



South Australian Year Book

1983

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SOUTH AUSTRALIAN

YEAR BOOK

1983

CORRIGENDUM

SOUTH AUSTRALIAN YEAR BOOK 1983

pages 382 and 383	the captions for Figures 4 and 5 should be transposed
page 382	the references to Figures 4 and 5 at the end of the first paragraph should be transposed.

A view of Rawnsley Bluff, the highest point (975 metres) on the outer perimeter of Wilpena Pound in the Flinders Ranges.

Malcolm Harrington





South Australian Year Book

No. 18 : 1983

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and Government Statist*

AUSTRALIAN BUREAU OF STATISTICS
SOUTH AUSTRALIAN OFFICE

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PREFACE

The *South Australian Year Book* is a general reference work presenting an authoritative and comprehensive statistical and descriptive portrayal of South Australia. It includes studies of the historical and geographical background and of the social, physical and financial development of the State culminating in a picture of South Australia as it is today.

This volume, the eighteenth issue of the Year Book, includes a special article on Conservation of the State's Cultural Materials, a new chapter on Energy, and a regional study of Northern Statistical Division. Some chapters or portions of chapters have been condensed to make room for the additional material but in such cases appropriate cross-references are given indicating in which earlier volumes the more complete information may be found. A list of special articles which appeared in previous issues is shown on pages 691-2.

Other official statistics of South Australia are published in different media, each chosen as the most appropriate to meet a particular need, whether this be for a compact reference guide, or for more detailed historical or up-to-date data, either on a specific subject or embracing wider fields.

A comprehensive range of statistics is published also by the Australian Statistician covering the whole of Australia (but giving some broad details about the States) and by other Deputy Commonwealth Statisticians for their respective States. The details of such publications are available at each office of the Bureau.

This Office maintains an Information Service, which, on request, supplies available statistical information and advice on which publications are appropriate, and a library in which all publications of the Australian Bureau of Statistics are available for reference. Businessmen, government officers and members of the public are invited to make use of these services.

I gratefully acknowledge the valuable assistance given by contributors of special articles, the Government Printing Division staff, and the staff of Computer Graphics Corporation Pty Ltd. My thanks are tendered to the staff of this Bureau, especially Mr I. R. Milne, B.Ec., under whose direction the Year Book was compiled by Mr G. D. Carey, B.Ec., AASA (Senior).

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METRICATION

In this publication quantities are shown in metric units.

1 millimetre	= 0·03937 inches
1 metre	= 3·28083 feet
1 kilometre	= 0·621371 miles
1 hectare	= 2·47105 acres
1 square kilometre	= 0·386102 square miles
1 kilogram	= 2·20462 pounds
1 tonne	= 0·984207 ton
1 tonne	= 36·7437 bushels of wheat
1 tonne	= 44·0925 bushels of barley
1 tonne	= 55·1156 bushels of oats
1 cubic metre	= 35·3147 cubic feet
1 cubic metre	= 423·776 super feet
1 cubic metre	= 27·4961 bushels
1 litre	= 0·219969 gallons

EXPLANATORY NOTES

In general, statistics in this volume relate to South Australia. A few tables, which are appropriately footnoted, include details for the Northern Territory.

Values are shown in Australian dollars (\$) or \$A) and cents unless another currency is specified.

Where figures have been rounded, discrepancies may occur between sums of component items and totals.

Symbols Used

<i>n.a.</i>	not collected, not available for publication
<i>n.e.c.</i>	not elsewhere classified
<i>n.e.i.</i>	not elsewhere included
<i>n.e.s.</i>	not elsewhere specified
<i>n.p.</i>	not available for publication but included in totals where applicable, unless otherwise indicated.
<i>n.y.a.</i>	figures not yet available
<i>p</i>	preliminary
..	not applicable
—	nil or less than half the final digit shown
————	break in continuity of series (where drawn across a column between two consecutive figures)

Citation of Acts

Acts of the Commonwealth Parliament are cited in *italics e.g. Census and Statistics Act 1905*.

Acts of the South Australian Parliament are cited in roman type *e.g. Licensing Act, 1967-1983*.

PART 1

NATURAL ENVIRONMENT

1.1 DESCRIPTION

Size and Location

The State of South Australia has the Southern Ocean to the south and is flanked on the other sides by land. It lies south of the 26th parallel of south latitude and has as a western boundary the 129th meridian of east longitude. The eastern boundary, north of the River Murray, corresponds with the 141st meridian, while to the south, between the river and the sea, the boundary lies approximately three kilometres to the west of this meridian.

The State is approximately 1 201 kilometres from east to west at the northern boundary and 1 143 kilometres at the head of the Great Australian Bight; from north to south it varies from 630 kilometres near the western extremity to approximately 1 325 kilometres near the eastern boundary; its coastline, excluding islands, measures approximately 3 700 kilometres. South Australia covers a total area of 984 377 square kilometres (one-eighth of the area of the Australian continent); however, approximately one-third of this area has no significant economic use and over one-half is devoted to extensive pastoral pursuits. Approximately 99 per cent of the population live south of the 32nd parallel.

A comparison of the areas, length of coastline and standard time of the various States and Territories is shown in the following table. The areas and length of coastline were determined by the Division of National Mapping by manually digitising these features from the 1:250 000 map series of Australia. This means that only features of measurable size at this scale were considered. About 60 000 points were digitised at an approximate

spacing of 0.5 kilometres. These points were joined by chords as the basis for calculation of areas and coastline lengths by computer.

Area, Coastline and Standard Times, Australia

State or Territory	Estimated Area (a)		Length of Coastline (a)	Standard Time	
	Total	Percentage of Total Area		Meridian Selected	Ahead of G.M.T.
	'000 km ²		km		Hours
New South Wales	802	10.43	1 900	150°E	(b) 10.0
Victoria	228	2.96	1 800	150°E	(b) 10.0
Queensland	1 727	22.48	7 400	150°E	10.0
South Australia	984	12.81	3 700	142°30'E	(b) 9.5
Western Australia	2 526	32.87	12 500	120°E	8.0
Tasmania	68	0.88	3 200	150°E	(b) 10.0
Northern Territory	1 346	17.52	6 200	142°30'E	9.5
Australian Capital Territory .	2	0.03	35	150°E	(b) 10.0
Australia	7 682	100.00	36 735	..	..

(a) As determined by the Division of National Mapping.

(b) Because of 'daylight saving' an hour should be added from late October to early March.

Standard Time

In terms of The Standard Time Act, 1898 South Australia has used 'the mean time of the meridian of longitude one hundred and forty-two and a half degrees east of Greenwich' as standard time since 1 May 1899. This time, known in Australia as Central Standard Time, is nine hours thirty minutes ahead of Greenwich Mean Time, one hour thirty minutes ahead of Western Standard Time used in Western Australia and thirty minutes behind Eastern Standard Time used by States on the east coast of Australia.

Before 1 February 1895 the meridian of Adelaide 138° 35' east (*i.e.* 9 hours 14 minutes ahead of Greenwich) was used to determine standard time in South Australia and subsequently from 1 February 1895 to 30 April 1899 the meridian 135° (*i.e.* 9 hours ahead of Greenwich) was used.

The Daylight Saving Act Amendment Act, 1972, assented to on 12 October 1972, provided for the observance of daylight saving in the summer of 1972-73, and in each subsequent summer, from the last Sunday in October until the first Sunday in March, South Australian summer time being adopted during this period.

A special article on the basis of time keeping and the determination of time standards was included on pages 1-2 of the *South Australian Year Book* 1973. An article on the determination of the time of sunrise and sunset was included on pages 3-5 of the same issue.

Physical Features

South Australia is a land of generally low relief, the inland area being largely covered by featureless plains, or sand and gibber deserts. Approximately 50 per cent of the State is less than 150 metres above sea level and over 80 per cent is less than 300 metres. Even the dominant mountains, the Mount Lofty-Flinders Ranges system, nowhere exceed 1 200 metres and have at no point proved difficult barriers to communications.

On the other hand the pattern of communication and development has been greatly influenced by the nature of the coastline, the south-easterly trend of which is interrupted by two major indentations, Spencer Gulf and Gulf St Vincent. These two relatively

shallow depressions cut into the settled areas a distance of approximately 300 and 150 kilometres respectively. The resultant natural divisions earlier tended to develop their own centres and many ports were constructed along the coast in spite of the fact that, with the exception of the area between Port Lincoln and Fowlers Bay, the nature of the coastline is not particularly accommodating to port development.

Kangaroo Island, approximately 480 kilometres in circumference and covering 4 350 square kilometres, is the predominant island off the South Australian coastline. There are, however, approximately 100 islands in all, relatively few of which are utilised.

The effect of the vast ocean area to the south is a more temperate climate than would be suggested by the latitude while the trend of the coastline exposes the coastal areas to the westerly rain-bearing air streams.

The most important mountains are the Mount Lofty-Flinders Ranges system. Kangaroo Island structurally belongs to these ranges which, together with parallel subsidiary ranges, extend north from Cape Jervis some 800 kilometres to the northern end of Lake Torrens. In the south the rounded hills of the Mount Lofty Ranges are of comparatively low altitude with Mount Lofty, the highest peak, being 727 metres. The western side of these ranges presents steep scarps to the Adelaide Plains while on the eastern side more gentle slopes merge into the Murray Basin.

To the north the Flinders Ranges are of greater height and sharper outline than their southern counterpart. St Mary Peak of 1 166 metres is the highest point. North of Peterborough there is a divergence from the main range which stretches *via* the Olary Ridges to the Barrier Range and Broken Hill. In the far north the ranges again diverge; one spur circling the northern end of Lake Torrens and the other ending north of Lake Frome. The Flinders Ranges contain some unusual basins of which Wilpena Pound is perhaps the best known.

The Mount Lofty-Flinders chain has an important climatic influence which results in higher rainfall in the plains to the west of the ranges, and in the ranges themselves, with relatively dry conditions in the Murray Basin.

The western half of the State is largely occupied by a low plateau over which an intermittent series of low ranges, including the Warburton, Stuart, Denison, Peake, and Everard Ranges, stretch from the Flinders to the somewhat higher Musgrave Ranges in the far north-west. Mount Woodroffe (1 440 metres), the highest point in the State, is located in the Musgrave Ranges.

The comparatively low hills of the Gawler Ranges form the northern side of the Eyre Peninsula triangle, and to the west of Whyalla lie the economically important Middle-back Ranges. Isolated peaks of volcanic origin are found in the extreme south-east of the State.

The River Murray, which drains approximately one-seventh of Australia, enters the sea in South Australia and is the State's only major river. The fall of the Murray is very slight, dropping less than twenty-two metres over the 642 kilometres between the border and the sea. For the 216 kilometres to Overland Corner the river occupies a wide valley and then passes through a narrower steeper-sided valley to Lakes Alexandrina and Albert at its heavily silted mouth.

Surrounding the northern Flinders Ranges is a series of vast lakes which are in reality lakes only after particularly heavy rainfall, normally appearing as shallow depressions with a salt or clay encrusted surface. Lake Eyre, the largest of these, is fifteen metres below mean sea level and is fed by a series of intermittently flowing rivers, including the Finke, the Diamantina and Cooper Creek, which traverse the plains of the north-east, constituting one of the largest areas of internal drainage in the world. To the south of Lake Eyre are Lakes Gairdner, Frome and Torrens, the last named being 240 kilometres in length.

General Geological Background

The physiography of the State very accurately outlines the geological features, the areas of higher relief being the basement rocks protruding as cores or ridges through the flat-lying younger sediments of the basin areas.

The main physiographic feature is the Kangaroo Island-Mount Lofty-Flinders Ranges arc of hills, which, although of no great elevation, extends over a distance of 800 kilometres. The rocks of this arc, which are predominantly ancient sediments, have been folded and faulted in a spectacular manner providing many classic examples of textbook tectonics; they owe their present prominence to repeated fold and uplift movements throughout geological time. The hills of the chain rise from the coastal plains of Gulf St Vincent to the west, the plains of the Murray River to the east, and the Lake Frome and Lake Eyre plains in the north-east and north. The basement rocks are also exposed to the west of Spencer Gulf, but are more completely levelled off, and constitute a geological shield of greater antiquity than the Mount Lofty arc.

In the far north-west of the State, the ancient basement is again exposed in the east-west trending hills of the Musgrave and Everard Ranges. These ranges form the northern boundary of the Great Victoria Desert which, with the great coastal Nullarbor Plain, covers the western half of the State.

There is thus a broad geological picture of ancient crystalline or partly crystalline folded rocks forming highland chains and provinces, surrounded by relatively young and soft flat-lying sediments which have accumulated in deep troughs and basins during periodic transgressions and regressions of the sea throughout most of geological time.

It is in the hard rock provinces that are found the deposits of minerals and rocks which have played an important role in the industrial development of the State. The basin areas are important as sources of artesian water and are the areas in which important oil and natural gas discoveries have been made.

In general, the younger sediments of the basin areas do not provide good agricultural soils except in the higher rainfall areas of the south and south-east of the State, while the best agricultural lands lie in the hard rock provinces of the Gawler-Barossa-Clare regions of the central ranges where relatively good rainfall is associated with more mature soil conditions.

A more complete discussion on the geology of South Australia was included on pages 3-18 of the *South Australian Year Book* 1970.

Seismicity

The most active area of the Australian continent is that of the South Australian seismic zones. The South Australian area has been monitored since 1962 by a small network of stations operated by the University of Adelaide.

The South Australian epicentres occur mainly in two belts, the major one being within the Adelaide Geosyncline and referred to as the Adelaide Seismic Zone. It extends from Kangaroo Island through the Mount Lofty and Flinders Ranges to Leigh Creek in the north. The epicentres generally follow the ranges and also the western boundary of the Upper Proterozoic Sequence and the fold trends in that part of the Geosyncline curving around to the east of Lake Torrens. The other main South Australian seismic zone is on Eyre Peninsula.

A discussion on earthquakes in South Australia was included on pages 18-19 of the *South Australian Year Book* 1970.

Eclipses

A special article on eclipses was included on pages 5-11 of the *South Australian Year Book* 1977.

1.2 CLIMATE AND METEOROLOGY

In the Southern Hemisphere, because of the extensive ocean areas and the absence of a broad land mass connecting the Antarctic with the tropical regions, the southern continents are not subject to the same range of weather extremes that are experienced in northern countries at similar latitudes. The ameliorating effect of this land-sea distribution is particularly noticeable in southern South Australia.

Briefly, the basic features of the South Australian climate are hot, dry summers with relatively mild nights, and cool but not severe winters with most rainfall occurring during the months of May, June, July and August.

METEOROLOGICAL OBSERVATIONS

Meteorological services throughout Australia are administered by the Commonwealth Bureau of Meteorology and the Regional Office of the Bureau in Adelaide directs operations throughout the State. In South Australia daily weather reporting stations are established at nearly eighty representative localities and there are over 900 rainfall recording stations.

Station weather observations telegraphed several times a day provide the basic information for the weather forecasting and warning services provided by the Regional Forecasting Centre, Adelaide. These observations are also collated in bulletins, maps and reports issued for public information. The reports include climatic surveys which are studies of climatic variations over defined regions of the State.

RAINFALL

Average Annual Rainfall

South Australia is by far the driest of the Australian States and Territories with just over four-fifths of the State receiving an average of less than 250 millimetres of rain annually. An indication of the shortage of rain in the State is given in the following table which compares the relative distribution of rainfall in South Australia and in Australia as a whole.

Distribution of Rainfall, South Australia and Australia

Average Annual Rainfall	Proportion of Total Area	
	South Australia	Australia
	Per cent	Per cent
Under 250 mm	82.6	38.8
250 mm and under 400 mm	9.1	19.8
400 mm and under 500 mm	4.5	11.2
500 mm and under 600 mm	2.6	9.5
600 mm and under 750 mm	0.8	7.5
750 mm and under 1 000 mm	0.4	6.2
1 000 mm and over	(a)	7.0
Total	100.0	100.0

(a) Less than 0.05 per cent—an area of the order of 750 hectares in the Mount Lofty Ranges.

As can be seen from the map on page 6, the isohyets generally show highest annual averages along the ranges and southern parts of the coast. The means decrease rapidly to less than 250 millimetres within 150 to 250 kilometres inland, and then decrease more gradually to below 150 millimetres in the vicinity of Lake Eyre. This area is the driest part of Australia and there have been several periods when the annual totals were less than 75 millimetres during consecutive years.

Mean monthly rainfalls at seventeen selected recording stations are shown in the table below. The average number of days receiving 0.2 millimetres or more of rain is also shown.

Mean Rainfall and Days of Rain: Selected Stations, South Australia

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
MEAN RAINFALL (a) (millimetres)													
Adelaide (West Toe)	20	21	24	44	68	72	66	61	51	44	31	26	528
Berri	17	22	11	17	28	26	24	27	27	24	20	19	262
Ceduna	11	14	13	21	38	37	40	37	29	27	23	20	310
Clare	26	25	25	48	75	80	81	79	72	57	36	29	633
Keith	19	23	22	35	56	52	54	56	51	45	33	26	472
Kingscote	15	18	18	37	60	73	78	64	46	36	24	19	488
Kyancutta	13	19	13	20	36	40	43	42	34	28	23	19	330
Maitland	18	22	20	43	64	68	66	62	50	43	28	22	506
Mount Gambier	24	32	33	60	75	77	102	90	68	63	47	38	709
Oodnadatta	23	35	8	10	15	13	11	11	12	15	9	13	175
Port Augusta	15	17	17	19	26	27	20	23	22	23	18	16	243
Port Lincoln	14	15	19	36	58	74	77	67	50	35	23	18	486
Port Pirie	18	19	17	29	40	41	33	36	34	33	23	20	343
Stirling	39	37	43	96	143	183	161	156	124	99	61	48	1 190
Tailem Bend	18	24	21	28	42	39	39	41	39	38	29	27	385
Whyalla	19	24	16	18	27	25	22	25	25	27	23	20	271
Yongala	21	21	16	26	36	41	40	45	39	34	28	24	371
AVERAGE NUMBER OF DAYS OF RAIN (b)													
Adelaide (West Toe)	4	4	5	9	13	15	16	16	13	11	8	6	120
Berri	3	3	3	5	7	8	9	9	7	6	4	4	68
Ceduna	3	4	4	7	11	11	13	12	10	8	6	5	94
Clare	4	4	5	8	12	14	15	15	13	11	7	5	113
Keith	4	4	5	8	12	13	15	15	12	11	8	6	113
Kingscote	3	4	5	9	13	15	18	16	13	10	6	5	117
Kyancutta	3	3	4	7	11	11	14	14	11	9	6	5	98
Maitland	4	4	4	8	12	14	15	15	12	10	7	5	110
Mount Gambier	8	8	11	15	18	18	22	21	18	17	14	12	182
Oodnadatta	3	3	2	3	3	3	2	4	3	3	3	3	34
Port Augusta	2	2	3	4	6	8	8	6	6	6	4	3	60
Port Lincoln	4	4	5	9	14	16	18	18	13	11	7	5	124
Port Pirie	3	2	3	5	8	10	10	10	8	7	5	4	75
Stirling	6	6	7	13	15	17	18	18	15	14	11	9	149
Tailem Bend	4	4	4	7	11	11	13	13	11	9	7	6	100
Whyalla	3	3	3	5	7	7	8	8	6	6	4	4	64
Yongala	4	3	4	6	10	12	13	13	10	8	6	5	94

(a) For all years of record to end of 1978 except for Adelaide (see page 15). (b) Days receiving 0.2 millimetres or more.

Seasonal Distribution of Rainfall

Those areas of the State with the higher average annual totals also show a marked winter maximum of rainfall. From November to March the fall is slight, but rarely is completely absent. However, a high rate of evaporation during the summer means that in general these summer rains are not significant from the agricultural point of view. The first significant falls generally arrive during April or May; June, July and August are usually the wettest months, with rains tending to show a marked decrease during September and October.

By contrast, the occurrence of rain over interior districts is quite erratic, but southern parts of the interior still exhibit a discernible trend for winter maxima. Records collected over the years from this northern half of the State show that heavy rains of up to 75

millimetres may occur in any month of the year, but at least two or three months without any significant rain at all are experienced practically every year.

Rainfall Intensity

Long sustained periods of intense rainfall are rare in South Australia. However, occasionally there are very intense falls lasting only a few minutes—for example in Adelaide several falls at a rate of more than 100 millimetres an hour over a five-minute period have been recorded. These were thunderstorm rains, and intense falls can cause considerable damage to crops and to light or freshly worked soils.

The most notable falls of rain which have occurred within a period of 24 hours ending at 9 a.m. were at:

Stansbury (18 February 1946)	222 mm
Stirling (17 April 1889)	208 mm
Ardrossan (18 February 1946)	206 mm
Oodnadatta (9 February 1976)	200 mm
Carpa, 25 km SW of Cowell (18 February 1946)	199 mm
Innamincka Station (28 January 1974)	189 mm

Other Yorke Peninsula towns besides Stansbury and Ardrossan also recorded over 175 millimetres on 18 February 1946. These, however, are very much below the 24-hour falls which have been recorded in tropical parts of Queensland and Western Australia. At Bellenden Ker (in Queensland) 1 140 millimetres were recorded in the twenty-four hour period ending 9 a.m. on 4 January 1979. The next day a further 807 millimetres were recorded at the same station. More than twenty other centres in Queensland have had daily readings exceeding 600 millimetres.

Snow and Hail

The occurrence of snow in South Australia is rare and mainly confined to the Mount Lofty Ranges and southern Flinders Ranges. Most falls are very light and do not persist for a very long period because of the relative warmth of the ground. Collated reports of snow in the Mount Lofty Ranges show a total of 135 days of snow experienced over a period of 142 years to the end of 1982. While most falls have occurred during the months June to September snow has been experienced as early as 25 April (1916) and as late as 3 December (1955).

Hail falls most frequently about the southern coasts and ranges during the winter. Further to the north, hail can be experienced with summer thunderstorms and some of the largest hailstones have been reported from northerly parts of the State. Tornadoes and tornadic squalls are, in almost all cases, accompanied by hail.

Floods

Various areas of South Australia are prone to localised flooding. However, most local flooding is associated with intense rainfall, and consequently, is of comparatively short duration. Exceptions have occurred in parts of the south-east and far north of the State where, because of topography and soil factors, stretches of water can persist for days and even weeks.

Extensive rises in the River Murray levels have at times caused damage to levees and installations along the banks. During 1956, following an excessive snow melt in the Australian Alps, prolonged flooding was experienced in many areas adjacent to the main course.

Droughts

When abnormally dry conditions persist over wide areas for long periods of time, drought, the worst of all Australian climatic hazards, is experienced. The drought years

in the pastoral districts of South Australia were 1863-67, 1896-98, 1901-03, 1913-16, 1926-30, 1939-40, 1943-45, 1959-62, 1965 and 1982. For the settled areas the years were 1859-60, 1884-86, 1895-98, 1911-15, 1928-29, 1943-45, 1959, 1967, 1976-77 and 1982.

The driest year in terms of actual rainfall was 1967, when an all-time low figure for the year of 257 millimetres was recorded in Adelaide. However, the 1914 drought is generally recognised as being the most severe experienced. In that year the River Murray was reduced to a series of waterholes in some places. The drought of 1982 was probably as severe as that in 1914. In both years almost all of the wheatgrowing areas of the State received very much below average rainfall (in the first decile range). That was especially true for the period May to October which constitutes the cereal growing season. The lack of rain resulted in very poor cereal yields.

Periods during which no significant rain falls are more prolonged in the northern districts than near the coast. In northern parts stock grazing, rather than cereal growing, is the main rural industry. Lack of rain can result in lack of plant growth leading to deterioration of feed and ultimately degradation of the land with heavy stock losses. Much work on rainfall variability and drought frequency has been done in recent years: the Bureau of Meteorology publishes the *Drought Review* periodically in conjunction with the *Monthly Rainfall Review* to provide current information for the whole of Australia.

The Bureau of Meteorology has also produced reference works including *Droughts in Australia* by J. C. Foley (Bulletin No. 43) and *Rainfall Deciles as Drought Indicators* by W. J. Gibbs and J. V. Maher (Bulletin No. 48) in addition to the detailed discussion with special reference to rainfall deciles which appeared on pages 8-10 of the *South Australian Year Book* 1967.

Rainfall Probability

A special article on rainfall probability, *i.e.* the likelihood, expressed as a percentage, that a minimum rainfall will be received during a stipulated period, was included on pages 6-9 of the *South Australian Year Book* 1966.

TEMPERATURE

Seasonal Temperature Conditions

Air temperature is normally recorded under standard conditions in a Stevenson Screen. Isotherms of the average maximum temperatures in a mid-summer month (January) and of the average minimum temperature in a mid-winter month (July) are shown on the maps on pages 11 and 12 respectively. The isotherms are more or less parallel to the coastline but the cooling effect associated with higher altitudes of the Mount Lofty and Flinders Ranges is clearly shown.

From December to February it is generally warm to hot throughout the State but sea breezes frequently bring some relief to the coastal districts. In locations more than 75 to 150 kilometres inland maximum daily temperatures usually exceed 32.5°C and are quite often over 37.5°C. In general, areas to the north of the 32.5°C isotherm on the January map average more than twenty days annually during which the maximum temperature exceeds 37.5°C. It is only on the extreme south-east coastal fringe and Kangaroo Island where the average number of such 'very hot days' is less than five a year. Air masses prevalent at this time of the year are relatively dry; hence cooling during the night is marked—a fall of 10°C to 20°C from day to night is usual.

During March temperatures begin to fall and continue to do so during April and May, the first frosts of the year often being experienced during this period. The three coldest months are June, July and August, with the coldest areas along the highlands. In those

parts of the State east and south-east of the ranges, the mean temperature for the latter months is near or just below 10°C, and these low temperatures cause vegetation growth to become very slow, although it does not cease altogether.

In the spring months, September to November, with gradually rising temperatures and longer hours of sunshine, crops and pastures grow rapidly. In this period severe frosts are sometimes experienced and these can cause considerable damage to fruit crops during the bud, flower and small fruit stages. When hot, dry, northerly winds persist over the State for two or more consecutive days, developing crops may suffer stress.

Monthly mean maximum and minimum temperatures at seventeen selected recording stations within the State are shown in the following tables. These are based as nearly as possible on a standard period except for the figures for Adelaide (Kent Town) which are estimates based on a comparison of readings taken between 1977 and 1979 at the Kent Town and West Terrace observation sites.

Mean Maximum Temperatures: Selected Stations, South Australia

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
°Celsius													
Adelaide (Kent Town)	28.8	28.8	26.2	22.1	18.5	15.6	14.9	16.1	18.4	21.5	24.7	27.2	21.9
Berri	31.2	30.2	28.2	22.6	18.9	15.9	15.4	17.2	20.7	23.5	26.9	29.6	23.4
Ceduna	28.4	27.9	26.5	24.0	20.5	18.1	17.2	18.3	21.0	23.5	25.7	27.1	23.2
Clare	29.4	29.1	26.2	21.3	16.9	13.8	12.9	14.5	17.3	20.8	24.6	27.5	21.2
Keith	29.9	29.5	26.9	22.2	18.0	15.5	14.8	15.9	18.4	21.3	24.4	27.4	22.1
Kingscote	23.5	23.3	22.0	19.6	17.2	15.2	14.4	14.8	16.3	18.3	20.4	22.3	18.9
Kyancutta	32.8	32.0	30.0	25.0	21.0	17.7	17.0	18.1	21.6	25.0	28.3	30.8	24.9
Maitland	28.5	28.2	25.5	21.9	17.7	15.3	14.2	15.1	17.2	20.9	23.9	25.9	21.2
Mount Gambier	25.1	24.6	22.7	19.0	15.7	13.7	13.0	13.9	15.6	17.6	19.8	22.5	18.6
Oodnadatta	37.3	36.2	33.6	28.0	22.9	19.7	19.5	21.6	26.0	30.1	33.4	36.1	28.7
Port Augusta	32.0	31.8	29.6	25.2	21.1	17.5	17.0	19.0	22.4	25.6	28.6	30.8	25.0
Port Lincoln	25.3	24.9	23.9	21.4	18.8	16.4	15.8	16.5	18.1	20.0	21.9	23.7	20.6
Port Pirie	31.7	31.4	29.4	24.6	20.2	17.1	16.3	17.9	20.7	24.4	27.4	29.9	24.3
Stirling	24.9	24.3	22.8	18.0	14.4	11.6	10.6	11.8	14.6	16.9	19.9	22.6	17.7
Taillem Bend	29.5	28.7	26.9	23.1	18.9	16.2	15.6	16.6	19.8	22.4	24.8	27.0	22.4
Whyalla	28.6	28.3	25.7	23.0	20.0	17.6	16.4	17.7	20.2	22.4	25.5	26.7	22.7
Yongala	29.9	29.6	26.6	21.3	16.7	13.1	12.3	14.0	17.3	21.4	25.4	28.4	21.3

Mean Minimum Temperatures: Selected Stations, South Australia

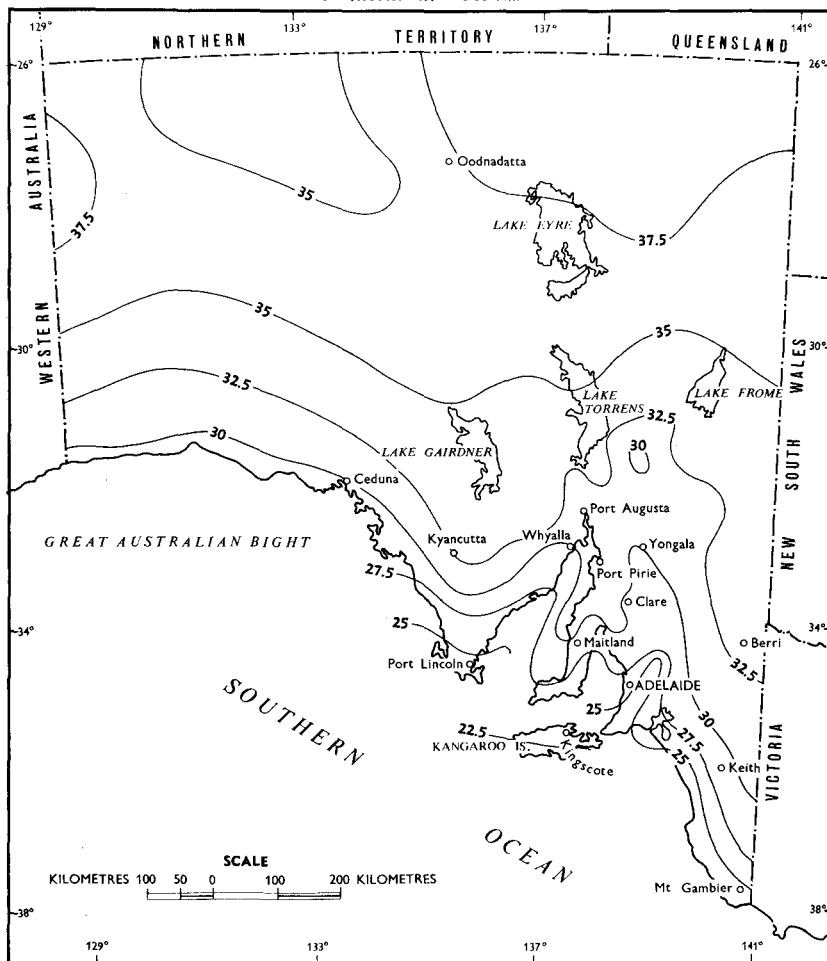
Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
°Celsius													
Adelaide (Kent Town)	15.9	16.2	14.5	11.9	9.5	7.5	6.5	7.1	8.4	10.5	12.7	14.8	11.3
Berri	15.3	14.9	13.4	10.2	7.8	6.1	5.3	6.0	7.8	10.0	12.2	14.1	10.3
Ceduna	14.9	14.9	13.1	10.7	8.4	6.5	5.7	6.1	7.7	9.7	12.0	13.7	10.3
Clare	13.7	13.8	11.5	8.3	5.8	4.3	3.3	3.9	5.1	7.4	9.9	12.1	8.3
Keith	12.6	12.8	11.1	9.0	7.2	5.6	5.2	5.5	6.4	8.1	9.6	11.5	8.8
Kingscote	14.6	15.2	14.1	12.3	10.6	9.2	8.3	8.1	8.9	10.2	11.7	13.3	11.4
Kyancutta	15.7	14.0	12.2	9.3	7.2	5.2	4.7	4.8	6.1	8.1	10.4	12.6	9.1
Maitland	15.1	15.5	14.2	12.1	9.6	7.6	6.8	6.9	7.9	9.8	11.5	13.5	10.9
Mount Gambier	10.7	11.4	10.1	8.4	7.0	5.4	4.9	5.1	5.8	6.9	7.9	9.6	7.8
Oodnadatta	22.5	22.0	19.2	14.1	9.6	6.7	5.7	7.1	10.9	15.0	18.1	20.9	14.4
Port Augusta	18.6	18.9	16.8	13.3	10.1	7.8	6.7	7.7	9.8	12.6	15.3	17.5	12.9
Port Lincoln	15.2	15.5	14.6	12.7	10.9	9.2	8.3	8.2	9.0	10.4	12.1	13.8	11.7
Port Pirie	17.2	17.4	15.8	12.8	10.3	8.2	7.5	7.9	9.4	11.6	13.9	15.9	12.3
Stirling	11.5	11.6	10.6	8.6	6.8	5.3	4.6	4.8	5.9	7.1	8.7	10.2	7.9
Taillem Bend	13.8	13.9	12.3	10.2	8.3	6.0	5.5	5.9	7.2	8.8	10.7	12.4	9.5
Whyalla	18.1	18.9	17.2	13.6	10.7	8.5	7.4	8.1	9.9	12.6	14.7	16.6	13.1
Yongala	13.2	13.4	10.8	7.3	4.7	3.1	2.3	2.7	4.0	6.2	9.2	11.7	7.4

The highest temperature recorded in South Australia was 50.7°C at Oodnadatta on 2 January 1960, and the lowest -8.2°C at Yongala on 20 July 1976.

SOUTH AUSTRALIA MEAN MAXIMUM TEMPERATURE: JANUARY

Based on all years of records

Isotherms in ° Celsius



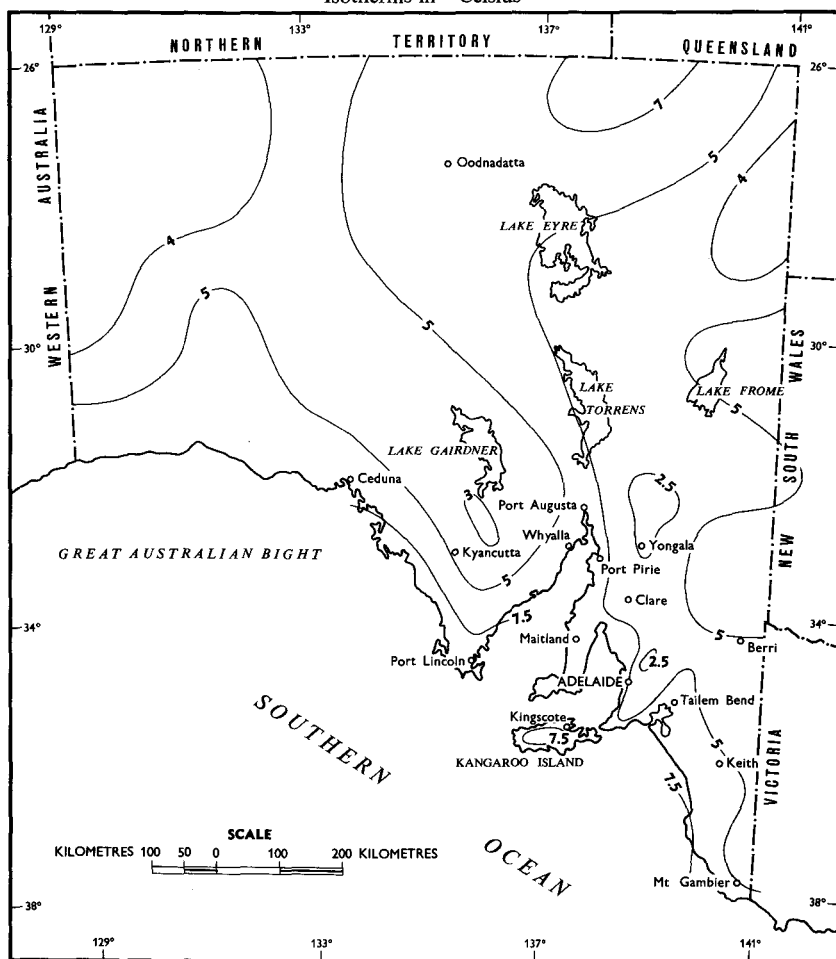
HUMIDITY

'Relative humidity' at a particular temperature is the ratio of the actual vapour pressure to the saturated vapour pressure (at that temperature) expressed as a percentage. Since relative humidity depends not only on the actual water vapour content of the

SOUTH AUSTRALIA MEAN MINIMUM TEMPERATURE: JULY

Based on all years of records

Isotherms in ° Celsius



air but also on air temperature, there is a tendency for highest relative humidities to be associated with low temperatures during the early morning hours, and conversely, the lowest relative humidity values tend to occur during the warmest part of the afternoon when measurements of under 20 per cent are common.

The average index of mean relative humidity has been derived from the ratio of the

average 9 a.m. vapour pressure to the saturation vapour pressure at the average mean temperature. Being thus related to the mean temperature this value of relative humidity is a good approximation of the daily mean.

With an average index of mean relative humidity of under 35 per cent in summer increasing to about 50 per cent in winter, the far northern parts of the State experience the lowest values of relative humidity in South Australia. By comparison, most southern parts of the State have an average index of mean relative humidity of about 45 to 55 per cent in summer, increasing to about 70 to 80 per cent in winter.

SUNSHINE AND CLOUD

The annual average sunshine total (as determined from records of sunshine and average cloudiness) ranges from about 2 000 hours along parts of the southern coastal fringe to 3 500 hours near the northern border of the State. Adelaide has an average of just over 2 500 hours a year.

December and January tend to be the sunniest months with daily averages reaching a maximum of about 10.5 hours over interior districts. During the June and July winter months daily averages are still as high as seven hours in the far north interior, but over the southern coastal fringe the daily average of just over eight hours for summer is reduced to about three hours during winter.

WIND

During the summer months winds from the southern quadrants are the most prevalent and a well-defined sea breeze is common along the whole of the coastal fringe from October right through to about April and May. During the winter months the north-westerly predominates, but the proportion of west to south-west winds is also relatively high.

South Australia is not subject to the type of sustained wind storms associated with tropical cyclones as in Queensland and tropical Western Australia. However, gales do occur from time to time along the coast during the winter and cause minor damage to buildings and foreshore works. Probably the most noteworthy storm was on 11 April 1948 when wind averaged over 60 km/h for six hours in central and south-eastern districts, the naval frigate *Barcoo* was grounded at Glenelg and the Glenelg jetty was wrecked. Frequent gusts over 100 km/h and a strongest gust of 130 km/h were recorded in Adelaide.

Most violent wind squalls are associated with thunderstorms and usually last only a few minutes. It was during such squalls that the highest wind gusts were recorded in South Australia—167 km/h at Woomera on 14 November 1979, 158 km/h at Woomera on 4 November 1969, 148 km/h at Leigh Creek on 3 December 1953 and also at Adelaide on 13 July 1964.

EVAPORATION

Evaporation is currently determined by many Australian authorities by measuring the amount of water evaporated from a free water surface exposed in a standard tank or pan. Before 1967, measurements were made using the sunken tank method *i.e.* tanks, each 0.91 metres internal diameter and 0.91 metres deep, sunk into the soil so that the rim was only 25 millimetres or so above the ground.

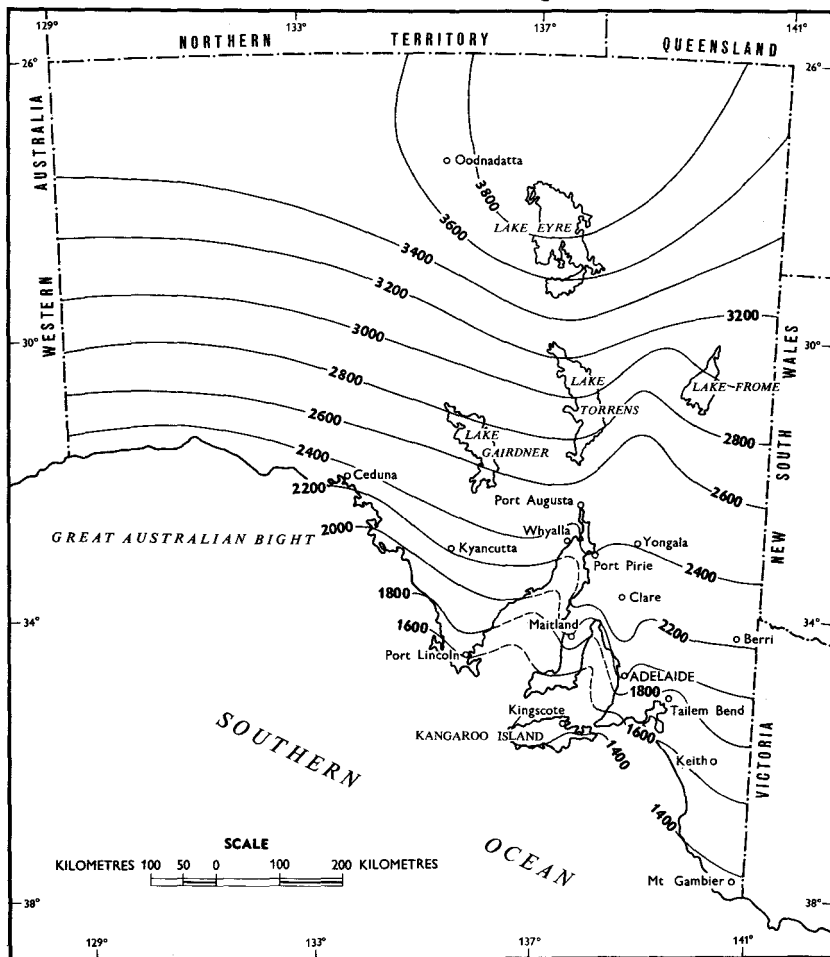
Early in 1967 a change-over to the American Class A evaporation pan was made after this instrument had been accepted as the standard evaporimeter for Australia. These pans, 1.21 metres in diameter and 0.25 metres deep, are placed above ground level on

wooden pallets. Wire mesh guards are fitted to the pans to prevent birds and stray animals drinking from them.

A map showing average annual Class A Pan evaporation as measured from openly exposed locations (*i.e.* free from shadows and wind sheltering) follows.

SOUTH AUSTRALIA AVERAGE ANNUAL EVAPORATION

Based on all years of records in millimetres,
for a Class A Pan with Birdguard



The annual average evaporation varies from below 1 600 millimetres in parts of the Mount Lofty Ranges and the lower South East to more than 3 600 millimetres over an area around and to the north-east of Oodnadatta in the far north of the State.

About half the State has an average evaporation rate exceeding 3 000 millimetres a year. This high rate is all the more significant when it is considered that the average annual rainfall over most of the northern half is less than 200 millimetres.

CLIMATE OF ADELAIDE

The longest continuous series of weather observations in the Southern Hemisphere started in Adelaide in November 1836 when Sir George Kingston commenced rain gauge readings at his property on the corner of Grote Street and West Terrace. Unfortunately, the earliest figures were mislaid and records are available only from the beginning of 1839. No other regular observations were made until Sir Charles Todd arrived to fill the post of Superintendent of Telegraphs and Government Astronomer in 1856.

In May 1860 the Observatory on West Terrace was completed and the instruments were moved to that site. For over 100 years the observation site at Adelaide remained practically unchanged. Minor shifts occurred in 1940 and 1962 but these were within 100 metres of the original observatory site.

In February 1977, the Adelaide Regional Office of the Bureau of Meteorology moved from West Terrace to College Road, Kent Town. Although a new observation site was set up at Kent Town, observations continued at West Terrace until February 1979 in order to compare the two sites.

Statistics derived from the long-standing West Terrace site, now demolished, serve as a valuable basis for describing the climate of the City of Adelaide and will continue to be useful guides to the future conditions—figures for West Terrace are therefore shown.

Climatological Data, West Terrace, Adelaide

(1) *Temperature and Relative Humidity based on a composite record of Greenwich Stand and Stevenson Screen observations*

Month	Temperature				Relative Humidity (9 a.m.)			
	Maximum		Minimum		Mean	Mean	Highest Monthly Mean	Lowest Monthly Mean
	Mean	Highest Recorded	Mean	Lowest Recorded				
Years of Record	122	122	122	122	122	109	109	109
	°Celsius					Per cent		
January	29.5	47.6	16.4	7.3	23.0	41	59	29
February	29.3	45.3	16.6	7.5	23.0	44	63	30
March	26.8	43.6	15.1	6.6	21.0	47	62	29
April	22.7	37.0	12.6	4.2	17.7	57	72	37
May	18.7	31.9	10.3	2.7	14.5	67	77	49
June	15.8	25.6	8.3	0.3	12.1	75	84	63
July	15.0	26.6	7.3	0.0	11.1	76	87	66
August	16.4	29.4	7.8	0.2	12.1	70	80	54
September	18.9	35.1	9.0	0.4	13.9	61	72	44
October	22.0	39.4	10.9	2.3	16.5	52	67	29
November	25.1	45.3	12.9	4.9	19.1	45	64	31
December	27.7	45.9	15.0	6.1	21.3	42	56	31
Year	22.3	47.6	11.9	0.0	17.1	56	87	29

Climatological Data, West Terrace, Adelaide (continued)

(2) Rainfall and Wind

Month	Rainfall				Wind			
	Mean	Highest Monthly and Yearly Total	Highest in One Day	Mean Days of Rain (a)	Average Speed	Highest Gust	Prevailing Direction	
							9 a.m.	3 p.m.
Years of Record	140	140	140	140	21	60	30	30
January	mm	mm	mm	No.	km/h	km/h	SW	SW
February	20	84	58	4	13	116	NE	SW
March	21	155	141	4	12	106	S	SW
April	24	117	89	5	11	126	NE	SW
May	44	154	80	9	11	130	NE	SW
June	68	197	70	13	11	113	NE	NW
July	72	218	54	15	12	108	NE	N
August	66	138	44	16	12	148	NE	NW
September	61	157	57	15	13	121	NE	SW
October	51	148	40	13	13	111	NNE	SW
November	44	133	57	11	13	121	NNE	SW
December	31	113	75	8	13	130	SW	SW
Year	26	101	61	6	13	121	SW	SW
Year	528	786	141	119	12	148	NE	SW

(3) Other Conditions

Month	Mean Daily Sunshine	Clear Days (b)	Mean Amount of Cloud (c)	Days of Fog	Days of Lightning	Amount of Evaporation (d)	Vapour Pressure 9 a.m.	Mean Barometric Pressure (e)
Years of Record	95	58	107	77	105	12	108	121
January	Hours	No.		No.	No.	mm	mb	mb
February	10.0	12.4	3.1	0.0	2.0	254	11.9	1 013.2
March	9.3	10.9	3.3	0.0	1.7	216	12.5	1 014.3
April	7.9	10.9	3.5	0.0	1.7	176	12.0	1 017.2
May	6.0	6.6	4.5	0.0	1.4	120	11.5	1 019.9
June	4.8	4.6	5.1	0.4	1.5	79	10.8	1 020.1
July	4.2	4.0	5.3	1.1	1.5	56	10.0	1 019.9
August	4.3	3.6	5.2	1.3	1.4	60	9.5	1 020.0
September	5.3	4.9	4.9	0.6	1.7	78	9.7	1 019.0
October	6.2	5.7	4.6	0.2	1.7	110	10.0	1 017.7
November	7.2	5.7	4.5	0.0	2.6	164	10.2	1 016.0
December	8.6	6.6	4.2	0.0	3.0	196	10.5	1 015.0
Year	9.4	9.0	3.7	0.0	2.2	241	11.3	1 013.3
Year	6.9	85.0	4.3	3.6	22.4	1 750	10.8	1 017.1

(a) Days receiving 0.2 mm or more of rain. (b) With less than two-eighths cloud. (c) Scale 0 (clear) to 8 (overcast) at 9 a.m. and 3 p.m. daily. (d) From Class A Pan (period 1967-1977). (e) Mean of 9 a.m. and 3 p.m. readings corrected to sea level.

Temperature records at Adelaide date from 1857, when readings were first taken from a thermometer placed in a screen known as a Greenwich Stand which failed to protect the thermometer fully from reflected radiation. In 1887 a new series of readings using a standard Stevenson Screen was introduced and this showed maximum temperatures during the warmer months to be 1° to 1.5°C lower on average. Other temperatures were not significantly affected. Both screens were in continuous operation until 1947 when use of the Greenwich Stand was discontinued. However, the Greenwich Stand readings remained the official record until 1947, thus there is a slight discontinuity in the temperature records in that year and means are weighted towards the Greenwich Stand method of measurement.

Adelaide is the driest of Australia's capital cities, having less rainfall and a lower relative humidity than any other capital. Summer maximum temperatures are high and the record of 47·6°C in the Greenwich Stand on 12 January 1939 is the highest recorded in any of the capital cities.

Temperature

In the summer months, Adelaide maximum temperatures frequently exceed 30°C and from time to time 'heat waves', with readings at or near 35°C for several consecutive days, are experienced. The outstanding heat wave was in January 1939 when fourteen days out of fifteen exceeded 30°C and of those fourteen days thirteen exceeded 35°C and six exceeded 40°C. During this heat wave the record temperature of 46·8°C recorded on 26 January 1858 was exceeded, first on 10 January 1939 when the temperature reached 47·2°C and then two days later on 12 January when the highest ever temperature of 47·6°C (46·1°C in the Stevenson Screen) was recorded.

July is usually the coldest month, when the mean maximum is 15°C. However, the extreme lowest minimum recorded is -0·4°C on 8 June 1982. August is only slightly warmer than July, but after August steadily rising temperatures are experienced.

Rainfall

Adelaide's summer rainfall is light and unreliable. The average monthly fall from January to March is under 25 millimetres and completely rainless months in this period are common. In fact, each of the five months December to April has at some time been recorded as completely dry, and in the period January to March 1893 there were sixty-nine consecutive rainless days. However, heavy rain is occasionally experienced at this time of the year and on 7 February 1925 rainfall was 141 millimetres—a record for one day.

Each month from May to September rainfall averages over 50 millimetres and in this period the rain is fairly reliable. June is the wettest month but the average is still under 75 millimetres for the month. The 140 year annual rainfall average is 528 millimetres, and annual totals have ranged from a low of 257 millimetres in 1967 to a high of 786 millimetres in 1851.

Other Conditions

Relative humidity in Adelaide is at its lowest in January when the average 9 a.m. reading (which approximates the average for the whole 24 hours) is 41 per cent. This low value of the relative humidity reduces the severity of heat waves in Adelaide. In fact, the relative humidity is very low for most months of the year, only becoming higher in winter, with the average at 9 a.m. reaching 76 per cent in July.

Adelaide is not subject to violent sustained wind storms. The prevailing wind during the day in summer is a south-westerly sea breeze which is well defined throughout the months October to April. Another common wind during summer, known locally as the 'gully wind', blows from the east or south-east out of the Adelaide Hills (more particularly at night) and becomes very strong and gusty at times. In winter the prevailing wind during the day is north-westerly with a high proportion of south-westerlies.

Transfer of Bureau of Meteorology to New Site

Temperature and rainfall averages have been estimated for the recently opened Kent Town site. These are shown in the following tables with the long-term means for the discontinued West Terrace observations. The temperatures refer only to observations taken from the Stevenson Screen thus eliminating the bias introduced with Greenwich Stand readings.

Comparison of Rainfall: West Terrace, Adelaide and Kent Town

Site	Years of Record	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
		Millimetres												
West Terrace, Adelaide: Long-term mean rainfall	140	20	21	24	44	68	72	66	61	51	44	31	26	528
Kent Town: Estimates of average rainfall .....	..	22	22	26	47	76	79	75	69	57	51	33	28	585

Comparison of Temperature: West Terrace, Adelaide and Kent Town

Site	Years of Record	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
		°Celsius												
Maximum: West Terrace, Adelaide; Long-term mean temperature	92	28.5	28.5	26.0	22.1	18.5	15.7	14.9	16.0	18.3	21.3	24.3	26.8	21.7
Kent Town; Estimates of average temperature .....	..	28.8	28.8	26.2	22.1	18.5	15.6	14.9	16.1	18.4	21.5	24.7	27.2	21.9
Minimum: West Terrace, Adelaide; Long-term mean temperature	92	16.5	16.8	15.1	12.7	10.4	8.4	7.5	8.0	9.2	11.1	13.1	15.1	12.0
Kent Town; Estimates of average temperature .....	..	15.9	16.2	14.5	11.9	9.5	7.5	6.5	7.1	8.4	10.5	12.7	14.8	11.3

From these tables the estimated average maximum temperatures at Kent Town vary from 0.4°C higher than at West Terrace in December to 0.1°C lower during June.

Estimated average minimum temperatures at Kent Town are all lower than the corresponding average temperatures at West Terrace. Differences range from 0.3°C in December to 1.0°C in July.

Rainfall was recorded at West Terrace for 140 years, the longest continuous record in the Southern Hemisphere. The estimated average annual total for Kent Town is 11 per cent higher than at West Terrace. However, monthly means range from 5 per cent higher in February to 14 per cent higher in July.

It follows that it is likely that new extreme temperature and rainfall readings will be recorded for 'Adelaide' at the Kent Town site. Such occurrences should not be compared with extremes that have been recorded at West Terrace. A new series of climatological statistics has been started for the Kent Town site and this will be kept separate from the West Terrace data.

WEATHER CONDITIONS IN SOUTH AUSTRALIA, 1982**Summer 1981-82**

Summer rainfall was below average for every district in the State. In the pastoral interiors it was 36 to 43 per cent below normal. Over the settled areas district rainfall averages varied from 31 per cent below normal for the Mount Lofty Ranges to 74 per cent below normal for the Upper Murray Valley.

Summer rainfall totals over the pastoral districts were most variable with the lowest readings of 5 mm to 12 mm being taken around the Gawler Ranges and south of the Barrier Ranges. The rainfall amounts increased towards the extreme northwest of the State. The highest readings reported were 96 mm at Ernabella and 80 mm at Oodnadatta.

Over the settled areas an exceptional fall of 124 mm was recorded at Wilpena Chalet but most other stations in the Upper North, together with the Lower North, Yorke Peninsula, Kangaroo Island, County Light, Murray Mallee and Lower Murray districts were in the 15 mm to 40 mm range. Readings of 20 mm to 60 mm were taken in the South East and over the Adelaide Plains. Most stations in the Mount Lofty Ranges received between 30 mm and 80 mm with a few higher registrations of up to 102 mm (at Stirling) being reported in the Adelaide Hills. By contrast, gaugings in the Western Agricultural and the Upper Murray districts were less than 25 mm at most stations.

Mean summer maximum temperatures were about 1°C to 2°C above normal at most centres, as were mean summer minima. However, January 1982 will be remembered for a prolonged heat wave. In Adelaide seven successive days with maximum temperatures above 37.8°C were experienced from 18 to 24 January and the heat was purported to have contributed to the deaths of at least ten elderly people. Railway lines were buckled by the heat and one train was derailed near Rhynie. The high temperatures were also believed to have caused an electrical transformer to fail, resulting in power blackouts in Adelaide and Port Pirie.

There were many bushfires in the State during the summer season. The most destructive ones occurred near Pinnaroo, Georgetown and Cradock during December; Meningie in January; near Wudinna and around Stokes Bay on Kangaroo Island during February.

On 12 December, strong wind gusts brought down power lines in Adelaide. On 11 January, electrical storms and strong wind gusts caused structural damage in the Whyalla and Riverland areas while on 24 January storms caused similar damage at Gurrui. Floods in the Lower South East district were caused by severe thunderstorms on 6 January, especially in the Mount Gambier area. Thunderstorms also flooded roads in the Far North and North West districts in mid-February. Also in mid-February strong wind gusts and squalls caused damage at Eudunda and North Haven and in the South East districts.

Autumn 1982

Autumn rainfall in the pastoral districts varied markedly from station to station. The highest gauging of 133 mm at Granite Downs in the North West contrasted sharply with the 6 mm recorded at Erudina and Olary in the North East district. Although the district average for the North West was 57 per cent above normal, for the Far North and North East districts they were below normal by 47 and 63 per cent respectively. Most gaugings in the North West district were in the 20 mm to 60 mm range and similar readings were also taken at several centres in the North East, while in the Far North district many gaugings were in the 10 mm to 30 mm category.

Over the settled areas the heaviest falls were 351 mm at Stirling and 301 mm at Uraidla in the Adelaide Hills. Most gaugings in the Mount Lofty Ranges were in the 150 mm to 280 mm range. In the Lower South East, the Adelaide Plains, County Light and over Kangaroo Island readings of between 100 mm and 200 mm were taken. In the Western Agricultural district falls of 120 mm to 160 mm were confined to a few stations in southern and western parts of Eyre Peninsula. However, most gaugings were in the 70 mm to 120 mm range and similar readings were fairly general throughout the Lower North, Yorke Peninsula and the Upper South East districts. In the Upper North, northern Eyre Peninsula and the Murray districts readings of 30 mm to 80 mm were generally reported.

During late March there was widespread flooding in interior districts and record March rainfall totals were reported from Ernabella and Granite Downs.

Mean autumn maximum temperatures were within 1°C of normal while most mean autumn minima were also close to normal. In the vicinity of Port Pirie, along the coast near Victor Harbor and in the South East districts they were about 1°C to 2°C above

normal. Hot spells occurred especially during March and April but they were off-set by days of below normal temperatures.

Bushfires broke out at Yorgetown, Cleve, Streaky Bay, Montacute, Athelstone and on Kangaroo Island during March. The fire season closed on 26 April and air pollution potential alerts were re-commenced on 30 April 1982.

Winter 1982

Winter rainfall was well below average in all South Australian rainfall districts, constituting drought conditions. District averages of below the ten percentile value (the value which is not exceeded in the driest 10 per cent of years) were recorded for all but the North West district. The Murray Valley and the North East district had their driest winter since 1914 and 1919 respectively. Details for other districts together with normals and percentage departures from normal are given in the table below.

Adelaide's winter rainfall was 112.4 mm, recorded at the Regional Office of the Bureau of Meteorology, Kent Town. It was the lowest winter total since 1977 when 108.6 mm were recorded. Adelaide's driest winter on record occurred in 1914 when 60.7 mm were recorded at West Terrace.

1982 Winter Rainfall, District Averages

District	1982 Winter	Normal Winter (<i>a</i>)	Departure from Normal	Driest Winter Since
	mm		Per cent	
North West	24	53	-55	1977
Far North	6	41	-85	1976
Western Agricultural	78	134	-42	1977
Upper North	39	107	-64	1944
North East	7	47	-85	1919
Lower North	66	156	-58	1944
Yorke Peninsula	89	160	-44	1977
Kangaroo Island	145	244	-41	1977
Adelaide Plains	84	181	-54	1959
County Light	75	189	-60	1959
Mount Lofty Ranges	145	300	-52	1959
Upper Murray Valley	20	74	-73	1914
Lower Murray Valley	41	117	-65	1914
Murray Mallee	34	93	-63	1944
Upper South East	66	146	-55	1944
Lower South East	162	265	-39	1957

(a) District normal rainfall calculated for the period 1913-81.

Mean winter maximum temperatures were about 1°C to 2°C above normal except over Kangaroo Island, Adelaide and the surrounding districts, and the Lower South East district where they were within 1°C of the winter normal.

Mean winter minimum temperatures were within 1°C of normal at many stations but there were numerous exceptions. From Lake Eyre across the Northern Flinders Ranges to the Barrier Ranges they were about 1°C to 2°C below normal. Similar statistics were recorded for Kangaroo Island, Adelaide, the Murray districts and the South East.

Severe frosts during the period 3 to 9 June caused damage to citrus crops in the Riverland and tomato crops at Murray Bridge. During the cold spell extreme minimum temperatures for any month were recorded at Murray Bridge, Loxton and the Adelaide area (-0.4°C on 8 June). Extreme minimum temperatures were also recorded at several centres from 16 to 21 July in another sequence of cold mornings.

Spring 1982

Spring rainfall was well below normal throughout the State. There was little rain during September, less in October and insignificant amounts in November in all districts. The lack of spring rain aggravated agricultural problems in this drought year. Deficits ranged from 54 per cent in the Lower South East to 89 per cent in the Upper Murray Valley.

In the pastoral districts 49 mm were received at Ernabella in the North West but even that was exceptional since other gaugings ranged from 3 mm at Twins Station to 27 mm at Nonning. In the Far North they ranged from 12 mm to 21 mm and in the North East Paratoo received only 1 mm while the highest gauging was 17 mm at Braemar.

In the settled areas only Stirling (116 mm), Parawa (103 mm) and Mount Burr (108 mm) received more than 100 mm of rain for the three spring months. There were light but general falls of about 40 mm to 100 mm over much of the Lower South East and the Mount Lofty Ranges. Gaugings of 25 mm to 75 mm were fairly general in the Lower North, Adelaide Plains, County Light, the Upper South East and isolated in the Upper North. Less than 25 mm were recorded at most stations in the Western Agricultural, the Flinders Ranges, Upper Murray and Murray Mallee while over the remainder of the State most readings were in the 20 mm to 60 mm category.

Extreme lowest November rainfall totals were recorded at many stations and for some, such as Port Lincoln, Maitland, Minlaton and Port Victoria records have been kept for more than a hundred years.

Mean maximum and minimum temperatures were generally close to normal during September and October but in November mean monthly maxima were about 2°C to 5°C above normal at most centres while corresponding minima were up to 3°C above normal. Mean maximum temperatures for spring were about 1°C to 2°C above normal while mean minima were within 1°C of normal at most centres. Hot spells were frequent in November and extreme maxima for that month were recorded at Cook, Marree and Moomba during the last week. Adelaide had its hottest November day for 20 years on 24 November when the maximum temperature was 41.4°C .

Numerous fires broke out in the hot, dry conditions. Some 40 hectares of Mt Crawford Reserve and private land in the Adelaide Hills were burned in the first week of November. Many others followed in the last week. One destroyed 1 000 hectares of farm land near Coonalpyn and two thirds of Mt Boothby Conservation Park while another near Wistow destroyed three homes, several sheds, machinery, stock and 40 square kilometres of pasture.

1.3 NATURAL RESOURCES

MINERALS

The opal fields at Coober Pedy, Mintabie and Andamooka supply most of the world's precious opal. The estimated value of raw opal production in South Australia was \$34 million in 1981. Most of this is exported to Hong Kong, Japan, USA and Germany.

Iron ore is mined in the Middleback Ranges on Upper Eyre Peninsula. These Ranges lie to the west of Whyalla, a coastal port with a steelworks, and extend discontinuously

from Iron Knob in the north to Iron Duke nearly 65 kilometres to the south. In excess of 150 million tonnes of ore have been mined since 1900. Currently production is at the rate of approximately 2.4 million gross tonnes per annum.

Copper ore is being mined at Mount Gunson by open-cut mining methods and, until early 1981, at Burra. The Mount Gunson Mine, 145 kilometres north-west of Port Augusta and 56 kilometres south-east of Woomera, is being mined at the annual rate of approximately 500 000 tonnes of ore of more than 2 per cent copper for the production of copper sulphide concentrates for export. The Burra Mine, 161 kilometres north of Adelaide will treat stockpiled ore (averaging 2.0 per cent copper) at the rate of 190 000 dry tonnes per year. The copper oxide produced at Burra is used for the production of fertilisers, agricultural chemicals and copper sulphate.

Vast deposits of copper-uranium mineralisation have been discovered at Olympic Dam on Roxby Downs Station, 80 kilometres north of Woomera and 15 kilometres west of Andamooka. Copper-uranium mineralisation, with minor gold, silver and rare earths, has been intersected at a depth of approximately 350 metres and the area has the potential to develop into a very large mining operation.

Leigh Creek coal field, operated by the Electricity Trust of South Australia, is the only deposit which is being mined at present and to date more than 40 million tonnes of coal have been mined for power generation at the Playford Power Station in Port Augusta. The current production rate is approximately 1.7 million tonnes per annum.

Permian sub-bituminous coal has been defined by drilling at Lake Phillipson, 80 kilometres south of Coober Pedy. The deposit consists of a number of seams in two main elongated troughs which together total approximately 2 000 million tonnes. The Wakefield Tertiary lignite deposits held by the Electricity Trust of South Australia, have estimated reserves of 2 000 million tonnes and a bulk sample has been procured for testing by excavation of a trial pit near Bowmans. Western Mining Corporation Ltd has announced the discovery of brown coal in drilling operations near Kingston (SE) which are additional to coal finds by the company in the Victorian portion of the Otway Basin. Further brown coal discoveries have been made by CSR Ltd in the Anna-Sedan area of the Western Murray Basin, where a deposit of some 200 million tonnes has been outlined.

Barite is obtained from several localities in the Flinders Ranges. The Oraparinna Mine is the largest producer of industrial grade barite in Australia. Oil drilling grade barite is mined at Mount Mulga, north of Olary and at several deposits in the Flinders Ranges.

The largest part of Australian reserves of gypsum are located in South Australia. The deposits have in general formed in coastal basins, the largest of these occurring at Lake MacDonnell and on Kangaroo Island. Other deposits, mainly of seed gypsum, are found inland at Moonabie, Lake Fowler, Cooke Plains and along the River Murray.

High grade kaolin is produced from weathered shales at Birdwood and altered metasediments at Williamstown in the Mount Lofty Ranges. Sillimanite and damourite (mica) are also obtained from the open-cut at Williamstown. White burning plastic clays are mined near Adelaide at Golden Grove, One Tree Hill and McLaren Vale and clays for refractory and ceramic uses are supplied from Tregolana, Longwood and Woodside.

High quality dolomite for steel making is quarried at Ardrossan and for glass making at Tantanoola. Silica sand for glass making and foundry use is mined at Normanville.

Flint for ceramic and grinding purposes is gathered from the beaches near Port MacDonnell.

Conditions in South Australia are ideal for the production of salt from sea water by solar evaporation. Large solar salt works are located at Dry Creek (near Adelaide), Port Price (Gulf St Vincent), and Whyalla. Salt is also harvested from several saline lakes, in particular Lake Bumbunga and Lake MacDonnell.

South Australia contains many deposits of limestone and apart from quarries worked for construction purposes the main deposits are at Rapid Bay, Angaston and Klein Point for cement, Mount Gambier for whiting and building stone, and Penrice for chemicals and cement.

Magnesite is mined on a small scale north-west of Copley.

Monumental stone is produced from white marble at Angaston, black granite from Black Hill, blue granite from Kingston (SE), brown granite from Sienna, and red granite from Calca. Billiard table slate and paving stone is supplied from Mintaro and from Jones Hill in the northern Flinders Ranges. Walling and paving stone is also obtained from Willunga and Wistow.

Nephrite jade, which occurs as lenses north-west of Cowell, is mined for ornaments and jewellery, and is also exported in crude form. Banded calcite, used for ornamental purposes, occurs in narrow veins near Warrioota in the Flinders Ranges.

Talc is produced from Mount Fitton in the Flinders Ranges, Gumeracha, Lyndoch and Tumby Bay for use in ceramics and cosmetics.

High grade zinc ore is mined at Puttapa, thirty kilometres south of Leigh Creek as markets allow.

Significant deposits of uranium exist in the Lake Frome region.

A special article on the Minerals of South Australia was included on pages 21-39 of the *South Australian Year Book* 1975.

PETROLEUM RESOURCES

Before the late 1940s South Australia had no satisfactory indigenous source of primary energy. A number of deposits of sub-bituminous coal including those at Leigh Creek, Moorlands, Balaklava and Lake Phillipson were known but none of these were considered worthy of development.

Industrial unrest in the late 1940s led to a growing awareness of the State's dependence on eastern States coal and foreign oil and led to the development of the Leigh Creek coalfield.

The search for petroleum was actively encouraged and assisted from the mid-1950s. This culminated in the discovery of the Gidgealpa gas field in 1963 by Santos Limited and the then Delhi Australian Petroleum Limited.

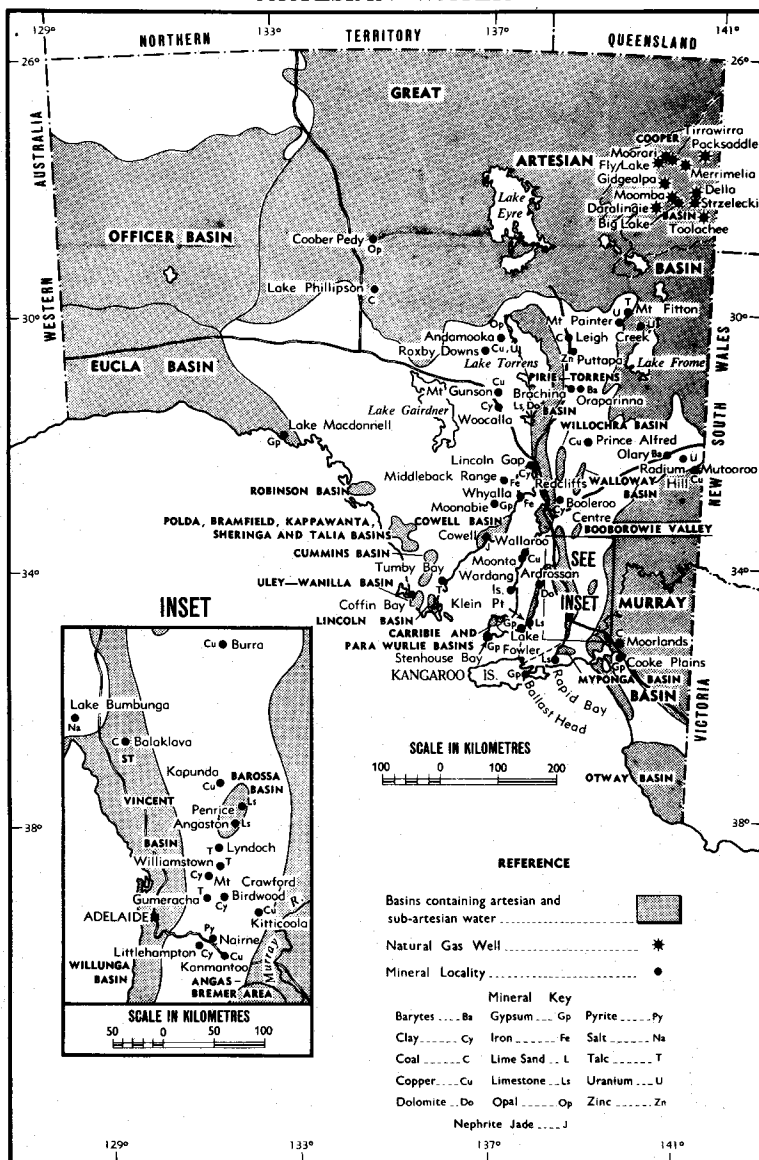
Following the discovery of a second major gas field at Moomba, a pipeline was constructed from Moomba to Adelaide and came into operation late in 1969.

A revival of petroleum exploration activity in the early 1970s resulted in a number of new discoveries of both gas and oil. An agreement was made with the Australian Gas Light Company Limited to supply gas to the Sydney area over a 25 year period. Adequate reserves were demonstrated to exist by late 1972, and supply to this new market commenced in December 1976.

Renewed drilling activity has been stimulated by the discovery of oil in the Mesozoic Eromanga Basin which overlies the Cooper Basin, particularly in the Dullingari and Strzelecki fields, indicating that there is considerable potential for further discoveries. During 1982 the 659 kilometre liquids 'condensate' pipeline from Moomba to Stony Point was completed and associated facilities for the export of condensate from Stony Point commenced construction.

Recent hydrocarbon shows in Cambrian, Mesozoic and Tertiary basins outside the main producing area have led to increased exploration both onshore and offshore. Extensive exploration programs have been undertaken in the offshore Polda and Great Australian Bight basins.

SOUTH AUSTRALIA MINERAL RESOURCES AND ARTESIAN WATER



UNDERGROUND WATER

South Australia is the driest of the Australian States with more than 82 per cent of its area receiving an average annual rainfall of less than 250 mm. The wettest parts of the State are the south and south-eastern coastal areas and the Mount Lofty-Flinders Ranges. Only small areas of the Mount Lofty Ranges, Kangaroo Island and the lower South East receive more than 600 mm per year. As a consequence of the rainfall pattern, South Australia is notably deficient in rivers. The River Murray, the only large permanent river, originates outside the State. The few streams commencing in the ranges are short and seasonal in flow. In this situation groundwater is of considerable importance and it is estimated that at least 105 000 wells have been drilled or dug in the search for water.

Annual groundwater use in South Australia is estimated to be 357 000 megalitres which is approximately 35 per cent of total water use. The greatest use of groundwater is for irrigation which accounts for an estimated 227 000 megalitres per year. In 1980-81 groundwater use, on an area basis, was 48 per cent of the total water used for irrigation. Principal areas of use are the South East, including the Angas-Bremer irrigation area near Langhorne Creek, the Adelaide Plains and the Mount Lofty Ranges. Stock and industry account for an estimated 100 000 megalitres per year, which includes approximately 77 000 megalitres flowing from artesian wells in the Great Artesian Basin. The latter quantity is being progressively reduced as artesian wells are either plugged and abandoned or rehabilitated and the flow controlled.

Most public water supplies in South Australia originate from reservoirs in the Mount Lofty and Flinders Ranges and on Eyre Peninsula and from the River Murray. These sources provide an estimated 92 per cent of reticulated supplies with groundwater supplying the remaining eight per cent, or approximately 20 000 megalitres per year.

Approximately fifty towns and districts are fully or partly dependent on groundwater for public water supplies. The two main areas of use are the South East and Eyre Peninsula which together account for approximately 93 per cent of groundwater used for public water supplies.

Although saline groundwater occurs over much of the western part of the State there are a number of large sedimentary basins where low salinity groundwater is available. These include the Great Artesian Basin, Murray and Otway Basins and St Vincent Basin. In addition there are a number of smaller basins which are important sources of groundwater for irrigation, town water supplies or stock.

Artesian flows occur in some of these basins but the largest flows are from the Great Artesian and Otway Basins. The Great Artesian Basin has a total area of 1 700 000 square kilometres of which 310 000 square kilometres are in South Australia, covering 30 per cent of the State. The main intake area for the principal aquifer lies along the western margin of the Great Dividing Range in New South Wales and Queensland. Minor intake also occurs along the western margin of the basin in South Australia. Natural outlets for the basin are the mound springs west and south of Lake Eyre. Total discharge from the springs is estimated to be 30 000 megalitres per year. Deep wells are necessary to tap the artesian aquifer, and individual wells may yield 4 500 kilolitres per day or more. The water is generally unsuitable for irrigation because of its chemical composition and it is used mainly for the watering of stock, with town water supplies being a minor use.

The Murray Basin has a total area of 278 000 square kilometres, mainly in Victoria and New South Wales, the area in South Australia being 73 000 square kilometres. The southern and central portions of the basin contain relatively low salinity groundwater suitable for most purposes. Salinity increases steadily in a northern and north-westerly direction and the groundwater becomes unusable in the vicinity of the River Murray. Very large yields can often be developed from cavernous limestone aquifers occurring

at relatively shallow depth and in some places from sand dunes and other local aquifers. Towns in the central part of the basin are supplied with groundwater, which is also extensively developed for stock supplies and for irrigation. Towns along the western margin, as far south as Keith, are provided with water by pipeline from the River Murray. At Padthaway, an area marginal to the Murray Basin, where groundwater occurs at shallow depth, withdrawal for irrigation is approximately 24 000 megalitres per year. The area is now a Proclaimed Region under the Water Resources Act, 1976. Withdrawal of ground water is subject to the holding of a permit, which limits the quantity that may be pumped. For the Angas-Bremer Irrigation Area near Lake Alexandrina estimated withdrawal is 20 000 megalitres per year and it is also a Proclaimed Region under the Act.

The Otway Basin in South Australia lies south of Kingston and extends along the southern coast of Victoria. Large supplies of low salinity groundwater are available from the Gambier Limestone aquifer over much of the basin. A deeper confined aquifer provides artesian supplies in the Kingston-Beachport area, the water being used mainly for flood irrigation of pasture, and for town water supplies.

The Eucla Basin, occurring in the south-western part of the State, has an area of 41 000 square kilometres in South Australia, but the greater part (135 000 square kilometres) lies in Western Australia. Little use is made of groundwater from the basin because of its high salinity, but water suitable for stock is available from the limestone aquifer in some areas, particularly near the head of the Great Australian Bight.

The Adelaide Plains Sub-Basin is part of the St Vincent Basin, extending 160 kilometres north of Adelaide, on the western side of the Mount Lofty Ranges. Good quality groundwater is obtainable in certain parts of the plains and it is extensively used for the irrigation of market gardens in the Northern Adelaide Plains. Pumping in this area has greatly exceeded the groundwater recharge rate for a number of years. It was the first Proclaimed Region under the Water Resources Act, 1976-79 and the use of groundwater is subject to controls.

In the Adelaide Metropolitan area the reticulated water supply has been augmented by groundwater on a number of occasions since 1915, the last time in 1967-68 when 9 500 megalitres were pumped over a seven month period.

Other small basins within or adjacent to the St Vincent Basin include Willunga and Noarlunga embayments and Myponga and Hindmarsh Tiers areas. In all these areas groundwater is used for stock and increasingly for irrigation.

The Pirie-Torrens Basin extends from Port Broughton to the northern end of Lake Torrens. Groundwater from the basin is used mainly for stock except in the Nelshaby-Napperby area east of Port Pirie where it is suitable for the irrigation of market gardens.

The Willochra and Walloway Basins located near Quorn and Orroroo respectively, also provide mainly stock water supplies. However, there is limited irrigation of pastures in both basins. In the Barossa Valley groundwater generally has a low salinity and it is being used increasingly for irrigation of vines.

There are several important groundwater basins on Eyre Peninsula including Lincoln, Uley-Wanilla, Uley South and Poldas Basins. They provide more than half the water for the reticulation system covering much of Eyre Peninsula. The fractured rocks of the Mount Lofty Ranges contain significant groundwater resources which are used for irrigation in several areas *e.g.* Piccadilly Valley.

The exploration and testing of the groundwater resources of the State is a continuing responsibility of the South Australian Department of Mines and Energy, which provides the services of geologists and an extensive drilling organisation. Pamphlets on the groundwater occurrences throughout the State, particularly those in the more important basins are published by the Department.

The Water Resources Act, 1976-1979, administered by the Engineering and Water Supply Department, covers the drilling for and development of groundwater over the whole State.

The Underground Waters Technical Advisory Committee, a body made up of officers from the Engineering and Water Supply and Mines and Energy Departments, was formed in 1981 to advise and assist mining and exploration companies which have projects involving water supply, dewatering, waste disposal and other environmentally sensitive aspects of groundwater.

SOILS

General

There are many kinds of soils in South Australia ranging from free-flowing sands such as the coastal dunes, to the shrinking and swelling clays of which good examples are found near Bordertown and Tanunda, while some show a marked textural contrast with depth, such as the sand over clay soils of the South East. Not only do these soils differ in their visible attributes, such as their colour, texture, stoniness and degree of slope, but also in the properties, largely unseen, of their chemistry, their relations to air and water, and to the micro-organisms which form the soil flora and fauna.

Undoubtedly the most widespread deficiency is phosphorus—low phosphorus contents are typical of South Australian soils. The gravelly ironstone soils of Kangaroo Island and parts of the Adelaide Hills are among the most impoverished in the world, containing only between 5 and 40 parts per million of phosphorus in their surface soils, whereas the red-brown earths in their natural state contain 200 to 300 parts per million. These figures do not compare favourably with those for the soils of Great Britain, in which 600 parts per million of phosphorus is common. However, soils are changed by the treatment they receive and the phosphorus content of soils in some areas has been so built up over the years that its residual effect is now sufficient to produce a good cereal crop without the further addition of superphosphate.

On the other hand, prolonged clean cultivation in vineyards and frequent cropping in wheatland areas causes deterioration of the structure of surface soils and depletion of nitrogen. The latter deficiency can be remedied by the proper use of legumes, such as medics and clovers, during the pasture phase of the crop rotation in wheatlands. Nitrogen is one of the most mobile of the nutrient elements in soil and is highly susceptible to differences in management.

Some soils which seem to be unique to Australia, such as the mallee soils or calcareous earths, are well represented in this State. The irrigated horticultural settlements established on these soils along the River Murray have been notably successful, but where dry land arable farming is practised these soils are susceptible to wind erosion.

There are other important features that affect plant growth, such as acidity and alkalinity, supply of trace elements and so on. Information about these and their importance in different localities can be obtained from the South Australian Department of Agriculture and in a bulletin published by the Department entitled *Soils of South Australia's Farm Lands*. The extent of country covered by the different soil groups is illustrated by the *Atlas of Australian Soils* which is being compiled by the Division of Soils, Commonwealth Scientific and Industrial Research Organization (CSIRO). The first sheet of this Atlas, published in 1960, includes the areas of higher rainfall country in South Australia and refers to the many soil surveys made in this State.

A special article on the Soils of South Australia was included on pages 21-31 of the *South Australian Year Book* 1969.

Building Soils

The soils of Adelaide and environs have varying engineering properties and provide varying foundation conditions for buildings. They may be classified as follows:

- (a) expansive clay soils which show changes in volume with changes in moisture content; these soils are often commonly known as 'Bay of Biscay' soils;
- (b) collapsing soils which, when wetted beyond a certain limit, lose strength and are liable to settle suddenly, even under their own weight; they are usually fine limey silts of windblown origin;
- (c) compressible soils, occurring chiefly on the coastal river estuaries, are associated with high water tables and restricted surface drainage; these soils are unable to carry building loads without long-term settlement;
- (d) stable soils, which include alluvial sands and gravel, and most weathered rocks.

Different types of house footing have been designed or adapted to cope with these problem soils, and further details are given in the pamphlet entitled *Soil Tests and House Foundations in Adelaide*, published by the Department of Mines and Energy.

1.4 FLORA AND FAUNA

FLORA

A broad division of vegetation types is formed by Goyder's Line which represents approximately the 250 millimetre annual isohyet. To the north of the Line, in the Eremaean Province, lies about 80 per cent of the State, experiencing arid to desert conditions where short, erratic growing seasons prevail. Areas to the south, in the temperate region, have climates with an equable seasonal cycle of winter rainfall and summer drought.

Eremaean Areas

These vast areas of inland South Australia are not well known botanically. Vegetation ranges structurally from low layered woodland, through shrub savannah, to exceedingly sparse vegetation of very low stature (shrub steppe). As in arid situations elsewhere throughout the world, therophytes are well represented and after rain these may transform the scene with prolific but transient herbage. The woody perennial vegetation is of genera adapted to the dry conditions. Predominant trees and shrubs are frequently species of *Acacia* (mulga, myall, ironwood) *Cassia*, *Grevillea* etc. but other genera (*Hakea*, *Myoporum*, *Casuarina*, and less frequently *Eucalyptus*) are often found. Some species such as the desert oak achieve a stature comparable with large temperate zone trees. Chenopod shrubs (bluebush, saltbush) are often prominent in the shrub stratum, and *Triodia* (porcupine grass) is the herbaceous cover, but there is considerable diversity in the Eremaean flora. The development of cattle and sheep grazing industries and overstocking for long periods, especially in times of drought, has led to the depletion of, and alteration to, much of the vegetation of this area.

Temperate Areas

In general, vegetation characteristics of the temperate zone of South Australia succeed each other in a fairly predictable sequence from the highest to the lowest rainfalls. Under the high and intermediate rainfalls (about 750-1 000 millimetres) dry sclerophyll forest is well developed, particularly in the Mount Lofty Ranges, where it constitutes a

western outlier of the dry sclerophyll forest system occurring in eastern Australia. *Eucalyptus obliqua* and *Eucalyptus baxteri* predominate, but other species such as *Eucalyptus rubida* (candlebark) are sometimes prominent. Such forest is replete with lesser trees such as *Acacia melanoxylon* (blackwood) at a lower canopy level and a rich array of sclerophyllous shrubs and sub-shrubs beneath. Most species have generic analogues in equivalent dry sclerophyll forests of both eastern and western Australia. Sclerophyll forest in South Australia has been cut over extensively and is being invaded by aliens. Lower rainfall areas down to about 400 millimetres per annum support mainly savannah woodlands and layered woodlands with South Australian blue gum (*Eucalyptus leucoxylon*) and peppermint gum (*Eucalyptus odorata*) as predominant trees. Associated trees include river red gum (*Eucalyptus camaldulensis*) especially along river and creek frontages, she-oak (*Casuarina* spp.), and manna gum (*Eucalyptus viminalis*). In these vegetations the grass stratum is expressed and the shrub stratum rather suppressed. These vegetations are now almost entirely replaced by agricultural areas.

In some places on the lower rainfall extreme of the temperate zone, variant vegetations occurred. These included substantial conifer (*Callitris* spp.) and conifer-eucalypt forests and woodlands (particularly in the Flinders Ranges), and areas of pure savannah, as once occurred about Burra.

The simple division of the State into Eremaean and temperate areas needs qualifying on two counts:

(i) *Heath*. Certain higher rainfall temperate areas do not support the expected vegetation as a consequence of limiting soil fertility. The Coonalpyn Downs area is an example. Here low nutrient dune fields are superimposed on the landscape and support only a heath vegetation where the rainfall regime is suitable for woodland. Such 'light land' is the scene of contemporary agricultural expansion;

(ii) *Mallee*. Intercalated between the Eremaean and temperate systems proper, there is developed in South Australia extensive mallee vegetation, dominated by eucalyptus, the various stems of which all rise from underground lignotubers. The term 'mallee' refers both to eucalypt species exhibiting this growth habit, and to vegetation dominated by such species. Mallee vegetation is associated in its temperate reaches with heath, and in its Eremaean extensions with various vegetation types.

A more detailed description of the vegetation was included on pages 26-37 of the *South Australian Year Book* 1967 and should be referred to for a description of the plant species included in the vegetation formations shown in the map on page 30 of this issue.

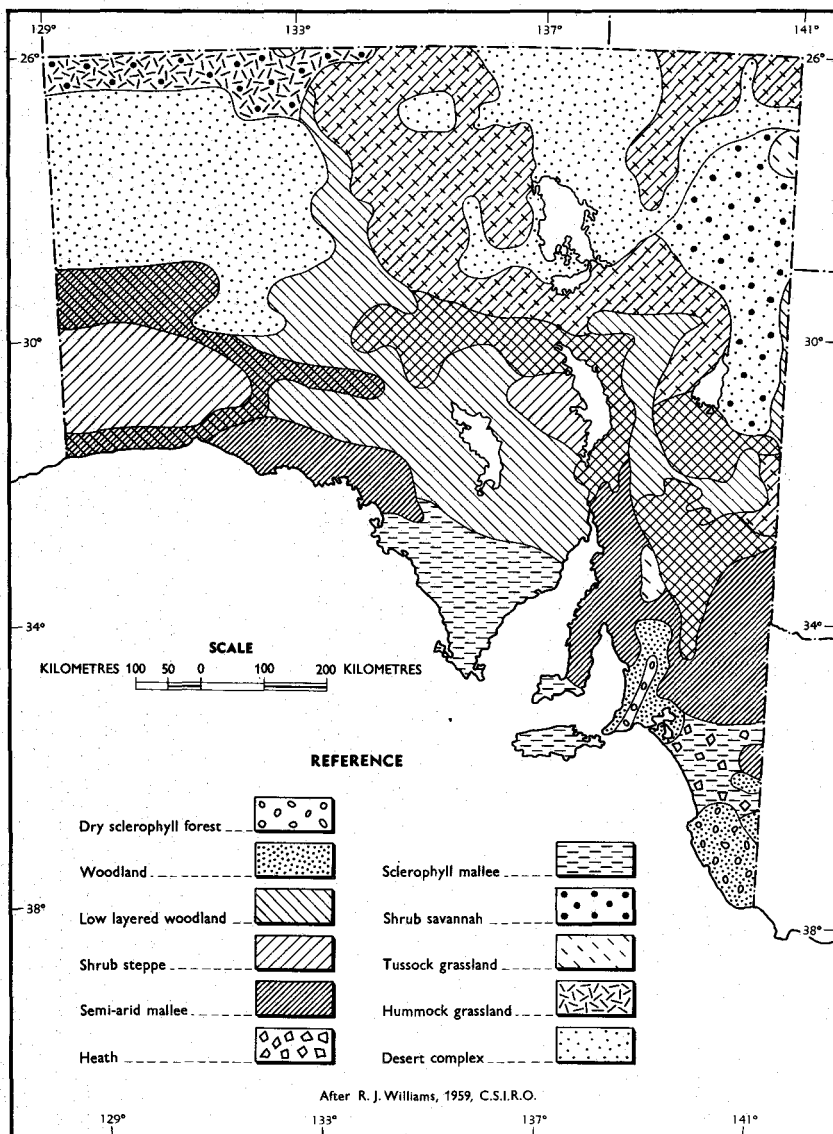
FAUNA

South Australia, centrally situated and sharing borders with every other mainland State, is in a sense the zoological crossroads of the continent. A number of typically western, eastern, and northern species extend to some point within the State, which has few species that are uniquely South Australian.

Only 8.3 per cent of South Australia—a fragmented, southern fringe—is favoured with an annual rainfall of 400 or more millimetres; more than 80 per cent receives 250 millimetres or less. The moister areas are restricted mainly to three peninsulas, to Kangaroo Island and the extreme south-east and these are divided by gulfs, straits, and stretches of drier country. Further north, the semi-arid to arid zone is deeply cut into and split by Spencer Gulf and the central highlands. Because of this geographical background the distribution of South Australian fauna, notably of birds and reptiles, is very complex.

Highly developed agriculture in the limited favourable areas and the wide-spread pastoral occupation beyond have depleted the fauna, particularly the mammals. A series of national parks and reserves is being established which will preserve samples of the various habitat types and, it is hoped, their indigenous fauna. The National Parks and

SOUTH AUSTRALIA VEGETATION MAP



Wildlife Service controls over 40 000 square kilometres on the mainland (see Part 6.4), and Flinders Chase Reserve (549 square kilometres) on Kangaroo Island which is free from the introduced fox.

The land mammals of South Australia at the time of European settlement numbered about 90 species—some 38 per cent of the total Australian mammal fauna. The two monotremes have survived; the spiny ant-eater is wide-spread but nowhere common, while the platypus (once found in the River Onkaparinga as well as in the River Murray) is extremely rare except where it has been introduced in Flinders Chase. The marsupials have been affected most severely; more than a quarter of the 50 or so species are now extinct in South Australia although a number of these survive beyond the State. Originally the marsupial fauna was relatively rich with some 45 per cent of the total number of Australian species represented.

Marsupials that are still common are the brushtailed possum (*Trichosurus vulpecula*) and the western grey kangaroo (*Macropus fuliginosus*). In the dry interior the red kangaroo (*Megaleia rufa*) at times greatly increases in number, probably because of changes caused by livestock grazing and the provision of extra water. Today South Australia is almost the sole custodian of the hairy-nosed wombat (*Lasiorhinus latifrons*) which is still numerous in the far west of the State, but elsewhere the species has been reduced to a few small isolated colonies.

Of the native placental mammals possibly one of the 15 or so species of bats and three or four of the 18 rodents have become extinct.

A special article on the mammals of South Australia was included on pages 42-9 of the *South Australian Year Book* 1970.

About 400 of the 700 species of Australian birds have been recorded in the State, a number that includes 40 or more vagrants and non-breeding visitors. Many species have declined greatly since settlement but probably not more than two have become extinct. The diminutive Kangaroo Island emu disappeared soon after the European settlement and the night or spinifex parrot (*Geopsittacus occidentalis*) is almost extinct in South Australia.

Many species of birds can be observed close to Adelaide in the Mount Lofty Ranges and on Kangaroo Island. Mallee areas with their lower rainfall are moderately rich in bird life although the removal of native flora has caused the disappearance of many in certain districts. Within the State may be found the boundaries between numerous western and eastern species and sub-species of birds.

A special article on the birds of South Australia was included on pages 28-40 of the *South Australian Year Book* 1972.

Well over 100 species of reptiles have been recorded. Of the few that are peculiar to the State, the white dragon lizard (*Amphibolurus maculosus*) found on the salt-encrusted margins of Lake Eyre and other inland playas is of particular interest. Undescribed species of lizards are known to occur in the Flinders Ranges. A special article on the reptiles of South Australia was included on pages 32-42 of the *South Australian Year Book* 1973.

The nineteen species of frogs include one that is restricted to the State. This number is only 16 per cent of the Australian frog fauna (123 species) and reflects, in large degree, the predominantly arid nature of the State.

Marine and freshwater fishes number about 390 species—not a very rich fauna for a State with a coastline of nearly 4 000 kilometres. There is, however, an abundance of certain species of economic importance. A special article on the freshwater fish of South Australia was included on pages 27-34 of the *South Australian Year Book* 1971.

The insects of the coastal regions show affinities with those of similar regions to the east and west, while many of the restricted number of species of the inland extend widely through arid Australia.

Among insect groups that are prominent elsewhere in Australia but are scarce in this State are butterflies and cicadas, while insects that depend on permanent streams or swamps, such as dragonflies and caddisflies, are rather poorly represented. Similarly, few species of freshwater crustaceans occur. In eastern and western Australia hosts of wasps, native bees, jewel beetles and other insects are attracted to the flowers of native shrubs in spring and summer. These insects are less numerous in South Australia largely because of the nature and limited extent of the bushland.

Among the restricted range of insects of the arid interior are a number of interesting forms. Of these certain desert-adapted grasshoppers (*Acrididae*) are notable. Other groups with specialised species are lacewings (*Neuroptera*) and beetles and moths. Some are never abundant but the populations of others may fluctuate enormously. Moths can prolong the pupal stage to survive dry periods and may emerge in great numbers after heavy rain.

A special article on the insects of South Australian homes and gardens was included on pages 32-42 of the *South Australian Year Book* 1976.

CONSERVING THE STATE'S CULTURAL MATERIAL*

'Cultural material is comprised of artefacts or property with aesthetic, historic, scientific or social value for past, present or future generations.'¹

Soon after the establishment of the Colony of South Australia it was realised that an educational centre was required to cater for the wider needs of the community. To this end, and after a number of abortive attempts to establish a permanent home for such a centre, the Institute Building on North Terrace was erected in 1860 to house the infant library and museum and provide suitable meeting accommodation for local societies.

In the years following the opening of the Institute, the collections of the library, museum and art gallery grew to a point where the existing building was inadequate to house and display the material which had accumulated. A new building was therefore proposed to house these collections which, it was hoped, would be part of a much grander design for future construction. These proposals eventuated in the construction of the Jervois Wing of the State Library which was opened in 1884.

However, by this time the museum collections were becoming too large to be accommodated in the Jervois Wing and a new building (the present North Wing) was constructed and opened in 1895.

Likewise, the collections of the recently established National Art Gallery had also outgrown their accommodation in the Jervois Wing and in 1885 this material was transferred to the Jubilee Exhibition Building for a period of fifteen years, after which it was established in its own purpose-built edifice. Further additions in 1936-37 and 1962 eased the extra accommodation burden to some extent for the State's art collections.

To accommodate further expansion in both collections and staff within the South Australian Museum, a third wing was added to the east end of the North Wing. The new wing was opened for public exhibition in 1915.

Further major construction on the North Terrace site did not take place until the increasing size of the collections of the State Library and Archives required the addition of the library's Bastyan Wing which was occupied and opened to the public in 1967.

* Contributed by David Tilbrooke, Curator of Conservation, South Australian Museum; Robert Wilmot, Curator of Conservation, Art Gallery of South Australia; Hank Bohmer, Manuscript Restorer, State Archives; and Tony Zammit, Conservation Bookbinder, State Library.

¹ The Burra Charter (International Council of Monuments and Sites).

Over this period of cultural institution development the material well-being of the collections of the State had been the responsibility of the relevant custodians (curators, archivists or librarians) depending on the institution concerned. The custodians, with some assistance from artisans and/or preparators, determined the suitability of storage and display facilities, dealt with outbreaks of fungus and insect infestations and generally repaired damaged material.

With the increasing awareness of the need for Australia to protect its environmental and cultural heritage a number of cultural institutions in Australia began to establish conservation laboratories and studios to undertake the conservation and restoration work of these institutions.

The first such conservation studio in South Australia was incorporated into the workshop block of the Art Gallery of South Australia where the first conservator's position was established in 1965.

In 1973 the State Library, recognising the need for active preservation of the State's collection of rare books, created and filled the position of Rare Book Binder and in 1982 included the conservation of library material within the ambit of this position. The State Archives instituted the position of Manuscript Repairer and filled the position in 1976 whilst the South Australian Museum created the position of Curator of Conservation in 1976 but did not acquire a conservator until early 1978. It is therefore only over the last eighteen years that a rationalised attempt has been made to conserve South Australia's material culture and only in the last two to three years has any attempt been made to support the conservators by providing space and funds.

Unfortunately, the enormous collections made by the Cultural Institutions since the founding of the colony have now become among the largest in Australia and constitute a very large conservation problem which will take decades to rectify. However, with current awareness of the need for conservation in both storage and display procedures as well as the active co-operation of the custodians of the collections in the use of these procedures, the life of the artefacts in the State's collections should be greatly extended and the need for repeated conservation drastically reduced. Thus the backlog of conservation work will become an easier task.

The principal aim and objective of the conservation of cultural material is to define and maintain an environment for the most effective preservation of that material. Whilst theoretically it should be possible to preserve an object indefinitely, by placing it in hermetically sealed container filled with an inert gas with a fixed level of relative humidity and kept in the dark at a low temperature², it is clearly out of the question since the public would be prevented from enjoying or experiencing it.

Inevitably a compromise is necessary and the theory and practice of conservation is ensuring this compromise suits both requirements more satisfactorily. The guiding principle of the conservator is to look after and preserve the collection in his charge.

Cultural material can be housed in such a way that it experiences a minimum degree of deterioration. The conservator must understand the nature of the various causes of deterioration, how to measure and record them and continually work to minimise their effects.

The principal causes of deterioration are fluctuating temperatures, and high temperatures especially; fluctuating Relative Humidity (RH) and its extremes of dryness and wetness; ultra-violet radiation; chemical action; biological and human activities.

When damage or deterioration has occurred, remedial action is taken and from time to time recourse to restoration work is inevitable. This restoration should not be seen as original work with the object 'made new': rather it is a compensation method to enable

² N. Stolow, 'Environmental Security', *A Primer on Museum Security*, 1966.

the particular object to be appreciated. Many restoration techniques are specifically designed to distinguish between original work and subsequent restoration. The 'Rigattino' method of retouching a painting is one such technique. In this method the aim of the restorer is to recreate the illusion of a complete picture to an observer at a distance of about 1.5 metres or more, but inside this distance the restored section of the work is clearly discernible. The method relies on small hatched parallel lines of pure colour which mix optically together to give the impression of adjacent colour areas. This method is widely used abroad, particularly in Italy and central Europe.

All restoration processes should be reversible, thereby facilitating the subsequent recovery of all that is original of the object. For this reason restoration work on a painting is completely isolated from the original with a layer of varnish and usually completed with pigments bound in a medium clearly distinguishable (and more easily removable) from the original.

With regard to other types of cultural material, restoration involves returning the *existing* materials of an item of cultural property 'to a known earlier state by removing accretions or by re-assembling existing components without the introduction of new material'.³

Conservation in the South Australian Museum

Museum Preservation

The collections of the South Australian Museum are concentrated on two main areas of interest; one relating to the natural history (geology and zoology) of the State and the other to the study of human cultures, both indigenous and foreign.

The material in both of these areas (usually referred to as 'specimens' in the case of natural science and 'artefacts' in the field of human cultures) requires treatment for its extended preservation. This treatment is termed 'preparation' in the case of natural science specimens, because these have to be treated for preservation *before* they can be used for study or display. Artefacts usually only require 'conservation' (as preservation of artefacts is termed) after use, following poor storage or when deterioration is detected. Thus in a museum which has both natural science and human studies material (often referred to as ethnology) the preservation process is divided into two areas of activity, each with its own specialist expertise and specifically trained staff. Those involved with preparation are referred to as preparators and those concerned with conservation, conservators. Although both areas of expertise are essential in the preservation of the collections of an institution such as the South Australian Museum, it is mainly to the area of artefact conservation that the remainder of this section will be addressed.

Human Studies Collections of the Museum

Before embarking on a study of the conservation programs and methods undertaken by the South Australian Museum, a brief review of the collections of human studies material held by the Museum will be useful in bringing these conservation procedures into perspective.

As can be seen from the historical summary of the State's collections given in the general introduction, the Museum and State Library have been gathering material of cultural interest for well over 130 years and in fact the museum holds a few artefacts purportedly collected by Colonel Light during his early years in the Colony of South Australia.

The first large donation of human study material was made by Mr. William Owen in 1860 and through various donations, purchases, exchanges and field collecting expedi-

³ The Burra Charter.

tions this early donation has been expanded to such an extent that the present collections of Aboriginal, foreign ethnological, historical, archaeological and anthropological material have grown to over 60 000 items.

It can be appreciated therefore that the collections are not only large and in some areas quite old, but also constitute the largest collection of human culture material held at any institution in Australia. A number of factors, apart from the total size of the collections, make them unique. The Australian ethnological collection of over 30 600 artefacts represents a wide range of tribal groups from all over Australia, and since much of the Australian ethnological material was collected by field expeditions and others interested in the life-style of the Aboriginal peoples, it is exceptionally well documented. This in turn makes these collections extremely valuable as a scientific resource to ethnographers and anthropologists. The Australian ethnological collection also contains a unique collection of toas or Aboriginal 'sign-posts', as well as rare sacred-secret artefacts.

The other large areas of concentration within the human studies collections of the South Australian Museum are those of foreign ethnology; a world class collection of 17 600 items particularly emphasising the Melanesian cultures, and archaeology with some 16 000 artefacts. The foreign ethnology collection contains not only Melanesian materials but also artefacts from Asia, Africa, North America as well as some of European origin and a small collection of industrial history material (which will eventually pass into the care of the History Trust of South Australia).

Conservation Programs of the Museum

The conservation program of the Museum is divided into two major, but equally important components: one is the protection of the Museum's collections in general and the other the well-being of the artefacts in particular.

Environmental Monitoring

The overall protection of the State's collections of human study material against adverse conditions in the environment such as high or low humidity or temperature, insect or mould infestation, and high light levels is an extremely important part of the Conservation Section's program. Obviously if damage from these sources can be prevented, or at least ameliorated, then the need for treatment of the artefacts in the collection is much reduced.

Unfortunately, the South Australian Museum at present has only a few of its storage and display areas under even partial environmental control; only one gallery and one ethnographic store are temperature-controlled and only the anthropology archives are both temperature- and humidity-controlled. It is therefore essential that storage and display areas be regularly monitored both instrumentally and visually so that adverse changes in the environment in which the collections are stored or displayed can be detected and the results of excessive relative humidity (usually fungal infestation) dealt with.

Soon after the establishment of the Conservation Section in the museum (1978), an environmental survey and assessment was carried out in the storage and display areas of the human cultures collections to determine their suitability for such collections and to determine any which were not satisfactory for this purpose. These unsatisfactory storage and display areas were considered critical ones and have therefore been monitored, using recording thermohygrographs, for both temperature and relative humidity readings, on a continuing basis ever since. A weekly analysis of the conditions of the environment within these areas is made, any trend towards a dangerous situation detected and appropriate action taken to alleviate such a trend. Fortunately, most of the critical storage areas are in old but robust buildings, in which the environment, at least

in respect to temperature and relative humidity, changes slowly. Thus potentially dangerous environmental conditions can be detected by the monitoring program well before a serious condition is reached.

The light levels in all store areas are very low; in most the artefacts are in total darkness. Only when curatorial work or inspection of the collections is being undertaken are the artefacts illuminated, and even then it is arranged that only a few artefacts or small groups of artefacts are illuminated at any particular time. This limits the potential damage by light to the minimum commensurate with the use of the collections.

The lighting of displays is governed by a different set of requirements, due almost entirely to the extended lengths of time that artefacts on display are subject to illumination. To minimise damage by light to material on display, particularly the sensitive organic components such as hair, feathers, thin wood, plant-fibre products, skins, leathers, bone and ivory, lighting levels are kept low and, to eliminate possible damage due to ultra-violet (UV) radiation, low UV output fluorescent light tubes are used for general lighting. Spot lights, using incandescent bulbs, are used to illuminate the groups of artefacts directly; although being kept at a distance to prevent possible radiant heat damage. Where extremely sensitive material is to be displayed, even for short periods of time, the quality of the light used (its UV content as well as its intensity) has to be monitored and, because light damage is accumulative, a period of display related to the 'safe' light level has to be agreed upon by the conservator and the display team. One of the main reasons for the predominant lack of daylight in the display areas of the South Australian Museum is to prevent damage to the extremely sensitive human study material and natural history specimens by the high UV content of the sun's rays. A second is the difficulty of accurately and economically controlling sunlight, particularly where long-term displays are concerned.

Pest Control in the Museum

A further aspect of the overall protection of the Museum's collections is the prevention of infestations by insects and fungi and the eradication of such infestations when discovered.

The majority of the collections held by the museum are composed of dead organic materials which in normal circumstances would be destroyed by the attacks of insects, fungi, bacteria and by the chemical effects of water, sunlight and heat, the resulting products being returned to the earth for re-use. It is one of the tasks of the Conservation Section to see that this process does not take place in the Museum and to this end a constant watch is kept for early signs of insect and fungal activity.

The ideal procedure for the prevention of infestation would be to totally isolate the collections from sources of infection, that is the adult insects and fungal spores. However this would mean excluding the people who use the collections or visit the Museum, for it is very often on the clothing of these people that the spores and insects enter the Museum.

A compromise is therefore sought between use and protection of the collections. Since neither fungal spores nor adult insects can be totally eliminated, the relative humidity is kept at a safe, low level so that the spores cannot germinate. Adult insects are deterred by naphthalene. The chances of fungal or insect infestation are thereby much reduced. There is also a program of spraying the whole Museum every three months with non-persistent insecticide to reduce the possibility of an increase in the Museum's insect pest population. Over the years the Museum has had very few serious insect or fungal infestations. Considering the poor storage conditions and the fact that few of the human studies artefacts have been fumigated before acceptance by the Museum, this record may reflect the efficacy of the system. However, due to the inaccessibility of many

parts of the collections, because of cramped conditions in storage, very little contact with the collections by researchers and others has been possible and this also may have contributed to the low incidence of pest infestation.

Artefact Conservation

The other major component of the Museum's conservation program is concerned with the condition of the artefacts as individual components of the collection. This particular aspect of conservation is often referred to as object or artefact conservation, the latter term being the more accurate for the work carried out in the South Australian Museum as it indicates the conservation of artefacts made by man.

Like conservation in general, artefact conservation embraces both the overall as well as the specific requirements of conservation of a particular artefact. Thus it includes: suitability of storage and display facilities; packaging and suitability of packaging materials for transport of artefacts and, methods of handling artefacts, as well as the defined conservation processes of cleaning, repair, consolidation and (only when absolutely necessary to aid the conservation process) restoration of an artefact.

The necessity for monitoring the environment of both storage and display areas to detect and then prevent dangerous conditions occurring, so that the life of objects may be prolonged, has been outlined above. As an extension of this process the effects on artefacts of the materials of construction used to produce display cases, storage racks, packing cases as well as those materials used to wrap, support and display artefacts are of considerable interest to the conservator. Many conservation laboratories have undertaken test programs on such materials, particularly those which are proposed for use in their own display packaging or storage activities. In the South Australian Museum investigations into the colour fastness, acidity or alkalinity (pH value) of thin, coloured felts used on display and thick felts used for storage have been made. Tests have also been made on the stability of the paint film on proposed enamelled-steel shelving to various solvents and solutions used by the Museum's various sections in preparation of specimens. The methods used to conserve the artefacts, as individual components of the collection, are as diverse as the objects themselves, ranging from simple cleaning to consolidation of fragile, insect-attacked wood. Each object, being hand-made, is an absolute individual, much like a fingerprint is specific to one individual human being. Even objects made by the same individual, although perhaps superficially identical, are, because of variation in the materials used, unique. It is therefore impossible to produce techniques of conservation which can be used for a wide range of objects, and although a range of techniques may be available to treat various object types, these invariably have to be adapted by the conservator to solve the specific conservation problem he or she faces.

To facilitate the modifications of existing conservation processes or the development of new techniques, the Conservation Section of the Museum has established a small analytical and research laboratory which is equipped to undertake simple qualitative and quantitative analysis of both organic and inorganic materials, prepare samples for analysis by more sophisticated techniques (e.g. electron micro-probe, electron microscopy and X-ray diffraction analysis) and also undertake material deterioration studies, to help in the understanding of such processes and the development of new conservation methods. The analytical facility is also useful when old repairs have to be broken down prior to proper conservation treatment when analysis of old adhesives, fillers and pigments, or colours, can help to determine whether the additions are original, or later ones added in the Museum; and whether chemical or mechanical methods of removal should be employed.

The conservation processes used during a particular era of conservation work may be the best available at the time the particular artefacts came to the conservation labora-

tory. However, with time and further research and development, better conservation methods and/or materials may become available. It is therefore essential that a complete record of the previous conservation processes be kept, so that reversal of the old treatment can be undertaken before retreatment using the newer techniques. If such records had been kept in the past, many of the analytical tests now having to be undertaken could have been avoided. In this respect it is perhaps fortunate that only a few artefacts have been repaired in the past, so that retreatment is not a major problem. The recording of conservation procedures is an important part of the treatment process and consists not only of a written but also a photographic record, the latter being in the form of both black and white photographs and colour slides. On some occasions, x-radiographs are taken where knowledge of the interior state of an object may be required. Where analysis of the materials of construction of an artefact must be made or tests for corrosion or deterioration products undertaken, the results of these tests are also recorded in the conservation report, so that the artefact's condition before treatment is also available to future workers, should this information be necessary. All treatments undertaken, such as cleaning methods, consolidants (either surface or bulk) used, solvent system, physical supports added (*e.g.* wooden or stainless steel dowels), fillers or pigments used and such basic information as the work requested by the curator concerned and the registration number of the artefact, are recorded.

Conservation Research

The changes that occur in the artefact materials due to age, past treatment, interaction of components of the artefact, effects of environment and so on, are of direct interest to the conservator, for a number of reasons, not least of which is the choosing of a suitable conservation process so that the changes may be reversed or at least halted.

The major materials of interest in the South Australian Museum are those of an organic polymeric nature such as wood, feathers, hair, skins, leathers, ivory and bone as these make up the bulk of the materials composing ethnographic and historical artefacts.

Of particular interest to the Conservation Section of the Museum is skin and its derived products, rawhide and leather. These materials were used extensively in the past for such objects as furniture and vehicles (upholstery and horse harnesses), musical instruments (drum-skins, strings), utensils (water bags, panniers, jugs and bottles), clothing (aprons, jerkins, boots and shoes), weapons (spear grips and shaft covers, sword and dagger scabbards, bows and bow strings) and reading and writing material (parchments and leathers for writing and as book covers).

The major conservation research effort in the Museum has therefore been concentrated on the area of leather and skin deterioration and the changes that occur in these materials due to age, type of tanning or preservative agents used and the storage conditions used during the artefact's working life and then subsequently as a museum object. As a result of these studies it is hoped that a better understanding of the changes that occur will be obtained and from this improved understanding better or more appropriate methods of conservation will be developed. The research program, as postulated in the paragraphs above, is a long and extensive one which will take a continuous effort over a number of years to produce worthwhile practical results. However, it is a program which only museums can undertake because these are the only institutions holding large collections of such material which have an interest in its long-term preservation.

Conservation Services to the Community

A conservation facility in any public institution has a responsibility to see that the

The figure consists of two cross-sectional diagrams of a road pavement structure. The top diagram shows a 'Dry or Moistened Gravel' base with 'Inclined Channels' for 'Active Drainage' and 'Passive Drainage' (water on surface). The bottom diagram shows a 'Drying Point Layer' with 'Inclined Channels' for 'Active Drainage' and 'Passive Drainage' (water on surface). It also shows 'Coupling of Water into and out of the Road' and 'Coupling of Water into and out of the Road'.

A black and white photograph of a circular wooden frame. The frame is composed of six wooden segments, each with a distinct grain pattern, arranged in a ring around a central hexagonal opening. The segments are joined together at their corners, creating a continuous circular structure. The background is a light, textured surface.

Fig. 6 Thomas Gotch, *Destiny*. Whole front, before treatment.



Fig. 7 Thomas Gotch, *Destiny*. After treatment.



Fig. 8 John Glover, *Corroboree: Swan River*. Painting before treatment with extensive overpainted sections.



Fig. 9 John Glover, *Corroboree: Swan River*. After cleaning and removal of overpaint.



Fig. 10 John Glover, *Corroboree: Swan River*. After completion of restoration.

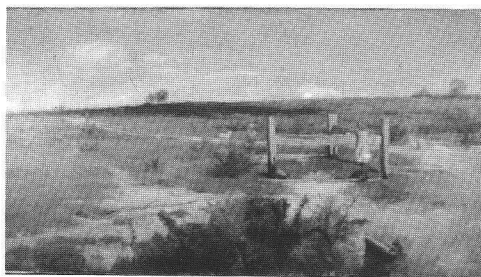


Fig. 11 Arthur Streeton, *Gorse in bloom: Box Hill*.

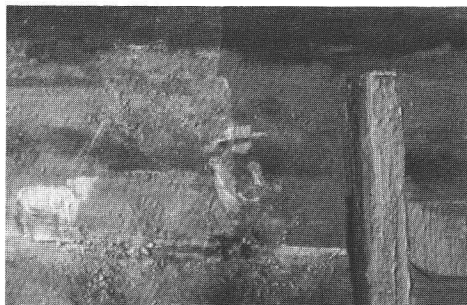


Fig. 12 Arthur Streeton, *Gorse in bloom: Box Hill*. Detail showing removal of PVA coating. (Note how original paint texture is restored after PVA coating is removed.)

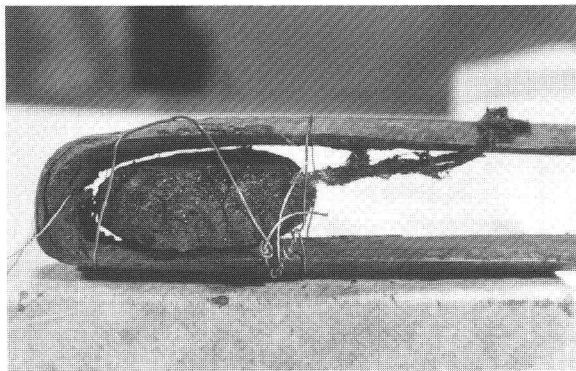


Fig. 13 Hafted, steel-bladed axe before conservation.

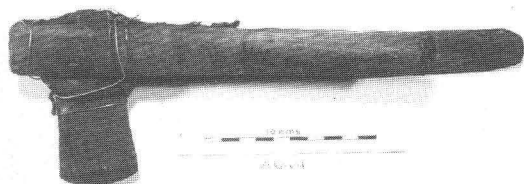


Fig. 14 Hafted, steel-bladed axe before conservation.

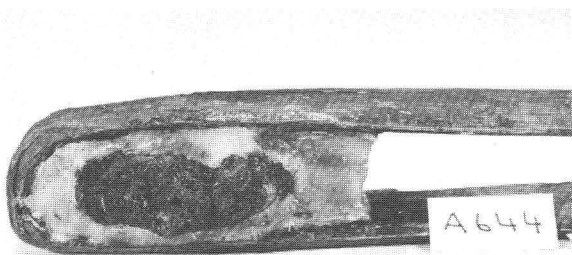


Fig. 15 Hafted, steel-bladed axe after supporting with wax.



Fig. 16 Hafted, steel-bladed axe after supporting with wax and fixing the haft with a raffia tie.

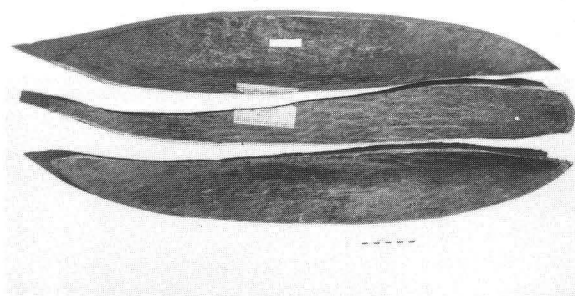


Fig. 17 Coolaman before reconstruction and conservation.

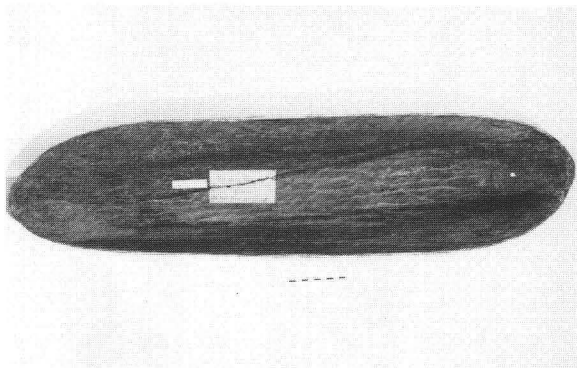


Fig. 18 Coolaman after reconstruction and conservation.

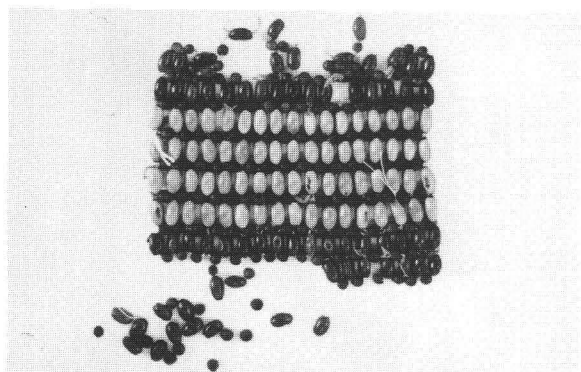


Fig. 19 Bean mat after attack by insect larvae.

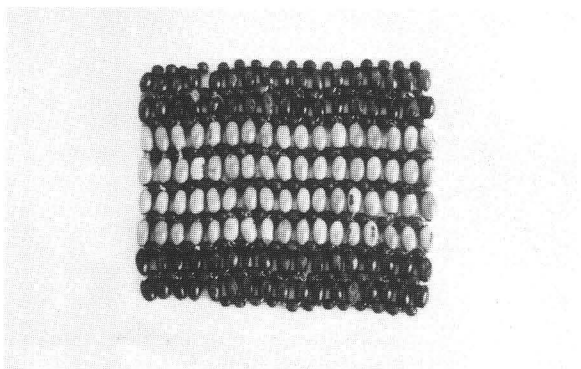


Fig. 20 Bean mat after fumigation and conservation.

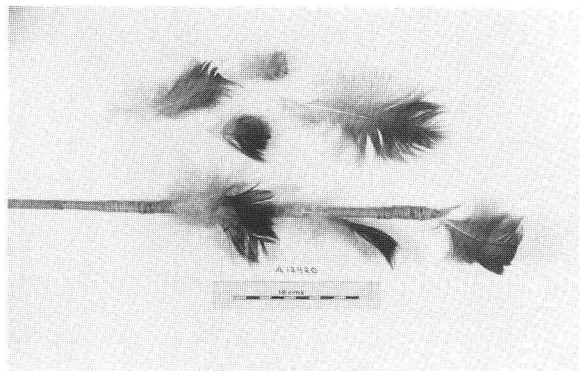


Fig. 21 Bamboo and feather wand with broken feathers.

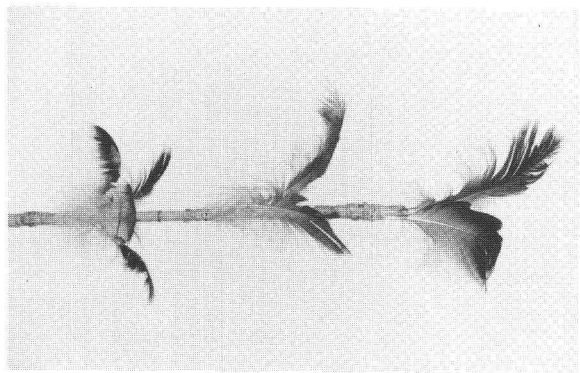


Fig. 22 Bamboo and feather wand with feathers replaced.

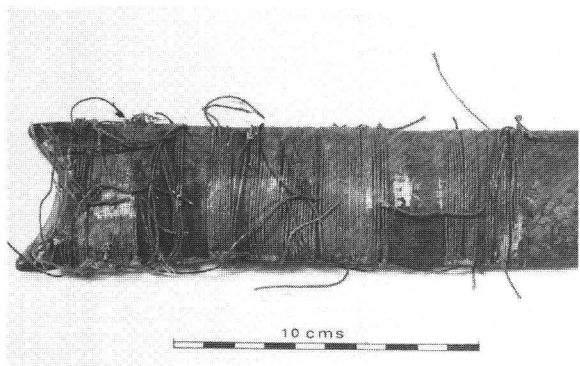


Fig. 23 Club with frayed and broken binding, before conservation.

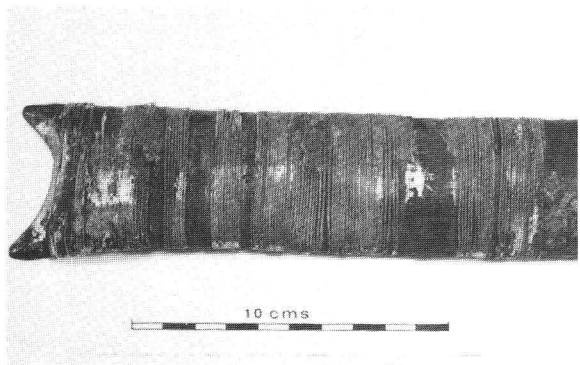


Fig. 24 Club with binding replaced.

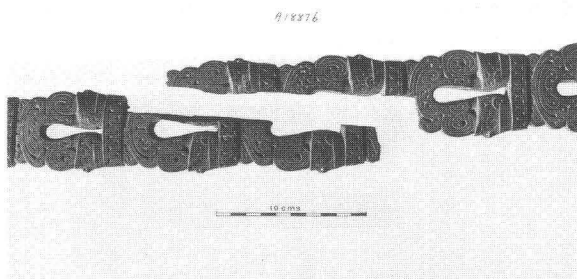


Fig. 25 Trobriand Island walking stick before conservation.

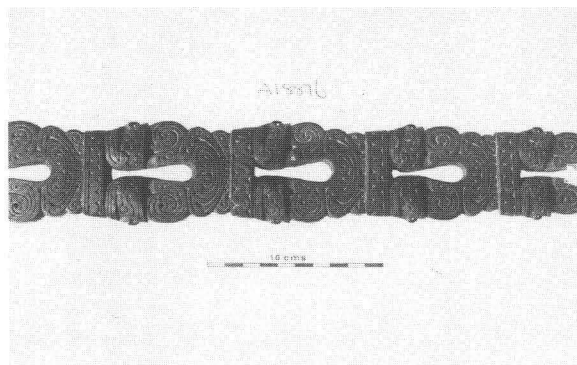


Fig. 26 Trobriand Island walking stick after cleaning and reconstruction.

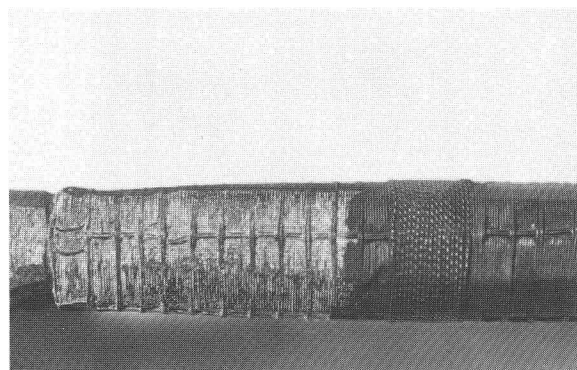


Fig. 27 Brass binding on an African spear showing white copper-fatty acid corrosion product (left), and brass wire, tarnished, with corrosion product removed by solvent washing (right).

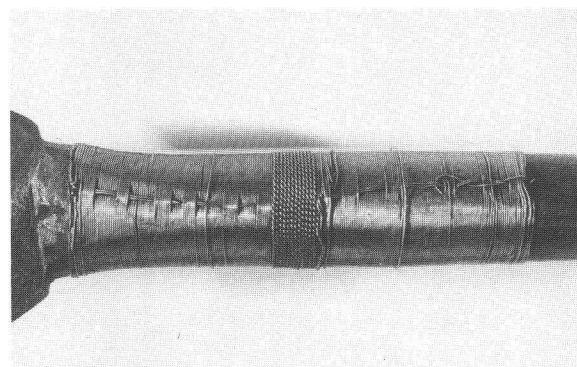


Fig. 28 Brass binding on an African spear with corrosion product and tarnish removed and protective lacquer applied.

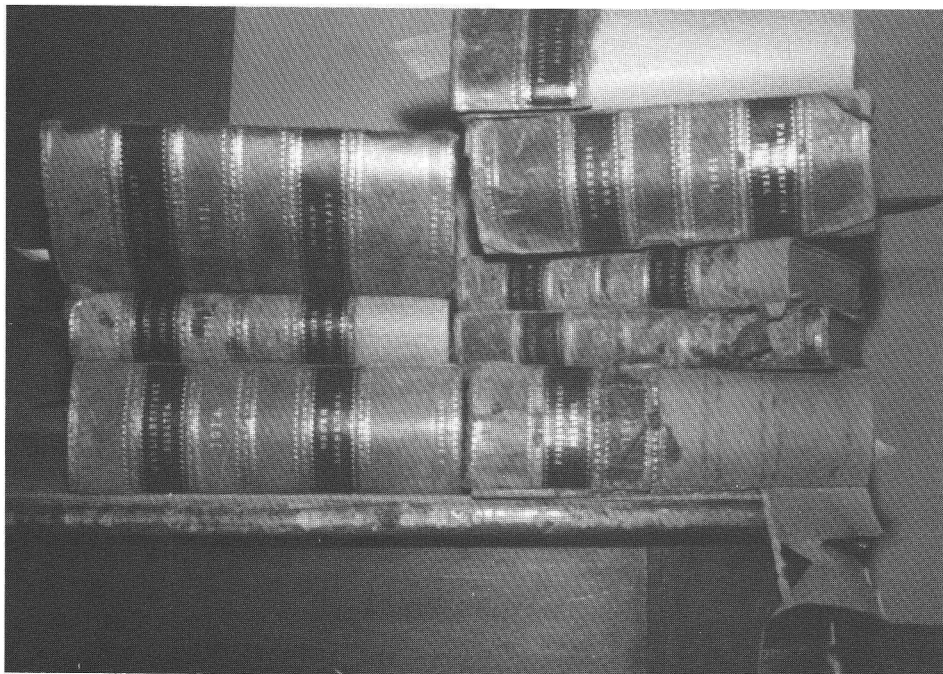
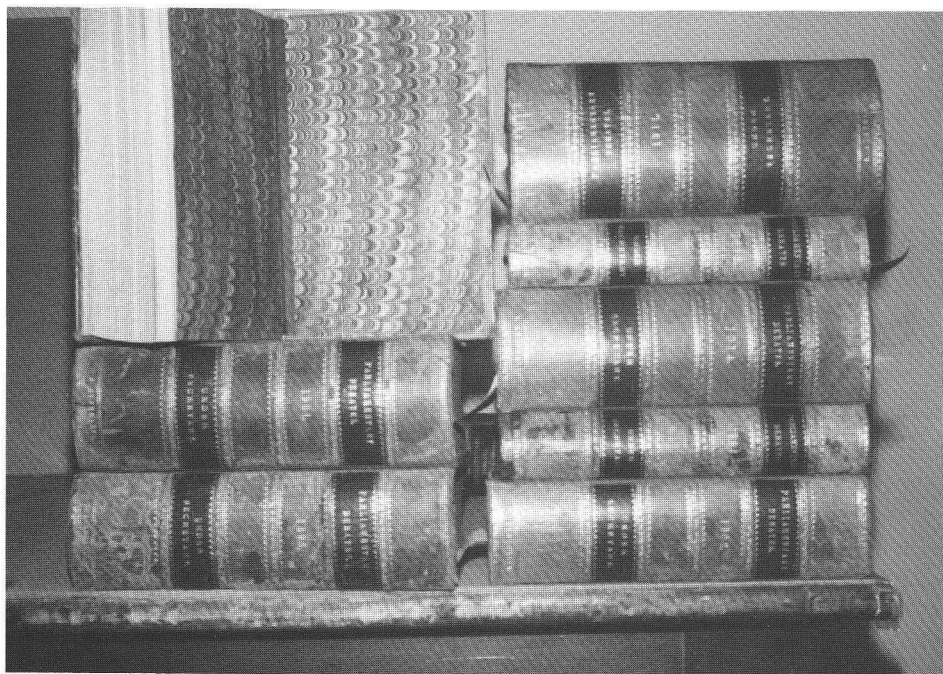


Fig. 29 Books before conservation.

Fig. 30 Books after restoration and conservation.



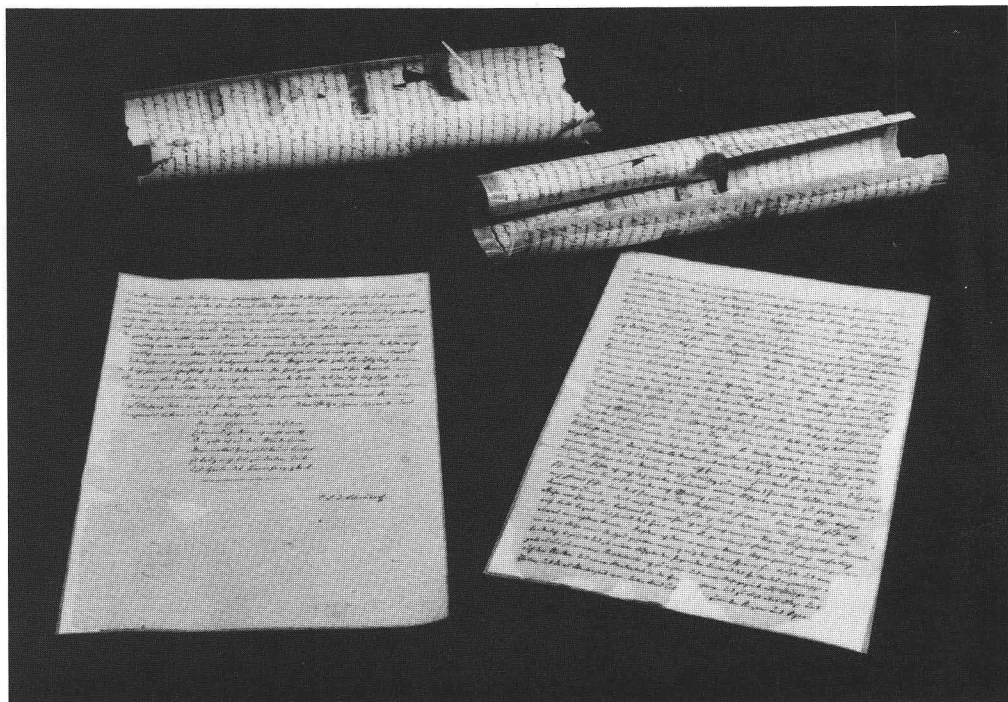


Fig. 31 Repair of damaged documents. Before treatment (above). After treatment (mounted on nylon gossamer) below.

general public has the opportunity to obtain information and advice to assist them in conserving their own collections of cultural material. Included within the term 'general public' are such specialist groups as the National Trust, local councils, government agencies (both federal and state) local historical societies, art groups and collector organisations as well as individual members of the public.

To meet the need of such groups and individuals, the Museum's Conservation Section began a public advisory service shortly after its establishment, setting one afternoon a week aside for inspection of artefacts and advice on conservation procedures.

As an extension of the advisory service, and specifically addressed to the needs of the country and urban museum custodians, one-day seminar/workshops on museology and conservation are organised twice a year under the auspices of the History Trust of South Australia and in co-operation with the South Australian Branch of the Museums Association of Australia, in which the conservation staff of the Museum cover a full day's program on basic conservation techniques. During the past three years, five of these seminar/workshops have been organised in major centres throughout the State, making conservation information available to the majority of interested groups of museum personnel.

Conservation in the Art Gallery of South Australia

The collection in the Art Gallery of South Australia is large and diverse. Apart from the National Gallery of Victoria the total number of works in South Australia's Art Gallery far exceeds that of galleries in other States. The bulk of the collection (in excess of 22 000 items) comes under the category of works on paper and includes drawings, prints, watercolours, photographs and mixed media. In addition to this are 1 400 easel paintings and a further 6 000 items comprising a significant collection of South East Asian ceramics, textiles (including tapestries and costumes), furniture (mainly European and English), sculptures (in metal, stone, plaster and wood), silverware, coins, weapons and Aboriginal bark paintings. This collection is increasing by between 600 and 700 works each year.

The Conservation Department in the Art Gallery is actively pursuing a policy that different material types require treatment by specialised conservators. To preserve such a diverse collection the Gallery requires access to conservators specialising in each of the diverse media represented in the collection. For this reason the Conservation Department of the Art Gallery looks forward with enthusiasm to the successful establishment of the State Conservation Centre, which will provide these experts for the first time in the State's history.

In 1962 a workshop was constructed adjacent to the Art Gallery consisting of some 328 square metres of floor space which housed the workshop and conservation functions of the Art Gallery. The current arrangement more clearly defines two separate but parallel functions; workshop and conservation. The area currently incorporates the carpenter's shop, the paint room, the mount room, a flexible work area, an area of storage for the supervisor, an extended storage rack for works of art undergoing treatment and two conservation studios.

The Conservation Department believes that the monitoring and control of the environment in the Gallery is the most important aspect in the preservation of the collection because *it affects all of the objects all of the time*. Some efforts are being made to monitor the temperature and relative humidity in the Art Gallery using thermohygrographs in selected areas. Since the operation of such instruments is time consuming, the department is examining the feasibility of the installation of a computer based system to monitor all the exhibition galleries and storage areas.

The current system for remedial and preventative conservation treatment to works in the collection relies on close co-operation between the Conservator and workshop artisans.

Works from the paper collection are mounted on acid free card using acid-free adhesive tape as a hinge. Some repair work on the paper collection is carried out by the Senior Artisan. The Gallery Conservator is a specialist in the restoration and conservation of easel paintings.

Only minimal work can be done on the textile collection with no specialised conservator. This is the case throughout the remainder of the collection and for this reason the Conservation Department has established a technical information resource to make information about different material types available to all those people involved in handling and storage of works of art. Occasionally outside assistance is required and work is sometimes treated by specialised conservators. Such work has to be closely supervised by the appropriate collection curator and the Conservation Department.

The current procedure for works requiring conservation treatment attempts to recognise each work as a unique item. Reference to any relevant background material such as photographs of work at an earlier stage or literary sources are similarly requested.

The type of service required and degree of urgency is specified. If the job can be done, the work is allocated a conservation requisition number and accepted for treatment.

Any important matters relating to the handling, preservation or storage of this work are recorded on the bottom of the form for the attention of the appropriate collection curator.

It cannot be over-emphasised that each item of cultural property is a unique object and more often than not composed of a completely unique combination of materials. The most fundamental rule governing any treatment therefore involves a rigorous and thorough examination using a variety of straightforward and more sophisticated techniques.

All examination and treatment undertaken on any work is entered in the conservation record for each individual item and no work receives any treatment before it has been photographed. Such photographs allow comparison before and after treatment, future assessment of advancing deterioration and the study of the results of newly developed techniques at a future date.

Aims and Objectives of Conservation in the Art Gallery of South Australia

With a chronic shortage of specialised staff for such a large and diverse collection it is essential to have a clear set of aims, objectives and priorities with regard to its preservation.

The Gallery is a dynamic institution with a lively exhibitions program. It is not the old treasure storehouse of earlier times when displays tended to be more static and objects were left 'in peace'. There is an ever increasing number of temporary and travelling exhibitions with a correspondingly larger number of works requiring treatment. 'Unless the organisers of exhibitions show greater respect for objects, and this is shared by all the professionals involved, we will inevitably find ourselves after the exhibition with our restoration laboratories full of invisible corpses'.⁴

The greatest priority for those wishing to establish a greater degree of conservation of cultural material is *Education*. It is vital to establish a greater communication and co-operation between all those concerned with the handling and organising of works of

⁴ MUSEUM XXXIV No. 1 1982 Interview with S.C. Chilone.

art. The Conservation Department of the Art Gallery has a substantial commitment in this area. Public lectures have been given in recent times to numerous organisations. A number of people of different ages have worked as volunteers and internees in the department. Their contribution is a vital aspect of the department, and serves as a further means of education. An audio-visual presentation entitled 'Protecting works of art on display' has been purchased from the Smithsonian Institution in Washington, USA, and was favourably received on the numerous occasions it has been shown. The department has also an audio-visual record of the cleaning of the recent Gallery acquisition 'Gorse in Bloom: Box Hill' by Arthur Streeton. A similar record exists illustrating a lateral tension frame for treating the fabric support of paintings which was designed in the department and constructed by the Art Gallery workshop.

The Conservation Department has established a separate conservation reference library and extensive technical information service which many people, both inside and outside the institution, are using. Scientific links have been established with the Australian Mineral Development Laboratories (AMDEL), the Institute of Medical and Veterinary Science (IMVS), the School of Chemical Technology at the South Australian Institute of Technology (SAIT) and the Australian Institute of Radiography, all of which have provided valuable assistance to the Department.

The Department receives numerous written inquiries from the public and also conducts a monthly clinic, where works requiring conservation treatment are brought for assessment.

It has been necessary to describe comprehensively the importance of a controlled environment for the preservation of works of art to Gallery staff and air conditioning contractors in such a way that motivation is high and decisive steps taken to correct malfunctions in the Gallery air conditioning plant. Co-operation has been achieved in this venture with the Gallery Supervisor and engineers from the Public Buildings Department. Monitoring of certain galleries is undertaken regularly by the Senior Artisan from the Gallery workshop and all charts are readily accessible in a file system. This area of work requires continuous attention.

Considerable effort has been extended to describe conservation requirements to all Gallery workers but the constraints imposed by various policies and chronic staff shortages ensure ground will only be gained by a very slow process as a greater awareness of the absolute necessity to preserve cultural material is realised. Significant cultural material should not be considered as a resource which can be 'used up' for other purposes. It is the 'first duty' of the museum 'to preserve those objects from the past which are in its care, not only for today but for generations yet to come'.⁵

A comparative chart of conservation resources throughout Australia was prepared by the Department, (see Appendix I), and presented at the 1982 Conference of Commonwealth and State Ministers with responsibility for cultural affairs and the arts. This showed South Australia to be at the bottom of the list with regard to these resources.*

While the first aim of the Department has been to educate others as to its intentions any realistic implementation of the aims and objectives is severely limited with only one specialised conservator. Some works have been restored and will be referred to on pages 42-4 but in relation to the amount of work that is required it can safely be said that each new week creates at least another new month of conservation backlog. Until the education aim is achieved this situation will not improve.

⁵ MUSEUM XXXIV No. 1 1982 Conservation: Keeping the past alive. Philip R. Ward.

* Chart reproduced from *State Centre for the Conservation of Cultural Material Joint Working Party Final Report*. February, 1982.

Material Conservation, Art Gallery of South Australia

Paintings are not (as so many people are inclined to believe) two dimensional objects. They do have a very definite three dimensional structure (Fig. 1) which it is vital to understand not only for purposes of conservation and restoration, but also for the appreciation of painting.

Correct treatment of a painting can only follow correct diagnosis which in turn results from 'skilled and painstaking examination'.⁶ While there are many scientific aids available to the modern conservator, experience and good interpretation underlie accurate diagnosis and subsequent treatment.

Paintings consist of a number of layers (Fig. 1) and an examination will attempt primarily to locate in which layer there is a structural fault. In the case of a traditional easel painting on canvas the base layer is an auxiliary support called a stretcher. This is made of wood and is adjustable to allow lateral tension to be maintained across the fabric it stretches. This fabric layer, usually canvas, is the support proper. Canvas came into use during the fifteenth century when a fine weave was used. This was followed in the sixteenth century by the Venetian painters using a coarser canvas. Until the nineteenth century linen and hemp from the flax plant were the most common fibres employed. In the last two centuries both cotton and jute have also been used. Other fibres have also been utilised for reasons of availability and particularly desired effects sought by the artists. Gauguin, for example, used soft woollen flannel and cocoa fibre.

The canvas support layer is coated with glue size which serves as a barrier between the fabric and painting medium.

In the case of oil paint, size can act as an agent of deterioration. Depending on the technique or period of the painting a variety of layers of 'ground' paint, underpaint and topcoats will be applied to achieve the final effect. In most cases of pre-twentieth century painting a layer of varnish will overlie the paint surface and this will usually consist of a thin coating of dammar or mastic (natural) resin, previously dissolved in mineral spirit or turpentine.

Any one or all of these layers can deteriorate or be damaged and may have to be replaced, re-inforced, consolidated, re-supported, cleaned or removed.

In the history of a painting it is unlikely that it has never received any kind of 'restoration' or 'conservation' treatment. A great deal of time is currently spent on reversing inappropriate methods of the past and for this reason it is continually necessary to research working techniques and develop newer, better processes based on the soundest principles of conservation ethics.

To illustrate the point that paintings consist of a number of layers, case histories of four paintings treated in the conservation laboratory during 1981 and 1982 follow.

In August 1982 the Art Gallery purchased a contemporary acrylic painting on linen canvas. The painting came from the Western Desert, where it was painted by an Aboriginal artist, Daisy Nakamorra.

The fabric was stretched over a barrel whilst it was painted and then removed after the paint had dried. The linen fibre, originating from the bast fibre is about 75 per cent cellulose and very hygroscopic. Once removed from the lateral tension caused by fixing it to the top of the barrel the canvas was free to expand and contract as the moisture content of the fibres fluctuated with the relative humidity of the air. Without any constraining influence, this movement would dramatically advance the deterioration of the overlying paint layer, which although bound in a flexible acrylic medium does not have the elastic capacity to absorb the expansion and contraction without rupture and

⁶ MUSEUM XXXIV No. 1 1982. Philip Ward.

progressive deterioration. In fact when the canvas came into the conservation studio it was fairly severely cockled. (Fig. 2).

It was possible to re-stretch the young and flexible fabric and paint layers without additional moisture and this was done over a flat board.

However for permanent display and purposes of preservation it was necessary to construct a circular stretcher which would support the fabric with adjustable lateral tension and at the same time allow the work to be hung without putting additional lateral tension on the fabric itself. Traditionally easel paintings are framed in fairly substantial wood mouldings which take the picture hooks and hanging wire. In the case of this work it was required to be hung without a frame.

The solution was to construct a six-sided frame which was tongue and groove jointed, glued and screwed for extra strength, and a second larger frame whose inside members corresponded exactly with the outside edges of the inner frame, but whose outer edges corresponded exactly with the circumference of the painting (Fig. 3). The adjustable outlying frame was attached to the inner fixed frame with 'Tite-joint fasteners', which allow easy expansion and contraction and avoid the vibration and mechanical movement associated with traditional wooden stretcher keys or wedges (Fig. 4).

The painting was hung from picture hooks attached to the inside frame. The stretcher was constructed from selected western red cedar and finished with beeswax and polishing. The fabric was attached with non-corrosive bronze staples fired by an air-tacker, to avoid vibration, through strips of acid-free card. A backing board, to prevent dust and dirt entering from the back and deflect accidental impact, was made from Corflute with breath holes and dust covers of narrow mesh polyester fabric heatwelded using Parafilm M. The backing board was attached with non-corrosive bronze screws and cup washers.

In January 1982 a large painting (2.56 metres x 1.92 metres) which had an 8.5 centimetres tear (Fig. 5) in the support layer of linen canvas was repaired. The work entitled 'Destiny' (Fig. 6) by Thomas Gotch was painted in the late nineteenth century and shown in the Gallery exhibition 'From the Sublime to the Ridiculous'. There were numerous other problems and complications which had to be considered before the painting could be treated. The tacking edges of the canvas (which are bent around the stretcher and through which tacks were nailed to secure the fabric in position) were torn in many places and would not allow sufficient tension to be applied at the edges to re-stretch the large canvas. A strip of canvas, ten centimetres in width and ninety-seven centimetres long had been sewn onto the bottom left corner of the main canvas.

The stitching was completed on the reverse side of the fabric and left two hems or turnovers of fabric some three centimetres in width and running horizontally for ninety-seven centimetres from the reverse right hand side of the canvas bordering the added canvas section. As such they would inhibit the attachment of any lining canvas to the back of the original as the line of stitching and two hemmed turnovers would push through to the front of the painting and cause a disfiguring ridge. In addition, the auxiliary wooden strainer had been cut in half and the painting bent over double to facilitate shipment to Australia at an earlier period. Finally, the painting was so large it was only able to be transferred from one work area to another with a great deal of patience and co-operation.

Nonetheless the painting was satisfactorily treated (Fig. 7) and duly framed in a new frame (as the original one had been discarded at an earlier time) in time for the exhibition on 12 February 1982.

Briefly, the process of treatment consisted of removing the canvas from its inappropriate strainer; shrinking back the canvas fibres which had been extended at the time of impact which caused the rupture, butt-jointing those fibres; removing the stitches in the

area of the hem and excess strips of canvas to afford a uniform surface over the entire back of the canvas; preparation of a new lining canvas and application of a low impregnating and easily reversible adhesive; lining or attachment of the two canvases together by hand (this process is now more commonly undertaken on a vacuum hot table); re-stretching onto a brand new, fully adjustable, wooden stretcher and finally framing.

To illustrate the treatment of the paint layer the example of 'Corroboree: Swan River' by John Glover is given. The painting had been extensively overpainted to a point which ethically was quite unacceptable since much of the original was covered and the artist's original intentions dramatically distorted. (Fig. 8). The overpainted sections, the largest areas of which were in the area immediately above the camp-fire to the left of the trunk of the main central gum tree, to the left hand side of the sky area and along the top edge, were all removed along with a discoloured layer of natural resin varnish (Fig. 9).

These areas were then retouched over an isolating layer of varnish, making quite sure that no original paint was covered. The painting was coated with a synthetic matt varnish based on a synthetic resin (Fig. 10).

Particular attention is drawn to the 'depth' of the painting, achieved by clearly defined foreground, middle distance and far distance horizontal bands.

A fourth painting, is used to illustrate the deterioration of the top layer of the varnish. (Fig. 11) 'Gorse in bloom: Box Hill' by Arthur Streeton was acquired by the Gallery in November 1982. Approximately twenty years or so before this date it had been lined onto another fabric, principally to minimise the effects of cupping. The raised edges were additionally reduced by sanding with glass paper. Naturally this treatment resulted in some losses of original paint.

The earlier repair was completed by overpainting these abrasions with oil paint, during which process original undamaged paint was covered. Finally the repair was completed by varnishing with an almost irreversible PVA type varnish, which had dramatically 'yellowed', thereby destroying all the true colour relationships and tonal values intended by the artist.

The difficulty of this particular treatment was to find a means of removing the thick, yellow and very hard layer of PVA without removing any of the original paint, the latter consisting of the whole range of paint and medium distributions likely to be encountered in the fresh, spontaneous techniques of impressionist painting. Impasto areas with deep valleys served as reservoirs to trap and hold thicknesses of the coating (Fig. 12), whilst thin, transparent glazes could conceivably be more securely attached to the PVA than to the underlying paint-layer.

By overlaying the PVA coating with a thin, smooth, fibrous tissue paper in small sections about four square centimetres, and brushing on the solvent acetone, it was possible to destroy the chemical structure of the coating and lift it away from the paint without harm. As this particular solvent evaporates quickly the treated section was covered with a piece of glass.

The overpaint was also removed and only the damaged crack lines minutely retouched. The whole painting was varnished with a synthetic matt resin.

Research and Development

The Gallery's Conservation Department has been extremely fortunate in the volunteer services of one person who has enabled the commencement of a most valuable project. To give an early boost to the furniture/wood area of the State Conservation Centre and fill a much needed gap in the conservation of Australian cultural material the Department embarked on a project to establish a cultural material wood identification system in August 1982. This work will be reported elsewhere.

No substantial work has been done to determine the techniques and materials of the Australian Impressionist painters. Such a study would provide a fascinating comparison with their European counterparts.

Another vital area for research and development is a manageable computer-based data logging system for the environmental monitoring of the North Terrace Cultural institutions.

A great deal of work on the ageing of various materials is being pursued world-wide and while it is not considered likely that the Conservation Department will participate in a great deal of original research, conservators should keep abreast of developments and note applications suitable to the collection.

A function of any practising conservation laboratory is to thoroughly test and question all materials and treatment techniques it uses and continually strive to upgrade them.

Conservation in the State Library and State Archives of South Australia

The State Library of South Australia, like most libraries in Australia today, believes that conservation is not only necessary but essential, if the various collections are to be maintained in a relatively stable condition. At the moment the State Library is in the initial stages of introducing a comprehensive conservation program in keeping with its organisational policies and also existing conservation knowledge and techniques. It is also formulating specific guidelines and outlining the distribution of its responsibilities in order to provide optimum conditions for the preservation of various collections.

The introduction of such a program has not been attempted before, because library conservation is, unlike that of art galleries and museums, new, the latter having practiced conservation/restoration for the past forty years and the former even longer.

An awareness of the need for library conservation was highlighted by the 1966 Florence flood. However, it was realised that knowing the problems is not the solution. Trained staff and the technological capabilities to combat book deterioration must be available. Since 1966 a great deal of research has been carried out to counteract the problems facing libraries today.

Conservation programs encourage respect for the Library and its collections and minimise the loss of valuable books. Well organised and well monitored maintenance procedures eliminate a considerable amount of work and reduce spending on the conservation/restoration of books and other objects.

One solution to a problem concerning books, is to persuade paper manufacturers and publishers to make and print books on durable and permanent paper. If this could be achieved, the requirements for library preservation needs for the future would be greatly reduced.

Conservation Priorities

The various priorities and practicalities of a conservation policy must be controlled so as to have a significant and instantaneous impact on preserving the book collection. For the Library's program to be successful, it must attend to the following priorities:

- (a) Installation of environmental control;
- (b) Fumigation of material before entering library;
- (c) Fumigation of the Library and repositories;
- (d) Education of staff in the principles of conservation;
- (e) Prevention of destructive practices;
- (f) Isolation of material too brittle or otherwise fragile to circulate;
- (g) Cleaning and consolidation of books;

(h) Assignment of priorities to items most needing treatment and the development criteria for such treatment priorities;

(i) Introduction of new conservation techniques.

Of these priorities, the first steps have been to evolve an initial training program, and undertake co-ordination of an immediate short-term conservation program. Forty items from seven sections of the library which required immediate conservation treatment were chosen. On examining the items submitted for assessment it was found that several of the items could not be started because the Library lacked a conservator with the expertise to treat textiles, ceramics and metals of which the objects were made. The other items were assessed and given a priority according to the following categories with the understanding that the ratings are flexible to account for emergencies. The priorities are:

- (a) Unique items dealing with our cultural heritage in a state of deterioration;
- (b) Articles in constant use in a state of deterioration;
- (c) Articles in a state of deterioration;
- (d) Articles in constant use;
- (e) Articles used for display;
- (f) Ongoing work.

Articles may often fall into more than one category on the list, and the number of categories they fit, plus the level of the priority are the important criteria for determining work flow.

Practices

Through the ages the materials used for writing have varied from country to country, and what was used in each geographical area depended on the abundance and types of material available. Regardless of the form or materials of their books, libraries have always had the problems of preservation. Book deterioration, and the human influence on this, is not confined to the twentieth century.

With the advent of the industrial revolution the problems of preservation were increased ten-fold because the supply of rags and linen, from which paper was made, could not keep up with demand. As the demand continued to grow, ground wood, pulp and alum resin sizing were introduced in the papermaking process. This type of paper has a life expectancy of only ten to twenty years.

To add further to the conservation problem, the trend towards cost-cutting with the use of less expensive materials, and the changes of the physical characteristics of bindings, meant that instead of books lasting centuries they lasted about a decade.

The detrimental effects of these changes were recognised early and research was conducted to counteract them. However publishers often failed to acknowledge the pleas to use better materials in many areas of publishing and poor standards continue to this day. Consequently the deterioration of books in our libraries is so great it is difficult to counteract.

When assessing the degree of deterioration of books we can relate to a number of factors. One of these factors relates to the mechanical construction of a book.

Sewing

The sewing is vitally important in the construction of a book, not just for holding the signatures, that is, the sections that make up a book, but also for making the book durable. Of course the book is not held by the sewing alone; the strain is also relieved by gluing up, and rounding the backing lining. The covers are also important.

When early books were prepared for binding the sewing never created a problem.

There were never a great number printed, the binding margins were quite considerable, the paper was of good quality and usually hand made. Most sewing was reinforced by cords and the sewing was through the centre of the signature which resulted in a flexible opening function for reading.

There are various methods of sewing used today, but the basic principle has not altered.

Lining

Incunabula and leather bindings made before the seventeenth century have no reinforcement on the spine by way of lining materials except for the fast onspine method sewn on cords. These books are still in use today. About 1750 the style and the construction of the book was altered. Many books were sewn on thin cords let into the backs, to give a smooth back, instead of the usual practice of sewing on raised cords. This method of lining is commonly referred to as 'hallow lining'.

One unfortunate result was that spines began to be lined with many layers of paper which gave a firm and rigid surface for gold tooling, but made the book difficult to open. Also the paper was not of good quality. Incredibly the linings today are not just of poor quality, but in most cases they are not applied at all.

Cover

Considerable amount of deterioration in books today, specifically those with leather covers, is attributable to excess acid used during the tanning process and the lack of oil and grease to keep leather supple and flexible. Two other factors are the acidic reaction of pollution from our atmosphere and the inferior leather used.

In the manufacture of leather perhaps the most destructive of all processes is the removal of the vitally important salts known as the non-tans. Frequently these types of leather show rapid and severe deterioration. The final stage of such deterioration is often characterised by the condition known as 'red-rot'. This condition is easily recognised; the leather appears quite desiccated, and when touched, turns to dust.

Conservation and preservation may be seen as using the right materials to construct the book, the right day-to-day handling methods and the right environment in which to store it.

Much of the work to be done in conservation and restoration is the result of these basic principles not being appreciated and used in the past.

Our fundamental purpose in conserving and restoring the Library's collections is to ensure their continued accessibility and, hopefully, to preserve this cultural material for future generations.

The South Australian Archives

The collections of the State Archives consist predominantly of books, files, maps, photographs and plans of various dimensions, all of which are composed of paper. The remainder of the archival collections are made up of works on leather, vellum, parchment, linen and canvas as well as glass negatives, cinematographic film—on both nitrocellulose and safety bases; magnetic tape, phonograph records and 'wax' cylinders.

Deterioration of the components of these collections has occurred over the years due to general usage, poor climatic conditions and poor storage. In the last fifteen years the deteriorating processes have been slowed due to the introduction of an air conditioned storage area and improved handling and storage facilities.

However, such improvements on environment and storage procedures can only slow down the deterioration process they cannot reverse it; and so the need for a conservation

program and conservation expertise in the State Archives is essential if vital historical documents of all kinds are not to be lost forever.

The work of conserving the State's archival material, in all its forms, has been slowly proceeding since 1976 with a major concentration on documents of paper construction: these are the most common in the collections and also the least durable, with the exception of nitrocellulose films.

As has been shown in the previous section papers made during and after the Industrial Revolution were much less durable than those made before it due to the introduction of chemical and mechanical processing and in particular the use of wood pulp in preference to linen rags. Paper made from wood pulp often contains a varying proportion of lignin (a wood cell component which chemically deteriorates the paper) which, with the bleaching processes used to whiten the wood pulp after its production, tends to produce an acidic and unstable product which slowly decomposed with time due to acid hydrolysis of the cellulose component. Such paper is usually discoloured and quite brittle.

Further deterioration to such paper by the acidic components is prevented in a process referred to as 'de-acidification'. However, de-acidification does not replace damaged or deteriorated cellulose fibres and thus cannot restore the strength of the paper structure; only the addition of a water soluble size to slightly weakened paper or the addition of a mechanical support such as non-woven nylon or terylene net will give such strength.

De-acidification, by hand, has to be carried out on each sheet of paper whether the document is a single sheet or a book, in which case the leaves of the book must be carefully removed before de-acidification can take place. The process is thus very time consuming and really only applicable to rare books where the time spent is conservationally worthwhile. Where the book requiring de-acidification is not of great bibliographic or historic value then bulk de-acidification, using a vapour phase process is required. Such processes are under investigation at this time for possible use in the State Conservation Centre, when it is established, and will permit large numbers of books to be de-acidified at one time.

Even where good quality paper has been used in the production of a document or book such material still tears and these tears have to be repaired. Such repair work is carried out using rice paper tissue and a neutral, reversible adhesive (methyl cellulose) thus producing a strong, unobtrusive result. A more commonly used material for the repair of tears in paper is heat set tissue which requires no drying time, as no solvent adhesive is used. The use of such material permits mending through a whole book, without the interleaving required for the wet method.

Very frail manuscripts are mounted between layers of nylon gossamer which allows viewing of the document on both sides whilst giving suitable support.

Where paper has been lost from a document due to mould attack, or other deterioration processes the lost portion is inlaid with paper pulp fibres before overall support, if deemed necessary, is added. Thus a document or book page may have to be brush cleaned, its pH determined, and de-acidified if necessary, in-laid, mounted and then bound or encapsulated in a polyester or mylar sleeve, before it can be handled or studied.

Conservation and the Environment

The connection between a cultural object's well-being and the environment in which it is displayed or stored may not, on initial consideration, seem obvious. However, anyone who has seen a piece of iron or paper left to the vagaries of the natural environment will realise how rapidly deterioration may occur if proper protection is not provided. The situation is no different whether the object is kept in an old barn or an art gallery, museum or library; only the time scale of the rate of deterioration is changed. It

is therefore essential that any cultural material considered to be of value to the community should be given the best protection possible when it is in the custody of one of our cultural institutions, so that deterioration is kept to the absolute minimum. It is here that the work of the conservator begins.

Environmental Factors and the Conservation of Cultural Material

The majority of materials used in the construction of artefacts held in our cultural collections are subject to deterioration; the deterioration of many artefacts being exacerbated by the use of different materials with different properties in the same artefact. Much of this deterioration is produced by physical changes in the materials themselves due to variations in temperature or relative humidity of the surrounding environment which produces warping of wood, ivory or bone, melting of waxes or resins, corrosion of metals, the alteration of tension in canvases and the curling of bark paintings. Light also causes deterioration through the photochemical degradation of materials, particularly those derived from natural sources such as paper, skins, wood and so on. It is these three parameters—relative humidity, temperature and light which are of such great interest and concern to the conservator.

Humidity—Its Effects and Control

Humidity can be defined as the amount of water vapour in the atmosphere at a given temperature. Most natural materials, particularly those of organic origin, will have water contents which are very high in their original states but considerably lower after treatment to produce the working material, *e.g.* paper from wood pulp or leather from animal skins. Such working materials will usually have a final water content (the equilibrium water content) which is in equilibrium with the surrounding atmospheric water vapour at the time of manufacture. However, as the atmospheric water vapour (humidity) content changes the water content of the working material will also change in proportion to the atmospheric change. Thus, as the humidity drops, the material will lose water and, as it rises, the material will increase in water content until it is in equilibrium with the atmosphere once again.

Provided such changes occur very slowly little damage is done; however if they occur quickly or the changes are very large then the equilibrium is greatly disturbed, the material is unable to respond quickly enough and large internal stresses are produced. Should these stresses become too great then the material will crack, warp or twist, bend or snap depending on its nature or the use to which it was put. Obviously, the more massive the material, the more difficult it is for the water vapour to enter or leave the interior and the more easily the material will crack or warp; that is, the smaller the change in humidity required to produce a dangerous stress situation.

Thin materials should, therefore, be less at risk due to humidity changes than bulky ones and this would be true if all material products were isotropic, that is, having the same properties in all directions. Unfortunately this is not the case: only materials such as paper and leather approach the isotropic state; wood, bone and ivory are anisotropic and respond to humidity changes depending on how they are cut or worked.

The ideal solution to the problems of distortion, stress and resultant mechanical damage would be to keep all organic materials at a humidity level which is at equilibrium with their post-processing water content by keeping all the objects composed of a particular type of material in the correct, humidity controlled atmosphere. Unfortunately, different organic materials need to be stored at different humidities as they usually have different equilibrium water contents. Thus a different humidity level would

be required for each type of material in a collection; an extremely expensive procedure. Also, many objects are made of mixtures of material types, and therefore, which of the materials should be chosen as the criteria for the correct storage environment has to be determined.

The most commonly occurring material in collections of interest to museums and art galleries collecting historical, ethnographic artefacts and paintings on stretchers or panels, is wood. Because wood is a particularly sensitive material with respect to humidity changes, the humidity in equilibrium with seasoned wood moisture content is chosen as a mean value for collections, and Museum and Art Gallery display areas are set at this level.

Unfortunately, the humidity, or water vapour content of air, varies with the temperature, that is, the colder it is the less water vapour the air will hold before saturation occurs and likewise, the hotter it is the more water vapour it will hold. Thus, the humidity must be stated with the temperature at which it was measured. To overcome this difficulty the ratio of water vapour content of the air at the temperature of measurement to the water vapour content at *saturation* (at the same temperature) is used as the criterion of atmospheric water content. This value is referred to as the Relative Humidity and is given the abbreviation RH. Because the RH value is a fraction (since a ratio has been used) the numerical value of RH is multiplied by 100 and the result expressed as a percentage. Thus measurements are usually made in, and results expressed as, percentage Relative Humidity. A value of 50 per cent of RH means the air is half saturated with water vapour, 25 per cent of RH a quarter saturated and 75 per cent RH three quarters saturated, and so on. The equilibrium RH for conditioned wood (14 per cent water content) is approximately 55 per cent and this is taken as the mean value by museums, art galleries and libraries for both display and storage environments. Where mechanical air conditioning systems are installed, such as the State Library and Archives, the Art Gallery of South Australia and the Anthropology archives of the South Australian Museum, then an allowance has to be made for the detection sensors sensitivity, inertia (response time) of the system to environmental changes and other factors so that a ± 5 per cent RH variation is allowed in actual levels of RH. The full range of RH is therefore 50 to 60 per cent. The change between these levels is expected to be very slow, usually a full year (60 per cent RH winter maximum to 50 per cent summer minimum). Where there is no mechanical or other air conditioning system, then robust buildings, such as basements or showcases, used in the display galleries, must be used to ameliorate the more rapid or drastic changes in the RH of the environment.

The effect of changes in Relative Humidity on sensitive, organic materials has been discussed; the effects of extremes of relative humidity on organic materials or the effects of normal or excessive conditions on inorganic materials also has to be considered.

Where the relative humidity rises beyond 65 per cent or falls below 40 per cent then a number of problems can occur. If it exceeds 65 per cent fungal spores can germinate on suitable materials, and outbreaks of fungal infection can occur. Should this not be detected early enough, it may spread rapidly causing serious damage due to staining and enzymic corrosion of the infested material. High RH can also promote corrosion of iron and copper alloys, such as bronze and brass particularly if they have been handled, placed close to the sea or coated with vegetable or animal products in the past.

If the RH falls below 40 per cent wooden objects will crack, and paper, textiles and many protein materials (e.g. sinew, rawhide) will become brittle. If such material is handled under these conditions it will often tear or split.

Effects of temperature

The main effects of temperature on artefacts held by the cultural institutions are usually less noticeable than, or often confused with, those generally associated with changes in RH. As we have seen RH is associated with temperature in the way it is defined, thus changes in temperature can affect the RH of an enclosed environment that is itself not temperature controlled. In such an environment, *e.g.* a show case or storage room, a rise in temperature will lower the RH and, conversely, a drop in temperature will raise the RH with the usual results for the object so displayed or stored. Fortunately the collections of the major state cultural institutions are, as explained previously, either stored and displayed in air conditioned environments or robust buildings which prevent temperature changes or at least ameliorate them. A further problem of temperature, in its effects on the deterioration of materials, is that chemical processes are accelerated by a rise in temperature and therefore any chemical deterioration, such as rusting, is also accelerated by such a rise in temperature given that other necessary conditions for the process to occur are not reduced in effect by the temperature rise.

Where collections contain waxes or resins these are subject to softening at higher temperatures and some pitch and asphalts have been known to flow due to excessively high temperatures in poor storage conditions where naphthalene has been used as an insect repellent (possibly due to the solvent effect of the naphthalene).

The optimum temperature chosen for display is $21^{\circ}\text{C} \pm 1^{\circ}$ which is low enough for the protection of the collections but high enough for visitor comfort. The same temperature is usually chosen for storage so that material transferred from storage to display is not affected by thermal shock. Some materials, such as leather, skins and paper would be better stored at a lower temperature, (*e.g.* 17°C), thus reducing chemical deterioration and deterring insects. Indeed, black and white films are stored at 15°C in other institutions than those under discussion. The major problems of storage at lower than normal (21°C) temperatures are that the custodians of the material so stored cannot work on it for long periods, material must be acclimatised slowly to 21°C before it can be used by students or scholars. This can take eight to twenty-four hours depending on the object and maintaining such conditions requires a separate air conditioning system which is a costly procedure. Therefore at present where temperature control of store areas is possible those areas are maintained at $21^{\circ}\text{C} \pm 1^{\circ}$.

The Forms, Use and Effects of Light

The third parameter the conservator is concerned with is that of light level. It is fairly obvious that without light we would not be able to see the objects normally displayed in art galleries or museums, or read the books or documents in a library or archives. However the use of the wrong type of light and at the wrong intensity can lead to serious damage of the material displayed or stored in these institutions.

Sunlight is made up of a whole range of radiations (the electromagnetic spectrum, EMS) the long wavelength radiations being associated with radiowaves, and the very short wavelength radiations, of high energy usually associated with X-rays and gamma rays. Between these two extremes lie the radiations we see as light, feel as heat or those we see as sunburn or suntan. The heat radiations we term infra-red (because they lie beyond the red end of the visible portion of the EMS) and the radiations responsible for suntan (or sunburn) we term ultra-violet (because they lie above the violet end of the visible portion of the EMS).

Although most of the high energy ultra-violet radiation from the sun is absorbed by the upper atmosphere and by window glass, some ultra-violet radiation of longer wavelength (lower energy) still can enter display spaces through windows and cause damage, as can infra-red radiation, to materials on display.

Both kinds of radiation cause damage to the materials held and displayed by our cultural institutions, particularly organic materials such as paper, leather, wood, canvas and ivory; infra-red by desiccating the material, making paper brittle and wood and ivory crack and warp, and ultra-violet by photochemical breakdown of the material structure itself.

To prevent this the windows may be treated with a proprietary reflective film which removes a large proportion of both ultra-violet and infra-red radiation or the windows can be blacked out and controlled artificial light used to illuminate displays. Because the intensity of sunlight is unpredictable its control is very complicated and many institutions tend to choose the latter method of illumination. However, even controlled artificial light has its problems and these, and their solutions, will be discussed later.

Where the State institutions, such as the Art Gallery, use natural light for colour rendering purposes the light is brought in through light lanterns in the roof which are fitted with ultra-violet filters and adjustable curtains so that light intensity can be controlled. In the State Library, Archives and Museum, where objects may be on display for longer periods than in the Art Gallery, controlled artificial lighting is used. Artificial light sources used in the Cultural Institutions are of two kinds: incandescent spotlights or bulbs and fluorescent tubes, each having their own peculiar advantages and disadvantages.

Incandescent sources, although low in ultra-violet content, have a high infra-red (heat) content and therefore are used only outside display cases and at some distance from them to prevent heat damage (desiccation) to the displayed artefacts. Fluorescent tubes of the normal domestic variety have low heat output (cool light) but are fairly rich in low energy ultra-violet light and therefore are avoided for museum, library and art gallery display lighting. However, fluorescent tubes are available which have a very low ultra-violet output and these are usually used both as general lighting and as in-showcase illumination. These lights are also generally used in storage areas, where daylight is totally excluded for obvious reasons, and here the lighting is so arranged as to be low-level, only on over the areas where work is to be carried out and, where possible, the objects are protected from excess illumination by the use of drawers, cupboards, or box storage unless actually being used or viewed. When the stores are not in use all lighting is turned off.

The amount of damage done depends not only on the type of radiation but also the intensity of the light, the amount of damaging radiation present and the length of time the object is exposed to the light source. It is therefore a product of time, radiation level and radiation content and it is the conservator's duty to see that these three parameters are controlled to minimise the damage done.

Although damage by light to particular materials, *e.g.* paper, can be accurately determined and therefore a time/intensity rating given, most artefacts are composite in nature and are made of materials with various time/intensity ratings. Therefore the time for which they may be displayed is difficult to determine. In cases such as this the most sensitive material is chosen as the criteria. Fortunately, most materials fall into two categories of sensitivity to light. Those most easily damaged; paper, paintings, leather, veneer (wood, bone or ivory), and textiles are considered sensitive material and can be displayed under low light levels no greater than 50 lux, for up to three months; the light source having an ultra-violet content of less than seventy-five microwatts per lumen. The less sensitive materials, such as bulk wood, metals, and stone are considered 'robust' materials and can be displayed at light levels up to 150 lux for periods of up to three months with light sources of ultra-violet output below seventy-five microwatts per lumen. Because of the time/intensity relationship higher intensity may with discretion be

used, but for shorter periods; likewise a lower intensity may be used for a correspondingly longer time.

Material Conservation and the Public

There are two major roles for institutions such as museums, art galleries and libraries in any community; the first is entertainment and the second education. In most cases the collections of the South Australian institutions were originally brought together as an educational and scientific resource and also as a gathering of man's achievements in the fields of fine art and decorative art; again an educational resource, but one with historical significance. It is because of this educational role, in its widest sense, that the conservation of these collections is so important. If we allow the rare books, ethnographic artefacts or works of art held by the State in trust for future generations to disintegrate for want of proper conservation, then we are depriving our descendants of the heritage which our forebears passed on to us.

Further Reading: 'The South Australian Museum and Its Collections' *South Australian Year Book* 1982.

APPENDIX I

MAJOR AUSTRALIAN CULTURAL COLLECTIONS

Conservation Department	Date of Facility	Environmental Control	Plans for Development
Western Australia			
Western Australian Museum	1981	Yes	No
Art Gallery of Western Australia	October 1979	Yes	No
Battye Library of Western Australia State Archives State Reference Library	Planning approved	Yes	1984
Total			
New South Wales			
Art Gallery of New South Wales	1970	Yes	Probably 1988
Museum of Applied Arts and Sciences	December 1979	Yes	Complete April 1982
Australian Museum	1971	—	No immediate expansion planned
Archives Authority of New South Wales	June 1978	—	Yes—1984 (Kingswood)
Mitchell Library—State Lib. Gen. Ref. —Bindery	1967	Minimal	Yes—1988
Total			
ACT			
National Library, ACT	1972	Yes	Yes
National Archives, ACT (Temporary—Fyshwick)	January 1979	Yes	Yes
National Archives Repository, ACT (Research/Training Laboratory—Mitchell)	1981	Yes	No
Australian War Memorial	1978	Yes	No
Australian National Gallery	1982	Yes	No
Total			
Victoria			
National Gallery of Victoria	—	Yes	—
Labrobe Library, Victoria	1971	—	Yes
Public Record Office, Victoria	1973	Airconditioning only	Desirable
National Museum of Victoria	1980	—	Yes
Archives, Ballarat	—	—	No
(Ballarat) Regional Conservation Centre	1976	Heating only	—
Total			
Queensland			
Queensland Art Gallery	1982	Yes	—
Museum	June 1980	Yes	Yes
Library	—	—	Yes 1985
Archives	1970	—	No
Fryer Library, University	1975	—	—
Commonwealth Archives, Brisbane	1981	Yes	—
Anthropology Museum Conservation Laboratory	1974	Yes	—
Total			
South Australia			
South Australian Archives	1976	Yes	Yes
South Australian Library	—	—	Yes
Commonwealth Archives	1963	Yes	No
Art Gallery of South Australia	1962	No	Yes
South Australian Museum	1978	No	Yes
History Trust of South Australia	—	—	Yes
Total			

APPENDIX I

AND CONSERVATION RESOURCES, 1982

Nature and Size of Collections	Current No. Conservators	Current No. Support Staff	Size of Existing Facilities (net)
Everything except Fine Art and Books, Archives	17 + 3 (temp. full time) 3	1 full-time typist 1x1 day a week	1 220 m ² inside + 1 000 m ² outside, 300 m ² paper 33 m ² mountcutting 50 m ² paintings 217 m ²
Graphic Art 2 700 3-D Works 1 900 Easel Paintings 720 Ethnographic 300	1 (6-1984)*	1x1 day a week (3-1984)*	
Cartographic 36 509 Bound volumes, Serials, Scores 364 227 Archives and Unbound Serials 33 360 shelf metres Photographs 250 000 images Cassettes, Records, Reels of Film 10 158	24 (29-1984)*		2 600 sq m
Graphic Art 5 817 3-D Works 2 073 Easel Paintings 562 Easel Paintings 2 119 Photographs 572	5 + 1 (regional) + 1 volunteer	1x1 day a week	325 m ²
Technology Equipment, Transport and Engineering, Applied Arts, Electronics, Machinery	7 + 5 temp. + 3 contract restorers	6 (4 temp) restorer/ preparators	220 m ²
Australian + Pacific Ethnological & Archaeological Rest of World Ethnological & Archaeological 18 483-35 shelf metres	5 + 3 temp. + 1 volunteer	1 typist + 1x1 day a week 1 photographer 1 typist—3 days 1x1 day 20 (bindery)	246 m ² 85 m ² 85 m ² 193 m ²
812 000 volumes	2		1 054 sq m
	33		
Graphic Art 20 000 Photographs 200 000 Easel Paintings 600 Glass Negatives 20 000 Historic Photographs 40 000 Historic Photo Albums 600	6 + 2 students	1½	95 m ²
	3	0	376 m ²
	0	0	415 m ²
Easel Paintings 4 000, Relics 40 000, Graphic Art 7 750 Easel Paintings 600 Graphic Art 12 000-15 000 Textiles 3-D 550 Ethnographic (Cataloguing incomplete)	11 + 1 part time + 2 12 (until 1985)	33 3 (until 1985) Access to Gallery Photographic Department	600 m ² 600 m ² (approx)
	33		2 086 sq m
Graphic Art 25 000 Easel Paintings, Sculpture, Decorative Arts etc. 35 000	4 (1 vacant)		240 m ²
Documents 25 846 shelf metres	3 (1 vacant) 1 trained Binder	2 (Binder, Technician)	56 m ²
Natural History, Anthropology 86 000	1	None	14 m ²
To service 16 Regional Galleries	3 (2 vacant)	2 0	631 m ² 200 m ²
	12		1 054 sq m
Total collection, approximately 15 000 items (not yet catalogued)	3	Access to Gallery Typist, Photographer & Workshop	345 m ²
Ethnographic 100 000 approximately History and Technology 30 000 approximately	1	Access to Museum Staff, Outside Contract Work	66 m ²
Photo Albums 300 Stamps several thousands Art Works 700 Glass Negatives 600 Books 11 000 Phone Discs 20 000 Single documents, plans, films, photos Manuscripts 16 shelf kilometres	0		—
Not catalogued 8 000 shelf metres, approx. 10% requires conservation Ethnographic 500	1 (awaiting reclassification) 1 0 2 part-time 7	1 Binder full-time + 1 general assistant, 3 days 0 —	40 m ² 14 m ² 158 m ² 150 m ²
			773 sq m
Only items requiring treatment mentioned	1 (awaiting reclassification)	Access to photo & clerical	45 m ²
Documents/manuscripts, newspapers 200 000		1 Rare-Book Binder	20 m ²
Watercolours 800 Photos 50 000	0		90 m ²
Glass Negatives (a/v) 24 000 Wax Cylinders 600	1		90 m ²
Books 100 000 Phone Discs 20 000			
Docs./Mss./Newsp. n.a. 8 000 Photos, Slides 90 000			
Graphic Art 21 118 Dec. Arts/Sculpture 6 004			
Easel Paintings 1 392 Textiles, Photos, Primitive Art.			
Ethnographic 49 000	1	1 Assistant & secretarial	45 m ²
Metals, Ceramics, Furniture, Textiles 1 400	—		0
	3		290 sq m

*planning

approved

PART 2

EXPLORATION AND COLONISATION

PRE-HISTORY

Man entered the Australian continent from South-East Asia during the last glaciation at least 40 000 years ago, when sea levels were lower than in recent times. Nevertheless, these first migrations would have entailed sea voyages of at least some sixty kilometres. Settlement was well established at least 25 000 to 30 000 years ago, and by 20 000 years ago almost all the continent was inhabited.

The original Australians lived as hunters and gatherers, using tools of wood, bone and stone. The archaeological evidence indicates that originally there was a simple, pan-continental toolmaking tradition characterised by stone core tools and scrapers used to make further tools of wood. This tradition persisted until 5 000 to 6 000 years ago, when a series of new influences became apparent. A range of more specialised and sophisticated small tools was added to the old technology. The dingo, the only animal domesticated by the Aborigines, also entered the continent at this time. These new influences never reached Tasmania, isolated for some 12 000 years by the post-glacial rising seas, where a few thousand Tasmanian Aborigines maintained the culture of the late Pleistocene period until the European settlement of the island.

The Aborigines probably achieved maximum exploitation of local resources within the limits of their technology. Population balance had apparently been attained long before European settlement, and anthropologists accept that there were at least some 250 000 to 300 000 Aborigines in Australia in 1788. They were divided into some 500 small groups, speaking a variety of languages and dialects. These 'tribes' were further divided into 'bands'—families or clusters of family groups—which formed the basic self-sufficient economic unit and ranged within territorial limits. Labour was divided

between the sexes: the men hunted while the women foraged for the roots, seeds and small animals which formed a basic part of their subsistence. When abundant food or water supplies were available, or when ceremonial obligations demanded, local groups would congregate; in leaner times they scattered. Ceremonial exchanges of goods at these gatherings led to their wide dispersal. Religious and ceremonial activities related to the land were a vital part of Aboriginal life. There is evidence that they had developed the use of ochre as a ritual painting material as early as 25 000 years ago, while some form of ritual burial was also practised at this time.

The physical barriers of distance and aridity within Australia itself were cause in part of the cultural isolation and linguistic diversity of its people. European exploration and settlement was for most Aboriginal societies their first contact with an outside culture. The impact of this settlement rapidly led to the disappearance of the traditional Aboriginal way of life in those areas where the colonists established themselves most successfully.

At the time of European settlement of South Australia in 1836 there were about 12 000 Aborigines in South Australia.

EXPLORATION BEFORE COLONISATION

The Dutch made the first recorded discovery of Australia in 1606 on the Gulf of Carpentaria, and Dutch ships were sighting Western Australia from 1616 onwards. It was in 1627 that the first part of the South Australian coast was discovered when the *Gulden Zeepaard* under the command of Francois Thyssen examined the coastline from Cape Leeuwin to the islands of St Francis and St Peter in the far west of South Australia. On board the *Gulden Zeepaard* was Pieter Nuyts, 'Councillor Extraordinary of India', after whom this area was named 'A Landt Van P. Nuyts'.

As the South Australian coast presented no evidence of prospects for trade, the Dutch, being essentially a trading nation, were not inclined to closer investigation. Indeed, so little interest was displayed in this section of the Australian coastline that it was 165 years before the next recorded sighting of South Australia was made, and this was by a French explorer.

Rear-Admiral D'Entrecasteaux, who had been searching all around Australia for the lost French explorer La Perouse, sighted land south of Cape Leeuwin in December 1792 and examined the cliffs of the Great Australian Bight. He sailed to the head of the Bight, but then after so many miles of barren coast abandoned hope of finding anything other than desolate country, and sailed south for Van Diemen's Land (Tasmania). The early impressions of the South Australian coast were therefore most unfavourable and tended to discourage further investigation.

The British who followed were far more interested in the possibility of colonisation to help ease their population problem at home, and consequently, once the effects of early discouragement had worn off, they began to take an interest in South Australia as a possible site for a new colony. Lieutenant James Grant was the first British explorer to sail along the South Australian coast, sighting the extreme easterly shores of South Australia about 1800. While in Cape Town he had been informed of the discovery of Bass Strait and was instructed to sail through it in the *Lady Nelson* on his way to Port Jackson. Sailing along the extreme south-east coast he named Cape Banks, Cape Northumberland, Mount Schank and Mount Gambier.

The first notable British contribution to the exploration of the South Australian coast came, however, with the voyages of Matthew Flinders in the *Investigator*. With the support of the President of the Royal Society, Sir Joseph Banks, Flinders sailed from England on 18 July 1801. On his voyage of circumnavigation of the Australian continent he thoroughly explored the coast of South Australia between January and April 1802. In

addition he discovered the Gulfs and Central Highlands, thus solving the question of whether a north-south strait divided the Australian land mass in two. More important was the fact that Flinders reported very promising country for settlement. Many places along the coast carry the names given by Flinders; several of these were named after places in his home county of Lincolnshire, e.g. Port Lincoln, Sleaford, the Althorpes and Boston Bay, while others include unusual names such as Backstairs Passage, The Pages, and Antechamber Bay. Flinders was in fact the first man to explore South Australian waters between Nuyts Archipelago and Encounter Bay. It was at Encounter Bay on 8 April 1802 that he met Captain Nicholas Baudin, the French explorer, heading along the coast from the east in *Le Geographe*.

Baudin, in command of *Le Geographe* and accompanied by *Le Naturaliste*, left Le Havre in October 1800 with instructions to explore several specified regions including the then unknown portion of the southern coastline of Australia. After being delayed in the East Indies and Van Diemen's Land, Baudin sailed westward and charted the mainland coast from Western Port to Encounter Bay, where he met Flinders. The object of Baudin's expedition was to make scientific discoveries on behalf of Napoleon, but he had wasted considerable time *en route*. Thus most of the South Australian mainland coast was discovered before him by Grant and Flinders, and he was the original explorer of only a small section between Cape Banks and Encounter Bay. Some French names still remain, for example Lacepede Bay, Guichen Bay and Rivoli Bay. After the meeting at Encounter Bay, Baudin sailed further westward and along the northern shore of Kangaroo Island to Murat Bay, before being forced to abandon further exploration and to return to Port Jackson in June 1802. However, after re-equipping his expedition and with the addition of another ship (*Casuarina*) for charting work in shallow waters, Baudin returned to the South Australian coast by way of King Island in Bass Strait. Leaving King Island on 27 December Baudin in *Le Geographe* and Freycinet in command of *Casuarina* headed direct for Kangaroo Island where they circumnavigated the whole island and charted its coast, being the first to chart its southern and western shores. This was to be the last major contribution made by an official French expedition to exploration of the South Australian coast.

Although these discoveries on the South Australian coast did not lead to any immediate colonisation, there began an increasing series of visits by sealing vessels to Kangaroo Island. A group of American sealers built a schooner on the island in 1804, while wild gangs of sealers and runaway convicts were forming settlements from 1806 onwards. In addition, French exploration in the area had led to a fear on the part of the British authorities that it might result in French colonisation, and, although not greatly valuing the area for itself, the British would have found it an embarrassment to have the French settled on the Australian continent. As a result, in 1804, the British sent Grimes, a government surveyor, to Kangaroo Island to report on it as a possible site for colonisation. The Grimes Report was most unfavourable, stating that the soil was poor and that the island lacked fresh water. On the other hand, in 1819 a Captain Sutherland visited the island and wrote an over-optimistic report on its future. It was this report which later led the South Australian Company into establishing their first station there in 1836.

In the period between 1804 and 1836 a number of further discoveries took place at various parts of the South Australian coastline by Captains Dillon (1815-16), Goold (1827-28), Hart (1831-33), and Jones (1833-34), together with the discovery of Lake Alexandrina by a group of sealers in 1828. Reports of this period were marked by contradictions regarding the suitability of South Australia for settlement. However, contradictory as were these accounts reaching England, they managed to convince the founders of South Australia even before 1830 that the available fertile land was more than adequate for the founding of a colony.

The most significant explorations of the period immediately before colonisation were those of Captain Charles Sturt, who explored the Murray River from New South Wales down to its mouth; traversed Lake Alexandrina and located the Goolwa channel, reaching the western shore of the Murray mouth on 12 February 1830. Captain Sturt's journey has become something of an epic in Australian history; with a small party of soldiers and convicts he rowed 2 700 kilometres on the Rivers Murrumbidgee, Darling and Murray. They suffered from desperate weariness, endured a distressing lack of provisions, and were periodically attacked by Aborigines. However, the main object of Sturt's journey was accomplished; the settling of the long insoluble 'problem of the rivers' of south-eastern Australia. But the real significance to South Australia was more than the mere settling of what was little more than an academic question, for his discoveries opened up 3 200 kilometres of navigable inland waterway and gave to Gulf St Vincent, which lay so near the mouth of the Murray, a new significance. It was the age of canal building in Europe and of the development of the Mississippi in America, so that navigable water was considered of prime importance. The exuberance felt by everyone interested in South Australia at such a discovery is typified by the Wakefield theorists who believed that the entire produce of eastern Australia would eventually be shipped from this area. In fact, the Murray became the grand attraction of the scheme. However, Sturt's own fervour at this stage was somewhat cooler than that of interested persons in England for there was one great disappointment which marred his discovery—the Murray lacked a sufficiently safe navigable mouth. Sturt found that the Murray flowed into a series of shallow lakes and a sand-blocked mouth. So little did Sturt's contemporaries understand the earth movements and land formation of the area, that their only conclusion was that there must somewhere be another channel emptying the waters of the Murray into the sea. So, the 'problem of the rivers' was replaced by the 'mystery of the Murray mouth'—and official action was to be taken promptly to solve this mystery.

Governor Darling of New South Wales sent Captain Collet Barker to the southern coast to try to solve the mystery of the Murray. Barker, landing at Noarlunga on 17 April 1831 ascended Mount Lofty and then returned to his ship, the *Isabella*, and examined Port Adelaide. After landing again at Rapid Bay, he crossed the hills to the Murray, thus proving that the river had no westerly outlet. Barker's expedition came to a tragic end when, under mysterious circumstances, he was apparently murdered at the Murray mouth by the usually peaceable Narrinyeri natives. This was the first of a long series of tragic deaths, mainly arising out of navigational difficulties, in the area of the Murray mouth which tended to discourage navigation later. Barker's party, however, reported fertile country in the region and the existence of a pass from the Murray mouth to Rapid Bay on Gulf St Vincent. While Barker's expedition proved without doubt that there was no really navigable connection between the Murray and the sea, it added to the rapidly growing volume of favourable accounts of the fertility of the region around Gulf St Vincent. Interested people in England were so obsessed with the geographical fact of the great Murray waterway opening up the centre of Australia that they barely registered the unfavourable accounts of its egress to the sea.

Probably the greatest encouragement for the settlement of South Australia came from Charles Sturt himself who, after his return to Sydney in May 1830, wrote *Two Expeditions into the Interior of Southern Australia* (published in 1833), in which he said: 'My eye never fell on a country of more promising aspect, or more favourable position, than that which occupies the country between the lake and the ranges of St Vincent's Gulf, and continuing northward from Mount Barker, stretches away without visible boundary'. This glowing report, together with that of Barker's expedition, was welcomed by those in England seeking a suitable site to establish a colony where the principles of the Wakefield Plan could be applied without restriction. Sturt spared no efforts in converting

opinion to the potentialities of South Australia and, as well as his *Two Expeditions*, he wrote a private letter to the Colonial Office on 17 February 1834. Sturt actually marked the present position of the Outer Harbor at Port Adelaide as the proper and natural site for the capital. 'It is in the angle formed by the creek with the coastline that I would recommend the formation of a township, . . . because it appears to me that when the distant interior shall be occupied and communication established with the lake and valley of the Murray, the banks of this creek will be the proper and natural site for the capital. . . . The level country to the north would be overspread, the valley of the Murray would be peopled, every available spot would be located, and its numerous ramifications would afford pasture for thousands of cattle'. In his reasons for this opinion he showed more foresight than he was to do later when, in disagreement with Colonel Light, he supported those who wished to move the capital to Encounter Bay.

Colonel William Light, who had been appointed Surveyor-General of the new colony, sailed from England in the *Rapid* on 4 May 1836 with instructions to select a site for the capital of the colony. After a brief visit to Encounter Bay, which he found unsuitable, he landed at Nepean Bay on Kangaroo Island where some South Australian Company ships had already established a settlement.

From here Light explored the east coast of Gulf St Vincent. Then, pressed for time by the unexpected arrival of the new settlers, he was able to make only a quick trip to Port Lincoln and a brief inspection of part of the west coast of Gulf St Vincent before, in concurrence with Sturt's earlier opinion, he decided that the most suitable site for Adelaide was on the banks of the small, but centrally situated, River Torrens.

COLONISATION

The colonisation of South Australia was in itself an experiment involving certain new principles and was to represent a turning point in British colonial policy. The period was conducive to colonisation as in Britain there was wide-spread unemployment and poverty, the popular remedy for which was emigration. Nevertheless the somewhat revolutionary nature of the plans was to result in seven years of negotiation and considerable modification of early ideas before the colonisation of South Australia was finally approved.

The theoretician was Edward Gibbon Wakefield, whose ideas were contained in a number of writings including the now famous *A Letter from Sydney* series, written in 1829 while he was imprisoned in Newgate Gaol. Wakefield's plans involved three broad principles: the sale of land; the use of the receipts for sponsoring emigrants; and the granting of some measure of self-government. Drawing on developments in New South Wales, Wakefield argued that the then current system of giving away vast tracts of land to settlers resulted in an imbalance between land and labour. It was therefore desirable to restrict land distribution and increase the labour supply, and this could be done by selling land at a suitably high price to prevent all labourers becoming landowners and by devoting the proceeds to free passage for a carefully selected labour force.

At the same time, following conflicting observations by early explorers, encouraging reports of the South Australian coastline filtering in from traders and seamen gave rise to moves for the practical application of Wakefield's ideas for the founding of a colony in South Australia.

The first attempt to form a colony was made by Robert Gouger who, having met Wakefield in Newgate Gaol in 1829, was so impressed with his ideas as to approach certain interested parties with a view to purchasing a tract of land in South Australia. He was unable, however, to gain sufficient support to interest the Colonial Office in his plans. In 1830 the National Colonization Society was formed with Gouger as its

secretary. The Society served to further disseminate Wakefield's principles, but was not directly associated with plans for a colony in South Australia.

Renewed interest in colonisation followed the first of Captain Sturt's enthusiastic reports of the land of the lower Murray and in 1831 a group of intending settlers, still enthused with the ideas of Wakefield, formed the South Australian Land Company. A committee headed by Colonel Robert Torrens approached the British Government for a charter and then made preparation for the first voyage. The Government was not prepared to grant the necessary territory, and negotiation continued until 1833 when the Company finally conceded that the Government was unlikely to approve any plans involving a chartered colony.

From the same core of enthusiasts who had supported this and earlier ventures there emerged in 1834 the South Australian Association. This group was prepared to abandon hopes for a chartered colony, conceding the issue of self-government, provided that the enabling legislation accommodated Wakefield's other principles for land sales and migration. The passage of the legislation was by no means smooth; the scheme was new and involved untried principles, and knowledge of the territory was still extremely limited. Doubts on the suitability of the site were to be largely dispelled by the writings and personal representations of Sturt and the confirmatory expedition by Barker, and finally in July 1834 legislation for a colony in South Australia was put before Parliament. This legislation represented a considerable compromise on earlier plans.

The South Australian Colonization Act (4 & 5 William IV. Cap. 95) was assented to on 15 August 1834; the persistent efforts of Gouger, Torrens, and many others for a settlement in South Australia had finally borne fruit, and at least some of the ideas of Wakefield were to be tried. The territory allotted under the Act embraced 802 508 square kilometres, with the western boundary the 132nd meridian of east longitude and the other boundaries virtually as they are today. The colony was to be opened to settlement by British subjects, but under no condition were convicts to be admitted, making South Australia the only State to be settled entirely by free persons. Authority was to be divided, with the Colonial Office through the Governor controlling all affairs of government except land sales and immigration, these fields being reserved to a Board of Commissioners. Provision was made for self-government upon the population reaching 50 000. All land alienated by the Crown was to be sold at a price of not less than '12 shillings' (\$1.20) per acre and the whole of the proceeds used in 'conducting the emigration of poor persons from Great Britain and Ireland'.

Although Parliament was prepared to authorise the experiment it was not prepared to finance it; the colony was to be self-supporting. The Commissioners were accordingly authorised to borrow \$400 000 against future general revenue to finance the founding of the colony and the establishment of government, and \$100 000 against the sale of land to start the migration program. Finally, the Act contained two conditional clauses which were to harass the whole venture and served to delay colonisation another twelve months. The first of these conditions, which were to be satisfied before the Commissioners could exercise their general powers, required that government securities to the value of \$40 000 be lodged as a guarantee for the venture. Secondly, land to the value of \$70 000 was to be sold before settlement.

A Board of Commissioners with Torrens as Chairman was appointed early in 1835. The Board immediately offered land in the new colony at \$2 an acre including rights to a city acre with every 80 acres of rural land. In spite of considerable publicity, unsurveyed land in an unknown colony proved difficult to sell, and with less than half the land sold the price was reduced to the permitted minimum of \$1.20 an acre. Finally, George Fife Angas, a member of the Board, together with two others took up the balance

of the land on behalf of the South Australian Company, which was then in the process of being formed.

In December 1835 with sufficient land sold and with the \$40 000 guarantee lodged with the Treasury, the Commissioners were free to begin the business of colonisation. The South Australian Company was formed in January 1836, and in February two ships of the Company, the *John Pirie* and the *Duke of York*, sailed for Kangaroo Island to establish a settlement. Another Company ship the *Lady Mary Pelham* followed later.

The *Cygnets* carrying the Deputy Surveyor, G. S. Kingston and his staff left at the end of March and the *Rapid* with Colonel William Light, Surveyor-General, on board departed at the beginning of May. One of Light's most important tasks was to choose a site for the first settlement and details of his early movements are given on page 60. The first Company vessels reached Kangaroo Island in July, and colonists arrived at Adelaide from early November. The first Governor of the colony, Captain John Hindmarsh RN, arrived at Holdfast Bay on 28 December 1836 and the new colony was officially proclaimed on the same day. By this time some 300 colonists were already in residence. Hindmarsh was to remain in the colony for eighteen months, a period marked by political feuding and very little progress.

The one outstanding feature of the first two years was the work of Light. Expected to carry out difficult tasks with an inadequate staff Light first had to contend with opposition to his choice of a site for Adelaide. His views prevailed and the city was surveyed to his plan and the land was allotted by March 1837. There were 700 one-acre lots in Adelaide south of the River Torrens and 342 one-acre lots in North Adelaide. Victoria Square was situated in the centre of the City and there were four other squares in Adelaide as well as one in North Adelaide. An important feature in Light's plan was the extensive parklands surrounding the City.

The survey of country land for the preliminary purchasers proceeded very slowly and it was not until May 1838 that the first ballot for country sections was held. At the same time the survey staff were becoming increasingly disgruntled with the unrealistic demands of the Commissioners and in June almost the entire staff resigned. Light died in October 1839.

While the preliminary survey was in progress the settlers remained in Adelaide where their energies and resources were largely devoted to speculation in town lands and in land orders, and where supplies had to be imported with a corresponding outflow of capital. Superimposed on this situation was the continual arrival of new immigrants who served only to increase the number of unemployed.

Much of the inactivity of the colony was brought about by constant clashes between Hindmarsh and the Resident Commissioner J. H. Fisher, which finally led to the dismissal of Fisher and the recall of Hindmarsh in July 1838. It was realised that the divided authority as incorporated in the Colonization Act was impracticable, and the next Governor, Colonel George Gawler, was authorised to represent both the Crown and the Commissioners.

Appalled at the stagnation of the colony, Gawler immediately undertook a liberal spending program. Surveying was considerably increased with the result that 200 000 hectares had been surveyed by mid-1841. At the same time an extensive public building and works program provided relief for the unemployed. Generally, Gawler created a renewed state of optimism which remained until 1840 when land values were depreciated and sales declined. Immigrants continued to arrive throughout this period.

Most of Gawler's expenditure was met by bills drawn on the Commissioners in London. In 1841 a situation was reached where the Commissioners could no longer honour these bills and Gawler was summarily replaced by Captain George Grey. The Imperial Parliament met the bulk of the debts, and in 1842 the Board of Commissioners

was abolished. Thus the small measure of independence which the Board represented disappeared and South Australia became an ordinary Crown Colony.

The term of office of Grey was in contrast to that of Gawler, with Grey imposing rigid economies. Public expenditure was cut and considerable unemployment with its accompanying hardships followed. Speculation ceased and the unemployed gradually left Adelaide to be absorbed on the lands which Gawler had opened up. By this time the flow of immigrants had ceased with the suspension of the assisted migration scheme.

By 1844 the colony was producing wheat in excess of its needs and when Major Robe succeeded Grey as Lieutenant-Governor in 1845, South Australia finally became self-supporting. Moreover prosperity was on the doorstep; copper had been located at Kapunda in 1843 and a major find was made at Burra in 1845. Heavy immigration followed these discoveries and continued until the Victorian gold rush. Copper soon became the principal export, with wool providing a complementary cargo. In addition, the repeal of the Imperial Corn Laws in 1846 and the Navigation Acts in 1849 strengthened the export trade in grain.

The discovery of gold in Victoria in 1851 had a two-fold influence on the development of South Australia. In the first place it drained off a large proportion of the skilled artisans and forced the closing of the copper mines. Secondly it gave great impetus to agriculture when the price of wheat rose sharply—the feeding of the miners became as attractive a proposition as was the actual mining. Four years later, when the miners returned, many of the more fortunate purchased land with their winnings.

At the same time political changes were taking place and in 1856 South Australia attained self-government.

EXPLORATION AFTER COLONISATION

Only a minor portion of the area proclaimed as South Australia was to prove economically viable, but extensive exploration with its accompanying hardships was necessary to establish this fact. Post-colonisation exploration was of two forms; the first being the continuous process of discovery as settlers sought grazing and crop lands and sometimes mineral resources, and the second the more deliberate activities of the professional explorers as they sought to cover vast distances through unknown terrain.

The earliest exploratory moves of the colonists were directed towards establishing an overland route between Adelaide and Encounter Bay, and in discovering a north-easterly passage to the River Murray that would by-pass the Mount Lofty Ranges. Contact was first made with Encounter Bay in about July 1837 by Colonel Light and J. H. Fisher, and in December of the same year an expedition by Strangways and Hutchinson played a further important part in making contact with the River Murray by driving a bullock cart across the ranges to Encounter Bay, and then exploring the Murray mouth, the Goolwa channel and the southern part of Lake Alexandrina. The north-easterly route to the Murray was first traversed successfully early in 1838. Penetration of the Mount Lofty Ranges began in 1837, and by the end of the year parties had crossed the ranges and descended to Lake Alexandrina.

From the beginning of 1838 attempts were made to open up stock routes from the eastern States. Joseph Hawdon and Charles Bonney were the first to make an overland cattle drive to Adelaide. Leaving Hawdon's station near Albury on 13 January 1838 with a party of seven men, they took a route which followed the Murray for much of the way, and reached Adelaide in eleven weeks with the cattle in good condition and only four head out of 300 lost *en route*. At the same time Edward John Eyre was making a similar cattle drive, but after unsuccessfully trying to find a suitable trail south of the Murray, he was forced to make his way back to the Loddon River and then follow the trail taken by Hawdon and Bonney. In another journey starting in 1838, Eyre became the first to

bring sheep overland to Adelaide, driving 1 000 sheep and 600 cattle along the Hawdon trail. Charles Sturt was another to make an early stock drive to Adelaide, while Bonney in 1839 pioneered an alternative route which followed the south-east coast of the State and crossed the Murray above Lake Alexandrina.

Other parts of the State were also attracting attention. A section of Yorke Peninsula was visited in 1838, and in the following year a number of expeditions were made into the hinterland of Port Lincoln. Thus by 1840 the area within an 80 kilometre radius of Adelaide had been explored for pastoral, farming and mineral lands. Settlers had also ventured by boat along the Murray, by boat to Port Lincoln and thence inland, and by boat and overland to Yorke Peninsula. Reports by drovers who came down the Murray suggested that the land on the other side of the Murray was of little immediate value. It was soon to be realised, however, that very different conditions prevailed in the Lower South East, and by the mid-1840s this area was supporting a considerable sheep population.

Knowledge of the arid interior and of the far west coast was to be obtained from a number of major expeditions, the first such venture being led by Edward John Eyre. In 1839 Eyre journeyed north to Mount Arden, at the head of Spencer Gulf, where he established a base camp. From Mount Arden he made the first sighting of the dry bed of Lake Torrens. Crossing to Port Lincoln, Eyre proceeded up the west coast of the peninsula which came to bear his name, passed through Streaky Bay, and came to within 80 kilometres of the Western Australian border. The return journey to Mount Arden camp was made across the top of Eyre Peninsula.

The interest of the colonists was now divided between the country to the north, including Eyre's new-found lake, and the possibility of establishing an overland stock route to Western Australia. Eyre having just returned from the desolate country of the Great Australian Bight showed little enthusiasm for the latter idea, and in June 1840 set out for the north. From Mount Arden he made three attempts to penetrate beyond the lakes, but after following the Flinders Ranges to Mount Hopeless and making a number of observations, he concluded that Lake Torrens was a giant horseshoe-shaped salt lake forming an impassable barrier. This erroneous belief was to persist for eighteen years.

Thwarted in his efforts to go north, Eyre decided to attempt the western crossing. Leaving Mount Arden the party separated, one group going direct to Streaky Bay while Eyre went down to Port Lincoln. The party reformed at Streaky Bay and moved to Fowlers Bay, where a camp was established in November 1840. After a number of preliminary explorations around the Bight, Eyre and a small party set out for King George Sound (Albany) in February 1841, having sent the remainder of the party back to Adelaide. Eyre arrived at King George Sound in July after an extremely tortuous crossing.

In 1842 and 1843 the Surveyor-General, Colonel Frome, made two trips to the Lake Torrens region in an attempt to determine the nature of the area. However, after reaching a 'desert-like' Lake Frome (which he believed to be part of Lake Torrens) he turned back, making two short thrusts to the east on the return journey. Frome had seen enough to be able to report that there was no country as far as the meridian 141° (and probably much beyond it) available for either agricultural or pastoral purposes.

Captain Charles Sturt, whose earlier journey down the Murray had helped precipitate the colonisation of South Australia, was again to contribute to South Australian exploration. Considerable mystique had developed concerning Central Australia, including the rumoured presence of an inland sea, and in August 1844 Sturt set out from Adelaide in an effort to unveil this area. Hoping to avoid the supposed horseshoe lake, Sturt followed the Murray and Darling Rivers to Menindee. After passing through Broken Hill and seeing Eyre's Mount Hopeless from the other side of the lakes, the party moved to

Mount Poole some 300 kilometres north of Menindee. Here they rested for six months while waiting for rain to fall. In July 1845 Sturt set off in a north-westerly direction crossing Sturt's Stony Desert and the north-east corner of the State. Although temporary relief was provided by Eyre Creek, the course of which they followed for some considerable distance, the desert nature of the subsequent terrain forced the party to turn back when very close to their central goal, and only 800 kilometres from the Gulf of Carpentaria. A second assault on the desert also failed, although Sturt explored along Cooper Creek for almost 150 kilometres before returning to the base camp and thence to Adelaide in January 1846.

In 1846 John Horrocks led a small party north from his station, Penwortham, through the Flinders Ranges *via* Horrocks Pass (so named by the party) and on to a camp site at Depot Creek. The party had brought with them the only camel then in the colony, the first time one had been used for exploration work in Australia. From Depot Creek, Horrocks made two trips, the first of about 30 kilometres and the second about 100 kilometres to Lake Dutton where, jostled by his camel, he accidentally shot himself, thus bringing the expedition to an early end, but not before he had formed the opinion that there was no suitable pastoral land in that direction. Horrocks died of his wounds about three weeks later.

Further to the west a small expedition led by John Darke explored country to the north and east of the Gawler Ranges, and concluded that there was no useful land for settlers in this region. On his way home to Port Lincoln, Darke was mortally wounded by natives near what is now known as Darke Peak. In 1857 Stephen Hack explored the country west of Lake Gairdner and found useful pastoral country at the south-western end of the Gawler Ranges.

At about this time the northern lakes again became a centre of interest. In 1856 there had been considerable rainfall in the area, and when the Deputy Surveyor-General, G. W. Goyder, visited Lake Torrens he found an inland sea surrounded by excellent vegetation. Goyder's glowing report was, however, discounted by a return journey the following year. Indeed the extremely fickle seasons experienced in the north were to lead to many conflicting reports as the explorers and settlers moved northwards. Between 1857 and 1859 several exploratory expeditions visited the region of Lake Torrens and it was during this period that the myth of the horseshoe lake was destroyed. Knowledge of the lakes district was extended by B. H. Babbage, who discovered Lake Eyre in 1858, and Major P. E. Warburton, who located the first stock crossing. A. C. Gregory, coming south from Queensland in search of Leichhardt, passed between the lakes *en route* to Adelaide in 1858.

At the same time parties were searching for pastoral country in the north, with the most extensive search being made by John McDouall Stuart in 1858. Stuart, who had been in Sturt's party in 1844, set out from Mount Arden, passed to the west of Lake Torrens, and circled north of Coober Pedy, returning to Mount Arden *via* Fowlers Bay. In the meantime the South Australian Government was offering a reward for the first successful north-south crossing of the continent, and after making two exploratory journeys to the north in 1859, Stuart set out in March 1860 to attempt such a crossing.

Stuart had an advantage over Sturt in that the intervening years had revealed the lakes to be passable and thus he was virtually able to begin his expedition at Chambers Creek at the southern tip of Lake Eyre, and to pass through known country as far as The Neales watercourse. Stuart reached the MacDonnell Ranges in the Northern Territory in April, and later the same month estimated that he had reached the centre of the continent. His attempt to reach the northern coastline was thwarted however, and in June he turned back. In a second attempt in 1861 he followed the same route and this time reached Newcastle Waters before being forced to return. At his third attempt Stuart

was successful, reaching the sea on 24 July 1862 and establishing a route which was to be followed by the Overland Telegraph ten years later. A special article on the Overland Telegraph Line was included on pages 526-31 of the *South Australian Year Book* 1972.

While Stuart was making his second attempt to reach the north, the ill-fated Burke and Wills expedition was crossing the continent further to the east. Their journey took them across the north-east corner of the State along much the same path as that followed by Sturt some seventeen years earlier. In 1861 and 1862 parties led by Alfred Howitt, who left from Melbourne and John McKinlay from Adelaide, were to pass through the same area in search of Burke and Wills. After finding traces of the expedition on Cooper Creek, McKinlay pushed east and then north, to reach the Gulf of Carpentaria.

The construction of the Overland Telegraph between 1870 and 1872, and the subsequent maintenance of this link between Adelaide and Darwin, naturally led to minor exploration of the adjacent country. At this stage attention turned to the land between the telegraph line and the settlements of Western Australia. Foremost among the explorers of this region, and whose paths brought them within South Australia, were John Forrest and William Ernest Giles. In March 1870 Forrest left Perth for Adelaide, covering much the same path as Eyre had taken 30 years earlier. Forrest crossed South Australian territory again in 1874 when he travelled from Geraldton in Western Australia across the centre of the continent, coming down the Alberg watercourse to Peake telegraph station.

Giles had set out from the Overland Telegraph in 1873 at a point north of Oodnadatta, but was forced to return after covering approximately half the distance to the western seaboard. He tried again in May 1875, this time going south from Beltana to Port Augusta and then to Ooldea on a route which forty years later was to be closely followed by the east-west railway. From Ooldea the party went north for over 170 kilometres before again striking out to the west. Giles reached Perth in November, and three months later left Geraldton to return to South Australia on a route similar to that taken by Forrest two years earlier, arriving at Peake telegraph station in August 1876.

In 1873 W. C. Gosse returning from an unsuccessful attempt to reach Perth from Alice Springs, discovered and named the Musgrave Ranges.

A number of persons other than those mentioned contributed to the exploration of the State, both in the period discussed and subsequently. The inhospitable nature of the country meant that many areas had to await the coming of the aeroplane before an accurate physical description could be recorded. One such expedition was that led by Donald Mackay in 1935 when the western half of the State north of the east-west railway line was aerially surveyed.

PART 3

CONSTITUTION AND GOVERNMENT

3.1 SYSTEM OF GOVERNMENT

South Australia is one of the six Australian States (originally constituted by Acts of the Imperial Parliament) which at Federation in 1901 ceded many of their powers on matters of national importance (*e.g.* international affairs and defence) to the Commonwealth of Australia. From time to time other powers on matters of local importance have been delegated to local governing bodies. As a result the people of South Australia are subject to the laws of a three-tier system of government. In addition statutory powers within specified fields are exercised by certain public corporations such as the State Bank of South Australia, the Electricity Trust of South Australia, the South Australian Housing Trust and the South Australian Meat Corporation.

Both the Commonwealth and the South Australian Parliaments are bicameral: in each the leader of the Government (the Prime Minister of the Commonwealth and the Premier of South Australia) is seated in the Lower House and in each the Upper House has restricted powers concerning money Bills.

Electorates

The State is a single multi-member electorate for elections for both the Commonwealth (Senate) and South Australian (Legislative Council) Parliaments. There are ten members elected from South Australia to the Commonwealth Senate; these members are elected for a period of six years with half of them generally retiring each three years.

The South Australian Legislative Council consists of twenty-two members elected for a term of six years, with eleven generally retiring each three years. Before the last general election there were twenty-one Legislative Councillors, eleven having been

elected under the present system which was introduced by the Constitution and Electoral Acts Amendment Act, 1973 and ten under the system which applied before the election of 12 July 1975.

Although it is the respective Parliaments alone which have the power to make changes in the number, size, and distribution of electorates, it is customary to appoint electoral commissions to recommend in these matters.

The terms of the Commonwealth Constitution provide for changes in House of Representatives electorates in certain eventualities. Because of a prescribed relationship between population and the distribution of House of Representatives electorates, the Chief Australian Electoral Officer determines the representational entitlement of the States during each Parliamentary triennium, based on the latest available statistics prepared by the Australian Statistician (rather than on Census figures). Should the representation entitlement of any State change consequent upon such a determination, a redistribution is required.

In South Australia the boundaries of electorates are defined in a schedule to the State Constitution, and these have been changed from time to time on the recommendations of various electoral commissions which were appointed at irregular intervals with specific instructions as to how they should divide up the State. However, following an amendment to the Constitution in 1975, a permanent Electoral Commission was appointed in 1976 with instructions to divide the State into forty-seven House of Assembly electoral districts, each district having the same number of electors, with a maximum tolerance of ten per cent from the electoral quota. This Commission also has the duty to review boundaries periodically to maintain equal numbers of electors in electorates.

Party System

Most members of both the Commonwealth and the South Australian Parliaments are elected by the voters from candidates pre-selected and endorsed by the major political parties. Once policy has been determined at a party meeting, members generally observe party solidarity; speaking, voting, and acting in accordance with that policy both in and out of Parliament whether the party be in government or in opposition.

Cabinet and Executive Government

Both in the Commonwealth and in South Australia, executive government is based on the system which was evolved in Britain in the eighteenth century and which is generally known as 'cabinet' or 'responsible' government. Its main principles are that the head of the State, Her Majesty the Queen (or her representative, the Governor-General or Governor, acting on her behalf) should perform governmental acts on the advice of her ministers; that she should choose her principal Ministers of State from members of Parliament belonging to the party or coalition of parties commanding a majority in the popular House; that the Ministry so chosen should be collectively responsible to that House for the government of the State; and that the Ministry should resign if it ceases to command a majority there.

The cabinet system operates chiefly by means of constitutional conventions, customs or understandings and through institutions that do not form part of the legal structure of government at all. The executive power of the Commonwealth is exercisable by the Governor-General and that of South Australia by the Governor, each being advised by an executive council which only meets for formal purposes. The whole policy of a Ministry is in practice determined by some or all of the Ministers of State, meeting without the Governor-General or Governor under the chairmanship of the Prime Minister or Premier. This group of Ministers is known as the Cabinet.

The Cabinet

The Cabinet does not form part of the legal mechanism of government. Its meetings are private and deliberative, the actual Ministers of the day alone are present, no records of the meetings are made public and the decisions taken have in themselves no legal effect. At present the thirteen senior Ministers of the Commonwealth Government constitute the Cabinet and other Ministers only attend Cabinet meetings when required, but from 1972 to 1975 all Ministers were members of the Cabinet. In South Australia, all thirteen Ministers are members of Cabinet.

As Ministers are the leaders of the party or parties commanding a majority in the popular House, the Cabinet substantially controls not only the general legislative program of Parliament, but the whole course of Parliamentary proceedings. In effect, though not in form, the Cabinet, by reason of the fact that all Ministers are members of the Executive Council, is also the dominant element in the executive government of the State. In summoning, proroguing or dissolving Parliament, the Governor-General or the Governor is usually guided by the advice tendered him by the Cabinet through the Prime Minister or Premier, although legally the discretion is vested in the Governor-General or Governor himself.

Executive Council

The Executive Council is usually presided over by the Governor-General or Governor, the members holding office during his pleasure. All Ministers of State must be members of the Executive Council. Commonwealth Ministers remain members of the Executive Council on leaving office, but are not summoned to attend its meetings, for it is an essential feature of the cabinet system that attendance should be limited to the Ministers of the day.

The meetings of the Executive Council are formal and official in character and a record of proceedings is kept by the Secretary or Clerk. At Executive Council meetings the decisions of Cabinet are, where necessary, given legal form, appointments are made, resignations accepted, proclamations issued and regulations approved.

Appointment of Ministers

Legally, Ministers hold office during the pleasure of the Governor-General or Governor, but in practice the discretion of the Queen's representative in the choice of Ministers is limited by the conventions on which the Cabinet system rests. When a Ministry resigns the Crown's custom is to send for the leader of the party which commands, or is likely to be able to command a majority in the popular House, and to commission him, as Prime Minister or Premier, to 'form a Ministry'—that is, to nominate other persons to be appointed as Ministers of State and to serve as his colleagues in the Cabinet.

Committees

At one stage in the consideration of every Bill each House resolves itself into Committee for freer discussion of proposed legislation than would be possible under the rules of formal debate usually applied in Parliament.

In addition there is a Committee system whereby a limited number of Members inquire into and report on particular matters, thus enabling a greater volume of work to be handled more effectively. There are Joint Committees, consisting of members of both Houses, and each House has committees to attend to its own functions. Standing Committees (e.g. the South Australian Public Works Standing Committee) consider matters of a continuing or recurring nature, and *ad hoc* committees are formed to inquire into and report on specific matters as they arise.

Party representation on Joint and House Committees is usually proportionate to representation in Parliament or the appropriate House respectively.

Administration

The pattern of public administration in South Australia is determined by the division and delegation of statutory authority already mentioned. Various aspects and areas of administration are attended to by Commonwealth and South Australian Government departments, by local government authorities, and by public corporations deriving authority and responsibility from either Commonwealth or South Australian legislation. Within this framework numerous boards and committees exercise administrative and, in some cases, judicial powers.

These various levels of administration are largely interdependent and complementary. Some items of Commonwealth legislation are completely, or almost completely, administered by State authorities, often in matters in which (the Commonwealth and the State having concurrent powers) Commonwealth legislation either supplements or supersedes State legislation, *e.g.* the Births, Deaths and Marriages Registration Branch applies the *Marriage Act 1961* in this State. Performance of State functions by Commonwealth authorities is neither as frequent nor as extensive, but there are instances of the provision of services or facilities, *e.g.* the Commonwealth Electoral Office maintains the House of Assembly electoral roll; State land tax may be paid at Post Offices.

Judicature

The degree to which South Australians are subject to the jurisdiction of Commonwealth and South Australian courts respectively varies with the type of action. Most criminal and civil actions are heard, at least originally, in State courts, but many individuals are subject exclusively to jurisdiction of Commonwealth courts in industrial matters.

Generally speaking, the decisions of the lower courts (the South Australian Magistrates and Local Courts) may be the subject of appeal to the State Supreme Court, and the decisions of this higher court, acting in either its original or appellate jurisdiction, may be the subject of appeal to the High Court of Australia.

Included in the jurisdiction of the High Court of Australia is the review of legislation to test its constitutional validity.

3.2 COMMONWEALTH GOVERNMENT

Federation

The Commonwealth of Australia was proclaimed on 1 January 1901 in 'An Act to constitute the Commonwealth of Australia', a statute of the Imperial Parliament, which received Royal Assent in July 1900. The draft constitution, which was enacted with only minor amendment, had been prepared at intercolonial conferences during 1897, 1898, and 1899, and was accepted at referenda during 1899 by South Australia, New South Wales, Victoria, Queensland and Tasmania, and in 1900 by Western Australia.

Separation of Powers

The Constitution provides, in Sections 52, 69, 86, 90 and 115, for certain powers to be vested exclusively in the Commonwealth Government and, in Section 51, for certain specified fields of interest to be common to both the Commonwealth and State Governments; in cases of conflicting legislation, that of the former prevails to the extent of the inconsistency. All other fields of interest remain the exclusive province of the State

Governments until amendment is made to the Constitution Act or until the State Parliaments cede particular powers.

Financial Resources

Since Federation the distribution of financial resources between the Commonwealth and State Governments has been an almost constant problem. Under the original terms of the Constitution three-quarters of the net revenues from the duties of customs and excise, for ten years, was returned to the States; provision also existed for general and particular grants to the States. Significant changes have been made in the distribution of financial resources since 1910. These are reviewed in some detail in Part 11—Public Finance.

COMMONWEALTH LEGISLATURE

The Constitution provides that 'the legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives'. Provision for constitutional amendment includes a requirement that a proposed amendment must be submitted to a referendum.

Franchise

Qualifications for franchise are possessed by any British subject, not under eighteen years of age and not disentitled on other grounds, who has lived in Australia for six months continuously. Residence in a subdivision for a period of one month before enrolment is necessary to enable a qualified person to enrol. Enrolment and voting are compulsory except that the compulsory enrolment provisions do not relate to Aboriginals.

A member of the Defence Forces on service outside Australia who is a British subject not less than eighteen years of age and has lived in Australia for six months continuously is entitled to vote at Commonwealth elections, whether enrolled or not.

Persons of unsound mind, attainted of treason, convicted and under sentence for any offence punishable by imprisonment for one year or longer or, persons who are holders of temporary entry permits under the *Migration Act 1958* or are prohibited immigrants under that Act are excluded from the franchise.

Membership

Qualifications necessary for membership of either House of the Commonwealth Parliament are possessed by any British subject, eighteen years of age or over, who has resided in Australia for at least three years and who is, or is qualified to become, an elector. The principal reasons for disqualification of persons otherwise eligible as members of either House are; membership of the other House, allegiance to a foreign power, being attainted of treason, being convicted and under sentence for any offence punishable by imprisonment for one year or longer, being an undischarged bankrupt or insolvent, holding office of profit under the Crown (with certain exceptions), or having pecuniary interest in any agreement with the Public Service of the Commonwealth except as a member of an incorporated company of more than twenty-five persons.

EXECUTIVE GOVERNMENT

Governor-General

On 29 July 1982 His Excellency Sir Ninian Stephen, KCMG, QC, was sworn in as the twentieth Governor-General of the Commonwealth. His authority as the Queen's representative is derived from Letters Patent, instructions under the Royal Sign Manual and Signet, and the relevant sections of the Commonwealth Constitution.

Executive Council

Members of the Federal Executive Council are chosen, summoned and sworn by the Governor-General and hold office during his pleasure. All Ministers are members. Councillors usually retain membership for life but it is customary for attendance at meetings to be limited to Ministers of the day.

Ministry

Members of the forty-seventh Ministry (the first Hawke Ministry) are listed below.

Hawke Ministry at 11 July 1983**Inner Cabinet***Prime Minister*

The Hon. R. J. L. Hawke, AC, MP (Vic.)

Deputy Prime Minister and Minister for Trade

The Hon. L. F. Bowen, MP (NSW)

Minister for Industry and Commerce

Senator the Hon. J. N. Button, (Vic.)

Minister for Social Security

Senator the Hon. D. J. Grimes, (Tas.)

Minister for Employment and Industrial Relations

The Hon. R. Willis, MP (Vic.)

Treasurer

The Hon. P. J. Keating, MP (NSW)

Special Minister of State

The Hon. M. J. Young, MP (SA)

Minister for Immigration and Ethnic Affairs

The Hon. S. J. West, MP (NSW)

Minister for Resources and Energy

Senator the Hon. P. Walsh, (WA)

Minister for Foreign Affairs

The Hon. W. G. Hayden, MP (Qld)

Minister for Education and Youth Affairs

Senator the Hon. S. M. Ryan, (ACT)

Attorney-General

Senator the Hon. G. Evans, (Vic.)

Minister for Defence

The Hon. G. G. D. Scholes, MP (Vic.)

Minister for Finance

The Hon. J. S. Dawkins, MP (WA)

Outer Ministry*Minister for Transport*

The Hon. P. F. Morris, MP (NSW)

Minister for Primary Industry

The Hon. J. C. Kerin, MP (NSW)

Minister for Aviation

The Hon. K. C. Beazley, MP (WA)

Minister for Housing and Construction

The Hon. C. J. Hurford, MP (SA)

Minister for Sport, Recreation and Tourism and Minister for Administrative Services

The Hon. J. J. Brown, MP (NSW)

Minister for Health

The Hon. N. Blewett, MP (SA)

Minister for Science and Technology

The Hon. B. O. Jones, MP (Vic.)

Minister for Communications

The Hon. M. J. Duffy, MP (Vic.)

Minister for Home Affairs and Environment

The Hon. B. Cohen, MP (NSW)

Minister for Aboriginal Affairs

The Hon. A. C. Holding, MP (Vic.)

Minister for Veterans' Affairs

Senator the Hon. A. T. Gietzelt, (NSW)

Minister for Territories and Local Government

The Hon. T. Uren, MP (NSW)

Minister of Defence Support

The Hon. B. L. Howe, MP (Vic.)

Salaries and Allowances

From 1 October 1982 the annual salary for each Senator and Member has been \$38 500 with an electorate allowance of either \$14 000, \$17 000 or \$20 300 depending on the area of, or population within the Member's electorate. Senators receive an electoral allowance of \$14 000.

The following additional payments are also made:

Prime Minister—\$42 400 plus expense allowance of \$19 500;

Deputy Prime Minister—\$28 900 plus expense allowance of \$11 500;

Ministers (Inner Cabinet)—\$22 200 plus expense allowance of \$8 000;

Treasurer—\$23 100 plus expense allowance of \$9 750;

Leader of the House—\$22 200 plus expense allowance of \$9 750;

Ministers (Outer Ministry)—\$17 300 plus expense allowance of \$8 000;

Speaker (House of Representatives)—\$22 200 plus expense allowance of \$8 000;

President (Senate)—\$22 200 plus expense allowance of \$9 750;

Chairman of Committees (House of Representatives)—\$6 750 plus expense allowance of \$1 650;

Chairman of Committees (Senate)—\$6 750 plus expense allowance of \$1 650;

Leader of the Opposition (House of Representatives)—\$22 200 plus expense allowance of \$9 750;

Deputy Leader of the Opposition (House of Representatives)—\$12 700 plus expense allowance of \$8 000;

Leader of the Opposition (Senate)—\$12 700 plus expense allowance of \$8 000;

Deputy Leader of the Opposition (Senate)—\$6 400 plus expense allowance of \$1 650;

Government Whip (House of Representatives)—\$6 400 plus expense allowance of \$1 650;

Opposition Whip (House of Representatives)—\$5 600 plus expense allowance of \$1 650;

Deputy Government Whip (House of Representatives)—\$1 875;

Deputy Opposition Whip (House of Representatives)—\$900;

Other Whips (House of Representatives)—\$3 750;

Government Whip (Senate)—\$5 250 plus expense allowance of \$1 650;

Opposition Whip (Senate)—\$5 250 plus expense allowance of \$1 650.

Superannuation

The *Parliamentary Contributory Superannuation Act 1948* provides for the payment of superannuation retirement benefits to or in respect of former members of the Commonwealth Parliament. Contributions by Senators and Members are compulsory.

Contributions by members are at the rate of 11·5 per cent of the total of the parliamentary allowance and of any additional salary or allowance in the nature of salary payable by reason of service as a Prime Minister, a Minister, or office-holder in the Parliament. The member's contribution rate is reduced to 5·75 per cent when he obtains his maximum benefit entitlement.

Members who retire involuntarily become eligible for a retiring allowance after eight years service (or less in certain circumstances) while those who retire voluntarily become eligible after twelve years service (or less in certain circumstances). A member who becomes entitled to a retiring allowance, other than on the grounds of ill-health, may elect to convert the whole or a percentage of that retiring allowance to a lump sum payment. Where there is no entitlement to a retiring allowance the benefit is a lump sum payment comprising a refund of contributions plus a supplement, the amount of which depends on whether retirement was involuntary or voluntary.

The scheme also provides for the payment of annuities to eligible widows and widowers of former members. Where the former member was in receipt of a retiring allowance at the time of death, the annuity payable is five-sixths of that allowance or, if the member had elected to commute the whole or part of that allowance, five-sixths of the allowance that would have been payable had the member not elected. Where the member died during parliamentary service, the annuity payable equals five-sixths of the retiring allowance that would have been payable to the member had the member retired involuntarily. An annuity is payable to an eligible dependent child if both parents have died.

THE SENATE

The Senate is the Upper House. Originally it was intended that this House should protect the rights and interests of the States, but with the growth of the parliamentary system of party-line voting, its role has become mainly that of a house of review.

Representation

At present the Senate consists of sixty-four members—ten from each State, two from the Australian Capital Territory and two from the Northern Territory. The original

provision was that each State, voting as a single electorate, should elect six Senators but by the Representation Act of 1948, which was effective for the 1949 elections, the number was raised to ten. By the *Senate (Representation of Territories) Act 1973*, the number of Senators was increased from sixty to sixty-four with the addition of two Senators from both the Australian Capital Territory and the Northern Territory. The Territories were represented in the Senate for the first time following the general election of 13 December 1975. Except in extraordinary circumstances each Senator is elected for a term of six years, five from each State and all Territory Senators retiring every three years.

From 1 July 1982 representation in the Senate was as follows:

State or Territory	ALP	LP	NP	AD	IND
New South Wales	5	3	1	1	—
Victoria	5	4	—	1	—
Queensland	4	2	3	1	—
South Australia	5	4	—	1	—
Western Australia	5	4	—	1	—
Tasmania	4	5	—	—	1
Australian Capital Territory	1	1	—	—	—
Northern Territory	1	1	—	—	—

ALP Australian Labor Party LP Liberal Party of Australia NP National Party AD Australian Democrat
IND Independent

Elections for the Senate: Voting, South Australia

Date of Election	Electors Enrolled	Votes Recorded		Informal Votes	
		Number	Percentage of Electors Enrolled	Number	Percentage of Votes Recorded
10 December 1949	434 224	420 437	96·82	48 838	11·62
28 April 1951	440 454	427 593	97·08	24 792	5·80
9 May 1953	453 496	437 583	96·49	21 297	4·87
10 December 1955	462 747	444 827	96·13	39 802	8·95
22 December 1958	490 930	473 832	96·52	36 677	7·74
9 December 1961	521 396	501 312	96·15	28 284	5·64
5 December 1964	551 341	528 464	95·85	39 421	7·46
25 November 1967	594 480	568 823	95·68	32 864	5·78
21 November 1970	639 807	609 268	95·23	42 306	6·94
18 May 1974	750 308	722 434	96·28	82 191	11·38
13 December 1975	789 004	759 369	96·24	75 540	9·95
10 December 1977	824 205	783 669	95·08	81 451	10·39
18 October 1980	849 899	806 695	94·92	70 359	8·72
5 March 1983	880 455	836 699	95·03	73 350	8·77

The members representing South Australia in the Senate are:

To Retire 30 June 1985:

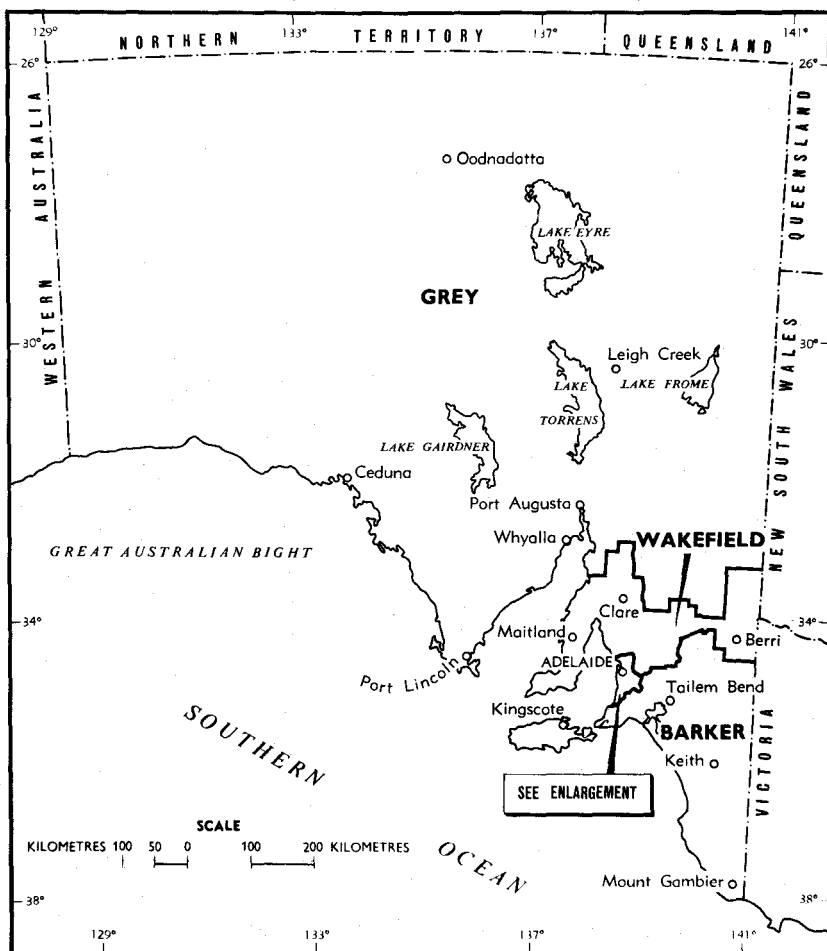
Bolkus, Nick (ALP)
Maguire, Graham Ross (ALP)
Crowley, Rosemary Anne (ALP)
Jessop, Donald Scott (LP)
Teague, Baden Chapman (LP)

To Retire 30 June 1988:

Elstob, Ronald Charles (ALP)
Foreman, Dominic John (ALP)
Messner, Anthony John (LP)
Hill, Robert Murray (LP)
Haines, Janine (AD)

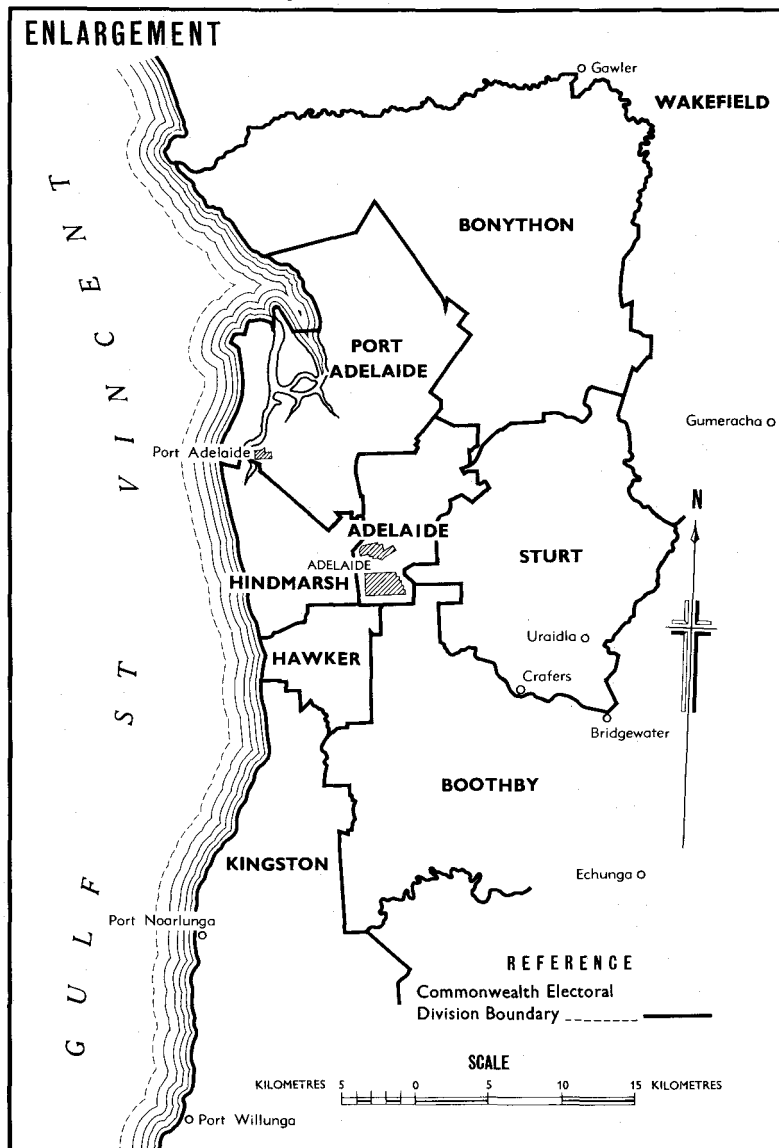
SOUTH AUSTRALIA COMMONWEALTH ELECTORAL DIVISIONS

As proclaimed 11 November 1977



PORTION OF SOUTH AUSTRALIA COMMONWEALTH ELECTORAL DIVISIONS

As proclaimed 11 November 1977



Voting System

Before the election in 1949 the system of preferential voting was used for Senate elections, but for the 1949 and subsequent elections a system of proportional representation has been used. This system was discussed in detail on pages 55-6 of the *South Australian Year Book* 1971.

THE HOUSE OF REPRESENTATIVES

Representation

The members of the House of Representatives (the Lower House) are elected in single-member electorates. The number of electorates into which a State is divided is determined by the proportion that the population of the State bears to the population of the Commonwealth as a whole. Section 24 of the Constitution provides that the number of members in the House of Representatives shall be as nearly as possible twice the number of Senators and prescribes the formula to be used, 'until the Parliament otherwise provides', for allocating to each State its share of the available seats but stipulates that no original State shall have less than five members in the House. In addition one member is elected from the Northern Territory and two members are elected from the Australian Capital Territory. Preferential voting is used for elections for the House of Representatives.

Elections for the House of Representatives: Voting, South Australia

Date of Election	Electors Enrolled	Votes Recorded		Informal Votes	
		Number	Percentage of Electors Enrolled	Number	Percentage of Votes Recorded
29 May 1954	455 872	(a) 357 854	(a) 96·77	8 812	2·46
10 December 1955	462 747	444 827	96·13	18 050	4·06
22 December 1958	490 930	473 832	96·52	15 619	3·30
9 December 1961	521 396	501 312	96·15	15 629	3·12
30 November 1963	541 536	523 135	96·60	13 963	2·67
26 November 1966	585 465	563 341	96·22	16 220	2·88
25 October 1969	624 626	599 719	96·01	20 562	3·43
2 December 1972	671 081	644 211	96·00	16 845	2·61
18 May 1974	750 308	722 434	96·28	20 311	2·81
13 December 1975	789 004	759 369	96·24	18 201	2·40
10 December 1977	824 205	783 669	95·08	26 461	3·38
18 October 1980	849 899	806 695	94·92	22 491	2·79
5 March 1983	880 455	836 699	95·03	22 380	2·67

(a) Contested electorates only.

Following an electoral redistribution of House of Representatives seats in 1977 by Federal Electorate Redistribution Commissioners, the number of members of the House of Representatives was reduced from 127 to 124. The number of South Australian seats in the House of Representatives was reduced from 12 to 11 with the seat of Angas being abolished.

The number of Western Australian seats was increased to 11 in 1980, with a corresponding increase to 125, in the total number of seats.

After the election of 5 March 1983 representation in this House was as follows:

Party	NSW	Vic.	Qld	SA	WA	Tas.	ACT	NT	Total
ALP	24	23	10	7	8	—	2	1	75
LP	11	7	3	4	3	5	—	—	33
NP	8	3	6	—	—	—	—	—	17

ALP Australian Labor Party LP Liberal Party of Australia NP National Party

House of Representatives, 1983 Election Voting and Party Representation in South Australian Electorates

Electorate	Electors on Roll	Electors Voting	Successful Candidates		
			Name	Party	First Preference Votes
Adelaide	77 528	72 487	Hurford, C. J.	ALP	39 134
Barker	78 745	75 580	Porter, J. R.	LP	42 333
Bonython	86 932	81 834	Blewett, N.	ALP	48 097
Boothby	82 105	78 775	Hall, R. S.	LP	42 676
Grey	74 947	71 320	O'Neil, L. R. T.	ALP	35 276
Hawker	76 533	71 823	Jacobi, R.	ALP	36 483
Hindmarsh	79 687	75 859	Scott, J. L.	ALP	39 496
Kingston	85 403	81 602	Bilney, G. N.	ALP	40 019
Port Adelaide	79 355	74 983	Young, M. J.	ALP	48 865
Sturt	80 977	77 729	Wilson, I. B. C.	LP	36 656
Wakefield	78 243	74 707	Andrew, J. N.	LP	43 380

REFERENDA

Alteration to the Constitution must be initiated in the Commonwealth Parliament and requires the approval of a majority of electors voting in a majority of the States as well as a majority of all the electors voting in the Commonwealth as a whole.

Of the thirty-six proposals so far submitted to the people of Australia for amendment to the Constitution, only eight have been approved (one in each of 1906, 1910, 1928, 1946 and 1967, and three in 1977). In addition proposals concerning compulsory overseas military service were submitted to the people in 1916 and 1917 respectively; both proposals failed to gain the necessary majority of votes.

At the most recent referendum, held on 21 May 1977, four alterations to the Constitution were proposed. Three of the four referendum proposals were approved, but the Constitution Alteration (Simultaneous Elections) Referendum was defeated because it recorded a majority of votes in only three States (although it was approved by the majority of electors in Australia).

3.3 GOVERNMENT OF SOUTH AUSTRALIA

The Constitution Act, 1855-1856, which inaugurated the system of responsible government in South Australia, was passed and came into force on 24 October 1856. A summary of early constitutional history and the introduction of responsible government was included on pages 60-2 of the *South Australian Year Book* 1971.

VICE-REGAL REPRESENTATION

Lt-General Sir Donald Beaumont Dunstan, KBE, CB, was sworn in as the Queen's representative in South Australia on 23 April 1982.

The title of the vice-regal representative has been varied from time to time. The first three holders of the Office were styled 'Governor and Commander-in-Chief', the next two, 'Lieutenant-Governor', and the following two, 'Captain-General and Governor-in-Chief'. The title then reverted to its original form until Federation in 1901. Since then, because of the appointment of a 'Governor-General and Commander-in-Chief in and over the Commonwealth', the holder of the State office has been described simply as 'Governor', and this title is used in the following table, which lists occupants of the office since the foundation of South Australia.

As titular head of the Government of South Australia the Governor exercises powers, duties, and functions, similar to those of a constitutional sovereign. On the one hand he is indirectly responsible to the Imperial Parliament through the Secretary of State for Foreign and Commonwealth Affairs, and on the other hand he usually acts on the advice of his Ministers, who take the responsibility for their advice. Nevertheless, the Governor retains important spheres of discretionary action and is thus enabled to maintain something of a safeguard against malpractice and injustice, particularly in extreme circumstances. To ensure continuity of services, the Governor has power to appropriate up to one per cent of the total amount appropriated from the State's general revenue by the Appropriation Acts for public service without specific Parliamentary authority.

Governors of South Australia

Name	From	To
Captain John Hindmarsh, RN, KH	28 December 1836	16 July 1838
Lt-Col George Gawler, KH	17 October 1838	15 May 1841
George Grey	15 May 1841	25 October 1845
Lt-Col Frederick Holt Robe	25 October 1845	2 August 1848
Sir Henry E. F. Young	2 August 1848	20 December 1854
Sir Richard G. MacDonnell, CB	8 June 1855	4 March 1862
Sir Dominick Daly	4 March 1862	19 February 1868
Rt Hon. Sir James Fergusson, Bart	16 February 1869	18 April 1873
Sir Anthony Musgrave, KCMG	9 June 1873	29 January 1877
Lt-Gen. Sir Wm F. D. Jervois, GCMG, CB	2 October 1877	9 January 1883
Sir Wm C. F. Robinson, GCMG	19 February 1883	5 March 1889
Rt Hon. the Earl of Kintore, PC, GCMG	11 April 1889	10 April 1895
Sir Thomas F. Buxton, Bart, GCMG	29 October 1895	29 March 1899
Rt Hon. the Lord Tennyson, KCMG	10 April 1899	17 July 1902
Sir George R. Le Hunte, KCMG	1 July 1903	18 February 1909
Admiral Sir Day Hort Bosanquet, GCVO, KCB	18 February 1909	22 March 1914
Lt-Col Sir Henry L. Galway, KCMG, DSO	18 April 1914	30 April 1920
Lt-Col Sir Wm E. G. Archibald Weigall, KCMG	9 June 1920	30 May 1922
Lt-Gen. Sir George T. M. Bridges, KCB, KCMG, DSO	4 December 1922	4 December 1927
Brig.-Gen. the Hon. Sir A. G. A. Hore-Ruthven, VC, KCMG, CB, DSO	14 May 1928	26 April 1934
Maj.-Gen. Sir W. J. Dugan, KCMG, CB, DSO	28 July 1934	23 February 1939
Sir Charles M. Barclay-Harvey, KCMG	12 August 1939	26 April 1944

Governors of South Australia (continued)

Name	From	To
Lt-Gen. Sir C. W. M. Norrie, KCMG, CB, DSO, MC	19 December 1944	19 June 1952
Air Vice-Marshal Sir Robert A. George, KCMG, KCVO, KBE, CB, MC	23 February 1953	7 March 1960
Lt-Gen. Sir Edric M. Bastyan, KCMG, KCVO, KBE, CB	4 April 1961	1 June 1968
Maj.-Gen. Sir James W. Harrison, KCMG, CB, CBE	4 December 1968	16 September 1971
Sir Mark L. Oliphant, KBE	1 December 1971	30 November 1976
Sir Douglas R. Nicholls, KCVO, OBE	1 December 1976	30 April 1977
Sir Keith D. Seaman, KCVO, OBE	1 September 1977	28 March 1982
Lt-Gen. Sir Donald B. Dunstan, KBE, CB	23 April 1982	

A Governor is normally appointed for a term of five years, but he can be reappointed for one or more subsequent terms. At present he is granted a basic salary of \$30 000 a year and an expense allowance which is altered in accordance with the Consumer Price Index number for Adelaide. The amount appropriated from Consolidated Revenue for the Governor's salary and allowances for 1981-82 was \$89 900. The Governors' Pensions Act, 1976-1981 provides for a pension to be paid to former Governors and to the spouses of deceased Governors.

In the absence or prolonged illness of a Governor other persons have been appointed to administer the government of the State. These persons have been variously styled 'Lieutenant-Governor', 'Deputy-Governor', 'Deputy Lieutenant-Governor', and 'Administrator', and several of them have held office more than once. The nineteen persons so appointed have been:

Deputy Governors

Name	Occupancy of Office		Occasions in Office	Total Period	
	First	Most Recent		Years	Days
George Milner Stephen	16/7/1838	17/10/1838	1	—	93
Boyle Travers Finnis	20/12/1854	8/6/1855	1	—	170
Lt-Col Francis G. Hamley	19/2/1868	16/2/1869	1	—	364
Maj. James Harwood Rocke	6/4/1870	5/5/1870	1	—	29
Hon. Sir Richard D. Hanson	7/12/1872	9/6/1873	1	—	184
Rt Hon. Sir Samuel J. Way, Bart	29/1/1877	17/11/1915	65	6	117
William W. Cairns, CMG	24/3/1877	17/5/1877	1	—	54
Hon. James P. Boucaut	26/10/1885	16/9/1897	9	—	263
Hon. William H. Bunday	30/7/1888	9/8/1888	1	—	10
Hon. Sir G. J. R. Murray, KCMG	25/9/1916	9/2/1942	103	6	47
Hon. Thomas Slaney Poole	20/3/1925	22/11/1925	2	—	240
Hon. Sir H. Angas Parsons	11/6/1935	19/2/1942	6	—	54
Hon. Sir J. Mellis Napier, KCMG	21/4/1942	17/5/1973	179	9	140
Hon. Sir Herbert Mayo	15/10/1946	9/1/1965	25	—	187
Hon. Sir G. S. Reed	24/7/1951	4/11/1957	5	—	31
Hon. J. J. Bray	25/6/1968	5/8/1973	8	—	72
Hon. D. S. Hogarth	8/7/1971	8/7/1971	1	—	1
Sir W. R. Crocker, KBE	7/9/1973	23/4/1982	27	1	32
Hon. Sir C. L. Laucke, KCMG	1/7/1982	(date of appointment)			

CABINET AND EXECUTIVE GOVERNMENT

In South Australia all Ministers are members of the Cabinet and all Ministers are *ex officio* members of the Executive Council. Although the Governor may, subject to any law enacted by the Legislature, appoint other persons to the Executive Council, membership is in practice limited to Ministers of the day.

The Constitution Act of 1855-1856 provided that every Minister must be a member of either the Legislative Council or the House of Assembly or become a member within three months of appointment. However, in 1873 an amendment was made to the Act authorising the Governor to appoint an Attorney-General from outside Parliament; this provision was retained until 1953, and four Attorneys-General were so appointed.

The maximum number of Ministers has been varied from time to time. In 1856 the number was five; in 1873, six; 1901, four; 1908, six; 1953, eight; 1965, nine; 1970, ten; 1973, eleven; 1975, twelve and 1978, thirteen. In 1908 it was specified that no more than four Ministers were to be in the House of Assembly, but in 1953 this limit was increased to five, in 1965 to six, in 1970 to seven and in 1973 to eight. This restriction on the number of Ministers from the lower House was removed by the Constitution Act Amendment Act (No. 2), 1975, and now it is permissible for all Ministers to be selected from the House of Assembly.

The Constitution of 1856 provided for salary payments to Ministers only and salary payments to other members did not commence until 1887. For details of salaries and allowances paid to members of Parliament *see* page 87.

Cabinet, as such, has no legal powers. Some Cabinet decisions result in the initiation and subsequent enactment of legislation; other decisions become legally binding through ratification by Executive Council or through powers vested in individual Ministers for the administration and control of their respective departments of government. In addition to government departments, statutory authorities also come under some degree of ministerial or parliamentary oversight.

Premiers

Since 1856 the following thirty-nine persons have held the office of Premier:

Premiers of South Australia

Name	Dates of Office	Total Period in Office	
		Years	Days
Hon. Boyle T. Finnis	24/10/1856- 21/8/1857	—	301
Hon. John Baker	21/8/1857- 1/9/1857	—	11
Hon. Robert R. Torrens	1/9/1857- 30/9/1857	—	29
Hon. Richard D. Hanson	30/9/1857- 9/5/1860	2	222
Hon. Thomas Reynolds	9/5/1860- 8/10/1861	1	152
Hon. G. M. Waterhouse	8/10/1861- 4/7/1863	1	269
Hon. Francis S. Dutton	4/7/1863- 15/7/1863; 22/3/1865- 20/9/1865	—	193
Hon. Sir Henry Ayers, KCMG	15/7/1863- 4/8/1864; 20/9/1865-23/10/1865; 3/5/1867- 24/9/1868; 13/10/1868- 3/11/1868; 22/1/1872- 22/7/1873	4	35
Hon. Arthur Blyth	4/8/1864- 22/3/1865; 10/11/1871- 22/1/1872; 22/7/1873- 3/6/1875	2	254

Premiers of South Australia (continued)

Name	Dates of Office	Total Period in Office	
		Years	Days
Hon. John Hart, CMG	23/10/1865- 28/3/1866; 24/9/1868-13/10/1868; 30/5/1870-10/11/1871	1	339
Hon. James P. Boucaut, QC	28/3/1866- 3/5/1867; 3/6/1875- 6/6/1876; 26/10/1877- 27/9/1878	3	11
Hon. H. B. Strangways	3/11/1868- 30/5/1870	1	208
Hon. John Colton	6/6/1876-26/10/1877; 16/6/1884- 16/6/1885;	2	142
Hon. William Morgan	27/9/1878- 24/6/1881	2	270
Hon. John C. Bray	24/6/1881- 16/6/1884	2	358
Hon. Sir J. W. Downer, KCMG, QC	16/6/1885- 11/6/1887; 15/10/1892- 16/6/1893	2	239
Hon. Thomas Playford	11/6/1887- 27/6/1889; 19/8/1890- 21/6/1892	3	323
Hon. J. A. Cockburn	27/6/1889- 19/8/1890	1	53
Hon. F. W. Holder	21/6/1892-15/10/1892; 8/12/1899- 15/5/1901	1	274
Rt Hon. C. C. Kingston, QC	16/6/1893- 1/12/1899	6	168
Hon. V. L. Solomon	1/12/1899- 8/12/1899	—	7
Hon. J. G. Jenkins	15/5/1901- 1/3/1905	3	290
Hon. Richard Butler	1/3/1905- 26/7/1905	—	147
Hon. Thomas Price	26/7/1905- 5/6/1909	3	314
Hon. A. H. Peake	5/6/1909- 3/6/1910; 17/2/1912- 3/4/1915; 14/7/1917- 8/4/1920	6	312
Hon. John Verran	3/6/1910- 17/2/1912	1	259
Hon. Crawford Vaughan	3/4/1915- 14/7/1917	2	102
Hon. Sir H. N. Barwell, KCMG	8/4/1920- 16/4/1924	4	8
Hon. John Gunn	16/4/1924- 28/8/1926	2	134
Hon. Lionel L. Hill	28/8/1926- 8/4/1927; 17/4/1930- 13/2/1933	3	160
Hon. R. L. Butler	8/4/1927- 17/4/1930; 18/4/1933- 5/11/1938	8	210
Hon. R. S. Richards	13/2/1933- 18/4/1933	—	64
Hon. Sir Thomas Playford, GCMG	5/11/1938- 10/3/1965	26	125
Hon. F. H. Walsh	10/3/1965- 1/6/1967	2	83
Hon. D. A. Dunstan, QC	1/6/1967- 17/4/1968; 2/6/1970- 15/2/1979	8	259
Hon. R. S. Hall	17/4/1968- 2/6/1970	2	47
Hon. J. D. Corcoran	15/2/1979- 18/9/1979	—	216
Hon. D. O. Tonkin	18/9/1979- 6/11/1982	3	49
Hon. J. C. Bannon	6/11/1982-		

Ministry

The Ministry is the sixty-fifth to hold office. The members at 1 May 1983 were:

Premier, Treasurer, Minister of State Development and Minister for the Arts

Hon. John Charles Bannon, MP

Deputy Premier, Minister of Labour and Minister of Public Works

Hon. John David Wright, MP

Attorney-General, Minister of Consumer Affairs, Minister of Corporate Affairs and Minister of Ethnic Affairs

Hon. Christopher John Sumner, MLC

Minister of Environment and Planning and Minister of Lands

Hon. Donald Jack Hopgood, MP

Minister of Transport and Minister of Marine

Hon. Roy Kitto Abbott, MP

Minister of Health

Hon. John Robert Cornwall, MLC

Minister of Education and Minister for Technology

Hon. Lynn Maurice Ferguson Arnold, MP

Chief Secretary and Minister of Tourism

Hon. Gavin Francis Keneally, MP

Minister of Mines and Energy

Hon. Ronald George Payne, MP

Minister of Community Welfare and Minister of Aboriginal Affairs

Hon. Gregory John Crafter, MP

Minister of Water Resources and Minister of Recreation and Sport

Hon. John William Slater, MP

Minister of Housing and Minister of Local Government

Hon. Terence Henry Hemmings, MP

Minister of Agriculture, Minister of Fisheries and Minister of Forests

Hon. Frank Trevor Blevins, MLC

PARLIAMENT

Parliament is summoned, prorogued, or dissolved, by proclamation issued by the Governor. The two Houses of Parliament are the Legislative Council (Upper House) and the House of Assembly (Lower House). The following table gives the dates and the number of House of Assembly sitting days for Parliamentary sessions in recent years.

Parliamentary Session	Period	House of Assembly Sitting Days
1973	19/6/73-27/6/73	4
1973-74	24/7/73-28/3/74	69
1974-75	23/7/74-18/6/75	74
1975-76	5/8/75-19/2/76	45
1976-77	8/6/76-28/4/77	65
1977	19/7/77-17/8/77	11
1977-78	6/10/77-22/3/78	45
1978-79	13/7/78-1/3/79	55
1979	24/5/79-22/8/79	11
1979-80	11/10/79-12/6/80	35
1980-81	31/7/80-11/6/81	56
1981-82	16/7/81-18/6/82	68
1982	20/7/82-14/10/82	27

Voting System

Members for both Houses are elected by secret ballot; the preferential system of voting is used. In filling the vacancy for each House of Assembly District the candidate who has received the largest number of first preference votes is elected if this number constitutes an absolute majority (*i.e.* greater than one-half of the total formal votes). If no candidate has received an absolute majority of first preference votes a second count is made in which the second preferences of the candidate who has received the fewest first preference votes are distributed. This distribution of second preferences of the successive candidate with the fewest votes is repeated until one candidate has received an absolute majority of votes.

For Legislative Council elections before 12 July 1975, the State was divided into five 4-member electoral districts with two members for each district retiring at each Legislative Council election. The first vacancy in each district was filled in the same manner as those in the single-member House of Assembly Districts discussed above. The second vacancy in each district was filled by re-arranging all ballot papers according to first preferences and allotting each ballot paper of the first elected candidate according to the second preferences. If a candidate then had an absolute majority he was elected, otherwise subsequent counts were made eliminating candidates with the fewest votes until one remaining candidate had received an absolute majority.

However, as a result of the passing of the Constitution and Electoral Acts Amendment Act, 1973, the number of electorates and the voting system has been changed for Legislative Council elections commencing with the election of 12 July 1975. This Act has increased the number of members of the Legislative Council from twenty to twenty-two and has introduced a system of proportional representation with the whole of the State as a single multi-member electoral district. A further amendment was made in 1981 which was effective for the first time at the 1982 election. The list system introduced in the 1973 legislation was abolished, and electors are required to vote for the requisite number of candidates to be elected. Provision is made for full preferential voting and for the distribution of preferences.

Members, Qualifications, and Privileges

Certain requirements must be met before a person qualifies for membership of the South Australian Parliament. The following persons are not eligible for membership of either House: Judges, persons under the age of eighteen, aliens, members of the Commonwealth Parliament, persons who are not residents of South Australia, holders of contracts for the Public Service, occupants of offices of profit under the Crown, persons of unsound mind, persons attainted of treason, undischarged bankrupts and insolvent persons, and, amongst others, persons under sentence for any offence punishable by imprisonment for at least a year. Other requirements applicable only to one House or the other are mentioned on pages 88-9.

Each member is required to take an oath or make an affirmation of allegiance to the Crown before being permitted to sit or vote in Parliament. All members of the Parliament are entitled to such privileges, immunities, and powers as were held by members of the House of Commons on 24 October 1856, the date on which the Constitution Act came into force.

Franchise

The franchises for the separate Houses are shown on page 89. South Australia was the first, at the general election of 25 April 1896, of the Australian States to give voting rights to women, and the existence of this provision in this State contributed to the decision to include full adult franchise in proposals for Federation. For the first eighty-five years of

responsible government voting for both Houses of Parliament was voluntary but the Electoral Act Amendment Act of 1942 made voting for the House of Assembly compulsory for persons whose names appear on the House of Assembly Electoral Roll.

Number of Members and Electorates

Alterations made to the number of members and number of electorates for each of the two Houses are shown in the following table:

Members and Electorates, South Australia

Date	Legislative Council		House of Assembly	
	Members	Electorates	Members	Electorates
1856	18	1	36	17
1863	18	1	36	18
1875	18	1	46	22
1882	24	4	46	22
1884 (a)	24	4	52	26
1890	24	4	54	27
1902	18	4	42	13
1912 (b)	18	4	40	12
1915	20	5	46	19
1938	20	5	39	39
1970	20	5	47	47
1975	21	1	47	47
1979	22	1	47	47

(a) Separate representation for Northern Territory.

(b) Cession of Northern Territory to Commonwealth Government control.

Functions of Parliament

The function of Parliament is to legislate for the peace, order, and good government of the State. Principal among the tasks of Parliament is the raising of revenue and the appropriation of funds for the development and maintenance of the State through its public services.

Legislation may be initiated by any member in either House except that money Bills must be initiated by Ministers of the Crown in the House of Assembly; the Legislative Council may suggest amendments to money Bills although it may not effect such amendments itself. Most Bills are initiated by the Government as a result of the deliberations of Cabinet. The Opposition and Independent members usually confine their activities to examination, criticism, and amendment, of Government measures. Legislation, other than to amend the Constitution, may be passed by a simple majority of the votes of the members present.

Constitutional Amendment

Alteration to the Constitution Act is in the hands of Parliament itself. An alteration to the Constitution requires at the second and third readings of the Bill acceptance by a majority of all the members (not only those present or voting) of each House voting separately.

Deadlocks

A deadlock results from the refusal by the Upper House to pass the same (or substantially the same) Bill during two consecutive Parliaments, provided that a general election for the Lower House has been held between the refusals and that on the second occasion an absolute majority of all the members of the Lower House voted in favour of

the Bill at its second and third readings. In the event of a deadlock between the Houses, provision is made for the dissolution of both Houses.

Life of Parliament

Term of office of each Parliament is generally three years from the day on which it first meets for the dispatch of business but it may be prorogued or dissolved by the Governor before the expiration of this period.

Legislation introduced in 1933 extended the life of the twenty-eighth Parliament to five years and in 1937 the Constitution Act was amended for each subsequent Parliament to have a life of five years. However, the twenty-ninth Parliament repealed this provision and re-introduced three-year Parliaments.

Salaries and Allowances

Salaries and allowances for members of Parliament are determined periodically by the Parliamentary Salaries Tribunal, pursuant to the provisions of the Parliamentary Salaries and Allowances Act, 1965-1982.

The annual salary from 1 January 1982 is \$31 530 per member with allowances of between \$6 105 and \$22 590 depending on the area of the member's electorate and the distance from the City of Adelaide. The following additional payments are also made:

Premier and Treasurer—\$36 630 plus expense allowance of \$4 540.

Deputy Premier—\$25 730 plus expense allowance of \$3 770.

Leader of the Government in the Legislative Council—\$22 390 plus expense allowance of \$3 580.

Other Ministers—\$21 090 plus expense allowance of \$3 145.

President of Legislative Council and Speaker of House of Assembly—each \$17 660 plus expense allowance of \$1 780.

Chairman of Committees, House of Assembly—\$8 830 plus expense allowance of \$890.

Leader of the Opposition, House of Assembly—\$21 090 plus expense allowance of \$3 145.

Leader of the Opposition, Legislative Council—\$8 140 plus expense allowance of \$995.

Deputy Leader of the Opposition, House of Assembly—\$8 140 plus expense allowance of \$995.

Government Whip—\$5 795.

Opposition Whip—\$5 795.

In addition allowances are paid to the members of the various Parliamentary Committees.

Superannuation

All members are required to contribute to a Superannuation Fund established under the Parliamentary Superannuation Act, 1974-1982, which provides for the payment of superannuation pensions to persons, or widows or widowers or eligible children of persons, who have served as members of the State Parliament. Members qualify for a pension after fifteen years service, or after thirteen years service in five Parliaments, but can also qualify for a pension after six years service if they retire involuntarily or are over sixty years of age.

Every member is required to contribute 11.5 per cent of his salary, including additional salary received as a Minister, officer of Parliament or member of a Parliamentary Committee. According to the length of service the pension payable to ordinary members varies between 41.2 per cent of basic salary (presently \$12 990 a year) and 75 per cent of

basic salary (presently \$23 647 a year). Greater amounts of pension accrue to those members who have made additional contributions based on additional salary as a Minister or an office holder. Pensions are increased or decreased on 1 October each year in accordance with the increase or decrease in the Consumer Price Index for the preceding year ending 30 June.

At 30 June 1982 there were sixty-nine contributors to the fund; forty-three ex-members, twenty-three widows and two children were in receipt of pensions.

Cost of Parliamentary Government

The following table shows, in broad groups, the expenditure incurred in the operation of the parliamentary system in South Australia, comprising the Governor, the Ministry, the Legislative Council, House of Assembly and electoral activities.

Cost of Parliamentary Government, South Australia

Particulars	1979-80	1980-81	1981-82
		\$'000	
Governor's Establishment	484	493	650
Ministry	661	738	829
Parliament:			
Legislative Council(a)	612	996	1 106
House of Assembly(a)	1 260	1 884	2 116
Other(b)	4 951	4 725	6 881
Total Parliament	6 823	7 605	10 103
Electoral	1 166	469	503
Royal Commissions, Select Committees, etc.	81	247	155
Total	9 215	9 552	12 240

(a) Allowances to members, travelling and other expenses.

(b) Government contribution to members' superannuation funds, printing, reporting staff, library, etc.

LEGISLATIVE COUNCIL

Members and Electorates

Before the passing of the Constitution and Electoral Acts Amendment Act, 1973 each member of the Legislative Council, in addition to fulfilling the general requirements mentioned on page 85, must have attained the age of thirty years, have been a British subject, and have resided in the State for at least three years. For the purpose of electing members to the Council the State was divided into five electorates each having four members. Each electorate normally elected two members every three years, and each member occupied his seat for a minimum of six years. When a casual vacancy occurred because of the death, resignation or disqualification of a member, such a casual vacancy was filled, at a by-election in the particular electorate, for the unexpired portion of the previous member's term.

The Constitution and Electoral Acts Amendment Act, 1973, assented to on 22 November 1973, increased the number of members in the Legislative Council from twenty to twenty-two and reduced the number of electorates to one with the whole State becoming a single electorate with members elected on a proportional representation basis. This amendment did not become fully effective for two general elections as only half the Legislative Councillors retire at each election and eleven members (not ten as previously) are now elected at each general Legislative Council election. At the general

election of 15 September 1979, eleven members were elected to the Legislative Council and at present there are twenty-two members in this House. In future casual vacancies will be filled by a person chosen at a joint sitting of the members of both the Legislative Council and House of Assembly.

Franchise

Voting for the Legislative Council is voluntary for those persons whose names are on the Legislative Council Electoral Roll. Under the Constitution and Electoral Acts Amendment Act, 1973, all names which appear on the House of Assembly Electoral Roll are included on the Legislative Council Electoral Roll. Thus, all electors entitled to vote at House of Assembly elections are entitled also to vote at Legislative Council elections. Qualifications for House of Assembly electors are discussed below.

President and Chairman of Committees

At the first meeting of the Council in each Parliament the members choose one from among their number to fill the position of President and Chairman of Committees. The person so elected is then entitled to a casting vote only.

HOUSE OF ASSEMBLY

Seat of Government

The House of Assembly can be regarded as the more important Chamber in that the Government of the day holds its position as such only so long as it controls a majority in this House. When it no longer controls such a majority in vital issues, particularly 'money Bills', the Government must resign or go to the polls. Once defeated in the Lower House on a 'money Bill', the government is unable to finance the administration of the State.

Franchise

A British subject at least eighteen years of age who:

- (i) has lived continuously in Australia for at least six months, and in South Australia for at least three months, and in a Subdivision for at least one month immediately preceding the date of his or her claim for enrolment; or
- (ii) is or has been (as qualified by the Constitution Act) a member of the Commonwealth Naval, Military or Air Force, or a member of the Mercantile Marine, during any war in which the Commonwealth is or has been engaged;

is entitled to vote at an election for a Member of the House of Assembly if, at the time of the election, he or she is enrolled on the Electoral Roll for a Subdivision of the Assembly District in which the election is held, and is not of unsound mind.

Persons convicted of an offence punishable with imprisonment for one year or more and persons attainted of treason are entitled to the same voting rights as ordinary citizens under the provisions of the Constitutional Act Amendment Act, 1976.

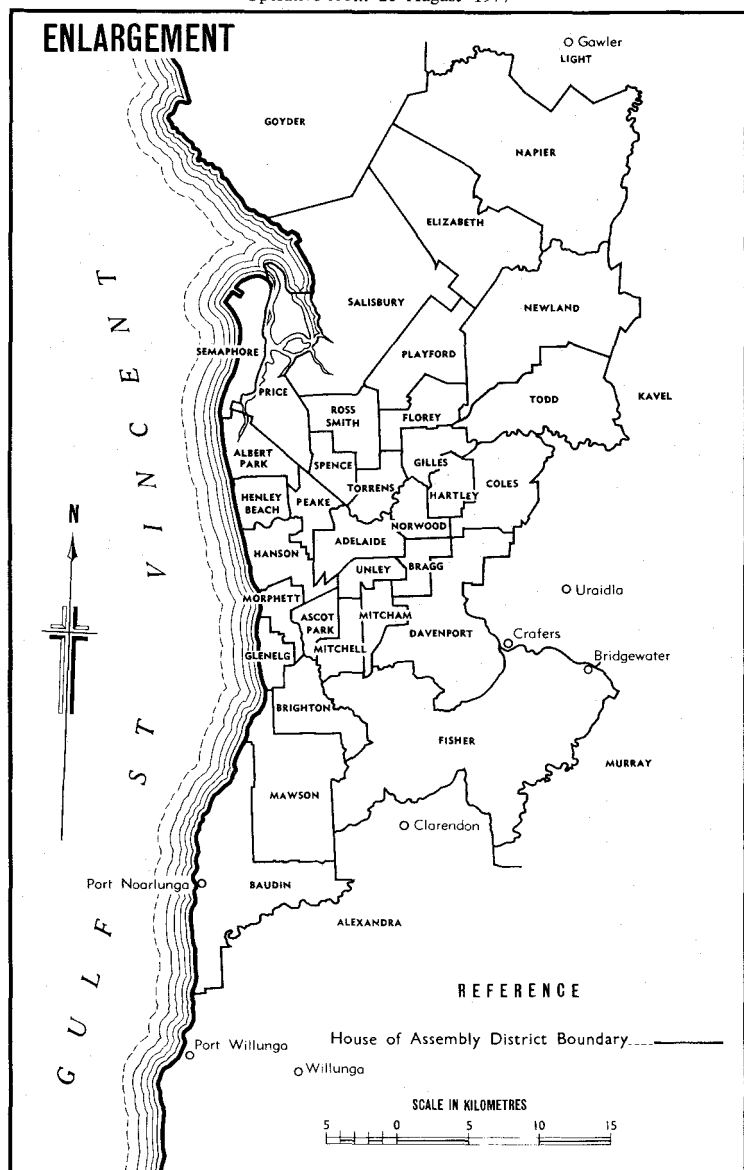
Enrolment for the House of Assembly is not compulsory but in practice, as a consequence of the operation of the Commonwealth and House of Assembly Joint Electoral Rolls, most persons enrolling for the Commonwealth Electoral Roll are also enrolled for the House of Assembly.

Membership

Subject to the exclusions mentioned on page 85 election to the House of Assembly is open to those eligible to vote in an election for the House. Members of this House are elected for a maximum of three years, for single-member districts. The seat of a member

PORTION OF SOUTH AUSTRALIA SOUTH AUSTRALIAN ELECTORAL DISTRICTS

Operative from 23 August 1977



becomes vacant through his death, resignation or disqualification and, usually, is filled at a by-election.

Electoralates and Electoral Distribution

The present allocation of thirty-three metropolitan and fourteen country electoralates for the House of Assembly became operative from 23 August 1977 and was determined by the Electoral Districts Boundaries Commission. Before this date there were twenty-eight metropolitan and nineteen country House of Assembly electoral districts. The first election incorporating the present boundaries was held on 17 September 1977.

The Commission, constituted by the Constitution Act Amendment Act (No. 5), 1975, differs from previous commissions for redistribution of electoral boundaries in that each of those commissions was created by the Parliament to make a single report and recommendation to the Parliament. The boundaries so recommended did not become effective unless the recommendation was approved by the Parliament. However, the present Commission has perpetual succession and a common seal as a corporate entity. The reports made by the Commission do not require validating legislation and become operative three months after publication of the Commission's Order.

Under the Act any elector may, within one month of the Commission's Order, appeal to the Full Court of the Supreme Court.

Officers and their Functions

A Speaker presides over the House, and his election is the first business when a Parliament first meets. He presides over debate, maintains order, represents the House officially, communicates its wishes and resolutions, defends its privileges when necessary, and applies its procedure. The Speaker may exercise a casting vote only. There is also a Chairman of Committees elected by the House at the beginning of each Parliament; he presides over the deliberations of the House in Committee and acts as Deputy Speaker when required.

Other officers of the Parliament include the Leader and Deputy Leader of the Opposition in either House and the various party whips whose function is to ensure that their party members are present in the House for divisions and other important business.

ELECTIONS AND PARTY REPRESENTATION

The following table gives details of the numbers of electors on the Electoral Rolls and voting in contested electoralates for all general elections from 1950 to 1982.

South Australian Parliament: Voting at Elections, 1950 to 1982

Date	Legislative Council			House of Assembly		
	Contested Electoralates			Contested Electoralates		
	Electors Enrolled	Electors Voting	Per Cent	Electors Enrolled	Electors Voting	Per Cent
4 March 1950	68 347	52 954	77.48	311 658	290 306	93.15
7 March 1953	97 968	79 373	81.02	354 273	336 529	95.00
3 March 1956	22 963	16 002	69.69	299 048	280 811	93.90
7 March 1959	86 278	70 007	81.14	426 340	400 531	93.95
3 March 1962	118 218	98 786	83.56	444 197	417 462	93.98
6 March 1965	186 899	149 910	80.21	542 436	513 064	94.59
2 March 1968	275 701	262 328	95.15	609 626	575 948	94.48
30 May 1970				635 533	603 952	95.03
10 March 1973	383 758	357 971	93.28	696 290	655 937	94.20
12 July 1975	771 414	719 753	93.30	771 414	721 770	93.56
17 September 1977				818 335	764 072	93.37
15 September 1979	826 586	765 033	92.55	826 586	768 985	93.03
6 November 1982	871 225	808 503	92.80	871 225	811 783	93.18

The following table shows the Party representation in both Houses of the South Australian Parliament resulting from each general election from 1950.

South Australian Parliament: Party Representation at Elections, 1950 to 1982

Date	Legislative Council			House of Assembly		
	ALP	LP	Other	ALP	LP	Other
4 March 1950	4	16	—	12	23	4
7 March 1953	4	16	—	14	21	4
3 March 1956	4	16	—	15	21	3
7 March 1959	4	16	—	17	20	2
3 March 1962	4	16	—	19	18	2
6 March 1965	4	16	—	21	17	1
2 March 1968	4	16	—	19	19	1
30 May 1970	4	16	—	27	20	—
10 March 1973	6	13	1	26	18	3
12 July 1975	10	9	2	23	20	4
17 September 1977	10	11	—	27	18	2
15 September 1979	10	11	1	19	25	3
6 November 1982	9	11	(a) 2	23	22	(b) 2

(a) Australian Democrat. (b) 1 National Party, 1 Independent.

ALP Australian Labor Party LP Liberal Party of Australia

At the general election held on 6 November 1982 there were forty-seven electorates represented in the House of Assembly, thirty-three metropolitan and fourteen country. The table below shows the electoral returns for that general election.

House of Assembly: Party Representation, 1982

Electorate	Electors on Roll	Electors Voting	Successful Candidate		
			Name	Party	First Preference Votes
Metropolitan:					
Adelaide	16 147	14 361	Wright, J. D.	ALP	7 888
Albert Park	19 931	18 751	Hamilton, K. C.	ALP	11 012
Ascot Park	16 749	15 795	Trainer, J. P.	ALP	8 409
Baudin	23 718	22 149	Hopgood, D. J.	ALP	12 802
Bragg	16 261	15 176	Tonkin, D. O. (a)	LP	9 177
Brighton	19 881	18 742	Appleby, J. E.	ALP	8 486
Coles	19 838	18 797	Adamson, J. L.	LP	8 470
Davenport	19 040	17 615	Brown, D. C.	LP	12 133
Elizabeth	20 151	18 510	Duncan, P.	ALP	10 896
Fisher	24 057	22 592	Evans, S. G.	LP	11 436
Florey	18 125	16 985	Gregory, R. J.	ALP	9 213
Gilles	16 920	15 852	Slater, J. W.	ALP	8 120
Glenelg	17 031	15 863	Mathwin, J.	LP	9 110
Hanson	17 929	16 625	Becker, H.	LP	8 720
Hartley	19 651	18 195	Groom, T. R.	ALP	8 734
Henley Beach	19 220	18 122	Ferguson, D. M.	ALP	8 782
Mawson	24 988	23 636	Lenahan, S. M.	ALP	11 968
Mitcham	16 948	15 759	Baker, S. J.	LP	7 759
Mitchell	17 698	16 448	Payne, R. G.	ALP	8 971
Morphett	16 993	15 719	Oswald, J. K. G.	LP	7 346

House of Assembly: Party Representation, 1982 (continued)

Electorate	Electors on Roll	Electors Voting	Successful Candidate		
			Name	Party	First Preference Votes
Metropolitan: (continued)					
Napier	18 740	16 922	Hemmings, T. H.	ALP	9 862
Newland	24 547	23 179	Klunder, J. H. C.	ALP	11 120
Norwood	17 722	16 008	Crafter, G. J.	ALP	8 510
Peake	16 944	15 732	Plunkett, K. H.	ALP	8 837
Playford	20 308	18 921	McRae, T. M.	ALP	10 391
Price	15 813	14 875	Whitten, G. T.	ALP	8 753
Ross Smith	16 160	14 911	Bannon, J. C.	ALP	10 200
Salisbury	23 282	21 602	Arnold, L. M. F.	ALP	13 632
Semaphore	19 080	17 826	Peterson, N. T.	IND	7 915
Spence	15 241	14 138	Abbott, R. K.	ALP	9 866
Todd	20 798	19 732	Ashenden, E. S.	LP	8 664
Torrens	16 914	15 285	Wilson, M. M.	LP	7 602
Unley	16 595	15 267	Mayes, M. K.	ALP	7 704
Country:					
Alexandra	20 194	19 097	Chapman, W. E.	LP	10 519
Chaffey	19 126	17 594	Arnold, P. B.	LP	10 219
Eyre	15 542	13 849	Gunn, G. McD.	LP	7 977
Flinders	16 587	15 652	Blacker, P. D.	NP	8 106
Goyder	17 426	16 358	Meier, E. J.	LP	9 468
Kavel	19 268	18 013	Goldsworthy, E. R.	LP	10 878
Light	16 946	16 082	Eastick, B. C.	LP	9 553
Mallee	15 858	15 019	Lewis, I. P.	LP	8 374
Mount Gambier .	18 617	17 533	Allison, H.	LP	8 444
Murray	19 116	18 016	Wotton, D. C.	LP	9 959
Rocky River	17 415	16 485	Olsen, J. W.	LP	8 943
Stuart	17 947	16 844	Keneally, G. F.	ALP	10 403
Victoria	15 998	15 080	Rodda, W. A.	LP	8 023
Whyalla	17 751	16 071	Brown, M. J.	ALP	7 356

(a) At a by-election held on 14 May 1983, the seat was won by Mr G. A. Ingerson.

ALP Australian Labor Party NP National Party
LP Liberal Party of Australia IND Independent

Speaker : The Hon. T. M. McRae, MP*Chairman of Committees* : M. J. Brown, MP*Leader of the Opposition* : J. W. Olsen, MP*Deputy Leader of the Opposition* : E. R. Goldsworthy, MP*Government Whip* : J. P. Trainer, MP*Opposition Whip* : S. G. Evans, MP*Clerk of the House of Assembly* : G. D. Mitchell

The members of the Legislative Council after the general election of 6 November 1982 were as follows:

Blevins, Hon. F. T. (ALP)	Creedon, Hon. C. W. (ALP)
Bruce, Hon. G. L. (ALP)	Davis, Hon. L. H. (LP)
Burdett, Hon. J. C. (LP)	DeGaris, Hon. R. C. (LP)
Cameron, Hon. M. B. (LP)	Dunn, Hon. H. P. K. (LP)
Chatterton, Hon. B. A. (ALP)	Feleppa, Hon. M. S. (ALP)
Cornwall, Hon. J. R. (ALP)	Gilfillan, Hon. I. (AD)

Griffin, Hon. K. T. (LP)
 Hill, Hon. C. M. (LP)
 Laidlaw, Hon. D. V. (LP)
 Levy, Hon. J. A. W. (ALP)
 Lucas, Hon. R. I. (LP)

Milne, Hon. K. L. (AD)
 Ritson, Hon. R. J. (LP)
 Sumner, Hon. C. J. (ALP)
 Whyte, Hon. A. M. (LP)
 Wiese, Hon. B. J. (ALP)

President and Chairman of Committees : Hon. A. M. Whyte, MLC

Leader of the Opposition : Hon. M. B. Cameron, MLC

Clerk of the Legislative Council : C. H. Mertin

Court of Disputed Returns

In South Australia, provision is made in the Electoral Act, 1929-1982, for the constitution of a Court of Disputed Returns which has jurisdiction to hear and determine all questions of disputed returns affecting either House of the State Parliament which are referred to it by the House concerned. No return on an election writ may be disputed, except by a petition to this Court. A subsidiary function of the Court is to hear petitions for exoneration from liability for failure to file certain electoral returns or vouchers under Part XIV of the Electoral Act.

The Court is constituted by the senior puisne Judge of the Supreme Court, or where he is not available by the puisne Judge next in order of seniority who is available.

The Court sits as an open court, usually at Parliament House, Adelaide, and has power, *inter alia* :

- (a) to compel the attendance of witnesses and the production of documents;
- (b) to examine witnesses upon oath;
- (c) subject to any Supreme Court rules, to regulate the form and mode of its own proceedings;
- (d) to declare that any person who was returned as elected was not duly elected;
- (e) to declare any candidate duly elected who was not returned as elected;
- (f) to declare any election void;
- (g) to dismiss or uphold any petition in whole or in part;
- (h) to award any costs; and
- (i) to punish any contempt of its authority.

Most cases have related to House of Assembly elections. Since 1857, the Court of Disputed Returns has considered twenty-two petitions referred to it by the House of Assembly concerning the election of twenty-seven members of that House. The Court's decisions in these cases are summarised hereunder:

Election voided and member unseated	16
Member unseated but other candidate declared to be duly elected	2
Petitions unsuccessful	2
Petitions dismissed	6
Petition withdrawn	1

REFERENDA

Since the inception of responsible government in South Australia in 1856 eight referenda have been held—the first in 1896 and subsequent ones in 1898, 1899, 1911, 1915, 1965, 1970 and 1982—and eleven proposals have been submitted.

Three proposals related to education (1896) of which only one was approved; three were constitutional (1898 and 1899)—all approved; one related to Parliamentary salaries

(1911)—not approved; one related to bar-room closing hours (1915)—favoured 6 p.m. closing; one related to the establishment of a lottery (1965)—approved; one related to extended shopping hours in the metropolitan area (1970)—not approved; and one related to daylight saving (1982)—approved.

The last referendum, held on 6 November 1982, asked House of Assembly electors 'Are you in favour of daylight saving?' Of the 811 247 electors qualified to vote 568 790 voted 'Yes' and 225 161 voted 'No'.

ADMINISTRATION

The South Australian Public Service consists of thirty-four departments.

PREMIER, TREASURER, MINISTER OF STATE DEVELOPMENT AND MINISTER OF THE ARTS

Hon. John Charles Bannon, MP

Department of the Premier and Cabinet	Department of the Public Service Board
Treasury Department	Department of State Development
Department of Trade and Industry	Department for the Arts

DEPUTY PREMIER, MINISTER OF LABOUR AND MINISTER OF PUBLIC WORKS

Hon. John David Wright, MP

Department of Labour	Public Buildings Department
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ATTORNEY-GENERAL, MINISTER OF CONSUMER AFFAIRS, MINISTER OF CORPORATE AFFAIRS AND MINISTER OF ETHNIC AFFAIRS

Hon. Christopher John Sumner, MLC

Attorney-General's Department	Department of the Corporate Affairs Commission
Courts Department	Department of Public and Consumer Affairs
Electoral Department	

MINISTER OF ENVIRONMENT AND PLANNING, MINISTER OF LANDS AND MINISTER OF REPATRIATION

Hon. Donald Jack Hopgood, MP

Department of Environment and Planning	Department of Lands Department of Services and Supply
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MINISTER OF TRANSPORT AND MINISTER OF MARINE

Hon. Roy Kitto Abbott, MP

Highways Department	Department of Transport
Department of Marine and Harbors	

MINISTER OF HEALTH

Hon. John Robert Cornwall, MLC

Hospitals Department

MINISTER OF EDUCATION AND MINISTER OF TECHNOLOGY

Hon. Lynn Maurice Ferguson Arnold, MP

Education Department	Department of Technical and Further Education
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CHIEF SECRETARY AND MINISTER OF TOURISM

Hon. Gavin Francis Keneally, MP

Auditor-General's Department

Department of Correctional Services

Police Department

Department of Tourism

MINISTER OF MINES AND ENERGY

Hon. Ronald George Payne, MP

Department of Mines and Energy

MINISTER OF COMMUNITY WELFARE AND MINISTER OF ABORIGINAL AFFAIRS

Hon. Gregory John Crafter, MP

Department for Community Welfare

MINISTER OF WATER RESOURCES AND MINISTER OF RECREATION AND SPORT

Hon. John William Slater, MP

Engineering and Water Supply
DepartmentDepartment of Recreation and
Sport**MINISTER OF HOUSING AND MINISTER OF LOCAL GOVERNMENT**

Hon. Terence Henry Hemmings, MP

Department of Local Government

MINISTER OF AGRICULTURE, MINISTER OF FISHERIES AND MINISTER OF FORESTS

Hon. Frank Trevor Blevins, MLC

Department of Agriculture

Department of Fisheries

Department of Woods and Forests

SUPREME COURT JUDGES

Judges of the Supreme Court are appointed by commission of the Governor on the advice of the Executive Council. A person may not be appointed a judge of the Supreme Court unless he is a legal practitioner of ten years standing. Judges of the Supreme Court at 7 July 1983 were:

Hon. Leonard James King (Chief Justice)	Hon. Christopher John Legoe
Hon. Dame Roma Flinders Mitchell, DBE	Hon. Brian Rothwell Cox
Hon. George Henry Walters	Hon. Robert Finney Mohr
Hon. Howard Edgar Zelling, CBE	Hon. Roderick Grant Matheson
Hon. William Andrew Noye Wells	Hon. Derek Willoughby Bollen
Hon. Alexander Keith Sangster	Hon. Robin Rhodes Millhouse
Hon. Samuel Joshua Jacobs, AO	Hon. Elliott Frank Johnston
Hon. James Michael White	

THE OMBUDSMAN

The office of the Ombudsman is established under the Ombudsman Act, 1972-1974. The Ombudsman, Mr R. D. Bakewell, is empowered to investigate complaints from members of the public concerning the administrative acts of State Government departments, State statutory authorities and local government councils.

The jurisdiction of the Ombudsman does not extend to Commonwealth Government departments or authorities, judicial decisions, police actions, or actions by private individuals or companies.

A complaint to the Ombudsman is usually made by the person or enterprise directly affected by an administrative act, although, a Member of the South Australian Parliament or some other person may act on his behalf. Complaints may be made by telephone or personal visit, but it is preferable for a complaint to be in writing giving full details including copies of any correspondence with the authority concerned.

The Ombudsman has the powers of a royal commission but conducts his investigations in private. Complainants are informed of the final result of any inquiry and where appropriate progress reports are given while an investigation is proceeding. The Ombudsman service is provided free-of-charge.

During 1981-82, 1 109 complaints were registered and of those fully investigated, approximately 38 per cent were found to be justified fully or in part.

LEGISLATION

During 1982, ninety-two Public Acts were passed by the forty-fourth South Australian Parliament. Details of some of the more important legislation passed during this period are given below.

Commercial Bank of Australia Limited (Merger) Act, 1982 (No. 72). An Act to provide for the transfer in South Australia to Bank of New South Wales of the undertaking of The Commercial Bank of Australia Limited.

The Commercial Banking Company of Sydney Limited (Merger) Act, 1982 (No. 73). An Act to provide for the transfer in South Australia to The National Bank of Australasia Limited of the undertaking of The Commercial Banking Company of Sydney Limited.

Correctional Services Act, 1982 (No. 48). An Act to provide for the establishment and management of prisons and other correctional institutions; to regulate the manner in which persons in correctional institutions are to be treated, and to repeal the Prisons Act, 1936-1981.

Fisheries Act, 1982 (No. 58). An Act to provide for the conservation, enhancement and management of fisheries, the regulation of fishing and the protection of certain fish; to provide for the protection of the aquatic habitat, and to repeal the Fisheries Act, 1971-1980.

Justices Act Amendment Act (No. 2), 1982 (No. 46). An Act to amend the Justices Act, 1921-1981, with relevance to situations of domestic violence where the inadequacies of the present law have been found to be particularly acute.

Petroleum (Submerged Lands) Act 1982 (No. 19). An Act to make provision with respect to the exploration for and the exploitation of the petroleum resources of certain submerged lands adjacent to the coasts of South Australia and to amend the Off-shore Waters (Application of Laws) Act, 1976-1980.

Planning Act, 1982 (No. 3). An Act to provide for simplified planning laws, and to regulate development, within the State; and to repeal the Planning and Development Act, 1966-1981.

Public Finance Act Amendment Act, 1982 (No. 89). An Act to amend the Public Finance Act, 1936-1981, to provide an adequate legislative framework within which statutory authorities in South Australia may borrow or enter into other arrangements for the financing of capital expenditure.

Radiation Protection and Control Act, 1982 (No. 49). An Act to provide for the control

of activities related to radioactive substances and radiation apparatus, for protection against the harmful effects of radiation, and to amend the Health Act, 1935-1980.

Referendum (Daylight Saving) Act, 1982 (No. 80). An Act to provide for the holding of a referendum of electors relating to daylight saving.

Roxby Downs (Indenture Ratification) Act, 1982 (No. 52). An Act to ratify and approve a certain indenture between the State of South Australia, its Minister of Mines and Energy, and four Australian companies, in relation to the exploitation of minerals at Olympic Dam and Stuart Shelf in the north of the State, and to make special provision for local government in relation to that part of the State subject to the indenture.

South Australian College of Advanced Education Act, 1982 (No. 1). An Act for the establishment of the South Australian College of Advanced Education; to provide for its administration and define its powers, functions, duties and obligations; to incorporate within the College the institutions known as the Adelaide, Hartley, Salisbury and Sturt Colleges of Advanced Education; and to repeal the Acts which established those institutions.

Technology Park Adelaide Act, 1982 (No. 12). An Act to establish a corporation to be known as 'Technology Park Adelaide', and to prescribe its functions and powers.

OVERSEAS REPRESENTATION

South Australia is represented in London by the Agent-General for South Australia, at South Australia House, 50 Strand, London. As official representative of the State, it is the function of the Agent-General to work in close co-operation with the High Commissioner for Australia, to keep the State Government informed of political and economic developments overseas, to promote industrial development and investment in South Australia, to encourage immigration to the State and to foster trade with the United Kingdom and other countries. The present Agent-General and Trade Commissioner is Mr J. L. Rundle, AM.

INTERSTATE REPRESENTATION

The South Australian Tourist Bureau maintains offices at 402 George Street, Sydney, NSW, and at 25 Elizabeth Street, Melbourne, Victoria, to foster and facilitate tourist travel to South Australia.

CONSULAR REPRESENTATIVES

There are 24 countries represented in South Australia by consuls, vice-consuls, consular-agents or consul-generals.

Austria: Dr Peter E. Steidl, Consul (a)

Belgium: Sir Robert E. Porter, Consul

Britain: H. Charles Schmidt, OBE, Consul-General

Denmark: John G. Branson, Consul

Dominican Republic: Peter H. D. Lathlean, Consul

Finland: Colin C. Verco, OBE, Consul

France: Dr Rex J. Lipman, Consul

Germany: Sir Bruce R. Macklin, OBE, Consul

Greece: Athanasios A. Camilos, Consul-General (b)(c)

Italy: Dr Paolo V. Massa, Consul (b)

Japan: J. Langdon Parsons, Consul-General

Lebanon: Elias G. Nemer, Consul

Liberia: William B. Coombs, Consul

Malaysia: Hassan B. M. Salleh, Consul

Mexico: Robert W. Clampett, AM, Consul

Netherlands: Willem Ouwens, Consul

Norway: John N. Howe, Consul

Peru: Max J. Hill, Consul

Philippines: Thomas P. Fowler, Consul-General

Portugal: Raymond F. Walters, Consul

Sweden: Mrs June S. Tanner, Consul

Switzerland: Paul A. Richter, Consul

Thailand: Mrs Joan M. Walton, OAM, Consul

United States of America: William J. McGovern, Consular-Agent (b)

(a) Secretary, Consular Corps.

(b) *Consul de Carriere*.

(c) Dean of the Consular Corps.

STATE EMBLEMS

A description of the South Australian Coat-of-Arms, the State Badge, the State Flag and the Floral Emblem together with coloured illustrations was included on pages 94-5 of the *South Australian Year Book* 1970.

On 27 September 1970, the hairy-nosed wombat (*Lasiorhinus latifrons*) was adopted as South Australia's official Faunal Emblem.

3.4 PUBLIC CORPORATIONS

A public corporation is defined, for statistical purposes, as a body (other than a local government authority or body whose receipts and payments are included in the public accounts of the Commonwealth, a State, or a Territory) created by or under legislation to carry out an activity or activities on behalf of a Government, or a body in which a Government has a controlling interest.

Some authorities, such as marketing boards which are set up by Acts of Parliament are not regarded as public corporations because their activities are carried out on behalf of industries rather than on behalf of any Government.

Most public corporations have independent powers for the recruitment of staff. All possess greater administrative and financial autonomy than government departments but there is a wide variation in the degree of autonomy accorded, in various aspects, to different authorities.

Activities carried out by public corporations include tertiary education, hospital services, power supply, public transport, banking services, fire control, irrigation and drainage in rural areas, control and regulation of milk supply, slaughtering of animals for human consumption, housing development, off-course totalisators and lotteries, and investigation of problems relating to the development of mineral resources.

In appropriate parts of this Year Book reference is made to the activities of most of the public corporations which operate in South Australia.

3.5 LOCAL GOVERNMENT

LOCAL GOVERNMENT AUTHORITIES

Local Government Areas: Number, Size and Status

At 1 January 1983 there were 127 local government areas in South Australia. Each local government area is controlled by a council consisting of members elected by local ratepayers and exercising powers under the Local Government Act, 1934-1983. During 1981 plans were advanced for the establishment of a form of local government for the township of Coober Pedy. The Coober Pedy (Local Government Extension) Act, 1981, came into effect on 1 January 1982. The Outback Areas Community Development Trust, described below, performs some of the functions of a local government body in the unincorporated northern areas of the State.

The total area incorporated in local government areas at 1 January 1982 was 151 524 square kilometres; this is only slightly above 15 per cent of the total area of the State but contains almost 99 per cent of the State population.

There are two major types of local government areas—district council areas and municipalities. Usually district council areas consist predominantly of rural land and contain one or more towns. Generally, to qualify for proclamation as a municipality an area must be used predominantly for either residential, business, industrial, or manufacturing purposes (or a combination of these purposes), and be able to support itself financially. Some municipalities are constituted as cities, the qualification being 15 000 inhabitants for metropolitan municipalities (the twenty-one local government areas which form the metropolitan area as defined under the Local Government Act and which, before June 1966, corresponded to the statistical Urban Adelaide) and 10 000 persons in other areas.

Of the 127 local government areas at 1 January 1983, thirty-six were municipalities (including 25 cities) and ninety-one were district council areas.

The Governor may create, abolish, or vary the size, status, or organisation of, any local government area or portion thereof, provided certain requirements are satisfied. Such alterations usually stem from petitions by electors or a council.

As a result of legislation passed in 1969 district councils may apply to the Governor for mayoral status; in previous years only municipal councils had mayors. Since the legislation twenty district councils have been granted mayoral status.

Functions of Local Government

The Local Government Act, 1934-1983 prescribes most of the 'powers and authorities' which each council shall or may exercise 'for the good government' and 'the management of the affairs' of its area, but some functions devolve from other Acts. To enable it to sue and be sued and to participate in transactions involving the purchase and sale of land and other property each council is constituted as a corporate body.

The functions performed by councils vary somewhat with the area concerned, but there are general functions which are common to them all. Many of these functions receive more detailed attention in the parts of this book dealing with the appropriate subjects, *e.g.* road construction and maintenance in Part 8.3, Roads; health services and Local Boards of Health in Part 6.5, Health; and libraries in Part 6.4, Culture and Recreation. Among the many other functions of local government authorities are the provision of street lighting, the licensing and inspection of slaughterhouses, the maintenance of cemeteries, the maintenance of foreshores and jetties, the control of the location of industries (especially noisy trades), the prevention of fires within certain areas, and the policing of provisions relating to vermin and weeds.

Organisation and Representation

Whereas a municipality must be divided into at least two areas known as wards, a district council need not have wards; however, only four district councils have undivided areas. No council may comprise less than five members, and each ward in a municipality must be represented by two councillors. No district council area may be divided into more than ten wards, and the number of councillors for each ward is established by proclamation.

A candidate for election as a councillor must be an adult elector for the area for which he seeks election. Special magistrates, undischarged bankrupts, persons holding contracts or employment under the council, persons under sentence for crimes, and persons of unsound mind are ineligible for election.

Each year half the number of councillors retire. In councils with wards, one councillor from each ward, the one who has been 'the longest in office without re-election', retires; in other councils the councillors who did not retire one year do so the next. In all cases a retiring councillor is eligible for re-election.

Any municipality may apply to add no less than three and no more than six aldermen to its council. The qualifications for councillors apply to aldermen, except that aldermen are not bound by the limits of wards, and an alderman must have served at least one year as a member of the council. Although the functions of aldermen are not specifically defined the concept is that they should impartially consider the interests of the area as a whole and so resolve any conflict which may arise between sectional interests represented by councillors.

Mayors of municipalities and of certain district councils are elected annually on the same basis as aldermen. The chairman of a district council is chosen annually by councillors from among their number.

Allowances

Council members, other than mayor or chairman, are not paid salaries or allowances, but may be reimbursed any expenses incurred in the performance of council business, and in the case of district councils, may be reimbursed the cost of travelling to and from council meetings.

The mayor or chairman receives an annual allowance which is determined at a council meeting in July of each year. This allowance, payable in advance, is to compensate for any expenses he is likely to incur in the execution of his official duty in the current financial year.

Franchise

Under the provisions of the Local Government Act, 1934-1983 universal adult franchise applied in local government elections and polls from 2 July 1977. A person is entitled to enrol as an elector if he is resident in a local government authority area, or if he is a ratepayer in respect of ratable property within the area. A body corporate is enrolled under the name of a nominated agent. Recent changes to the Act now provide the right of non-naturalised residents to be enrolled, and for local government elections to be held on the first Saturday in October.

Officers and their Functions

Each council may appoint any officers it considers necessary to carry out its duties, including constables to facilitate the maintenance of law and order within its area. Each council must appoint a town clerk (in a municipality) or a district clerk (in a district council) as the chief executive officer, and an auditor.

Employment in local government administration is now regarded as a career and

councils now require a great range of skilled employment including community development officers, accountants, planning officers, social workers and data processing personnel. Most town and district clerks are full-time employees, and councils are required to employ in those positions only those persons who have passed examinations qualifying them for the work. The characteristics of particular areas determine to some extent the nature of the duties performed by town and district clerks; they often undertake a very wide variety of functions, especially in smaller areas, where even the part-time employment of specialist officers for particular tasks is not warranted. Continuity of service between councils for long service leave and other purposes is provided for in the Local Government Act. The Minister of Local Government sets a minimum standard of superannuation benefits which must be made available to council employees. Other officers employed in local government are required to hold appropriate qualifications; these include engineers, overseers, building surveyors and inspectors, health surveyors and authorised weed officers.

The auditor for each council is appointed for a term of one year. He is not eligible for appointment unless he holds a Local Government Auditor's Certificate of competence issued by the Local Government Auditors Examining Committee.

Whenever a council itself undertakes a new assessment of property values within its area it is required under the Local Government Act to appoint a valuer who recommends to the council a valuation of each property for rating purposes. A ratepayer may appeal against a council's valuation of his own property or that of another ratepayer. Instead of undertaking its own assessment of property values it is now not uncommon for a council to adopt the valuations of the Valuer-General. When this is done a council avoids the necessity of employing a valuer but a fee for each valuation is payable to the Valuer-General. There is no right of appeal to the council against valuations so based; in respect of the Government valuation the right of appeal lies against the Valuer-General when the valuation is made.

Finance

Local government authorities derive their revenue from many different sources, including sundry licences and fines, but the principal sources are rates, loans raised against the security of future rates, and government grants. The relative importance of these sources of revenue varies between areas and through time, within areas.

Specific purpose Commonwealth Government grants, generally, are not made direct to local government authorities but are administered by appropriate State Government departments. The most important example of this is the distribution of a portion of Commonwealth Aid Roads Grant to local government authorities, by the Highways Department in conjunction with the State Treasury.

The Commonwealth Government makes available to the States for sharing by local government authorities an agreed percentage of income tax collected by the Commonwealth. The basis on which the States make the funds available to local government authorities must be agreed to by the Commonwealth Government and must include an approved distribution on a *per capita* basis with the balance distributed on an equalisation basis. South Australia is making 30 per cent of the State amount available to local government authorities on a *per capita* basis.

The State Government provides funds and subsidies to local government for a wide range of functions including public libraries, recreation centres and facilities, public parks, caravan parks, effluent and stormwater drainage, and roads.

A large proportion of local government expenditure from both loan funds and other revenue is for the construction and maintenance of roads, footpaths, and stormwater drains. Further information is contained in Part 11.5, Local Government Finance.

South Australian Local Government Grants Commission

This body was established in 1976 under the provisions of the South Australian Local Government Grants Commission Act, 1976.

Its main function is to recommend to the Minister the councils to which grants should be made and the amount of such grants. It has, for the purpose of its inquiries, the powers of a commission appointed under the Royal Commissions Act, 1917.

The Commission is required to ensure that all funds provided are distributed each year and that as far as possible, any grant to a council will be sufficient to enable the council to function at a standard not appreciably below similar councils. The grants recommended by the Commission are required to be free from any direction as to specific use.

The recommendations of the Commission must be forwarded to the Minister who may refer them back requesting further consideration. The Commission is required to reconsider its recommendation in the light of the request and following this the Minister, even though no amendments are made to original recommendations, must approve of those recommendations.

Local Government Advisory Commission

The Local Government Advisory Commission was established by Act of Parliament in 1976. The Commission comprises a Chairman who must be a person holding judicial office, one member being a public servant nominated by the Minister and another member appointed by the Governor.

The Commission is required to investigate and make recommendations on voluntary amalgamations of councils submitted to it and to advise the Minister on any matter relating to any petition or counter petitions referred to it for investigation.

The Commission has the powers of a royal commission.

Outback Areas Community Development Trust

The Outback Areas Community Development Trust Act, 1978 established the Outback Areas Community Development Trust to make funds available to improve community facilities in the isolated centres of the outback unincorporated areas of the State. The Trust is empowered to borrow \$1 million, and works closely with local community and progress associations in the determination of needs and priorities for funding.

Local Government Industry Training Committee

This body, established in 1977, is one of a number of State and National Training Committees endorsed and funded by the Commonwealth Government through the National Training Council. Its objective is to improve the education and training opportunities available to local government staff and elected members throughout South Australia.

Community Development Boards

Community Development Boards have been established in local government areas with a wide and representative membership to encourage and assist people to become more involved in the life of their local community. The Boards also promote the development of links and co-operation between organisations and groups within the local community. They are responsible to the local government authorities.

3.6 TOWN AND REGIONAL PLANNING

There are many complex and often competing demands placed on the resources of the State, all of which need to be carefully considered when making land-use decisions. Planning is the process involved in balancing these demands to achieve development that meets the needs of the community while protecting the environment. The way in which development is regulated also needs to be reviewed periodically to reflect changes in community attitudes. The South Australian Government has carried out such a review of planning controls and has introduced a new planning system in South Australia.

After the (now repealed) Planning and Development Act came into operation in 1966, there had been a large number of amendments, making it difficult to administer and confusing to the community. In addition, different planning controls applied in different parts of the State, depending on whether a council operated under interim development control or whether it had its own planning regulations. (A detailed explanation of the evolution of planning controls in South Australia is discussed in an article on Town and Regional Planning, included in the *South Australian Year Book* 1982).

A new Planning Act came into effect in November 1982, to simplify the way in which development is regulated and to introduce one common set of planning procedures throughout the State. A Planning Bill and a complementary Real Property Act Amendment Bill were introduced into Parliament in June 1981 to replace the Planning and Development Act. The Bills were 'laid on the table' to give interested community organisations the opportunity to make submissions and contribute to the formulation of the new laws. The Bills were re-introduced into Parliament in November 1981 and passed in January 1982. The new Act is known as the Planning Act, 1982.

The former State Planning Authority has been dissolved and the South Australian Planning Commission and an Advisory Committee to the Minister have been established. The Commission is responsible for making decisions on those development applications referred to the State and for providing advice on certain developments by government agencies. The landholdings of the State Planning Authority have been transferred to the Minister who is responsible for the purchase and development of major open space and regional parks. The Minister's Advisory Committee comprises eight members representing local government, commerce and industry, environmental, rural, housing and urban infrastructure interests. Its role is to advise the Minister on changes to planning policies.

Under the Planning and Development Act, each council was obliged to introduce separate planning regulations (zoning), which defined detailed planning policies for its area. Interim development control was used to control development while these planning regulations were being prepared. Confusion often arose when development plans and related planning regulations both needed amending as separate public exhibitions were required. The detailed planning policies in planning regulations and the large number of development plans existing under the old planning legislation have been consolidated into one overall plan, known as the Development Plan. There is one set of regulations common to all councils, dealing only with administrative procedures and definitions. The regulations also define which development proposals are considered by the State Government and which are considered by councils. These are known as the Development Control Regulations.

From time to time the Development Plan will need to be amended and this is achieved through Supplementary Development Plans (SDP). Councils have the responsibility for preparing SDP's for their own areas. Where broad policy changes are proposed covering more than one council area, the Minister may initiate an SDP in consultation with the

relevant councils. Any changes are publicly exhibited to give people the opportunity to comment and influence what direction planning will take within their local area.

The majority of planning decisions are taken by local government bodies, but where proposals affect wider areas or places of State significance, applications are sent to the South Australian Planning Commission for decision. The Adelaide City Council remains as a separate entity under its own development control Act. Generally, a person wishing to undertake a development, including land division, applies to the relevant local council. If a project is highly controversial or likely to have major social, economic or environmental significance, an Environmental Impact Statement may be prepared at the discretion of the Minister. In effect therefore environmental impact assessment is now integrated with planning controls. The Governor also has powers to intervene and make final decisions on major development proposals.

Under the former planning legislation, the control of land division and building development took place under separate systems and with separate procedures. Under the new Act, the procedures may be combined so that a person can apply for approval for the division and use of land at the one time.

Appeals may be made against decisions and are heard by the Planning Appeal Tribunal, previously known as the Planning Appeal Board. Rights of appeal extend to third parties.

Coast Protection

The Coast Protection Act, 1972-1978 provides for the conservation and protection of the State's coastline, including its foreshore and beaches. A Coast Protection Board of six members has been established under the chairmanship of the Director of Planning. Its objectives are broadly to protect and restore the coast, to develop any part of it for enjoyment by the public and to carry out research.

The Board makes grants to local government authorities to assist them with projects and to help carry out work within the boundaries of the appropriate coast protection districts. Work could include protective works, the provision of public facilities, conservation and rehabilitation works, and planning or engineering studies. Loss of sand from several metropolitan beaches is a major problem and the Board is devoting technical and financial resources to a sand replenishment program.

Coast protection districts are established, after which management plans are prepared setting out the measures needed to protect the coast and secure its most appropriate use. Under proposed new planning legislation, management plans will be incorporated into Supplementary Development Plans.

Two coast protection districts, Metropolitan and Yorke, were declared in 1973; Fleurieu coast protection district and South East were declared in 1974 and 1976 respectively. The declaration of the remaining three districts, Eyre, Spencer and Kangaroo Island coast protection districts will follow.

A consultant study of the Fleurieu district, which extends from the northern boundary of the hundred of Myponga to the centre of the Murray Mouth, was completed in 1978 and the draft management plans for the district, together with those for the Metropolitan coast protection district, were displayed for public comment in 1979. A study report for the Yorke district, which includes the coastline from Port Gawler to the northern boundary of the District Council of Port Broughton, has been completed and a draft management plan is now under way. Work was also commenced on a management plan for the South East Coast Protection District during 1979.

In 1981-82 the Coast Protection Board spent \$1 701 207 on foreshore protection, repairs, improvements and restoration, studies and research. Much of this work was

undertaken by local government bodies who, in many cases, contributed additional funds towards the cost of the works and land.

Rundle Mall

A special article on the development of Rundle Mall appeared on pages 114-18 of the *South Australian Year Book* 1977.

PART 4

LAND SETTLEMENT

4.1 LAND TENURE

The Department of Lands is one of the oldest government departments in the State. It implements the land management policies of the Government, maintains records of land tenure, and provides a number of services which are outlined in the following summary:

Registrar-General's Office is responsible for the maintenance of highly developed information systems of registration of land ownership and occupation. The Land Ownership and Tenure System (LOTS) provides detailed information from a computer based file of land titles and valuations. On-line facilities are presently available in Port Lincoln, Berri, Mt. Gambier, Kadina, Clare, Naracoorte, Murray Bridge, Pt. Augusta, Noarlunga, Glenside, Warradale and Adelaide and a wider distribution of terminals is planned;

Valuer-General's Office provides property valuations which are used by State and local governments in the management of revenue raising systems. Staff of the Valuer-General's Office are located in Berri, Kadina, Port Lincoln, Mount Gambier, Port Augusta, Murray Bridge, Noarlunga and Adelaide;

Land Resource Management Division manages the Government's interest in Crown Lands and other properties where the Crown has a residual interest. It also administers land settlement schemes and is involved in the development of residential and industrial estates in metropolitan and country areas. Officers of this Division are located in Adelaide, Berri, Murray Bridge, Naracoorte, Port Lincoln, Ceduna and Mt. Gambier;

Survey Division is responsible for the co-ordination and control of surveys to provide a basis for the accurate location of land parcels. The Division also provides the aerial

photography and mapping which assists in the planning and management of State-wide development.

IDENTIFICATION OF LAND AND REGISTRATION OF TITLE

To facilitate the identification of land, the southern portion of the State encompassing all the arable land and certain pastoral areas has been subdivided into counties and these in turn have been generally subdivided into smaller units known as hundreds.

The first Surveyor-General, Colonel Light, had been instructed by the Colonisation Commissioners to divide the colony into towns and counties, and in 1842 the first nine counties were proclaimed. As the administration was having considerable difficulty in regulating the leasing of unsold lands for pasturage it was proposed in 1846 that boundaries of areas smaller than counties be created and the system of hundreds, used in some counties in England, was adopted.

The boundaries of early counties and hundreds followed natural features. As further counties and hundreds were declared, natural features suitable for boundary delineation were not always available and in most cases the boundaries were set parallel to lines of longitude and latitude.

In 1887 an area of 100 000 hectares was declared to provide for the town and irrigation area of Renmark on the River Murray. Similar areas were subsequently surveyed and proclaimed adjacent to other sections of the River.

There are currently forty-nine counties covering 23 per cent of the State, the last of these being declared in 1933. The counties have an average size of 463 000 hectares, varying from County Light, north of Adelaide, with 217 470 hectares to County Jervois on Eyre Peninsula with 959 000 hectares.

Counties are generally subdivided into hundreds, although four northern counties remain undivided and a number of others are only partly subdivided. There is considerable variation in the size of hundreds, while the number of hundreds in a completely subdivided county varies from eight in Counties Alfred and Kintore to thirty-four in County Jervois. New hundreds are created from time to time, the present total being 535. Hundreds are further subdivided into sections which in turn may be divided into allotments or occasionally blocks.

Land is therefore, for the purposes of title, identified by the county, hundred, and section, and, where appropriate, block or allotment within which it falls. Land in towns and in proclaimed irrigation areas may further be identified as falling within that town or area.

Torrens System of Land Registration

Land transactions in South Australia are conducted under the Torrens System of land registration as provided by the Real Property Act, 1886-1982. This system, first introduced by the Real Property Act, 1858, was named after its author, Sir Robert Torrens, who was at that time Registrar-General of the Colony.

The Torrens System provides that the matter of title to land shall be a government responsibility. Each piece of land is represented by a certificate of title which, with very few (and in practice unimportant) exceptions, is guaranteed by the State. Retrospective examination which is necessary with general law title is eliminated and the costs and time involved in conveyancing can thus be kept to a minimum.

An amendment to the Real Property Act in 1967 provided for the creation of interests in land by a three-dimensional division of the land into strata units by means of strata plans. Under the provisions of the amendment, a strata plan creates individual private rights (as well as common entitlements) in the property depicted in the plan. The enactment of this legislation enabled titles to be issued for home unit developments

within a system which provided for the individual rights of the unit owners and for their corporate rights and responsibilities in common property.

The following table shows details of mortgages, transfers and other transactions relating to land under the Real Property Act, 1886-1982 for each of the three years to June 1982.

Real Property Act Transactions, South Australia

Item	1979-80	1980-81	1981-82
		\$ million	
Amount lent on mortgages	1 711	1 615	1 442
		Number	
Certificate of title:			
Issues (a)	17 083	15 343	14 970
Transfers	46 015	47 716	45 780
Mortgages (b):			
Registrations	52 360	47 352	42 463
Discharges	51 621	51 311	48 222

(a) Includes limited titles and some replacement of old documents without change of ownership of land.

(b) Includes mortgages of Crown and other leases.

The Real Property (Registration of Titles) Act, 1945-1975 provides for the small proportion of land remaining under the general law to be converted to the Torrens System and this transition is still in progress in certain areas.

SYSTEMS OF TENURE

CURRENT TENURE

In the table below, occupied land in South Australia is classified according to its present form of tenure. Thus 'Area sold, dedicated, etc.' does not represent the accumulated total of all alienated lands as certain alienated lands repurchased by the Crown are currently held under leases.

At 30 June 1982 land in South Australia was occupied as follows:

	Area Hectares	Proportion Per Cent
Area sold, dedicated, etc.;		
Sold	15 109 057	15.35
Free grants	858 230	0.87
Dedicated (a)	135 988	0.13
Under agreement to purchase	217 722	0.21
Total	16 320 997	16.56
Area under lease and licence (b);		
Perpetual	8 543 517	8.68
Pastoral	45 963 100	46.72
Other	273 350	0.27
Total	54 779 967	55.67

	Area Hectares	Proportion Per Cent
Area in occupation	71 100 964	72·23
Remainder of State;		
Lakes and lagoons	3 107 986	3·16
Open for allotment or selection		
Other vacant land (c)	24 228 728	24·61
Total area of State	98 437 678	100·00

(a) Includes State forest reserves.

(b) Includes areas held under Mining Acts.

(c) Includes surveyed roads, railways and other reserves, 9 453 438 hectares; of which 7 948 396 hectares are set apart as Aboriginal reserves.

In 1901 the area sold, granted and leased, *i.e.* the area occupied, was 37 934 751 hectares, increasing to 57 472 548 in 1924, but falling to 52 370 744 in 1931 because of decreased areas under pastoral lease. Since 1931 there has been a fairly steady increase to the present figure of 71 100 964 hectares.

LAND ADMINISTRATION

Approximately 90 per cent of the occupied area of South Australia comprises Crown land held under lease and as such is controlled by the Department of Lands. This Department is charged with the general administration of Crown lands, and with making available under appropriate tenure newly developed lands and such lands as come into the hands of the Crown by resumption, expiry, surrender or forfeiture of existing tenure. The consent of the Minister of Lands is required before the transfer, mortgage or sublease of any of the forms of tenure administered by the Department.

Land available for leasing is allotted by the Land Board and, in the case of pastoral lands, by the Pastoral Board, who interview applicants and make allotments on merit. The Boards also advise the Minister on matters connected with land settlement.

Leases and licences under the various mining Acts are issued and supervised by the Department of Mines, while the Woods and Forests Department and the Engineering and Water Supply Department are responsible for the issuing of leases over reserves and areas under their control.

METHODS OF ALIENATING LAND

Sales under Agreement to Purchase

There is provision for Crown lands to be alienated through an agreement to purchase. The purchase money is payable over varying terms not exceeding sixty-four years and the purchaser must comply with certain special conditions concerning the improvement and the development of the land, including the fencing of the property within the first five years. It is not necessary for an agreement to run the full term as, subject to the Minister's approval, purchase may be completed after six years provided the purchaser has complied with all the necessary conditions. Land allotted under Agreements to Purchase amounted to 238 hectares in 1981-82.

Sales at Auction

Certain Crown lands may be sold at auction for cash. These include town lands, suburban lands exempt from the operations of the Land Board, and Crown lands which have been offered for lease and not taken up within two years. Town lands so sold are subject to limitations on resale and conveyance through mortgage during the first six

years, and it is usually conditional that improvements, for an agreed function and of a certain minimum value, be erected within a stipulated period.

Trust Grants and Reservations

A free grant of Crown lands may be made for any public purpose. Of the 858 230 hectares thus alienated at 30 June 1982, 310 799 hectares had been granted for the Defence Research Centre. Lands may also be dedicated and reserved for a variety of purposes such as forest reserves, Aboriginal reserves, national parks, conservation parks, recreation parks, parklands and schools.

METHODS OF LEASING AND LICENSING LAND

Leases for Limited Terms

Pastoral lands outside the counties and large areas in the northern counties are held under pastoral leases granted for terms of forty-two years (except in the case of previously unoccupied lands when the term is twenty-one years) or for shorter terms where the land may be required for other purposes. Under the conditions of these leases the lessee must expend in improvements a sum as recommended by the Pastoral Board and must comply with certain conditions on stocking. Rent is based on the carrying capacity of the land, the distance from markets and the proximity of transport facilities, and in the case of recent leases, is reviewed every seven years. Such lands may be reallocated to the same lessees on expiry of the existing terms.

In certain circumstances, for example, where land has not been surveyed or its potential is uncertain, or where permanent alienation is not desirable, miscellaneous leases are issued for periods up to twenty-one years. Certain business and industrial sites may also be held under miscellaneous lease. Annual licences may be granted over Crown lands for certain industrial sites, grazing areas, fishermen's residences, holiday shack sites and other approved purposes.

Land reserved for the Woods and Forests Department was leased for cultivation or grazing purposes for a period not exceeding forty-two years. At 30 June 1982, there was no forest land under lease.

Perpetual Leases

Leases in perpetuity may be offered over Crown lands which have been surveyed or delineated on the public maps. The lessee is required to provide boundary fencing and may be required to clear and render available for cultivation a certain proportion of the land within a specified period.

In certain cases special perpetual leases are available under which no rent is payable for the first four years, and with less than full rent over the next six years.

Sections in government controlled irrigation areas are offered on perpetual lease and, if the land has not been cultivated previously, rents and water rates are payable on a sliding scale for the first three years. Certain improvements are required to be made. Town allotments in irrigation areas may be offered under perpetual lease either at auction, by calling applications, or may be let on annual licence. Allotments may also be offered at auction for cash or for agreement to purchase. Allotments not sold at auction may be sold by private contract.

During 1980-81, 2 337 hectares in irrigation areas were allotted under perpetual leases.

MINING CLAIMS, LEASES AND LICENCES

Legislation

The granting of leases and licences and the pegging of new claims is governed by the Mining Act, 1971-1982. A total of 276 private mines was current at 30 June 1982. Mineral royalties received by the Department of Mines and Energy during 1980-81 amounted to \$6 535 000.

The following table shows tenements held under the Mining Act, 1971-1982 and the Petroleum Act, 1940-1981 for the last five years.

**Tenements Held Under Mining and Petroleum Acts, South Australia
At 30 June**

Particulars	1977	1978	1979	1980	1981	1982
Mineral claims	68	334	131	91	112	154
Precious stones claims	1 222	1 094	1 450	1 484	1 464	1 512
Leases	674	1 530	1 393	1 476	1 534	1 601
Exploration licences	120	109	123	231	369	372
Petroleum licences and permits	5	18	19	23	28	35

Minerals Resumed

The mineral rights on private land were resumed by the Crown in July 1972 so that all minerals are the property of the Crown. If minerals (other than extractive minerals) which have been resumed under the Mining Act, 1971-1982 are mined any royalties collected upon the minerals recovered are payable to the person so divested of his property in minerals upon application.

A royalty of 2.5 per cent (5 per cent for extractive minerals) of the value of the minerals, realised upon their sale, is payable to the Minister of Mines and Energy on all minerals (except precious stones) recovered and sold or used for commercial purposes. No royalty is payable on precious stones.

Extractive Minerals

Extractive minerals are defined as sand, gravel, stone, shell, shale or clay but does not include any such minerals that are mined for a prescribed purpose, nor fire-clay, bentonite or kaolin. No person is permitted to peg claims for extractive minerals on freehold land other than the person who, immediately before the operation of the Mining Act, 1971-1982 held the mineral rights or had rights to mine the minerals by holding a claim or lease over the deposit. Normal pegging rights apply to extractive minerals on other than freehold land or exempt land, and also apply to other minerals on freehold land.

The royalties collected from the mining of extractive minerals are paid into the Extractive Areas Rehabilitation Fund to be used in rehabilitating land disturbed by mining operations. The Fund may also be used for research into methods of mining engineering and practice with a view to reducing environmental damage or impairment. Receipts into this Fund during 1980-81 amounted to \$774 000.

General Conditions

A current miners right or, in the case of precious stones, a precious stones prospecting permit must be held by every prospector to authorise the pegging of the appropriate class of claim.

At least three weeks notice of entry for prospecting or mining purposes must be given

to the landholder if the land is freehold or held on perpetual lease. Three weeks notice must also be given to any landholder before 'declared equipment' can be used on his land. In either case the landholder may lodge an objection with the Warden's Court.

A claim (other than a precious stones claim) has a maximum term of twelve months, is not transferable and must be converted to a lease before minerals can be removed for sale or used for commercial purposes.

A mining lease may be granted after twenty-eight days notice in the *South Australian Government Gazette* for a term of up to twenty-one years with certain rights of renewal. A mining lease is transferable with the Minister's consent and an annual rent is payable on a mining lease. Nineteen-twentieths of the rent collected on a lease on freehold land is paid to the landholder.

Exploration licences have a maximum term of five years and a maximum area of 2 500 square kilometres and are subject to the terms agreed. Twenty-eight days notice must be given in the *South Australian Government Gazette* before an exploration licence is granted.

Mining leases and exploration licences are granted under conditions which give proper consideration to the protection of the environment.

4.2 LAND SETTLEMENT SCHEMES

CLOSER SETTLEMENT

There is provision in the Crown Lands Act for acquisition of land for subdivision to encourage closer settlement. Such land is divided into blocks and offered under conditional agreements to purchase with payment over thirty-five and sixty-four year periods.

No land has been purchased for closer settlement since 1952-53, by which time 384 298 hectares had been purchased at a cost of \$5 730 400, including 21 008 hectares set apart for returned service personnel from the 1914-18 War, 1 302 hectares for forest and water conservation purposes and 10 758 hectares purchased in connection with the reclamation of River Murray swamp lands.

At 30 June 1982 a total of 12 930 hectares of closer settlement lands was held under agreement to purchase.

MARGINAL AREAS ASSISTANCE

The excessive opening up of the drier marginal lands for wheat growing resulted in many settlers in these areas being forced to leave their holdings, particularly in the 1930s.

Investigations showed that if the settlers were to succeed, cereal growing would need to be replaced by grazing. The Commonwealth Government established a Marginal Lands Improvement Fund to assist this development. The money was used to purchase properties from certain settlers with a view to enlarging the holdings of others, to provide fencing and water supplies and to pay small grants to settlers vacating holdings in which there was no equity.

The Fund was provided by the Commonwealth Government under the *Wheat Industries Assistance Act 1938*. An amount of \$1 426 000 was allocated to South Australia. By arrangement with the Commonwealth Government the rentals and income from sales of improvements on marginal lands which had been subject to adjustments under the above Fund are retained as an additional fund to be used for assistance to settlers in marginal areas. Receipts for 1979-80 amounted to \$26 474.

During 1967-68 an amount of \$150 000 was transferred from this Fund to the Farmers

Assistance Fund. No advances were made from this Fund during 1980-81. The balance of the Fund at 30 June 1981 was \$535 518.

CROWN LANDS DEVELOPMENT

The Crown Lands Development Act, 1943-1973, administered by the Department of Lands, provides for the development of Crown lands, or lands which the Department may purchase, and for the allotment of such lands to suitable settlers.

A substantial proportion of the land under the Act was developed with the object of inclusion in the War Service Land Settlement Scheme. Properties not accepted for the scheme were subsequently allotted under the Act, and since then a number of individual properties have been surrendered to the Crown for development and re-allotment to the former holders.

ASSISTANCE FOR RETURNED SERVICE PERSONNEL

1914-18 WAR

Following the 1914-18 War, the State Minister for Repatriation was authorised to acquire land for the purpose of re-settling discharged servicemen. Such land could be purchased by agreement or acquired compulsorily, whether held in fee simple or under Crown lease. Crown lands could also be set apart for this purpose. The land acquired was subdivided where appropriate and offered under agreement to purchase, perpetual lease or a term lease. Provision was also made for the discharging of existing mortgages on freehold properties already held by ex-servicemen, with fresh mortgages in favour of the Minister of Repatriation.

In all, 3 801 ex-servicemen were settled, with 3 008 settling in 'dry lands' and 793 in irrigation areas.

1939-45 WAR AND KOREA-MALAYA OPERATIONS

War Service Land Settlement

Under the War Service Land Settlement Scheme, provision was made for the settlement on rural holdings of certain ex-servicemen from the 1939-45 War and Korea and Malaya operations.

Suitable Crown land was made available and other land was acquired. This land was subdivided and developed to a stage where it could be brought into production by the individual settler within a reasonable time. Basic structural improvements were provided and it was then offered to eligible settlers on perpetual lease. Credit facilities are available to these settlers for working capital, the purchase of stock and equipment, and the effecting of further improvements.

During the first year after allotment in the case of 'dry lands' settlers, and the first year after an irrigation holding became self-supporting the settler was granted a living allowance and was exempted from the payment of rent or interest in respect of the holding, and of payments on account of principal or interest in respect of advances, other than advances for working capital. Provisions exist for a settler on 'dry lands' to convert property to freehold after a period of ten years by the payment of a fixed purchase price and the repayment of all advances. There is no provision for freeholding in government irrigation areas.

The following table shows for recent years the number of farms allotted and total expenditure under the War Service Land Settlement Scheme.

**War Service Land Settlement, South Australia
Farms Allotted and Total Expenditure to 30 June**

Particulars	1979	1980	1981	1982
Farms allotted:				
Number	1 032	1 032	1 032	1 032
Area ('000 hectares)	285	285	285	285
Expenditure:			\$'000	
State	10 775	10 838	10 838	10 838
Commonwealth Government;				
Acquisition of land	6 846	6 846	6 846	6 846
Development and improvement of land	31 648	31 648	31 647	31 577
Provision of credit facilities	44 846	45 166	45 328	45 413
Other	17 579	17 625	17 662	17 695
Total expenditure by Common- wealth Government	100 919	101 285	101 483	101 531
Total expenditure	111 694	112 123	112 321	112 369

The Department of Lands administers the War Service Land Settlement Scheme on behalf of the Commonwealth Government. The Commonwealth Government provides the funds and meets the costs of the scheme with the exception of administration costs and two-fifths of any losses, which are met by the South Australian Government.

All large scale development operations under the scheme have now been completed. The principal areas settled are in the South East, on Kangaroo Island, Eyre Peninsula, and in irrigation areas along the River Murray.

Loans and Allowances (Agricultural Occupations) Scheme

The Commonwealth Government through the State Bank of South Australia provided financial assistance for the establishment or re-establishment of ex-servicemen in agricultural occupations. Loans were made for a variety of purposes and non-repayable allowances were made where income during the course of re-establishment proved to be inadequate. The payment of allowances and the advancing of new loans ceased in 1956-57 by which date loans totalling \$2 009 096 had been made to 1 288 ex-servicemen, and allowances totalling \$649 218 had been granted to 2 264 ex-servicemen.

An additional Marginal Lands Improvement Fund was established in 1943 from which expenditure of \$416 476 had been made to 30 June 1978 by the Department of Lands.

SOUTH AUSTRALIAN URBAN LAND TRUST

The Urban Land Trust Act, 1981, which repealed the Land Commission Act, 1973-1977 and continues the corporation previously known as the South Australian Land Commission under the new name of the South Australian Urban Land Trust, came into operation by proclamation on 26 November 1981.

The Urban Land Trust Act incorporated the changes made by the South Australian Government in April 1980, restricting the former Land Commission to a principal role of providing an urban land bank of broadacres.

Loans had been provided to the State for the purposes of the Land Commission under

Financial Agreements between the Commonwealth and State Governments. The availability of loans from the Commonwealth Government ended with the close of the 1977-78 financial year, as prescribed in the Agreements.

In view of its decision to restrict the future role of the Land Commission to that of a land bank and other changes in circumstances which had occurred since the Financial Agreements with the Commonwealth Government were made, the State Government entered into negotiations to alleviate the increasingly heavy burden of debt due to the Commonwealth.

Following negotiations, in November 1981 the Commonwealth Government agreed to waive the total indebtedness of \$88 995 953 as at 30 June 1981 for a lump sum payment of \$36 000 000. Of this amount, \$25 000 000 was paid in June 1982. Under the terms of settlement, the remaining \$11 000 000 is payable by equal amounts of \$5 500 000 in each of the financial years 1982-83 and 1983-84.

The Urban Land Trust's broadacre land bank totalled 3 847 hectares in eight local government areas as at 30 June 1982. Through leasing arrangements, the Trust has continued its policy of keeping almost all broadacre land in productive use pending sale. Sales of broadacre areas have included land for school sites, roadworks, commercial uses and community purposes.

Since first releasing fully serviced housing allotments in 1975, the Trust has sold, to 30 June 1982, a total of 4 664 allotments. The balance held by the Urban Land Trust, as at 30 June 1982, totalled 1 924 allotments in seven local government areas.

PRIVATE LAND DEVELOPMENT SCHEMES

The most important private scheme in South Australia has been a project, begun in 1949 by the Australian Mutual Provident Society to develop a large area of land in the south-east of the State in what was previously known as the Ninety Mile Desert. The development of this area was made possible by the discovery that the retarded nature of the country was caused by certain soil deficiencies, and that these deficiencies could be overcome by the addition of trace elements (mainly copper sulphate and zinc sulphate) to the soil.

Large tracts of unimproved land were obtained either by purchasing existing leases or by Crown allotment. Intending settlers were employed by the Society in the development work, covering a period of approximately five years, and were then allotted a holding over which they had a perpetual lease title. The Society provided finance for the purchase of land, and for stock, plant and working expenses. In all, 38 880 hectares were taken up by employees of the Society.

In addition to the development of land for employees a large area was developed to various stages and sold to the public; sales in this category amounted to 132 435 hectares.

ADVANCES TO THE RURAL SECTOR GOVERNMENT ADVANCES

Advances Administered by State Bank

In addition to advances made under schemes mentioned above, the State Bank administers certain funds provided by the State for rural development.

Under the Advances to Settlers Act, 1930-1972, the Bank makes advances to settlers for a variety of purposes including general improvements, the purchase of livestock and the discharging of existing mortgages. The Loans to Producers Act, 1927-1980 empowers the Bank to make advances for certain developmental projects and the purchase of

certain capital equipment. The Bank also administers Acts providing loans for the construction of vermin-proof fencing, general fencing and the laying of water piping.

Financial Details

The following table gives details of advances made to the rural sector by government authorities and balances outstanding at 30 June 1981.

Advances to Settlers, South Australia

Particulars	Advances made during 1980-81	Total Advance at 30 June 1981	Principal Outstanding at 30 June 1981	
			Persons	Amount
	\$'000	\$'000	Number	\$'000
Department of Lands:				
Advances to soldier settlers	—	10 144	97	64
Advances under closer settlements Acts	—	5 461	72	52
Settlement of returned service personnel (1939-45 War) (a)	145	45 235	344	3 783
Advances under Crown Lands Development Act	—	986	38	391
Department of Agriculture:				
Advances for Natural Disaster Relief (b)	33	24 888	1 311	13 431
Advances under Marginal Dairy Farms Reconstruction Scheme (a)(b)	—	1 196	132	461
Advances under Rural Reconstruction Scheme (a)	2 634	32 362	735	20 864
Advances under Fruitgrowing Reconstruction Scheme (a)(b)	1	418	181	304
Advances under Beef Industry Assistance Scheme (b)	—	734	54	178
Advances under Rural Adjustment Scheme	3 344	17 367	526	15 349

(a) Advances made from funds provided by the Commonwealth Government.

(b) Currently not operative.

Farmers Assistance Fund

The Primary Producers Emergency Assistance Act, 1967-1982 provides a means of servicing the essential carry-on requirements of primary producers suffering loss as a result of drought, fire, flood, frost, animal or plant disease, insect pest or other natural calamity. Assistance is given to enable such persons to continue in the business of primary production where no other source of financial assistance is available to them and who, by virtue of the assistance, have a reasonable prospect of being able to continue in the business of primary production.

Payments and/or direct grants may also be made towards the cost of fodder or water for starving stock, including the transport of livestock to and from agistment and for any other purpose deemed necessary.

The first \$3.0 million expenditure in any calamity is to be borne from State funds.

The terms and conditions of loans, including terms and conditions relating to interest, are determined by the Minister.

Rural Industry Assistance Scheme

The Rural Industry Assistance (Special Provisions) Act, 1971-1972 and Rural Industry Assistance Act, 1977 gave effect to agreements between the Commonwealth and South Australian Governments for a scheme of assistance which provides for carry-on finance, debt reconstruction, farm build-up, farm improvement, rehabilitation and household support loans.

Details of the number of applications received and the expenditure involved are shown in the following table.

**Rural Industry Assistance: South Australia, Applications and Approvals from
Commencement of Operations to 30 June 1981 ^(a)**

Debt reconstruction:	
Applications received	1 439
Applications declined	819
Applications approved	546
Total assistance approved	\$17 640 000
Average assistance approved	\$32 000
Farm build-up:	
Applications received	1 626
Applications declined	622
Applications approved	904
Total assistance approved	\$32 985 000
Average assistance approved	\$36 000
Farm improvement:	
Applications received	125
Applications declined	42
Applications approved	67
Total assistance approved	\$644 000
Average assistance approved	\$10 000
Rehabilitation:	
Applications received/approved	25
Total assistance approved	\$87 500
Expenditure to 30 June 1977	\$82 500
Household support:	
Applications received	87
Applications declined	10
Applications approved	68
Total assistance approved	\$389 000

(a) Commenced 27 May 1971.

Carry-on finance and debt reconstruction are designed to assist the farmer who, although having sound prospects on a long-term basis, has used all of his cash and credit resources and cannot meet his financial commitments.

Farm build-up is to assist the process whereby farms which are too small to be profitable can be enlarged to an economic unit.

Farm improvement is intended to assist in restoration of an uneconomic property to economic viability by improving the use of the property without increasing its size.

Rehabilitation and household support measures provide limited assistance to alleviate conditions of personal hardship.

Part B carry-on assistance provides aid to specific rural industries suffering the effects of a severe market downturn or similar situation.

Funds were provided initially by the transfer of the balance of the Primary Producers Debt Adjustment Fund (\$804 636) to the Rural Industry Fund. Other contributions to the Fund are made by the Commonwealth Government and at 30 June 1981, \$40 250 365 had been received. The State is liable for the repayment to the Commonwealth Government of 75 per cent of the moneys made available by the Commonwealth Government under

the terms of the Rural Assistance (Special Provisions) Act, 1971 and 85 per cent of the moneys advanced under the terms of the Rural Industry Assistance Act, 1977.

Total advances from the Fund by way of repayable loans to 30 June 1981 amounted to \$49 729 000.

4.3 STATISTICAL DIVISIONS AND SUBDIVISIONS

For the purpose of presenting the statistical series of South Australia, the State is divided into a number of areas which are entitled statistical divisions.

PREVIOUS STATISTICAL DIVISIONS

Statistical series for South Australia have been published at various times under two different sets of statistical divisions—'Primary' Statistical Divisions, the boundaries of which have followed the boundaries of proclaimed counties, and 'Census' Statistical Divisions, where boundaries for the most part have followed the boundaries of local government areas.

Before 1889 agricultural statistics were published for counties from at least 1851, and local government areas from 1854. Publication of statistics by 'Primary' Statistical Divisions commenced in 1889 on the basis of five statistical divisions made up of thirty-eight counties. In 1920-21 an additional division was created to limit the number of counties in each division (as the number had by this time increased to forty-eight) and the number of 'Primary' divisions remained at six from that date.

Early population census results were published on the basis of local government areas and counties, but for the 1891 and 1901 Censuses the five 'Primary' Statistical Divisions were used. The Census of 1911, which was the first conducted by the Commonwealth Government reverted to use of counties for published results whereas subsequent censuses, up to and including 1947, were published using local government areas. Details of the 1954 and subsequent population censuses have been published by 'Census' Statistical Divisions.

For the 1966 Census an additional division, the Adelaide Statistical Division, was delineated to embrace the area expected to contain the urban development of Adelaide during a period of at least twenty years.

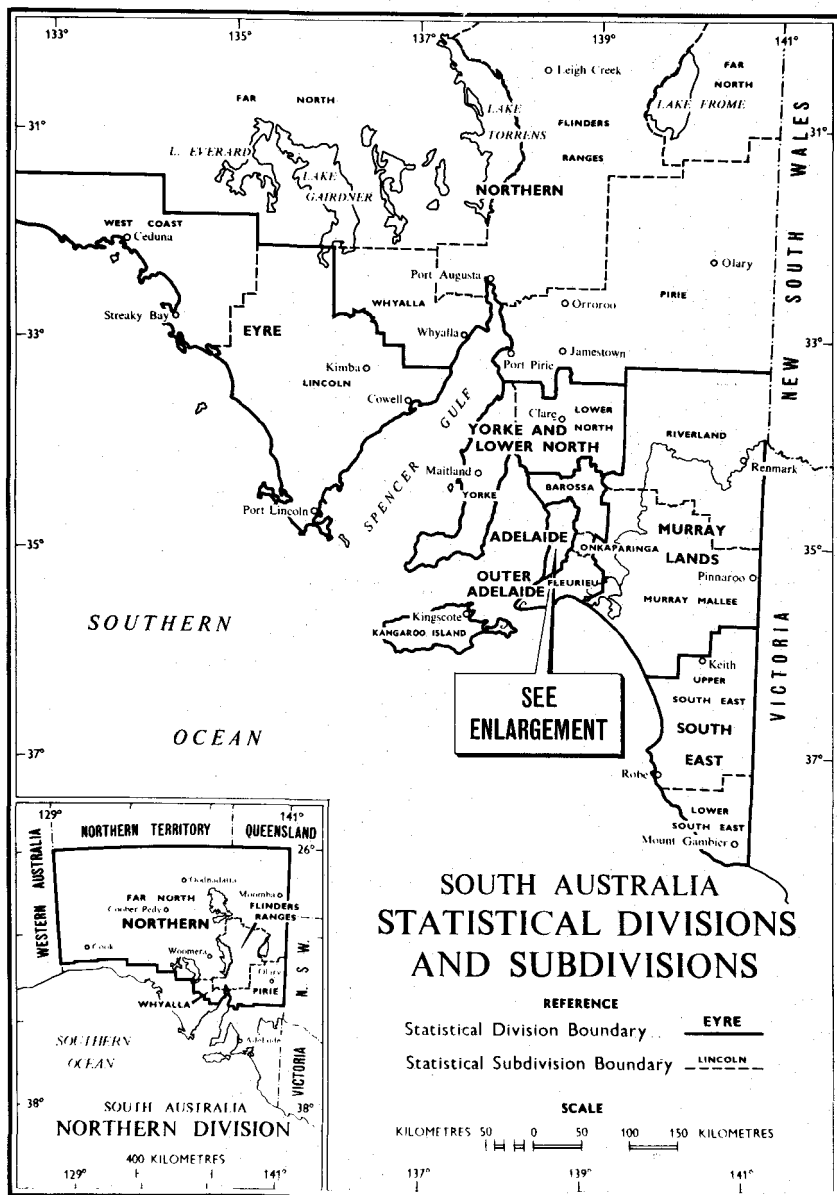
Although, ideally, statistical division boundaries should remain unchanged over time so as to enable comparisons to be made of constant areas, growth in certain statistical divisions, together with the adoption of the Adelaide Statistical Division for the 1966 Population Census, made it desirable to review the boundaries and to select a new group of statistical divisions.

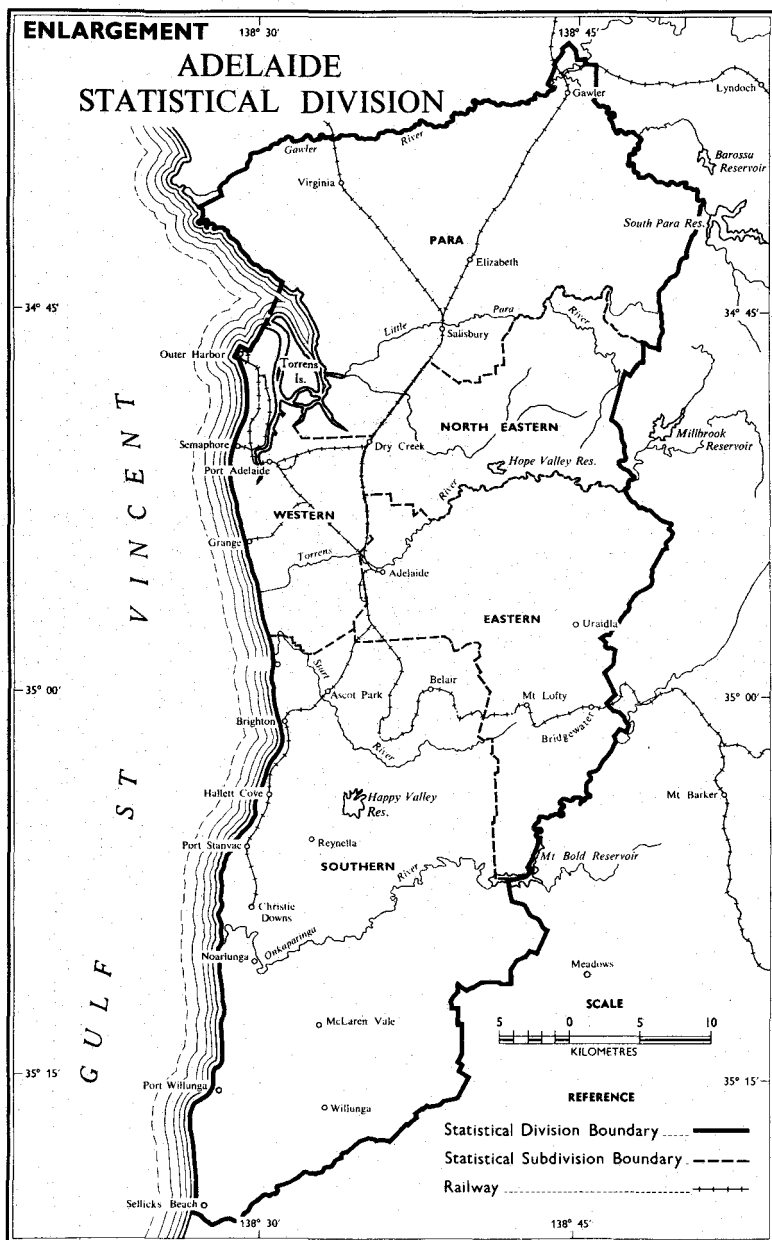
The new statistical divisions were designed to represent closely allied and meaningful areas of production and community interest and where areas smaller than divisions were considered to be important, subdivisions were introduced.

These statistical divisions and subdivisions were adopted for the publication of official statistics from 1 January 1971.

CURRENT DIVISIONS AND SUBDIVISIONS

From 1 July 1976 new statistical divisions and subdivisions were adopted for the publication of official statistics. Maps showing the new statistical divisions and subdivisions are included on pages 121 and 122. A more detailed article together with descriptions of the divisions and subdivisions was included on pages 135-43 of the *South Australian Year Book* 1977.





PART 5

POPULATION

5.1 THE CENSUS

PRE-FEDERATION ACTIVITY

Early 'musters'

Population returns in one form or another have existed from a very early period in the history of Australia. The earliest enumerations were known as 'musters', and although the actual results of very few of them have been preserved, it is probable that during the early days of colonisation they were of frequent occurrence. The first official 'muster' was taken in 1788 soon after the new settlement at Sydney Cove was formed, and in 1803 the first 'muster' of convicts in Van Diemen's Land (now Tasmania) was conducted.

Development of the Census

The first regular census in Australia was taken in New South Wales in November 1828, and included the population of Moreton Bay (now Queensland) but not Van Diemen's Land (Tasmania). Details of the names, ages and civil conditions of the inhabitants were sought. The next census was taken in 1833, and was followed by another in 1836, when arrangements were made for the enumeration of the population of the newly-established settlement at Port Phillip (Victoria). The first censuses taken in Tasmania, Victoria and Queensland as separate colonies were in 1841, 1854 and 1861 respectively. The first recognised census in South Australia was taken in 1844 and in Western Australia in 1848. The 1881 census was the first simultaneous census taken in Australia and formed part of the first simultaneous census of the British Empire.

CENSUSES OF AUSTRALIA

Under the Commonwealth of Australia Constitution Act of 1900, 'Census and Statistics' became Commonwealth Government functions and with the passing of the empowering legislation, the *Census and Statistics Act 1905*, all censuses of Australia have been taken under the authority of this Act and the regulations made thereunder. The first Australian census collected under the Act was that of 1911; subsequent censuses were taken in the years 1921, 1933, 1947, 1954, 1961, 1966, 1971, 1976 and 1981. The Act provides that the census should be taken by means of a householders schedule delivered to every dwelling and that this schedule should contain particulars of the dwelling and its inmates.

Periodicity and Date of the Census

The *Census and Statistics Act 1905* provided that the Census should be taken 'in the year one thousand nine hundred and eleven and in every tenth year thereafter'. But in 1930 this was amended by the addition of the words 'or at such other time as is prescribed'. Because of the economic depression prevailing in 1931 the third Australian census was not taken until 1933, and because of war conditions the fourth Australian census was not taken until 1947. Consideration was then given to the practicability of holding future censuses in the series of years originally envisaged. However, it was considered that the interval of years from 1947 to 1951 was too short; therefore it was decided to take the fifth census in 1954 at the mid-point of the period from 1947 to 1961. The sixth census was held in 1961. Because of the administrative demand for more frequent counts of the population the seventh census was held in 1966, the eighth in 1971, the ninth in 1976, and the tenth in 1981.

The Census and Statistics Act provides that 'the Census day shall be a day appointed for that purpose by proclamation', but the actual date is not specified. The census is conducted on a basis which records the population actually in Australia at the place where located on Census day. However for the 1976 and 1981 Censuses there is facility to extract population details according to place of usual residence from the local government level to the whole State. In the selection of census day every endeavour is made to choose a date when there is a minimum displacement of population. In 1911 and 1921, census day was near the beginning of April, but in 1933 and subsequently, census day has been at the end of June because this time has fulfilled the condition mentioned and is otherwise suitable, being the end of a financial year and of a quarterly period used extensively for statistical purposes.

Scope of the Census

The census covers the population and dwellings of Australia.

Persons excluded from results of censuses up to 1966 were:

- (i) diplomatic representatives of other Governments and their families and staffs having diplomatic immunity in accordance with international practice;
- (ii) full-blood Aborigines, pursuant to Section 127 of the Constitution which specifically excluded them from the count of the population.

Diplomatic representatives, families and staffs are still excluded but, following the results of a referendum held in 1967, Section 127 of the Constitution was repealed and full-blood Aborigines were included in censuses from 1971. In 1971 Census publications, where 1966 figures are also shown, these figures have been amended to include full-blood Aborigines and thus provide comparability: this can be done for all tables other than those on the labour force.

The count of persons at the census includes babies born at or before midnight of

census day and excludes persons dying before midnight of census day. Travellers on ships in or between Australian ports at midnight of census day are also included.

For census purposes the Act defines a dwelling as 'a building, erection, or tenement, whether permanent or temporary, which is wholly or partly used for the purpose of human habitation and includes any ship or other vessel in any port of the Commonwealth or in any inland waters thereof, or any ship or vessel on a passage between any two Commonwealth ports'. Section 10 (2) provides that 'where a building is let, sublet, or held in different apartments and occupied by different persons or families, each part so let, sublet, or held and used for the purpose of human habitation shall be deemed a dwelling'. Measureable characteristics such as class of dwellings, nature of occupancy, number of inmates in relation to number of rooms, mortgages and rentals are recorded.

The census data on occupied dwellings are obtainable from the completed householders schedules. However, census collectors are responsible for recording, from personal observations or inquiry, particulars also of dwellings which are unoccupied on census day, including those temporarily unoccupied or those used for 'holiday purposes'. Dwellings excluded from census results are those occupied by accredited persons having diplomatic immunity. Dwellings occupied solely by full-blood Aborigines also were excluded at censuses before 1971.

Before the 1976 Census, all householders schedules were fully processed. The 1976 Census processing was undertaken in two stages. In the first stage all schedules were processed, with data on the number of males, females and persons extracted, together with some information on marital status, location, age distribution and birthplace. In the second stage, all schedules from non-private dwellings and 50 per cent of those from private dwellings were processed (except for the Northern Territory). The data extracted in the second stage (except that for the Northern Territory) are thus subject to sampling errors. Further details on the nature and extent of such errors may be obtained from the publication *Making Sense of the Census* (Catalogue No. 2129.0). In the 1981 Census, all householders schedules were fully processed.

A more detailed description outlining the history, purposes, legal basis, organisation and publication of the results of the population census in Australia was included on pages 77-86 of the *South Australian Year Book* 1968.

5.2 POPULATION GROWTH AND DISTRIBUTION

The count of persons of South Australia had reached 17 366 persons at the first Census on 26 February 1844. In 1861, twenty-five years after the first settlers arrived, the count was 126 830 and this figure had more than doubled by the Census in 1881. By 1921 the census count was almost 500 000 persons and it is estimated to have reached 1 000 000 persons in January 1963. The population at 30 June 1966 was estimated as 1 094 984 persons.

The following table shows counts of persons at the census dates indicated.

Persons in South Australia, Censuses 1844 to 1966

Census Date	Males	Females	Persons(a)	Average Annual Increase	
				Number	Per Cent
1844 26 February	9 686	7 680	17 366		
1846 26 February	12 670	9 720	22 390	2 512	14.47
1851 1 January	35 302	28 398	63 700	8 262	36.90
1855 31 March	43 720	42 101	85 821	5 530	8.68

Persons in South Australia, Censuses 1844 to 1966 (continued)

Census Date		Males	Females	Persons(a)	Average Annual Increase	
					Number	Per Cent
1861	8 April	65 048	61 782	126 830	6 835	7.96
1866	26 March	85 334	78 118	163 452	7 324	5.78
1871	2 April	95 236	90 189	185 425	4 395	2.69
1876	26 March	109 841	102 687	212 528	5 421	2.92
1881	3 April	145 113	130 231	275 344	12 563	5.91
1891	5 April	161 920	153 292	315 212	3 987	1.45
1901	31 March	180 485	177 861	358 346	4 313	1.37
1911	3 April	207 358	201 200	408 558	5 021	1.40
1921	4 April	248 267	246 893	495 160	8 660	2.12
1933	30 June	290 962	289 987	580 949	7 149	1.44
1947	30 June	320 031	326 042	646 073	4 652	0.80
1954	30 June	403 903	393 191	797 094	21 574	3.34
1961	30 June	491 406	480 081	971 487	24 913	3.13
1966	30 June	550 196	544 788	1 094 984	24 699	2.54

(a) Excludes full-blood Aborigines before 1961 Census.

In the following table, increases in the population have been classified as *recorded natural increase* (the excess of recorded births over recorded deaths) and *other increases* (which consists mainly of the excess of arrivals over departures, either from overseas or interstate).

Increases in the Population, South Australia ^(a)

Period	Recorded Natural Increase			Other Increase(b)			Total Increase
	Males	Females	Persons	Males	Females	Persons	Persons
Annual Average:							
1881-1890	3 349	3 535	6 884	(-) 1 488	(-) 1 141	(-) 2 629	4 255
1891-1900	2 832	3 024	5 856	(-) 973	(-) 567	(-) 1 540	4 316
1901-1910	2 665	2 745	5 410	(-) 44	(-) 404	(-) 448	4 962
1911-1920	3 508	3 614	7 122	366	926	1 292	8 414
1921-1930	3 131	3 300	6 431	1 201	714	1 915	8 346
1931-1940	(c) 1 787	(c) 1 929	(c) 3 716	(-) 860	(-) 397	(-) 1 257	2 459
1941-1950	(c) 3 977	(c) 4 026	(c) 8 003	2 705	1 671	4 376	12 379
1951-1960	5 631	5 923	11 554	6 279	5 585	11 864	23 418
1961-1970	5 980	6 401	12 381	4 206	4 975	9 181	21 562
1971-1980	4 815	5 275	10 090	1 517	1 013	2 530	12 620

(a) Excludes full-blood Aborigines before 1961.

(b) Figures from 1971 exclude short-term overseas migration.

(c) Deaths of defence personnel (except those registered on civil registers during 1940 and 1941) not deducted in calculating natural increase.

For 1971 and subsequent years, the two tables above are replaced by a new series compiled on the basis of estimated resident population. An information paper entitled *Population Estimates: An Outline of the New Conceptual Basis of ABS Population Estimates* (Catalogue No. 3216.0) provides details of the conceptual changes.

Estimated Resident Population in South Australia: 1971 to 1981

Census 30 June	Males	Females	Persons	Average Annual Increase	
				Number	Per Cent
1971	597 572	602 542	1 200 114		
1976	635 152	638 918	1 274 070	14 791	1.23
1981	654 724	664 603	1 319 327	9 051	0.71

Increases in the Estimated Resident Population, South Australia, 1972 to 1981

At 31 December	Natural Increase			Other Increase			Total Increase
	Males	Females	Persons	Males	Females	Persons	Persons
1972	5 791	6 229	12 020	979	437	1 416	13 436
1973	4 936	5 538	10 474	1 958	1 002	2 960	13 434
1974	4 764	5 142	9 906	7 290	6 980	14 270	(a) 24 176
1975	4 691	5 267	9 958	782	156	938	10 896
1976	4 350	4 552	8 902	395	450	845	9 747
1977	4 551	4 855	9 406	1 152	2 326	3 478	12 884
1978	4 023	4 758	8 781	(-) 1 852	(-) 486	(-) 2 338	6 443
1979	4 151	4 602	8 753	(-) 1 656	(-) 1 722	(-) 3 378	5 375
1980	4 146	4 715	8 861	(-) 590	(-) 578	(-) 1 168	7 693
1981	4 379	5 171	9 550	1 430	2 064	3 494	13 044

(a) Effect of Cyclone Tracy.

Rate of Increase of Population, South Australia and Australia ^(a)

Period	South Australia			Australia		
	Recorded Natural Increase	Other Increase	Total Increase	Recorded Natural Increase	Other Increase	Total Increase
Annual Average:						
1881-1890	22.67	(-) 8.66	14.01	19.96	14.23	34.19
1891-1900	16.90	(-) 4.44	12.46	16.91	0.71	17.62
1901-1910	14.70	(-) 1.22	13.48	15.29	1.00	16.29
1911-1920	15.99	2.90	18.89	15.77	4.20	19.97
1921-1930	11.87	3.53	15.40	12.97	5.23	18.20
1931-1940	(b) 6.33	(-) 2.14	4.19	(b) 7.92	0.60	8.52
1941-1950	(b) 12.50	6.83	19.33	(b) 12.04	4.34	16.38
1951-1960	13.81	14.18	27.99	13.71	8.73	22.44
1961-1970(c) ...	11.57	8.58	20.15	11.79	5.75	17.53
1971-1980	8.10	2.10	10.20	9.41	4.53	13.94

(a) Rate per 1 000 of mean population.

(b) Deaths of defence personnel (except those registered on civil registers during 1940 and 1941) not deducted in calculating natural increase.

(c) Excludes full-blood Aborigines before 1961.

As from June 1971, intercensal estimates of overseas migration exclude short-term (less than one year) movements, consistent with the measurement of interstate migration. Annual average increases which are given for each ten-year period since 1881 show some important aspects of the development of the State, namely:

- (i) the net migration, especially of males, away from South Australia following the mineral discoveries in other States in the 1880s and early 1890s;

(ii) the slow growth during the economic depression of the 1930s when natural increase fell to a particularly low level; and

(iii) the high rate of migration in the post 1939-45 War period up to 1960.

The State's rate of population increase was slower than the Australian rate in every decade from 1881-90 to 1931-40. In the next two decades the steep rise in the rate of net migration enabled an above-average growth rate to be achieved, and this was maintained until 1966. Since 1966 however, the State's growth rate has generally been below the Australian rate.

Estimates of the resident population of the State for the last six years are given in the following table. The total increase for each year and the rate of growth are also shown.

Estimated Resident Population at 31 December, South Australia

Year	Males	Females	Persons	Total Increase for Year	Rate of Growth
					Per cent
1976	637 900	642 500	1 280 400	9 700	0.76
1977	643 600	649 700	1 293 300	12 900	1.00
1978	645 800	653 900	1 299 700	6 400	0.49
1979	648 300	656 800	1 305 100	5 400	0.41
1980	651 900	660 900	1 312 800	7 700	0.59
1981	657 700	668 200	1 325 900	13 100	0.99

Intercensal estimates of resident population are derived by adding to the estimated population at the census the recorded natural increase and the allocation to the State of portion of the net gain to Australia by overseas migration; gains and corresponding losses that result from movement between South Australia and other States are also taken into account, in so far as they are recorded as transfers of residence under family allowance procedures or Commonwealth Government electoral procedures, supplemented by results of any special count or sample survey. The estimates above have been revised according to the new official population estimates series: Estimated Resident Population.

The estimated mean resident population for South Australia is calculated for the years ended 30 June and 31 December. Estimates for the last six years are shown below.

Estimated Mean Resident Population, South Australia

Year	Year Ended 30 June			Year Ended 31 December		
	Males	Females	Persons	Males	Females	Persons
1976	632 900	637 100	1 270 000	635 300	639 400	1 274 700
1977	637 900	642 300	1 280 200	640 700	645 900	1 286 600
1978	643 400	649 400	1 292 800	645 200	652 200	1 297 300
1979	645 900	653 900	1 299 700	646 700	655 300	1 302 000
1980	648 200	656 700	1 304 900	649 900	658 400	1 308 200
1981	652 000	661 000	1 313 000	654 700	664 400	1 319 100

EARLY HISTORY OF SETTLEMENT

A detailed description of early settlement in South Australia together with information on the 1851 Census was included on pages 116-7 of the *South Australian Year Book* 1970.

DISTRIBUTION OF POPULATION

Urban Centres

Commencing with the 1966 Census, a boundary has been drawn at each census around each cluster of 1 000 or more persons (or around known holiday resorts of less population if they contain 250 or more dwellings of which at least 100 are occupied). These clusters are named urban centres and the persons and dwellings enumerated therein are classified as urban for statistical purposes.

When delimiting urban centres of less than 25 000 persons the urban centres are determined subjectively (by inspection of aerial photographs, by field inspection and/or by consideration of any other information that is available). All contiguous urban growth is included, together with close but non-contiguous development which could be regarded as part of the centre. For urban centres with 25 000 or more persons the basic criterion used is *population density*. The geographic units classified according to the density criterion are collection districts, the smallest units available, which must have a density of at least 200 persons per square kilometre for inclusion in the urban centre. A gap in urban development of less than three kilometres (by the shortest rail or road distance) is ignored while urban areas three or more kilometres apart are treated as separate even if the gap comprises mainly reserved land or a natural barrier. Particular rules apply to contiguous areas with special functions such as airports, sporting areas and industrial areas which do not meet the density criterion.

The boundary of such an urban centre is thus a moving one which reflects the process of urbanisation. The use of objective criteria enables valid comparisons to be made between one urban centre and another, and between the count of persons for an urban centre at one census with the count at succeeding censuses.

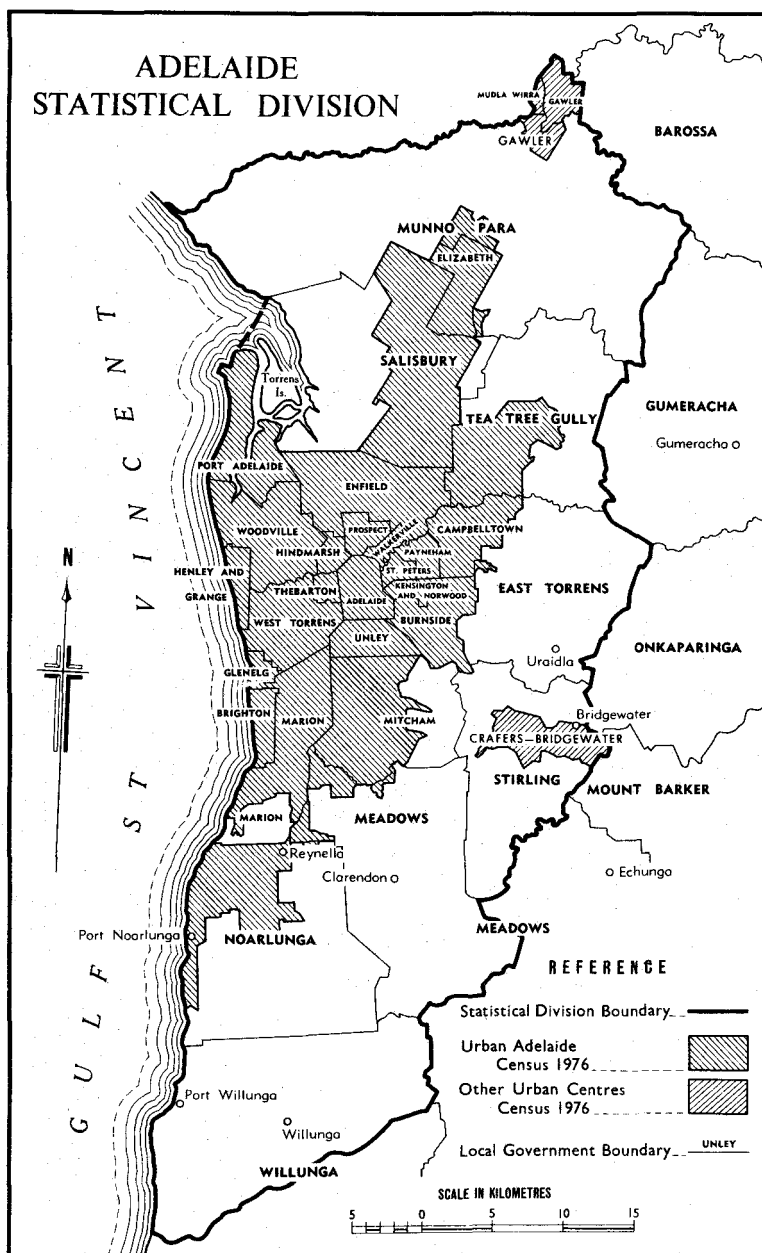
Population in Urban Adelaide

At the 1966 Census, Urban Adelaide contained nearly all the metropolitan area as defined at the 1961 Census, and, in addition, included the City of Elizabeth and large portions of the Cities of Salisbury and Tea Tree Gully, and small parts of Munno Para and East Torrens District Councils. Results of the 1971 Census showed that Urban Adelaide had extended to encompass the whole of the urban area of Reynella-Port Noarlunga as well as fringe development particularly in northern suburbs (see map on page 130).

Urban Adelaide as defined for the 1981 Census comprised 19 complete local government areas and part of each of eight others and totalled 652.0 square kilometres.

Over the past decade there has been a considerable fall in the population of the City of Adelaide, and lesser falls in all of the older municipalities close to the city, namely Prospect, Hindmarsh, Thebarton, Unley, Kensington and Norwood, and St Peters. The greatest proportionate increases in population have occurred in the local government areas of Munno Para and Salisbury (generally north of the city); Campbelltown and Tea Tree Gully (north-east); Meadows and Noarlunga (south-west).

Although figures for Urban Adelaide, defined according to the density criteria, are not available for the 1947 and 1954 Censuses, there appears to have been a continual increase in the proportion of the total State population residing in Urban Adelaide until the 1971 Census. At the 1961 Census, Urban Adelaide defined according to the density criteria is estimated to have contained 580 449 persons or 59.9 per cent of the total State and this figure had increased to 728 279 (66 per cent) at the 1966 Census.



In 1971, the amalgamation of Urban Adelaide and Urban Reynella-Port Noarlunga, together with the inclusion of further peripheral development, resulted in an increase to 809 482 persons (69 per cent of the State count). At the 1976 Census, Urban Adelaide's share of the total State count was little changed, at just less than 69 per cent, and has remained constant at the 1981 census.

Persons Counted in Urban and Rural Areas, South Australia, Censuses 1921 to 1981 ^(a)

Census	Urban				Rural		Total (Including Migratory)
	Adelaide(b)		Other(c)				
	Number	Per Cent	Number	Per Cent	Number	Per Cent		Number
1921	255 375	51·57	41 637	8·41	195 054	39·39	495 160
1933	312 619	53·81	51 456	8·86	214 762	36·97	580 949
1947	382 454	59·20	65 911	10·20	196 007	30·34	646 073
1954	483 508	60·66	110 107	13·82	201 133	25·23	797 094
1961	587 957	60·66	177 380	18·30	200 065	20·64	969 340
1966	728 279	66·51	174 964	15·98	190 167	17·37	1 094 984
1971(d)	809 482	68·97	183 187	15·61	179 148	15·26	1 173 707
1976(d)	857 196	68·85	198 777	15·97	187 546	15·07	1 244 756
1981(d)	882 520	68·68	207 934	16·18	193 628	15·07	1 285 033

(a) Excludes full-blood Aboriginals before the 1966 Census.

(b) See definition of Urban Adelaide.

(c) 'Other Urban' up to the 1947 Census comprised all municipalities outside Urban Adelaide. For the 1954 and 1961 Censuses non-municipal towns of 1 000 or more persons were also included, but in 1961 municipalities of less than 1 000 persons were excluded. From 1966 onwards the figures comprise clusters of 1 000 or more persons and a small number of holiday resorts which are regarded as urban on a dwelling density basis.

(d) The figures are not adjusted for census underenumeration.

Population in Other Urban Centres

Only a very small proportion (16 per cent) of South Australia's population is located in urban centres outside of the capital city compared with the three eastern States, New South Wales, Victoria and Queensland. Whereas, in each of the eastern States, there are at least six centres outside the capital city with a population in excess of 20 000, Whyalla with a count of 29 962 persons at the Census of 30 June 1981 is the only such centre in South Australia.

Persons in Urban Centres: South Australia, Censuses 1976 and 1981 ^(a)

Urban Centre	Census at 30 June		Urban Centre	Census at 30 June	
	1976	1981		1976	1981
Adelaide	857 196	882 520	Jamestown	1 325	1 384
Aldinga Beach	983	2 021	Kadina	2 849	2 943
Angaston	1 734	1 753	Kapunda	1 362	1 340
Balaklava	1 237	1 306	Keith	1 191	1 147
Barmera	1 946	2 014	Kingscote	1 121	1 236
Berri	2 890	3 419	Kingston (SE)	1 250	1 325
Bordertown	1 983	2 138	Leigh Creek	999	1 635
Burra	1 201	1 222	Lobethal	1 422	1 522
Ceduna	2 327	2 794	Loxton	2 786	3 100
Clare	2 260	2 381	Maitland	1 017	1 085
Coober Pedy	1 903	2 078	Mannum	2 137	1 984
Crafers-Bridgewater	6 600	9 764	Millicent	5 471	5 255
Crystal Brook	1 410	1 240	Moonta	1 751	1 924
Gawler	8 596	9 433	Mount Barker	3 204	4 190
Goolwa	1 148	1 624	Mount Gambier	19 292	19 880
Hahndorf	937	1 274	Murray Bridge	8 740	8 664

Persons in Urban Centres: South Australia, Censuses 1976 and 1981 ^(a) (continued)

Urban Centre	Census at 30 June		Urban Centre	Census at 30 June	
	1976	1981		1976	1981
Naracoorte	4 571	4 758	Renmark	3 371	3 475
Nuriootpa	2 808	2 851	Sellicks Beach	241	342
Penola	1 254	1 205	Strathalbyn	1 701	1 756
Peterborough	2 760	2 575	Streaky Bay	1 008	985
Port Augusta	13 092	15 254	Tailem Bend	1 999	1 677
Port Broughton	654	587	Tanunda	2 254	2 621
Port Elliot	768	773	Victor Harbor	4 279	4 522
Port Lincoln	10 272	10 675	Waikerie	1 611	1 629
Port MacDonnell	712	682	Walleroo	2 045	2 043
Port Pirie	15 005	14 695	Whyalla	33 426	29 962
Port Vincent	335	394	Woomera	2 958	1 658
Quorn	1 048	1 049			

(a) See text for definition of 'urban'. The figures have not been adjusted for census underenumeration.

Between 1976 and 1981 most urban centres beyond the Adelaide Statistical Division experienced population growth; this was most evident in the River Murray towns and the West Coast. The 'Iron Triangle' was somewhat of an enigma in that Port Augusta continued to expand, whereas Port Pirie and Whyalla declined.

Statistical Divisions

Around Urban Adelaide a further boundary has been defined. This boundary circumscribes the area in close economic and social contact with the urban centre, and which contains the anticipated urban development of the city for a period of at least twenty to thirty years. This boundary defines the Adelaide Statistical Division (see map on page 130). In addition to Urban Adelaide there are two urban centres within the Adelaide Statistical Division, Urban Gawler and Urban Crafrers-Bridgewater.

The six further statistical divisions which have been delineated in South Australia are mainly amalgamations of local government areas. They represent closely allied and meaningful areas of production and community interest. Factors taken into account when determining their boundaries were differential living zones, patterns of retail shopping, location and nature of industry, transport routes, provincial newspaper circulation, coverage of provincial radio and television stations, spheres of activity of cultural groups and sporting associations.

The Estimated Resident Population in the Adelaide Statistical Division is shown in the following table.

Estimated Resident Population in Local Government Areas, Adelaide Statistical Division ^(a)

Statistical Subdivision and Local Government Area	Estimated Resident Population at 30 June		
	1976	1981	1982
Para	109 930	122 180	123 660
Elizabeth (C)	34 470	32 910	32 480
Gawler (M)	6 230	6 410	6 540
Light (DC) (part)	540	900	900
Munno Para (DC)	23 010	27 480	27 860
Salisbury (C) (part)	45 700	54 480	55 870

Estimated Resident Population in Local Government Areas, Adelaide Statistical Division ^(a)
(continued)

Statistical Subdivision and Local Government Area	Estimated Resident Population at 30 June		
	1976	1981	1982
North Eastern	147 390	154 210	155 490
Enfield (C) (part)	56 070	50 770	50 540
Gumeracha (DC) (part)	750	950	990
Salisbury (C) (part)	33 520	33 620	33 810
Tea Tree Gully (C)	57 060	68 860	70 150
Western	219 010	211 690	212 300
Enfield (C) (part)	18 880	17 070	16 960
Henley and Grange (C)	17 040	15 990	15 760
Hindmarsh (M)	9 010	7 810	7 810
Port Adelaide (C)	36 900	36 240	36 490
Thebarton (M)	10 680	9 400	9 410
West Torrens (C)	49 480	46 040	45 960
Woodville (C)	77 020	79 120	79 900
Unincorporated	20	20	20
Eastern	213 650	211 180	211 990
Adelaide (C)	12 060	11 200	11 230
Burnside (C)	39 630	38 670	38 600
Campbelltown (C)	42 670	44 200	44 570
East Torrens (DC)	4 750	5 210	5 300
Kensington and Norwood (C)	9 830	9 070	9 100
Onkaparinga (DC) (part)	110	100	100
Payneham (C)	18 180	17 060	17 020
Prospect (C)	20 180	19 180	19 140
St Peters (M)	9 660	8 800	8 690
Stirling (DC)	10 940	13 480	13 880
Unley (C)	38 210	37 180	37 230
Walkerville (M)	7 430	7 050	7 120
Southern	234 070	253 450	256 600
Brighton (C)	22 380	20 300	20 150
Glenelg (C)	14 720	13 610	13 670
Marion (C)	69 500	68 440	69 060
Meadows (DC) (part)	12 560	20 430	21 720
Mitcham (C)	61 660	61 610	61 630
Noarlunga (C)	49 020	62 620	63 820
Willunga (DC) (part)	4 240	6 430	6 560
Total	924 060	952 690	960 040

(a) All estimates are for boundaries existing at 30 June 1982.

(C) Municipality with city status

(M) Municipality

(DC) District Council

The estimated resident populations of statistical divisions and subdivisions at 30 June 1976, 1981 and 1982 are shown in the following table.

Estimated Resident Population of Statistical Divisions and Subdivisions, South Australia

Statistical Division and Subdivision	30 June		
	1976	1981	1982
Adelaide:			
Para	109 930	122 180	123 660
North Eastern	147 390	154 210	155 490
Western	219 010	211 690	212 300
Eastern	213 650	211 180	211 990
Southern	234 070	253 450	256 600
Total Adelaide	924 060	952 690	960 040
Outer Adelaide:			
Barossa	25 620	28 890	29 410
Kangaroo Island	3 300	3 720	3 850
Onkaparinga	13 260	16 470	16 870
Fleurieu	18 100	20 960	21 550
Total Outer Adelaide	60 280	70 040	71 680
Yorke and Lower North:			
Yorke	21 150	22 570	22 810
Lower North	19 490	19 930	20 130
Total Yorke and Lower North	40 640	42 500	42 950
Murray Lands:			
Riverland	30 520	33 070	33 600
Murray Mallee	30 120	30 510	30 800
Total Murray Lands	60 650	63 580	64 400
South East:			
Upper South East	18 930	19 640	19 880
Lower South East	40 590	42 110	42 470
Total South East	59 510	61 740	62 360
Eyre:			
Lincoln	26 360	27 490	27 940
West Coast	6 590	7 100	7 210
Total Eyre	32 960	34 590	35 160
Northern:			
Whyalla	35 460	32 010	31 900
Pirie	32 400	32 040	32 100
Flinders Ranges	19 400	21 660	22 350
Far North	8 480	8 410	8 410
Total Northern	95 750	94 120	94 760
Total State (including migratory)	1 274 100	1 319 300	1 331 400

Statistical Districts

At the 1976 Census, around each urban centre of at least 10 000 persons, a further boundary (the statistical boundary) was defined to contain the anticipated growth of the

urban centre for a period of at least 20 years. This fixed boundary (as distinct from the urban boundary which is continuously moving) delimits an area which for general statistical purposes is free from the practical problems imposed by a moving boundary, but which nevertheless represents the town or city in a wider sense. In selected cases, statistical district boundaries were delineated around urban centres below 25 000 persons where existing local government area boundaries were clearly inadequate in indicating the extent of urban development.

The estimated population of statistical districts at 30 June 1976, 1981 and 1982 are shown in the following table.

Estimated Resident Population at 30 June: Statistical Districts, South Australia

Statistical District	At 30 June		
	1976	1981	1982
Mount Gambier	19 920	21 040	21 330
Murray Bridge	10 270	11 210	11 550
Port Augusta	14 300	15 650	15 960
Port Lincoln	10 630	11 430	11 610
Port Pirie	15 440	15 500	15 620
Whyalla	34 330	31 250	31 140

Projections of the Population

Details of projections of population for South Australia may be found in the publication *Projections of the Population of South Australia* (Catalogue No. 3203.4).

Further References

Additional information may be found in the following publications:

- 2404.0 *Persons and Dwellings in Local Government Areas and Urban Centres—South Australia*
- 2438.0 *Summary characteristics of Persons and Dwellings—South Australia*
- 3201.4 *Estimated Resident Population in Local Government Areas—South Australia*
- 3202.4 *Estimated Resident Population in Local Government Areas—South Australia, June 1976 to June 1981*
- 3203.4 *Projections of the Population of South Australia*

5.3 BIRTHS AND DEATHS

Compulsory registration of births and deaths was first provided in South Australia in 1842 when an Act 'for registering births, deaths and marriages in the Province of South Australia' was passed. Current legislation is contained in the Births, Deaths and Marriages Registration Act, 1966-1975 which came into operation on 1 January 1968. The administration of the Act is the responsibility of the Principal Registrar of Births, Deaths and Marriages. For registration purposes the State is divided into twenty-two registration districts each of which has a registry office in the charge of a District Registrar.

The Principal Registrar maintains a register of all live births and of all deaths registered in the State and each District Registrar maintains, in a register, duplicate copies of the registrations of births and deaths which occurred in the district under his jurisdiction. Up to the end of 1967 separate registers were kept of still births, which were not included in the registration or statistics of either live births or deaths. Compulsory registration of still births was introduced in South Australia in 1937.

The current legislation does not require the Principal Registrar to maintain a register of still births, but it provides for a 'Medical Certificate of Cause of Perinatal Death' to be filled in and forwarded to the Principal Registrar by the attending medical practitioner in respect of a 'child not born alive of at least twenty weeks gestation or four hundred grams weight'. The 'perinatal' certificates are also required from attending medical practitioners for children dying within twenty-eight days of birth.

The birth of each live-born child is required to be registered by a parent within sixty days of the date of birth. Registration of a live birth after the expiration of sixty days following the date of birth requires also the payment of a fee and a declaration in a form prescribed by the Act.

A death is required to be registered within fourteen days of the date of death by the occupier of the building or place in which the death occurred. Special provisions and penalties exist for the late registration of a death. A body may not be buried unless the undertaker is in possession of a 'Notice of signing of Medical Certificate of Cause of Death' signed by a medical practitioner or of an order by a coroner for burial, and the undertaker is required within seven days of the disposal of the body to notify the Principal Registrar of such disposal.

Births and deaths of Aborigines when registered are incorporated in registers, but to the end of 1965 were excluded from statistics where there was definite indication that they were of full-blood. Statistics of births and deaths for 1966 and subsequent years cover all registrations.

In accordance with international practice, statistics for a period are on the basis of the births and deaths which were registered during that period. However, numbers registered in a period usually differ from the number of occurrences in the same period and, mainly because of the longer period allowed for registration, such variations generally are more apparent in birth than in death figures.

BIRTHS

The South Australian birth rate per thousand of mean population during 1981 was 14·67 compared with the Australian rate of 15·80 per thousand. This was also the lowest rate recorded by any of the Australian States or Territories for the same period. The lowest ever recorded rate of 14·13 was established in 1935.

Live Births Occurred and Registered, South Australia

Year	Total Live Births Occurred (a)	Live Births Registered				Mascu- linity (c)
		Total	Rate (b)	Males	Females	
1976	18 919	18 947	14·86	9 838	9 109	108·00
1977	19 138	19 260	14·97	9 907	9 353	105·92
1978	18 405	18 558	14·30	9 496	9 062	104·79
1979	18 219	18 478	14·19	9 520	8 958	106·27
1980	18 474	18 499	14·14	9 462	9 037	104·70
1981	18 288	19 351	14·67	9 816	9 535	102·94

(a) Figures are subject to the addition of late registrations, particularly to 1981.

(b) Number per 1 000 of mean population. (c) Number of male births per 100 female births.

Age-specific Birth Rates

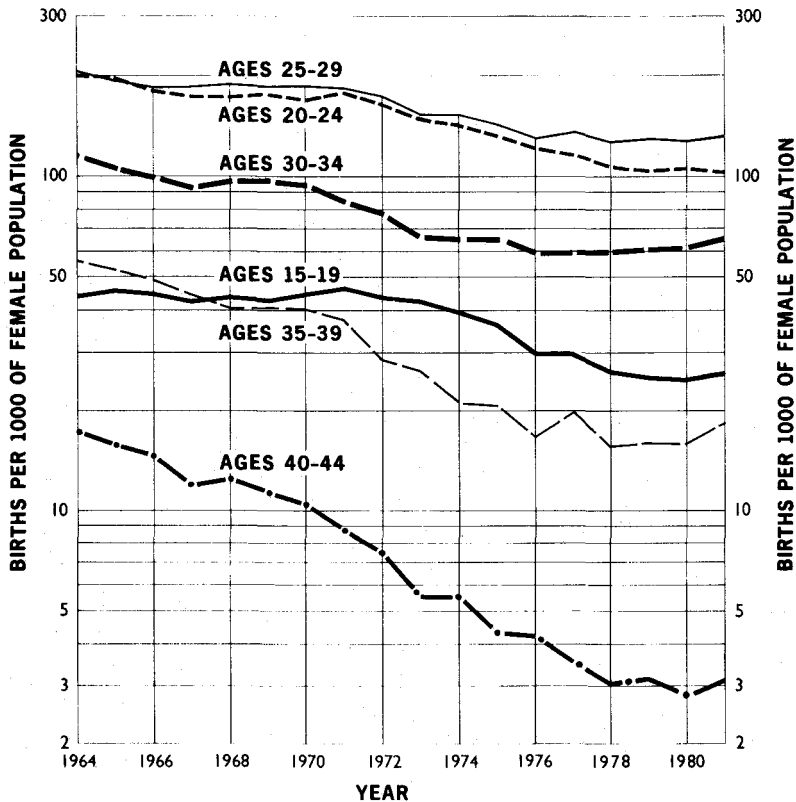
One significant feature of age-specific birth rates is that whereas in 1961, females in the 20-24 years age group accounted for the highest number of births, this can now be

attributed to those in the 25-29 years age group. Also, a general decline in the fertility of women of all ages is evident, and this is particularly marked in the older age groups. In accordance with this, total fertility has decreased, reflecting the tendency toward smaller families.

AGE - SPECIFIC BIRTH RATES

SOUTH AUSTRALIA 1964 TO 1981

SEMI-LOGARITHMIC GRAPH



Age-specific Birth Rates and Total Fertility, South Australia ^(a)

Year	Age Group (Years)							Total Fertility
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Annual Rates								
1966 (b)	44.56	178.73	181.58	99.31	49.30	14.62	0.75	2.84
1971 (b)	46.70	179.03	186.66	82.68	37.14	8.69	0.55	2.71
1972	43.89	164.12	174.75	76.28	28.26	7.54	0.52	2.48
1973	42.72	147.34	154.14	65.16	26.10	5.46	0.58	2.21
1974	39.78	139.79	150.07	64.16	20.93	5.52	0.22	2.10
1975	36.15	135.54	146.27	63.71	20.14	4.37	0.34	2.03
1976 (b)	29.63	126.52	137.40	59.16	17.32	4.24	0.25	1.87
1977	29.89	119.94	143.56	59.49	17.91	3.56	0.14	1.87
1978	26.58	109.05	134.56	59.78	16.44	3.03	0.14	1.75
1979	25.57	106.37	136.41	60.80	16.86	3.15	0.36	1.75
1980	25.47	107.05	133.62	61.52	16.67	2.83	0.25	1.74
1981 (b)	26.32	104.58	140.18	65.31	18.74	3.10	0.16	1.79

(a) Number of live births per 1 000 of female population in each age group. Excludes particulars of full-blood Aborigines before 1966. (b) Census year.

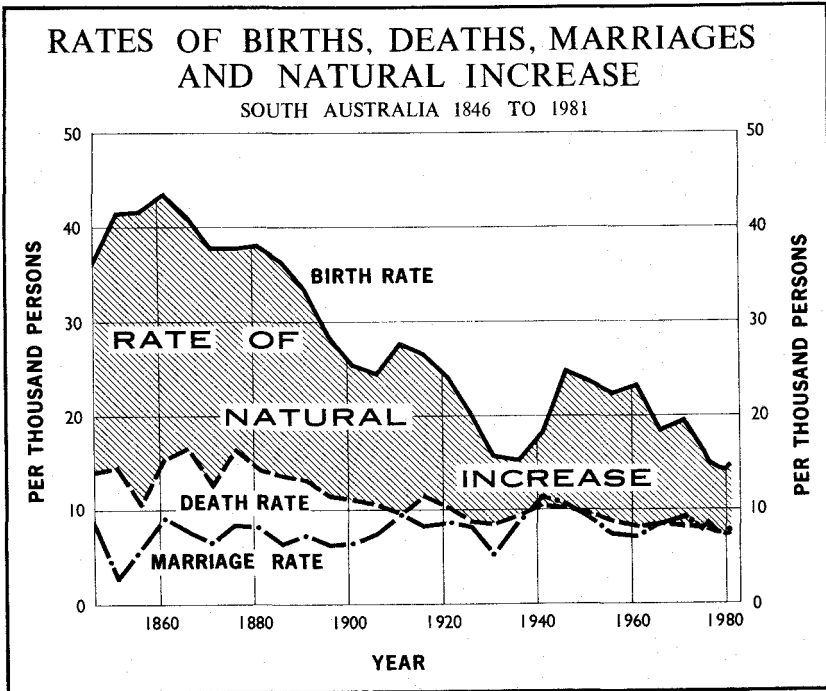
Gross and Net Reproduction Rates

The gross reproduction rate is an indication of the number of live females that can be expected to be born to a woman through her child-bearing years. The net reproduction rate, which is a measure of the degree to which the population can replace itself, is derived from the gross reproduction rate by taking into account the females who fail to survive to the end of their child-bearing period. The following table indicates that the net reproduction rate steadily decreased to a level of 0.828 in 1979 but rose slightly to 0.863 in 1981. This level is lower than the point at which women produce only one female child to take their place in the reproductive cycle and, excluding the impact of migration, if this trend continues, zero population growth will ultimately be reached. It should be realised, however, that these figures are not a forecast of what can be anticipated but only a hypothetical projection of what would happen if the given conditions upon which they have been based continue to apply.

Gross and Net Reproduction Rates, South Australia

Year	Gross Reproduction Rate	Net Reproduction Rate	
		Rate	Mortality Experience on which Rate is Based
1966 (a)	1.368	1.323	1965 to 1967
1971 (a)	1.318	1.281	
1972	1.196	1.162	
1973	1.075	1.044	1970 to 1972
1974	1.009	0.981	
1975	0.994	0.966	
1976 (a)	0.900	0.880	1975 to 1977
1977	0.909	0.889	
1978	0.854	0.834	
1979	0.851	0.828	
1980	0.849	0.829	
1981 (a)	0.883	0.863	

(a) Census year.



Ex-nuptial Births and Legitimations

Since 1960 there has been a marked increase in the number and rate of ex-nuptial births. For the previous forty years, the rate remained relatively steady at about three per hundred live births, but in recent years the rate has increased sharply, reaching a record level of 12.86 per hundred live births in 1981.

The legitimization of an ex-nuptial child upon the subsequent marriage of the parents which was first provided for in South Australia by the Legitimation Act, 1898, the provisions of which were later incorporated in the Births and Deaths Registration Act, was possible only if there was no legal impediment to the marriage of the parents at the time of the birth of the child.

The *Marriage Act 1961*, which came into operation on 1 September 1963, provides for the legitimization of a child upon the subsequent marriage of the parents whether or not there was a legal impediment to the marriage at the time of the birth of the child. Legitimizations under this Act take place whether or not the child was living at the time of marriage, and the child is considered legitimate from the date of birth or, in the case of a child born before 1 September 1963, at that date.

Ex-nuptial Live Births and Legitimizations, South Australia

Year	Ex-nuptial Births			Rate per 100 Live Births	Legitimizations
	Males	Females	Total		
1976	906	883	1 789	9.44	350
1977	959	937	1 896	9.84	369
1978	1 038	1 012	2 050	11.05	328
1979	1 087	1 011	2 098	11.35	277
1980	1 172	1 129	2 301	12.44	277
1981	1 293	1 199	2 492	12.88	285

Confinements and Live Births

In the table below confinements in each of the years 1978 to 1981 have been shown in relation to age group of the mother and nuptiality.

Confinements: Age Group of Mother and Nuptiality, South Australia ^(a)

Age Group (Years)	Number of Confinements				Percentage of Total in each Category			
	1978	1979	1980	1981	1978	1979	1980	1981
NUPTIAL CONFINEMENTS								
10-14	—	—	1	—	—	—	—	—
15-19	808	706	667	654	5.0	4.4	4.2	3.9
20-24	5 363	5 129	5 138	5 069	32.9	31.6	32.0	30.4
25-29	6 733	6 802	6 605	6 938	41.2	42.0	41.2	41.6
30-34	2 748	2 872	2 931	3 227	16.8	17.7	18.3	19.3
35-39	566	590	600	703	3.5	3.6	3.7	4.2
40-44	100	101	85	96	0.6	0.6	0.5	0.6
45 and over	5	11	7	5	—	0.1	—	—
Not stated	—	—	—	—	—	—	—	—
Total	16 323	16 211	16 034	16 692	100.0	100.0	100.0	100.0
EX-NUPTIAL CONFINEMENTS								
10-14	16	13	6	6	0.8	0.6	0.3	0.2
15-19	796	792	806	847	39.2	38.1	35.4	34.3
20-24	674	711	816	870	33.2	34.2	35.8	35.2
25-29	344	350	400	478	17.0	16.8	17.6	19.4
30-34	142	151	178	186	7.0	7.3	7.8	7.5
35-39	53	53	58	68	2.6	2.6	2.5	2.8
40-44	4	7	12	14	0.2	0.3	0.5	0.6
45 and over	—	1	1	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—
Total	2 029	2 078	2 277	2 469	100.0	100.0	100.0	100.0

(a) Includes only those confinements which resulted in one or more live births.

The next table shows the number of confinements and live births for 1980 and 1981 classified separately for single births and multiple births in which at least one issue was live-born. Multiple births registered in South Australia during 1981 comprised 180 cases of twins and 6 cases of triplets, representing an average of 9.6 multiple confinements per 1 000 confinements.

Confinements and Live Births: Class of Birth, South Australia ^(a)

Particulars	1980				1981			
	Confinements	Live Births			Confinements	Live Births		
		Male	Female	Total		Male	Female	Total
Nuptial:								
Single births	15 873	8 131	7 742	15 873	16 528	8 349	8 179	16 528
Twins	157	153	161	314	159	170	146	316
Triplets	4	6	5	11	5	4	11	15
Quads	—	—	—	—	—	—	—	—
Total nuptial	16 034	8 290	7 908	16 198	16 692	8 523	8 336	16 859
Ex-nuptial:								
Single births	2 252	1 150	1 102	2 252	2 447	1 276	1 171	2 447
Twins	25	22	27	49	21	16	26	42
Triplets	—	—	—	—	1	1	2	3
Total ex-nuptial	2 277	1 172	1 129	2 301	2 469	1 293	1 199	2 492
Total	18 311	9 462	9 037	18 499	19 161	9 816	9 535	19 351

(a) Includes only those confinements which resulted in one or more live births.

Nuptial confinements classified according to the relative age groups of the parents, and ex-nuptial confinements classified to the age group of the mother are shown for 1981 in the following table.

Confinements: Relative Ages of Parents, South Australia, 1981 ^(a)

Age Group of Father (Nuptial Births) (Years)	Age Group of Mother (Years)							Total
	Under 20	20-24	25-29	30-34	35-39	40-44	45 and Over	
Under 20	84	32	1	—	—	—	—	117
20-24	435	1 939	274	24	—	1	—	2 673
25-29	108	2 496	3 628	355	36	1	1	6 625
30-34	21	477	2 527	1 809	151	8	—	4 993
35-39	5	83	392	792	317	18	—	1 607
40-44	1	26	78	176	135	36	1	453
45-49	—	13	25	40	46	21	1	146
50 and over	—	3	12	31	18	11	2	77
Not stated	—	—	1	—	—	—	—	1
Mothers:								
Married	654	5 069	6 938	3 227	703	96	5	16 692
Unmarried	853	870	478	186	68	14	—	2 469
Total	1 507	5 939	7 416	3 413	771	110	5	19 161

(a) Includes only those confinements which resulted in one or more live births.

Between 1972 and 1981 the proportion of nuptial first live births rose from 40.4 to 43.8 per cent of total nuptial births registered. Over the same period the number of fourth or subsequent children born into existing marriages declined from 2 092 to 1 041, a fall from 10.5 to 6.2 per cent of total nuptial births registered. These figures reflect the decline in the average number of children born into the family unit.

The table which follows shows the number of confinements classified by duration of marriage and previous issue. Previous issue is the number of live-born children of the existing marriage born before the current confinement.

Nuptial Confinements: Duration of Marriage and Previous Issue of Mother
South Australia, 1981 ^(a)

Duration of Marriage	Number of Confinements (b)	Previous Issue of Marriage						6 and Over
		0	1	2	3	4	5	
Under 1 year	1 652	1 512	122	16	1	1	—	—
1 year	1 803	1 525	256	18	2	—	2	—
2 years	1 796	1 107	625	57	4	2	—	1
3 years	1 825	896	812	100	14	3	—	—
4 years	1 789	724	845	209	7	4	—	—
5 years	1 665	519	815	292	37	1	1	—
6 years	1 491	401	685	343	52	9	1	—
7 years	1 308	265	558	371	98	15	—	1
8 years	946	148	327	366	87	11	6	1
9 years	814	98	259	351	83	15	7	1
10 years	526	50	149	212	87	20	6	2
11 years	330	28	70	114	84	23	8	3
12 years	246	14	46	99	59	26	1	1
13 years	162	13	23	64	38	17	4	3
14 years	108	6	13	35	32	17	2	3
15 years and over	224	8	20	59	48	43	23	23
Not Stated	7	5	—	1	—	1	—	—
Total	16 692	7 319	5 625	2 707	733	208	61	39

(a) Includes only those confinements which resulted in one or more live births.

(b) Includes previous issue not stated.

Nuptial First Live Births: Duration of Marriage of Parents, South Australia

Duration of Marriage	Nuptial First Live Births				Percentage of Total			
	1978	1979	1980	1981	1978	1979	1980	1981
Under 5 months	440	409	409	442	6.42	5.99	5.92	6.04
5 months	226	226	239	260	3.30	3.31	3.46	3.55
6 months	144	153	152	183	2.10	2.24	2.20	2.50
7 months	59	64	75	91	0.86	0.94	1.09	1.24
8 months	98	83	95	109	1.43	1.21	1.36	1.49
9 months	131	136	101	145	1.91	1.99	1.46	1.98
10 months	109	146	131	137	1.59	2.14	1.90	1.87
11 months	120	115	140	145	1.75	1.68	2.03	1.98
Total under 1 year	1 327	1 332	1 342	1 512	19.35	19.50	19.42	20.66
1 year	1 397	1 294	1 407	1 525	20.37	18.94	20.40	20.84
2 years	1 225	1 153	1 069	1 107	17.86	16.88	15.50	15.13
3 years	968	897	922	896	14.11	13.13	13.36	12.24
4 years	746	769	744	724	10.88	11.26	10.78	9.89
5 years	529	550	513	519	7.71	8.05	7.43	7.09
6 years	286	353	379	401	4.17	5.17	5.49	5.48
7 years	173	198	223	265	2.52	2.90	3.23	3.62
8 years and over	207	286	297	365	3.02	4.19	4.30	4.99
Not stated	—	—	5	5	—	—	0.07	0.07
Total	6 858	6 832	6 901	7 319	100.00	100.00	100.00	100.00

The previous table illustrates a trend, which has been apparent since 1964, towards a longer period after marriage before the birth of the first child. In particular, there has been a decrease in the percentage of nuptial first live births to women who had been married less than two years, from 54.48 per cent in 1972 to 41.50 per cent in 1981.

A corresponding increase is evident in the five years and over duration of marriage groups; from 8.44 per cent to 21.18 per cent.

DEATHS

The 9 706 deaths registered in South Australia during 1981 represented a crude death rate of 7.36 per thousand of mean population, the lowest yet recorded in this State. Although crude death rates in excess of 16.0 were recorded in the 1860s, the rate has not exceeded 9.0 since 1956. Other fluctuations in the number of deaths and the crude death rate over time can be seen in the Statistical Summary, Appendix A.

Deaths: Numbers Registered and Rates, South Australia

Year	Numbers Registered			Crude Death Rate (a)		
	Males	Females	Persons	Males	Females	Persons
1977	5 317	4 467	9 784	8.34	6.99	7.66
1978	5 475	4 288	9 763	8.52	6.65	7.58
1979	5 323	4 338	9 661	8.25	6.69	7.46
1980	5 279	4 301	9 580	8.14	6.61	7.38
1981	5 372	4 334	9 706	8.20	6.52	7.36

(a) Number of deaths per 1 000 of estimated mean population.

Deaths: Numbers Registered in Age Groups, South Australia

Age Group	Males			Females			Persons		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
Under 1 year	88	106	97	78	81	60	166	187	157
1 year	13	9	4	7	7	7	20	16	11
2 years	6	5	2	4	7	3	10	12	5
3 years	3	3	5	7	3	—	10	6	5
4 years	1	5	2	4	2	—	5	7	2
Total under 5 years ...	111	128	110	100	100	70	211	228	180
5-9 years	18	13	16	8	10	5	26	23	21
10-14 years	13	26	16	12	7	9	25	33	25
15-19 years	85	89	77	27	33	28	112	122	105
20-24 years	87	80	63	24	33	20	111	113	83
25-29 years	82	61	66	34	19	17	116	80	83
30-34 years	74	56	50	38	26	17	112	82	67
35-39 years	66	63	73	31	35	34	97	98	107
40-44 years	82	102	75	43	44	46	125	146	121
45-49 years	166	135	146	72	70	77	238	205	223
50-54 years	277	283	273	149	136	107	426	419	380
55-59 years	417	469	436	187	185	198	604	654	634
60-64 years	566	552	501	277	266	249	843	818	750
65-69 years	746	702	748	381	403	403	1 127	1 105	1 151
70-74 years	808	740	838	539	513	547	1 347	1 253	1 385
75-79 years	720	728	760	642	567	616	1 362	1 295	1 376
80-84 years	484	524	571	714	674	723	1 198	1 198	1 294
85-89 years	336	327	357	616	708	644	952	1 035	1 001
90-94 years	145	166	157	334	331	396	479	497	553
95 years and over	40	35	39	110	141	128	150	176	167
All ages	5 323	5 279	5 372	4 338	4 301	4 334	9 661	9 580	9 706

A long established trend of increases in the number of deaths at the higher ages has been offset to some degree by a decrease in those in the younger age groups. The effect of this trend related to the changes in age distribution of the population is illustrated in the next tables, which show age-specific death rates, *i.e.* deaths in each age group expressed as a rate per 1 000 of the population in that age group. Because age constitution of the population is known accurately only at censuses, the periods shown are those with a census date as their centre.

Age-specific Death Rates: Males, South Australia ^(a)

Age Group (Years)	Death Rate (b)							
	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67	1970-72	1975-77
0-4	19.98	9.90	8.09	6.41	5.82	4.58	4.66	3.19
5-9	2.33	1.18	1.00	0.52	0.50	0.44	0.43	0.36
10-14	1.55	1.08	0.68	0.65	0.46	0.55	0.38	0.36
15-19	2.41	1.69	1.42	1.50	1.08	1.19	1.48	1.52
20-24	3.47	2.35	1.44	1.88	1.37	1.33	1.55	1.57
25-29	3.67	2.51	1.59	1.70	1.59	1.34	1.12	1.29
30-34	3.97	2.51	1.88	1.57	1.62	1.13	1.41	1.24
35-39	5.12	3.23	2.41	2.29	2.08	2.23	2.04	1.73
40-44	6.10	4.73	3.63	3.56	3.43	3.27	3.15	2.62
45-49	8.37	6.82	6.12	5.48	5.44	5.71	5.49	5.09
50-54	11.58	9.82	10.74	10.16	9.24	9.59	9.37	8.27
55-59	18.99	15.11	16.28	15.71	15.75	15.92	16.01	13.35
60-64	26.02	24.98	26.08	24.33	24.39	26.69	25.10	22.57
65-69	41.62	36.14	40.08	39.31	37.84	40.55	41.00	36.55
70-74	62.49	57.07	60.79	62.59	59.47	63.86	64.42	55.42
75-79	105.50	92.60	97.69	94.55	88.56	90.71	96.09	86.26
80-84	158.90	147.86	145.56	141.64	135.85	138.50	142.39	136.02
85 and over	269.50	257.03	248.89	235.84	227.39	228.91	230.02	233.90
All ages	10.75	9.29	10.87	9.80	9.00	9.17	9.31	8.58

(a) Deaths of full-blood Aborigines where identified in registrations were excluded before 1966.

(b) Average annual number of deaths per 1 000 population at ages shown.

Age-specific Death Rates: Females, South Australia ^(a)

Age Group (Years)	Death Rate (b)							
	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67	1970-72	1975-77
0-4	16.29	8.29	7.12	5.01	3.93	3.47	3.39	2.50
5-9	2.30	1.04	0.54	0.45	0.35	0.33	0.32	0.35
10-14	1.32	0.88	0.38	0.42	0.30	0.29	0.29	0.21
15-19	2.71	1.25	0.75	0.52	0.37	0.44	0.65	0.56
20-24	2.91	2.36	1.04	0.63	0.58	0.46	0.48	0.44
25-29	3.95	2.73	1.65	0.85	0.70	0.53	0.60	0.42
30-34	4.18	2.66	1.91	0.99	0.96	0.87	0.91	0.67
35-39	5.27	3.85	2.03	1.79	1.33	1.14	1.18	0.90
40-44	4.99	4.10	3.48	2.56	1.80	2.13	1.86	1.84
45-49	6.42	5.80	4.59	3.65	3.03	3.29	2.95	2.77
50-54	9.18	8.06	7.09	5.88	5.22	4.99	4.60	4.39
55-59	10.65	11.24	10.33	9.04	7.82	7.59	7.41	6.73
60-64	18.07	17.68	14.97	14.06	12.74	12.82	12.16	10.67
65-69	33.15	27.16	25.22	23.01	21.05	20.39	20.32	16.92
70-74	46.20	42.19	42.17	40.35	35.52	35.36	33.42	29.24
75-79	83.56	75.53	72.07	72.20	58.28	60.81	57.60	52.12
80-84	131.63	121.15	121.57	109.92	108.61	100.52	99.42	86.30
85 and over	232.84	233.59	214.35	215.80	199.38	183.88	186.55	186.61
All ages	9.00	8.23	9.19	8.31	7.38	7.42	7.50	7.10

(a) Deaths of full-blood Aborigines where identified in registrations were excluded before 1966.

(b) Average annual number of deaths per 1 000 of population at ages shown.

CAUSES OF DEATH

The classification of causes of deaths in Australia since 1907 has been based on the International Classification of Diseases (ICD). Up to 1949 the effect of revisions to ICD had been negligible but the introduction in 1950 of the Sixth Revision (ICD6) introduced major changes which, together with the adoption of more flexible rules for selecting the underlying cause where certificates of cause of death showed more than one cause, affected the comparability of figures for years before 1950 with those for 1950 and later. A complete classification of causes of deaths for each State and Territory of Australia for 1950 according to both the Fifth and Sixth Revisions was published by the Australian Statistician in *Demography* 1950, Bulletin No. 68. The Seventh Revision (ICD7) adopted in Australia in 1958, did not affect comparability significantly.

Similarly, the Eighth Revision (ICD8), adopted ten years later in 1968, provided few changes beyond the transfer of some categories, e.g. cerebrovascular disease from diseases of the nervous system to diseases of the circulatory system, and a revised classification for the recording of perinatal morbidity and mortality.

The Ninth Revision (ICD9) was introduced in 1979 and while not departing radically from ICD8 in its structure is more detailed in many classifications. The most significant feature of ICD9 relevant to causes of death is that maternal condition codes from the section 'Certain conditions originating in the perinatal period' are not available for Infant Deaths but may be used for Perinatal Deaths (see below).

In the following table deaths registered in 1981 are shown classified according to an abbreviated list, including percentages for each cause and the rate per 10 000 of mean population.

Causes of Death: South Australia, 1981

Abbreviated Classification (a)	ICD9 Code Number	Number of Deaths	Proportion of Total	Rate per 10 000 of Mean Population
			Per cent	
S1 Intestinal infectious diseases	001-009	6	0.0	—
S2 Tuberculosis	010-018	4	—	—
S4 Meningococcal infection	036	2	—	—
S6 Septicaemia	038	11	0.1	0.1
S8 Measles	055	1	—	—
S10 All other infective and parasitic diseases	{ Remainder }	14	0.1	0.1
	001-139			
S11-S20 Malignant neoplasms	140-208	2 173	22.4	16.5
S21 Benign neoplasms and neoplasms of unspecified nature	210-239	18	0.2	0.1
S22 Diabetes mellitus	250	159	1.6	1.2
S24 Other protein-calorie malnutrition	262, 263	1	—	—
S25 Anaemias	280-285	13	0.1	0.1
S26 Meningitis	320-322	4	—	—
S28 Chronic rheumatic heart disease	393-398	40	0.4	0.3
S29 Hypertensive disease	401-405	96	1.0	0.7
S30 Acute myocardial infarction	410	2 207	22.7	16.7
S31 Other ischaemic heart disease	411-414	672	6.9	5.1
S32 Other forms of heart disease	415, 416, 420-429	547	5.6	4.1
S33 Cerebrovascular disease	430-438	1 221	12.6	9.3
S34 Atherosclerosis	440	133	1.4	1.0
S35 Other diseases of circulatory system	417, 441-459	180	1.9	1.4
S36 Pneumonia	480-486	231	2.4	1.8
S38 Bronchitis, emphysema, asthma	490-493	214	2.2	1.6
S39 Other diseases of respiratory system	{ Remainder }	274	2.8	2.1
	460-519			
S40 Ulcer of stomach and duodenum	531-533	67	0.7	0.5
S41 Appendicitis	540-543	4	—	—
S42 Chronic liver disease and cirrhosis	571	81	0.8	0.6
S43 Nephritis, nephrotic syndrome, nephrosis	580-589	69	0.7	0.5

Causes of Death: South Australia, 1981 (continued)

Abbreviated Classification (a)	ICD9 Code Number	Number of Deaths	Proportion of Total	Rate per 10 000 of Mean Population
			Per cent	
S44 Hyperplasia of prostate	600	12	0.1	0.1
S48 Congenital anomalies	740-759	66	0.7	0.5
S49 Birth trauma	767	6	0.1	—
S50 Hypoxia, birth asphyxia and other respiratory conditions	768-770	19	0.2	0.1
S51 Other conditions originating in the perinatal period	{ Remainder } 760-779	27	0.3	0.2
S52 Symptoms, signs and ill-defined conditions	780-799	88	0.9	0.7
S53 All other diseases	{ Remainder } (801-799)	448	4.6	3.4
S54 Motor vehicle traffic accidents	E810-E819	229	2.4	1.7
S55 Accidental falls	E880-E888	74	0.8	0.6
S56 All other accidents	{ Remainder } E800-949	119	1.2	0.9
S57 Suicide	E950-E959	161	1.7	1.2
S58 Homicide	E960-E969	15	0.2	0.1
Total all causes		9 706	100.0	73.6

(a) No deaths were recorded in 1981 in the following categories: S3 Whooping Cough (033), S5 Tetanus (037), S7 Smallpox (050), S9 Malaria (084), S23 Nutritional marasmus (261), S27 Acute rheumatic fever (390-392), S37 Influenza (487), S45 Abortion (630-639), S46 Direct obstetric death (640-646, 651-676), S47 Other complications of pregnancy, childbirth and puerperium (647, 648), S59 All other external causes (E970-E999).

Selected Causes of Death: Age Groups, South Australia, 1981

Age Group (Years)	Malignant Neoplasms (140-208)	Ischaemic Heart Disease (410-414)	Cerebro-vascular Disease (430-438)	Disease of Respiratory System (460-519)	Disease of Digestive System (520-579)	Accidents, Poisonings and Violence (E800-E999)	Total Deaths (All Causes)
MALES							
Under 25	16	1	1	7	6	138	282
25-29	9	—	1	—	3	44	66
30-34	13	3	—	1	2	26	50
35-39	14	10	5	—	5	28	73
40-44	22	19	8	1	4	17	75
45-49	39	49	7	2	8	24	146
50-54	91	98	19	8	10	21	273
55-59	136	141	19	26	19	29	436
60-64	136	201	35	33	19	21	501
65-69	207	294	67	65	17	18	748
70-74	208	297	85	90	17	18	838
75-79	162	268	102	78	17	18	760
80-84	104	174	72	66	23	14	571
85 and over	69	151	94	65	15	13	553
All ages	1 226	1 706	515	442	165	429	5 372
FEMALES							
Under 25	13	—	—	5	—	42	132
25-29	3	1	2	1	2	7	17
30-34	9	—	2	—	—	2	17
35-39	13	2	4	—	2	9	34
40-44	27	1	1	1	3	8	46
45-49	34	10	5	6	3	11	77
50-54	65	8	6	4	6	8	107
55-59	85	39	10	15	9	5	198
60-64	100	67	31	9	6	7	249
65-69	136	133	39	16	8	6	403
70-74	131	174	79	28	21	13	547
75-79	115	201	122	23	20	12	616
80-84	103	238	153	52	21	14	723
85 and over	113	299	252	117	33	25	1 168
All ages	947	1 173	706	277	134	169	4 334

Selected Causes of Death: Age Groups, South Australia, 1981 (continued)

Age Group (Years)	Malignant Neoplasms (140-208)	Ischaemic Heart Disease (410-414)	Cerebro- vascular Disease (430-438)	Disease of Respiratory System (460-519)	Disease of Digestive System (520-579)	Accidents, Poisonings and Violence (E800-E999)	Total Deaths (All Causes)
PERSONS							
Under 25	29	1	1	12	6	180	414
25-29	12	1	3	1	5	51	83
30-34	22	3	2	1	2	28	67
35-39	27	12	9	—	7	37	107
40-44	49	20	9	2	7	25	121
45-49	73	59	12	8	11	35	223
50-54	156	106	25	12	16	29	380
55-59	221	180	29	41	28	34	634
60-64	236	268	66	42	25	28	750
65-69	343	427	106	81	25	24	1 151
70-74	339	471	164	118	38	31	1 385
75-79	277	469	224	101	37	30	1 376
80-84	207	412	225	118	44	28	1 294
85 and over	182	450	346	182	48	38	1 721
All ages	2 173	2 879	1 221	719	299	598	9 706

The long-term trends in deaths and death rates from some of the main causes are discussed in the following pages. One of the factors affecting these trends has been the reduction of mortality in early childhood. This improvement has increased the number of persons reaching higher ages where the risk from degenerative diseases is greatest; consequently deaths from degenerative diseases now constitute a higher proportion of deaths than formerly.

Infectious Diseases

In 1956 a poliomyelitis immunisation program began and since then the incidence of and deaths from this disease have declined (see Part 6.5).

There has been a long-term downward trend in deaths from respiratory tuberculosis. This has been assisted by the introduction in March 1952 of compulsory chest X-ray surveys of the population, enabling early detection and therefore more effective treatment of the disease.

Deaths from certain infectious diseases over the period 1915 to 1981 are shown in the following table.

Deaths from Certain Infectious Diseases, South Australia ^(a)

Period	Respiratory Tuberculosis	Typhoid Fever	Scarlet Fever	Diphtheria	Whooping Cough	Acute Poliomyelitis	Measles
Annual Average:							
1915-19	339	311	4	94	21	(b)	14
1920-24	330	28	9	70	28	9	7
1925-29	313	12	2	25	13	3	12
1930-34	261	7	2	12	13	3	6
1935-39	211	4	1	27	11	6	2
1940-44	190	3	2	30	10	2	9
1945-49	161	1	1	7	8	9	6
1950-54	81	—	—	1	2	23	3
1955-59	43	—	—	1	1	2	3
1960-64	32	—	—	—	1	1	2
1965-69	20	—	—	—	—	—	2
1970-74	8	—	—	—	—	—	—
1975-79	2	—	—	—	—	—	1

Deaths from Certain Infectious Diseases, South Australia ^(a) (continued)

Period	Respiratory Tuberculosis	Typhoid Fever	Scarlet Fever	Diphtheria	Whooping Cough	Acute Polio- myelitis	Measles
Year:							
1977	2	—	—	—	—	—	—
1978	1	—	—	—	—	—	1
1979	2	—	—	—	—	—	1
1980	4	—	—	—	—	—	—
1981	3	—	—	—	—	—	1

(a) Deaths of full-blood Aborigines where identified in registrations were excluded before 1966.

(b) Not separately recorded.

Malignant Neoplasms

For 1950 and subsequent years, deaths from malignant neoplasms (generally known as 'cancer') have included those deaths classified to neoplasms of lymphatic and haematopoietic tissues. This latter group, which accounted for 215 of the 2 173 deaths attributed to malignant neoplasms in 1981, includes such diseases as lymphosarcoma, Hodgkin's disease, leukaemia and multiple myeloma.

The following table shows deaths from malignant neoplasms according to site of the disease for selected years.

Malignant Neoplasms: Deaths, Site of Disease, South Australia ^(a)

Site of Disease	1965	1970	1975	1980	1981
	Number				
Malignant neoplasm of:					
Lip, oral cavity and pharynx	20	35	33	49	35
Digestive organs and peritoneum	479	546	583	642	713
Respiratory and intrathoracic organs (b)	201	291	381	462	467
Skin	34	44	48	51	47
Breast	107	146	171	164	184
Uterus	61	52	55	61	51
Other female genital organs	47	63	61	54	56
Male genital organs	84	110	142	153	104
Urinary organs	88	79	88	97	111
Brain and nervous system	50	43	54	66	77
Other and unspecified sites	84	83	107	106	130
Neoplasms of lymphatic and haematopoietic tissue	128	160	187	205	198
Total deaths	1 383	1 652	1 910	2 110	2 173
	Rate (c)				
Lip, oral cavity and pharynx	0.19	0.30	0.27	0.37	0.27
Digestive organs and peritoneum	4.50	4.72	4.71	4.93	5.41
Respiratory and intrathoracic organs (b)	1.89	2.51	3.08	3.55	3.54
Skin	0.32	0.38	0.39	0.39	0.36
Breast	1.01	1.26	1.38	1.26	1.39
Uterus	0.57	0.45	0.44	0.47	0.39

Malignant Neoplasms: Deaths, Site of Disease, South Australia ^(a) (continued)

Site of Disease	1965	1970	1975	1980	1981
Rate (c)					
Malignant neoplasm of (continued):					
Other female genital organs	0.44	0.54	0.49	0.41	0.42
Male genital organs	0.79	0.95	1.15	1.17	0.79
Urinary organs	0.83	0.68	0.71	0.74	0.84
Brain and nervous system	0.47	0.37	0.44	0.51	0.58
Other and unspecified sites	0.79	0.72	0.86	0.81	0.99
Neoplasms of lymphatic and haematopoietic tissue	1.20	1.38	1.51	1.57	1.50
Total rate	13.00	14.26	15.43	16.20	16.47

(a) Deaths of full-blood Aborigines where identified in registrations were excluded before 1966.

(b) Includes intrathoracic organs for ICD9 only.

(c) Per 10 000 of mean population.

Malignant Neoplasms: Age-specific Death Rates, South Australia ^(a)

Age Group (Years)	Death Rate (b)						
	1932-34	1946-48	1953-55	1960-62	1965-67	1970-72	1975-77
MALES							
0-4	—	0.49	1.18	1.02	1.14	1.27	0.88
5-14	0.12	0.51	1.05	0.82	0.97	0.79	0.45
15-24	0.31	0.07	1.64	0.86	0.90	0.90	0.85
25-34	1.05	1.18	1.21	1.33	1.62	1.24	1.79
35-44	3.36	2.57	4.63	4.29	3.72	5.36	3.69
45-54	8.65	12.35	10.42	11.57	15.09	14.80	14.48
55-64	35.41	32.77	33.43	36.52	43.46	43.94	42.23
65-74	89.18	82.62	69.54	83.67	87.28	101.64	101.49
75 and over	147.57	148.98	149.45	142.29	151.06	175.14	196.61
All ages	11.40	13.60	12.54	12.86	14.09	15.69	16.45
FEMALES							
0-4	0.30	0.41	1.24	0.79	0.57	0.57	0.13
5-14	0.13	0.23	0.34	0.79	0.55	0.38	0.51
15-24	0.25	0.40	0.72	0.46	0.82	0.56	0.45
25-34	1.49	1.74	1.99	2.16	1.70	2.39	1.46
35-44	6.32	4.42	5.95	6.66	5.68	4.88	5.27
45-54	16.86	15.39	12.67	16.69	16.14	15.83	14.26
55-64	34.61	30.12	32.91	28.19	30.33	30.90	30.06
65-74	55.98	57.21	52.26	52.24	49.90	55.38	51.11
75 and over	115.15	108.52	98.41	99.76	94.61	102.54	112.27
All ages	11.37	13.12	12.64	12.68	12.30	13.13	13.44

(a) Deaths of full-blood Aborigines where identified in registrations were excluded before 1966.

(b) Average annual number of deaths per 10 000 of population at ages shown.

The above table shows how the age-specific death rates for malignant neoplasms have increased for older age groups while the following table indicates a general increase in deaths from the same causes. Therefore, it appears that the increase over the period in the all-ages rate is attributable in part to the increasing number of elderly people.

Deaths from Malignant Neoplasms, South Australia ^(a)

Period	Number of Deaths			Death Rate (b)		
	Males	Females	Persons	Males	Females	Persons
Annual Average:						
1950-54	462	483	945	12.11	12.96	12.53
1955-59	565	519	1 084	12.79	12.06	12.43
1960-64	656	617	1 273	13.16	12.58	12.88
1965-69	820	698	1 518	14.77	12.67	13.72
1970-74	958	784	1 742	15.94	13.06	14.50
1975-79	1 079	840	1 919	16.97	13.15	15.06
Year:						
1977	1 066	855	1 921	16.72	13.37	15.05
1978	1 184	804	1 988	18.43	12.46	15.44
1979	1 101	844	1 945	17.07	13.02	15.04
1980	1 230	880	2 110	18.96	13.53	16.24
1981	1 226	947	2 173	18.73	14.25	16.47

(a) Deaths of full-blood Aboriginals where identified in registrations were excluded before 1966.

(b) Number of deaths per 10 000 of mean population.

Cerebrovascular Disease

The increase in both numbers and rates of deaths from cerebrovascular disease (commonly referred to as 'a stroke') is further evidence of the effect of the increased proportion of the population at higher ages.

Deaths from Cerebrovascular Disease, South Australia ^(a)

Period	Number of Deaths			Death Rate (b)		
	Males	Females	Persons	Males	Females	Persons
Annual Average:						
1940-44	271	368	639	8.96	12.03	10.51
1945-49	321	431	752	9.92	13.21	11.57
1950-54	404	553	957	10.62	14.82	12.70
1955-59	481	614	1 095	10.89	14.27	12.55
1960-64	490	645	1 135	9.83	13.16	11.48
1965-69	567	731	1 298	10.21	13.26	11.73
1970-74	582	808	1 390	9.72	13.46	11.59
1975-79	547	780	1 327	8.60	12.22	10.42
Year:						
1977	561	776	1 337	8.88	12.12	10.47
1978	541	751	1 292	8.42	11.64	10.03
1979	497	742	1 239	7.70	11.45	9.58
1980	448	699	1 147	6.91	10.75	8.83
1981	515	706	1 221	7.87	10.63	9.26

(a) Deaths of full-blood Aboriginals where identified in registrations were excluded before 1966.

(b) Number of deaths per 10 000 of mean population.

Although the rate generally has fallen since 1954, deaths from this cause constituted 18.1 per cent of deaths of persons aged seventy-five years and over in 1981. During the period 1930-34 deaths classified to this cause were only 8.6 per cent of all deaths, but during 1975-79 they were 13.5 per cent of all deaths.

Diseases of the Heart

The following table shows the number of deaths attributed to heart disease and rates per 10 000 of the mean population since 1940.

The percentage of total deaths classified to heart disease increased from 25.50 per cent in the period 1940-44 to 36.55 per cent during 1975-79. Apart from the effect of the ageing population, there are other factors which have influenced this large increase, namely changes in the mode of certification and classification, and improvement both in diagnosis and certification; therefore any comparison of numbers, rates and percentages of deaths from this cause over the period should be made only with caution.

Deaths from Diseases of the Heart, South Australia ^(a)

Period	Number of Deaths			Death Rate ^(b)		
	Males	Females	Persons	Males	Females	Persons
Annual Average:						
1940-44	886	704	1 590	29.29	23.02	26.14
1945-49	1 094	822	1 916	33.84	25.15	29.47
1950-54	1 342	996	2 338	35.22	26.70	31.01
1955-59	1 519	1 111	2 630	34.38	25.81	30.15
1960-64	1 776	1 245	3 021	35.61	25.42	30.56
1965-69	2 036	1 432	3 468	36.69	25.97	31.35
1970-74	2 080	1 503	3 583	34.70	25.02	29.85
1975-79	2 043	1 550	3 593	32.12	24.28	28.19
Year:						
1977	2 017	1 552	3 569	31.62	24.28	27.96
1978	2 034	1 561	3 595	31.65	24.20	27.92
1979	2 051	1 517	3 568	31.80	23.40	27.59
1980	1 906	1 442	3 348	29.39	22.17	25.77
1981	2 032	1 481	3 513	31.04	22.29	26.63

(a) Deaths of full-blood Aboriginals where identified in registrations were excluded before 1966.

(b) Number of deaths per 10 000 of mean population.

External Causes

In the table which follows, deaths from selected categories of external cause (accidents, poisonings and violence) are shown for recent years.

Motor vehicle traffic accidents account for considerably fewer deaths than those caused by either heart disease, cerebrovascular disease or malignant neoplasms although it is comparable with these other major causes when considered in terms of 'life years lost'. In 1981 there were 188 deaths from all causes of persons in the 15-24 years age group and of these 50.5 per cent were caused by motor vehicle accidents.

Deaths: External Causes (Accidents, Poisonings and Violence), South Australia

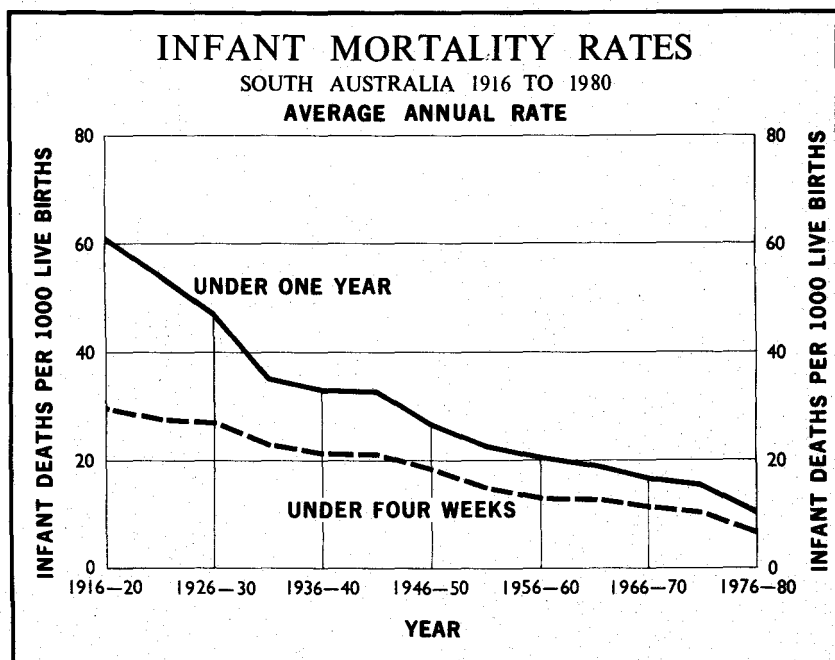
Year	Motor Vehicle Traffic Accidents	Accidental Drownings	Accidental Poisonings	Accidental Falls	Cause				Total Deaths for Category
					Suicide and (Intentional) Self-inflicted Injury	Homicide and Injury Purposely Inflicted	Other External Causes		
MALES									
1977	232	20	4	37	101	16	73	483	
1978	218	25	12	26	116	16	89	502	
1979	229	28	4	33	132	16	72	514	
1980	212	18	8	30	99	14	83	464	
1981	175	22	7	32	118	11	64	429	
FEMALES									
1977	96	9	2	54	28	8	29	226	
1978	79	3	3	40	39	11	23	198	
1979	73	5	1	51	47	11	21	209	
1980	68	6	4	34	46	14	34	206	
1981	54	4	1	42	43	4	21	169	

**Deaths: External Causes (Accidents, Poisonings and Violence), Age Groups
South Australia, 1981**

Age Group	Cause							Total Deaths for Category
	Motor Vehicle Traffic Accidents	Accidental Drownings	Accidental Poisonings	Accidental Falls	Suicide and (Intentional) Self-inflicted Injury	Homicide and Injury Purposely Inflicted	Other External Causes	
MALES								
Under 15 years	15	4	—	1	—	1	5	26
15-24 years	75	3	2	1	24	—	7	112
25-34 years	26	3	4	4	22	2	9	70
35-44 years	12	3	1	—	20	1	8	45
45-54 years	12	3	—	1	15	6	8	45
55-64 years	16	2	—	4	16	—	12	50
65-74 years	5	3	—	5	15	1	7	36
75 years and over	14	1	—	16	6	—	8	45
Total	175	22	7	32	118	11	64	429
FEMALES								
Under 15 years	6	1	—	1	—	—	2	10
15-24 years	20	—	1	—	8	1	2	32
25-34 years	1	—	—	—	7	—	1	9
35-44 years	6	1	—	1	7	—	2	17
45-54 years	4	—	—	—	9	2	4	19
55-64 years	5	—	—	2	4	—	1	12
65-74 years	6	—	—	4	5	1	3	19
75 years and over	6	2	—	34	3	—	6	51
Total	54	4	1	42	43	4	21	169

INFANT MORTALITY

The infant mortality rate, *i.e.* the number of deaths of children under one year to every 1 000 live births, has shown a marked decline from 148.77 in 1875-79 to 11.67 in 1975-79. In 1981 the rate was 8.11. The number of infant deaths and infant death rates for selected years since 1851 are shown in the Statistical Summary, Appendix A.



The fall in infant mortality is attributable to many factors, but the most important are reflected in the falling neo-natal death rate. This is partly because of better pre-natal care and obstetric management, which have led to safer births, and to the neo-natal intensive care units at major maternity hospitals which have brought about a high survival rate for small and immature infants.

Infant Mortality: Age at Death, South Australia

Year	Under 1 Day	1 Day and under 1 Week	1 Week and under 4 Weeks	4 Weeks and under 3 Months	3 Months and under 6 Months	6 Months and under 12 Months	Total under 12 Months	
							Number	Rate (a)
MALES								
1978	51	22	11	15	23	16	138	14.53
1979	31	14	6	14	16	7	88	9.24
1980	33	28	11	16	14	4	106	11.20
1981	23	23	12	11	16	12	97	9.88
FEMALES								
1978	37	8	3	23	10	8	89	9.82
1979	29	15	5	14	13	2	78	8.71
1980	35	6	8	12	12	8	81	8.96
1981	16	9	10	11	8	6	60	6.29
PERSONS								
1978	88	30	14	38	33	24	227	12.23
1979	60	29	11	28	29	9	166	8.98
1980	68	34	19	28	26	12	187	10.11
1981	39	32	22	22	24	18	157	8.11

(a) Rate per 1 000 live births.

Statistics of infant mortality shown in the table above are inclusive of the neo-natal segment of perinatal deaths which are discussed in the following paragraphs.

The causes of infant deaths in 1981 classified according to age group are shown in the following table.

Infant Mortality: Causes in Age Groups, South Australia, 1981

Cause of Death	Age Group					Total under 12 Months
	Under 1 Week	1 Week and under 4 Weeks	4 Weeks and under 3 Months	3 Months and under 6 Months	6 Months and under 12 Months	
Infective and parasitic diseases (000-139)	—	—	1	1	—	2
Diseases of nervous system and sense organs (320-389)	—	1	1	2	2	6
Diseases of respiratory system (460-519)	—	—	—	—	1	1
Congenital anomalies (740-759)	22	10	4	5	2	43
Perinatal causes:						
Disorders relating to short gestation and unspecified, low birthweight (765)	13	—	—	—	—	13
Birth trauma (767)	6	—	—	—	—	6
Intrauterine hypoxia and birth asphyxia (768)	2	1	—	—	—	3
Respiratory distress syndrome (769)	4	1	—	—	—	5
Other respiratory conditions (770)	9	—	—	1	1	11
Other perinatal causes (Rem. 764-779)	8	3	2	1	—	14
Sudden death (cause unknown) (798)	1	4	10	11	8	34
All other diseases	5	2	3	2	2	14
Accidents, poisonings, violence (E800-E999)	1	—	1	1	2	5
Total all causes	71	22	22	24	18	157

PERINATAL DEATHS

Perinatal deaths comprise fetal deaths (stillbirths) and neonatal deaths (deaths within twenty-eight days of birth), of children weighing at least 500 grams at delivery or, when birthweight is unavailable, of at least twenty-two weeks gestation.

In South Australia a certificate must be completed by medical practitioners for the neonatal death of any child born alive, irrespective of birthweight, and for any fetal death where the period of gestation was at least twenty weeks or the birthweight was at least 400 grams. This definition was used as the basis for publication of perinatal statistics until 1980. However in accordance with a recommendation of the Ninth Revision Conference (1975) of the World Health Organization (WHO) 'that national perinatal statistics should include all fetuses and infants weighing at least 500 grams or, when birthweight is unavailable, the corresponding gestational age (twenty-two weeks) or body length (twenty-five centimetres crown-heel), whether alive or dead' the definition of perinatal deaths has been amended. In the following table, the statistics for 1981 and earlier years now relate to this revised definition.

Live Births, Fetal Deaths, Neo-natal Deaths and Perinatal Deaths, South Australia

Year	Live Births Number	Perinatal Deaths					
		Fetal		Neo-natal		Total Perinatal	
		Number	Rate (a)	Number	Rate (b)	Number	Rate (c)
MALES							
1977	9 905	75	7.52	76	7.67	151	15.13
1978	9 489	81	8.46	77	8.11	158	16.51
1979	9 513	73	7.62	44	4.63	117	12.21
1980	9 458	59	6.20	68	7.19	127	13.34
1981	9 811	60	6.08	49	4.99	109	11.04
FEMALES							
1977	9 348	71	7.54	76	8.13	147	15.61
1978	9 059	74	8.10	45	4.97	119	13.03
1979	8 955	62	6.88	46	5.14	108	11.98
1980	9 028	61	6.71	40	4.43	101	11.11
1981	9 531	69	7.19	31	3.25	100	10.42
PERSONS							
1977	19 253	146	7.53	152	7.89	298	15.36
1978	18 548	155	8.29	122	6.58	277	14.81
1979	18 468	135	7.26	90	4.87	225	12.09
1980	18 486	120	6.45	108	5.84	228	12.25
1981	19 342	129	6.63	80	4.14	209	10.73

(a) Fetal death rate is the number of fetal deaths per 1 000 of the total of live births and fetal deaths.

(b) Neo-natal death rate is the number of neo-natal deaths per 1 000 live births.

(c) Perinatal death rate is the number of perinatal deaths per 1 000 of the total of live births and fetal deaths.

Despite the improvements which have already been achieved infant and perinatal mortality still presents one of the most challenging areas for medical and scientific research. For example, Rh incompatibility is now a declining cause of death as a direct result of prophylactic immunisation. In Adelaide, research on placental efficiency and fetal anoxia has enabled pre-natal detection of impending danger, so that treatment can prevent damage or death of the fetus. Falling death rates attributable to placental disorders and anoxia are evidence of this.

With the introduction of the Ninth Revision of ICD in 1979 provision exists for the classification of perinatal deaths according to the main disease or condition in both the child and the mother as illustrated in the table below.

Perinatal Deaths: Causes of Death, South Australia

Cause of Death	1981
Main disease or condition in child:	
Slow fetal growth, fetal malnutrition and immaturity (764-5)	7
Birth trauma (767)	6
Hypoxia, birth asphyxia and other respiratory conditions (768-770)	75
Fetal and neo-natal haemorrhage (772)	7
Haemolytic disease of fetus or newborn (773)	—
Other conditions originating in the perinatal period (Rem. 764-779)	64
Congenital anomalies (740-759)	42
Infectious and parasitic diseases (001-139)	—
All other causes (140-739, 780-799, E800-E999)	8
Total	209
Maternal condition:	
Maternal conditions which may be unrelated to present pregnancy (760)	15
Fetus or newborn affected by maternal complications of pregnancy (761)	23
Fetus or newborn affected by complications of placental cord and membranes (762)	58
Fetus or newborn affected by other complications of labour and delivery (763)	7
No maternal condition reported	106
Total	209

EXPECTATION OF LIFE

The expectation of life at age x is defined as the average number of years lived after age x by each group of persons aged exactly x years. Because detailed information of the age structure and mortality experience of the population is required, the calculation of the expectation of life for each age is generally based on a period which spans a population census (the only time at which a sufficiently accurate age distribution is available).

The table which follows shows the expectation of life at specified ages in Australia based on mortality experience in the decade to 1910 and for the three years spanning each of the Censuses of 1921, 1933, 1947, 1954, 1961, 1966, 1971 and 1976.

Expectation of Life, Australia

Age	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67	1970-72	1975-77
MALES								
0	59.2	63.5	66.1	67.1	67.9	67.6	67.8	69.6
5	60.4	62.6	63.8	64.3	64.8	64.4	64.5	65.8
10	56.0	58.0	59.0	59.5	59.9	59.5	59.7	60.9
15	51.4	53.4	54.3	54.7	55.1	54.6	54.8	56.1
20	47.0	48.8	49.6	50.1	50.4	50.0	50.2	51.5
25	42.7	44.4	45.0	45.5	45.8	45.4	45.6	46.9
30	38.4	39.9	40.4	40.9	41.1	40.7	40.9	42.2
35	34.2	35.5	35.8	36.3	36.5	36.0	36.2	37.5
40	30.1	31.1	31.2	31.7	31.8	31.4	31.6	32.8
45	26.0	26.9	26.8	27.2	27.4	27.0	27.1	28.3
50	22.2	22.8	22.7	22.9	23.1	22.8	22.9	24.0
55	18.5	19.0	18.8	19.0	19.2	18.8	18.9	20.1
60	15.1	15.6	15.4	15.5	15.6	15.3	15.4	16.4
65	12.0	12.4	12.3	12.3	12.5	12.2	12.2	13.1
70	9.3	9.6	9.6	9.6	9.8	9.5	9.5	10.3
75	6.9	7.2	7.2	7.3	7.5	7.3	7.3	7.9
80	5.0	5.2	5.4	5.5	5.6	5.5	5.5	5.9
FEMALES								
0	63.3	67.1	70.6	72.8	74.2	74.2	74.5	76.6
5	63.6	65.6	67.9	69.6	70.8	70.6	71.0	72.7
10	59.2	61.0	63.1	64.8	65.9	65.8	66.1	67.7
15	54.6	56.3	58.3	59.9	61.0	60.8	61.2	62.8
20	50.0	51.7	53.5	55.1	56.2	56.0	56.4	58.0
25	45.7	47.2	48.7	50.2	51.3	51.2	51.5	53.1
30	41.5	42.8	44.1	45.4	46.5	46.3	46.7	48.3
35	37.3	38.4	39.5	40.7	41.7	41.6	41.9	43.4
40	33.1	34.0	34.9	36.0	37.0	36.9	37.2	38.7
45	29.0	29.7	30.5	31.4	32.3	32.3	32.6	34.0
50	24.9	25.6	26.1	27.0	27.9	27.8	28.1	29.5
55	21.0	21.6	22.0	22.8	23.6	23.6	23.8	25.2
60	17.2	17.7	18.1	18.8	19.5	19.5	19.7	21.0
65	13.6	14.2	14.4	15.0	15.7	15.7	15.9	17.1
70	10.4	11.0	11.1	11.6	12.2	12.2	12.4	13.5
75	7.7	8.2	8.3	8.7	9.2	9.2	9.4	10.3
80	5.6	6.0	6.0	6.3	6.7	6.7	6.9	7.6

Further References

Additional information may be found in the following publications:

- 3301.0 *Births—Australia*
- 3301.4 *Births—South Australia*
- 3302.0 *Deaths—Australia*
- 3302.4 *Deaths—South Australia*
- 3303.0 *Causes of Death—Australia*
- 3303.4 *Perinatal Deaths—South Australia*
- 3304.0 *Perinatal Deaths—Australia*

5.4 MIGRATION

Powers and Legislation of the Commonwealth Government

Under the Constitution, the Commonwealth Parliament is empowered to make laws on immigration, emigration, aliens and the influx of criminals. Immigration into Australia is regulated by the *Migration Act 1958*, which came into force on 1 June 1959. The *Aliens Act 1947*, provides that a register of aliens shall be maintained for every State or mainland Territory of Australia and that, unless exempted, aliens sixteen years of age and over are required to register with the Department of Immigration and Ethnic Affairs. Under the provisions of the *Australian Citizenship Act 1948* aliens may, upon application, be granted citizenship; generally, this is after three years residence but may be earlier under certain circumstances. Legislation and conditions of immigration into Australia and of naturalisation are discussed in detail in *Year Book Australia*.

Assisted Migration

From early colonial times free or assisted passages were given to large numbers of migrants from Britain, and to lesser numbers from other countries. Responsibility for migrant recruitment and transport was originally with the Colonial Governments, then the States, and in 1920-21 was transferred to the Commonwealth Government.

After the 1939-45 War, Australia and Britain entered into agreements to provide free passages for ex-servicemen and assisted passages for other British migrants. The first agreement ended in 1955, but the assisted passage agreement continued until 1972. Since then Australia has provided unilateral assistance for British migrants.

Large-scale assisted migration from Europe began in 1947 with Australian participation in the resettlement of Displaced Persons under the auspices of the International Refugee Organisation. Agreement with a number of European countries, either directly or through the agency of the Inter-governmental Committee for European Migration, resulted in a preponderance of European assisted migration to Australia over the next twenty-five years. During this time Australia developed unilateral arrangements to assist other migrants from Europe, the United States and elsewhere.

From May 1973 there was a uniform policy on assisted migration from all countries but since 30 April 1981, passage assistance has been available only to refugees.

Refugees and Special Humanitarian Programs

Refugees now comprise about one fifth of Australia's total immigration program with an intake of 21 917 in 1981-82. Indo-Chinese refugees constitute the largest single element of the intake and some 65 585 have been resettled between April 1975 and June 1982. Of the 13 805 Indo-Chinese refugees who arrived in the twelve months ending 30 June 1982, 1 699 were destined for South Australia.

Internal tensions in Eastern Europe have increased the outflow of refugees from countries in this area, particularly Poland, 5 948 Eastern European refugees arriving in Australia in 1981-82.

In November 1981, the Minister for Immigration and Ethnic Affairs announced a new Special Humanitarian Program, which provides for the entry of people who are not eligible for resettlement in Australia as refugees but who still have close ties with Australia.

Overseas Arrivals and Departures

Since 1924 the movements of overseas travellers have been classified into two main categories according to declared intention regarding residence, *i.e.* short-term and long-term (including permanent). For short-term movements, overseas visitors and Australian residents are identified separately.

The principal categories of travellers according to stated purpose of travel are:

Permanent movement ; consisting of people arriving with stated intent to settle permanently in Australia, and Australian residents departing with stated intent to reside permanently abroad.

Long-term movement ; consisting of the arrival of visitors and the departure of residents with stated intent to stay (in Australia or in a country abroad respectively) for twelve months or more; and the departure of visitors and the return of Australian residents who have stayed (in Australia or in a country abroad respectively) for twelve months or more.

Short-term movement ; consisting of all other movements, including the movement of Australian troops irrespective of period of stay.

The following table gives details for 1981 of overseas arrivals and departures of people whose State of residence had been or was intended to be South Australia. For departures, State of residence refers to the State in which the traveller regards himself as living or as last having lived. State of intended residence for arrivals is derived from the intended address given by settlers and Australian residents returning after a journey abroad. Particularly in relation to settlers, this information does not necessarily refer to the State in which a traveller will eventually establish a permanent residence.

Overseas Arrivals and Departures: Mode of Transport and Category of Traveller
State of Residence, South Australia, 1981

Category of Traveller	By Sea		By Air		Total
	Males	Females	Males	Females	
ARRIVALS					
Assisted settlers	—	—	1 821	1 205	3 026
Other settlers	25	22	2 202	2 598	4 846
Total permanent	25	22	4 023	3 803	7 872
Long-term residents returning	16	18	2 095	2 062	4 191
Long-term visitors arriving	2	—	821	597	1 420
Total long-term	18	18	2 916	2 659	5 611
Total permanent and long-term	43	40	6 939	6 462	13 483
Short-term residents returning	211	219	35 707	35 982	72 119
Short-term visitors arriving	44	40	16 539	15 365	31 988
Total arrivals	298	299	59 185	57 809	117 591

**Overseas Arrivals and Departures: Mode of Transport and Category of Traveller
State of Residence, South Australia, 1981 (continued)**

Category of Traveller	By Sea		By Air		Total
	Males	Females	Males	Females	
DEPARTURES					
Former settlers	8	5	432	456	901
Other residents	3	1	276	285	565
Total permanent	11	6	708	741	1 466
Long-term residents departing	13	12	1 817	1 624	3 466
Long-term visitors departing	4	2	527	356	889
Total long-term	17	14	2 344	1 980	4 365
Total permanent and long-term	28	20	3 052	2 721	5 821
Short-term residents departing	248	288	37 192	35 044	72 772
Short-term visitors departing	10	10	16 683	15 933	32 636
Total departures	286	318	56 927	53 698	111 229

Entry for Residence

From January 1975, all people living overseas other than New Zealand citizens, wishing to come to Australia as settlers have had to obtain visas for entry. Under a reciprocal agreement with New Zealand, citizens of that country may enter Australia without prior authority. However, from 1 July 1981, New Zealand citizens have been required to hold a valid passport.

From April 1982 Australia operated a new migrant selection system.

The labour shortage and business migration category comprises applicants with occupations in demand in Australia, employment nominees and business migrants. People admitted under this category will have professions, skills or entrepreneurial flair of direct benefit to Australia in the 1980s.

The former family reunion category which covered mainly immediate family has been replaced by an expanded family migration category. This category includes brothers, sisters and non-dependent children. While the economic/employment prospects of these relatives continues to be assessed, they find it easier to be approved when their family in Australia sponsors them and undertakes to provide them with support, including a job in some cases. The new policy also allows all working age parents to be considered without having to go through an economic/employment assessment. Where the parents intend to enter the workforce, however, sponsors in Australia will be asked to find them a job. In addition, no age limits are now being placed on children who are part of the family unit. For immediate family there is no minimum residence requirement for sponsorship. For all others the requirement has been shortened to two years.

Apart from these two major categories, persons are considered for migration to Australia under three additional categories. Firstly, through independent migration for people of proven achievement and distinction in occupations where demand may be limited. Secondly, through the refugee and special humanitarian programs.

The final category, special eligibility, largely covers people who cannot be regarded as part of the planned immigration program. It provides for the entry of people who have sufficient assets to support themselves fully during their retirement in Australia and for the entry of people with acknowledged creative or sporting talents.

The migrant intake for 1981-82 was 118 000.

Temporary Entry

Persons seeking to enter Australia for reasons other than settlement may be considered under the policies of the Commonwealth Government relating to visitors, students and temporary residents.

Visitors

Visas are issued free of charge overseas with minimal formality and delay to applicants seeking to make genuine visits to Australia for short periods for purposes such as tourism, business, visiting relations or friends and pre-arranged medical treatment. Persons granted visit visas are made aware through information notes and a declaration they sign as part of the visa application that they are not entitled to undertake employment or studies and that they are required to leave Australia at the end of their authorised period of stay.

Overseas students

Australia has a comprehensive program of aid to under-developed countries involving the sponsorship of students. This program is the responsibility of the Minister for Foreign Affairs and is administered by the Australian Development Assistance Bureau. Each year the Bureau brings to Australia substantial numbers of mainly post-graduate students undertaking formal studies, and trainees who participate in short extensive courses, seminars or workshops.

The private overseas student policy is aimed at providing opportunities for people from overseas to acquire qualifications and skills, especially in fields where Australia has developed a special expertise, that will be of value to the student in pursuing a career in the homeland. This is to the benefit of the student and the home country but at the same time the scheme is an important element in the development of cultural exchange and fostering of international understanding and goodwill.

The private overseas scheme provides students with full-time courses of study at Australian educational institutions; specialised full-time courses at private institutions such as pilot training, secretarial studies and computer courses; employment designed to provide on-the-job training for the acquiring and updating of skills; special English language courses; and exchange arrangements between students of Australian and overseas schools and universities.

Temporary Residents

The policy of the Commonwealth Government is that opportunities for employment in Australia are to be available as a first priority to Australian residents.

Temporary residence visas may, however, be issued to overseas persons to enter Australia for limited periods to engage in pre-arranged specialised activities. Persons who may receive such visas include senior management personnel possessing expertise not available locally; academic staff; members of religious organisations; and entertainers and sportsmen, both individuals and groups.

Generally, action for the granting of visas is initiated in Australia by the organisation or entrepreneur which seeks the temporary entry of the persons concerned. Persons seeking temporary residence for periods in excess of twelve months are required to meet the health and character standards which apply to migrant entry.

Ethnic Affairs

The Ethnic Affairs Division of the Department of Immigration and Ethnic Affairs fosters the development of a culturally diverse, but socially cohesive society where Australian citizenship has an important and respected status and meaning.

The Division ensures that Commonwealth Government policies, programs and services take account of, and are sensitive to, the multi-cultural, multi-racial nature of the Australian society.

The Division also has the tasks of:

- (a) being comprehensively informed on developments in community relations, especially those of ethnic communities;
- (b) enhancing the status and value of Australian citizenship;
- (c) increasing awareness and understanding of the responsibilities and privileges of citizenship at all levels of Australian society;
- (d) administering citizenship legislation and ensuring that its underlying values are appropriate to the times;
- (e) providing a range of settlement programs.

The Ethnic Liaison Officer Scheme was introduced in early 1978. Ethnic liaison officers have been appointed in most Commonwealth Government departments and authorities to give special attention to all policy, program and services matters affecting migrants, to be involved in ethnic matters and to provide assistance in discussions between their own departments and the Department of Immigration and Ethnic Affairs.

The status of 'Australian Citizen' was created under the *Nationality and Citizenship Act 1948* which came into force on 26 January 1949. The relevant Act is now the *Australian Citizenship Act 1948* and under its provisions all migrants, regardless of origin, are required to satisfy uniform requirements for the granting of citizenship.

Previous Citizenship of Persons Granted Australian Citizenship, South Australia

Nationality	1976	1977	1978	1979	1980	1981
Austrian	29	37	30	15	17	14
British	5 011	2 526	2 198	1 864	1 967	2 213
Cypriot	72	30	56	108	131	68
Czechoslovak	29	37	21	9	6	4
Danish	31	11	12	22	4	7
Dutch	187	120	103	64	59	60
Finnish	27	33	14	17	12	20
French	60	75	65	35	51	24
German	275	142	137	152	129	82
Greek	964	698	473	374	325	200
Hungarian	37	29	24	13	16	12
Indian	78	36	44	43	47	23
Irish	60	22	38	24	21	28
Italian	1 092	769	672	489	464	360
Lebanese	89	79	43	37	125	71
Malaysian	61	45	55	70	71	61
Maltese	53	49	50	68	48	45
New Zealander	29	22	17	19	21	57
Polish	85	61	92	56	37	46
Singaporean	21	17	31	10	21	19
South African	56	50	32	31	53	60
Spanish	92	62	30	29	9	20
Turkish	30	19	11	25	20	26
US American	20	14	20	8	12	17
Yugoslav	502	537	445	387	325	160
Stateless	33	44	34	75	33	23
Other	272	426	362	372	459	544
Total	9 295	5 990	5 109	4 416	4 483	4 264

In the table above, numbers of migrants granted citizenship are shown according to previous citizenship. From 1974 citizens of Britain (and colonies) and other Commonwealth nations were included for the first time. Before 1 December 1973 these people were granted citizenship by registration.

Education

The Commonwealth Government through the Ethnic Affairs Division with the co-operation of the States, funds and co-ordinates a program which aims to provide:

- (a) English language learning opportunities for adult migrants and refugees from non-English speaking backgrounds;
- (b) information about living in Australia.

This program, known as the Adult Migrant Education Program, is divided into two distinct phases: the on-arrival phase and the on-going phase. The on-arrival phase is directed to new arrivals to provide the first English language learning opportunities for recently arrived migrants and refugees. Bilingual information instructors provide information about living in Australia in the home language of new arrivals to the extent practicable.

Within the on-going phase a range of activities is offered to assist the individual to learn English and emphasis is increasingly being placed on learning activities which are geared to individual needs. Activities including individual self access arrangements, full and part-time day and evening classes and special courses which are directed to work related language needs such as those of professionally qualified people. Volunteer tutors visit homes and use is made of television and correspondence courses. During 1981-82 almost 10 000 adult migrants in South Australia took part in the learning arrangements under the Adult Migrant Education Program.

For the most part, courses in the Adult Migrant Education Program in South Australia are conducted by the State Adult Migrant Education Service. These are fully funded by the Commonwealth through the Department of Immigration and Ethnic Affairs.

The program commenced in the late 1940s and has developed over the years. Major changes took place in 1978, following the acceptance by the Commonwealth of the recommendations of the Galbally Report. The Program was then revised and strengthened, enhancing the range, effectiveness and quality of English language learning arrangements for adult migrants in Australia.

In 1982, the Commonwealth's acceptance of the recommendations of the Review carried out by the Australian Institute of Multicultural Affairs (AIMA) brought further development to the program. Major emphasis is now being placed on the on-arrival phase, with an estimated enrolment of 21 000 students in all states for 1982-83. Other changes include extension of the living allowance to part-time students in the on-arrival phase, subject to an income test, and enhancement of course, teacher and materials development.

5.5 CHARACTERISTICS OF THE POPULATION

Statistics relating to characteristics of the population of South Australia are derived from information obtained at each population census. Census technology and coverage have changed over the years, reducing comparability between censuses. Examples are the inclusion of full-blooded Aborigines for the first time in 1966, and sample processing in 1976. The latter may result in minor differences between the sum of estimated components and estimated totals, and between totals in different tables, for 1976 data.

Sex Distribution

The masculinity of the population of South Australia, *i.e.* the number of males to each 100 females at each census is shown below.

Census Year	Masculinity	Census Year	Masculinity
1844	126.1	1901	101.5
1846	130.4	1911	103.1
1851	124.3	1921	100.6
1855	103.8	1933	100.3
1861	105.3	1947	98.2
1866	109.2	1954	102.7
1871	105.6	1961	102.3
1876	107.0	1966	101.0
1881	111.4	1971 (a)	99.2
1891	105.6	1976 (a)	99.4
		1981 (a)	98.5

(a) Based on Estimated Resident Population.

Before the 1971 Census the only census at which masculinity was less than 100 was 1947. The lower rate at the 1947 Census was partly attributable to the loss of male lives in the 1939-45 War, while the subsequent increase was mainly because of the predominantly male migration inflow of the early post-war period. The following table gives masculinity according to age group of the estimated resident population at the three Censuses 1971 to 1981.

Estimated Resident Population, Masculinity According to Age, South Australia

Age Group	Census		
	1971	1976	1981
0-4	104.52	104.86	105.12
5-14	104.13	105.76	105.70
15-24	100.90	102.27	102.47
25-34	102.44	102.27	101.36
35-44	105.23	103.39	100.29
45-64	99.31	100.77	99.37
65 and over	70.46	69.92	72.78
All ages	99.18	99.41	98.51

Age Distribution

Details of the age distribution of the population are of particular importance because, as well as revealing changes which have occurred in the age structure from one census to the next, they supply basic material for the calculation of fertility rates, mortality rates, annuity rates and probabilities of survival.

Age distribution of the resident population at the two most recent censuses are given in the following table. Large absolute changes in population occurred in the age groups 30-34, which increased by 21 171, and 0-4, 5-9 and 45-49, which fell by 10 290, 8 848 and 9 076 respectively. The movement in the older two age groups is partly because of the post 1939-45 War birth rate increase and the low birth rates of the depression years of the early 1930s respectively. The decrease in the lower age groups can in part be explained by the sharp decline in fertility in recent years.

The median age of the resident population of South Australia at the 1971 Census was 27.5 years, rising to 28.7 years at 30 June 1976. The figure for 30 June 1981 is estimated to be 30.4 years (males 29.6 and females 31.1).

Age Distribution of the Estimated Resident Population, South Australia, 1976 and 1981

Age Last Birthday (Years)	30 June 1976			30 June 1981			Increase
	Males	Females	Persons	Males	Females	Persons	Persons
0-4	52 799	50 353	103 152	47 589	45 273	92 862	(-) 10 290
5-9	57 967	55 367	113 334	53 814	50 672	104 486	(-) 8 848
10-14	60 599	56 738	117 337	58 561	55 645	114 206	(-) 3 131
15-19	60 530	59 335	119 865	59 408	57 756	117 164	(-) 2 701
20-24	54 329	52 978	107 307	58 443	57 249	115 692	8 385
25-29	53 312	52 686	105 998	54 341	53 376	107 717	1 719
30-34	43 393	41 870	85 263	53 456	52 978	106 434	21 171
35-39	36 919	35 958	72 877	42 113	41 988	84 101	11 224
40-44	33 932	32 570	66 502	35 648	35 547	71 195	4 693
45-49	38 116	35 670	73 786	32 911	31 799	64 710	(-) 9 076
50-54	37 145	36 509	73 654	36 485	35 333	71 818	(-) 1 836
55-59	31 031	31 324	62 355	35 192	35 555	70 747	8 392
60-64	26 931	28 701	55 632	28 131	30 868	58 999	3 367
65-69	19 848	23 438	43 286	24 419	27 390	51 809	8 523
70-74	13 677	17 338	31 015	16 613	21 402	38 015	7 000
75-79	7 806	13 110	20 916	9 958	14 546	24 504	3 588
80 and over	6 818	14 973	21 791	7 642	17 226	24 868	3 077
Total	635 152	638 918	1 274 070	654 724	664 603	1 319 327	45 257

The next table shows that the proportion of the population under 15 years of age fell markedly between 1901 and 1947, rose significantly between 1947 and 1961 but since then has continued to fall.

Proportional Age Distribution of Population, South Australia, 1901 to 1981

Year	Males			Females			Persons		
	Under 15 Years	15 Years and Under 65	65 Years and Over	Under 15 Years	15 Years and Under 65	65 Years and Over	Under 15 Years	15 Years and Under 65	65 Years and Over
	Per cent								
1901	36.0	60.0	4.0	35.9	59.8	4.3	35.9	59.9	4.2
1911	31.1	64.4	4.5	31.3	63.8	4.9	31.2	64.1	4.7
1921	32.2	62.8	5.0	31.3	63.5	5.2	31.7	63.2	5.1
1933	26.8	66.6	6.6	26.0	66.6	7.4	26.4	66.6	7.0
1947	25.1	67.0	7.9	23.5	67.0	9.5	24.3	67.0	8.7
1954	29.2	62.9	7.9	28.6	61.3	10.1	28.9	62.1	9.0
1961	31.4	61.2	7.4	30.7	59.1	10.2	31.1	60.1	8.8
1966	30.7	62.4	7.0	29.5	60.5	10.0	30.1	61.4	8.5
1971(a)	29.5	63.4	7.1	28.1	61.9	10.0	28.8	62.7	8.5
1976(a)	27.0	65.4	7.6	25.4	63.8	10.8	26.2	64.6	9.2
1981(a)	24.4	66.6	9.0	22.8	65.1	12.1	23.6	65.9	10.5

(a) Based on Estimated Resident Population.

Marital Status

The marital status of the population was ascertained at the censuses, when a statement of never married, married, married but permanently separated (legally or otherwise), widowed, or divorced was required in respect of every person enumerated.

In 1981 the number of persons who were stated to have been never married represented 43.2 per cent of total persons, a lower proportion than in 1976. Married persons in 1981 represented 46.8 per cent of the total compared with 47.5 per cent in 1976.

At the 1976 Census 82.0 per cent of widowed persons were female and this proportion had increased to 82.7 per cent in 1981. The disparity between the number of widowed

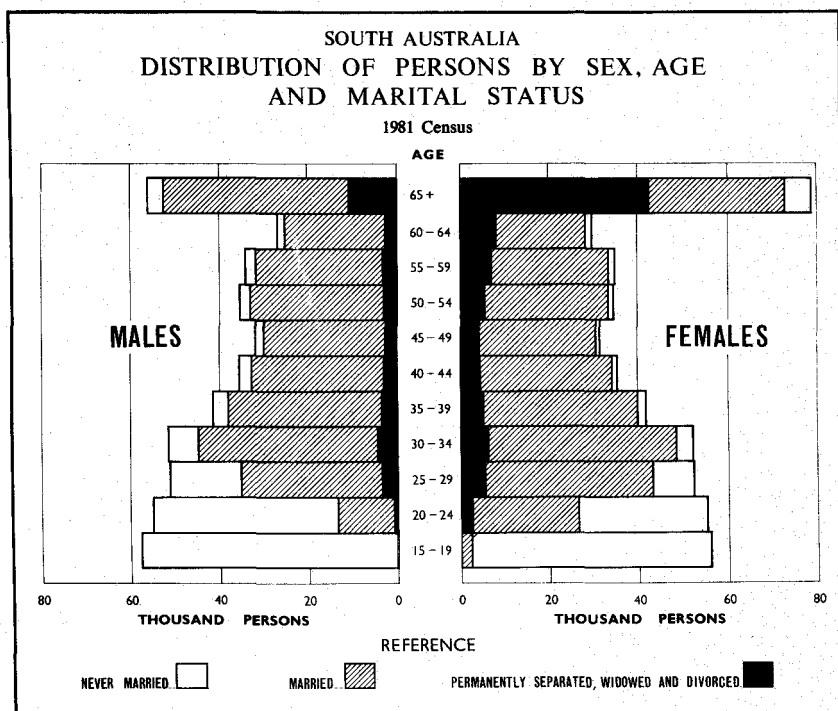
males and widowed females is the result of the greater longevity of females coupled with the usually younger age at marriage.

Marital Status of Persons in South Australia, Censuses 1976 and 1981 ^(a)

Marital Status	30 June 1976				30 June 1981			
	Males		Females		Males		Females	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Never married:								
Under 15 years of age	169 471	27.3	160 595	25.7	157 161	24.7	149 416	23.0
15 years of age and over	124 921	20.1	94 635	15.2	139 271	21.9	109 241	16.8
Total never married	294 392	47.5	255 230	40.9	296 432	46.6	258 657	39.8
Married	295 976	47.7	295 468	47.3	300 669	47.3	300 654	46.3
Married but permanently separated	9 698	1.6	1 700	1.9	11 171	1.8	13 244	2.0
Widowed	11 118	1.8	50 784	8.1	11 705	1.8	55 879	8.6
Divorced	8 976	1.4	11 223	1.8	15 719	2.5	20 903	3.2
Total	620 161	100.0	624 595	100.0	635 696	100.0	649 337	100.0

(a) Census counts not adjusted for underenumeration.

The following diagram shows details of sex, age and marital status of persons in South Australia at the 1981 Census.



Country of Birth

Of the persons in South Australia at the 1911 Census, 85.7 per cent were Australian born, as were 88.3 per cent in 1921, 90.3 per cent in 1933, and 93.3 per cent in 1947. Overseas migration had lowered the proportion of Australian born persons to 86.1 per cent by 1954, while in 1981 the proportion was down to 76.2 per cent. The proportion of persons in South Australia born in the United Kingdom, including the Republic of Ireland, fell from 11.0 per cent in 1911 to 5.1 per cent in 1947, and rose to 12.7 per cent in 1976. In 1981 there was a decrease in the absolute number of persons in South Australia born in European countries. The proportion born in the United Kingdom fell to 11.8 per cent.

Country of Birth of Persons in South Australia Censuses 1976 and 1981 ^(a)

Country of Birth	30 June 1976		30 June 1981		Increase
	Persons	Males	Females	Persons	Persons
Australia	951 535	479 753	499 922	979 675	28 140
New Zealand	4 098	3 354	3 264	6 618	2 520
Europe:					
United Kingdom and Republic of Ireland	157 882	75 358	76 729	152 087	(-) 5 795
Germany	15 393	7 147	7 608	14 755	(-) 638
Greece	14 706	7 409	6 797	14 206	(-) 500
Italy	31 943	16 848	14 475	31 323	(-) 620
Netherlands	10 741	5 546	5 100	10 646	(-) 95
Poland	6 914	3 884	2 902	6 786	(-) 128
Yugoslavia	9 003	5 135	3 931	9 066	63
Other	22 682	11 339	9 492	20 831	(-) 1 851
Total Europe	269 264	132 666	127 035	259 701	(-) 9 563
Other countries	19 862	17 690	17 088	34 778	14 916
At Sea	18	11	12	23	5
Total born outside Australia	293 224	150 367	144 135	294 502	1 278
Total including Not Stated	1 244 760	635 696	649 337	1 285 033	40 273

(a) Census count not adjusted for underenumeration.

Period of Residence in Australia

At the 1981, and previous censuses, details of period of residence in Australia were sought from overseas-born persons.

Period of Residence in Australia of Persons in South Australia Censuses 1976 and 1981 ^(a)

Period of Residence in Australia	30 June 1976			30 June 1981		
	Males	Females	Persons	Males	Females	Persons
Under 1 year	1 935	2 024	3 959	2 082	1 904	3 986
1 year and under 2	2 918	3 021	5 939	3 123	3 110	6 233
2 years and under 3	3 521	3 442	6 962	1 978	2 113	4 091
3 years and under 4	3 466	3 615	7 082	1 810	1 831	3 641
4 years and under 5	3 744	3 534	7 278	2 145	2 243	4 388
5 years and over	83 377	76 039	159 416	134 938	129 071	264 009
Not stated	51 255	48 059	99 314	2 222	2 087	4 309
Residents born outside Australia	150 214	139 736	289 950	148 298	142 359	290 657
Residents born in Australia	468 111	483 424	951 535	479 753	499 922	979 675
Visitors	1 835	1 436	3 271	1 815	1 500	3 315
Total	620 160	624 595	1 244 755	635 696	649 337	1 285 033

(a) Census count not adjusted for underenumeration.

In 1947 there were 43 552 persons in South Australia (including visitors) who were not born in Australia and only 5 per cent of these had lived in Australia for less than five years. By 1954 the number of such persons had risen to 110 605 of whom 51 per cent had resided in Australia for less than 5 years. By 1976 the number (excluding visitors) had increased to 289 950, but the proportion of those who had lived in Australia for less than five years had fallen to 10.8 per cent. In 1981 this proportion was only 8.5 per cent. The reliability of the 1976 and 1981 proportions may be affected by high numbers in the 'Not stated' category.

Religion

Information on the religious affiliations of the population is obtained only at population censuses. There is, however, no legal obligation to answer the question on religion and at the 1981 Census respondents representing approximately 10.6 per cent of the South Australian population chose not to answer.

The Church of England has always had the greatest number of adherents, its relative importance having been fairly consistent since 1866 when it accounted for 31.8 per cent of persons compared with 20.3 per cent in 1981.

Changes in the pattern of religious affiliation appear to some extent attributable to migratory movements. This is particularly noticeable in the case of Catholics (*i.e.* persons described as either Catholics or Roman Catholics) who accounted for only 14.3 per cent of the persons in 1933 compared with 19.9 per cent in 1981.

The proportion of persons claiming no religious affiliation has increased over the years, from 8.2 per cent of persons in 1971 to 13.9 per cent in 1981.

Religious Denomination of Persons in South Australia
Censuses 1976 and 1981 ^(a)

Religious Denomination	30 June 1976		30 June 1981	
	Persons	Proportion of Total	Persons	Proportion of Total
Christian:		Per cent		Per cent
Baptist	22 004	1.8	22 287	1.7
Catholic, Roman Catholic(b)	247 572	19.9	255 332	19.9
Church of England	275 338	22.1	260 919	20.3
Lutheran	62 344	5.0	63 860	5.0
Methodist—inc. Wesley	195 890	15.7	85 935	6.7
Presbyterian	34 778	2.8	21 725	1.7
Uniting Church .....	..	..	108 857	8.5
Other Christian	136 454	11.0	138 350	10.8
Total Christian	974 381	78.3	957 265	74.5
Non-Christian:				
Buddhist	<i>n.a.</i>	<i>n.a.</i>	2 229	0.2
Hebrew	1 072	0.1	1 114	0.1
Muslim	1 031	0.1	1 456	0.1
Other Non-Christian	2 747	0.2	2 329	0.2
Total Non-Christian	4 849	0.4	7 128	0.6
Indefinite	5 528	0.4	6 529	0.5
No religion(b)	140 070	11.3	178 136	13.9
Not stated	119 930	9.6	135 970	10.6
Total	1 244 758	100.0	1 285 033	100.0

(a) Census count not adjusted for underenumeration. (b) So described in individual census schedules.

Educational Attainment*Schooling History*

At the 1981 Census information was sought on the age at which people aged 15 years and over left school. The following table summarises the answers to this question.

Schooling History of Persons Aged 15 Years and Over in South Australia
Census 1981 ^(a)

Age Left School	Males	Females	Persons	Proportion of Total
Persons aged 15 years and over:				Per cent
Age left school:				
12 years or younger	13 985	15 522	29 507	3.02
13 years of age	16 660	18 365	35 025	3.58
14 years of age	98 768	109 435	208 203	21.28
15 years of age	99 170	116 330	215 500	22.02
16 years of age	101 855	109 551	211 406	21.61
17 years of age	69 803	66 693	136 496	13.95
18 years of age	27 984	18 211	46 195	4.72
19 years or older	11 384	5 704	17 088	1.75
Never attended school	2 762	3 828	6 590	0.67
Not stated	15 962	17 134	33 096	3.38
Still attending	20 202	19 148	39 350	4.02
Total 15 years of age and over	478 535	499 921	978 456	100.0

(a) Census count not adjusted for underenumeration.

Educational Qualifications

At the 1976 and 1981 Censuses information was sought on the type of educational qualification obtained. The following table shows that of total persons 15 years of age and over in 1976, only 21.2 per cent had obtained any educational qualifications since leaving school, but this proportion had risen to 23.8 per cent in 1981.

Educational Qualifications of Persons Aged 15 Years and Over in South Australia
Censuses 1976 and 1981 ^(a)

Highest Level of Qualification Obtained	1976	1981		
	Persons	Males	Females	Persons
No qualification	630 498	299 636	388 095	687 731
Trade level	91 934	82 973	9 863	92 836
Technician level	37 701	25 881	32 726	58 607
Tertiary (excluding degrees)	30 431	15 208	20 228	35 436
Bachelor degree, post graduate-diploma or equivalent	20 691	20 863	11 195	32 058
Higher degree level or equivalent	2 652	3 207	819	4 026
Inadequately described	10 623	919	1 359	2 278
Total with qualifications	194 032	149 051	76 190	225 241
Not stated	90 160	29 848	35 636	65 484
Total 15 years of age and over	914 690	478 535	499 921	978 456

(a) Census count not adjusted for underenumeration.

Family Structures

At the 1981 Census, occupants of private dwellings were asked to identify the household head and to describe the relationship of each person in the household to this person. From the answers provided to this and other questions, the structures of families were determined. The results for South Australia are summarised in the following table.

Structure of Families in South Australia
Census 1981 ^(a)

Family Structure	Male Head	Female Head	Total Families
Head only	42 384	57 209	99 593
Head and children only	3 053	19 873	22 926
Head and spouse only	98 584	6 686	105 270
Head, spouse and children	117 391	4 836	122 227
Head and other adults only	5 762	12 896	18 658
Head, other adults and children	1 041	4 539	5 580
Head, spouse and other adults only	34 692	1 141	35 833
Head, spouse, other adults and children	29 858	916	30 774
Total families in private dwellings	332 765	108 096	440 861

(a) Census count not adjusted for underenumeration.

PART 6

SOCIAL ENVIRONMENT

6.1 LAW, ORDER AND PUBLIC SAFETY

LAW AND ADMINISTRATION

The law in force in South Australia consists of:

- (i) so much of the common law of England and such English statute law as came into force on the original settlement of the colony in 1836;
- (ii) Acts passed by the Parliament of the State of South Australia, together with regulations, rules, orders, etc., made thereunder;
- (iii) Acts passed by the Commonwealth Parliament within the scope of its allotted powers, together with regulations, rules, orders, etc., made thereunder;
- (iv) Imperial law binding South Australia as part of the British Commonwealth, as part of Australia or as a State—subject, since 1931, to the Statute of Westminster (this relates mainly to external affairs or matters of Imperial concern);
- (v) Case law (this consists of judicial decisions of the English, Commonwealth or State Courts, respectively, and represents an important part of the law in force in South Australia).

The scope of Commonwealth legislation is limited to the subjects specified in the Commonwealth Constitution. In some cases Commonwealth Government powers of legislation are exclusive of, in others concurrent with, those of the State. In all cases of conflict, valid Commonwealth laws override State laws.

LEGAL PROFESSION

Legal practitioners in South Australia are entitled to act as either barristers or solicitors, although some practitioners elect to practise only in one of these capacities. All practitioners have a right of audience in all Courts of South Australia except the Supreme Court, where only principals have this right.

After completing the prescribed academic training, followed by a period of practical training in a legal practice course or in articles, aspirant practitioners apply to the Full Court of the Supreme Court for admission to practise, and are issued with a Practising Certificate which is subject to annual renewal.

Rules of Court regulate the conditions of entry into the legal profession and the Legal Practitioners Act, 1981-1982 provides the basis for control of legal practitioners in such areas as discipline, remuneration, accounting for trust funds and the qualifications of notaries public. The Act provides for the investigation of complaints by the Legal Practitioners Complaints Committee and the hearing of charges of unprofessional conduct by a Disciplinary Tribunal. A Lay Observer appointed by the Attorney-General is entitled to be present at proceedings of the Committee or Tribunal. A complainant who is dissatisfied with proceedings before either the Committee or the Tribunal may make representations to the Lay Observer. The Disciplinary Tribunal may make an order as it sees fit or recommend that disciplinary proceedings be commenced in the Supreme Court.

In 1982 there were 1 180 legal practitioners entitled to practise in South Australia.

Members of the legal profession voluntarily provide an advisory service outside normal business hours. Any person may obtain preliminary legal advice through this service for which a nominal charge is made. The service operates at Adelaide, Campbelltown, Millicent, Norwood, Port Adelaide, Mount Gambier, Naracoorte and Port Lincoln.

ATTORNEY-GENERAL'S DEPARTMENT

In South Australia the Attorney-General is a Minister of State Parliament. There is a Solicitor-General who, under the Attorney-General, acts as principal legal adviser to the Government.

The Attorney-General is charged with the conduct of business relating to the Supreme Court and inferior Courts as well as statute law revision and consolidation. He also advises Ministers on questions on which his legal opinion is required, initiates and defends proceedings by and against the State and determines whether informations should be laid in cases of indictable offences.

The Attorney-General also administers Acts of Parliament relating to justices, coroners, lands titles, registration of companies and business names, and the Electoral Department.

The Attorney-General's Department is responsible for providing legal services to the Government. The Department is comprised of the Crown Solicitor's Office, Office of Crime Statistics, Parliamentary Reporting Division, Administrative Services Division and ancillary legal research services.

COURTS DEPARTMENT

The Courts Department is responsible for the performance of all of the non-judicial functions of the courts serviced by the Department. The Department is comprised of the

Supreme Court Division, Subordinate Jurisdiction Division, Magistrates Division, Sheriff's Office, Court Reporting Division and Support Services Division. Administrative Services are provided for the Supreme Court, the District Court, Courts of Summary Jurisdiction and various boards and tribunals.

Supreme Court

The Supreme Court is the superior court of record in and for the State and is constituted by the Chief Justice and the puisne judges appointed under the Supreme Court Act, 1935-1981. The Supreme Court is a court of law and equity and is vested with jurisdiction in civil, criminal, testamentary, land and valuation, admiralty and appellate causes or matters. The Supreme Court Rules made by the Judges under the power contained in the Act regulate the pleading practice and procedure of the Court in any jurisdiction and the manner in which all suitors' funds are to be dealt with.

There are at present fourteen judges of the Supreme Court, comprising the Chief Justice Mr Justice King, and thirteen puisne judges. A judge holds office until the age of seventy years at a salary determined by the Governor. The Court sits in Adelaide, but holds circuit sessions three times each year at Port Augusta and Mount Gambier.

Generally speaking, the Supreme Court has unlimited civil and criminal jurisdiction, except in respect of matters which are reserved for the original jurisdiction of Commonwealth Courts. The Court as a rule determines its own practice.

Following the establishment of District Criminal Courts, jurisdiction to hear many indictable offences was vested in these Courts late in 1970.

Crimes and misdemeanours prosecuted by indictment in the Supreme Court must be tried before a jury. The Court has original jurisdiction over all litigious matters arising in the State except where its jurisdiction is excluded by statute. The original jurisdiction of the Court is usually exercised by a single judge sitting in Court or in Chambers. Although it is still possible to have certain civil issues tried before a jury, this has not been done for many years.

The Court has power to restrain inferior courts from acting in excess of their jurisdiction and may, by order, compel them to enforce a legal right. The Court acts as a court of appeal from inferior courts. In proper cases, appeals lie from decisions of the Supreme Court to the High Court of Australia or where not excluded by statute, direct to Her Majesty In Council (*i.e.* the Privy Council).

In the post-war period to the end of 1976, a total of fifty-six persons were sentenced to death in South Australia; forty-one of these sentences were subsequently commuted. The last execution in South Australia occurred in 1964; no female has been executed in the State since 1873. The Statutes Amendment (Capital Punishment Abolition) Act, 1976 assented to on 23 December 1976 abolished capital punishment in South Australia.

The Supreme Court in its testamentary causes jurisdiction is the only authority competent to grant probate of the will, or administration of the estate, of any deceased person who leaves real or personal property in the State. Except in the case of certain small estates, a grant of representation is generally necessary to obtain title to the property of a deceased person. The Succession Duty Act, 1929-1977 was amended during 1979 and exempted completely from payment of succession duty, the estates of persons who died on or after 1 January 1980.

The powers of the Court are exercised by the Judges, the Masters and the Registrar or Deputy Registrar of Probates. The latter deal with all applications for probate and administration where there is no contention and any matters prescribed by the rules. In cases of doubt or difficulty, the Registrar may obtain the direction of a judge. The records of the Court are available for public inspection, and copies of wills and other documents may be obtained.

District Courts

District Courts are constituted under the Local and District Criminal Courts Act, 1926-1980, and came into operation on 31 August 1970. These courts have jurisdiction to hear and determine many of the indictable offences that previously could only be tried by the Supreme Court. The State is divided into three proclaimed districts; Central Criminal Court District, Northern Criminal Court District, and the South Eastern Criminal Court District.

The jurisdiction of a District Court is exercisable by a District Court Judge sitting in open court, with or without a jury, or in chambers as the case may require. The Crown is represented in District Courts by the Attorney-General or by counsel appearing on his behalf. The other party may conduct his own case or may engage counsel on his behalf. A person who is not a practitioner of the Supreme Court entitled to practise cannot appear in a District Court on behalf of any party.

Appeals against verdicts and sentences of District Courts are to the Full Court.

Pursuant to Section 321 of the Act the Senior Judge and two other judges may make rules of court for carrying into effect the District Court provisions of the Act.

On 1 July 1980, the Office of Crime Statistics within the Attorney-General's Department, implemented a system of data collection from the Supreme and District Courts of South Australia. The following table shows details of persons charged and convicted for major offences charged in these Courts for the year 1981-82.

Supreme and District Courts: Major Offences Charged, South Australia, 1981-82

Major Offence Charged	Persons (a)		
	Charged	Convicted	Sentenced to Prison
Homicide	47	23	16
Assault	188	134	48
Rape	63	43	38
Other sexual offences	104	78	26
Robbery	73	70	50
Other offences against the person	10	14	3
Forgery and fraud	114	95	28
Breaking and entering	480	460	172
Arson	28	23	8
Drug offences	236	223	68
Other offences	205	170	69
Total offences	1 548	1 333	526

(a) Includes corporate bodies.

Local Courts

Local Courts were first established in South Australia by an ordinance of 1850 and originally had criminal as well as civil jurisdiction. The Local Courts Act, 1926 effected important alterations in the structure and jurisdiction of Local Courts by abolishing juries in Local Courts and also justices as constituent members of Courts of Full Jurisdiction (except on the application of a party), by conferring equitable jurisdiction on the Local Court of Adelaide of Full Jurisdiction, and by giving a full appeal to the Supreme Court on facts as well as on law from all judgments, determinations and orders

of local courts in actions involving more than \$60. This Act was repealed in 1961 when the Local and District Criminal Court Act was passed.

Local Courts are divided into three groups—Full Jurisdiction, Limited Jurisdiction and Special Jurisdiction. The courts vested with all three jurisdictions are the Local Courts of Adelaide, South East (Mount Gambier), Lincoln (Port Lincoln), Pirie (Port Pirie), Riverland (Berri) and Whyalla. These courts may hear and determine actions for amounts up to \$40 000 and in relation to a course of action in tort relating to injury, damage or loss caused by or arising out of, in the case of a motor vehicle, up to \$60 000. The equitable jurisdiction provisions have also been extended to all Local Courts of Full Jurisdiction. Local Courts of Limited Jurisdiction may hear and determine claims of up to \$7 500, with special provisions for hearing 'small claims' as defined for a pecuniary sum not exceeding \$1 000. Courts of Special Jurisdiction may hear and determine any unsatisfied judgment summons whatever the amount of the judgment.

Local Courts: Summary of Transactions, South Australia

Year	Total Claims	Verdicts and Judgments		Service and Execution of Process Act
	Summonses Issued (a)	Verdicts by Trial	Judgment by Default	Summonses for Service out of Jurisdiction
		Number	Number	
1976	70 443	3 348	29 016	2 102
1977	73 687	5 115	29 005	2 651
1978	77 963	5 132	29 147	2 676
1979	80 944	3 056	30 911	3 312
1980	76 612	3 321	32 025	3 010
1981	67 222	3 178	28 742	2 710
1982	68 129	2 282	29 696	3 022

(a) Including those withdrawn or settled out of Court.

A Local Court of Full Jurisdiction may be constituted of a Judge of the Supreme Court or a Local Court Judge, and exercise all jurisdictions under the Act. A special magistrate may exercise limited jurisdiction and special jurisdiction; two justices of the peace sitting together or one special justice sitting alone may only exercise special jurisdiction.

Any Local Court may reserve any question of law arising in any action for the decision of the Supreme Court, and any party who is dissatisfied with any final judgment, determination or order of a Local Court, if the claim exceeds \$1 000, may appeal to the Supreme Court. Appeals involving claims under \$1 000 may be made if leave of the District Court is obtained. Pursuant to Section 28 of the Act the Governor may appoint the Senior Judge or any other judge to make rules of court for carrying into effect the Act or any other Act conferring jurisdiction upon Local Courts.

COURTS OF SUMMARY JURISDICTION

Courts of Summary Jurisdiction are held in all major towns to hear criminal cases. In offences of dishonesty their jurisdiction is confined to cases where the property value is not more than \$2 000, and the limit of their jurisdiction as to penalty is imprisonment for two years. Their procedure is regulated by the Justices Act, 1921-1981. They are presided over, either by a special magistrate, a special justice or by two justices of the peace, with the more serious cases generally being heard by a special magistrate.

Courts of Summary Jurisdiction, Selected Offences, South Australia, 1981 ^(a)

Offence	Persons Charged	Persons Convicted
Minor assault	1 089	616
Assault police	411	288
Possess marijuana	1 172	939
False pretences	376	253
Forge and utter	105	68
Unlawful use of motor vehicle	488	377
Shop theft	2 331	1 243
Drive under the influence of alcohol	1 123	964
Exceeding prescribed content of alcohol	3 522	3 421
Wilful damage	596	466
Prostitution	63	47
Drunkenness	3 323	3 101
Indecent behaviour	95	54
Indecent language	879	783
Other disorderly behaviour	1 721	1 514
Resist arrest	763	609

(a) Does not include defendants committed for trial in a higher court.

Special magistrates are appointed under the Justices Act, 1921-1982 and the Local and District Criminal Courts Act, and each appointment must be approved by the Chief Justice. Generally they are required to be practitioners of the Supreme Court who have been practising for some years. The Justices Act allows for two Justices of the Peace to hear cases in Courts of Summary Jurisdiction. In 1981, Justices of the Peace presided over 33 per cent of cases heard in country courts and 2 per cent of those heard in metropolitan courts.

CHILDREN'S COURTS

Proceedings in Children's Courts are regulated by the Children's Protection and Young Offenders Act, 1979 which came into force on 1 July 1979, replacing the Juvenile Courts Act, 1971-1975. The Senior Judge appointed under the new Act exercises administrative control over Children's Courts throughout the State.

Juvenile Offenders Before Children's Courts and Aid Panels
South Australia, 1981-82 ^(a)

Type of Offence	Children's Courts	Children's Aid Panels	Total
Against the person	301	150	451
Theft	1 628	3 454	5 082
Driving and traffic (b)	289	214	503
Drug offences	82	123	205
Other offences	910	1 429	2 339
Total offenders	3 210	5 370	8 580
Males	2 873	3 879	6 752
Females	337	1 491	1 828

(a) Under 18 years. Excludes truants and children found to be neglected, destitute or uncontrolled.

(b) Excludes most minor traffic offences.

Children's Courts may be presided over by a judge or magistrate. Special justices assist in dealing with most of the traffic offences and some summary matters. Limitations are imposed on the jurisdiction of the courts depending on whether a judge, magistrate, or justices of the peace have been appointed to preside.

Children's Courts may not try homicide offences. In cases of very serious offences or persistent serious offending, an order for the child to be tried in an adult court may be obtained. A child may elect to be tried as an adult and, if found guilty, be subject to the penalties set by the Children's Court.

Screening panels decide whether a young offender appears before a non-judicial tribunal called a Children's Aid Panel or a Children's Court.

Most first and minor offenders are referred to the aid panels for consideration. Children's Courts are closed to the public. Members of the Press may be present, but they are generally restricted to publishing the results of the proceedings and may not identify any child concerned in the proceedings.

Penalties imposed by a Children's Court range from a bond or fine, with or without recording a conviction, to a sentence of detention in a training centre for a period between two months and two years. When a period of detention is imposed, reports are required on the social background and circumstances of the child and these are reviewed throughout the period of detention. Payment of compensation may also be ordered as a rehabilitative and not a punitive measure.

Where mandates are issued for detention in default of payment of fines and costs or in default of compliance with an order for the payment of money other than a fine or costs, such detention may be satisfied by periodic non-residential detention (community services under supervision).

A child who is dissatisfied with a finding, may appeal to the Supreme Court or may apply to have the order reconsidered in the Children's Court.

Children's Courts also deal with neglected children where the Director-General of Community Welfare applies for a declaration that a child is in need of care and that he be placed under the guardianship of the Minister of Community Welfare. For further details see Part 6.6.

Adoptions

The Adoption of Children Act, 1966-1980 is administered in conjunction with the Department for Community Welfare. More information on adoptions in South Australia can be found in the section on State Welfare Services in Part 6.6.

JURY SYSTEM

The procedure in relation to juries is governed by the Juries Act, 1927-1976.

Indictable offences are tried before a Judge and twelve jurors sitting in the criminal jurisdiction of either the Supreme Court or District Court, depending on the gravity of the offence. In South Australia, for many years juries have not officiated when civil causes were being tried.

Jury districts for the metropolitan and certain country areas are fixed by proclamation pursuant to the Juries Act and consist of a number of subdivisions of the House of Assembly electoral districts. Legislation passed in 1965 provided for women to serve on juries as well as men, and, with certain exceptions, all persons over the age of twenty-five and under sixty-five who are enrolled as House of Assembly electors within the proclaimed jury districts are qualified and liable to serve as jurors.

Persons who may claim exemption from liability to serve are listed in the third schedule to the Act and include Judges, Members of Parliament, certain public officers,

members of the defence forces, clergymen, legal practitioners, magistrates, university professors, police officers, doctors, dentists, pharmacists, opticians, physiotherapists, veterinary surgeons, newspaper editors and school teachers.

A jury list is compiled annually for each jury district. The names of persons included in the list are selected by computer process from the appropriate House of Assembly electoral rolls at the direction of the Sheriff. The jurors summoned to hear and determine an issue are later selected by ballot. Accused persons and the Crown each have the right to challenge three jurors without assigning reasons. About 2 000 persons serve on juries each year in South Australia. A jury pool system was instituted in 1974 and juries now may be required to serve in both the Supreme and District Courts during their month of service.

STATE INDUSTRIAL TRIBUNALS

Industrial arbitration in South Australia was inaugurated in 1894 by the establishment of Boards of Conciliation. Since then the system has undergone fundamental changes from time to time and the present basis is the Industrial Code, 1967-1977, under which the Industrial Court, Industrial Commission, Conciliation Committees and Commissioners have been established. For details on the composition of these bodies and their functions see Part 7.2.

THE LICENSING COURT

The licensing of hotels and the issue of liquor licences and permits is governed by the Licensing Act, 1967-1982 under which is constituted a Licensing Court consisting of a Licensing Court Judge, Special Magistrates designated by the Governor as members of the Licensing Court, and Licensing Court Magistrates. The classes of licence that may be granted are:

- | | |
|---------------------------------------|--------------------------------|
| (a) Full publican's licence | (k) Railway licence |
| (b) Limited publican's licence | (l) Restaurant licence |
| (c) Wholesale storekeeper's licence | (m) Limited restaurant licence |
| (d) Retail storekeeper's licence | (n) Cabaret licence |
| (e) Wine licence | (o) Theatre licence |
| (f) Brewer's Australian ale licence | (p) Special licence |
| (g) Distiller's storekeeper's licence | (q) Twenty-litre licence |
| (h) Vigneron's licence | (r) Hotel brokers licence |
| (i) Club licence | (s) Tourist facility licence |
| (j) Packet licence | |

Fees for licences are paid in accordance with the amount of liquor purchased (or in some cases sold) during the preceding twelve months. From 1 January 1982, in the case of the retail licences, fees are calculated at two per cent of the amount of low alcohol liquor purchased and nine per cent of the amount of other liquor, in lieu of eight per cent as previously.

In December 1976, legislation was enacted to authorise discretionary hotel bar trading hours from 5 a.m. to 12 midnight, Monday to Saturday, and to fix obligatory trading hours, Monday to Saturday from 11 a.m. to 8 p.m.

In the case of a full publican's, limited publican's and restaurant licence, liquor may be sold and disposed of in the dining area at any time on any day with or ancillary to *bona fide* meals.

The Court may upon the granting or renewal of a full publican's licence, having regard to the needs of the public, exempt the holder of the licence from the obligation to supply lodging. A limited restaurant licence authorises the consumption of liquor at any time on any day in the premises specified in the licence, with or ancillary to *bona fide* meals, by persons bringing the liquor onto the premises for their own consumption.

Liquor Licences Current and Permits Issued, South Australia

Licence or Permit	Year ended 30 June				
	1978	1979	1980	1981	1982
Licences:					
Publican's;					
Full	604	603	604	609	611
Limited	59	66	73	77	82
Storekeeper's (a)	190	192	193	197	198
Vigneron's	89	103	109	116	123
Club	216	241	260	270	280
Restaurant	229	254	295	334	374
Permits:					
Special licensed premises	2 220	2 307	2 290	2 160	2 188
Special unlicensed premises	19 046	20 768	21 676	21 476	21 009
Booth	9 326	10 272	10 625	10 049	9 790
Club	2 209	2 452	2 306	2 381	2 570
Other	1 246	1 444	1 558	1 675	2 142

(a) Covers wholesale, retail and distiller's.

Permits may be granted under certain circumstances to extend the trading hours of licensed premises and to allow the sale, supply or consumption of liquor in unlicensed premises. Permits may be granted to clubs, for periods of up to one year, for the sale and supply to members for consumption on club premises—at 30 June 1982, 843 of these permits were current. Clubs whose takings from the sale of liquor exceed \$50 000 in any one year are not eligible for a permit but are required to apply for a club licence.

In April 1982, legislation was enacted which introduced a tourist facility licence to authorise the licensee to sell or supply liquor in the premises and upon conditions specified in the licence. The licence is not granted unless the Court is satisfied that the licensing of the premises is likely to enhance the tourist industry in the State, and no other single licence under the Act (other than a full publican's licence) would provide adequate for the needs of members of the public resorting to the premises.

The legislation also provided that:

- (a) the Court may, by endorsement on a full publican's licence, authorise the holder to sell and dispose of liquor under the licence on a Sunday during a period of not more than two hours or during two separate periods, each of which is not more than two hours and which are separated by an interval of not less than two hours, if it is satisfied that the sale and disposal of liquor by the licensee on a Sunday is required to satisfy a demand by tourists in the vicinity of the licensed premises;
- (b) the Court may also grant a late night permit to the holder of a full publican's licence, a limited publican's licence or a restaurant licence where the Court is satisfied that the licensee proposes to provide entertainment on premises of a high standard, and that the permit will be of benefit to members of the public attending that entertainment. A late night permit shall authorise the sale, supply and consumption of liquor in accordance with the licence held by the permit holder, on that part of the licensed premises to which the permit relates, between the hours of 9 p.m. and 3 a.m. in the following morning;
- (c) the holder of a distiller's storekeeper's licence may, if the Court so authorises by endorsement on the licence, sell or supply liquor in any quantity for con-

sumption on a specified part of the licensed premises with, or ancillary to, a *bona fide* meal, and the holder of a vigneron's licence may, if the Court so authorises by endorsement on the licence, sell or supply wine or brandy in any quantity for consumption on a specified part of the licensee's premises with, or ancillary to, a *bona fide* meal.

BANKRUPTCY

Since 1928 bankruptcy has been under Commonwealth Government jurisdiction. Under the *Bankruptcy Act 1966* South Australia is a bankruptcy 'district' and jurisdiction is exercised through the Federal Court of Australia.

A sequestration order cannot be made on a creditor's petition if the debt is less than \$1 000. Preferential creditors include employees for amounts owing in respect of wages and salaries, workers compensation, long service leave, annual leave, recreation leave or sick leave, and the Commissioner of Taxation for tax instalment deductions.

A bankrupt who has not previously been discharged is automatically discharged after five years unless an objection is filed with the Registrar in Bankruptcy.

Bankruptcies: Number, Liabilities, Assets, South Australia

Year	Bankruptcies and Orders for Administration of Deceased Debtors' Estates			Compositions, Deeds of Arrangement and Deeds of Assignment			Total Debtors
	Number	Assets	Liabilities	Number	Assets	Liabilities	Number
		\$	\$		\$	\$	
1977-78	655	4 973 118	9 492 844	18	551 434	2 327 360	673
1978-79	816	1 551 459	10 420 291	31	2 032 725	2 495 537	847
1979-80	964	2 328 092	9 985 499	52	2 841 137	4 095 200	1 016
1980-81	952	3 439 325	14 105 295	60	1 977 032	11 612 579	1 012
1981-82	804	1 600 988	11 951 660	56	2 690 839	7 615 897	860

LEGAL SERVICES COMMISSION

The Legal Services Commission, constituted under the provisions of the Legal Services Commission Act, 1977-1979, is responsible for the provision of all legal assistance in South Australia and provides free legal advice to any person.

The Commission provides legal advice in any matter as well as providing representation in court proceedings. These services are subject to a flexible means test, and to guidelines laid down from time to time. Legal services may be provided either by lawyers employed by the Commission or by private practitioners.

The Commission is administered by an independent statutory body which includes representatives from a variety of groups in the community. It is jointly funded by the State and Federal Governments and includes a Research and Education Section which is responsible for issuing pamphlets and other educational activities to advise people of their legal rights and duties.

The South Australian Law Society also conducts some evening legal advisory services, at no cost to pensioners and students, and at a nominal charge to others.

CONSUMER PROTECTION

Consumer protection in South Australia, in common with the other States, is a responsibility divided between the Commonwealth and State Governments. The major arm of Commonwealth responsibility is the Trade Practices Commission; the relevant State instrumentality is the Department of Public and Consumer Affairs. In practice, the Trade Practices Commission intervenes only in multi-State matters or where exemplary legal action is called for. The State looks into matters involving consumer redress.

The South Australian Department of Public and Consumer Affairs was formed in 1976 from units of several existing departments. A number of branches of the Department are involved in consumer protection work. The Consumer Services Branch, headed by the Commissioner for Consumer Affairs, deals with the most general consumer complaints, and generally supervises seventeen Acts, including the Consumer Transactions, Manufacturers Warranties, Door to Door Sales, Unfair Advertising, Consumer Credit, Second-hand Motor Vehicles, Fair Credit Reports, Prices, and Residential Tenancies Acts.

The following table shows an analysis of complaints investigated by the Consumer Services Branch for the year ended 30 June 1982.

**South Australian Department of Public and Consumer Affairs, Consumer Services Branch
Analysis of Complaints, 1981-82**

Particulars	Complaints	
	Number	Per Cent
Practice complaints:(a)		
Advertising, representations	265	3.1
Packaging or labelling	23	0.3
Sales methods	502	5.8
Prices and charges	594	6.9
Quality of product or service	3 813	44.3
Credit practices	532	6.2
Contracts	1 912	22.2
Guarantees and warranties	800	9.3
Offers of redress	161	1.9
Total practice complaints	8 602	100.0
Product complaints:		
Food, beverages, tobacco	91	1.0
Clothing, footwear, drapery	325	3.8
Consumer durables	1 535	17.9
Motor vehicles and other transport equipment	1 728	20.1
Building and constructions	1 721	20.1
Miscellaneous products	680	7.9
Transport and energy services	214	2.5
Insurance and finance	566	6.6
Real estate and accommodation	1 161	13.5
Miscellaneous services	562	6.6
Total product complaints	8 583	100.0

(a) More than one practice complaint may occur with any one particular product.

The Prices Act requires the Commissioner for Consumer Affairs to take such steps as he thinks proper for informing the public on matters relating to consumer affairs. This is undertaken by the Education Division of the Department, with particular emphasis on schools and in the area of consumers handicapped by age, low income, and other disadvantages.

The Standards Branch, headed by the Commissioner for Standards, specialises in matters relating to weights and measures, packaging and labelling. Included in the Standards Branch's administration are seven Acts, including the Packages, Goods (Trade Descriptions), Flammable Clothing, Trade Measurements and Trade Standards Acts.

The Residential Tenancies Branch administers the Residential Tenancies Act. Landlords and tenants may make application to the Residential Tenancies Tribunal to arbitrate upon, and settle residential tenancy disputes.

The Commercial Tribunals Branch comprises several licensing and disciplinary authorities supervising various industries, including auctioneers, credit providers, land agents, used-car dealers and builders.

Co-operation between the Commonwealth and South Australian authorities on a day-to-day basis ensures that overlapping and duplication of activities is kept to a minimum.

PUBLIC TRUSTEE

The office of Public Trustee was established in 1881 and is regulated by the Administration and Probate Act, 1919-1981. The Public Trustee provides a service to the public by preparing wills for no charge and in the administration of estates and in the protection of infants and absentee beneficiaries in estates administered by private administrators. A person may appoint the Public Trustee to be the executor and trustee of a will or as trustee of any disposition of property creating a trust.

The Public Trustee, where directed by the Court, becomes administrator of certain deceased estates; acts as guardian of certain infants; controls a protected person's property under the Aged and Infirm Persons' Property Act, 1940-1975; and receives, invests and distributes for the benefit of widows and minor dependants, amounts awarded under the Workers Compensation Act, 1971-1982.

Under the Mental Health Act, 1976-1979 the Public Trustee has control of the estates of some patients, pursuant to appointments made by the Guardianship Board, and may be appointed to act for the estate of any person found to be of unsound mind.

The Public Trustee may be appointed under a Power of Attorney or as an agent by any person to conduct their business affairs while they are alive and may continue to perform these duties even though the person may cease to have legal capacity at a later date; he may be appointed as administrator of unclaimed property and as a custodian trustee.

THE SOUTH AUSTRALIAN POLICE FORCE

The police force was first established in South Australia in 1838 and has been administered by a Commissioner of Police since 1840. Since that time the Force has grown to such an extent that a Deputy Commissioner and four Assistant Commissioners have been introduced. Each Assistant Commissioner has control of one of four major areas of the Force which have been designated 'Operations', 'Personnel', 'Crime' and 'Services'. The number of police officers rose steadily from 127 in 1851 to a peak of 802 in 1929, fell to 674 in 1943 and has since risen steadily to 3 400 members in 1982.

Women police officers were introduced in 1915 giving the Force the distinction of being one of the first in the world to do so. In that year two female officers were sworn

in, having equal rights with the male officers. By 1974 the number of women police officers had grown to thirty-six and at 30 June 1982 the number was 239.

The maintenance of law and order and the reduction of opportunities for criminal activity are the main functions of the uniformed branches. At 30 June 1982 there were thirty metropolitan regional and ninety-seven country police stations and offices.

**Police Personnel, South Australia
At 30 June**

Personnel	1978	1979	1980	1981	1982
Executive officers(a)	39	46	44	45	40
Inspectors	66	63	64	61	65
Sergeants	389	430	478	476	487
Constables(b)	2 857	2 823	2 837	2 845	2 808
Total	3 351	3 362	3 423	3 427	3 400

(a) Includes superintendents.

(b) Includes trainees, cadets and probationary constables.

The Traffic Region has completed decentralisation and now each metropolitan region has a complement of traffic police. Their duties include policing the general regulations relating to road use, controlling traffic and improving road safety by ensuring the safe and efficient flow of traffic. Such services as speed detection, accident investigation and prevention and lecturing on road courtesy and safety are still maintained by units stationed at the Thebarton Police Barracks. A Traffic Intelligence Centre, using information gained from accident statistics, assists in the correct placement of speed detection units in relation to accident action centres.

The Criminal Investigation Branch in Adelaide comprises a compact specialist unit responsible for the investigation of major crime or crimes involving an unusual expertise. Criminal Investigation Units are also placed in major metropolitan and country stations. To ensure that the activities of these units are co-ordinated, a Bureau of Crime Intelligence at Police Headquarters studies crime trends, and circulates relevant information. Auxiliary services provided by the Modus Operandi, Records, Fingerprints, Photographic, Documents, Ballistics, Crime Scene and Laboratory Sections are essential aids to criminal investigations.

On 30 November 1978, a Special Tasks and Rescue Force (STAR Force) was formed with headquarters at Thebarton Police Barracks. The primary function of the Star Force is to provide a mobile patrol force of trained personnel skilled in the use of firearms, anti-terrorist tactics, crowd control, crime prevention techniques, underwater recovery and search and rescue operations.

The changing role of the police in the community, together with continual changes in law and investigational techniques, has resulted in special emphasis being placed upon the training of all personnel within the Force. Applications for cadetship are accepted from the age of sixteen and a half years and training commences at seventeen years of age. Cadets are given a two-year course of academic and practical instruction before graduation to operational duties. Adults are enlisted between the ages of nineteen and twenty-nine years and are given twenty-six weeks instruction; they then serve a probationary period on general duties before being permanently appointed.

All personnel are required to undergo refresher and firearm training at selected intervals of service. In addition, courses are regularly conducted for such specialist appointments as prosecutors, detectives, technicians and instructors. At 30 June 1982 there were 139 cadets in training, including four trade apprentices, and 24 adult recruits

who had received training during the year. Formal instruction was given to 2 618 members in refresher, specialist, firearm and driver training courses during 1982.

In 1971 the use of light aircraft was instituted by the Department for the transport of personnel and prisoners throughout the State. Three aircraft are now in service.

The following table gives details of the revenue and expenditure of the South Australian Police Force in recent years.

South Australian Police Force, Revenue and Expenditure ^(a)

Year	Expenditure			Revenue	Net Cost	
	Wages and Salaries	Other	Total		Total	Per Head
Dollars						
1977-78	47 675 182	9 103 157	56 778 339	3 322 782	53 455 557	41.44
1978-79	52 008 645	10 420 694	62 429 339	3 560 976	58 868 363	45.64
1979-80	57 386 694	13 523 800	70 910 494	3 890 570	67 019 924	51.58
1980-81	69 151 926	13 832 994	82 984 920	4 108 986	78 875 934	60.55
1981-82	78 164 000	14 708 000	92 872 000	7 786 000	85 086 000	63.91

(a) As reflected in Consolidated Revenue Account only—capital expenditure is met from Loan Fund.

An extensive re-organisation of the general duty police in the metropolitan area was begun early in 1973. This involved the division of metropolitan Adelaide into three territorial regions, each commanded by a Chief Superintendent, the implementation of a sector system within these regions and the restructuring of patrol areas to give emphasis to personal contact between the patrol force and the general public. This re-organisation has been monitored on a continuing basis with a view to maximising the efficiency of the patrols. As a result, in August 1981, significant changes were made to the rostering and deployment of personnel and the methods of tasking the patrols by revised communication procedures. These changes were implemented to improve the stability, experience and accountability of patrol members with the intention of further developing co-operation and interaction with local communities. Portable UHF radio hand sets have been introduced to enable mobile and foot patrols to be in contact with each other and with their patrol base. In certain areas equipment, code named TARTA, has been developed to allow the patrolling officer to both make and receive telephone calls from the police vehicle *via* the Telecom exchange system. Telex and facsimile machines are also in use at certain main stations and within Police Headquarters.

In February 1979, a Research and Development Group was formed, directly responsible to the Assistant Commissioner, Services and under the command of a Chief Superintendent. Research and Development Group has under its control Organisational Services, Computer Systems Section and Policy Section. Projects relating to manpower planning, organisation and methods, workload and productivity, operational research, demographic and sociological research, operational crime research, policy research and industrial relations liaison are carried out by this Group. The Computer Systems Section is being used to explore the field of the computer's application to police oriented tasks.

The Police Community Affairs and Information Service was formed in 1973 to foster better relations between the police and the general public. An Aboriginal Liaison Officer (a police officer) is attached to this Section and deals directly with police/Aboriginal relations. In July 1975, a new branch known as the Inspectorate was set up primarily to inspect operational units and to investigate complaints against police. A Publications Section also functions within this unit to prepare and co-ordinate material for the updating and maintenance of manuals and other publications.

Early in 1974, a Dog Squad of six handlers and six dogs became operational; it now comprises twelve handlers and dogs. As well as carrying out foot and mobile patrol duties, the squad is used in tracking and drug searches.

Since the opening of the Eyre Highway in September 1976 two fully equipped four-wheel drive vehicles are being used for patrols between Ceduna and the Western Australian border.

On 1 January 1980 a Firearms Section was formed with headquarters at Hindmarsh Square, Adelaide. The section handles Registration, Licensing, Adjudication and Enquiries and is controlled by a Superintendent. At 30 June 1982, 261 542 firearms were registered.

On 7 March 1977 a Psychology Unit was formed with headquarters at Angas Street. This unit consists of three psychologists who assist in training police officers, selection and counselling.

In 1975 a Staff Development Branch was formed with headquarters at Angas Street. This Branch is controlled by an Inspector and a First Grade Sergeant. It provides a career-path counselling service, administers external studies programs, administers the Staff Appraisal System and maintains a supply of personnel for specialist positions.

On 21 June 1977 a Welfare Officer was appointed, accountable to the Commissioner of Police through the Assistant Commissioner, Personnel. The Welfare office is located at Central headquarters, Angas Street. This section provides advice and assistance to police employees, to widows and dependants of deceased police members and retired police members, on financial, marital, health and other personnel problems.

In an effort to reduce the road toll, Random Breath Testing was introduced in October 1981. The legislation under which it operates is to be reviewed after three years and a decision made whether to retain this type of testing based on its effectiveness in reducing the road toll. The locations at which the units operate are chosen as a result of information gained by the Police Department's Traffic Intelligence Centre utilising accident statistics and other available data.

A system of Traffic Infringement Notices (on-the-spot fines) was introduced in January 1982. This brought South Australia into line with other Australian States using similar systems. Under the scheme, people issued with a notice can choose to pay the expiation fee fixed by regulation as an alternative to having the matter determined by a Court.

CORRECTIONAL SERVICES

There were eight gaols and prisons administered by the South Australian Department of Correctional Services during 1980-81. Adelaide Gaol is a holding centre for remand and short-term sentenced prisoners. Yatala Labour Prison, South Australia's largest prison, provides for long-term male prisoners under maximum, medium and minimum security ratings. Adjacent to Yatala is the Northfield Security Hospital which was officially opened in November 1973 to accommodate the criminally insane and those undergoing short-term psychiatric care and assessment. This modern hospital is staffed by trained medical personnel and provides specialised treatment programs for both males and females. Port Augusta Gaol, Port Lincoln Prison and Mount Gambier Gaol are medium security prisons which accommodate male and female prisoners. Cadell Training Centre on the River Murray is a dual purpose institution which operates as a pre-release centre for long-term prisoners as well as accommodating minimum security short-term prisoners. The Women's Rehabilitation Centre at Northfield is a multi-purpose prison for females from all parts of the State. In addition, nine police prisons, serving as short-term detention centres for both males and females and situated mainly

in the more remote country areas, hold prisoners on behalf of the Department of Correctional Services.

The emphasis in South Australian prisons is on rehabilitation. Industrial and trade training in various fields is available in the institutions, enabling prisoners to be prepared for eventual outside employment. A wide range of correspondence courses is available through the Open College of the South Australian Department of Technical and Further Education under the supervision of staff from the College. Special migrant and remedial classes are also conducted by the Education Division of the Department. A recent innovation at the Cadell Training Centre has been the establishment of a community-based education centre which caters for both trainees and members of the public from the surrounding districts. An assessment panel ensures that prisoners serving long-term sentences are correctly assessed for education, employment, social and other training purposes. In a wide range of matters affecting the well-being and after-care of prisoners and their families, the prison administration is assisted by chaplains, the Offenders Aid and Rehabilitation Society, the Salvation Army and other voluntary organisations. Community services rendered by prisoners include the provision of emergency fire service units and the production of soft toys for children's homes.

Probation and Parole

The Probation and Parole Branch has district offices located at Adelaide, Port Adelaide, Elizabeth, Salisbury, Noarlunga, Gilles Plains, Glenelg and Norwood in the metropolitan area and at Berri, Cadell, Gladstone, Whyalla, Port Augusta, Port Lincoln and Mount Gambier in the country. The Branch is responsible for providing supervision and social casework services to probationers and parolees. Probation officers provide a professional social work service, including a wider range of treatment and management alternatives for offenders. Provision of pre-sentence social reports to the courts remains one of the major functions of the Branch. The Community Service Order Scheme, initiated and administered by the Branch, provides participating Courts with a further alternative to imprisonment.

Community involvement in correctional services is fostered by the Branch with a growing use of volunteers to supplement the work of the statutory staff, including the staffing of the Adelaide Court Information Service.

Prisons: Persons Received under Sentence

Major Offence	1979-80		1980-81	
	Persons	Per Cent	Persons	Per Cent
Homicide	22	0.4	9	0.2
Assault	414	7.9	382	7.0
Robbery and extortion	39	0.7	37	0.7
Fraud, forgery and misappropriation	135	2.6	175	3.2
Theft, breaking and entering	459	8.8	542	10.0
Property damage	115	2.2	90	1.6
Driving and related offences	1 465	27.9	1 387	25.6
Drunkenness	714	13.6	900	16.5
Other offences	1 880	35.9	1 906	35.1
Total	5 243	100.0	5 428	100.0

PUBLIC SAFETY

AMBULANCE AND ASSOCIATED SERVICES

The St John Council for South Australia Inc. operates the ambulance service for South Australia through thirteen metropolitan bases, and seventy-nine country branches and sub-branches. Staffing is provided through an integrated system of regular and volunteer officers. In the metropolitan area during 1981-82 St John ambulances travelled 2 313 484 kilometres and carried 169 507 patients. Country ambulances travelled 2 471 169 kilometres and transported 46 184 patients. In addition three aerial ambulances, two based at Whyalla and one based at Adelaide, flew 759 780 kilometres and carried 1 433 patients. The St John Radio Network, with common frequencies, covers South Australia through fifty-six base and 230 mobile stations.

Common training programs for all officers are based on a Manual of Emergency Care and Transport published by the Council in South Australia, and all officers are required to undergo annual Skills Maintenance and Assessment. The establishment of the Medic Alert Foundation, which originated in the United States of America, has facilitated the identification of people suffering from diseases and allergies which are not readily apparent. This knowledge is of assistance to both ambulance and hospital staff in handling and treating patients. In South Australia, Medic Alert is sponsored by Rotary International and is administered by the St John Council for South Australia for all States and Territories in Australia, excepting Western Australia.

First Aid courses of eight weeks duration are conducted by the Council throughout the State. The courses attract a steady demand from the general public. A course 'Occupational First Aid' is designed for people working in industry and although only introduced in 1981, the interest being shown in this particular course indicates that there will be heavy demand in future.

Besides the 'First Aid' and 'Occupational First Aid' courses, some 3 500 people from government departments and industry were instructed in the skills of cardio-pulmonary resuscitation. It is also planned to commence basic life support training sessions so that the general public will be able to support life at the scene of an accident until the arrival of an ambulance. The Council also markets a First Aid Kit for motorists which, while based on international standards, is designed specifically for the road user in Australia.

FIRE SERVICES

South Australian Metropolitan Fire Service

Provision for the establishment and maintenance of fire brigades in South Australia under the control and management of the Fire Brigades Board was first instituted in 1882. On 3 December 1981, the Fire Brigades Act Amendment Act was proclaimed; this dissolved the Fire Brigades Board and established a Corporation, represented by the Chief Secretary.

In accordance with its general duty of extinguishing fires and protecting life and property in case of fire, the Corporation maintains suitably equipped fire brigades in proclaimed fire districts in the Adelaide Metropolitan Area and in country towns. At 30 June 1982 there were forty-one fire brigade stations of which twenty-one were metropolitan and twenty were country. During the year 1981-82 these brigades received 8 006 calls of which 549 were false and malicious calls. Some of these brigades are manned by permanent personnel and others by auxiliary firemen, there being at 30 June 1982, 648 officers and firemen and 148 auxiliary firemen.

In addition to its main function, the Corporation provides a service section for the regular maintenance of private fire equipment installed in public and private premises,

and makes its officers available for inspection of premises and for advice on fire protection generally, as well as to demonstrate the use and handling of various types of first-aid fire equipment.

The Fire Brigades Act, 1936-1981 provides that the expenses and maintenance of brigades be defrayed in the proportion of one-eighth by the State Treasury, three-quarters by insurance companies and one-eighth by the municipalities and district councils concerned.

Total contributions for 1981-82 were \$17 546 000 made up as follows; insurance companies \$13 159 500; municipalities and district councils \$2 193 250; and State Treasury \$2 193 250.

South Australian Country Fire Services

The South Australian Country Fire Services (CFS) is a voluntary fire fighting organisation affording urban and rural fire protection to an area of 886 000 square kilometres, or approximately 90 per cent of South Australia. It is constituted as a statutory body under the Country Fires Act, 1976-80.

The CFS consists of 464 brigades, group committees, Regional and District Fire Fighting Associations with 11 500 members. The Service also provides personnel and equipment for salvage, vehicle accident rescue and assistance in emergencies where fire may not necessarily be occurring.

While rural type fires account for the majority of fires outside the South Australian Metropolitan Fire Service area, CFS brigades are also involved in attending a significant number of building and vehicle fires, and special service calls.

The CFS provides protection for a number of urban fringe areas with significant populations including Mount Barker, Stirling and parts of Mitcham and Salisbury. Outside these areas, CFS brigades cover 110 towns with populations of 200 or more.

South Australian Country Fire Services

Particulars	1980	1981	1982
Strength of service at 30 June:			
Affiliated organisations	448	464	464
Volunteer members	11 000	11 500	11 500
Fires attended in twelve months ended 30 June:			
Number of fires;			
Structural/Vehicle	346	311	356
Rural	1 313	1 446	1 227
Area destroyed in bush fires (ha) .	142 691	90 415	102 959
Financial losses (\$):			
Structural/Vehicle	2 830 191	2 404 105	3 328 834
Rural	7 115 595	1 072 168	3 727 730
Total Brigade callouts	2 796	2 859	2 220

WATER SAFETY AND LIFE SAVING

Royal Life Saving Society—Australia

The South Australian Branch of the Royal Life Saving Society—Australia was established in 1909 and the formation of clubs at various beaches followed. In 1952 an

agreement was made with the Surf Life Saving Association whereby the Surf Life Saving Association undertook responsibility for life saving on ocean beaches, the Royal Life Saving Society retaining responsibility in all other areas of activity.

In South Australia the Society has developed into a large teaching body administered by a Council. The Society gives instruction to schools and other interested bodies in the various methods of life saving, including the current methods of artificial respiration. This is done by honorary instructors and examiners. Classes of instruction are also conducted at all major public swimming pools throughout the State. Life saving patrols are conducted at inland waterways on weekends and public holidays during the warmer months. In the winter months the emphasis is on talks and demonstrations on resuscitation, but during the swimming season weekly life saving instruction and examination, and life saving demonstrations are conducted throughout the State. Awards totalling in excess of 34 000 were gained by candidates during the 1981-82 season.

The honorary work of the Society is financed mainly by grants made by the Government, by donations, and by the Society's own fund-raising activities.

Surf Life Saving Association

The South Australian State Centre of the Surf Life Saving Association of Australia was formed in 1952, with the co-operation of the South Australian Branch of the Royal Life Saving Society and the Surf Life Saving Association of Australia.

The Association has nineteen affiliated clubs situated at Aldinga Bay, Brighton, Chiton Rocks, Christies Beach, Glenelg, Grange, Henley, Hallett Cove, Moana, Port Elliot, Port Lincoln, Port Noarlunga, Seacliff, Semaphore, Somerton, Southport, North Haven, West Beach and Whyalla.

Voluntary members give many hours to patrolling their respective beaches on weekends and public holidays from the beginning of November until the end of March. At 30 June 1982 there were 3 511 senior active, reserve, cadet, junior and other members, in Association clubs. From 1952 to the end of the 1981-82 season, 2 571 rescues were performed with no loss of life on patrolled South Australian beaches. During this same period many hundreds of persons received first-aid treatment.

The South Australian State Centre receives an annual grant from the State Government and individual clubs have been assisted with subsidies when building their club houses.

'Learn to Swim' Campaign

Vacation swimming classes organised by the Education Department were first established in January 1956. During January 1982, 42 300 children were enrolled at 235 centres throughout the State when instruction was provided by over 1 100 qualified instructors for a period of ten days. The major aim of the program is to impart water safety knowledge, teach survival and safe swimming and to enable children to assist with a rescue by the safest and quickest method available.

Term time classes are available for children in government and non-government schools from Year 1 to Year 12. Approximately 120 000 children participated in swimming and aquatic programs in 1982.

The Education Department and the Royal Life Saving Society introduced new National Survival, basic rescue and swimming proficiency awards into the program in 1983.

Special Aquatic Centres are operating at nine locations offering vacation and term time sessions in surfing, canoeing, water skiing, snorkelling, fishing, adventure boating, sailing and board sailing.

NATIONAL SAFETY COUNCIL OF AUSTRALIA SA DIVISION

The National Safety Council of Australia SA Division was formed in 1963 as the Industrial Accident Prevention Society of SA Inc., a voluntary non-profit educational body. It is an autonomous branch of the largest safety organisation in Australia devoting its entire resources to the reduction of accidents in most areas of the community. In South Australia the Council's efforts are devoted to occupational, child and home, and water safety problems; traffic safety being the function of the Road Safety Council of South Australia. The SA Division is also responsible for servicing the requirements of members in the Northern Territory and regular visits are made to that area for safety training and promotional purposes.

The aims of the Council are carried out by the provision of safety consultant services, lectures, training courses and the distribution of safety publications and materials. Finance is derived from membership fees, services, an annual grant from the State Government and assistance from the Commonwealth Government. The Council's activities are controlled by a body representative of all spheres of community interest.

ROAD ACCIDENT PREVENTION

The Division of Road Safety and Motor Transport of the Department of Transport was established in 1981 for the purpose of developing, co-ordinating and implementing road safety policy embracing education, enforcement and legislation, traffic regulation and vehicle design and safety. At the same time, the charter of the Road Safety Council was varied from its administrative responsibilities for road safety education to an advisory role, reporting directly to the Minister of Transport.

There are a number of other Government organisations involved in the promotion of road safety in South Australia including the Road Traffic Board, the Motor Registration Division, and the Police, Highways and Education Departments.

The primary role of the Division is to achieve greater co-ordination, consolidation and integration of the road safety effort in South Australia. Its administrative responsibilities presently extend to the promotion of road safety through media publicity, instructional activity centred on its Road Safety Instruction Centre at Oaklands Park, vehicle inspection functions centred on its Vehicle Inspection Station, Regency Park; regulation of the private bus transport industry, and road safety policy and research.

6.2 EDUCATION

Educational services are available to all South Australians in a wide variety of forms, some being provided by Government and others by non-government agencies. Constitutionally education is a State responsibility, but the Commonwealth makes grants for specific purposes. Education in this State can be seen as comprising three levels, namely, pre-school, school and post-school.

Pre-school education is provided by the Kindergarten Union, Education Department and Catholic Education Office and consists of a range of services available to children (under five years of age) and their parents.

In South Australia attendance at school is compulsory for children from six to fifteen years of age. No child may be admitted to a government school, other than a child/parent centre, before the age of five years. The admission of children aged five is provided for in all junior primary, primary and area schools at the beginning of each school term, but schools are encouraged to receive intakes more frequently.

Education at the primary and secondary level is available at government schools controlled by the Education Department and at non-government schools, most of which

are denominational. Some non-government schools provide boarding facilities. In both government and non-government schools there has been a trend towards co-education in recent years. The term 'Year' is used to denote class level in both primary and secondary schools. Primary classes are designated Year 1 through to Year 7, and secondary classes Year 8 to Year 12.

South Australian schools celebrated the centenary of State education in October 1975. The present system of government schools and of compulsory education dates from the Education Act, 1875.

At the tertiary level the University of Adelaide, the Flinders University of South Australia and the colleges of advanced education are independently controlled but are financially dependent on government grants.

Facilities for adult education are provided by the Department of Technical and Further Education, the Workers Educational Association, Department of Continuing Education of the University of Adelaide, and Flinders University.

A historical summary of education in South Australia was included on pages 153-4 of the *South Australian Year Book* 1969.

PRE-SCHOOL EDUCATION

The Kindergarten Union of South Australia was established in 1905 and the first kindergarten, the Franklin Street Free Kindergarten, opened in 1906.

In 1982 there were 308 centres distributed widely throughout the State. The education and care programs include pre-entry to school for five-year-olds, general educational programs for three and four-year-olds which encourage cognitive, social, emotional, physical, moral and creative growth, special clinical services for handicapped children, home-based activities for isolated children, full-day care, emergency care, out-of-school hours care, 'respite' care and specific parenting programs combined with group activities for babies and toddlers. In addition, staff of the Special Services Division assist parents to manage children who have specific learning difficulties and work closely with the Adelaide Children's Hospital, general practitioners, Health Centres, the Child, Adolescent and Family Health Service, the field staff of the Department for Community Welfare and other agencies.

Most centres operate two sessions per day. The customary program is for nine sessions per week, each of approximately three hours. In 1982 there were more than 33 000 children registered with the Union's 308 centres.

In 1982 the Union operated four mobile kindergartens (from Clare, Waikerie, Noarlunga and Salisbury) and eleven mobile resource units/toy libraries. The Union employed 960 staff in 1982, 893 were employed in the centres, including eleven Aboriginal Pre-school Assistants, ten Ethnic Assistants, twenty-three Child Care Staff and nine Mobile Resource Operators.

As a statutory authority, the Kindergarten Union operates under the Kindergarten Union Act, 1974-75 and receives funding from both the Commonwealth and State Governments. Authority is vested in the Board of Management and the Council of the Union. The Minister of Education holds Cabinet responsibility for the administration of the Act.

In 1974 the Education Department established pre-school centres, now known as child/parent centres. These centres are staffed by Education Department teachers and are usually located in the grounds of existing junior primary, primary and area schools.

There are 89 child/parent centres serving approximately 4 780 children and their families. Of these child/parent centres, ten cater for Aboriginal children in rural areas, one caters for children requiring special education and ten are integrated services centres

which are co-operative ventures with the Department for Community Welfare, the South Australian Health Commission, the Kindergarten Union and local community services. Four of these are Early Childhood Family Services Centres located at Alberton, Christies East, Elizabeth West and Whyalla. The Port Augusta Primary School is the base for the Remote and Isolated Children's Exercise (RICE) to serve children and their families in the outback.

In April 1982 the Childhood Services Council was replaced by two committees. The Early Childhood Education Advisory Committee is responsible to the Minister of Education for advice on all aspects of the education of pre-school children and the education of special pre-school groups including a program for three-and-a-half year old children in areas of special need including Aboriginal children, ethnic groups, handicapped and isolated children through the RICE program. The Community Welfare Advisory Committee on Early Childhood Care is responsible to the Minister of Community Welfare for policy advice on child care centres, playgroups, family day care, child care in women's shelters and children of offenders.

The following table shows statistics on all known day care centres and pre-school centres in South Australia obtained from a census conducted by the Australian Bureau of Statistics during the week commencing 29 June 1981.

Day Care Centres and Pre-school Centres, South Australia, 1981 ^(a)

Particulars	Type of Centre				Total
	Kindergarten Union	Licensed by Department for Community Welfare	Government Schools	Other	
Number of centres	299	79	85	28	491
Capacity (per session)	9 634	3 047	2 394	612	15 687
Attendance:					
Boys	10 385	1 906	2 288	266	14 845
Girls	9 866	1 777	2 106	265	14 014
Total	20 251	3 683	4 394	531	28 859
Paid staff(b):					
Qualified	737	321	160	58	1 276
Unqualified	440	229	94	34	797
Total	1 177	550	254	92	2 073

(a) Week commencing 29 June 1981.

(b) Includes part-time.

GENERAL SCHOOL EDUCATION

The State Government, through the Education Department, provides free facilities for primary and secondary education; however, parents may choose between government and non-government schools. The Education Department functions under the Minister of Education. The permanent head of the Department is the Director-General of Education, assisted by a Deputy Director-General, two Assistant Directors-General of Education and Directors of Personnel, Curriculum, Educational Facilities, Research and Planning, and Management and School Services. The Department is organised into ten Education Regions and schools are administered in many aspects through the local Regional Director. A Director-General of Further Education heads the Department of Technical and Further Education which is responsible for a wide range of post-secondary educational activities conducted by community colleges and colleges of further education in all areas of the State.

The work of the schools is assisted by the school councils, and also by the mothers

clubs, parents and friends associations and welfare clubs. For many years these bodies have been raising large sums for the purchase of additional amenities for schools.

In country areas many children are conveyed to government schools by free bus services provided by the Education Department. At the end of 1982 there were 677 bus services carrying an average of 25 000 students daily to 309 schools.

Although non-government primary schools largely follow the government schools in their curricula, the Education Department exercises no formal authority over these schools beyond requiring them to submit certain statistical returns relating to compulsory attendance. The similarity between courses in the government and non-government secondary schools is attributable to the influence of the Public Examinations Board of South Australia syllabus and the close liaison of the administration and teachers of both types of school.

The Catholic school system is organised on a State-wide basis under the direction of the South Australian Commission for Catholic Schools. This Commission is comprised of the Archbishop of Adelaide, the Bishop of Port Pirie, priests, primary and secondary school principals, superiors, parents, teachers (lay and religious), members of school boards and regional members together with the State Director of Catholic Education and the Diocesan Director, Port Pirie.

The State Government now pays a grant of \$10 a year for each primary and \$20 for each secondary student attending a registered non-government school. In 1982 additional payments on a needs basis varying from \$275 to \$585 per student were made.

Schools

Details of schools operating in South Australia in 1982 are given in the next table.

Schools by Size, South Australia, At 1 July 1982

Students on Roll	Government Schools					Non-government Schools
	Primary	Primary-Secondary	Secondary	Special (a)	Total	
Under 21	21	—	—	4	25	6
21 to 35	38	1	—	5	44	8
36 to 100	104	16	1	10	131	38
101 to 200	102	8	4	3	117	44
201 to 300	88	15	7	1	111	20
301 to 400	79	14	7	—	100	11
401 to 600	80	9	23	—	112	21
601 to 800	14	2	21	—	37	9
801 to 1 000	—	1	22	—	23	10
1 001 to 1 200	—	1	10	—	11	2
1 201 to 2 000	—	—	5	—	5	—
Total	526	67	100	23	716	169

(a) Schools for physically and mentally disabled, socially maladjusted or emotionally disturbed children.

The average size of government schools has increased rapidly since 1940 partly as a result of the consolidation of country schools. There were 716 government schools in 1982 compared with 1 043 in 1940 and 1 108 in the peak year of 1935. In 1940 there was an average of 73 students to each government school, with this figure increasing to 125 by 1950, 255 by 1960 and 351 by 1970. After peaking at about 379 between 1972 and 1975, the figure declined to 290 in 1982. There has been a general increase in the average size of non-government schools.

Students

Enrolments in recent years, classified by government and non-government schools and by age of the students are given in the following tables.

Full-Time Primary and Secondary Students, South Australia**At or about 1 July**

Age	Government Schools			Non-government Schools		
	1980	1981	1982	1980	1981	1982
Under 6	15 960	15 372	14 821	3 471	3 715	4 000
6	17 818	17 087	16 381	2 778	2 955	3 055
7	18 720	17 267	16 865	2 936	2 927	3 110
8	19 824	18 705	17 264	3 006	3 191	3 172
9	20 502	19 671	18 395	3 128	3 304	3 407
10	19 859	20 259	19 276	3 256	3 585	3 675
11	19 516	19 360	19 835	3 142	3 644	3 906
12	18 455	18 874	18 934	3 796	3 959	4 315
13	17 996	18 252	18 400	3 742	4 005	4 361
14	18 452	17 641	17 883	3 707	3 824	4 179
15	16 279	15 893	15 267	3 518	3 749	3 866
16	10 856	10 276	10 262	3 153	2 949	3 364
17	3 578	3 582	3 531	1 268	1 299	1 311
18	640	548	515	171	151	184
19 and over	227	246	315	44	55	67
Total	218 682	213 033	207 944	41 116	43 312	45 972

Primary and Secondary Students, South Australia**At 1 July 1982**

Age	Government Schools			Non-government Schools		
	Primary	Secondary	Total	Primary	Secondary	Total
Under 6	14 821	—	14 821	4 000	—	4 000
6	16 381	—	16 381	3 055	—	3 055
7	16 865	—	16 865	3 110	—	3 110
8	17 264	—	17 264	3 172	—	3 172
9	18 395	—	18 395	3 407	—	3 407
10	19 273	3	19 276	3 674	1	3 675
11	19 758	77	19 835	3 857	49	3 906
12	8 577	10 357	18 934	1 579	2 736	4 315
13	576	17 824	18 400	104	4 257	4 361
14	118	17 765	17 883	14	4 165	4 179
15	120	15 147	15 267	9	3 857	3 866
16	117	10 145	10 262	17	3 347	3 364
17	115	3 416	3 531	7	1 304	1 311
18	88	427	515	6	178	184
19 and over	86	229	315	9	58	67
Total	132 554	75 390	207 944	26 020	19 952	45 972

Teachers

The number of teachers employed in primary and secondary schools in recent years is shown in the following table.

Teachers, South Australia

At or about 1 July	Government Schools				Non-government Schools			
	Full-time		Part-time (a)		Full-time		Part-time (a)	
	Males	Females	Males	Females	Males	Females	Males	Females
1980	6 216	7 485	117	810	881	1 216	50	247
1981	6 263	7 079	150	980	946	1 258	52	271
1982	6 143	6 696	216	1 159	1 033	1 320	71	1 313
Type of Teacher 1982								
Primary	2 276	4 250	55	643	314	798	18	141
Secondary	3 967	2 240	134	436	716	493	53	164
Other (b)	170	206	28	80	3	29	(c)10	

(a) Equivalent full-time units of part-time teaching.

(b) Includes teachers at schools for physically and mentally disabled, socially maladjusted or emotionally disturbed children, and teachers who are active in more than one type of school.

(c) Persons only.

PRIMARY EDUCATION

Children normally begin their schooling at the age of five years when they enrol for primary education at either a government or non-government school. Primary education involves a seven-year course.

GOVERNMENT SCHOOLS

Metropolitan children attend junior primary and primary schools while country children normally attend a junior primary, primary, rural, area or special rural school, although those in remote areas receive lessons by correspondence.

Primary

In primary education the emphasis is on the child's active involvement in learning. The curriculum is designed to extend children's experience of their environment, through social studies, science and mathematics. It provides for the development of all language skills, especially fluency in speech, writing and reading, and for creative activities in movement, music, art, drama and writing.

The primary school curricula provide a general framework for the study of English, mathematics, social studies, science, health education, music, art and craft and physical education. A new program in religious education is being introduced. An increasing provision is being made for the study of additional subjects, such as foreign languages, ballet, instrumental music and aquatics.

Ancillary services and expert advice are provided for primary schools through the Principals of the Educational Technology Centre and the School Libraries, Physical Education and Music Branches. There are also consultants in other subject areas who visit the schools and conduct in-service courses.

The following table shows the number of students in government schools by year of primary education in recent years.

Primary Students: Government Schools, South Australia

Year of Education	1977	1978	1979	1980	1981	1982
			'000			
Reception	7.3	6.9	6.6	5.2	5.1	5.0
Year 1	20.7	19.8	18.1	17.6	16.8	16.5
Year 2	22.0	21.2	20.1	18.1	17.4	16.6
Year 3	21.0	21.1	20.5	19.6	17.8	17.1
Year 4	20.2	20.5	20.9	20.2	19.3	17.4
Year 5	19.4	20.0	20.2	20.4	19.9	18.9
Year 6	19.4	19.1	19.6	20.0	20.0	19.6
Year 7	19.7	19.1	18.7	19.2	19.6	19.6
Ungraded special(a)	2.3	2.3	2.2	2.0	2.0	1.9
Total primary students	152.0	150.0	146.8	142.3	137.9	132.6

(a) Includes students in opportunity classes at other than special schools.

Area and Special Rural

These schools, situated in country centres, cater for both primary and secondary students. The primary course is similar to that of the primary schools but the secondary courses offered are restricted by the availability of staff.

Correspondence

The Correspondence School was started in 1920 to cater for children unable to attend ordinary schools. Most of these children live in remote parts of South Australia or are unable to attend school through physical or emotional disability. The service also reaches itinerant families and those travelling overseas. Secondary courses are also offered to children attending a school at which a specific subject is not available.

Port Augusta School of the Air supplements the work of the Correspondence School. It provides two-way radio contact and various other services to facilitate personal interaction. Written work provided by the Correspondence School is marked by staff of the School of the Air and the Correspondence School. Co-operation between the Correspondence School and the Broken Hill School of the Air assists with education of children living on the New South Wales-South Australian border. In 1982, 496 children were enrolled to receive primary education at these schools, including those enrolled at the Port Augusta School of the Air.

NON-GOVERNMENT SCHOOLS

At 1 July 1982, 26 020 children were receiving primary education at non-government schools. The majority of these children were attending Catholic schools.

Catholic

Many children receiving primary education in the Catholic school system attend parish schools while the remainder attend colleges conducted by religious orders. Both types of school are supported by fees paid by parents and by State and Commonwealth Government grants. Parish schools are the property of the parishes which are responsible for equipping and maintaining them. The educational program of each school is under the direction of the principal, who may be either a lay person or a member of a religious order, and who is usually assisted by an elected school board.

Other

Several denominational bodies including the Anglican Church of Australia, the Lutheran Church and the Seventh Day Adventist Church conduct primary schools; there are also three non-denominational primary schools. Primary education is provided with secondary education at primary/secondary schools conducted by denominational bodies including the Anglican Church of Australia and the Uniting Church, and at four non-denominational schools.

EDUCATION OF DISABLED CHILDREN

The Special Education Section of the Education Department provides education for disabled children in a variety of settings. The general policy is that children should be educated in the most 'ordinary' situation possible and that a range of options should be available. Options provided include special schools, full-time special classes, part-time special classes, support teachers within ordinary schools helping children and teachers in regular classes, and support teachers working outside their home base schools. In addition, a variety of arrangements are entered into in which groups of disabled children and their teachers are combined with regular groups and their teachers in a single complex. Specific provisions are made for hearing-impaired children (all within centres in regular schools plus support services), visually-impaired children (one small special school plus support services), moderately intellectually disabled children (mostly in special schools but occasionally in special or regular classrooms), physically disabled children (in both special and regular schools) and others.

Special schools are conducted for day students and within institutions for children in residence.

SECONDARY EDUCATION

Children who have completed their primary schooling are required by law to attend a secondary school, either government or non-government, until their fifteenth birthday.

GOVERNMENT SCHOOLS

The South Australian Education Department's policy is to provide comprehensive co-educational high schools which, consistent with their size and enrolment, offer the widest range of courses possible in an endeavour to meet the interests of the students.

Students living in urban areas usually attend their local high schools which, apart from four schools, are now comprehensive, co-educational schools. An application may be made to enter any school but only the neighbourhood school can guarantee a place. In country areas, secondary education is provided by special rural schools, area schools or high schools depending on the size of the population being served. The curriculum available may be supplemented by the services of the Correspondence School.

All new schools built in recent years, and many existing schools, have been provided with gymnasiums and music and drama areas. The upgrading of schools and the provision of flexible-plan units in existing schools is continuing.

The first three years of secondary schooling provide a broad general education and during this period students are introduced to as wide a range of subjects as possible. Each school is free to develop its own combination of subjects and to determine the amount of time spent on each, within departmental guidelines.

Specialisation increases in Years 11 and 12 when students tend to identify more clearly their vocational goals. However, the ability of schools to cater for diverse interests and capacities may be limited by their resources.

Secondary Students: Government Schools, South Australia

Year of Education	1977	1978	1979	1980	1981	1982
	'000					
Year 8	20.3	19.7	18.7	18.2	18.7	19.2
Year 9	20.3	19.9	19.1	18.4	17.9	18.4
Year 10	18.8	18.7	18.1	17.6	16.9	16.7
Year 11	14.6	15.0	14.5	14.7	14.2	13.9
Year 12	6.4	6.6	6.7	6.8	6.7	6.7
Ungraded special(a)	0.7	0.6	0.7	0.7	0.8	0.6
Total secondary students	81.1	80.5	77.7	76.4	75.2	75.4

(a) Includes students in opportunity classes at other than special schools.

Area Schools

Area schools, which are located in some country districts, include a secondary section as well as primary. Because of their size the secondary curriculum offered may not be as varied as that of a large metropolitan high school, but a similar breadth and balance is sought.

Special Rural Schools

These schools were first established in remote country areas in 1966 with the intention of supplying a limited secondary education in areas where it had been shown that there was an obvious need for secondary education but where the establishment of an area school was not warranted. Courses in these schools are restricted to the core subjects, English, social studies, mathematics, science—sometimes craft where facilities are available, and geography and/or history. Instruction usually does not proceed beyond Year 10 level.

Correspondence School

Children who are unable to attend a secondary school may receive secondary education through the Correspondence School. Lessons are forwarded to cover academic, commercial and art subjects up to Year 11 standard. Assistance may take the form of full correspondence or supplementary courses. Supplementary courses are conducted through a primary school head teacher who may, in the case of remoteness from secondary school facilities, conduct grades beyond Year 7. Courses are also supplied to students in smaller secondary schools who wish to do a specific subject which is not available because of staffing problems.

Isolated students who wish to do matriculation studies (Year 12) are enrolled through the South Australian Open College, a Department of Technical and Further Education service. Some adult students, whose level of literacy and numeracy makes it difficult to work through the Open College, do enrol in the Correspondence School. In 1982, 617 secondary students were enrolled at the Correspondence School, including 287 students attending other schools. There were 207 adult students. With the 496 primary students, this made a total of 1 113 students enrolled at the Correspondence School in 1982.

The Curriculum

The aim of all secondary schools is to provide courses of study that best suit the needs of individual students. This has resulted in schools offering as wide a range of subjects and syllabuses as possible.

Secondary school subject curriculum committees, which are comprised of representatives of a wide spectrum of interests associated with education, meet regularly to discuss courses of study and to establish new syllabuses for secondary students. Although syllabuses are distributed to all teachers, they are in no way prescriptive. They are adapted to cater for the needs and abilities of students.

School Libraries

After a period of rapid improvement in the quality of library services in South Australia, libraries are now consolidating their positions as the major resource facility within schools. Diversification of curriculum and the introduction of a number of new courses have had a major impact on school library collections. The enquiry based method of learning and the need to educate children in a variety of different post secondary experiences has meant that school libraries need to provide a very diverse collection of resources for use by staff, students and the school community. Schools must look to other libraries and resource centres to supplement their own collections. Some schools have formed co-operative ventures to share the expense of purchasing resources and equipment and school/community libraries now provide library service in many small rural communities.

Libraries in government schools have the central support service of the School Libraries Branch of the Education Department to assist them. Services offered include central cataloguing (SAERIS scheme), book and non-book reviewing and selection, a quarterly professional publication, *Review*, and a central library and bulk loan scheme as well as an advisory service to principals, teachers and librarians. Regional Education offices provide library advisory and resource services in each region in conjunction with the central support services of the School Libraries Branch.

Government Schools: Library Statistics, South Australia

Particulars	Unit	1978	1979	1980	1981	1982
Teacher-librarians	No.	549	561	605	611	628
Library aides	No.	514	620	793	781	847
Books held	million	3.4	3.6	3.9	4.1	4.2
Other materials	million	2.1	2.4	1.1	1.1	1.1
Amount spent	\$ million	2.2	2.1	2.3	2.4	2.6

NON-GOVERNMENT SCHOOLS

Secondary education is also provided by non-government schools; these schools, for the most part, are identified with various religious denominations. Non-government secondary schools usually charge fees, but a limited number of internal scholarships are available. In addition to normal day attendance some non-government schools offer boarding facilities for country students. Non-government schools provide academic courses preparing students for the Public Examinations Board examination at the Year 12 level. Church schools give religious as well as secular education.

In the next table non-government school students are classified according to the denominational affiliation of the school they attended. The predominant contribution of Catholic schools is clearly evident from the table. In 1982 Catholic schools accounted for 71 per cent of primary students and 59 per cent of secondary students attending non-government schools.

**Students at Non-government Schools, South Australia
At or about 1 July**

Denomination of School	1978	1979	1980	1981	1982
Primary:					
Catholic (a)	17 120	16 907	17 237	17 960	18 561
Anglican Church of Australia	1 513	1 587	1 688	1 820	1 925
Lutheran	1 726	1 868	1 980	2 130	2 351
Seventh Day Adventist	237	236	234	220	187
Uniting Church	1 083	1 147	1 194	1 270	1 415
Other	136	212	240	543	684
Non-denominational (a)	538	634	774	786	897
Total primary	22 353	22 591	23 347	24 729	26 020
Secondary:					
Catholic	10 143	10 416	10 637	11 118	11 856
Anglican Church of Australia	2 056	2 050	2 153	2 242	2 309
Lutheran	926	902	915	981	1 099
Seventh Day Adventist	154	176	168	156	153
Uniting Church	2 401	2 430	2 457	2 584	2 827
Other	14	30	43	89	145
Non-denominational	1 394	1 377	1 396	1 413	1 563
Total secondary	17 088	17 381	17 769	18 583	19 952

(a) Includes students at special schools.

Summary

The following table gives details of all non-government schools and covers both primary and secondary education. Additional information is shown on pages 192-3.

Non-government Schools, South Australia

Year	Number of Schools	Number of Teachers (a)	Students on Roll at or about 1 July				Total
			Primary (b)		Secondary		
			Males	Females	Males	Females	
1978	151	2 152	11 206	11 147	8 041	9 047	39 441
1979	155	2 296	11 365	11 226	8 274	9 107	39 972
1980	159	2 394	11 702	11 645	8 500	9 269	41 116
1981	163	2 812	12 464	12 265	8 867	9 716	43 312
1982	169	3 095	13 105	12 915	9 621	10 331	45 972

(a) Full-time teachers plus the full-time equivalent of part-time teachers.

(b) Includes students at special schools.

Catholic Schools

The Catholic school system provides secondary education at boarding and day colleges in metropolitan and country areas. The schools seek to serve the needs of students by providing (where appropriate) courses in technical education, business and commercial education and general education together with academic courses for those seeking admission to tertiary education after matriculation (Year 12). The majority of Catholic secondary schools are owned and operated by the religious communities who conduct them and are supported by fees charged and government grants.

Other

The Lutheran Church and the Seventh Day Adventist Church conduct secondary schools and there are two non-denominational secondary schools. Secondary education is provided also at primary/secondary schools (see page 192).

Training in typing and shorthand is provided at privately owned business colleges which specialise in this field. A number of these colleges also prepare students in certain Public Examinations Board subjects.

EXAMINATIONS AND EDUCATION ASSISTANCE

Examinations

In addition to internal examinations conducted by the schools the Public Examinations Board (PEB) conducts a further examination at the completion of the fifth year of secondary education. Before 1966 this examination had been known as the Leaving Honours examination and while considered a desirable fore-runner to university study had not been compulsory for entrance to the University of Adelaide (matriculation being based on the Leaving examination). Commencing with 1966 this examination became the Matriculation examination.

Matriculation Examination: Candidates and Subjects Presented, South Australia

Subject	1978	1979	1980	1981	1982
Ancient languages(a)	15	13	18	23	21
Art	1 203	1 091	1 077	1 116	1 092
Asian languages(b)	205	201	288	268	404
Biology	5 704	5 385	5 060	4 586	4 526
Chemistry	2 574	2 707	2 825	2 766	3 184
Classical Studies	1 504	1 434	1 286	1 133	1 139
Economics	2 819	2 789	2 843	2 844	2 923
English	6 186	6 006	5 774	5 307	5 501
Geography	3 606	3 432	3 084	2 899	2 828
Geology	1 613	1 557	1 505	1 280	1 178
History(c)	4 912	4 752	4 202	3 731	3 764
Mathematics 1	2 152	2 256	2 329	2 434	2 703
Mathematics 2	2 145	2 255	2 323	2 425	2 699
Mathematics 1S	2 653	2 667	2 707	2 369	2 709
Music	318	466	499	540	489
Physics	2 688	2 769	2 932	2 908	3 324
Other modern languages(d)	930	1 136	1 227	1 292	1 305

(a) Ancient Greek and Latin.

(b) Chinese, Indonesian, Japanese, Malay and Vietnamese.

(c) American, Ancient, Australian, Medieval, Modern European and Modern World History.

(d) Dutch, French, German, Greek, Hungarian, Italian, Latvian, Lithuanian, Polish, Russian, Spanish, Ukrainian and Hebrew.

Before 1966 the PEB had given a certificate for a pass in the required number of subjects at either the Intermediate or Leaving examinations and for a pass in one or more subjects in the Leaving Honours examination. From 1966 to 1979 the Board issued to each Intermediate, Leaving and Matriculation examinee a certificate showing the grade achieved in each of the subjects in which examined. The last PEB Intermediate examination was held in 1968 and the last Leaving examination in 1974. The total number of candidates who presented for examination by the Board in one or more subjects at the 1982 Matriculation Examination was 8 861.

PRIMARY AND SECONDARY EDUCATION ASSISTANCE

The Commonwealth Government, the State Government and various private benefactors provide assistance to various categories of primary and secondary students.

South Australian Government

In 1982, under Primary and Secondary Books and Materials grants, cash grants of \$14 per primary student and \$47 per secondary student were paid to all government and non-government schools to assist with the cost of books and materials. In government schools this grant is incorporated in a School Support Grant; for primary schools of \$1 160 per school and \$25.50 per student; for secondary schools of \$5 900 per school and \$66.50 per student. Books bought from the grant become school property and are loaned for school use.

Students who have to travel considerable distances to the nearest school, or school bus, may also receive travelling expenses.

If students are forced to live away from home, an isolated children's allowance is normally payable by the Commonwealth Government. In a few cases where Commonwealth assistance is not available the South Australian Government pays boarding allowances and may award rural scholarships.

Commonwealth Government

The Scheme of Assistance for Isolated Children assists the parents of students who do not have reasonable daily access to an appropriate government school. The main aim of this scheme is to assist student children whose homes are geographically isolated. However, assistance is also available in certain circumstances to children with disabilities who must live away from home to attend school or study by correspondence and to students undertaking a special type of course or specialised remedial teaching. Students who must live away from home to undergo diagnostic testing of an educational nature may also be assisted, as may students from itinerant families.

The Secondary Allowances Scheme aims to provide assistance to families with a limited income so that they may maintain their children at school for the final two years of secondary education. Under this scheme an allowance of up to \$726 a year may be paid subject to a means test.

The Commonwealth Government also provides financial assistance for the education of students of Aboriginal or Torres Strait Island descent who attend approved secondary schools. This assistance is provided under the Aboriginal Secondary Grants Scheme. The grants are open to full-time students under the age of twenty-one who attend an approved secondary school. Grants also may be made available to full-time students who attend an approved primary school provided the student is fourteen years of age. Benefits under this scheme comprise textbook and uniform allowances, living allowance, personal allowance and fees. Students who must live away from their normal place of residence in order to attend school may be eligible for a boarding allowance in lieu of living allowance, and for up to three return journeys to their home each year.

TERTIARY EDUCATION ASSISTANCE

In 1974 the Commonwealth Government abolished tuition fees at universities, colleges of advanced education, and technical colleges and introduced the Tertiary Education Assistance Scheme.

The Tertiary Education Assistance Scheme is intended to assist students in approved courses at universities, colleges of advanced education, technical colleges and certain other approved tertiary institutions in Australia. Assistance under the scheme may include payment of living allowance, incidentals allowance, allowance for a dependent spouse and/or child, and fares allowance. All benefits are subject to a means test and a student must be eligible for living allowance in order to receive any of the other benefits. The maximum amount of living allowance payable is \$3 100 a year for independent

students. Students eligible to receive living allowance at the away from home rate and students living at home may receive up to \$2 827 or \$1 737 a year respectively. In addition, each grantee may receive up to \$273 in lieu of family allowance paid in respect of the dependent student by the Department of Social Security.

Aboriginal Study Grants are available for students of Aboriginal and Torres Strait Islands descent who wish to study further after leaving school. Benefits include a living allowance, a textbook and equipment allowance and an establishment and clothing allowance.

Awards are also available for postgraduate study either in research or in course work. Assistance is by means of taxable allowances paid to award holders. The allowances payable consist of a living allowance, an incidentals allowance and under certain circumstances special allowances in respect of dependants, cost of travel, cost in setting up residence, and a contribution to costs associated with the production of a thesis. The living allowance payable to an award holder with no dependants is \$4 620 a year.

OTHER ASSISTANCE

Under the Adult Secondary Education Assistance Scheme the Commonwealth Government provides assistance to adult students undertaking full-time Year 11 and 12 courses at technical colleges, secondary schools and other approved institutions. This assistance is available subject to a means test and certain conditions of eligibility. Assistance under the scheme may include living allowance, incidentals allowance, allowance for a dependent spouse and/or child, and fares allowance. An applicant must be eligible for living allowance in order to receive any of the other benefits and the provision of living allowance is subject to a means test. The maximum rates of living allowance are \$1 587 at the home rate, \$2 594 at the away from home rate and \$2 867 at the independent rate. Students receiving the at home or away from home rates may receive up to \$273 in lieu of family allowance.

TERTIARY EDUCATION

The Tertiary Education Authority of South Australia was established on 1 July 1979 under the Tertiary Education Authority Act, 1979 to promote, develop and co-ordinate tertiary education in South Australia. The Authority replaced the former South Australian Board of Advanced Education which since 1972 had functioned as a co-ordinating body for the advanced education sector only.

The Authority is responsible for the co-ordinated development of the three sectors of tertiary education—universities, colleges of advanced education and further education. The Authority is also the State accrediting authority for advanced education and further education awards; it provides advice on the allocation of capital and recurrent funds to post-secondary institutions and is responsible for the overall planning of the State's provision for tertiary education.

The Authority is empowered to consult and negotiate with national authorities concerned with tertiary education, including the Commonwealth Tertiary Education Commission and the Australian Council on Awards in Advanced Education.

THE UNIVERSITY OF ADELAIDE

The University of Adelaide was established in 1874 by Act of Parliament passed by the South Australian Parliament. The academic work of the University began in March 1876, with four professors, three part-time lecturers, a registrar-librarian, and eight matriculated and fifty-two non-graduated students attending classes in arts and science subjects. Within a decade, law, music and medicine were added; in 1888 studies in engineering

were instituted in collaboration with the South Australian School of Mines and Industries; and at the turn of the century the University broke new ground for Australian universities by founding a conservatorium of music and by instituting studies in commercial subjects. Between the two World Wars the Waite Agricultural Research Institute and faculties of dentistry and economics were established; studies in agricultural science and engineering greatly developed; and diploma courses in pharmacy, public administration and physical education instituted.

The greatest expansion for the University, however, took place in the immediate post-war years. These years saw the need to provide training in the professions for the large number of ex-servicemen and women who were eligible to enrol under the Commonwealth Reconstruction Training Scheme. This resulted in the expansion of accommodation, equipment and staff and almost doubled the teaching resources of the University.

The report of the Murray Committee on Australian Universities in 1957 marked the beginning of another era of rapid expansion in buildings and student numbers. This expansion continued through the 1960s until the mid-1970s. The national funding body, the Commonwealth Tertiary Education Commission has designated the University as developed, and as a result there will be no major expansion of the University in the foreseeable future.

As with the other Australian universities, the University of Adelaide was predominantly concerned during its first half-century with teaching undergraduates. Some members of the staff, especially the professors, took an active part in the more general educational, cultural, economic and scientific development of the community. However, it was not until after the 1939-45 War that the University embarked upon research in a substantial manner.

The 1939-45 War revealed, among other things, the importance of advanced training in many areas of intellectual endeavour and in the years immediately following the war the University of Adelaide adopted a conscious policy of developing postgraduate studies and encouraging original investigations and research by members of its staff. The science-orientated disciplines took the lead but were soon followed by others. The degree of Doctor of Philosophy, which represents training in techniques of advanced study and research with the requisite meticulous accuracy and self reliance, was established by the University in 1950. In 1982 there were a total of 431 candidates for the degree in the University of Adelaide.

The University has continued to place strong emphasis on research and this involvement is reflected in the comparatively high proportion of postgraduates undertaking higher degrees by research in 1982; 15.5 per cent of the student load was attributable to research higher degree enrolments, the highest proportion of all the established State universities.

Research in the University of Adelaide attracts considerable funds from outside granting bodies. In 1982, 265 grants totalling \$5.01 million were attracted to the University. Of these, 107 grants totalling \$1 550 198 were from the Australian Research Grants Scheme; a total which is one of the highest in Australia even though the staff complement of Adelaide is much smaller than a number of other universities. In addition to these grants the University received a further \$1.6 million over 3 years for its Australian Centre of Gene Technology which was deemed by the Commonwealth Government to be one of the ten Australian Research Centres of Excellence.

The governing body of the University of Adelaide is the Council, comprising the Chancellor and the Vice-Chancellor (*ex officio*), twenty-four members elected by a Convocation of Electors, four members elected by the undergraduates and five members appointed by Parliament. The principal advisory committees of the Council are the

Education Committee (to which, and through which, all faculties and other academic bodies report, either directly or indirectly through the Executive Committee) and the Finance Committee each of which is appointed by the Council. There is also the usual university structure of faculties, boards of studies and special committees to advise on particular aspects of the University's work.

The University of Adelaide, Enrolments ^(a)

Course	1978	1979	1980	1981	1982
Higher degree candidates (b)	1 164	1 140	1 092	1 106	1 161
Undergraduate, diploma, certificate and miscellaneous students:					
Agricultural Science	208	204	217	226	199
Architecture	189	188	208	218	251
Arts	2 415	2 260	2 194	2 234	2 230
Dentistry	287	289	262	224	195
Economics	761	810	809	843	815
Engineering	616	599	604	641	645
Law	642	658	670	724	756
Mathematical Sciences	457	485	539	566	593
Medicine	741	732	719	711	702
Music	148	172	152	164	177
Science	1 004	999	995	1 013	1 054
Environmental Studies	—	—	—	1	6
Miscellaneous (SAIT) (c)	160	152	157	154	152
Elder Conservatorium (d)	192	202	207	205	194
Visiting students (e)	192	206	209	226	180
Total	9 176	9 096	9 034	9 256	9 310

(a) Each student is counted once only; in the category appropriate to his principal course.

(b) Includes Master's qualifying candidates.

(c) Students enrolled in subjects as part of a diploma course at the South Australian Institute of Technology.

(d) Students not also enrolled for degree or diploma subjects.

(e) Students enrolled at another university, who may subsequently qualify for a degree of that other university, but who are undertaking part of their degree work at the University of Adelaide.

In 1982 the University had 11 faculties: arts (13 departments); economics (2); science (12); agricultural science (8); engineering (4); medicine (9); law; mathematical sciences (5); music; dentistry (4); and architecture and planning. Higher degrees are provided in all faculties and post-graduate diploma courses are provided in applied psychology, psychotherapy, environmental studies, computing science, and education.

Intending students are normally required to have passed the Matriculation Examination at a prescribed overall standard. Interstate and overseas students, however, may be accepted on alternative qualifications.

The period of study for undergraduate degree courses ranges from three years to six years (for medicine). As from 1974 all tuition fees and associated charges for degree and diploma courses were abolished. However, fees are still payable in respect of courses in the Continuing Education Department and for studies in the Elder Conservatorium of Music which do not form part of a degree course. All students are still required to pay a Union Fee comprising, for full-time students, an entrance fee of \$30 and an annual fee of \$163; the annual fee for part-time students is proportionately less.

The original full-time academic staff of 4 in 1876 had grown by 1976 to 72 professors, 93 readers, 228 senior lecturers, 158 lecturers, and 135 tutors and demonstrators. In that year the University reached its maximum size in terms of student enrolments (almost

10 000), but enrolments have been reduced steadily from that date to their present level of approximately 9 000. Continued reductions in real terms in funding by the Commonwealth Government have forced the University to reduce its staff to the extent that by 1984 the number at and above lecturer status will be 15 per cent below the 1976 total. In 1982 there were 74 professors, 105 readers, 271 senior lecturers, 62 lecturers and 115 tutors. Teaching by part-time staff amounted to approximately 58 000 hours. Part-time staff were mainly engaged in large first-year science classes involving laboratory work and in the faculties of engineering, law, medicine and dentistry.

From its inception until the end of 1982 the University had conferred 37 453 degrees and 9 775 diplomas by examination. There were 1 512 degrees conferred and 145 diplomas awarded in 1982.

Details of student enrolments are given in the following table.

The University of Adelaide: Enrolments, 1982 ^(a)

Course	New Students (b)	All Students				
		Full-time	Part-time	External	Staff	Total
Higher degree candidates	226	575	429	79	72	1 155
Master's qualifying candidates	4	—	6	—	—	6
Undergraduate, diploma and miscellaneous students:						
Agricultural Science ..	59	167	32	—	—	199
Architecture	80	233	18	—	—	251
Arts	724	1 316	900	14	—	2 230
Dentistry	31	174	21	—	—	195
Economics	219	438	377	—	—	815
Engineering	182	584	61	—	—	645
Environmental Studies	6	6	—	—	—	6
Law	154	631	125	—	—	756
Mathematical Sciences	181	437	156	—	—	593
Medicine	106	697	5	—	—	702
Music	43	162	15	—	—	177
Science	368	846	208	—	—	1 054
Misc. (SAIT) (c)	82	—	152	—	—	152
Elder Conservatorium (d)	75	—	194	—	—	194
Visiting students (e) ..	116	4	176	—	—	180
Total	2 656	6 270	2 875	93	72	9 310

(a) Each student is counted once only; in the category appropriate to his principal course.

(b) Figures for undergraduate courses include students who have transferred from another undergraduate course either in this or another university, or who are commencing a second course.

(c) Students enrolled in subjects as part of a diploma course at the South Australian Institute of Technology.

(d) Students not also enrolled for degree or diploma subjects.

(e) Students enrolled at another university, who may subsequently qualify for a degree of that other university, but who are undertaking part of their degree work at the University of Adelaide.

Waite Agricultural Research Institute

The Waite Institute was established as a research institute at Urrbrae in 1924, through the generous benefaction of Mr Peter Waite. Upon his death in 1922 Peter Waite endowed the University with the properties of Urrbrae, Claremont and Netherby (about 120 hectares) with Urrbrae House and ancillary buildings and also a trust fund of \$120 000. A further 40 hectares has been added by purchase to the original gift, bringing the total to about 160 hectares at the Waite campus. Following the death of Mrs Dorothy Mortlock in 1979, the Institute received a property of 3 864 hectares at Mintaro near Clare through the generosity of the late Mr J. A. T. Mortlock. The land is at present being improved and will be operated to support the Institute's research programs. Part of Mr Mortlock's land was made available in 1965 and was used to establish the Mortlock Experiment Station of 275 hectares. The Charlick Experiment Station of 112 hectares near Strathalbyn was established in 1978. Its purchase was made possible by a bequest from the late Mr Claude S. Charlick.

Under the provisions of the Agricultural Education Act of 1927 the functions of a teaching faculty of agricultural science were added to the Institute's research functions. The Institute at present has about 100 undergraduate and 90 postgraduate students. The latter undertake either Master's or Doctor of Philosophy studies, and about one third of their number is from overseas. In recent years, postgraduate students have been drawn from more than thirty countries.

There are seven departments at the Waite Institute, spanning the spectrum of the agricultural sciences. They are agricultural biochemistry, agronomy, animal physiology, entomology, plant pathology, plant physiology and soil science. There is also a biometry section. The Institute has a distinguished research record and a world-wide reputation. Some of its more notable achievements have been in the field of soil trace element deficiencies, specifically of manganese, copper and molybdenum, which led to the development of about 50 000 square kilometres of previously unproductive country on the Yorke Peninsula, Ninety Mile Desert and the south-west of Western Australia. The work on manganese was the fore-runner of trace element work throughout the world. More recently, a method of controlling the cancerous disease of stone fruits, crown gall, by biological means has been developed. This is expected to result in the elimination of losses which at present amount to about \$150 million throughout the world. The barley variety 'Clipper' which was released by the Institute several years ago is the most widely grown variety in Australia and is grown in several other countries. It is estimated to have added \$40 million a year to the value of Australia's barley crops.

Amongst the many research programs currently being undertaken at the Institute are breeding programs for wheat, barley and triticale, investigations of mechanisms of drought tolerance in cereals, soil chemistry, biological control of insects, pasture management, beef cattle metabolism, investigations into plant viruses, animal reproduction and many other projects of vital importance to agriculture in Australia and overseas.

In addition to the Waite Agricultural Research Institute, the CSIRO Divisions of Soils, Horticulture, and Mathematics and Statistics and the Australian Wine Research Institute are located on the Waite Institute campus, making it one of the most important centres of research in Australia.

The Library

The central library of the University is named the Barr Smith Library in honour of its original benefactor, Robert Barr Smith, and his son, Tom Elder Barr Smith. During his life Robert Barr Smith provided funds for the purchase of books, and members of his

family gave the University a substantial donation in 1920 to his memory. Tom Elder Barr Smith provided the first part of the present building in 1930 at a cost of nearly \$70 000.

In addition to the central library there are branch libraries for law and medicine and a separate library exists at the Waite Agricultural Research Institute. Borrowing facilities are available to University staff and students, and to graduates of approved institutions.

Holdings at the end of 1982 were approximately: central library 943 833 volumes; law library 75 344; medical library 102 710; and the Waite Agricultural Research Institute library 39 178 volumes; making total holdings equivalent to 1 180 105 volumes, including items in microform equivalent to 132 574 volumes.

During 1982 the library issued 340 487 extramural loans to students, staff and graduates; 34 467 to other libraries in South Australia; and 6 415 to libraries in other States and countries. It received 3 800 loans from other libraries. Accessions totalled 44 292 volumes, including 200 musical works in sheets and items in microform equivalent to 7 691 volumes; while withdrawals numbered 749 volumes. Serial titles regularly received numbered 18 735.

Elder Conservatorium of Music

Adelaide was the first university in Australia to establish a Chair of Music (1884) and a Conservatorium of Music (1897). In addition to full degree courses in practical studies, musicology and composition, the Elder Conservatorium of Music provides instruction in the various branches of musical performance for part-time students.

Concert experience for students is provided through regular informal concerts internal to the Conservatorium and by occasional public concerts. The University Music Society, each year, arranges a series of night concerts, by members of the staff, who also provide a large number of free public concerts and recitals during the year.

In 1982 there were 177 students proceeding to the degree of Bachelor of Music, including Honours students and 5 students proceeding to higher degrees. In addition 194 students were taking single subject practical studies.

University of Adelaide Theatre Guild

The Guild has had a continuous existence since it was founded in 1938. It was granted formal recognition as a society associated with the University in 1962, and in 1972 it was given administrative facilities within the University and its President recognised as a University Officer.

Membership of the Guild is open to graduates, undergraduates, and to the general public. All members have full voting rights at any general meeting of the Guild including the election of seven of the thirteen members of the Board of Management. The President of the Guild, who will be the Chief Executive Officer and Chairman of the Board, shall be a full-time member of the academic or professional staff of the University or of equivalent status.

Finance

Details of income and expenditure for the period 1977 to 1981 are shown in the following table.

The University of Adelaide, Finance ^(a)

Particulars	1977	1978	1979	1980	1981
	\$'000				
Income for capital purposes:					
Commonwealth Government	3 917	5 982	3 289	2 695	2 779
Income for other purposes:					
Commonwealth Government	38 753	41 071	44 306	48 581	54 034
State Government	288	382	491	587	655
Student fees	143	138	203	177	166
Other	3 094	2 817	3 508	3 199	4 020
Total income	46 195	50 390	51 797	55 239	61 654
Expenditure:					
Teaching and research	32 171	33 997	37 134	40 175	45 101
Administration	2 711	2 995	3 410	3 401	3 926
Libraries	2 666	3 027	3 384	3 593	4 013
Buildings, premises, grounds	6 455	7 120	4 778	3 746	4 134
Other	2 084	1 969	2 171	2 246	2 632
Total expenditure	46 087	49 108	50 877	53 161	59 806

(a) Includes Waite Agricultural Research Institute.

Residential Colleges

The residential colleges are independent bodies affiliated with the University. Three of the four colleges for undergraduates were founded by churches but impose no denominational restrictions on admission; the fourth undergraduate college and the college for postgraduate students have no denominational affiliation. All are situated in North Adelaide within easy walking distance of the University.

Their names, church affiliations, years of founding and residential capacities are:

St Mark's	Anglican Church of		
	Australia	1925	127 students, 15 tutors;
St Ann's	Non-denominational	1947	135 students, 8 tutors;
Aquinas	Catholic	1948	107 students, 8 tutors;
Lincoln	Uniting Church	1952	173 students, 10 tutors;
Kathleen Lumley ...	Non-denominational		
	(postgraduate)	1968	60 students.

St Mark's until 1980 confined its membership to men; in 1973 St Ann's and Lincoln and in 1974 Aquinas made their facilities available to both men and women. Kathleen Lumley has been co-residential since its foundation.

Other Special Features

Unique features of the University's work include its extensive research into gene technology which is conducted by the University's Australian Centre for Gene Technology (one of the ten Centres of Excellence throughout Australia), studies in Aboriginal music conducted by the Centre for Aboriginal Studies in Music, Antarctic research undertaken by the Mawson Institute for Antarctic Research, postgraduate research into women's studies co-ordinated by the Centre for Women's Studies, arid zone research undertaken both at the University and its Middleback Field Centre, study and research of Asian politics, history and culture by the Centre for Asian Studies, and further

education programs conducted through the University's radio station 5UV and the Department for Continuing Education.

THE FLINDERS UNIVERSITY OF SOUTH AUSTRALIA

During 1958 when the University of Adelaide began to plan two major new buildings on its existing 13 hectare site it became apparent that further expansion would have to take place elsewhere.

Early in 1961 the South Australian Government indicated that it would make available to the University of Adelaide an area at Bedford Park, of 150 hectares, situated about eleven kilometres from the centre of Adelaide in the foothills of the Mount Lofty Ranges. Consequently the University of Adelaide made a submission for financial support to the Australian Universities Commission in 1962, which gave approval for the planning of Bedford Park. The institution became known as 'The University of Adelaide at Bedford Park'. Towards the end of 1965 the South Australian Government decided to make the University of Adelaide at Bedford Park a fully autonomous university under the name 'The Flinders University of South Australia', after the great explorer and hydrographer, Matthew Flinders. A more detailed history of the Flinders University was included on pages 163-8 of the *South Australian Year Book* 1967.

The Flinders University of South Australia Act came into force on 1 July 1966. The Act places the whole management of the University in the hands of a council with powers to make statutes and regulations subject to the approval of Convocation which comprises the graduates of the University, graduates of other universities who have been awarded a diploma of the University, and full-time members of the staff.

The Council comprises thirty-one members: the Chancellor; the Vice-Chancellor; the President of the Students Association; five members of the Parliament of South Australia; three members appointed by the Governor; eight members of the academic staff elected by the academic staff; one member of the ancillary staff elected by the ancillary staff; four persons elected by Convocation; one postgraduate student elected by the postgraduate students; three undergraduate students elected by the undergraduate students; and not more than three other members co-opted by the Council.

Academic Organisation

The academic organisation of the University is based on 'Schools' instead of faculties or departments. The School is the basic academic and administrative unit and one of the academic staff of each school is appointed to act as the Chairman of the School for a period of three years.

The Flinders University of South Australia

Full-time Staff Establishment, 1 May 1982

Schools:	
Academic (teaching and research)	334
Technical	282
Clerical	98
Academic services:	
Library;	
Professional	21
Other	45
Computing;	
Professional	5
Other	3

The Flinders University of South Australia
Full-time Staff Establishment, 1 May 1982 (continued)

Registry:	
Senior administrative	21
Clerical	75
Caretaking, grounds and maintenance	66
Student services:	
Professional	7
Other	2
Independent operations	6
Total	965

At present there are eight schools: humanities; social sciences; mathematical sciences; physical sciences; biological sciences; medicine; earth sciences; and education. The School of Biological Sciences is an integrated one; there are no divisions into the traditional disciplines of botany, zoology, microbiology, etc., the emphasis being on the manner in which the teaching and research are organised, e.g. cellular biology, molecular biology. The remaining schools have a total of twenty-six disciplines established within them.

In 1980 the University established a Board of Studies in Theology.

Admission to the University

Normally students must have qualified for matriculation by passing the Matriculation Examination of the Public Examinations Board in a prescribed manner, and must be selected by the University. Flinders University, together with the other tertiary institutions in South Australia, have established the South Australian Tertiary Admissions Centre to which all students wishing to enrol in any of the institutions must apply for admission. Admission is subject to selection within the quota and is based on academic merit.

Details of enrolments are shown in the following two tables.

The Flinders University of South Australia: Enrolments, 1982

Course	Commencing Students	All Students		
		Full-time	Part-time	Total
Arts	504	802	631	1 433
Sciences	214	447	79	526
Economics	131	226	109	335
Education	10	25	2	27
Physical Education	16	50	17	67
Social Work	1	1	10	11
Medicine	57	332	—	332
Theology	48	58	51	109
Higher degrees	129	141	264	405
Master qualifying	16	8	16	24
Postgraduate diploma	131	117	116	233
Postgraduate bachelor	57	81	47	128
Miscellaneous	110	7	152	159
Total	1 424	2 295	1 494	3 789

The Flinders University of South Australia, Enrolments

Course	1979	1980	1981	1982
Undergraduate bachelor degrees:				
Arts	1 683	1 557	1 421	1 433
Science	440	483	508	526
Economics	329	344	356	335
Education	76	37	30	27
Physical Education	113	93	71	67
Medicine	341	348	343	332
Social Work	14	18	11	11
Theology(a)	—	54	75	109
Postgraduate bachelor and diploma:				
Bachelor Social Administration	86	91	90	91
Bachelor Special Education	34	36	37	27
Diploma Education	60	53	45	58
Diploma Education (Primary)	15	7	3	—
Diploma Social Sciences	33	41	34	20
Diploma Applied Psychology	41	39	40	32
Diploma Community Child Health(b)	—	—	—	4
Diploma Nutrition and Dietetics	12	12	11	13
Diploma Accounting(b)	74	91	100	103
Diploma Urban and Social Planning(c)	10	2	6	3
Higher degrees (including master qualifying) ...	418	401	416	429
Miscellaneous	167	143	163	159
Total	3 946	3 850	3 760	3 789

(a) Commenced in 1980. (b) Commenced in 1982. (c) Commenced in 1979.

Degrees Offered

The University offers the following degrees; Bachelor of Arts, Bachelor of Economics, Bachelor of Education (Primary), Bachelor of Medicine and Bachelor of Surgery, Bachelor of Science, Bachelor of Social Work, Bachelor of Social Administration, Bachelor of Special Education, Bachelor of Theology, Master of Arts, Master of Arts (Drama), Master of Economics, Master of Education, Master of Educational Administration, Master of Psychology, Master of Social Administration, Master of Science, Master of Theology, Doctor of Philosophy, Doctor of Letters and Doctor of Science. In addition there are postgraduate diplomas in Accounting, Applied Psychology, Community Child Health, Humanities, Social Sciences, Education (Secondary), Nutrition and Dietetics, and Urban and Social Planning.

The Library

The acquisition of books for the Library commenced in 1963 when the first Library staff were appointed. By the time teaching began in 1966 a collection of some 60 000 volumes had been assembled. At the end of 1982 the collection totalled 530 000 volumes and approximately 30 000 volumes are being added each year; 7 470 periodicals are currently received. Emphasis is placed on the acquisition of material to support the current teaching and research programs of the University. Loans to staff and students during 1982 exceeded 100 000. The Medical Library, situated in the Flinders Medical Centre, is a branch of the main Library and holds about 35 000 volumes on medicine and allied subjects for University and Medical Centre users.

The Flinders Institute for Atmospheric and Marine Sciences

The Flinders Institute for Atmospheric and Marine Sciences was established by the Council to further the University's interest in physical and environmental aspects of the air and the sea.

Academic staff and postgraduate students of the University who seek to conduct their research within the framework of the Institute's operations may be considered as members. As an association of scientists with related research interests, the Institute is able to undertake a relatively wide range of investigations, the locations of which range from Antarctica to Australia's north-west continental shelf.

The Institute ensures that the University's academic and technological capabilities in atmospheric and marine sciences are made known to such government instrumentalities and private sectors of industry as may make use of them to the mutual benefit of both the outside group and the University. As such, in many areas of the environmental and earth sciences, the Institute is able to play an active role in introducing senior undergraduate students and postgraduate research scholars to some of the scientific needs of the community. Tidal and specialised meteorological data libraries, instrumental facilities and field stations on the Coorong and Cape du Couedic as well as a series of publications are maintained.

In recent years, the work of the Institute has been extensively supported by, or associated with, the Australian Research Grants Committee, the Australian Marine Sciences and Technologies Advisory Committee, the Commonwealth Department of Environment, the Bureau of Meteorology, the Antarctic Division of the Department of Science, Department of Defence, the South Australian Housing Trust, the Engineering and Water Supply Department, the US National Centre for Atmospheric Research, the US National Science Foundation, Swissteco Radiation Instruments, the Hydrographic Service RAN, the Division of National Mapping, Iceberg Transport International Ltd and the University's own research budget.

Flinders University Institute for Energy Studies

The Institute for Energy Studies at Flinders University has a membership extending through the disciplines of biology, chemistry, physics, geography, mathematics and meteorology. The aim of the Institute is to explore alternative methods of energy production which are non-polluting. The projects under investigation are concerned with collection, storage and conversion of various forms of solar energy, and aspects of fusion physics. The Institute publishes reports on significant developments by its research associates.

National Institute of Labour Studies Incorporated

The National Institute of Labour Studies in the School of Social Sciences encourages graduate study, research and publication in the areas of industrial relations, labour economics, industrial psychology and sociology, and labour history. It publishes a quarterly review of labour events, *The Australian Bulletin of Labour*, and a working paper series. The Institute is open to membership and at present more than seventy organisations are members.

The Institute is administered by a Board of Governors including persons outside the University. It employs a research staff of five Research Fellows (full-time equivalents), two Research Assistants and a number of secretarial staff. All the funds of the Institute are drawn from sources outside the University. There are a number of Honorary research associates attached to the Institute comprising members of staff of the School of Social Sciences who are active in labour studies and members of staff of some other tertiary institutions in Australia.

The Centre for Research in the New Literatures in English (CRNLE)

In April 1977, Flinders University established, within the School of Humanities, the Centre for Research in the New Literatures in English (CRNLE).

The primary aim of the CRNLE is promotion of research in its field by providing a specialist library collection; developing and supervising postgraduate research programs; facilitating more effective teaching of undergraduate courses; and sponsoring research investigations that involve cultural and social questions and are based on cross-cultural, comparative and inter-disciplinary approaches to the study of the literatures and societies concerned.

Membership of CRNLE is open to academic staff, research assistants, graduate students, visiting scholars who are working in conjunction with the Centre, writers and other qualified persons. The Centre publishes a twice-yearly Journal (CRNLE Reviews Journal), a Newsletter, books, and an Essays and Monograph series.

The Centre for Applied Social and Survey Research (CASSR)

The Centre for Applied Social and Survey Research (CASSR) was established by the University Council in 1977 to promote applied social and survey research, disseminate the findings of research through the publication of technical research papers and monographs and the holding of seminars, workshops and summer schools.

In addition to conducting its own research activities and providing a survey research facility for staff and students within the University, CASSR can provide consulting advice to government and private enterprise in a wide range of applied social research fields and conduct sample survey research and data analysis in accordance with the University's outside research contract policy.

CASSR's activities are controlled by a management committee which comprises a director, academic staff of the University, and a number of experts in social research from outside organisations.

Institute for Atomic Studies

The Institute for Atomic Studies was formed in 1976 to act as a focus for the interaction of scientists and graduate students and for the dissemination of reports of research involving the structure and interaction of microscopic quantum systems. Present members, within the disciplines of physics and chemistry, are pursuing fundamental research in the fields of experimental and theoretical atomic collision physics, low and intermediate energy nuclear theory, quantum field theory, statistical physics, electron transport phenomena and quantum and surface chemistry.

Institute for Australasian Geodynamics

In June 1976, the Council of the University approved the formation of the Institute for Australasian Geodynamics. The Institute grew out of the research work undertaken by the geology and geophysics staff members of the School of Earth Sciences since 1972 in various aspects of geodynamics.

The Institute was formed to provide a focus for geodynamic research within the School of Earth Sciences, but has the broader aim of:

- (a) fostering co-operative studies between Australian and Asian scientists on the geodynamic evolution of Australasia;
- (b) facilitating the training of Asian and Australian research scholars in geodynamic aspects peculiar to the region;
- (c) encouraging and co-ordinating specific research projects and the publication of reports; and

- (d) setting up and maintaining a data bank of regional geological and geophysical information.

Centre for Neuroscience

The Centre for Neuroscience was established by the Council of the Flinders University of South Australia to foster the interests in the neurosciences that existed within the Schools of Medicine, Biological Sciences and Social Sciences and in the Flinders Medical Centre. The Centre also acts as a Statewide resource for the neurosciences.

Membership is open to all members of the University who have published in the neurosciences while associate membership is open to students, research assistants and visiting fellows. It is also available to staff of other institutions in Adelaide with interests in the neurosciences. At present there are thirty-five members and seventeen associates.

Cancer Research Unit

The Cancer Research Unit was established in 1977 as a joint development between the School of Medicine and the School of Biological Sciences. Members of both Schools are investigating various aspects of cancer as their major research interest. Interests range from the theoretical (*e.g.*, DNA structure, control of cell proliferation) to the practical (*e.g.*, treatment).

The principal aim in establishing the Unit was to bring together these individual research scientists to promote cross-fertilisation of ideas and to encourage collaborative research projects. An additional aim was to facilitate the acquisition of major items of equipment which could not be justified by a single user but which would be of great value and could be readily justified on the basis of collaborative projects or multi-user access.

The Unit has obtained funds from Research Foundations to purchase and establish a Fluorescent Activated Cell Sorter.

Centre for Development Studies

The Centre for Development Studies was established by the University Council in 1980 to utilise the wide range of professional expertise and experience available to assist both teaching and research on development issues. It is a multi-disciplinary centre whose objectives are (i) to encourage research on development, by providing a forum for inter-disciplinary discussion and collaboration, (ii) to provide the focal point for a graduate program in development studies and (iii) to provide an institutional framework that will facilitate the provision of consultancy and training services to agencies involved in development, and other community-oriented activities.

The Research activities of the Centre will focus on a small number of problem areas which are considered to be directly relevant to the development needs of Third World countries and for which there are already staff members with expertise. The first research group established is concerned with the inter-disciplinary and comparative study of food crisis management.

In the first half of the year a regular Development Studies seminar is held at which papers on related development issues and the research activities of staff and other involved people are discussed. The Centre also sponsors occasional one day conferences on major development issues, designed for interested individuals and groups outside the University.

University Hall

The Flinders University's hall of residence was completed early in 1971. During the academic year it offers accommodation for more than 200 students, mostly in single furnished study bedrooms. In addition some larger areas may be offered as share

accommodation. During University vacations the Hall is available for conferences organised by outside bodies.

Finance

Details of income and expenditure for the period 1978 to 1981 are shown in the following table.

The Flinders University of South Australia, Finance

Particulars	1978	1979	1980	1981
\$'000				
Income for capital purposes:				
Commonwealth Government	183	212	166	171
Income for other purposes:				
Commonwealth Government	19 651	21 200	23 271	27 180
State Government	220	84	213	431
Other	943	1 356	1 400	1 888
Total income	20 997	22 852	25 050	29 670
Expenditure:				
Teaching and research	14 703	15 642	17 427	20 601
Administration	2 485	2 696	2 995	3 233
Libraries	1 496	1 569	1 757	2 025
Buildings, premises, grounds	1 534	1 440	1 454	1 742
Other	962	1 204	1 616	1 837
Total expenditure	21 180	22 551	25 249	29 438

ADVANCED EDUCATION

There are three colleges of advanced education in South Australia offering courses in a wide range of fields. The colleges are the South Australian College of Advanced Education, Roseworthy Agricultural College and the South Australian Institute of Technology.

Further details of college activities are listed below.

SOUTH AUSTRALIAN COLLEGE OF ADVANCED EDUCATION

The South Australian College of Advanced Education was formed on 1 January 1982 by the merger of Adelaide College of the Arts and Education and Hartley, Salisbury and Sturt Colleges of Advanced Education. These Colleges serve as separate sites of the new institution, and had a total enrolment of 11 386 students at 30 April 1981. Courses are offered full-time, part-time and externally.

The City and Underdale Sites (formerly Adelaide College of the Arts and Education) were established in January 1979 by the merger of the former Adelaide and Torrens Colleges of Advanced Education. Adelaide Teachers College, the original teacher training institution in South Australia, was opened on 1 June 1876. It was parent to Western Teachers College which combined with the South Australian School of Art in 1973 to form the then Torrens College of Advanced Education. Adelaide Teachers College became Adelaide College of Advanced Education in 1973. Adelaide College of the Arts and Education was the oldest institution in Australia with an unbroken history devoted to the training of teachers.

The City site is situated in Kintore Avenue, Adelaide, which the former Adelaide Teachers College first occupied in 1927. Undergraduate courses include Interpreting and Translating, Labour Studies, Music, Jazz, Teacher Education (Secondary-Music, Drama, School Librarianship) and Dance. Postgraduate courses are offered in Community Languages, Curriculum Development, Educational Administration, Education, Religious Education, Teacher Librarianship and Jazz Education.

The Underdale site is a modern complex where courses are offered at the undergraduate level in Aboriginal Studies, Art, Design, Home Economics, Training and Development, and Teacher Education (Junior Primary; Primary; Secondary-Art Design, Home Economics, Physical Education, and Technology and Industrial Arts; and Further Education). Postgraduate courses include Aboriginal Studies, Fine Art, Further Education, Home Economics, Reading and Language Education, and Teaching (Technology and Industrial Arts).

Magill site (formerly Hartley College of Advanced Education) was formed by the amalgamation of Murray Park and Kingston Colleges of Advanced Education in 1979. This campus traces its origins to the Kindergarten Training College, established in 1907, and Wattle Park Teachers College (1956).

At the undergraduate level, courses are offered in Teacher Education (Early Childhood Education, Junior Primary and Primary), Business, Communication Studies, Journalism and Liberal Studies. Postgraduate courses include Administrative and Secretarial Studies, Child Development, Education (Early Childhood and Primary) Instructional Use of Computers, Parent Education and Counselling, and Teaching (Primary Reading).

Salisbury site (formerly Salisbury College of Advanced Education) is located on a twenty-eight hectare site approximately twenty kilometres north of Adelaide and was established in 1968 as the Salisbury Teachers College.

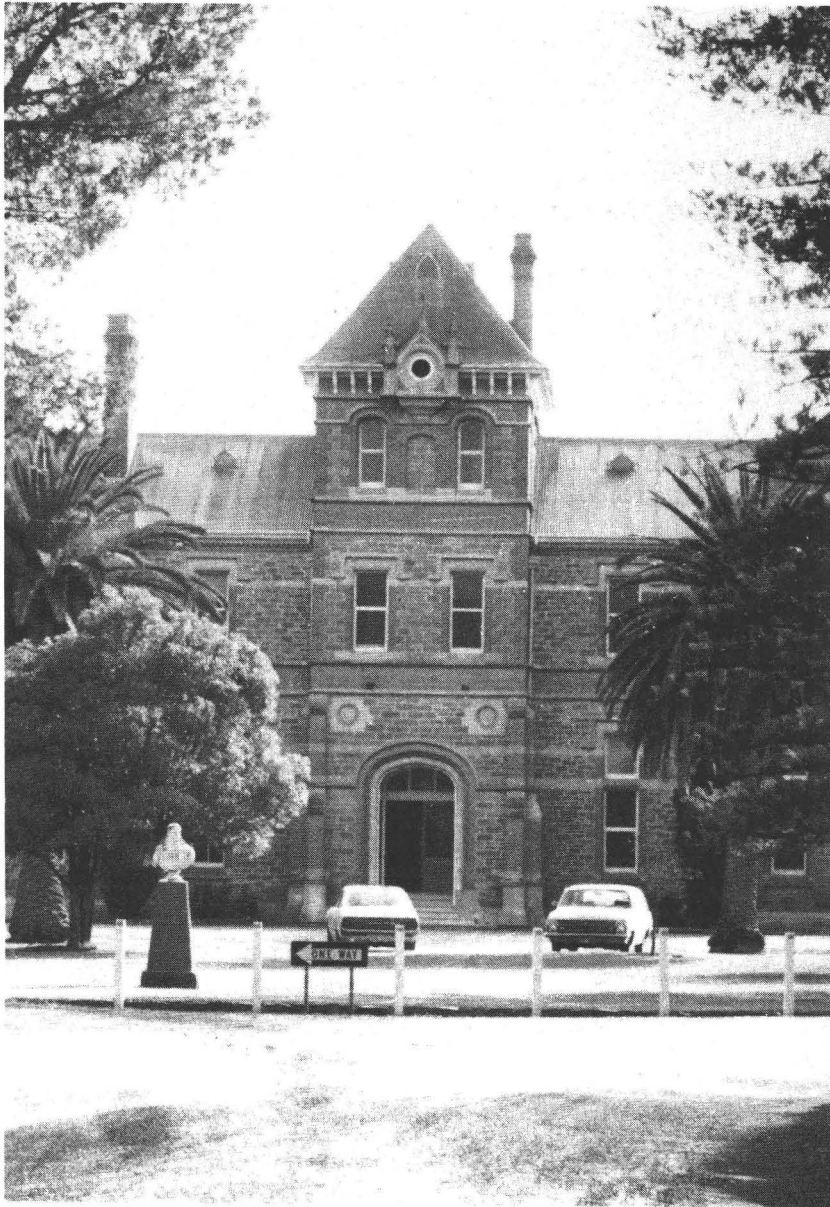
Undergraduate courses are offered in Teacher Education (Junior Primary; Primary; and Secondary), Community Work (Youth), Recreation, and Wildlife and Park Management. Courses offered at the postgraduate level include Curriculum, Educational Technology, Outdoor Education, Reading Education, Recreation, Teaching English as a Second Language, Teaching (Women's Studies, Primary Mathematical Education, and Social Education), and Women's Studies.

Sturt site (formerly Sturt College of Advanced Education) was opened in 1966 as the Bedford Park Teachers College and is sited at Bedford Park. The later introduction of health education programs and of specialist courses for the health professions has established Sturt as a significant centre in South Australia for health studies.

Undergraduate courses are offered in teacher education (junior primary; primary; and upper primary/lower secondary), Speech Pathology, and in both basic and post-basic nursing, including Community Health Nursing, Psychiatric Nursing, Nurse Education and Nursing Management. At the postgraduate level, courses are offered in Community and School, Health Education, Professional Development, Teaching English as a Second Language, and Teaching (Combined Arts).

ROSEWORTHY AGRICULTURAL COLLEGE

Roseworthy Agricultural College, founded in 1883, celebrated 100 years of service to agriculture and land management in 1983. Originally established for experimental and training purposes, it owed its existence to protracted moves in the late 1870s to improve the quality of farming practices in the State, and in particular, to a parliamentary motion moved in 1879 by M.F.P. Basedow, MP, a member of the House of Assembly at that time.



Roseworthy Agricultural College: main building.

John Daniel Custance, a graduate of Cirencester Agricultural College in Britain, was appointed to the post of Departmental Professor of Agriculture, for the purposes of familiarising South Australian farmers with advanced agricultural practices. Custance, who immediately before his appointment to South Australia was an adviser to the Japanese Government, concluded that the establishment of an agricultural college which could teach young men the principles and practices of sound farming was the proper course to take. Acting on this advice, the government purchased land recommended by Custance, near Roseworthy, in typical mallee country suited mainly to sheep, beef and cereal growing enterprises. The main building, which originally housed the sleeping quarters, lecture rooms, laboratory, library, catering facilities and administration, was begun in 1883 by the company of Sara and Dunstan. Fifteen students were admitted to a two year full-time, residential diploma course in 1885. The course was later expanded to a duration of three years.

On the research side, considerable attention was devoted to trials of various crops, pastures and fertilisers to assess their suitability for South Australia, where concern had been expressed about the declining grain harvests from land which had been progressively overworked by farmers whose knowledge of sound agricultural practices, even within the limits of the conventional wisdom of the day, was often lacking. The results of experiments, and general advice, was passed on not only to students in training, but also to farmers through meetings of local Agricultural Bureaux, which were district-centred organisations of farmers for the discussion of problems and the sharing of information. This process, now known as agricultural extension, appeared often to be a somewhat painful one for the early Professors of Agriculture, since some farmers did not welcome the intrusion of substantive theory into the realms of established practice.

Roseworthy also gave attention to the needs of the wine and grape industry at an early stage. Professor A.J. Perkins was appointed Government Viticulturist in 1892, and began a program of lectures to grapegrowers around the state. He addressed winemakers, was a major architect of the quarantine laws which prevented the vine pest *phylloxera* from entering South Australia, sought advice overseas for the purposes of advancing the dried grape industry, and engaged in teaching students at the College the skills of viticulture and winemaking as part of their agriculture training.

The general training in agriculture, incorporating all or most of the common agricultural pursuits in the State, continued in this same general way until 1936, when a separate course in oenology, the science of winemaking, was introduced. This change was followed in the late 1940s by a short-lived diploma in dairying. By this time, the College, which had produced some significant research results (following the original research into superphosphate and fertilisers by Custance and his successor William Lowrie) in the fields of plant breeding and animal husbandry, with a demonstration in the 1930s and 1940s of the importance of an animal and pasture phase in the ley farming system, had survived a major crisis in 1932, when it was in some danger of being closed because of certain perceived inefficiencies. The College also developed during the 1960s a new Diploma known as the Roseworthy Diploma in Agricultural Technology, which enabled students to complete a fourth year in which they could acquire additional skills in Farm Management, Specific Industry Experience, and Social Science and Extension.

Until the passage of the Roseworthy Agricultural College Act in 1973, the College had been in effect a Department of the South Australian Government. In 1974, when the Act was proclaimed, it became a College of Advanced Education, funded by the Federal Government through a State tertiary education body, initially designated as the Board of Advanced Education, but known, after modification in recent times, as the Tertiary Education Authority of South Australia (TEASA). The College greatly expanded its range of courses from 1973, and at present offers seven undergraduate and three

graduate courses, covering the fields of Agriculture, Oenology, Wine Marketing, and Natural Resources, the latter field offering training in the management of land beyond the narrower confines of traditional agricultural courses, and includes detailed attention to non-agricultural land, vegetation and wildlife.

Another new development occurred in the mid-1970s, when Roseworthy offered a Graduate Diploma in Agriculture (Dryland Farming Systems) for graduates from countries in the Mediterranean region and North Africa, whose climates are similar to that of South Australia. The course, for which students were selected through the Food and Agriculture Organisation of the United Nations, ran for five years, 1976 to 1980, and served forty-eight students. In this way, the College played its part in the general effort made by South Australia to provide agricultural expertise and technology for countries generally in the Mediterranean area or with a Mediterranean climate.

The College continues to carry out research work, as allowed under the Act, in all the fields in which it offers courses, including plant breeding, viticulture, wool, sheep breeding, pest management, soil management, energy crops, agricultural machinery, pasture management, animal nutrition, wildlife management and some studies into rural society and agricultural history. A small museum of agriculture is being developed as a further extension of the services the College has provided over its century of existence.

The College is celebrating its centenary with a number of major events, including symposia on Trees in the Rural Environment, Advances in Grape and Wine Technology, and Agriculture—Exploitive or Permanent?; an old-style country fair; a centenary oration; a conference on agricultural education; a thanksgiving service and a gathering of past and present staff and students.

There were also gatherings of staff and students in 1982 as events leading up to the centenary year. A substantial volume entitled *The Personal Letterbooks of Professor A.J. Perkins, Government Viticulturist in South Australia 1890-1901* was released during 1982, and two other works, *The House on the Hill* and *Roseworthy Agricultural College: A Century of Service* were published during 1983, all as part of the centenary celebrations. There has also been produced a variety of centenary souvenirs.

The traditional Roseworthy College *Open Day*, familiar to thousands of visitors over many years, was divided into two quite distinct days for the first time in 1983, when a *College on Display Day* in May for inspection of the College's educational and research programs was held, as well as the usual October Open Day. Details of the College's work may be found in the Annual Reports of the South Australian Department of Agriculture, or the Annual Reports of Roseworthy Agricultural College, held variously by the State Library and the Roseworthy Agricultural College Library. Further material is available in Black, A.W., *Organisational Genesis and Development: A Study of Australian Agricultural Colleges* (University of Queensland Press, 1976) and Daniels, J.G. (Ed.), *Roseworthy Agricultural College: A Century of Service* (Roseworthy Agricultural College, 1983).

SOUTH AUSTRALIAN INSTITUTE OF TECHNOLOGY

The South Australian Institute of Technology, which adopted its present name in 1960, was established in 1889 as the South Australian School of Mines and Industries.

After its inception there was co-operation between the University of Adelaide and the School, and in 1903 joint engineering courses were established. An important development in the history of technical education came in 1957 with an agreement between these institutions whereby certain courses of study at the School would lead to the degree of Bachelor of Technology at the University. Other degree courses were subsequently introduced.

Consequent upon government policy aimed at the independent development of colleges of advanced education the last degree students under the joint arrangement with the University of Adelaide graduated in 1976. The South Australian Institute of Technology Act, revised in 1972, empowered the Institute to grant its own degrees. The first of these awards was made at the 1973 graduation ceremony.

The Institute maintains a close relationship with the Education Department and the Department of Technical and Further Education, and since 1959 there has been a progressive transfer of control of certain activities. Classes up to and including Matriculation level and all trade classes were transferred to the control of the Education Department, as was the Adelaide Technical High School in September 1963.

A number of technician courses have progressively been transferred from the Institute to the Department of Technical and Further Education and this has enabled the Institute to expand its work in the professional and more advanced semi-professional fields. However, some courses, not approved for awards in advanced education by the Australian Commission on Advanced Education but which lead to a certificate awarded by the South Australian Technician Certificate Board, will continue to be offered.

In addition to its campuses at North Terrace, City, and The Levels (approximately thirteen kilometres north of the city), the Institute operates a campus at Whyalla teaching at both professional and semi-professional levels. In 1982 the Institute taught approximately 1 100 subjects.

The Institute is administered by a Council which has complete authority within the limits of the finance placed at its disposal and for which it is responsible annually to Parliament.

A wide range of courses and subjects to various levels is offered. All twenty-four of the professional courses presented by the Institute have been accredited by the Australian Council on Awards in Advanced Education for the award of Institute degrees or diplomas. The Institute offers a Masters' degree in Applied Science (Pharmacy), a Master of Business Administration degree and a Masters' degree (Research) which is available in seventeen areas. There are also twenty-eight accredited graduate diploma courses including a General Graduate Diploma offering programs in Applied Science and Engineering.

For a number of years the Institute has offered courses which lead by various periods of part-time study to a level of qualification below that of the full professional. These courses provide for those employed in the broad area between the tradesman and the professional. In addition to seven Technician Certificate courses, the Institute also offers thirteen Associate Diploma courses which may be entered after completion of a Technician Certificate or twelve years of schooling. Degree, associate diploma and certificate courses applicable to local needs are conducted at the Institute's Whyalla campus.

The following table shows the details of students and staff for the period 1978 to 1982.

South Australian Institute of Technology, Students and Staff

Particulars	1978	1979	1980	1981	1982
Students:					
Individual enrolments	6 016	5 944	6 053	6 304	6 604
Subject enrolments	24 361	23 808	23 581	25 256	28 287
Full-time teaching staff	340	337	328	326	320
Part-time teaching staff	568	567	559	603	638

The Library is situated at each of the three campuses of the Institute. The total holding

at the end of 1982 was 228 000 volumes with some 2 700 periodical titles being received during the year. Loans to staff and students exceeded 144 000 in 1982.

Emphasis is placed on the acquisition of material in the applied sciences, technology and social sciences to support the Institute's teaching program. Collections of audio-visual materials including films, microforms, maps, prints, records and slides are being developed.

Details of income and expenditure for the period 1977 to 1981 are shown in the following table.

South Australian Institute of Technology, Finance

Particulars	1977	1978	1979	1980	1981
	\$'000				
Income for capital purposes:					
Commonwealth Government	763	1 704	623	854	1 003
Income for other purposes:					
Commonwealth Government	14 156	15 257	16 002	17 587	20 436
Other	216	273	253	313	494
Total income	15 135	17 234	16 878	18 754	21 933
Expenditure:					
Capital (land, buildings, plant, furniture and equipment)	898	1 871	751	799	1 079
Revenue	14 324	15 399	16 277	18 237	20 288
Total expenditure	15 222	17 270	17 028	19 036	21 367

The following table shows for all Colleges of Advanced Education in South Australia, the number of students in various course levels and fields of study from 1980 to 1982.

**Colleges of Advanced Education, Students by Course Level and Field of Study
South Australia**

Course	1980	1981	1982
Master Degree:			
Applied Science	9	9	11
Building, Surveying and Architecture	—	2	4
Commerce and Business	23	47	63
Engineering and Technology	11	15	17
Liberal studies	—	3	8
Para-medical	23	24	23
Total	66	100	126
Graduate Diploma:			
Agriculture	18	22	20
Applied Science	111	171	197
Art and Design	33	39	23
Building, Surveying and Architecture	25	29	24

**Colleges of Advanced Education, Students by Course Level and Field of Study
South Australia (continued)**

Course	1980	1981	1982
Graduate Diploma (continued):			
Commerce and Business	394	393	380
Engineering and Technology	28	45	40
Liberal Studies	701	1 134	1 280
Music	8	33	49
Para-medical	41	58	73
Teacher Education	625	461	201
Total	1 984	2 385	2 287
Bachelor Degree:			
Agriculture	73	77	72
Applied Science	368	384	456
Art and Design	556	672	785
Building, Surveying and Architecture	284	229	255
Commerce and Business	1 248	1 310	1 503
Engineering and Technology	687	781	875
Liberal Studies	791	831	1 461
Music	113	149	136
Para-medical	627	606	634
Teacher Education	2 352	2 207	1 857
Total	7 099	7 246	8 034
Diploma:			
Agriculture	108	101	97
Applied Science	50	70	60
Art and Design	48	27	3
Commerce and Business	41	26	—
Liberal Studies	105	154	—
Para-medical	439	537	637
Teacher Education	4 228	3 697	2 710
Total	5 019	4 612	3 507
Associate Diploma:			
Agriculture	185	232	247
Applied Science	95	110	149
Art and Design	195	202	196
Building, Surveying and Architecture	184	181	159
Commerce and Business Studies	435	563	551
Engineering and Technology	282	283	349
Liberal Studies	758	767	767
Music	6	35	23
Para-medical	201	159	158
Teacher Education	87	81	109
Total	2 428	2 613	2 708
Miscellaneous:	380	602	369
All Courses:			
Agriculture	384	432	436
Applied Science	633	744	873
Art and Design	832	940	1 007
Building, Surveying and Architecture	493	441	442
Commerce and Business Studies	2 141	2 339	2 497

**Colleges of Advanced Education, Students by Course Level and Field of Study
South Australia (continued)**

Course	1980	1981	1982
All Courses (continued):			
Engineering and Technology	1 008	1 124	1 281
Liberal Studies	2 355	2 889	3 516
Music	127	217	208
Para-medical	1 331	1 384	1 525
Teacher Education	7 292	6 446	4 877
Miscellaneous	380	602	369
Total	16 976	17 558	17 031

FURTHER EDUCATION

The Department of Technical and Further Education is responsible for a wide range of post-secondary educational activities conducted by community colleges and colleges of further education in all areas of the State.

Much of the educational development is directed towards an improvement in vocational competence. This includes the provision of courses for the employment sectors of industry, commerce and government. These courses are provided at many levels from basic trade (apprentice) to post-trade certificate, technician, para-professional and to some extent diploma level. Also associated with this vocational orientation are preparatory or general education courses.

The Department also caters for continuing education for people of all ages by providing a wide variety of general, academic, craft, art, cultural, personal development and general interest courses. The Department offers more than 1 800 educational programs involving about 2 000 subjects for over 120 000 students throughout South Australia.

The following table shows the range of educational activities conducted by the Department during 1981 and 1982, and the actual student hours involved.

Further Education: Distribution of Educational Activities, South Australia

TAFE Stream	Actual Student Hours			
	1981		1982	
	No.	Percentage of Total	No.	Percentage of Total
Degree and diploma	20 361	0.2	15 386	0.2
Technician, certificate and post-trade ...	3 608 877	32.3	3 441 847	31.8
Basic trade or apprenticeship	2 396 570	21.5	2 426 246	22.4
All other skilled trade and vocational ...	812 550	7.3	1 479 738	13.7
Preparatory and general education	3 038 018	27.1	2 397 618	22.2
General interest, enrichment and improvement	1 298 522	11.6	1 049 524	9.7
Total	11 174 898	100.0	10 810 359	100.0

The following table shows staff in community and further education colleges.

Further Education: Staffing, South Australia

Staff	1980	1981	1982
Full-time teaching	1 394	1 538	1 414
Part-time teaching(a)	3 641	3 488	3 243
Non-teaching (ancillary)	771	777	789
Total	5 806	5 803	5 446

(a) The large number of part-time teachers in each year reflects the Department's policy to have teaching staff who are currently involved in activities in commerce, industry and government, and to provide courses for groups, particularly in country centres, where full-time staff are not warranted.

The following table shows the number of subjects and course enrolments for the years 1980 to 1982.

Further Education: Enrolments, South Australia

TAFE Stream	1980	1981	1982
SUBJECT ENROLMENTS			
Degree and diploma	528	552	415
Technician, certificate and post-trade	59 977	64 323	64 917
Basic trade or apprenticeship	22 489	22 342	23 561
All other skilled trade and vocational	31 180	29 336	34 657
Preparatory and general education	33 178	45 687	51 192
General interest, enrichment and improvement	52 307	56 430	49 661
Total	199 659	218 670	224 403
COURSE ENROLMENTS(a)			
Degree and diploma	339	356	236
Technician, certificate and post-trade	31 477	33 695	34 587
Basic trade or apprenticeship	9 905	9 448	9 703
All other skilled trade and vocational	28 445	25 405	27 619
Preparatory and general education	27 811	38 152	46 205
General interest, enrichment and improvement	52 270	56 384	49 657
Total	149 437	163 440	168 007

(a) There is no reconciliation for multi-stream enrolments.

Teaching Methods

The Department provides full-time, part-time or correspondence studies in a large number of courses. Special arrangements are made for country apprentices. Correspondence students are also able to attend community and further education colleges for supervised study.

An integrated training approach to vocational education continues to develop in many colleges. The more traditional divisions of technical courses into theory, drawing and practical plus on the job experience are being replaced by integrated course work on a project basis.

Many colleges produce and use a wide range of learning materials. These materials include slide and overhead transparencies, video tapes, and audio tapes as well as multi-media packages and are made available for internal and external students.

The Educational Multi-Media and Print Production branch of the Open College of Further Education, provides a State-wide service in the production of learning materials and their usage. Part of this service is the production of a number of video programs for general distribution and educational television service for a number of teachers.

In college library/resource centres there are now holdings of books, periodicals, sound and video tapes, slides and transparencies exceeding 250 000 items. The appointment of lecturers (resource centre) in many colleges enhances the use of the resource centre as an important part of the learning process.

Administration

Community colleges and colleges of further education function as semi-autonomous units in a Departmental network.

The Operations Division is responsible for translating established policies into operational programs particularly in the areas of curriculum, staff training and development. The Resources Division services all areas of the Department with emphasis upon research, building, educational resources, administration, finance and clerical services.

Current and Future Developments

The major areas of change and emphasis include the following inter-related developments:

- the continuing development of the community college, both conceptually and physically;
- the further development of general studies in colleges which were predominantly technical by tradition, with the emphasis on preparatory, remedial and bridging courses;
- the development of educational programs to aid young people in the transition from school to work;
- the adoption of the 'open college' approach to education so as to reach a broader sample of the South Australian population at the post-secondary level;
- greater use of media in the teaching-learning situation in conjunction with the planned development of library/resource centres;
- co-operation and co-ordination in curriculum matters with other post-secondary institutions, and increased community involvement in educational planning.

Workers' Educational Association of South Australia

The Workers' Educational Association of South Australia Incorporated (WEA) was established in 1913. Originally patterned on the English WEA, it is a voluntary adult education organisation which works in close co-operation with other adult education organisations and the trade union movement.

Activities it organises include a comprehensive day and evening class program, postal courses for trade unionists throughout Australia, trade union, credit union and industrial democracy training in South Australia. It possesses an adult education centre in the city. Courses are offered at the University of Adelaide, the Flinders University of South Australia, the South Australian Institute of Technology, many colleges of advanced education, high schools and other public institutions.

In 1982 there were 1 128 classes with a total enrolment of 24 578 students organised by the WEA and a further nineteen postal courses with an enrolment of 1 400. Since 1973 a program of trade union education has been developed with the aid of a State Government grant. Courses have been provided on worker participation concepts and skills for union officials and for employees of several government departments. The WEA's union education office also provides training and education programs for the credit union

movement in South Australia. During 1982, the union education office conducted thirty courses for 527 students in the fields of trade unionism and credit unions. Seminars and Publications Section organised four conferences on national, political, social and cultural problems which were attended by 567 persons. The Proceedings of the National Health Conference were published.

University of Adelaide: Department of Continuing Education

The University initiated adult education classes in 1917 under a Department of Tutorial Classes. A Department of Adult Education was established in 1957 and was renamed the Department of Continuing Education in 1977.

The Department provides courses and schools in a range of subjects for members of the general public and arranges seminars on issues of social and political concern. It has a publications program based on proceedings of the schools and seminars. The Department also arranges courses for the continuing education of professional people.

In June 1972 the University opened an educational radio station, on 1 630Hz, under the call sign VLSUV. Established by private donation of \$100 000 the station is administered by the Department of Continuing Education and costs are met by the University and by listeners' donations and subscriptions. Since its opening the station has provided structured courses for professional people and the general public.

Since 1975 the Station has operated on the MW band under a new experimental broadcasting licence with the call sign 5UV. Under the new arrangements hours of broadcasting were doubled to approximately 100 hours per week and its range of programs included music for the first time. In addition it offered access programs for student and community groups and approximately twenty-eight ethnic communities broadcasted regularly until 1980 when Ethnic Broadcasters Incorporated set up their own FM station, 5EBI. In 1978 the University was granted a full AM licence by the newly established Australian Broadcasting Tribunal.

Total enrolments for all departmental activities during 1982 exceeded 2 500 and an estimated weekly audience of 45 000 listened to 5UV programs.

During 1982 the Department, including Radio 5UV, was the subject of an extensive review by a panel of independent consultants, external to the University. The report of the review panel recommended major new arrangements for the conduct of continuing education by the University, including the involvement of all departments and faculties in the provision of continuing education, and the upgrading of the resources and the strengthening of the educational programming of Radio 5UV.

TRADE EDUCATION

Industrial and Commercial Training Commission

Legislation governing vocational training in South Australia is contained in the Industrial and Commercial Training Act, 1981 which is administered by the Industrial and Commercial Training Commission. The Commission consists of a full-time Chairman and Deputy Chairman together with eight part-time members, three representing the interests of employers, three the interests of employees, together with a nominee of the Director of the Department of Labour and of the Director-General of Technical and Further Education. The Training Commission replaced the Apprenticeship Commission in May 1981, and, as the name implies, has much wider functions and responsibilities. It is charged to:

- evaluate training already being provided;
- determine training programs for trades and other vocations;
- develop trainee schemes and pre-vocational courses;
- examine the training needs of special groups;

co-ordinate training resources;
 organise and supervise contracts of training;
 promote training programs;
 encourage skills centres for off-the-job training;
 advise the Minister of Labour on training matters.

To assist the Commission in its tasks, Training Advisory Committees are being established to cover the various sectors of industry and commerce. The establishment of advisory committees on an industry rather than a vocational basis is seen as an important innovation. Where considered appropriate by an advisory committee, sub-committees may be appointed to advise on the training requirements of particular vocations. Efforts are being made to integrate the activities of the advisory committees when developed with those of the various Industry Training Committees established under the auspices of the National Training Council. Integration is also intended with relevant committees of the Department of Technical and Further Education.

Trade Training

A major part of the Training Commission's responsibilities embraces the administration and supervision of apprenticeship matters. Under the Act an employer cannot undertake to train a person (whether as an apprentice or otherwise) in a declared vocation as prescribed except in pursuance of a contract of training, and unless first approved as an employer by the Commission. The term of an indenture of apprenticeship is as prescribed for each declared vocation, generally four years. There is a probationary period of three months from the day on which an apprenticeship commences. Authority rests with the Commission to investigate and deal with apprenticeship matters including transfer, assignment, suspension or cancellation of indentures. A Disciplinary Committee has responsibility for determining matters where there is a breach of provisions of an indenture or of the Act.

Number of New Apprenticeships Commenced: Trade Groups, South Australia

Trade	1977	1978	1979	1980	1981
Metal	1 513	1 301	1 267	1 361	1 330
Electrical	386	371	352	345	394
Building	676	377	288	313	353
Furniture	181	110	111	169	130
Printing	81	87	91	78	58
Vehicle industry	175	155	136	107	74
Ship and boat-building	7	3	5	4	5
Bootmaking	8	20	17	13	6
Clothing	1	—	1	1	—
Coopering	1	—	2	4	1
Food	263	244	223	235	128
Hairdressing	297	312	293	291	183
Leather and canvas goods	2	2	2	2	2
Miscellaneous	25	26	25	19	39
Total all trades	3 616	3 008	2 813	2 942	(a) 2 703

(a) Subject to revision. (Totals are revised annually so as to show number of indentures by year of commencement rather than by year of lodgement with the Commission.)

The following table shows the number of new apprenticeships commenced, indentures completed, indentures cancelled, and apprentices employed at 31 December for the years 1977 to 1981.

Apprenticeships, South Australia

Particulars	1977	1978	1979	1980	1981
New apprenticeships commenced	3 616	3 008	2 813	2 942	2 703
Number of indentures completed	2 788	2 954	2 622	2 799	3 014
Number of indentures cancelled	486	396	329	304	212
Number of apprentices employed	12 072	11 370	11 049	10 942	10 469

The provision of technical education for apprentices is the responsibility of the Minister of Education. However the Commission has the authority to approve courses of training and instruction for apprentices or other trainees in declared vocations, in trainee schemes or schemes of pre-vocational training.

With few exceptions every apprentice must attend a College of Technical and Further Education to complete a course of instruction, generally during the first three years of their indenture term. There are several ways in which attendance may be required including day release where the apprentice attends one day a week and block release where the apprentice attends on consecutive days of a week (most commonly in blocks of two weeks).

Once the required basic course of instruction is completed facilities are available to permit many apprentices to commence, on a voluntary basis, further studies most of which are components of various Post-trade Certificate courses. These additional college studies and others designed to meet special demands for training in new processes and techniques are generally made available to people employed or seeking employment in the respective industries.

**Enrolment in Apprenticeship Courses at Colleges of Technical and Further Education
South Australia**

Colleges	1977	1978	1979	1980	1981
Metropolitan colleges of further education	8 891	8 459	8 237	7 764	8 048
Country colleges of further education	1 169	1 074	1 005	1 009	1 139
College of External Studies(a)	5	180	311	322	261
Total	10 065	9 713	9 553	9 095	9 448

(a) Includes Northern Territory apprentices.

Three employer organisation based group apprenticeship schemes are now established in South Australia, one with the Master Builders Association of SA Inc., another with the Metal Industries Association of SA and the third with the SA Automobile Chamber of Commerce. These schemes attract financial assistance from the Commonwealth and State Governments. Under the schemes a number of employers whose individual business operation may not be able to provide the full range of training required for an apprenticeship, can collectively do so. The Associations act as the employer in the contracts of training, arranging for the apprentices' on-the-job experience with a number of participating employers.

Pre-vocational Training

There has been a dramatic increase in both the range of pre-vocational courses and the number of student places made available in such courses over recent years. These courses are presented by the Department of Technical and Further Education after being

approved or endorsed by the Training Commission. The initial stimulus for this growth was the Commonwealth/State Transition Education Program. The following table shows the extent of the expansion.

Pre-vocational Courses (Trade Based)

Particulars	1981	1982	1983 (planned program)
Range of courses	2	7	15
Number of trades covered	13	27	39
Number of student places	400	660	1 100

In July 1982 State Cabinet determined that courses of pre-vocational training (*i.e.* training designed as preparation for training in a trade or other declared vocation) should become a permanent feature of the South Australian education and training system. The State is accepting an increasing responsibility to fund these courses. Plans are in progress to introduce in 1984 a range of new courses and in this regard the 1983 courses are seen as interim ones enabling alternative structures and content to be tested.

Educational and indenture term credit is made available for students who complete an approved course of pre-vocational training to the required standard and subsequently gain an apprenticeship in a trade area relevant to the course undertaken.

Manpower Training

The Commonwealth's manpower and training programs are administered by the Department of Employment and Industrial Relations. The training programs cover four functional areas which are: Trade Training; Skills Training; Youth Training; Special Training.

Each program comprises a number of components designed to meet specific policies and training initiatives.

Trade Training Program

Support for trade training is provided by the Commonwealth through a number of programs to assist in meeting the demands of industry for skilled tradesmen. This general aim is supported by specific measures to:

- (a) improve the quality and quantity of trade training in Australia;
- (b) assist in making trade training more flexible and responsive to market forces;
- (c) assist out-of-trade apprentices; and
- (d) maximise the use of existing Commonwealth and State Government facilities.

Commonwealth Rebate for Apprentice Full-time Training Program

The Commonwealth Rebate for Apprentice Full-time Training Program (CRAFT) compensates employers through tax-exempt rebates for the costs of releasing apprentices to attend (or to study for) basic trade courses provided by technical education institutions in any year of apprenticeship or to attend full-time, off-the-job training courses in their first year of apprenticeship. Rebates are set according to the trade concerned, year of apprenticeship and stage of technical education. For apprenticeship training after 1 January 1983, CRAFT rebates range between \$21 and \$41 per day.

Employers can also qualify for a special higher level of technical education rebate by engaging an apprentice who has completed a pre-employment training course, which results in exemptions from at least one stage of technical education and a minimum

reduction of six months in the formal period of apprenticeship. This rebate ranges between \$29 and \$57 per day according to the trade group concerned.

Rebates for full-time, off-the-job training are payable to employers at first year technical education rebate rates for the release of apprentices to attend approved full-time instruction at their own or other training centres in the first year of apprenticeship.

Weekly living-away-from-home allowances for first and second year apprentices are provided where an apprentice is compelled to live away from home in order to obtain or to remain in apprenticeship.

These allowances are \$33 for first year apprentices and \$14 for second year apprentices from 1 January 1983, and are taxable.

Special Apprentice Training

The Group One-Year Apprentice Scheme provides for apprentices indentured to private employers to receive full-time training in Commonwealth or State Government instrumentalities for the whole of their first year of apprenticeship. The costs (including wages) of this training are met in full by the Commonwealth. At the end of the first year the apprentices commence work with their employers.

The Special Assistance Program is aimed at reducing wastage among apprentices who become out-of-trade.

Two forms of assistance are available:

- (a) a wage subsidy for up to seventeen weeks to employers who permanently engage out-of-trade apprentices; and
- (b) a training allowance for out-of-trade apprentices to allow completion of basic trade courses and/or practical off-the-job training at training institutions, and/or approved training centres.

Under the Group Apprenticeship Support Program assistance is available for group apprenticeship projects to offset the administrative costs of establishing the projects. A group apprenticeship project is eligible for assistance where there is increased apprentice employment. Preference must be given to suitable out-of-trade apprentices. Arrangements which reduce apprentice terms are encouraged.

This program is jointly administered and costs shared by the States and the Commonwealth.

TRAINING DEVELOPMENT

Department of Labour

The Department of Labour through its Industrial Safety and Regional Services Division, provides staff to undertake training supervisory duties throughout the State for the Industrial and Commercial Training Commission. These officers—Training Supervisors—advise on training programs, report on the suitability of on-the-job training facilities and standards, and supervise contracts of training.

Staff of the Training Services Branch of the Department of Labour analyse and determine policies relating to training manpower and human resource management. Activities include the development of training strategies and initiatives. The Branch also provides a comprehensive range of services to a number of policy-making and advisory bodies reporting to State and Commonwealth Governments and to industry organisations, companies and employee associations. In addition, the Branch delivers executive services to the Industrial and Commercial Training Commission.

The Department also provides a clerical and data collection service to the Industrial and Commercial Training Commission.

Skills Training Program

Assistance for skills training is provided by the Commonwealth through programs for employers and individuals. The purpose of this assistance is to help industry meet its requirements for skilled labour and to support individuals, who without training or re-training, would be at a disadvantage in obtaining stable and rewarding employment. In achieving these ends the Commonwealth has adopted a varied approach.

Skills in Demand Program

The Commonwealth Skills in Demand Program has been specifically developed; to assist industry in overcoming skill shortages; or to establish new or improved training arrangements, particularly those of a nationally consistent nature; and to assist suitable unemployed people to obtain stable and rewarding employment.

Where industry and Government agree that there is a shortage of skilled labour in a particular locality or industry, and/or a need is established for new training arrangements, assistance may be made available by the Department of Employment and Industrial Relations.

The extent of Commonwealth assistance depends on the contribution from industry and other sources.

Assistance can be provided for course development costs; course running costs; allowances to individuals and subsidies to employers in respect of unemployed persons; other essential costs.

Industry and/or the training institutions are responsible for the provision of the approved training arrangement beyond the agreed period of Commonwealth assistance. The Commonwealth continues to pay allowances and subsidies for eligible trainees, however.

General Training Assistance

General training assistance for individuals with previous labour market experience is provided through training allowances while undertaking formal courses and subsidies to employers to provide on-the-job training.

A training allowance is available to eligible unemployed jobseekers to provide their income support while undertaking formal training away from employment. The allowance is only available for training in occupations where the Department of Employment and Industrial Relations forecasts indicate there will be demand at the completion of training.

Trainees receive an income tested living allowance which comprises a basic component, equivalent to the rate of Unemployment Benefit applicable to the person concerned, and a training component.

Compulsory fees are paid and trainees may receive a book and equipment allowance. Trainees may also be eligible for a living away from home/moving allowance or other benefits depending on their circumstances.

On-the-job subsidies are available when a CES office is unable to locate and refer an experienced/qualified job seeker to a vacancy. The employer may be paid a subsidy to provide training for an eligible person referred by that office. The length of the subsidy period depends on the extent of the skills to be acquired by the trainee and is based on a schedule of maximum training periods for each occupation.

For unemployed people with special needs, such as ex-prisoners and migrants, longer

periods of training may be approved. The length of training is determined by the assessed needs of the individual, with a minimum of twenty weeks.

Industry Training Services

As part of its responsibility in implementing an effective national manpower policy, the Department of Employment and Industrial Relations has established Training Policy and Programs and Trainer Training Services to improve the extent and quality of training practices throughout industry and commerce. In addition, an advisory service is provided to assist companies to start or extend training in a systematic way.

Training Policy and Programs provides an advisory service aimed at the promotion of additional and better training in, and for, industry and commerce. Activities range from assisting Industry Training Committees to examine specific manpower problems, to the distribution of *Training Talkback*, the journal of the National Training Council. In addition to publicising the training services of the Department, the Service acts to create an awareness of all training resources available in South Australia. Another responsibility is the administration of the Manpower Development Scheme which provides funds for the employment of manpower development executives and industrial training officers by Industry Training Committees and industry associations, the development of new training programs, research into training needs, the production of basic training manuals and group training schemes to allow groups of small firms to employ training specialists.

The general aims of the Trainer Training Service are to promote training as a concept in industry and commerce, and to improve training standards. The Service is directed at those with responsibilities for training others, including manpower training—instructional specialists and line personnel with duties for administering or implementing training. The Service is divided into several trainer training areas: Training Officer Service, Instructor Service and a Supervisor Trainer Service.

The Training Officer Service is provided to train specialists (Industry instructors, training officers and training managers). This is achieved by a Training Officer (Development) Program (TOP) which is divided into four modules. TOP Stage I covers group instructional techniques and is two weeks full-time. TOP Stage II covers the design of courses for operators, from training needs assessment to evaluation. TOP Stage II consists of two weeks in a training centre and a four week practical assignment with a host company. TOP Stage III covers course design for supervisors from training needs assessment to evaluation. It consists of four weeks full-time in the training centre and a five week practical assignment with a host company.

TOP Stage IV is designed to provide core skills and knowledge for managers who make decisions on the total training investment and who are responsible for the systems, structure and practices of training and development. A strong emphasis is placed on marketing of training.

The Instructor Program aims to provide basic instructional techniques for those who instruct groups of employees and those who provide individual instruction on the job.

The Supervisor Training Service aims to provide resources to trainers to meet some basic needs of supervisors. Trainers in this Service may be engaged in full-time or part-time training duties. The courses covered include Instruction-Communication, Interpersonal Relations, Accident Prevention and Method Improvement. Instructional skills training conducted by or for industry can attract support under the Trainer Training Subsidy Scheme.

The TOP and the Supervisor and Instructor Programs are national programs available in all capital cities except Darwin.

Youth Training Program

Assistance for youth training is provided through programs to assist the young unemployed to obtain stable and worthwhile employment.

In 1979 the Commonwealth Government introduced the School to Work Transition Program whereby, through co-operation with the State Government, a range of educational and training programs is provided to assist young people in taking this important step.

The Education Department has embarked upon a number of research programs to identify students potentially at risk, and to generate new strategies to help this group. Link courses—part-time courses of a practical nature delivered in conjunction with the Department of Further Education, aimed at assisting senior secondary students to understand the world of work—make students aware of what is expected of them in the fields of employment they have studied, and provide an introduction to relevant skills.

The Department of Technical and Further Education offers a wide range of practical courses under the School to Work Transition Program. These courses follow.

The Educational Program for Unemployed Youth which is for 15-24 year old unemployed persons whose lack of educational and personal development makes it difficult for them to get or hold a job or cope with vocational training. The course offers remedial training in literacy and numeracy, as well as an opportunity for improving employment related social skills.

Foundation Courses aimed at giving students the opportunity to study the nature and entry requirements of a wide range of occupations across the major industrial groupings. Students then match their own developing skills and interests with these occupations in order to select a broad industry grouping of occupations for further study.

Vocational Preparation courses designed to prepare young people for labour market requirements in particular industries or geographical locations. They are normally shorter courses, and are taught at semi-skilled levels.

Pre-vocational (Trade Based) courses designed for young people who wish to become trades people. Instruction is at the apprenticeship level and a student gains educational credit to Stage I in the relevant trades upon successful completion and may receive up to twelve months reduction in the indenture period.

Pre-vocational (Non-Trade) courses designed for young people who have made a choice to enter a particular group of occupations other than trade based occupations. These offer credit towards Vocational Certificate courses.

Other TAFE courses which are full-time, up to one year in length and vocationally oriented may also be approved for the longer term unemployed.

Such courses are characterised by an emphasis on the skills and knowledge appropriate to a range of occupations within a family grouping and are usually taught at approaching certificate level with transfer or credit to DFE certificate upon successful completion.

Students attending Commonwealth or State-funded Pre-apprenticeship Courses at TAFE institutions may opt for an allowance of \$20 per week when the Transition Allowance or assistance under the Tertiary Education Assistance Scheme is not available. The purpose of the assistance is to encourage students to undertake training leading to an apprenticeship in occupations for which there is an established labour market demand.

A major disadvantage faced by young people in competing in the labour market is a lack of appropriate work skills and previous work experience. It is a disadvantage which

compounds as time passes by. The longer young people remain unemployed the more difficult it becomes for them to secure employment. Lack of personal qualities or formal qualifications required by employers add to their difficulties. To offset these disadvantages, assistance under the Special Youth Employment Training Program (SYETP) is provided to employers by way of wage subsidies when the Commonwealth Employment Service assesses that the job seeker is in need of work experience and training in order to secure stable employment. A higher rate of subsidy is available for the longer term unemployed.

For employers to qualify for the subsidy they must be prepared to provide work experience and on-the-job training in full-time jobs for seventeen or thirty-four weeks. They must also agree to a training plan for each trainee and pay at least the award wage for the job.

Trainees may also be placed in Commonwealth departments and instrumentalities under SYETP. Trainees are paid the award rate for the type of employment undertaken and the full cost is charged to the Department of Employment and Industrial Relations.

Special Training

Some groups in the community, because of background and circumstances beyond their control, face additional disadvantages in gaining and maintaining employment. In recognition of these disadvantages special programs, allowances and subsidies are available. Two such groups are Aborigines and the disabled.

Formal training allowances are paid to eligible Aborigines undergoing formal training to obtain a specific employment qualification, or attending an approved preparatory employment course. Such courses include those offered by recognised educational institutions and others specially designed for Aborigines.

Employer subsidies are paid to employers who provide on-the-job training for Aborigines in specific occupations. Training programs depend upon the needs of the individual Aborigines. These subsidies apply to both the public and private sector of the economy.

Various forms of special assistance are also provided for Aborigines to prepare them for employment and to assist them to take up employment. This assistance is in the form of career visits, work experience placements and expenses to cover travel to employment interviews and accommodation.

Assistance for the disabled is of three types:

- training allowances;

- employer subsidies; and

- special work preparation programs.

A training allowance is available to disabled people who undertake formal training for an occupation which has been assessed as being in demand.

A subsidy is available to employers who employ and train a disabled person. Because of the particular difficulties faced by disabled people the subsidy has been set at a higher rate than that for able-bodied people. The period of training is related to the particular occupation, with a minimum period of twenty weeks.

Work preparation projects for the disabled have been developed as part of an initiative for the International Year of Disabled Persons. Work preparation projects are designed to help those persons with physical or mental disabilities which make it difficult for them to find employment but an approved agency has assessed them as having the capacity to gain open employment. Funds are made available to the agencies on a fee-for-service basis; funding is provided for a period of three years. Training Allowances are paid to participants.

STATE EXPENDITURE ON EDUCATION

The following table shows details of outlay by State Authorities on education for the past four years.

State Authorities: Outlay on Education, South Australia ^(a)

Purpose	1977-78	1978-79	1979-80	1980-81
			\$'000	
General administration, regulation and research	14 420	24 242	29 381	34 620
Transportation of students	7 900	8 898	9 281	10 429
Primary and secondary education	341 179	357 004	379 269	434 146
Vocational training	41 747	46 712	45 581	51 435
University education (b)	63 084	64 967	66 426	73 642
Other higher education	59 238	55 907	55 013	60 596
Other education programs:				
Handicapped children	7 862	9 234	10 462	12 973
Adult education	2 146	2 156	2 422	2 661
Pre-school and childcare	13 244	13 400	15 411	18 233
Other	5 366	4 837	4 220	7 287
Total	556 186	587 357	617 466	706 022

(a) Charges for goods and services supplied have been excluded from receipts and deducted in calculating outlay.

(b) Includes expenditure on general research.

Further References

Additional information may be found in the following publications:

- 4202.4 *Schools—South Australia*
- 4206.0 *Colleges of Advanced Education—Australia*
- 4208.0 *University Statistics, Part 1—Students—Australia*
- 4209.0 *University Statistics, Part 2—Staff and Libraries—Australia*
- 4210.0 *University Statistics, Part 3—Finance—Australia*

6.3 SCIENTIFIC AND RESEARCH ORGANISATIONS

AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

The Australian Mineral Development Laboratories (AMDEL) is an independent contracting organisation engaged in research, development, consulting and services for industry and government in the fields of minerals and materials both in Australia and overseas. The laboratories are established and operate as a statutory body under an Act of the South Australian Parliament. They function on a commercial basis relying entirely on earnings to provide the services offered. Operations are based in Adelaide (at Frewville and Thebarton) with branch laboratories located in Perth, Melbourne and Townsville.

At present AMDEL employs about 210 people in Adelaide within five major Divisions, these being; Analytical Chemistry, Operations, Mineral and Materials Sciences, Applied Technology and Administration. A further forty people are employed at branch laboratories.

The range of services offered includes chemical and mineral analysis, mineralogy, petrology, bench and pilot scale testing of ores, mineral separation, geochronology, source rock and core analysis, fuel chemistry, ore reserve calculations, mine planning, mineral and chemical engineering, metallurgy, process design and control, plant evaluation and commissioning, materials science and engineering, mechanical testing, com-

puter techniques, process instrumentation and control, and environmental studies. A range of high technology instrumentation developed by AMDEL is sold to customers worldwide. AMDEL's gross sales are approximately \$10 million annually.

AUSTRALIAN MINERAL FOUNDATION

The Australian Mineral Foundation has been established by the industries, institutions and departments concerned with minerals and petroleum. It is administered by a council representative of these groups.

The mining and petroleum industries are confronted with a rapid development in technology and a continual requirement for transmitting new information both to operating staff and to postgraduate students. The Foundation fills this communication need in several ways:

- (a) by providing short-term concentrated training courses for professional and other specialised staff;
- (b) through the media of symposia, conferences and distinguished lecturers;
- (c) through a specialised resource centre including a geoscience library and information service.

In addition an auditorium, seminar rooms, offices and extensive catering facilities are made available for conventions.

AUSTRALIAN WINE RESEARCH INSTITUTE

The Australian Wine Research Institute situated at Urrbrae promotes research and other scientific work for the Australian wine industry; it was established in 1955, having grown from a small research unit formed in 1934 within the University of Adelaide.

The Institute is administered by a nine-member council consisting of representatives from the Australian Wine and Brandy Corporation, the Australian wine industry, the Commonwealth Government, the Commonwealth Scientific and Industrial Research Organization and the University of Adelaide. It is funded by contributions from the Australian wine industry, a grant from the Commonwealth Government, and income from a Trust Fund.

Comprising laboratories and an experimental winery, the Institute conducts research into wines, brandies, and winemaking and specialises in the microbiology and chemistry of wines and brandies. Technical services at the Institute assist commercial winemakers with technical problems, provide tested yeast cultures for wine fermentation and communicate research developments to the wine industry.

The John Fornachon Memorial Library maintained by the Institute is a specialised library of technical literature on wine.

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

The Commonwealth Scientific and Industrial Research Organization (CSIRO) is the largest scientific research organisation in Australia. It has a total staff of approximately 7 400 located in some 100 laboratories and field stations throughout Australia: more than one-third of the staff are scientists.

CSIRO is a statutory body established by the *Science and Industry Research Act 1949*. Under the Act CSIRO replaced, but had continuity with, the former Council for Scientific and Industrial Research (CSIR) which was established in 1926. The *Science and Industry Research Act 1949* as amended by the *Science and Industry Research Amendment Act 1978* stipulates that CSIRO is to be governed by an Executive com-

prising a full-time Chairman, two other full-time members and between three and five part-time members. It also provides for a statutory Advisory Council and State Committees as independent sources of advice to the Executive.

The Act indicates that the functions of CSIRO are:

- (a) to carry out scientific research for any of the following purposes;
 - (i) assisting Australian industry,
 - (ii) furthering the interests of the Australian community,
 - (iii) contributing to the achievement of Australian national objectives or the performance of the national and international responsibilities of the Commonwealth,
 - (iv) any other purpose determined by the Minister,
- (b) to encourage or facilitate the application or utilisation of the results of such research;
- (c) to act as a means of liaison between Australia and other countries in matters connected with scientific research;
- (d) to train, and to assist in the training of, research workers in the field of science and to co-operate with tertiary education institutions in relation to education in that field;
- (e) to establish and award fellowships and studentships for research, and to make grants in aid of research;
- (f) to recognise associations of persons engaged in industry for the purpose of carrying out industrial scientific research and to co-operate with, and make grants to, such associations;
- (g) to establish, develop and maintain standards of measurement of physical quantities and, in relation to those standards;
 - (i) to promote their use,
 - (ii) to promote, and participate in, the development of calibration with respect to them, and
 - (iii) to take any other action with respect to them that the Executive thinks fit,
- (h) to collect, interpret and disseminate information relating to scientific and technical matters; and
- (j) to publish scientific and technical reports, periodicals and papers.

CSIRO's research is carried out in forty Divisions and a number of smaller units. Three of these Divisions have their headquarters in South Australia: these are the Divisions of Horticultural Research, Human Nutrition, and Soils. Two Divisions, Applied Physics and Manufacturing Technology, have branch laboratories in Adelaide. Another two, Computing Research and Mathematics and Statistics, have regional offices in Adelaide and the Division of Forest Research has a regional station at Mount Gambier.

Division of Applied Physics, Adelaide Branch Laboratory

The Division of Applied Physics, a member of the Institute of Physical Sciences, has its headquarters at the National Measurement Laboratory, Sydney, with branches in Adelaide and Melbourne. The Division undertakes research in applied physics related to problems in industry and the community, and collaborates with industry in exploiting promising developments. The Division is also responsible for the establishment and maintenance of the Commonwealth legal standards for the measurement of physical quantities and the provision of means of relating measurements, made throughout Australia, to these standards. The Laboratory has a number of research programs including studies in solid-state physics, the physics of fluids, optics, magnetic and dielectric properties of materials, acoustics, and vibration.

The role of the Adelaide Branch Laboratory includes the establishment of a close liaison with industry and Government departments to assist in solving problems associated with precise measurements using staff expertise from the Adelaide, Sydney or Melbourne Laboratories. The Branch also provides a calibration service in certain fields, particularly in temperature, electrical and physical (mass, volume, density) metrology. The Adelaide Laboratory is a major centre for the measurement of the thermal characteristics of heat insulating materials and existing facilities have recently been extended to handle materials and temperatures in frequent use in industry.

Division of Horticultural Research

This Division is concerned primarily with research on perennial fruit crops. It has a headquarters laboratory in Adelaide, a further laboratory at Merbein, near Mildura, and staff stationed at the CSIRO Laboratories at Darwin. The Division is a member of the Institute of Biological Resources.

Research is related to four main areas; grapevines, sub-tropical and tropical tree fruits and nuts, the effects of salinity on plant performance and the more fundamental physiological and biochemical aspects of plant growth and reproduction. The Division is investigating the effects of environmental factors, including water quality and availability and light regime, on plant growth, the influence of plant hormones on plant performance and the development of the photosynthetic system of plants. Research on plant reproduction concentrates on floral initiation, pollination and early fruit development studies in a range of plants including avocado, macadamia, mango and pistachio. A program of controlled breeding of avocados and pistachios is associated with this work. Tissue culture research is an important adjunct to these and other projects by the Division. The tree crop program aims to develop alternative perennial crops for the temperate, inland, irrigated areas of Australia and to study the behaviour of fruit species that have potential for the tropical north of the continent.

The Division's salinity research is concerned with the responses of plant species to salt stress with the aim of selecting and breeding more salt tolerant horticultural crops. Viticultural research is concerned with breeding grapevines better suited to the hot inland irrigated regions of Australia and with developing vine management systems that increase yields and reduce costs. Methods for the rapid detection and elimination of vine viruses are also under study as are the taxonomy, ultrastructure and host-parasite relations of a range of plant-parasitic nematodes.

Division of Human Nutrition

The Division of Human Nutrition, a member of the Institute of Animal and Food Sciences, has its headquarters and main laboratories in the grounds of Adelaide University. It also has facilities at the Glenelg Field Station at O'Halloran Hill.

The Division studies nutritional processes with a view to identifying the existence and health consequences of nutritive imbalances and deficiencies in Australian diets. Its research includes experimental studies in inorganic nutrition and in metabolism and digestion and epidemiological and behavioural studies, with emphasis on the relationships between nutrition, lifestyle, and human health.

Division of Manufacturing Technology

The Division of Manufacturing Technology, a member of the Institute of Industrial Technology, has its headquarters in Fitzroy, Victoria, with laboratories at Fitzroy and at Woodville North, South Australia. The Division undertakes research directed at the improvement of the manufacture of fabricated components, including the study of processes for manufacture, the integration and control of processes, and the engineering analysis and synthesis of product design for manufacture.

The Division's Adelaide laboratory is concerned with industrial production technology. New facilities are in operation for undertaking research and development on an industrial scale in welding, ferrous casting, forging, and in aspects of surface coating such as plasma spraying for wear and corrosion resistance. Recent initiatives have been concerned with energy management in manufacturing and with automation and control engineering.

Division of Soils

The Division of Soils is a member of the Institute of Biological Resources, which conducts research relating to the management and productivity of Australia's agricultural, forestry and fisheries resources, and the management and conservation of Australia's ecosystems. The research of this Division is concerned with the use of soils in agriculture and forestry, and the role of soils and soil materials in hydrology, plant growth, as habitats for flora and fauna and as a base for engineered structures. The work is organised into several programs, each of which comprise a number of projects. Because soil is a complex mixture of organic and inorganic materials, with a micro-flora and micro-fauna that vary with the material from which it was formed, the climate in which it occurs, and the plants and animals that occupy its surface, very few problems in soils are capable of unidisciplinary solution.

Scientists in the Division are loosely grouped together to tackle problems in four major areas namely (a) to provide an inventory of Australia's soil and water resources; (b) to maintain and improve plant production through modifying the chemical, physical and biological properties of soils; (c) to understand the principles of erosion with a view to its control; and (d) to identify and correct soil problems arising from natural and man-made alteration of the environment. Within each area understanding of the fundamental processes occurring in soils is sought along with practical solutions to problems arising from the use of soils.

The headquarters laboratory is in Adelaide, with smaller groups in regional laboratories in Brisbane, Canberra, and Townsville. About half the staff is in the Adelaide laboratories.

WAITE AGRICULTURAL RESEARCH INSTITUTE

The Waite Agricultural Research Institute was established, within the University of Adelaide, in 1924. The research projects conducted at the Institute cover a wide range of topics, of which the following are a few examples: relationship of stocking rates to pasture composition and fertiliser practices; the physiology of animal reproduction, the mechanisms of drought resistance in cereals; the genetics and breeding of cereals and pasture plants; flower and fruit development in horticultural plants; studies on soil-borne and virus diseases of plants; biological control of insect pests; the biochemistry of nitrogen fixation; and the studies of soil structure and mechanics.

Further details relating to the Waite Institute may be found in Part 6.2 Education.

DEFENCE RESEARCH CENTRE SALISBURY

The Defence Research Centre Salisbury (DRCS), is the largest research and development complex in Australia and constitutes part of the Commonwealth Department of Defence. The centre, which occupies an area of 1 170 hectares near Salisbury, had a staff of nearly 2 700 in December 1982.

DRCS comprises three separate laboratories and a supporting administration branch. The Electronics Research Laboratory undertakes research and development

related generally to surveillance including radio science, radar, infra-red physics, optics, electro-optics, electronic warfare and navigation. The Weapons Systems Research Laboratory undertakes research and development related generally to weapon systems and underwater detection systems including aeroballistics, guidance and control of weapons and remotely-piloted vehicles, rocket and gun propulsion, sonobuoys and signal processing. The Advanced Engineering Laboratory undertakes engineering feasibility studies, development, design and manufacture of experimental and prototype systems and equipment in the fields of mechanical, electrical, electronic and communications engineering.

Each Laboratory at DRCS provides specialised consulting services to the Defence Force, to Canberra-based staff and to other laboratories of DSTO and, where appropriate, to industry.

Facilities are provided within DRCS for branches of firms that have contracts in the defence field.

Edinburgh RAAF Base, headquarters of the Royal Australian Air Force in South Australia, adjoins DRCS. Aircraft used by DRCS for trials or the development of equipment operate from this base.

A special article on DRCS, then called WRE, together with maps and diagrams was included on pages 184-92 of the *South Australian Year Book* 1969.

Woomera

Within the Woomera restricted area of some 130 000 square kilometres are a Trials Area, comprising instrumented Range and Service exercise and training areas, and the Defence Support Centre Woomera, comprising a township and an adjacent technical facility.

A Joint USA/Australia Defence Space Communications Station (JDSCS) is located near Woomera and makes use of the Defence Support Centre there.

The government-owned Woomera township is situated approximately 500 kilometres north-west of Adelaide and has a current population of about 2 000, including some 1 000 associated with JDSCS. It has all necessary amenities and services, including hospital, schools, community store and shops, churches, theatre, clubs and a wide range of sporting facilities.

6.4 CULTURE AND RECREATION

LIBRARIES

State Library

The State Library of South Australia is an important cultural feature of the State and meets significant areas of need in information, education, recreation and research. It is situated on North Terrace adjacent to the South Australian Museum and Art Gallery of South Australia.

The current complex consists of three adjoining buildings: the Jervois Wing, the Bastyan Wing, and the Institute Building. Collections housed in these buildings predate the formation of the colony tracing their origins to the formation of the South Australian Literary Society in London in 1834. The circulating and reference library formed by the South Australian Literary Society was landed in South Australia in 1837 and merged with the library of Adelaide Mechanics Institute in 1856. In 1884 a Public Library, Museum and Art Gallery placed the collections and services of what had become the South Australian Institute under the control of a Board of Governors. On assuming control of

the Institute the Board transferred the reference books to a Public Library and transferred the remainder to the Adelaide Circulating Library. The Public Library was housed in the Jervois Wing and the Adelaide Circulating Library in the Institute Building.

The modern character of the Library was established in 1940 when, after the Price Report of 1937, the Library was separated from the Museum and Art Gallery and became a State Government department administered by the Libraries Board of South Australia.

The Jervois Wing continued to house most of the Library's collections until 1967 when the name of the Library was changed to the State Library of South Australia and the first stage of the Bastyan Wing was completed.

In 1979 the State Library became a Division of the Department of Local Government, and in 1980 the administration of public libraries was largely separated from the State Library to become the Public Libraries Division of the Department of Local Government. In 1982, the administration of the two lending branches, Adult and Young People's was transferred to the Public Libraries Division. Legislation covering libraries has been updated by the Libraries Act, 1982.

State Reference Library

Reference, information, and research services are offered through the State Reference Library. These services are primarily based on a collection which includes some 450 000 books and pamphlets, 13 000 newspaper and periodical titles, 80 000 maps and access to computerised information retrieval services. The Reference Library has a representative basic collection of nineteenth and twentieth century materials in all subjects except medicine and law. It has considerable strength in a number of subjects including librarianship, wine, jazz, Australian Aborigines, River Murray shipping and nineteenth century illustrated works on natural history. There are also some 38 000 books in the Children's Literature Research Collection, a special collection formed to assist in the study of children's books.

Where items are not held by the Library it is normally possible to arrange to borrow or obtain photocopies from other libraries in South Australia, interstate or overseas. In 1981-82, 190 000 enquiries were answered. *Pinpointer*, an index to popular periodicals, is published bi-monthly.

Since 1878 legislation has provided for the deposit in the Library of copies of all copyright items published in South Australia. This material forms the basis of the South Australiana collections which are thus a valuable resource for information about the history and development of the State. Prominence is to be given to these collections by the establishment of a separate South Australiana Library to incorporate all South Australian materials including private archival records.

State Archives

The State Archives are also housed within the State Library Building. The Archives, established in 1919, are the repository for the public and private historical records of South Australia. In 1925 legislation was passed requiring reference to the Libraries Board before destroying or disposing of public records. At the end of June 1982 there were 17 500 metres of occupied shelf space in the Archives. In 1981-82, 13 900 inquiries were dealt with involving 31 000 issues of documents, views, maps, or printed sources. A journal, *South Australiana*, is published twice a year.

With the planned separation of private records to the projected South Australiana Library it is also hoped to establish a separate office for public records allowing the Archives to assume a more active role in servicing Government agencies and preserving their records for research.

Community Services

In 1938 a Country Lending Services was established to provide books for residents in the country districts of the State, none of which had a free local library at the time. As the Country Mail Service this facility continues to cater for country readers, now limited to those who do not have access to a local public library. Country Mail is one of the Community Services offered; others are the provision of multi-cultural material, liaison with ethnic groups, and a lending service to institutions such as hospitals and gaols, throughout the State and more particularly to elderly citizens homes and housebound people within the City of Adelaide.

Adult Services

With origins dating from the formation of the Adelaide Lending Service in 1946, the Adult Services continue the original role of direct lending to residents of the metropolitan area, but also offer a wider variety of materials. Since 1972 the collections have been enlarged to include large print and foreign language books and periodicals, paperbacks, prints, posters and audio cassettes. Car manuals, musical scores, and drama sets are also available. A similarly wide range of material is available through the Children's and Youth Services.

Children's Services

The Children's Services, formerly the Children's Library, was established in 1915 and is believed to be the oldest in Australia. As well as the normal lending role, visits by school classes, and storytelling both inside the library and at outside venues are also featured.

Youth Services

Specific service to young people between the ages of thirteen and eighteen dates from 1957 and the establishment of the Youth Lending Service. Youth Services comprise lending from a collection of books, cassettes, posters and paperbacks.

State Library of South Australia

Year	Refer- ence Services	Adult Services	Youth Services	Children's Services	Central Pool for Local Public Libraries	Total
At 30 June:						
			BOOKS: VOLUMES HELD			
1979	399 000	130 000	27 000	74 000	200 000	830 000
1980	406 000	177 000	26 000	71 000	155 000	835 000
1981	413 000	146 000	24 000	69 000	200 000	852 000
1982	419 000	151 000	25 000	70 000	157 000	822 000
To 30 June:						
			MATERIAL LENT (a)			
1979	133 000	877 000	149 000	252 000	—	1 411 000
1980	117 000	934 000	147 000	236 000	—	1 434 000
1981	(b) 97 000	988 000	129 000	190 000	—	1 404 000
1982	(c) 35 000	978 000	107 000	159 000	—	1 279 000

(a) Loans of volumes and other library material.

(b) Lending of periodicals from the Reference Services ceased from 30 June 1981.

(c) Lending of books ceased from 30 June 1982.

Tours of the State Library are available to interested groups, and exhibitions are arranged regularly within the Library. Photographic services offered by the Library include the production of negatives from library materials, and photocopying facilities. Some printed and published materials of interest are offered for sale from the Library's sales office.

Local Public Libraries

In June 1982, sixty-five local authorities were operating a total of ninety public libraries including twenty school-community libraries and twelve mobile libraries, under the provisions of the Libraries (Subsidies) Act, 1955-1977. This Act, which gives the initiative for the establishment of free public libraries to local government, provides for the payment of subsidies (\$1 for \$1 based on all aspects of local government library expenditure) conditional upon a report on the matter by the Libraries Board to the State Treasurer. In 1981-82, subsidies amounted to \$3 782 000. The provision of bookstocks and other materials to public libraries operating under this Act is centred in the Public Libraries Division of the Department of Local Government, which also provides a Request and Reference Service to member libraries as a free service, as well as professional assistance to librarians and local authorities. This service includes advice on siting, and on internal planning of library buildings.

In the year ending 30 June 1982 the annual new book provision amounted to 170 000 volumes in addition to 75 400 paperbacks and 30 100 sound recordings. About 27 500 volumes were sent to libraries in answer to requests, from a central pool of 157 000 volumes maintained in the Public Libraries Division.

Local Public Libraries, South Australia

Year	Libraries at End of Year	Registered Readers	Books Lent	Stocks at End of Year
1977-78	39	244 000	5 215 000	662 000
1978-79	60	259 000	6 217 000	863 000
1979-80	74	286 000	7 506 000	1 314 000
1980-81	80	347 300	8 779 000	1 354 000
1981-82	90	393 000	9 598 000	1 416 000

Institute Libraries

Several country and suburban centres had formed institutes in the early 1850s. The first legislation on libraries was passed in the 1855-56 session of Parliament and resulted in the establishment of the South Australian Institute. In 1861, a new building was erected on the corner of North Terrace and Kintore Avenue for the Institute, which in 1884 was divided into two organisations, the Public Library and the Adelaide Circulating Library.

Institute libraries, which are situated in metropolitan and country areas throughout the State, are largely dependent on members subscriptions and in some cases on income from the institute hall, but they also receive a government subsidy and about two-thirds of them receive support in varying degrees from local councils.

The Institutes Association of South Australia Inc. acts as a co-ordinating authority and as a purchasing agency for affiliated institutes; these, however, retain complete autonomy, being governed by a committee elected by members. The conduct of institutes is regulated by the Libraries and Institutes Act, 1939-1979.

The borrowing facilities of institutes are available to subscribers and the general public has access to, and the use of reading facilities in the library. Many institute libraries allow children to borrow books from the library without charge.

The number of institutes is continuing to decline with the expansion of Public Library services and institute libraries will be eventually phased out. This policy is being pursued with the co-operation of the Institutes Association of South Australia.

**Institute Libraries, South Australia
At 31 December**

Particulars	1978	1979	1980	1981
Number of institutes	155	145	136	122
Subscribers	35 224	31 249	28 154	22 628
Number of volumes	664 284	631 352	590 050	520 632
Volumes circulated during year	1 126 302	1 028 906	904 265	894 981

Other Libraries

Particulars relating to the Barr Smith Library at the University of Adelaide, the Flinders University Library and the South Australian Institute of Technology Library are given in Part 6.2. Other libraries include those of the Royal Society of South Australia, specialising in natural history periodicals, the South Australian Branch of the Royal Geographical Society of Australasia and the Parliamentary Library.

MUSEUMS

The South Australian Museum

Founded in 1856 as part of the South Australian Institute, the South Australian Museum became a separate institution with its own board in 1940 under the provisions of the Museum Act, 1939, which was administered by the Minister of Education. In 1972 it became a Division of the Department for the Environment. A new South Australian Museum Act was proclaimed on 11 March 1976, in which the present-day functions of the Museum were defined. In October 1977 the Museum was made a Division of the Education Department, and in October 1978 responsibility for the administration of the South Australian Museum Act, 1976-1980 was vested in the newly created Ministry of Community Development. In September 1979 the Minister of Arts assumed responsibility for the Act's administration and the Museum became a Division of the Department for the Arts.

The aim of the Museum is to increase people's understanding of themselves and their environment. Similar to other major museums in Australia and overseas, it makes and preserves collections, carries out research and acts as an education and information centre for primary, secondary and tertiary students, and for the public. Its main areas of interest are archaeology, ethnology, natural history and geology.

The Museum was housed in the Institute building from 1861-1883 and in what is now the Jervois wing of the State Library between 1884-1895. In 1895 it moved into its first permanent building which today forms the western wing of the main building, opened in 1915. The exhibition galleries are located in these buildings. The Museum expanded over the years to occupy the historically and architecturally significant buildings of the Old Police Barracks, three floors of Goldsbrough House further along North Terrace, an office/warehouse complex in Kent Town and a number of other annexes in the metropolitan area. The State Government plans to redevelop the Museum on its present site and to renovate and restore adjacent buildings also for Museum purposes by 1986.

The Museum is managed and operated by a Board appointed by the Minister under the provisions of the South Australian Museum Act, 1976-1980. There is a staff of seventy-one organised into four branches: Administration, Conservation, Community Services and Scientific. Fourteen professional research workers are responsible for the care of the collections and for carrying out research. Several of the collections of specimens and data are outstanding. The collection of Australian ethnological material is of world renown while those of minerals, meteorites and tektites, insects, southern Australian animals and New Guinea ethnological objects are excellent.

A Curator of Conservation has overall responsibility for a proper storage environment, protection and restoration of the collections, particularly perishable ethnographic items. Research into aspects related to improving museum conservation practices is also carried out.

The research of the scientific staff is primarily systematic, involving the naming, identification and classification of animals, minerals and artefacts, but considerable emphasis is placed also on their distribution in space and time, and interrelationships with the environment. With the current interest in, and need for knowledge concerning conservation and environmental deterioration, this work is of increasing importance. Scientific staff members give advice, based on their research results and specialised knowledge, to many other research institutions and government departments. Results of the research work of staff members are published in the *Records of the South Australian Museum* and in scientific journals and books throughout the world. The Museum's Scientific Library houses more than 33 000 books and bound periodicals.

The Museum has a general Information Service dealing with more than 10 000 inquirers annually and approximately 28 000 school children pass through the Education Centre each year. With the appointment of more teachers and the development of a Travelling Education Service (TES), educational programs were extended to country areas in 1976. During 1981-82 over 12 000 country school children took part in TES programs.

Public entertainment and education involves the presentation of temporary and long-term displays in galleries covering nearly 4 000 square metres. Exhibits deal with such diverse topics as mammals, birds, fish, reptiles, minerals, meteorites, Egyptology, fossils and Australian and Pacific ethnology. Educational booklets on a variety of subjects, mostly written by Museum staff and published by the Museum, are on sale at a nominal price. Postcards and note paper are also published and are sold throughout Australia. Free information leaflets are available to inquirers.

The scientific work of the Museum is supported by the general public, by the many naturalists, and societies which meet at the Museum and by a number of distinguished scientists who are appointed as Honorary Associates. In particular, the Friends of the South Australian Museum have given considerable support since their foundation in 1964, including the purchase of many notable additions to the collections. At present they are raising money to purchase the cast of a skeleton of the Museum's first dinosaur.

A special article on the Museum's collections appears on pages 31-42 of the *South Australian Year Book* 1982.

Other Museums

The Constitutional Museum was established to preserve and interpret South Australia's political heritage. It is Australia's first political museum, and uses audio-visual techniques to show the State from before the first Europeans arrived in 1836, to the present time.

The Museum is housed in the restored former Legislative Council building next to Parliament House on North Terrace, Adelaide. It is one of only five pre-1875 buildings to survive in the city. The original building housed both Houses of State Parliament until 1898, when the House of Assembly moved to new quarters next door. In 1939 the Legislative Council moved out and the structure was listed for demolition, but upon the outbreak of the 1939-45 War the building saw service as a Wartime Recruiting Centre. More recently it has been a social club and a Government office.

In 1975 plans to restore the building to its 1875 condition were announced, and after two years of research and renovation it was re-opened as the Constitutional Museum in August 1980. The main feature of the Museum is a 100 minute program called *Bound for South Australia* which takes visitors through three main areas of the museum and the entire sweep of South Australia's history. Chamber One uses slides, soundtrack, theatrical sets and electronic techniques to tell the story of the State up to the granting of self-government in 1857. Chamber Two, the restored House of Assembly Chamber, offers a sound-and-light re-enactment of major political debates up to 1901. In Chamber Three, twenty-six projectors and more than 1 200 slides unfold the history of the State from Federation to the present day. In addition, the Museum mounts changing displays on political and historical themes in its remaining exhibition areas which include Speakers Corner, a small gallery made available on a monthly basis to groups within the community who wish to present their points of view.

A railway museum has been established and maintained by a voluntary organisation, the Mile End Railway Museum SA Inc. which maintains a large selection of locomotives, rollingstock and railway artefacts for display. These exhibits have been obtained from various railway systems which have operated in all areas of this State. The rolling stock dates from 1877 and the artefacts from 1856. The Museum is open to the public on the first and third Sunday of each month.

The National Trust of South Australia

The National Trust of South Australia was established by Act of Parliament in 1955. It encourages the preservation and restoration of buildings of architectural, historic or scientific interest, the protection of scenic beauty and the conservation of land, flora and fauna.

The Trust, which is administered by a council, has fifty-five branches spread throughout the State. Finance is provided by means of gifts, legacies, fund raising functions, subscriptions and government grants.

Buildings of particular significance in South Australia are assessed on their architectural or historic merit and are categorised as either:

Classified, *i.e.* buildings having great historic significance or high architectural qualities, the preservation of which is essential to the heritage of Australia; or

Recorded, *i.e.* buildings which contribute to the heritage of Australia and whose preservation should be encouraged.

Examples of the natural areas cared for are 'Wilabalangaloo' at Berri, 'Watiparinga' at Eden Hills, 'Roachdale' at Kersbrook and 'Engelbrook' at Bridgewater. The many beautiful or historic Trust properties include 'Collingrove' in the Barossa Valley, 'Beaumont House', the 'Marble Hill' ruins and reserve, and 'Olive Wood' at Renmark. 'Marble Hill' was officially re-opened on 15 February 1975 and magnificent views of the Adelaide Hills and Plains can be obtained from the restored tower and many vantage points in the thirty-one hectares of park-like setting in which the building stands. Original plans of the building are on view, together with artefacts and photographs of both the exterior and interior before the building was destroyed by fire on 2 January 1955. The original stables have been restored and converted for use as a tea room.

The Trust also owns the G. S. Sandison Reserve at Hallett Cove, an area of international scientific interest because of its glacial pavements.

In 1963 the paddle steamer *Marion* was purchased and refitted and now floats in the old graving dock at Mannum; while the Willunga Court House and Police Station, both built in the mid-nineteenth century, were restored in 1969. In the following year the Trust fully restored the Customs House at Robe and in 1971 played a prominent part in persuading the State Government to save from demolition the architecturally classic and beautiful ANZ Bank Building in King William Street which had been classified by the Trust. This building has been renamed Edmund Wright House and is now occupied by the South Australian Registrar of Births, Deaths and Marriages, and many marriage ceremonies are performed there. Concerts and benefit galas are held also at Edmund Wright House.

At December 1980, the National Trust of South Australia controlled forty-nine reserves totalling 1 184 hectares and some ninety-three restored buildings and other structures, forty-two of which are used as folk museums in various country centres.

The headquarters of the National Trust in South Australia is in the historic and beautiful mansion Ayers House, once the home of the five times Premier of South Australia, Sir Henry Ayers and Lady Ayers.

Aboriginal Heritage

Aboriginal relics and traces of early European settlement in South Australia are presently protected under the Aboriginal and Historic Relics Preservation Act, 1965, which is the responsibility of the Minister of Environment and Planning. Examples of Aboriginal culture protected by the Act include prehistoric campsites, ceremonial grounds, cave paintings, rock engravings and canoe trees. Early European heritage items include settlement and industrial sites, particularly those associated with the pastoral and mining industries, overland telegraph stations and military installations.

A particular relic or series of relics may be protected, by declaring the area in which it is found either a Prohibited Area or an Historic Reserve. A complete Register of all prohibited areas and reserves, and of known but unproclaimed relics, is maintained by the Heritage Conservation Branch of the Department of Environment and Planning. Since 1 January 1978 no further historic reserves or prohibited areas have been proclaimed in South Australia.

An excellent summary of the three major Aboriginal cultural groups is provided in a special article entitled 'Aboriginal Culture in South Australia', included in the *South Australian Year Book* 1978.

ART GALLERIES

Art Gallery of South Australia

The National Gallery of South Australia was founded in 1881 as a part of the South Australian Institute. In 1884 this became the Public Library, Museum and Art Gallery of South Australia, the Art Gallery section being administered by a Fine Arts Committee. This institution was dissolved by an Act of Parliament in 1940 and the Gallery became a State Government department under the Art Gallery Board. The name of the Gallery was changed to the Art Gallery of South Australia in 1967, and in 1980 the Gallery became a division of the Department for the Arts.

The first part of the present building, now known as the Elder Wing, was completed in 1900. The Melrose Wing, on the Gallery's western side, was added in 1936; the facade was rebuilt at the same time. A new three-storeyed northern wing was built in 1962 and further renovations were completed in 1979.

The scope of the Gallery's collections is broad and includes an excellent representa-

tive selection of Australian and European paintings and sculptures. The Gallery's comprehensive holdings include prints, drawings, photographs, decorative arts, furniture, weapons, medals, coins and stamps. The collection of South Australian historical items includes relics and pictorial material relating to the discovery, exploration and settlement of the colony. The ceramics holdings include one of the finest South-East Asian collections in the world.

Works by established European and Australian artists are permanently displayed and contemporary pieces exhibited regularly. South Australian art is well represented in frequently changing exhibitions in the Gallery of South Australian Art (formerly the Historical Museum), at the rear of the main Gallery building. The Gallery presents major international exhibitions annually and is particularly active during the biennial Festival of Arts.

The State Government makes an annual grant to the Gallery for the purchase of works of art. In addition the Gallery has received many bequests; the Elder, Morgan Thomas, David Murray, Ragless, Boxall, Mortlock and Kohlhausen bequests total over \$252 000. In 1964 Mrs Gladys Penfold-Hyland gave the Gallery a collection of English old master paintings, antique silver and porcelain, in memory of her late husband, Mr Frank Penfold-Hyland. This remains the finest gift ever received by the Gallery.

In 1981 the Gallery celebrated its centenary and one of the special activities to mark the occasion was the establishment of the Art Gallery of South Australia Foundation. The Foundation assists with raising substantial funds towards major acquisitions for the collections and has already augmented Gallery holdings through gifts in kind totalling \$314 000. The Friends of the Art Gallery of South Australia, established in 1969, has approximately 2 500 members, and actively supports the Gallery through educational events and social functions. Total annual attendance at these activities is about 13 000.

The Gallery provides free Gallery Guide and Education services, a Travelling Art Exhibition and a smaller touring metropolitan exhibition. The staff of professional and technical officers undertake the research, development, care and conservation of the collections and the preparation of exhibitions for public education and enjoyment.

Jam Factory Craft Centre

Originally known as the South Australian Craft Authority, the Jam Factory workshops were established in 1973 with the aim of developing a craft climate in South Australia through which standards of workmanship and design could be improved to an international level. The present policy at the Jam Factory is to employ skilled craftspeople as Workshop Heads, responsible for production and training programs within the craft workshops which include glass, pottery, leather and knitted textiles.

The Jam Factory operates a Gallery and a shop which markets quality items produced by South Australian craftspeople working outside the Jam Factory as well as by Jam Factory employees.

The Jam Factory also operates twelve workshops which are available on lease to independent craftspeople and organisations and provides premises for the Crafts Council of South Australia.

Other Galleries

Other galleries are operated by the Adelaide Festival Centre Trust, the Royal South Australian Society of Arts, Round Space, and the Women's Art Movement in Adelaide, by the Contemporary Art Society at Parkside and by the Experimental Art Foundation at Hackney.

In the South East of South Australia, there are galleries at Mount Gambier and Naracoorte.

MUSIC AND DRAMA

MUSIC

Regular concerts are given by the Adelaide Symphony Orchestra, in the Adelaide Festival Theatre for adult and youth subscribers. The Adelaide Town Hall is used for a series of concerts by the recently-formed Adelaide Chamber Orchestra. Choral music is presented by various choirs in occasional concerts throughout the year, the major large body being the Adelaide Chorus. The State Government's subsidised regional opera company, The State Opera of South Australia, stages regular productions throughout the year both in Adelaide and country centres.

The State Opera has formed a special Youth Company which enables young people to see the main opera productions at a nominal cost, as well as mounting its own special youth opera productions for, and by, young people.

Chamber music lovers are catered for through both the Musica Viva series of concerts, which feature top-ranking international and Australian ensembles, and other series featuring artists based at the Elder Conservatorium and other tertiary institutions.

Australian Broadcasting Corporation

The Adelaide Symphony Orchestra gave eighty-five public concerts in 1982. They included 41 metropolitan subscription and special concerts and six for country audiences. Another thirty-seven were free concerts, including eighteen city and twelve country schools' concerts.

Other public performances staged by the Australian Broadcasting Corporation during 1982 included three by the Sydney Symphony Orchestra at the 1982 Adelaide Festival, four solo recitals in Adelaide by artists of world prominence, and three subscription recitals in Broken Hill.

Elder Conservatorium of Music

The Elder Conservatorium of Music at the University of Adelaide provides a comprehensive course of training for students in courses leading to the degrees of Bachelor of Music, Master of Music and Doctor of Philosophy, and also caters for part-time students by providing instruction in the various branches of music as single studies.

The Elder Hall is the concert hall of the Conservatorium. It was built in 1900 and for many years was a general purpose hall. Since the 1950s it has been used mainly for musical purposes, including public performances. Free lunch hour concerts, open to the public, are given frequently during term time by staff and students of the Conservatorium.

During 1977 the Elder Hall was completely renovated internally at a cost of \$1 million, this cost being met from money contributed to the University's Centenary Appeal Fund. The Hall is now a first-class concert hall seating 712 people, with a stage capable of accommodating an orchestra of 75 performers and a choir of 75 people. It is fully air-conditioned, and of excellent acoustical quality. A new organ, built by Casavant Frères of Canada, was installed in June 1979.

Particulars relating to the Elder Conservatorium at the University of Adelaide are given in Part 6.2.

DRAMA

The State Theatre Company

The State Theatre Company of South Australia has its home at The Playhouse in the Adelaide Festival Centre. Its objective is to promote the art of the theatre by the

presentation of performances, commissioning the writing of works, training of persons concerned in theatrical presentations, establishing and conducting educational programs and establishing a theatrical archival collection.

Each year the company presents a major season of plays in Adelaide which comprises Australian works and established classics, and also tours country areas.

The company has Australia's largest Theatre-In-Education team, 'Magpie', which provides schools (in both metropolitan and country areas) with a team of actor-teachers educating through drama by entertaining students on a participatory level. Additionally, the Theatre-In-Education team presents plays designed to attract families and young people to the theatre when on tour throughout the State.

The State Theatre Company presents the 'Day with Lighthouse' program which provides students with an opportunity to look behind the scenes at the workings of a professional theatre company and a full performance of a production by the company. The company has a playreading panel which advises on new plays submitted by Australian writers and a costume hire shop which supplies costumes to many amateur theatre groups as well as hiring fancy dress to the general public.

The Adelaide Festival Centre

The Adelaide Festival Centre is a \$21 million performing arts complex on a 2.5 hectare site located on the banks of the River Torrens near the centre of the city of Adelaide. The Centre comprises a multi-purpose concert hall and lyric theatre, two drama theatres and an open-air amphitheatre. Stage Three of the Centre's building project, completed in 1977, comprises a two-level underground car park and 0.75 hectares of open plaza, featuring an overall sculptural design. Additional convention facilities, completed in 1980, provide a flexible multi-purpose venue capable of seating 800 people, or 500 at banquets, and is also able to be partitioned into sound-proof meeting rooms. The restaurant and bar areas have been relocated to take full benefit of the views over Elder Park.

The Adelaide Festival Centre Trust administers the Festival Theatre, The Playhouse, The Space, Amphitheatre and Opera Theatre (formerly Her Majesty's Theatre) and is the State's largest entrepreneur of outside productions for these venues. The Festival Theatre attracts productions and performers to South Australia which otherwise might never be seen in the State.

The Festival Theatre

The \$7.96 million Adelaide Festival Theatre was the first completed auditorium of the Centre and was officially opened on 2 June 1973. Seating nearly 2 000 people on three levels and in a series of tiered boxes, the Theatre has been designed for a comprehensive range of theatre activities, including orchestral concerts and recitals, large-scale opera, ballet and drama, films, musical comedy, variety and jazz concerts, conventions and conferences. The seats extend across the Theatre in continental style with access from large foyers along the sides of the auditorium.

The Festival Centre Trustees have a policy of commissioning and purchasing works of art for the Centre which now has a collection valued at more than \$426 000.

The Drama Complex

In October 1974 work was completed on the \$7.42 million drama complex alongside the Festival Theatre. The largest auditorium in this complex is The Playhouse, a 600-seat, two-level theatre which is designed for both proscenium and extended-stage productions.

The Playhouse is served by a production workshop consisting of design studio,

carpentry and paint shops, assembly areas, wardrobe, millinery and wigmaking sections and a darkroom.

Alongside The Playhouse and beneath plaza level is The Space, a 320-seat experimental theatre. A completely flexible auditorium, The Space can be arranged in almost any variation of seating and acting areas. It has been designed as an ideal venue for experimental performances and teaching workshops.

Where the Festival Theatre and The Playhouse meet on the Elder Park side of the Festival Centre site, there is an open-air Amphitheatre which is formed by the natural slope of the site.

The Silver Jubilee Organ

In April 1979, the Festival Theatre's new Silver Jubilee Organ was inaugurated, as a tribute to the first 25 years of reign of Her Majesty Queen Elizabeth the Second. Built and installed at a cost of \$402 000, it is stored backstage at the Theatre and can be moved to different parts of the stage by two people using an air cushion similar to that which operates on hovercraft. It has two consoles, one integral with the instrument and one remote, giving it the versatile ability of solo orchestral and operatic performance. The organ has 4 200 pipes, fifty stops, three manuals and mechanical (tracker) key action.

The Centre's Activities

The Australian Ballet gives annual seasons in the Festival Theatre and the resident Adelaide Symphony Orchestra uses the Theatre for its annual orchestral and youth concert series as well as for special celebrity concerts by international artists and orchestras. The Adelaide Festival Centre Trust and principal Australian commercial entrepreneurs use the Centre for a wide variety of other presentations.

University of Adelaide Theatre Guild

The University of Adelaide Theatre Guild is a society formally associated with the university.

The objects of the Guild as set out in its constitution are:

- (a) to contribute to the cultural life of the University and the community by the promotion of theatrical activity;
- (b) the production and the study of plays of literary value, historical plays, plays about current ideas and events, and plays showing the development of the theatre;
- (c) the encouragement of and participatory involvement in progressive theatrical developments;
- (d) the study, the practice and the dissemination of knowledge of the arts and crafts of the theatre.

The Guild has a permanent acting ensemble with members attending weekly workshops, and a technical wing of the ensemble.

The Adelaide Festival

In 1958, a small group of Adelaide citizens developed plans for the first Adelaide Festival of Arts, which was held in 1960. Further festivals have been held in March in years of even number from 1962.

The Adelaide Festival has achieved many artistic triumphs in its twenty-year history and has been instrumental in bringing to Australia for the first time many notable overseas companies, performers and artists. It has seen the first performances of scores of major Australian productions and an increasing number of world premieres commissioned specially by or for the Festival. Notable world premieres have included Peter

Maxwell Davies' music theatre piece for *The Fires of London*, *Miss Donnithorne's Maggot* (1974), South Australian composer Richard Meale's oboe concerto *Evocations* performed by Heinz Holliger and Collegium Musicum of Zurich (1974), Sir Robert Helpmann's ballets, *The Display* (1964) and *Perisynthyon* (1974), Alex Buzo's *Coralie Lansdowne Says No* performed by Sydney's Nimrod Street Theatre (1974), Jack Hibberd's *A Toast to Melba* performed by the Australian Performing Group (1976), Patrick White's play *Night on Bald Mountain* (1966) and *Signal Driver* (1982), the Australian Dance Theatre's *Transfigured Night* and *Stripsody* (1980) and Robin Archer's *Songs from Sideshow Alley* which was specially commissioned for the 1980 Festival. First Australian performances have included the Janacek operas *The Excursions of Mr Broucek* (1974) and *The Makropoulos Affair* (1982), Sir William Walton's *Troilus and Cressida* (1964), Benjamin Britten's *War Requiem* (1964), his church parable *The Burning Fiery Furnace* (1970), his opera *Death in Venice* (1980) and Sir Michael Tippett's opera *The Midsummer Marriage* (1978).

World famous writers who have been guests at Festival Writers Week include Yevgeny Yevtushenko, Edna O'Brien, Anthony Burgess, Allen Ginsberg, John Updike, Alan Moorhead, Angus Wilson and Nadine Gordimer.

The completion of the \$21 million Adelaide Festival Centre has caused a shift in the emphasis of the Festival. The regular appearances of leading overseas performers and companies at the Centre throughout the year has enabled the Festival to engage in activities considered more appropriate to arts festivals. These include the commissioning of new works, the encouragement of local companies and artists and the provision of a variety of programs to attract greater public interest and appreciation.

'Come Out'

In May 1975, the Festival administration, with \$30 000 in special grants from the State and Commonwealth Governments and a commercial sponsor (The Savings Bank of South Australia), staged 'Come Out', the first in a series of biennial festivals of performing, creative and visual arts for young people. These are now staged in years of odd number, between the main Festivals.

Regional Cultural Centre Trusts

The Regional Cultural Centres Act, 1976-1980 provides for the establishment of Regional Cultural Centres, at places designated by proclamation, and for their operation and management. Proclamations have been issued for centres at Mount Gambier, Port Pirie, Whyalla and Berri, for the South-East, Northern, Eyre Peninsula and Riverland regions respectively. The powers and functions of each Trust (constituted of eight persons—not less than three of whom shall be residents, including two nominated by local Councils) are to establish, maintain, develop, manage and control, a Centre for the performing arts, visual arts and crafts. The broad definition of the aim of the Trusts is 'to serve the cultural needs of their regions'. In pursuit of this aim, the Trusts have accomplished the following:

- (a) construction of a 500-seat theatre in each of the towns of Mount Gambier and Port Pirie, commencement of a 500-seat theatre in Renmark and plans for a 500-seat theatre in Whyalla;
- (b) appointment of Community Arts Officers to serve at a number of Regional Cultural Centres. Officers are based at Berri, Mount Gambier, Port Augusta, Port Lincoln, Port Pirie and Whyalla;
- (c) acquisition by the South East Trust of the Naracoorte Art Gallery, which has

remained under the direction of the Naracoorte Gallery Management Committee, and a hall in Mount Gambier which is used by art and craft groups and as a temporary exhibition area;

- (d) compilation by each of the Trusts' Community Arts Officers of regional directories of arts resources, facilities and activities within the regions which provide an information and advisory service to local groups and individuals;
- (e) involvement, in conjunction with the Arts Council of SA and Adelaide based organisations such as the Contemporary Arts Society, Women's Art Movement, and Craft Council of SA, in the co-ordination of touring exhibitions and specific creative projects.

The Trusts are also involved in the co-ordination of workshops, assistance in presenting local craft fairs and exhibitions by local groups and individuals, and assistance in establishing and developing local art and craft groups.

Carclew Youth Performing Arts Centre

Carclew advises the Government on youth performing arts policy, recommends the allocation of small grants for projects, assists in co-ordinating the activities of companies working with or for young people, and mounts special projects of its own, often with the assistance of the Federal Government through the Australia Council.

Carclew's facilities include: a Lending and Information Service; the Youth Arts Press; venues for meetings, rehearsals and other activities; the Schools Performing Arts Review Committee; a National Office which links up with other youth performing arts, produces the national magazine of youth performing arts, 'Lowdown', and is also the Australian Centre for ASSITEJ, the International Association of Theatre for Children and Young People. In addition, Carclew provides a home for both the National Music Camp Association, which controls the Australian Youth Orchestra, and the Association of Community Theatres. Carclew also operates *Theatre 62* as a children's and youth theatre.

Australian Dance Theatre

Re-established in 1977 under the artistic direction of Jonathon Taylor, the Australian Dance Theatre has become an internationally acclaimed modern dance company performing to South Australian and Victorian metropolitan and country audiences and touring to other Australian States. The company creates most of the works in its repertoire. It also tours overseas and has performed at the Edinburgh Festival, throughout Europe and in South-East Asia.

BROADCASTING

Radio and television broadcasting falls within the jurisdiction of the Commonwealth Government and is principally governed by the *Broadcasting and Television Act 1942*. Commonwealth bodies which are directly involved with broadcasting include the Department of Communications, the Australian Broadcasting Corporation (ABC), the Australian Broadcasting Tribunal, the Australian Telecommunications Commission (Telecom Australia) and the Special Broadcasting Service (SBS).

In addition to radio and television stations operated by the ABC and the SBS there are commercial radio and television stations operated by companies under licence and public radio stations operated on a non-profit basis by corporations under licence.

The responsibility for the development of the broadcasting system rests mainly with the Minister for Communications. The Minister is responsible, through his Department,

for broadcast planning, including all matters relating to the technical operation of stations, and for the investigation of interference to the transmission and reception of programs.

The Australian Broadcasting Tribunal, which came into being on 1 January 1977, has responsibility for licensing and supervision of the operation (other than technical aspects) of all commercial and public stations. The Tribunal is required to conduct public inquiries into: the granting of licences following the invitation of applications by the Minister; the renewal or transfer of licences; the setting of standards of broadcasting practices; alleged breaches of licence conditions; such other matters as the Minister may direct.

LICENSING

Subject to the conduct of an inquiry, during which submissions from the public may be considered, the Australian Broadcasting Tribunal is empowered to grant a licence, or to renew, suspend or revoke the licence of any commercial or public station. The criteria according to which the Tribunal may refuse to grant or renew a licence are enumerated in the Act. Licences to operate a commercial or public station are granted to companies by the Tribunal for an initial period of up to five years; licences may be renewed for periods of from one to three years. The initial licence fee is \$500. Subsequent licence fees are assessed annually on a sliding scale set out in the *Broadcasting Stations Licence Fees Act 1964* and the *Television Stations Licence Fees Act 1964* using each station's gross earnings in the previous twelve months accounting period as the basis for the calculation.

RADIO

There are at present twenty medium frequency Amplitude Modification (AM) radio stations operating in South Australia. In the metropolitan area there are two national, four commercial and one public station, while there are eight national and five commercial stations in country areas.

The Australian Broadcasting Corporation's Collinswood studios relay a Frequency Modulation (FM) service for 24 hours each day to cities across Australia, including Mount Gambier. An Adelaide commercial station 5SSA-FM, and three public stations, 5MMM-FM, 5PBA-FM and 5EBI-FM, also broadcast on the band.

The *Broadcasting and Television Act 1942* makes provision for the grant of public radio licences in various categories, namely educational, community, and special interest. Four public radio stations operate in Adelaide—5UV (University of Adelaide), 5MMM-FM (Progressive Music Broadcasting Association Incorporated), 5EBI-FM (Ethnic Broadcasters Incorporated) and 5PBA-FM (Para Broadcasters Association Incorporated).

In January 1982, the Australian Broadcasting Tribunal approved the grant of an FM public radio licence to Mallee Community and Educational Broadcasting Co-operative to serve the Murrayville-Pinnaroo district. The Tribunal has also approved the grant of FM public radio licences to serve the Mount Gambier community to South East Community Access Radio Incorporated) and the northern suburbs of Adelaide and Elizabeth (to Para Broadcasters Association Incorporated).

TELEVISION

Television Stations

The Adelaide area is served by one National and three commercial television stations on the Very High Frequency (VHF) band.

Television Programs

Commercial channels place considerable emphasis on drama and light entertainment, whereas the Australian Broadcasting Corporation devotes more time to programs of an informative and educational nature. Statistics of Adelaide television programs are shown in the following table.

Composition of Television Programs, All Adelaide Stations, 1981-82

Category	Commercial	National
	Per cent (a)	
Television drama	28.9	12.6
Cinema movies	17.1	2.3
Light entertainment	15.6	8.3
Sport	13.3	17.5
News	5.3	6.4
Children's	8.4	24.0
Family	2.8	0.5
Information	3.0	6.8
Current affairs	3.7	4.6
Politics	0.1	—
Religion	1.6	1.3
The arts	—	2.8
Education	0.2	12.9
Total	100.0	100.0

(a) Percentage of transmission time (6 a.m. to 12 midnight) in each category.

In an average hour on commercial television in Adelaide, programs occupy 48 minutes 21 seconds; advertisements occupy 9 minutes 33 seconds and other material, such as program promotions and community service announcements occupy 2 minute 6 seconds. More technical details concerning Radio and Television services can be found in Part 10.5 Communication.

FILMS

South Australian Film Corporation

The South Australian Film Corporation (SAFC) is constituted under the South Australian Film Corporation Act, 1972-1980. The Corporation has the sole right to produce, or arrange for the production of, films for or on behalf of the State Government.

The Corporation also may undertake film production on its own behalf or for other organisations. It produces its own feature films for cinema and television release and also enters into co-production and investment arrangements with other producers. Productions in which it has been involved so far include *Sunday Too Far Away*, *Picnic at Hanging Rock*, *Storm Boy*, *The Last Wave*, *Blue Fin* and *Breaker Morant*, which have received Australian and overseas acclaim from audiences and critics.

The Corporation also produces many short films for commercial sponsors, in addition to a wide range of films for State Government departments and instrumentalities. Prints of these films are sold extensively throughout Australia and abroad. Many have won Australian and international awards for excellence.

Other functions of the Corporation include the distribution and exhibition of films, the provision of library and other services relating to films and research into the effective-

ness of films generally. The State Film and Video Library of South Australia, which provides a free lending film service throughout South Australia, is a division of SAFC.

The Corporation encourages feature film and television production by providing studio and sound mixing facilities for rental. Liaison services for producers based outside South Australia are also available.

All SAFC operations and staff are centred at Hendon. This complex provides a complete film production facility, including: two large sound stages with dressing rooms, make-up, wardrobe, laundry and office facilities; modern sound mixing and post-synch recording studios; large set construction and storage areas and extensive costume, props and equipment hiring service. The State Film and Video Library also occupies part of the SAFC complex at Hendon.

THE PRESS

The State's first newspaper, *The South Australian Gazette & Colonial Register*, was first printed in London in 1836, six months before colonisation. The second issue of this paper, which served both as the official government publication and as an unofficial reporter of the news, was produced in Adelaide twelve months later. *The South Australian Gazette* (renamed *The South Australian Government Gazette* in 1840) emerged as a separate organ in 1839 and the newspaper continued as *The Register*. In 1850 *The Register* became the first continuous daily paper.

In the next twenty years several more daily newspapers were introduced, and for many years there were two morning and two evening papers daily. However, since the mid-1920s the present system of three major newspapers—one morning daily, one evening daily and one weekend publication—has emerged.

The Advertiser, published each morning except Sunday, was first issued in 1858 as *The South Australian Advertiser* and absorbed *The Register* in 1931. It is distributed throughout the State, with about seventy-five per cent of its circulation in Adelaide and suburbs and twenty-five per cent in country districts.

The News, published each evening from Monday to Friday, was introduced in 1923 replacing two evening newspapers, *The Express & Telegraph* and *The Journal*, which traced back their origins to the 1860s. Eighty-one per cent of sales of *The News* are in Adelaide and suburbs.

The Sunday Mail, printed on Saturday evenings and distributed mainly on Sunday mornings, first appeared under this name in 1955 following a merger between *The Mail*, first printed in 1912, and the *Sunday Advertiser*, which was introduced in 1953. About twenty-five per cent of sales of the *Sunday Mail* are in country districts.

The Stock Journal, previously the *Adelaide Stock and Station Journal*, was established in 1904. It is published weekly and provides up-to-date information on stock and wool markets and the technical aspects of farming and property management.

In addition to these major State-wide newspapers, a strong provincial press has been built up. There are at present twenty-eight country newspapers operating in the State with a combined circulation of over 123 000. Most of these are published weekly, although four appear twice each week, two three times a week and one four times a week. Of those still existing, *The Border Watch* (Mount Gambier) in 1861 and *The Bunyip* (Gawler) in 1863 were first to appear. Earlier publications are, however recorded; *The Port Lincoln Herald*, for example, was printed in the early 1840s. There are district papers printed by Messenger Newspapers Pty Ltd, containing items of local interest circulated in a number of suburbs of Adelaide as well as a number of community newspapers published on a non-profit basis by committees of local residents.

PARKS AND GARDENS

Botanic Gardens

The Adelaide Botanic Garden, occupying 18.5 hectares east of the Royal Adelaide Hospital, was established in 1855 and was opened to the public in 1857. Botanic Park, an area of about 30 hectares north of the Garden was acquired in 1866 and has now been developed as an arboretum. Since 1860 powers of management have been vested in the Board of the Botanic Gardens of eight members who serve for a period of four years but who may be re-elected for further terms.

The Garden contains an extensive collection of about 6 000 species of plants. Important features are the collections of native plants from dryland regions, cacti and succulents, the glass ground, glasshouse displays and the wisteria arbours. The Museum of Economic Botany, opened in 1881, houses a comprehensive carpological collection, displays of plant products and educational displays. The Tropical House is a fine example of a nineteenth-century conservatory and, along with the Museum and Main Gates, is listed in the Register of the National Estate.

In 1954 the State Herbarium was re-established within the Botanic Garden and a new herbarium building was completed and occupied in 1965. At present it contains about 400 000 specimens. In 1980, a substantial extension was opened to the State Herbarium. The Herbarium is the centre of all significant research on the classification of native flora of South Australia, in addition to specialist research on the genera *Eremophila*, *Kunzea*, *Cassytha* and flowering plant families *Scrophulariaceae*, *Verbenaceae* and *Stackhousiaceae*.

The Botanic Gardens Library is the most complete of its type in the State, with numerous rare books, periodicals and archival items.

State-wide advisory services are available on all matters relating to ornamental horticulture. A seconded teacher from the Education Department handles all inquiries from pre-primary to tertiary curricular matters and all visits by school children.

Experimental tree plantations have been established at Giles Corner, Lameroo and Stansbury to test hardiness of ornamental woody plants under natural rainfall. New plantations are being developed at Cleve, Hawker, Mount Gambier and Quorn.

In the mid-1960s the Wittunga Garden at Blackwood was donated by the Ashby Family to the Botanic Gardens. This comprises approximately fifteen hectares of Australian and South African plants and was opened officially in September 1975.

Mount Lofty Botanic Garden of approximately ninety-seven hectares was established in 1952. It is devoted to the cultivation of northern and southern hemisphere temperate plants and was opened to the public on 5 November 1977.

The grounds of Government House are maintained by the Botanic Gardens. In 1981 the Board of the Botanic Gardens assumed control of the four hectare heritage garden 'Beechworth' at Stirling, a late nineteenth century '*Rhododendron*' garden not presently open to the public. An organisation, The Friends of the Botanic Gardens, was formed in November 1977 and now numbers approximately 500 people. This group organises various activities, ranging from voluntary work in the Garden's library and herbarium to social functions for its members.

Zoological Gardens

The Royal Zoological Society of South Australia was founded in 1878, and in 1883 approximately 8 hectares of Botanic Park were granted to the Society for the establishment of the Zoological Gardens. At the same time arrangements were made for the various exotic and Australian animals and birds previously housed in the Botanic Gardens to be transferred to the Zoological Gardens.

The Zoological Gardens contain an excellent collection of mammals, birds and

reptiles. Particular emphasis is given to Australian animals and especially to native Australian birds. During 1981-82, 128 species of mammals, including a large collection of marsupials, and 218 different species of Australian and foreign birds were exhibited.

The many mammals, reptiles and birds are attractively displayed in cages and enclosures; the enclosures for some animals are moated yards freely open to public view. Two walk-through aviaries, a Children's Zoo, where the animals can be handled and fed, and a nocturnal house for the display of animals which are active during the night, are features of the Gardens.

The revenue necessary for maintaining and developing the Gardens is obtained through an annual State Government grant, from gate receipts and sundry sources.

During 1981-82 about 330 000 persons visited the Zoological Gardens.

National Parks and Wildlife Service

The South Australian National Parks and Wildlife Service operates under the National Parks and Wildlife Act, 1972-81. The Service is a division of the Department of Environment and Planning and is the main authority responsible for the development of parks and reserves, as well as the protection of native vegetation and wildlife throughout the State.

Natural areas are set aside to conserve samples of the major plant communities and wildlife habitats of South Australia. At the end of June 1982, 201 reserves had been declared, including nine National Parks, fifteen Recreation Parks, 169 Conservation Parks and eight Game Reserves, covering nearly 4.5 million hectares.

Management plans are prepared to assist park management. These set out the objectives for a park, identify the outstanding features, wildlife, vegetation and heritage sites and set priorities for work programs. During 1981-82, the Final Management Plan for Innes National Park was released. This park preserves the largest area of natural bushland remaining on Yorke Peninsula as well as a significant population of the rare Western Whipbird.

Community involvement in park management is particularly important and consultative committees have been established to enable interested groups to formally participate in the planning and care of parks. Eight new committees were launched in 1981-82 including the Eyre Peninsula, Kangaroo Island, Yorke Peninsula, Northern, Barossa, Mid-North and Mount Lofty Ranges Consultative Committees. Another program, known as The Community Assistance Scheme, was initiated in 1982 to enable community organisations to carry out volunteer work in parks and participate in projects such as weed control programs and survey and research work.

The Vegetation Retention Scheme has continued to attract applications from rural landowners. Under the Scheme, landholders are encouraged to enter into Heritage Agreements to retain and manage significant areas of native vegetation through the provision of various incentives, such as rate relief and fencing subsidies.

Another major responsibility of the Service is the protection of native animals which is achieved mainly through the issuing of permits to keep and sell protected animals, the regulation of hunting of game species and the re-establishment of threatened or endangered species. Biological surveys are also conducted to establish a good baseline knowledge of existing plant and animal species. This information can be used to help determine the impact of human development on the natural environment. A highlight of an offshore island survey was the discovery of a large breeding colony of fleshy-footed Shearwaters (a grey sea bird) on Smith Island, Lincoln National Park. Another survey led to the discovery of the Planigale (a tiny marsupial mouse) in Mount Remarkable National Park.

A general description of the vegetation and wildlife of South Australia is included in Part 1·4, Natural Environment.

Municipal Parks and Gardens

The City of Adelaide is surrounded by 688 hectares of parklands, considerable areas of which are devoted to gardens (136 hectares), golf courses (100 hectares) and other recreational areas. The form of development and flexibility of areas permits varied usage by the public including equestrian activities, swimming, boating, ball games, picnicking, fetes, Christmas parties, art displays and pop concerts. Planting during the year 1981-82 included 2 750 new and replacement trees.

Most suburban and country local government authorities maintain parks and gardens within their areas.

RECREATION AND SPORT

Department of Recreation and Sport

The Department of Recreation and Sport was established on 11 November 1982 around the nucleus of the former Division of Recreation and Sport. The Department is involved in:

Government Assistance Programs and Resources;

- facility development programs for recreation and sporting facilities;
- equipment grants;
- junior sports coaching scheme, grants for coaching and training;
- financial assistance towards travel to national sporting events;
- grants for the conduct of sporting championships in SA;
- umpire/referee training grant scheme;
- salary subsidy scheme for State sporting administrators/coaches;
- administrator grants for state recreation organisations;
- grants for innovative recreation programs;
- level I & II sports injury courses;
- level I & II sports administration courses;
- research and planning for recreation and sport;
- providing information on available recreation and sporting opportunities;
- recreation for special groups, including the disabled, elderly and ethnic groups;
- publicity of vacation recreation programs;
- administration of the 'Life. Be in it' campaign;
- development and maintenance of walking tracks (Heysen Trail);
- development of community physical fitness;
- playground development;
- co-ordination of Government involvement in the development of open space for recreational use;

Facilities;

- administration of residential recreation camps at Mylor, Parnanga and 'Frahns Farm' at Monarto and a Conference Centre at 'Graham's Castle', Goolwa;
- providing office accommodation and clerical assistance for state sporting associations;

Racing and Gaming;

administering the Regulations under the Lottery and Gaming Act, 1936-1982, pertaining to the licensing of fund raising lotteries in this State. Issuing licenses, providing information and guidance, and ensuring compliance with the Regulations;

administering the provisions of the Soccer Football Pools Act, 1981;

administering the provisions of the Racing Act, 1976-1983, and Regulations thereto. Supervision of Racing in South Australia.

Racecourses Development Board

The Racecourses Development Board, established under the Lottery and Gaming Act, 1936-1980 and continued under the Racing Act, 1976-1983, administers the Horse Racing Grounds Development Fund, the Trotting Grounds Development Fund and the Greyhound Racing Grounds Development Fund. These funds are financed by the deduction of 1 per cent from multiple totalisator betting and 50 per cent of unclaimed dividends and dividend fractions derived from South Australian Totalizator Agency Board betting operations.

The Board provides financial assistance by way of grants or loans towards:

- public facilities at racecourses;
- other facilities which will benefit racing;
- stake money.

Sports Administration Centre

In May 1978 the State Government established a Sports Administration Centre at Wayville. The Centre provides individual/shared office accommodation for sporting associations, general office services, printing and duplication service and telephone facilities.

The Centre has been designed to help alleviate the problems and expenses involved with the administration of sporting organisations. It is intended to function as a house of business and is geared to encourage associations to conduct their management in a more proficient and informative manner. As a collective central point, it allows a more effective communication level to be established with Government authorities and private business groups interested in the promotion of sport.

A restriction of five days per week per sport has been imposed and therefore priority for accommodation is given to the recognised State Associations. If the controlling body does not require the services of the Centre, then affiliated groups, with the approval of the State body, may avail themselves of the services.

SPORTING FACILITIES

In terms of attendance the most popular spectator sport is Australian football; during the 1982 season the average attendance at the 110 minor round matches was 7 344 while the average at the six final matches was 32 479.

From 1974 the South Australian National Football League Inc. has used its headquarters ground, Football Park at West Lakes, for major games with the Adelaide Oval as a support oval for matches when Football Park is unavailable or when other matches have been programmed there. There was a record attendance of 66 897 at the Grand Final on 25 September 1976 and a record minor-round figure of 35 213 for a match on 5 September 1981.

Adelaide Oval, occupying approximately six hectares of the north parklands, has been used for major cricket and Australian football matches. The record attendances have

been 62 543 on 2 October 1965 for Australian football and 50 962 for Test cricket on 14 January 1933. In addition there are first-class suburban ovals at which major sports are played.

The Olympic Sports Field which features a synthetic 'tartan' track is the headquarters of the Athletic Association of South Australia which is affiliated with the Australian Athletic Union. Each Saturday from October to March inter-club contests are held at this arena with an approximate annual attendance of 100 000 competitors and spectators. In addition regular international twilight meets are scheduled throughout the year.

The Apollo Entertainment Centre at Richmond is a multi-purpose air-conditioned building with seating for 3 200 spectators at which a weekly basketball competition is conducted. It is situated on a two hectare site and is the headquarters of the Amateur Basketball Association of South Australia Inc. The Centre is also used by visiting entertainers, other sporting bodies, ethnic groups, conventions and exhibitions. Other basketball stadiums are at Forestville, Bowden, Marion, Hillcrest, Colonel Light Gardens and Morphett Vale. Many school gymnasiums have basketball facilities and this sport is played in the open at various centres.

A number of indoor multi-purpose centres exist at Angle Park (The Parks centre), Blackwood, Campbelltown, Elizabeth, Ingle Farm, Marion, Noarlunga, Tea Tree Gully, Woodville, Salisbury and Port Adelaide and in country areas at Barmera, Clare, Kadina, Loxton, Mannum, Mount Barker, Mount Gambier, Naracoorte, Peterborough, Port Augusta, Renmark, Tanunda and Waikerie.

The parklands of the City of Adelaide are used extensively for sporting purposes and during 1981-82, 434 sports permits were issued catering for eighteen different sports.

Sports grounds are distributed throughout suburban Adelaide, at approximately two to three kilometre intervals, and throughout country areas. In addition, sports areas are available at most government and non-government schools.

Race Courses

There are four registered metropolitan courses; Morphettville, Cheltenham, Victoria Park (occupying approximately 23 hectares of the east parklands) and Oakbank. In addition there were, at 31 December 1982, thirty-two registered racing clubs and twenty-eight registered country courses. Picnic race meetings are held at a number of outlying centres.

Trotting Tracks

Metropolitan trotting in South Australia is conducted at Globe Derby Park, Bolivar, a modern and well-appointed track. There are twelve other courses in use in the State and six of these (Gawler, Kadina, Kapunda, Mount Gambier, Port Augusta and Port Pirie) have facilities for the conduct of night trotting. The courses situated at Cowell, Kimba, Murray Bridge, Strathalbyn, Victor Harbor and Whyalla conduct day meetings.

Dog Racing

Greyhound racing (with betting) was introduced into South Australia in May 1971 with meetings at Whyalla and Strathalbyn. Other tracks have been established at Angle Park, Barmera, Gawler, Port Pirie, Port Augusta, Port Lincoln and Mount Gambier since that date. Meetings are held three to four times a week. Average attendance at Angle Park, the city track, is approximately 2 000. At present about 5 000 people own or train greyhounds in South Australia. The estimated greyhound population is 8 000 dogs. In 1982, 275 meetings were held throughout the State, and \$673 000 was paid out in stake money for the financial year.

Golf Courses

At 31 December 1982 there were nine suburban public courses, five 18-hole courses, including one at the Belair Recreation Park, and four par-3 links. There were also fourteen private courses operating within suburban Adelaide. In addition, there are courses at many country centres.

Motor Racing

Adelaide International Raceway at Virginia was opened on 2 January 1972. It occupies an area of 65 hectares and contains two racing circuits of 2 and 3 kilometres respectively, a 3 kilometre asphalt speed bowl, and a drag-racing strip. There is provision for 20 000 spectators and approximately fifty meetings are held each year.

To the north of Adelaide meetings are held at the Mallala Motor Sport Park, which covers approximately 81 hectares. The Park has bitumen and dirt tracks and is used for road and sprint racing, moto-cross and buggy racing. Various motor sports clubs use the park for private meetings and approximately six to eight open meetings are held each year.

Tennis Courts

The Memorial Drive Tennis Club's courts (twenty-eight grass, eight hard and ten synthetic) at Memorial Drive, North Adelaide occupy approximately 4 hectares of the north parklands. The centre court was the venue for Davis Cup matches in 1952, 1956, 1963, 1968, 1975, 1978 and 1983. The parklands also contain approximately 210 other tennis courts. Courts associated with schools, churches and private clubs exist throughout the State.

Lawn Bowling Clubs

At 30 June 1982 there were 237 bowling clubs registered with the Royal South Australian Bowling Association—sixty-six in and near Adelaide and 171 in country areas, including four at Broken Hill, New South Wales. The size of clubs varied from thirty-five rinks at Bordertown to as few as three rinks, with the two largest suburban clubs being Holdfast Bay and Lockleys, each with thirty-two rinks. There are also 235 bowling clubs registered with the South Australian Women's Bowling Association, sixty-two in the metropolitan area (including five clubs exclusively for women) and 173 in the country. The total membership exceeds 17 700 men and 10 500 women.

Swimming Facilities

At 31 December 1978 there were eighty-one public swimming pools in South Australia, of which fifty-seven were in country centres. Of these only eight country and two metropolitan pools had been in use before 1950, recent activity having been stimulated by a State Government subsidy on pool construction. Of the eighty-one pools, seventy-four had treated water, the remainder were in lakes, dams, rivers or the sea, or utilised sea water. While mainly used for recreational and instructional purposes, the facilities provide a base for fifty-four swimming clubs providing instruction and competition in swimming, diving and water polo. These clubs had 5 223 members in 1981.

Swimming pools are provided at sixty-eight government schools, twenty-eight of these being in country areas. Swimming facilities are also available at a number of non-government schools. The Education Department encourages school committees to build swimming pools by granting subsidies for their construction.

The Adelaide Swimming Centre in the north parklands, opened on 20 December 1969, is a complex of four heated pools, including a 50-metres eight-lane pool, a diving/water polo pool, both of which comply fully with international competition requirements, a

20-metres by 20-metres learner's pool and a toddler's pool. The Centre is contained in a 2-hectare grassed area with spectator accommodation for 2 000 people forming an amphitheatre arrangement surrounding the competitive pools.

A new swimming complex was opened at Marion on 24 January 1976. The complex comprises 50-metres, learner's and wader's pools with associated facilities and was constructed at a cost of approximately \$900 000 by the Marion City Council, with financial assistance from the Commonwealth and State Governments.

An indoor 25-metres heated public swimming pool has been completed for the Parks Community Centre, the third in the State; the other two being at Mount Gambier and Whyalla.

The nature of Adelaide's foreshore and that of many country beaches, combined with the prevailing climate, provides ideal conditions for open sea summer bathing.

LOTTERIES AND BETTING

LOTTERIES

The State Lotteries Act, 1966-1981, which was assented to on 3 November 1966, provides for the promotion and control of lotteries by the Government of the State. On 24 November 1966, a Lotteries Commission consisting of a chairman and two other members was appointed to administer the Act. The first draw was made on 29 May 1967.

In accordance with Section 16 of the Act all moneys received by the Commission are paid into a Lotteries Fund from which moneys are made available to meet the expenses of the Commission and to pay prizes. The balance of the Lotteries Fund, which represents the surplus of income over expenditure and prize money not claimed for over six months, is transferred to the Hospitals Fund.

Up to 31 December 1982, \$339.3 million was received from the sale of tickets, including X Lotto, and Instant Money Game, of which \$206.0 million was distributed in prize money, and approximately \$109.3 million had been transferred to the Hospitals Fund.

Originally only one lottery, a 50 cent series, was conducted but in July 1967 a Jackpot series with tickets at \$1 each, was introduced. In addition special lotteries have been conducted with tickets sold at \$2, \$3, \$4, \$5, \$10, \$15 or \$20 each. The last of the 50 cent lotteries was drawn on 2 July 1974 and on 3 July 1974 a 60 cent lottery was introduced. However, its popularity gradually declined and the 60 cent lottery was discontinued on 6 August 1976.

In April 1973, a new type of lottery called 'X Lotto' (Cross Lotto) was introduced. In February 1981 X Lotto was replaced by the Australian Lotto Bloc with X Lotto as a partner. However the immediate sales benefits were subsequently reduced by the introduction of Soccer Pools. For the year ending 31 December 1982, \$33.1 million was invested.

On 4 December 1978 the Commission introduced yet another type of lottery called 'Instant Money Game'. As its name indicates, subscribers know immediately if they have won a prize. This lottery originated in America in 1974 and has spread to England, Europe and Africa. The instant prizes in this lottery range from \$2 to \$10 000, amounts of \$2, \$5 and \$10 are paid immediately at the point of sale; higher prizes are paid by cheque from Head Office immediately after verification on presentation of the ticket. Tickets are in lots of 500 000 with a face value of \$1 each, 61 per cent of which is allocated to prize money. Sales for the year ending 31 December 1982 were \$17.4 million.

At 31 December 1982 there were 251 Lotteries Commission Agents in South Australia. Of these, 169 were in the Adelaide and suburban areas and 82 in country areas, of whom 26 were subscriber (non-ticket selling) agents.

BETTING

Legalised betting in South Australia is restricted to horse racing, trotting, greyhound racing and coursing. Since 1 January 1977 it has been governed by the provisions of the Racing Act, 1976-1981.

The Act makes provision for betting with the totalisator and with bookmakers at horse race, trotting and greyhound race meetings. The totalisator cannot be used at coursing meetings but bookmakers may operate at these meetings.

Before December 1933 legalised betting was restricted to totalisator betting at registered race meetings. From 1933 to 1967 it was limited to 'on-course' totalisator and to betting with bookmakers who were licensed to bet on courses where meetings were held, and also (from January 1934 to February 1942) with bookmakers who were licensed to bet 'off-course' in registered premises.

Betting: Amounts Invested with Bookmakers and On-Course Totalisators and Distribution of Commissions, Taxes and Fractions, South Australia

Particulars	1978-79	1979-80	1980-81	1981-82
Amount invested:	\$'000			
Bookmakers;				
Horse racing	123 551	118 719	118 825	119 110
Trotting	28 812	27 119	28 062	29 808
Greyhound racing and coursing	27 300	27 055	26 488	25 882
Total	179 663	172 893	173 375	174 800
Totalisator;				
Horse racing	14 581	13 938	14 450	18 557
Trotting	3 264	3 172	3 173	3 208
Greyhound racing and coursing	2 866	2 859	2 810	2 852
Total	20 711	19 969	20 433	24 617
Total amount invested	200 374	192 862	193 808	199 417

Distribution of commissions, taxes and fractions derived from betting transactions:

State Government;				
Bookmakers,				
Commission on bets	2 002	1 926	1 942	1 961
Duty on betting tickets	137	126	(a) 58	—
Unclaimed bets	184	169	151	162
Totalisator,				
Tax	1 021	980	849	917
Total paid to Consolidated Revenue	3 344	3 201	3 000	3 040

Betting: Amounts Invested with Bookmakers and On-Course Totalisators and Distribution of Commissions, Taxes and Fractions, South Australia (continued)

Particulars	1978-79	1979-80	1980-81	1981-82
Clubs;				
Bookmakers,				
Commission on bets	1 925	1 851	2 117	2 384
Totalisator,				
Commission on takings	2 077	2 010	2 226	2 825
Fractions	140	165	180	213
Total payable to clubs	4 142	4 026	4 523	5 422
Racecourses Development Board;				
Commission on Totalisator				
takings	47	46	52	73
Totalisator fractions	41	—	—	—
Total	88	46	52	73
Hospitals Fund;				
Totalisator unclaimed dividends	94	96	120	101
Total distribution	7 668	7 369	7 695	8 636

(a) Amending legislation, effective from 28 December 1980, abolished duty on betting tickets.

As a war-time measure racing and betting in South Australia were banned from March 1942 until October 1943. Off-course betting facilities were not re-established until 1946, when they were restricted to country areas. Port Pirie is the only town where bookmakers now operate in registered premises.

In October 1966 provision was made for the setting up of the Totalizator Agency system of 'off-course' betting, and agencies have since been established in the metropolitan area and at numerous country towns. A Board consisting of a Chairman and seven other members representative of racing and trotting interests was appointed to administer the new system and the Totalizator Agency Board (TAB) Headquarters was established in Adelaide during December 1966. The Board was enlarged during 1970-71 to include a representative of the greyhound racing interests. The Board was changed in 1976 to comprise an independent Government appointed Chairman and Deputy Chairman plus a representative from the controlling body of each of the three codes of galloping, trotting and greyhounds. The TAB first operated on 29 March 1967 on a country race meeting while it operated for the first time on a metropolitan meeting on 1 April 1967.

Thirteen agencies were open on the first day of TAB operations. At 30 June 1982, 163 agencies were operating in the city, suburbs and country towns. Of these, forty-five were sub-agencies operated in conjunction with other businesses. In addition, a system of telephone betting is available to persons who have established accounts with the TAB. The installation of mark sense ticket betting terminals in metropolitan agencies commenced on 8 February 1979. The conversion of country agencies and sub-agencies to the computerised on-line betting system started in July 1981 and was completed by August 1982. In November 1981 the telephone betting system was upgraded to allow account holders anywhere in the State to place bets for the cost of a local telephone call. At 30 June 1982 the Board employed 199 permanent and 358 part-time staff.

For the year ended 30 June 1982 off-course investments totalled \$133 046 627 of which approximately 83 per cent was payable as dividends. The following amounts became payable to the South Australian Government (to be paid into the Hospitals Fund at the State Treasury) from the operations of the Board during that year:

	\$
Share of profit (1 July 1981 to 30 June 1982)	4 330 350
Fractions	1 002 536
Unclaimed dividends	442 367
Commission on NSW investments	3 004
	<hr/> 5 778 257 <hr/>

To 31 December 1980 the South Australian Government received 5.25 per cent of all investments. However, from 1 January 1981 the TAB retained all commission deducted from investments, paying 50 per cent of its net profit to the Government and the remaining 50 per cent to the Codes.

In addition, for the year ended 30 June 1982, an amount of \$4 330 350 was available for distribution to Galloping, Trotting and Greyhound Clubs under a scheme of distribution prepared by the Controlling authorities for each code and approved by the Minister for Recreation and Sport. Since commencing operations in 1967 the Board has distributed a total of \$28 021 760 to participating clubs while in the same period, the South Australian Government has received \$62 069 074.

Racecourses Development Board

The Racecourses Development Board, established under the Lottery and Gaming Act, 1936-1980 and continued under the Racing Act, 1976-1980, administers the Horse Racing Grounds Development Fund, the Trotting Grounds Development Fund and the Dog Racing Grounds Development Fund. These funds are financed by a proportion of investments on totalisators conducted by racing clubs or the Totalizator Agency Board and are to be applied by way of grants or loans to racing clubs for providing, erecting, improving or repairing public facilities. The Board is empowered also to borrow funds for these purposes.

6.5 HEALTH

HISTORICAL

The first hospital in South Australia was built in 1837. It was a small thatched hut situated on North Terrace and measured 6 metres by 4 metres. The foundation stone of the first Adelaide Hospital was laid in 1840. This building, which was demolished in 1938, contained two 12-bed wards and four smaller rooms. The first buildings of the present Royal Adelaide Hospital were erected in 1856-57. Hospitals in the country were established at Mount Gambier in 1869, Wallaroo and Port Lincoln in 1870, Port Augusta in 1875, and Port Pirie in 1890. The Port Adelaide Casualty Hospital was erected in 1882.

The first mental health services were provided from the Adelaide Gaol and a short-lived 'Public Colonial Lunatic Asylum' established in 1846 on the Greenhill Road site of the present Glenside Hospital. The 'Adelaide Lunatic Asylum', situated in the Botanic Gardens, operated from 1852 to 1902. The Parkside Lunatic Asylum (now Glenside Hospital) commenced operation in 1870 under the control of the Colonial Surgeon. The

Enfield Receiving House and the Northfield Mental Hospital (now Hillcrest Hospital) were established in 1922 and 1929 respectively.

The first Health Act in South Australia was passed in 1873. This Act, which was modelled on earlier English legislation, established a Central Board of Health, and a number of town councils were constituted as local boards. The present Health Act dates from 1935. Administration continued under the authority of the Central Board of Health until 1951 when a Department of Public Health was formed to co-ordinate the work of the board and other health activities.

The major State Government authorities responsible for health services in South Australia were the Hospitals Department and the Department of Public Health. Each Department, administered separately, had a permanent head who reported to the Minister of Health.

The Hospitals Department was responsible for the management and co-ordination of Government Hospitals in South Australia, both general and psychiatric.

The South Australian Health Commission was established on 1 July 1978 to ensure better rationalisation and co-ordination of health services in this State. A step in this direction was made in January 1978 when the Department of Public Health amalgamated with the Hospitals Department and the South Australian Health Commission assumed the functions previously undertaken by the Department of Public Health.

The Health Commission embraces the activities of the Central Board of Health, the Occupational Health Branch, Dental Health Services, the Communicable Disease Control Unit, Central Cancer Registry, Health Surveying Services, Intellectually Retarded Services, Mental Health Services, the Food and Drugs Advisory Committee, the Radiological Advisory Committee, the Clean Air Committee, and also the public health aspects of the control of tuberculosis, including the Chest Clinic and the State X-ray health surveys. The Commission is responsible also for health education, including the drug education program sponsored by the Commonwealth Government, and for Aboriginal health in South Australia.

The Central Board of Health administers the Health, Food and Drugs, Narcotic and Psychotropic Drugs, Noxious Trades and Bakehouses Registration Acts. The Board also has responsibilities under the Local Government Act, the Cremation Act, the Clean Air Regulations and Abattoirs Act.

The Health Act and the Food and Drugs Act constitute for every municipal or district council a local board of health or local authority for its area, except that in the metropolitan area, the Metropolitan County Board (representing twenty metropolitan corporations) is the local authority under the Food and Drugs Act. The Central Board of Health acts as a supervisory body over all the 127 local boards under the Health Act, the Food and Drugs Act and the Bakehouse Registration Act. It has concurrent jurisdiction with local boards. Outside the boundaries of local boards the Central Board is the administering authority.

The Commonwealth Government through the Departments of Health and Social Security is responsible for the administration of national health services in co-operation with State health authorities and voluntary organisations. Under the *Quarantine Act 1908* the Department of Health is responsible for the various aspects of human, animal and plant quarantine.

The South Australian Branch of the Department of Veterans' Affairs administers the medical services provided for ex-service personnel whose disabilities are accepted as being attributable to war service.

The funding and administration of health care services in South Australia have

undergone significant changes over the past twelve months. The Commonwealth Government's new health policy and the South Australian Health Commission's reorganisation have been amongst the most important of these changes.

The Commonwealth Government's new funding arrangements for recognised hospitals and the associated health insurance changes are a move towards the consolidation and extension of State Government responsibilities for the direct administration of health care services and greater contributions by individuals towards the cost of their care. South Australia continues to share the agreed net operating costs of its recognised hospitals with the Commonwealth, although the Cost-Sharing Agreement has been amended to allow for the raising of charges for all patients, except those assessed as eligible for exemption under Commonwealth criteria. These include unemployment and special beneficiaries, holders of Pensioner Health Benefit Cards and other disadvantaged people and their dependants, subject to an income test. Hospital Boards of Management have the authority to waive charges for preventive health services and for services to the chronically ill in cases of financial hardship.

The reorganisation of the South Australian Health Commission's central administrative and executive function, effective from 1 July 1981, has been designed to make it more effective in achieving the rationalisation and co-ordination of health services in South Australia.

The existing Central Office has been reorganised into three Sector Offices based on geographical areas, a Public Health Services Division and a Corporate Office. The three Sector Offices will enable the South Australian Health Commission to give greater attention to the needs of health units. The Executive Directors in charge of Sector Offices are responsible for all matters related to the organisation and delivery of health services within their sectors. The Corporate Office is responsible for the South Australian Health Commission's broader and longer-term policy development, planning, co-ordination and funding decisions. This involves liaison with the health system as a whole, other State Government departments and other levels of Government.

The School Health Services and the Child, Adolescent and Family Psychiatric Services of the South Australian Health Commission amalgamated with the Mothers and Babies' Health Association on 1 November 1981 to form the new Child, Adolescent and Family Health Service. This amalgamation consolidates in one organisation those services which cater for the total health needs of the family.

GENERAL HOSPITAL SERVICES

The control of hospitals in South Australia is vested in several authorities including the South Australian Health Commission, the Department of Veterans' Affairs, religious and charitable organisations, local community committees and private owners.

RECOGNISED HOSPITALS

Recognised hospitals (formerly public hospitals) are those which have been approved under the Hospital Agreement between the State Government and the Commonwealth. This agreement was subsequently renegotiated, with some amendments, effective from 1 October 1976. They are deficit financed by the State Government; the Commonwealth has agreed to meet up to 50 per cent of net operating costs in accordance with an agreed budget.

Recognised Hospitals, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
Hospitals	81	81	81	81	81
Staff (at end of year):					
Medical;					
Salaried	775	767	808	807	815
Sessional (a)	152	138	140	133	149
Nursing	8 235	7 808	7 461	7 557	7 220
Other	7 176	7 083	6 804	6 719	6 983
Total	16 338	15 796	15 213	15 216	15 167
Patients:					
Admitted	202 802	216 315	220 138	228 593	222 319
Average daily number resident	4 364	4 412	4 394	4 534	4 452
	\$'000				
Operating receipts:					
State Government aid	102 371	107 306	108 692	128 148	134 132
Commonwealth Government	102 371	107 306	108 692	128 148	134 132
Fees	40 350	43 908	48 687	47 209	71 625
Other	5 039	4 748	4 110	4 215	4 314
Total	250 131	263 268	270 181	307 720	344 203
Operating payments:					
Salaries and wages	181 384	189 656	195 395	221 529	252 135
Other	68 747	73 612	74 786	86 191	92 068
Total	250 131	263 268	270 181	307 720	344 203
Capital payments:					
Buildings, equipment etc.;					
Government	24 479	15 199	10 238	17 840	12 917
Other	9 444	9 800	6 018		8 364
Total	33 923	24 999	16 256	17 840	21 281

(a) Includes visiting staff paid on a sessional basis and honorary consultants, but not those paid on a modified fee for service basis.

Teaching Hospitals: South Australia, 1981-82

Particulars	Royal Adelaide Hospital	Queen Elizabeth Hospital	Adelaide Childrens Hospital	Flinders Medical Centre	Queen Victoria Hospital
Staff (at end of year):					
Medical;					
Salaried	258	180	95	191	12
Sessional (a)	52	27	20	20	7
Nursing	1 346	1 060	486	821	325
Others	1 449	1 204	673	981	199
In-patients:					
Admitted and re-admitted	38 510	32 454	17 262	27 156	9 186
Average daily number resident	789	515	187	421	142

(a) Includes visiting staff paid on a sessional basis and honorary consultants, but not those paid on a modified fee for service basis.

The five teaching hospitals and the former country Government hospitals, along with five former non-government hospitals, were incorporated under the South Australian Health Commission Act at 30 June 1980. Each has its own board of management.

In addition there are sixty recognised hospitals in country areas and four (including Adelaide Childrens Hospital and Queen Victoria Hospital) in the metropolitan area, conducted by local boards of management, which are deficit financed by the State Government and supervised by the South Australian Health Commission.

Royal Adelaide Hospital

Royal Adelaide Hospital is a general teaching hospital incorporated under the South Australian Health Commission Act and controlled by a board of management. The Hospital is affiliated with the University of Adelaide for the clinical teaching of undergraduate medical students. The Hampstead Centre (an annexe of the Hospital) provides rehabilitation services for medical, orthopedic, neuro-surgical and spinal injury patients as well as providing nursing home beds.

At 30 June 1982 there were 954 beds at the North Terrace site and 99 beds at Hampstead Centre. This excludes 125 beds at Hampstead classified as nursing home beds.

Queen Elizabeth Hospital

The Queen Elizabeth Hospital at Woodville is a general, casualty and maternity hospital incorporated under the South Australian Health Commission Act and controlled by a board of management. It is a teaching hospital affiliated with the University of Adelaide for the clinical teaching of undergraduate medical students. Opened in 1954 as a temporary 55-bed maternity hospital, it has been developed progressively to a major teaching hospital which, at 30 June 1982, had 702 beds available. In January 1982 the Queen Elizabeth Hospital assumed responsibility for the administration and management of the Western Domiciliary Care Service (Mareeba) and Western Regional Rehabilitation Service (Alfreda).

Modbury Hospital

Modbury Hospital is a general hospital comprising medical, surgical, maternity and childrens wards, and casualty and out-patient services. It is incorporated under the South Australian Health Commission Act and controlled by a board of management. The hospital was officially opened on 16 February 1973, with 134 staffed beds. Since that time additional beds have become available progressively and at 30 June 1982, 228 beds were in use.

Queen Victoria Hospital

The Queen Victoria Hospital, founded by public subscription, was opened in 1902. It primarily provides facilities for midwifery, neo-natal paediatrics and gynaecology. It is a university teaching hospital and is controlled by a board of management. Accommodation at 30 June 1982 was 182 beds.

Adelaide Children's Hospital

The Adelaide Children's Hospital was founded by public subscription in 1876 and the first buildings were completed in 1879. The hospital is a general paediatric teaching hospital and is a training school for nurses; the Department of Paediatrics of the University of Adelaide is situated at the hospital. It is controlled by a board of management and is a recognised hospital. Accommodation at 30 June 1982 was 274 beds.

Flinders Medical Centre

Opened in 1976, the Flinders Medical Centre represents the concept of a general teaching hospital integrated with a university (Flinders University) for the clinical teaching of undergraduate medical students and for research. At 30 June 1982, 494 beds were in use. The centre is controlled by a board of management of nine members.

COMMUNITY HEALTH AND DOMICILIARY CARE

The Domiciliary Care Program, established in 1971 and funded jointly by the State and Commonwealth Governments, provides health support services at home so that the recipient is able to live in a domiciliary situation where frequently the only previous alternative would have been institutional care. This concept was greatly expanded in 1973-74 by the addition of the Community Health Program which provided for a wider range of community health services not necessarily of a domiciliary nature.

With the introduction of the Hospital Program from 1 July 1975, there has been a rationalisation of community health services, so that existing hospital facilities may be used, where appropriate, in lieu of the provision of separate facilities or projects.

The whole concept of community health care is one of continuing development as a viable alternative, in appropriate circumstances, to institutional health care.

REPATRIATION HOSPITALS

The Department of Veterans' Affairs maintains the Repatriation General Hospital at Daw Park. It was built as a military hospital during the 1939-45 War, and came under the control of the Department in 1947. Medical, surgical and psychiatric in-patient and out-patient treatment is provided for eligible ex-service personnel, eligible dependants, serving members of the forces and, under certain conditions, for non-eligible ex-service personnel and civilians.

In 1974 the Daw Park Private Hospital adjacent to the Repatriation General Hospital was acquired and developed as a Rehabilitation Centre and Day Hospital. Within the Hospital's grounds is the Repatriation Artificial Limb and Appliance Centre which manufactures and supplies artificial limbs and other aids free of charge to all persons who require them, regardless of whether they have a Repatriation entitlement or not. The average daily number of patients in the Repatriation General Hospital during 1981-82 was 224. At June 1982 there were 726 staff and 287 beds.

PRIVATE HOSPITALS AND NURSING HOMES

There are several large private hospitals in the metropolitan area including Calvary Hospital, the Memorial Hospital and St Andrew's Presbyterian Hospital, all of which are run by denominational bodies. The Julia Farr Centre at Fullarton provides accommodation and nursing attention for persons suffering from chronic disease. The day-to-day management of the Centre is conducted by the South Australian Health Commission.

Details of all private institutions approved for payment of Commonwealth Government hospital or nursing home benefits are given in the following table.

Private Hospitals and Nursing Homes, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
Number of hospitals	37	36	37	36	37
Number of nursing homes	127	131	129	137	147
Number of beds at end of year:					
Hospitals	1 984	2 002	2 083	2 073	2 038
Nursing homes	4 663	4 932	5 146	5 444	6 854

MENTAL HEALTH SERVICES

A significant number of organisational changes took place within the Mental Health Services of the State in 1981-82. Many of these changes were made in parallel with the newly adopted sector administrative arrangements of the South Australian Health Commission which were introduced on 1 July 1981.

In the early part of the 1981-82 year the following hospitals and services were incorporated under the Health Commission Act: Glenside Hospital on 13 July 1981; Hillcrest/Enfield Hospital on 24 August 1981; and the Child, Adolescent and Family Health Services (including Child, Adolescent and Family Psychiatric Services) on 30 November 1981. By the end of June 1982 the earlier functional separation of the intellectually handicapped services from the administration of the Director of Mental Health Services was formally recognised by the incorporation of the Intellectually Disabled Services Council as a separate body with clearly defined responsibilities for the planning and monitoring of services for those with intellectual handicaps. The gazettal of the Intellectually Disabled Services Council as a separate incorporated body stipulated that its incorporation should take effect from 1 July 1982.

From the time of their incorporation onwards, all of these newly incorporated mental health bodies were given similar rights and responsibilities to those previously accorded to the major general hospitals and other health units by the South Australian Health Commission. While functional differences remained, no administrative distinctions were made between the mental health services and the general health services provided to community members. Each incorporated body was allocated to a specified sector within the Commission as part of this planned process of administrative integration. Close internal management relationships were soon established between Glenside Hospital and the Southern Sector. Similar relationships were established between Hillcrest/Enfield Hospital and the Child, Adolescent and Family Health Services and the Central Sector. The Director of Mental Health Services continued to retain responsibility for the management of the three community psychiatric clinics (St Corantyn, Carramar and Beaufort Clinics) and the Community Residency Program (psychiatric rehabilitation hostels).

Government Psychiatric Institutions, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81(a)	1981-82(a)
In-patients:					
Admitted and re-admitted ...	3 648	3 971	4 470	6 279	6 790
Discharged	3 743	3 935	4 339	6 246	6 824
Deaths during year	92	95	111	73	71
Remaining at end of year;					
Males	917	933	899	899	823
Females	753	758	812	780	751
Persons	1 670	1 691	1 711	1 679	1 574
Out and day-patients:					
Treated during year;					
Males	3 276	4 059	4 909	n.a.	n.a.
Females	3 240	3 894	4 722	n.a.	n.a.
Persons	6 516	7 953	9 631	16 611	13 515

(a) The 1980-81 and 1981-82 data have been processed manually and show discrepancies with the data from earlier years.

ALCOHOL AND DRUG ADDICTS TREATMENT BOARD

The treatment of those addicted to alcohol and other drugs in South Australia is the responsibility of the Alcohol and Drug Addicts Treatment Board under the provisions of the Alcohol and Drug Addicts (Treatment) Act, 1961-1976.

The Board controls the following facilities for the treatment of alcoholism and other addictions:

- Administrative Headquarters and Information Centre—Parkside;
- Driver Assessment Clinic—Parkside;
- Elura Clinic, North Adelaide—assessment clinic and out-patients centre;
- Osmond Terrace Clinic, Norwood—a 'sobering up' and observation unit for patients from all areas;
- Family Living Centre, Joslin—a residential therapeutic community for drug dependent persons;
- Osmond Terrace Drug Dependence Clinic, Norwood—assessment and treatment of patients addicted to narcotics.

An alcoholism treatment service is also provided by the Board to patients at the Flinders Medical Centre. In the country, the Board conducts clinics at Whyalla, Port Augusta, Port Pirie, the Riverland, Naracoorte, Mount Gambier, Port Lincoln and the Barossa Valley.

The efforts and operations of various church and voluntary organisations are co-ordinated by the Board. These organisations are assisted financially by the South Australian Government.

Education on the various aspects of dependency is undertaken by Board staff of a number of helping professionals both at undergraduate and graduate level.

CHILD, ADOLESCENT AND FAMILY HEALTH SERVICE

On 30 November 1981 the School Health Branch and Child, Adolescent and Family Psychiatric Services of the South Australian Health Commission merged with the Mothers and Babies' Health Association (MBHA) to form the Child, Adolescent and Family Health Service (CAFHS). This organisation now provides preventive health services for children under the age of eighteen years and their families.

The organisation provides services in Child Health Centres, kindergartens, schools, health centres and hospitals throughout South Australia.

Early Childhood Services

At 300 centres throughout the State child health nurses offer a supportive service to families with young children, providing information and advice which will help with the management of normal child development and minor problems associated with the growing child. Nurses also monitor the growth and developmental progress of infants and young children. Individual and group sessions are conducted for the management of problems in the older child up to the age of five years. Physiotherapy, family management and antenatal classes are held regularly, and many parentcraft courses are conducted in various locations throughout the year. An extensive correspondence service is provided for remote and isolated families, both within Australia and overseas.

The Torrens House Mothercraft Hospital provides training for infant welfare Sisters in South Australia. Torrens House has twenty beds and admits mothers with newborn babies for assistance in management and also treats babies and children up to the age of five years for various behavioural disorders. An Outreach program offers similar services to those provided for in-patients. Clients may also receive assistance on a daily basis at Torrens House.

Liaison nurses are based in all major metropolitan hospitals, to promote links between hospital and community services for mothers of new babies, and children who have been treated at hospital. A social work service exists for disadvantaged families including single mothers, and families-at-risk of child maltreatment.

Services to School Children

The medical inspection of school children was first introduced into schools in 1913 and between 1951 and 1981 was the responsibility of a branch of the Department of Public Health and later the South Australian Health Commission.

The medical assessment program aims to detect health problems likely to affect the progress of children at school and to provide advice on appropriate management. Children in need of medical treatment are referred to other agencies. All government and non-government schools are visited, usually annually. Students in Year 1 in primary schools are given a health assessment by a child health nurse. In addition, vision and hearing are assessed in Year 8, and students are offered an opportunity to discuss any health concerns with the nurse. The role of the child health nurse is being progressively extended into the community, and CAFHS staff work in close collaboration with other health and welfare workers, teaching staff and parents. There is an extensive school-lecturing service on parentcraft.

Child health nurses have been appointed to Priority Project Schools, Child-Parent Resource Centres and Community Health Centres. In some schools, child health nurses are responsible for providing CAFHS services to families and all children up to the age of eighteen years.

Psychiatric and Other Special Services

Psychiatric services are provided through Cartref House (Wakefield Street, Adelaide), Mitchell House (Fitzroy Terrace, Prospect), Magarey House (South Terrace, Adelaide) and for adolescents at Willis House (Enfield Hospital). Psychiatric services are also provided by CAFHS staff at Flinders Medical Centre.

Special services to pre-school children include developmental screening in a number of metropolitan kindergartens under the direction of a developmental paediatrician. Some follow-up services for children identified during screening programs in pre-schools are also provided. Children identified during the hearing screening program in pre-schools or schools can be further assessed by the Deafness Guidance Clinic in Rundle Mall.

The service is also active in the area of child health research and program evaluation.

GOVERNMENT DENTAL SERVICES

The School Dental Service is administered by the Dental Health Services Board of the South Australian Health Commission. From its introduction in 1921 as a school dental program for remote areas, subsequent extensions of the program have seen the Service achieve its objective of making dental care available to all primary and pre-school children, by the opening of the 1981 school year.

Government funded programs of dental care for pensioners and disadvantaged persons were established in 1980 at the Flinders Medical Centre, Gilles Plains Community College and the Parks Community Health Centre. A further clinic was opened at the Whyalla and District Hospital in November 1982.

On 1 July 1982, the South Australian Dental Service was incorporated under the Health Commission Act. The new organisation was formed by amalgamating the Adelaide Dental Hospital (formerly the Dental Department of the Royal Adelaide Hospital) and the Dental Health Services branch of the Health Commission, and it is responsible

for the provision of government funded dental services to children, pensioners and disadvantaged persons.

NOTIFIABLE DISEASES

Under the Health Act, 1935-1981, certain diseases have been designated as 'infectious' and others as 'notifiable'. It is required that cases of infectious and notifiable diseases be reported to the local board of health, which in turn advises the Central Board of Health, and that cases of tuberculosis, gonorrhoea and syphilis be notified directly to the Central Board. Pathology Laboratories notify all such cases to the Central Board. It should be noted that the figures in the following table refer to cases notified and may not reflect the actual number of occurrences of the diseases in the population.

Notifiable Diseases: Cases Notified, South Australia

Diseases	1978	1979	1980	1981	1982
Amoebiasis	1	4	14	18	10
Atypical Mycobacterium infections ..	(a)	(a)	(a)	15	6
Brucellosis	11	28	27	11	8
Campylobacter	(a)	(a)	501	327	515
Food poisoning	29	37	38	38	29
Giardiasis	(a)	(a)	568	661	565
Gonorrhoea	1 248	1 110	856	976	887
Hepatitis A	142	108	115	107	136
Hepatitis B	128	189	189	84	144
Leptospirosis	9	15	11	11	6
Malaria	21	31	54	38	38
Meningococcal infection	19	5	4	15	15
Pertussis (whooping cough)	(a)	(a)	55	80	30
Q-fever	20	67	125	173	50
Rubella	21	91	72	33	24
Salmonella infection	277	461	727	743	333
Shigella infections	47	101	100	38	30
Syphilis	254	355	251	122	109
Tuberculosis	93	123	130	103	113
Other notifiable diseases	10	28	43	52	51

(a) Not notifiable.

The Royal Adelaide Hospital maintains a venereal diseases investigation clinic at 275 North Terrace, Adelaide. There are also clinics situated at the Flinders Medical Centre, Bedford Park; in Nile Street, Port Adelaide; and at the Adelaide Women's Community Health Centre, 2 King William Road, North Adelaide.

Anti-tuberculosis Campaign

Compulsory X-ray surveys, introduced in 1952 to detect active cases of tuberculosis were discontinued in 1977. Tuberculin tests and B.C.G. immunisation to children in Year 9 at government and non-government schools continues to be offered.

With improved living standards in post-war years and aided by the tuberculosis campaign, the incidence of the disease has been reduced to a very low level of 8.02 per 100 000 of mean population.

Immunisation Programs

Diphtheria and poliomyelitis have not occurred as epidemic diseases in South Australia within the last two decades. Surveys have shown that approximately 90 per cent of

the infant population receives immunisation against pertussis (whooping cough), diphtheria, tetanus and poliomyelitis.

Measles immunisation on a large scale commenced in 1970 and now reaches at least 50 per cent of children over one year of age. Rubella immunisation is offered to all girls between the ages of eleven and fifteen years and uptake rates of 90 per cent are now achieved.

ABORTION

Since 1970, termination of pregnancy for specified medical and related conditions has been permitted under Section 82a of the Criminal Law Consolidation Act, 1935-1981. Certification of the grounds for termination of pregnancy is normally required from two legally qualified medical practitioners, one of whom performs the operation and all such operations are required to be undertaken in hospitals prescribed for this purpose. Notification of termination of pregnancy from certifying doctors and from hospitals where terminations take place are sent to the Director-General of Medical Services. This Section of the Criminal Law Consolidation Act is administered by the Minister of Health.

The following tables give details of abortions notified in recent years.

Abortions Notified: Type of Termination, South Australia

Type of Termination	1977	1978	1979	1980	1981
	Number				
Vacuum aspiration	2 876	3 215	3 396	3 579	3 704
Dilation and curettage	450	388	319	295	277
Intra-uterine injection	(a)	(a)	118	128	129
Hysterotomy	29	22	12	16	9
Hysterectomy	11	8	6	5	1
Other	200	161	35	38	20
Not stated	24	25	20	12	—
Total	3 590	3 819	3 906	4 073	4 140

(a) Before 1979, these figures were included in other.

Abortions Notified: Grounds on Which Granted, South Australia

Grounds	1980		1981	
	Number	Per Cent	Number	Per Cent
Assault on person	3	0·1	5	0·1
Potential damage to fetus	67	1·6	65	1·6
Specified medical disorders	40	1·0	44	1·1
Specified psychiatric disorders	3 963	97·3	4 026	97·2
Total	4 073	100·0	4 140	100·0

Abortions Notified: Age Distribution, South Australia

Age Group (Years)	1977	1978	1979	1980	1981
	Number				
Under 15	34	40	41	36	33
15-19	1 127	1 200	1 194	1 232	1 220
20-24	959	1 079	1 138	1 239	1 298
25-29	678	667	647	695	747
30-34	375	428	439	480	493
35-39	244	239	247	236	216
40-44	117	106	131	87	103
45 and over	9	15	18	20	14
Not stated	47	45	51	48	16
Total	3 590	3 819	3 906	4 073	4 140

OTHER HEALTH SERVICES**Blood Transfusion Service**

The Red Cross Blood Transfusion Service collects and processes blood for the routine and emergency needs of all hospitals in South Australia. Blood donations are given at the Service's centre in Adelaide, at a mobile unit visiting metropolitan and country centres, and at regional centres. In 1982 over 100 000 individual donations were received.

The Service maintains blood banks at the Royal Adelaide Hospital, Queen Elizabeth Hospital and the Flinders Medical Centre, and a reference laboratory which, in addition to performing the necessary tests on donor blood, carries out investigations for hospitals and medical practitioners. There are subsidiary blood banks at the Adelaide Children's Hospital, the Repatriation General Hospital, Modbury Hospital and the Lyell McEwin Hospital, Elizabeth, and regional blood transfusion centres have been established at Murray Bridge, Mount Gambier, Whyalla, Berri, Port Lincoln, Port Augusta and Wallaroo.

The cost of maintaining the Blood Transfusion Service is met by the State Government (60 per cent), the Commonwealth Government (about 37 per cent) and the Red Cross Society (about 3 per cent).

Home Nursing

The Royal District Nursing Society of South Australia Incorporated, through its fifty branches in metropolitan and country districts, provides registered nurses to attend the sick in their own homes, giving physical, psychological and supportive care.

Relatives are educated to assist in the care of patients and in helping patients to help themselves. Fees are not fixed but patients are expected to contribute according to their means. During 1981-82 the 192 full-time nurses made a total of 438 100 visits. The Society also maintains an emergency hospital at Marree and a medical centre at Iron Knob.

Funding is provided by the South Australian Government (36 per cent), the Commonwealth Government (36 per cent), with the other 28 per cent coming from contributions, local government and fund raising.

Aerial Medical Services

The Royal Flying Doctor Service (RFDS) of Australia is a non-profit organisation providing through its bases medical, dental, ophthalmic, School of the Air and telegram services in remote areas of Australia. The Royal Flying Doctor Service of Australia (Central Section) Inc. operates over an area of approximately 2 124 000 square kilometres in South Australia and the Northern Territory; it administers control stations at Port Augusta, and Alice Springs in the Northern Territory, two aircraft being based at Port Augusta and three at Alice Springs. For the year ended 30 June 1982 these aircraft flew a total of 800 000 kilometres in transporting 1 061 patients to hospital and treating 3 540 patients at outback clinics. A further 810 patients received dental treatment from Adelaide dentists on regular monthly visits. Doctors gave 3 902 radio consultations to outback residents and 18 820 telegrams and 24 698 radio-phone calls were transmitted from 388 licensed, fixed and portable outstations.

No flying charges are made to patients and the Service relies on donations, bequests and similar sources for approximately 20 per cent of the finance required and 80 per cent from Commonwealth and State Government grants.

Ambulance and Associated Services

The St John Council for South Australia Inc. operates the ambulance service for South Australia through thirteen metropolitan bases, and seventy-nine country branches and sub-branches. Staffing is provided through an integrated system of regular and volunteer officers. In the metropolitan area during 1980-81 St John ambulances travelled 2 319 610 kilometres and carried 174 620 patients. Country ambulances travelled 2 463 320 kilometres and transported 43 991 patients. In addition three aerial ambulances, two based at Whyalla and one based at Adelaide, flew 2 394 hours and carried 1 322 patients. The St John Radio Network, with common frequencies, covers South Australia through fifty-six base and 230 mobile stations.

Common training programs for all officers are based on a Manual of Casualty Care and Transport published by St John in South Australia, and all officers are required to undergo annual Skills Maintenance and Assessment. The establishment of the Medic Alert Foundation, which originated in the United States of America, has facilitated the identification of people suffering from diseases and allergies which are not readily apparent. This knowledge is of assistance to both ambulance and hospital staff in handling and treating patients. In South Australia, Medic Alert is sponsored as a joint project by St John and Rotary International and is administered by St John Council for South Australia for all States and Territories in Australia, excepting Western Australia.

First Aid courses of eight weeks duration are conducted by St John throughout the State. The courses attract a steady demand from the general public. A course 'Occupational First Aid' is designed for people working in industry and although only introduced in 1981, the interest being shown in this particular course indicates that there will be heavy demand in future.

Besides the 'First Aid' and 'Occupational First Aid' courses, some 3 500 people from government departments and industry were instructed in the skills of cardio-pulmonary resuscitation. It is also planned to commence basic life support training sessions so that the general public will be able to support life at the scene of an accident until the arrival of an ambulance.

CREMATORIUMS AND CEMETERIES

The first crematorium in South Australia, the Adelaide Crematorium, was erected by the Cremation Society of South Australia, presented to the State Government in 1903 and subsequently was closed in November 1959. Cremations are currently conducted at two cemeteries in the State. The Centennial Park Crematorium was erected in 1956 and is operated by the Centennial Park Cemetery Trust. A second crematorium, constructed by the Enfield General Cemetery Trust, commenced operations in December 1969.

Cemeteries in South Australia are divided into three main groups; those under the control of the State Government or local government authorities, those under church control and those under the control of trusts. In each of these groups the cemeteries are financed by the usual charges for burials and by the leasing of land for burial purposes. With church and trust cemeteries, the cost of maintenance is often derived from interest accruing from invested capital funds.

MEDICAL PERSONNEL

The following table lists registrations with the Medical, Dental, Pharmaceutical, Physiotherapy, Chiropodists, and Nurses Boards of South Australia, and with the Board of Optical Registration.

Professional Medical Personnel Registered at 31 December, South Australia

Profession	1977	1978	1979	1980	1981	1982
Medical practitioners (a)	4 574	4 783	(b) 4 800	(b) 5 100	(b) 5 500	4 778
Dentists	635	667	708	748	732	782
Pharmaceutical chemists	893	976	944	973	949	933
Opticians	107	108	120	124	136	141
General nurses (c)	16 384	17 653	18 938	20 052	21 111	22 097
Enrolled nurses	7 036	8 125	8 871	9 453	10 089	10 714
Midwives	6 085	6 505	6 868	7 174	7 502	7 806
Psychiatric nurses	1 349	1 527	1 663	1 792	1 896	1 995
Mental deficiency nurses	680	745	781	870	953	987
Infant welfare nurses	786	787	858	891	923	946
Mothercraft nurses	332	365	393	404	410	415
Infectious diseases nurses	37	72	38	38	38	38
Dental nurses	254	272	288	300	311	320
Physiotherapists	657	701	727	758	791	790
Chiropodists (d)	132	132	129	123	130	140

(a) Includes personnel not practising in South Australia. Date of registration is 31 January in the following year.

(b) Approximate only.

(c) General nurses may also be registered and included in other nursing categories.

(d) Date of registration is 1 July.

The figures for registered medical practitioners show the number of persons registered to practise medicine in South Australia and not the number actually practising, which is estimated at approximately two-thirds of those registered. Since the 1939-45 War there has been a considerable re-organisation of general practice in medicine with a movement away from single practices to partnership and group practice arrangements.

MEDICAL SCIENCES AND RESEARCH

Institute of Medical and Veterinary Science

The Institute of Medical and Veterinary Science, a body corporate, was established in 1937 to incorporate the functions of the former Adelaide Hospital Laboratory. The governing body of the Institute is the Council, and the chief executive officer of the Institute is the Director. Under the Institute of Medical and Veterinary Science Act, 1982, the Institute is subject to the control and direction of the Minister of Health. This Act, which repealed the Institute of Medical and Veterinary Science Act, 1937-1978, also provided for the transfer of the veterinary pathology and forensic pathology functions to the Departments of Agriculture, and Services and Supply respectively.

The Institute provides diagnostic facilities in all branches of laboratory medicine for the Royal Adelaide Hospital and other metropolitan and country hospitals, for public health authorities, for industry, and for private practitioners. It undertakes some work in veterinary pathology for the Department of Agriculture. Research is conducted into selected problems connected with human disease. The staff of the Institute take part in the teaching of the medical sciences to graduates, students and technicians.

The Institute is financed partly by an annual grant from the State Government, and by its earnings from work in laboratory medicine for Recognised Hospitals and for individual patients. Its research and development projects are assisted by the National Health and Medical Research Council, other research-funding bodies, certain private firms and benefactors.

The Institute of Medical and Veterinary Science

Particulars	1978-79	1979-80	1980-81	1981-82
Staff at end of year	871	871	883	863
Tests performed	44 426	4 411	4 589	4 630
		'000		
Revenue:				
State Government Grant	2 568	3 213	1 755	3 153
Fees for laboratory tests	10 164	11 092	13 405	14 788
Other	2 634	2 914	2 674	2 741
Total	15 366	17 218	17 834	20 682
Expenditure:				
Salaries and wages	10 889	12 178	14 093	15 632
Other	3 825	4 666	4 553	4 846
Total	14 713	16 844	18 646	20 478

At the Royal Adelaide Hospital the Institute operates a Blood Transfusion Service, a Nuclear Medicine Service and undertakes all required autopsies. Institute medical staff also take an active part in patient care by providing the clinical requirements of certain wards of the Royal Adelaide Hospital. To meet the need for laboratory services and blood transfusion in rural areas, the Institute operates nine regional laboratories.

Anti-Cancer Foundation

The forerunner of the Foundation, the Anti-Cancer Campaign Committee, was formed within the University of Adelaide in 1928. The Committee's early activities were largely devoted to establishing and developing the Radiotherapy Department of the Royal

Adelaide Hospital. As demand for these facilities grew the hospital assumed responsibility for routine treatment and the Committee concentrated its activities on cancer research. In 1962 the Committee was re-organised and became the Anti-Cancer Foundation of the University of Adelaide.

Early research was of a clinical nature, but more recently the Foundation has subsidised cancer research projects within the Institute of Medical and Veterinary Science, the Flinders University of South Australia, the University of Adelaide, the Queen Elizabeth Hospital and the Royal Adelaide Hospital.

Educational campaigns are conducted to encourage the public to seek early medical advice and prompt treatment. A mobile anti-cancer education unit makes periodical visits to all the major towns of South Australia. Social workers assist with problems associated with cancer patients being cared for at home by relatives. The Foundation has established Martin House, a well-equipped hostel to accommodate country patients receiving treatment at the Royal Adelaide Hospital. It has also set up the Mastectomy Rehabilitation Service to help women after breast surgery.

The income of the Foundation is derived from gifts and bequests, government grants and subsidies, and from direct public appeals. The Foundation is currently setting up support groups and branches in the suburbs of Adelaide, and various country towns in South Australia, to broaden its anti-cancer activities.

National Heart Foundation

The National Heart Foundation of Australia and its South Australian Division were established in 1960. Its aims are research into the causes of heart and arterial diseases, the rehabilitation of patients suffering from heart and arterial diseases, and the education of doctors and the general public in all aspects of cardio-vascular problems with particular emphasis on prevention and risk factors. The National Heart Campaign of 1961 raised \$5 124 000 for the work of the Foundation, of which \$662 000 was contributed in South Australia. An appeal for further funds which was made during 1969 raised \$268 000 in South Australia. Since then, the Heart Fund Continuing Support Program has been established with the aim of providing regular annual donations to support the three-part program. In 1981, the total amount raised by the Heart Fund Program exceeded \$700 000. The campaign funds are being spent on research (66 per cent), education (20 per cent) and rehabilitation (14 per cent). Research funds, distributed at the national level, support projects in various departments at the University of Adelaide, at Flinders University, and at the Institute of Medical and Veterinary Science, the Royal Adelaide Hospital and the Adelaide Children's Hospital. Research funds are also used in providing local and overseas fellowships and travel grants.

The National Heart Foundation Centre, Adelaide was established by the South Australian Division in 1963. The South Australian Division is involved in professional education of medical practitioners and paramedical staff, and an increasing emphasis is placed on community education in order to make the public aware of the symptoms of heart attack and what to do if one occurs, and to emphasise the risk factors which increase the chances of having a heart attack. A registered nurse or education officer is available to visit and talk to interested groups.

A Heart Risk Assessment Clinic was opened at the Heart Centre in February 1978. The aim of the clinic, which is staffed by a medical officer, registered nurse and assistant, is to detect abnormalities in blood pressure and blood fat levels. A complete assessment of risk factors is carried out, covering height and weight measurements, smoking and exercise, in addition to the taking of a blood specimen and blood pressure measurement. Clients are referred back to their own doctors for further advice.

With complete financial support from the Lions' Heart Research Foundation, a Mobile

Educational Unit was purchased in February 1979. The unit is used in community education with emphasis on heart-lung resuscitation classes throughout the State.

STATE AUTHORITIES EXPENDITURE ON PUBLIC HEALTH

The following table shows the net expenditure by State Authorities from Consolidated Revenue Account on various aspects of health, excluding expenditure on sewerage, drainage and water supply. The figures include both the cost of maintaining State Authorities activities and subsidies paid to other organisations active in this field. For further details see Part 11.3 State Government Finance.

State Authorities: Outlay on Health, South Australia

Purpose	1977-78	1978-79	1979-80	1980-81
		\$'000		
General administration, regulation and research	7 923	9 078	9 246	10 426
Hospital and clinical services:				
Mental health	44 315	38 908	40 505	48 634
Other hospital and clinical services	222 544	233 030	232 271	268 835
Other health services:				
Preventive services	1 059	1 061	1 230	2 360
Maternal and infant health	2 969	2 236	2 508	2 732
Domiciliary care	2 516	2 554	2 847	3 226
Health of school children	6 170	8 090	8 542	9 149
Community health facilities	6 103	6 199	7 221	7 216
Ambulance services	1 925	1 535	1 682	2 190
Other	14 399	11 871	11 407	14 442
Total	309 923	314 562	317 459	369 210

6.6 SOCIAL WELFARE

The Commonwealth and State Governments and a large number of voluntary agencies provide social welfare services for the population. The Commonwealth Government is concerned largely with providing fixed monetary pensions and benefits and repatriation services. It also provides, either directly or through State and local government authorities and voluntary agencies, for a wide range of welfare services for people with special needs. State agencies operate in the field of child welfare and distribute emergency relief in circumstances where Commonwealth Government assistance is not available. The voluntary agencies, many of which receive government aid, provide a wide range of services in various fields of social welfare.

COMMONWEALTH GOVERNMENT PENSIONS AND BENEFITS

EXPENDITURE

The following table sets out Commonwealth Government expenditure in South Australia on social welfare, which includes expenditure under the Social Security Act, other Acts, National Health Service and disability and service pensions. The figures shown do not include administration costs.

**Commonwealth Government Expenditure on Social Welfare, Selected Items
South Australia ^(a)**

Type of Benefit	1977-78	1978-79	1979-80	1980-81	1981-82
	\$'000				
Social Security Act:					
Age and invalid pensions	333 579	374 344	418 769	472 416	544 874
Widows pensions	38 613	45 456	55 006	63 647	72 136
Family allowances	90 483	84 100	97 481	88 861	96 856
Unemployment benefits (b)	84 166	116 028	119 484	133 184	166 430
Sickness benefits (b)	9 864	9 810	11 126	17 043	20 466
Supporting parent's benefits (b)	23 874	27 943	31 040	48 097	69 571
Delivered Meals Subsidy Act	260	254	259	361	406
Aged or Disabled Persons Homes Act (c)	4 467	2 646	3 373	2 600	4 213
Aged Persons Hostels Act	2 189	1 660	2 306	3 733	422
States Grants (Home Care) Act	1 820	1 403	1 579	1 293	1 754
States Grants (Deserted Wives) Act	3 203	3 143	2 981	1 552	—
National Health Service (d)	204 412	230 840	253 694	262 041	290 967
Disability pensions (b)	34 784	34 266	35 634	40 832	41 780
Service pensions (b)	37 234	43 953	53 439	71 258	84 948

(a) Where applicable the amounts shown include payments for supplementary assistance, allowances and additional pensions for children.

(b) Includes Northern Territory.

(c) Includes Personal Care Subsidy.

(d) Includes Northern Territory for some items.

COMMONWEALTH SOCIAL SECURITY

Brief details of Commonwealth Government pensions and benefits are given in this section; however, in discussing the eligibility of persons for the various payments, all the necessary qualifications and exceptions to the general rule have not been delineated.

Age and Invalid Pensions and Allowances

Age pensions may be granted to men aged sixty-five and over and women aged sixty and over, who have lived in Australia continuously for a period of ten years.

Invalid pensions are payable to persons aged sixteen years and over who are permanently incapacitated for work to an extent of at least 85 per cent, or are permanently blind. Where the incapacity or blindness occurred outside of Australia, other than during a temporary absence, ten years continuous residence is necessary to receive the pension.

If a person subject to the ten year qualification for either pension has completed five years but not ten years continuous residence, but has lived in Australia for periods which, in total exceed ten years, he may be eligible. Residence in New Zealand, the United Kingdom or an Australian external Territory (except Norfolk Island) may be treated as residence in Australia. Absences from Australia may, in certain circumstances, be treated as residence.

From November 1982 the maximum rate for an unmarried pensioner, or for a married pensioner whose husband or wife was not receiving an age or invalid pension, a tuberculosis allowance, a service pension, a wife's pension or an unemployment, sickness or special benefit, was \$77.25 a week. Where married pensioner couples are living apart for an indefinite period because of the illness or infirmity of either or both, each receives a pension at the single rate. The maximum married rate for a couple both being pensioners or one being a pensioner and the other in receipt of unemployment, sickness or special benefit was \$64.40 a week each. A wife's pension is payable, subject

to an income test, at the married rate to an age or invalid pensioner's wife who does not qualify for an age, invalid or repatriation service pension in her own right.

Age, Invalid and Wife Pensions, South Australia

At 30 June	Age Pensioners			Invalid Pensioners			Wife Pensioners
	Males	Females	Total	Males	Females	Total	
1977	37 709	80 187	117 896	11 835	6 742	18 577	6 417
1978	40 161	82 907	123 068	12 345	6 528	18 873	7 287
1979	41 950	84 741	126 691	13 492	6 677	20 169	8 370
1980	43 213	86 662	129 875	14 078	6 646	20 724	5 625
1981	44 165	88 413	132 578	14 157	6 475	20 632	8 700
1982	44 727	89 894	134 621	14 887	6 416	21 303	8 882

An additional pension up to \$10 a week is payable for all children under sixteen years or who are full-time students and under twenty-five years. An unmarried age or invalid pensioner having the custody, care and control of a child under sixteen years or who is a full-time student and under twenty-five years is paid a guardian's allowance of \$6 a week in addition to the pension. The guardian's allowance is increased to \$8 a week if there is a child under six years, or if there is an invalid child under sixteen years requiring full-time care and attention.

Up to \$10 a week extra may be paid to single pensioners or married couples who are in private rented accommodation. The amount of supplementary assistance paid depends on a person's or couple's income and the amount of rent actually paid. Supplementary assistance is not payable where rent is paid to the South Australian Housing Trust.

Age, invalid and wife's pensions, unless the pensioner is seventy years of age or over, or permanently blind, are subject to an income test. From November 1978, age pensions payable free of the income test will remain at \$51.45 a week (single) and \$42.90 a week (married), but pensioners may qualify for increases subject to the income test. Additional allowances are generally subject to an income test regardless of age. Under the income test, a full pension is paid if the annual income does not exceed \$1 560 (for a single pensioner) or \$2 600 (for a pensioner couple). If the income exceeds \$1 560 (or \$2 600), the annual rate of pension is reduced by half the excess.

Certain types of income are exempted. The main exemptions are: gifts or allowances from children, parents, brothers or sisters; benefits from friendly societies; family allowances or other payments for children; Commonwealth Government health benefits and amounts received from registered benefit organisations.

Widows Pensions

Widows pensions are paid to widows and other women who satisfy certain conditions; there is a test on income. There are three classes of pensions:

Class A, a widow with at least one child under sixteen years or supporting a full-time student over sixteen but under twenty-five;

Class B, a widow of at least fifty years of age with no children or, a Class A widow of at least forty-five years of age whose Class A pension ceases because she no longer has a child under sixteen or dependent student over sixteen but under twenty-five;

Class C, a widow under fifty years of age, with no children under sixteen or dependent student over sixteen but under twenty-five, who is in need of

financial help within twenty-six weeks of her husband's or de facto husband's death.

For Classes A and B the term 'widow' includes a deserted wife who has been deserted at least six months, a divorcee, and a woman whose husband has been in prison at least six months.

For all classes the term 'widow' may also include a woman who was the common law wife of a man for at least three years immediately before his death.

A residential qualification is not required if a couple were permanent residents when the husband died or if an event occurs—such as divorce—which qualifies a woman as a 'widow'. In other circumstances five years continuous residence immediately preceding a lodgment of claim or ten years residence at any time is required. Certain absences are not considered as breaking continuity of residence, and residence in New Zealand, the United Kingdom or an Australian external Territory (except Norfolk Island) counts as residence in Australia. The income test operates similarly to that for age pensions.

Widows Pensions, South Australia
At 30 June

Class	1978	1979	1980	1981	1982
A	6 757	7 600	8 106	7 877	7 787
B	6 852	7 290	7 608	7 948	8 205
C	3	16	12	12	16
Total	13 612	14 906	15 726	15 837	16 008

From November 1982, the maximum rates of pension were: Class A widows, \$77.25 a week, plus a mother's allowance of \$6 a week (\$8 if there is an invalid child or a child under six years), plus \$10 a week for each child under sixteen years or a full-time dependent student; for Class B widows, \$77.25 a week; for Class C widows, \$77.25 a week.

An additional payment of up to \$10 a week may be paid to a widow pensioner who pays for private rent or lodging. The amount of supplementary assistance paid depends on the amount of rent paid and the amount of income received by the pensioner. Supplementary assistance is not payable where rent is paid to the South Australian Housing Trust.

Supporting Parents Benefit

Supporting Parents Benefit is paid to men and women bringing up children on their own who do not receive any other pension or benefit. People eligible for supporting parents benefit include widowers, male divorcees, separated husbands or wives, including separated *de facto* husbands or wives and unmarried parents. The rate, income test and other conditions are the same as for Class A widows pension.

Portability

Social Security pensions once granted in Australia, may continue to be paid if the pensioner goes overseas. There are some exceptions which affect only a small proportion of pensioners.

Persons Living Overseas

Pensions may be granted to persons living outside Australia subject to the following conditions:

- (a) in the case of the age pension, the claimant had lived thirty years in Australia and was of age-pension age or within five years of that age at the time of departure from Australia; in the case of invalid or widows pensions, the claimant became permanently incapacitated for work (or permanently blind) or widowed in Australia;
- (b) the claimant left Australia before 8 May 1973;
- (c) the claimant is in special need of financial assistance.

In all cases, the claimant is required to satisfy the ordinary conditions for grant of pension in Australia, except that of living in Australia.

Family Allowances

Persons resident in Australia who have the custody, care and control of one or more children under the age of sixteen are eligible for family allowance. Charitable, religious, government and other approved organisations caring for children or students, may also get the allowance. Family allowance is also paid for full-time students between the ages of sixteen and twenty-five years. There is no income test on family allowances, but one year's residence in Australia is required if the mother and child were not born in Australia; this requirement is waived if the Department of Social Security is satisfied that they are likely to remain in Australia permanently.

From November 1982 family allowance was paid at the rate of \$22.80 a month for the first eligible child; \$32.55 for the second; \$39 for the third; \$39 for the fourth; \$45.55 for the fifth and each subsequent child. Family allowance of \$39 a month is paid for each child in an institution.

Family Allowances, South Australia

At 30 June	Families		Institutions		Total Number of Children
	Number of Families	Number of Children (a)	Approved Institu- tions	Number of Children (a)	
1978	189 193	376 816	54	818	377 634
1979	185 591	364 696	55	751	365 447
1980	184 544	359 056	65	563	359 619
1981	184 226	354 938	42	454	355 392
1982	184 211	352 345	30	458	352 803

(a) Children under the age of sixteen and full-time students between the ages of sixteen and twenty-five.

Disabled Child's Allowance

A disabled child's allowance was introduced in December 1974. The allowance is paid to parents or guardians who provide constant care and attention for a seriously disabled child in their own home. It is paid to help meet the extra costs in caring for a disabled child. It is aimed at encouraging the care of such children at home rather than in an institution. For a severely disabled child, the allowance is \$84 a month. Parents' or guardians' income does not affect the payment.

For a substantially disabled child the amount depends on both parents' or guardians' income, and the additional costs involved with caring for the child. The maximum payment is \$84 a month. In November 1978 this allowance was extended to cover disabled children under twenty-five years of age who are full-time students but who do not receive an invalid pension.

Double Orphans Pension

A pension of \$55.70 a month is payable to the guardian of a child under sixteen years or a full-time student between the ages of sixteen and twenty-five years who has both parents dead or one dead and the other missing. The benefit is also payable in respect of either an adopted child or a child whose sole surviving parent is a long-term inmate of a prison or mental hospital. Eligibility has now been extended in respect of refugee children whose parent or parents are living outside Australia or whose whereabouts are unknown.

If an orphan child is being cared for by an approved charitable or religious institution the pension may be paid to the institution.

Unemployment and Sickness Benefits

Unemployment benefit is paid to persons who are unemployed but are seeking to re-enter the workforce. Sickness benefit is payable where a temporary incapacity has resulted in a loss of income. There is a means test on income but not on property. Persons eligible must be between sixteen and sixty-four years of age (fifty-nine for women) with either twelve months residence immediately prior to the date of departure or the intention to reside permanently in Australia. A person receiving an alternative social security pension or benefit is ineligible for unemployment and sickness benefits.

To qualify for unemployment benefit a person must (a) be unemployed other than through industrial action, (b) be able and willing to undertake suitable work, and (c) have taken reasonable steps to secure work.

The amount of income which a person may receive and still qualify for the maximum rate of benefit is \$10 a week. The benefit is reduced by half the amount of other income earned between \$10 and \$60 a week, and by the full amount earned above \$60 a week. For unemployment and sickness benefit, the income of the claimant's husband or wife is taken into account. Special conditions apply where the wife receives an age, invalid or service pension.

From November 1982, the weekly rates of sickness benefit are \$77.25 for a single person aged eighteen years or more, \$128.80 for a married couple and \$40.00 for a person over sixteen, but under eighteen years. The weekly rates of unemployment benefit are \$77.25 for a single person aged eighteen years or more with dependants, \$64.40 for a single person aged eighteen years or more without dependants, \$128.80 for a married couple and \$40.00 for a person over sixteen but under eighteen years. An additional \$10 a week is payable in all cases for each child.

Normally, there is a waiting period before a person becomes entitled to unemployment or sickness benefit. Entitlement generally starts from the seventh day after the claim is lodged, or the seventh day after the person last worked, whichever is later or alternatively for sickness benefit from the seventh day after the date of incapacity subject to the income test and loss of income provisions. Where a person has a recurring incapacity a waiting period is not requested on subsequent claims.

If a person was unemployed, able and willing to work, and actively seeking work prior to lodging the claim, the full unemployment benefit waiting period may not have to be served.

People who become voluntarily unemployed, without good reason, are not paid for the first 6-12 weeks. Social Security advises these people how long the period will be.

Secondary school leavers are not eligible for unemployment benefit until six weeks after they have left school or have completed their examinations. Similar provisions apply to tertiary students who, without good reason, cease full-time studies before completing their course.

Unemployment and Sickness Benefits, South Australia

Year	Unemployment		Sickness		Special (a)	
	Number of Benefits Granted	Average Number on Benefit (b)	Number of Benefits Granted	Average Number on Benefit (b)	Number of Benefits Granted	Average Number on Benefit (b)
1977-78	86 905	25 949	13 233	2 474	2 787	554
1978-79	85 106	35 762	11 362	2 438	3 101	632
1979-80	78 136	37 000	12 224	2 800	4 375	850
1980-81	78 535	37 999	12 978	3 725	4 889	1 304
1981-82	82 496	44 488	14 104	4 547	4 841	1 232

(a) Excludes special benefits to migrants in accommodation centres.

(b) Average of the number at the end of each week.

Supplementary Assistance Allowance

Supplementary assistance is payable, subject to an income test, to an age, invalid, wife or widow pensioner, or a person receiving a supporting parents benefit if he or she pays rent or lodging and has little or no income apart from the pension or benefit. A similar payment, known as supplementary allowance, may be made to a sickness beneficiary who has received benefit for a continuous period of six weeks. The amount of supplementary assistance paid depends on a person's or couple's income and the amount of rent actually paid. Supplementary allowance is not payable where rent is paid to the South Australian Housing Trust.

Special Benefits

A special benefit may be granted to those persons unable to earn a living, who are in need and not in receipt of any other pension or benefit. Persons who can receive special benefit include: those caring for sick relatives; women without partners for a time before and after the birth of a child; those who are in hardship while waiting for some other pension or benefit. The rate of the benefit depends on the circumstances but cannot be more than the rate of unemployment or sickness benefits.

Mobility Allowance

In April 1983 a mobility allowance of \$10 per week, free of income test or income tax, was introduced. This is to keep in work or training severely disabled people who are unable to use public transport to travel to work or training because of their disabilities.

Family Income Supplement

A family income supplement for low income families (apart from those in receipt of pensioner benefits) was introduced in May 1983. The supplement, which is income tested, is up to \$10 per week, tax free, for each child.

Commonwealth Pensioner Fringe Benefits

Eligible pensioners and sickness beneficiaries may receive the following Commonwealth pensioner fringe benefits:

- free medical treatment if the treating doctor bulk bills (otherwise 85 per cent of the schedule fee is reimbursed subject to a maximum patient payment of \$5 per service);
- free optometrical consultations from participating optometrists;

- a range of free pharmaceuticals;
- free hearing aid services;
- a one-third telephone rental concession (subject to the incomes of co-residents);
- postal redirection fee concessions; and
- a 50 per cent fare concession for travel on Australian National Railways (ANR) and the Australian National Line (ANL).

Eligibility for these concessions is generally restricted to those whose income, apart from pension or benefit, is less than \$40 a week in the case of a single person, or \$68 a week combined in the case of a pensioner or beneficiary couple. The income limits are higher for recipients of sheltered employment allowances or where there are children.

Health Care Benefits

Pensioner Health Benefits Cards are issued, subject to an income test, to people receiving aged, invalid, wives and widows pension, tuberculosis allowance and supporting parents benefit. Eligible persons receive medical benefits for services rendered by private general practitioners, specialists and consultant physicians, free treatment in public hospitals and free medicines, as covered by the pharmaceutical benefits scheme. Pensioners' dependants are also covered.

Health Care Cards are issued to other specified groups and their dependants, including immigrants and refugees for their first six months in Australia (free of income test), most people receiving unemployment benefit and people with income below specified limits. Holders of a health care card are not entitled to free pharmaceutical benefits except as a public hospital outpatient.

Health Benefits Cards are issued to people receiving sickness benefit (free of income test). Hospital and medical benefits available to them are the same as those applicable to pensioner health benefit card holders.

Pharmaceutical Benefits Concession Cards are issued to pensioners who are not eligible for fringe benefits and to holders of health care cards. Holders of health care cards or pharmaceutical benefits concession cards will be eligible to receive certain pharmaceuticals at the concession rate of \$2 patient contribution.

Rehabilitation

The Commonwealth Rehabilitation Service (CRS) division of the Department of Social Security provides assessment, treatment and avenues for training, either for work or independent living, for disabled people. This is achieved through a program of medical, social, educational and vocational rehabilitation. The aim of rehabilitation is to help disabled people overcome any difficulties they have, thus allowing them to enjoy life in the workplace, at home, and in the community.

Rehabilitation, South Australia

Year	Number Accepted for Rehabilitation	Number Placed in Employment	Expenditure (a)
			\$
1977-78	371	164	1 541 343
1978-79	435	121	1 782 725
1979-80	425	156	2 172 000
1980-81	436	147	2 439 000
1981-82	677	182	2 698 000

(a) Excludes capital expenditure on sites and buildings, and administrative cost of the Rehabilitation Service.

The CRS facilities and services are available to people within the broad working age group, namely sixteen to sixty years if female and sixteen to sixty-five years if male, who are likely to derive substantial benefit from rehabilitation treatment and/or training. Children aged fourteen to fifteen years may also be accepted if they are likely to receive an invalid pension on attaining the age of sixteen years.

Referrals for rehabilitation assistance are accepted from any source. This includes medical practitioners and specialists, allied health professionals, welfare and community organisations, and agencies, Commonwealth and State government departments, employers, workers compensation insurance firms, relatives and friends of disabled people and disabled people themselves.

Rehabilitation Allowance

A Rehabilitation Allowance, training allowance, living away from home allowance, incentive allowance (rehabilitation) and costs incurred in travelling for treatment and training may be paid during the rehabilitation program. The Rehabilitation Allowance is a new benefit introduced in March 1983 for eligible people undergoing rehabilitation, who would otherwise have received another social security pension or benefit. The allowance is paid at the same rates and under the same conditions as invalid pensions.

Sheltered Employment Allowances

Disabled people employed in sheltered workshops who would otherwise qualify for invalid pension may be eligible for sheltered employment allowance. This is paid as a supplement to wages paid by the sheltered workshop.

Payment is made at the same rate as invalid pension and is subject to an income test but is not subject to income tax.

An incentive allowance of \$10 a week is also paid to people who receive Sheltered Employment Allowance. The incentive allowance is income-test free and exempt from income tax.

Funeral Benefits

A funeral benefit of up to \$40 is payable to a pensioner (and persons in receipt of certain other pension related payments) who is liable for the funeral cost of a deceased spouse, child or other pensioner. A lesser amount of \$20 is payable where a non-pensioner is liable for the funeral cost of a deceased aged, invalid or wife's pensioner (or a deceased claimant who would have been eligible for such a pension). Pensioner means a person who satisfies the Commonwealth Government pensioner and fringe benefits income test.

Homes for the Aged

The *Aged or Disabled Persons Homes Act 1954* provides that grants may be made to certain organisations towards the capital cost of erecting or purchasing approved homes for aged or disabled people. To be eligible for subsidy, the organisation providing the accommodation must be a non-government body which does not operate for profit and can be a religious organisation, a charitable organisation, an organisation of former members of the Defence Services, or a local government body. Grants are made on the basis of \$2 for each \$1 (excluding government assistance and borrowed money, except that borrowed by local government bodies) raised by an organisation. The maximum subsidy limits under the Act are \$14 000 for a single unit and \$16 240 for a double unit, plus a maximum of \$1 920 a unit for land, based on capital cost of \$2 880 per unit.

At 30 June 1982, 682 grants had been approved in South Australia since the inception of the scheme in 1954. The amount granted, \$59 537 423, was associated with the

accommodation of 11 800 persons. Since October 1969, a personal care subsidy has been provided in terms of this Act, to eligible organisations providing personal care services in hostel-type accommodation for persons of eighty years of age and over. In 1982, the subsidy was increased to \$30 per week, and the cover extends to persons who, though not yet eighty years of age, required personal care services.

In 1981-82 expenditure under this Act in South Australia totalled \$4 213 211; of this amount \$1 119 191 was for capital grants and \$3 094 026 for personal care subsidies.

The *Aged Persons Hostel Act 1972* is designed to encourage the provision of hostel accommodation for the aged. Subject to certain conditions, the Commonwealth meets the cost of providing additional hostel accommodation by eligible organisations up to a maximum of \$18 150 a person. The Commonwealth also pays an additional grant of up to \$2 400 a person for the purchase of land, and \$250 for furnishings.

The *States Grants (Home Care) Act 1969*, which is administered by the Department of Social Security, provides for financial assistance to the States to assist them in developing senior citizens' centres and a range of home care services providing housekeeping or other domestic assistance for aged persons in their homes. Payments to South Australia for the year ended 30 June 1982 amounted to \$509 248 for senior citizens' centres, \$87 712 towards the salaries of welfare officers employed in connection with senior citizens' centres and \$1 156 702 for home care services.

Delivered Meals Service

Under the *Delivered Meals Subsidy Act 1970*, financial assistance is provided to organisations to establish, maintain, expand and improve 'meals on wheels' services. These organisations must be non-profit, charitable, benevolent or welfare bodies not controlled by the Commonwealth or State Governments. The basic rate of subsidy is 45 cents for each meal plus 5 cents for each meal including an approved Vitamin C supplement and 45 cents for all other eligible meals. The South Australian subsidy totalled \$406 202 in 1981-82.

Homeless Persons Assistance

The *Homeless Persons' Assistance Act 1974* provides for assistance to non-profit organisations and local government bodies which provide accommodation, food and social welfare services for homeless men and women.

The Act enables grants to be made to eligible organisations to meet the cost of purchasing, constructing, altering or renting buildings to be used as homeless persons assistance centres, as well as to meet the cost of purchasing and installing furniture and equipment for such centres. Grants also meet half the salary of a social welfare worker employed at a centre, and help to meet the cost of providing food and accommodation for homeless persons at an approved centre, or of meals provided at such centres for non-residents. The rate of the food and accommodation subsidy has been prescribed at \$1.35 cents per day and the rate of meals subsidy at 45 cents per meal. Up to 30 June 1982 funds totalling \$951 936 had been made to eligible organisations in South Australia.

Disabled Persons Assistance

Under the *Handicapped Persons Assistance Act 1974*, financial assistance is provided by the Commonwealth Government to eligible organisations conducting sheltered workshops, training centres, activity therapy centres and residential accommodation for disabled persons. Subsidy is also available towards the cost of rehabilitation facilities (including holiday homes) which are ancillary to or provided together with an approved program of training, activity therapy, sheltered employment or residential accommodation. All capital and equipment subsidies are paid at a rate of \$4 for every \$1 raised from

non-government sources. A subsidy covering 50 per cent of actual salaries may be paid toward the cost of salaries of most staff. A higher rate of 100 per cent may be paid during an initial period in the case of some new enterprises. Since October 1970, a training fee of \$500 has been paid to sheltered workshop organisations for each disabled person who remains in normal employment for twelve months following at least six months training by the organisation.

During the year ended 30 June 1982, expenditure totalling \$10 030 000 was approved under the Act to be paid to eligible organisations in South Australia.

Disabled Childrens Benefit

A benefit is payable by the Commonwealth Government for each physically or mentally disabled child who is under sixteen years of age and resides in an approved home conducted by a charitable organisation. From November 1976, the rate of benefit has been \$5 per day. In 1981-82, expenditure by the Commonwealth Government on disabled children's benefits in South Australia was \$158 000. At 30 June 1982, 117 eligible disabled children were accommodated in eight approved homes.

Childrens Services

Under the Children's Services program, capital and recurrent grants may be made to State and Local Government bodies and community-based non-profit organisations for a range of child care projects.

The aim of the program is to provide care for children and families most in need, and is supplementary to services provided by State Governments.

Priority is given to supporting child care projects for:

- children of low income families;
- children with particular needs, such as aboriginal and migrant children, disabled children and isolated children;
- children 'at risk';
- multi-purpose projects providing a variety of services.

Reciprocal Agreements

New Zealand. An agreement exists between the Governments of Australia and New Zealand for reciprocity in social services. The arrangements cover age, invalid, wives and widows pensions, family allowances, and unemployment and sickness benefits, and apply to both permanent and temporary changes of residence. Residence in one country may be treated as residence in the other country in relation to entitlement to benefits in which a residential qualification applies. Persons from one country taking up permanent residence in another country may qualify for any of the specified benefits of the new country under the same conditions as apply to citizens of that country. Persons in receipt of any of the specified benefits in one country may continue to receive those benefits while temporarily absent in the other country, depending on the eligibility criteria of the particular benefit.

Britain. A reciprocal agreement on social services exists between Britain and Australia. Under the current agreement residence in one country may be treated as residence in the other country as the basis for entitlement to benefits in which a residential qualification applies. Australians going to Britain for permanent residence are treated in Britain as if national insurance contributions had been paid while in Australia, so that they can qualify for various National Insurance benefits. There is also provision for the safeguard of social service rights for persons going from one country to the other for temporary residence.

Telephone Rental Concessions

The Department of Social Security, with Telecom provides telephone rental concessions to qualified pensioners and persons receiving sickness benefit, in the form of a one-third reduction in annual rental charges.

Telephone Interpreter Service

A Telephone Interpreter Service is operating through the Department of Immigration and Ethnic Affairs as an adjunct to migrant welfare services. It acts as a multi-lingual information service both to migrants, especially those with queries regarding government services, and to professional people experiencing language problems with a patient or client.

NATIONAL HEALTH SERVICES

Expenditure

The following table shows Commonwealth Government expenditure in South Australia from the National Welfare Fund and the Health Insurance Fund on the various aspects of the national health services. The amounts shown are the direct costs of these benefits and services and do not include the administrative costs.

National Health Services Expenditure, South Australia

Type of Benefit	Year First Paid	1978-79	1979-80	1980-81	1981-82
\$'000					
National Welfare Fund:					
Hospital and nursing home benefits (a)	1946	19 138	21 653	25 326	28 443
Medical benefits (a)	1953	5	1	—	4
Medical benefits (a) (b)	1978	33 474	53 454	32 712	40 673
Deficit financing of nursing homes (c)	1975	12 000	14 370	17 616	20 044
Domiciliary nursing care (c)	1973	796	878	1 438	1 768
Pharmaceutical benefits (c)	1948	10 146	8 048	8 485	9 263
Pensioner pharmaceutical benefits (c)	1951	13 167	13 936	15 952	14 367
Tuberculosis allowances	1947	55	35	44	62
Other .....	..	1 662	1 822	2 180	2 361
Health Insurance Act:					
Medical benefits (c) (d)	1975	(e) 14 768	(e) 17	37	58
Hospital benefits (e)	1975	125 303	138 947	157 480	173 064
Health program grants	1975	326	533	771	860
Total		230 840	253 694	262 041	290 967

(a) Includes benefits and payments for Northern Territory residents insured with South Australian hospital and medical organisations. There are no organisations registered in the Northern Territory.

(b) Payment of Commonwealth medical benefits in respect of services rendered since 1 November 1978 when changes were made to the health insurance arrangements. Includes direct (bulk) billing payments and advances and reimbursements to registered medical benefits organisations. During 1978-79 payments were made out of consolidated revenue. Since 1 July 1979 payments have been made from the National Welfare Fund.

(c) Includes Northern Territory.

(d) Includes advances to cash payment centres.

(e) Payments in respect of services rendered between 1 July 1975 and 31 October 1978.

The Australian Health Scheme

Under the Federal/State system of Government in Australia, State Governments are responsible for the provision of hospital and health services within their own borders. The Federal Government is responsible for national health matters such as quarantine, and as well, maintains specific assistance programs relating to pharmaceutical benefits, medical benefits, nursing home benefits and health insurance. In general the Federal Government's role in the Australian health scheme is to provide Australian residents with protection against medical, hospital, nursing home and home care costs.

The Commonwealth Government provides finance in respect of health care through Commonwealth medical benefits, its contribution to the Reinsurance Trust Fund, the payment of Commonwealth nursing home benefits, and the funding of deficit financed nursing homes. The Commonwealth also provides a Domiciliary Nursing Care Benefit and daily bed subsidies towards the cost of accommodation in private hospitals.

Health insurance coverage is available from registered medical benefits organisations and registered hospital benefits organisations. These are private non-profit organisations.

The various sectors of the health scheme are authorised by, and administered under, the following Commonwealth legislation:

- (a) Health Insurance Act;
- (b) National Health Act;
- (c) Nursing Homes Assistance Act;
- (d) States (Tax Sharing and Health Grants) Act.

In all States and the Northern Territory, except South Australia and Tasmania, the hospital cost sharing agreements have been terminated. The Commonwealth, under new arrangements now provides funds to these States and the Northern Territory in the form of untied identifiable general purpose grants within tax sharing arrangements, in lieu of the previous specific funding for public hospitals, the Community Health Program and the School Dental Scheme.

South Australia and Tasmania also receive an identifiable general purpose health grant for services previously funded under the Community Health Program and the School Dental Scheme. For hospitals in these two States, the cost sharing arrangements continue with the Commonwealth meeting 50 per cent of the agreed net operating costs of recognised public hospitals.

Health Program Grants

Health program grants, authorised under the Health Insurance Act, are payable to eligible organisations to meet the cost, or such proportion of the cost as the Minister may determine, of approved health services provided by medical practitioners employed on a salaried or sessional basis. Eligible organisations are required to impose charges, where appropriate, for services involving privately insured patients. Generally, the grant covers the cost of Schedule medical services provided to patients in respect of whom a doctor in private practice would bulkbill, *i.e.* Pensioner Health Benefits cardholders and their dependants, and eligible people in special need.

Community Health Program—National Projects

Under the Community Health Program National Projects arrangements, the Commonwealth provides 100 per cent funding to organisations in respect of specific activity which has been approved for the purpose of the Program.

The largest of these projects is the Family Medicine Program (FMP) of the Royal Australian College of General Practitioners, which provides vocational training for young doctors who intend to enter general practice. The trainees receive their training

through attachments to participating private general practitioner practices and by attendance at educational events organised by the FMP.

The other national projects are either national co-ordinating secretariats of voluntary non-profit organisations operating in more than one State or specific health-related projects which have national application.

Program of Aids for Disabled People

The principal aim of the Program of Aids for Disabled People (PADP) arrangements is to enable people with disabilities of a permanent or indefinite duration to live more independently in a domestic situation, with a consequent reduction in demand for more costly institutional care. Under the program certain aids to daily living including wheel-chairs, surgical shoes, braces, splints, callipers, walking aids, personal aids (eating and cooking utensils, toilet articles) and basic home modifications (ramps, rails, grips, door widenings, etc.) may be provided to eligible people. PADP is operated through health services networks administered by the State and Territory health authorities.

Commonwealth Medical Benefits

The Health Insurance Act provides for a Medical Benefits Schedule which lists medical services and the Schedule (standard) fee applicable in each State in respect of each medical service. The Schedule covers all services rendered by legally qualified medical practitioners, certain prescribed medical services rendered by approved dentists in the operating theatres of approved hospitals, and optometrical consultations by participating optometrists. Schedule fees are set and updated by an independent fees tribunal which is appointed by the Government. The fees so determined are those to apply for medical benefits purposes only. Medical services in Australia are generally delivered by either private medical practitioners on a fee-for-service basis, or medical practitioners employed in hospitals.

All persons who are insured for at least basic cover with a registered medical benefits organisation are entitled to Commonwealth medical benefits at the rate of 30 per cent of the Schedule fee for each medical service. Patients also have to pay any amount charged in excess of the Schedule fee.

These Commonwealth medical benefits are paid through medical benefits organisations which are registered under the National Health Act and act as agents for the Commonwealth in this regard. Benefits may be claimed either before the doctor has been paid, in which case the benefits are used to help pay the doctor's account, or alternatively the benefits may be claimed after the doctor's account has been settled.

Special arrangements apply in respect of pensioners with pensioner health benefit entitlement and people who satisfy certain criteria as people in special need. People in special need, as defined, comprise migrants during their first six months in Australia, unemployment and special beneficiaries, and people on low incomes. Pensioners who qualify, are eligible for Commonwealth medical benefits equal to 85 per cent of the Schedule fee for each medical service, or the Schedule fee less \$5 whichever is the greater amount. The maximum personal contribution by an eligible pensioner would be \$5 where the Schedule fee is charged. Doctors may bulk bill the Department of Health direct for these benefits. Alternatively, the pensioners may pay the doctors' accounts and then claim the benefits from the medical benefits organisations with which they have registered.

For people in special need Commonwealth medical benefits equal to 85 per cent of the Schedule fee for each medical service or the Schedule fee less \$5, whichever is the greater amount are payable. Doctors who bulk bill the Commonwealth in respect of services to people in special need must accept the Commonwealth benefit of 85 per cent

in full settlement of the account. If doctors do not bulk bill, these patients may be required to make a personal contribution to the doctor's charges after claiming the appropriate Commonwealth medical benefit from a medical benefits organisation. Where the Schedule fee is charged the maximum contribution by a person in special need would be \$5 under these circumstances *i.e.* when not bulk billed.

Hospital Costs

The Commonwealth Government requires that accommodation in public hospitals with treatment by hospital doctors be available without charge to eligible pensioners and persons in special need. Subject to decisions by State Governments on extending access to free hospital treatment, all other patients must meet any charges raised either through health insurance or from their own resources. The process of determining the actual level of hospital charges and their application is the responsibility of the State health authorities.

The Commonwealth Government provides a private hospital bed day subsidy of \$28 for each day's hospitalisation of a patient for predetermined (prescribed) surgical procedures in private hospitals. For patients not receiving prescribed surgical procedures, a Commonwealth bed day subsidy of \$16 for each day's hospitalisation is provided. These subsidies are claimed by the private hospital on the patient's behalf and are subsequently deducted from the patient's account.

Hospital Benefits, South Australia

Type of Benefit	1978-79	1979-80	1980-81	1981-82
AMOUNT PAID (\$'000)				
National Welfare Fund:				
Hospitals;				
Insured patients (a)	1	1	—	—
Subsidised Health Benefits Plan				
payments (a)	1	—	—	—
Nursing home patients	19 135	21 652	25 326	32 313
Other nursing home payments (b)	—	—	—	—
Total National Welfare Fund	19 138	21 653	25 326	32 313
Health Insurance Fund:				
Hospitals;				
\$16 per day payments to private				
hospitals (c)	7 367	7 081	7 186	7 399
Payments to recognised				
hospitals (d)	(e) 116 574	130 104	148 150	161 387
Section 34 payments to private				
hospitals	1 362	1 762	2 144	2 488
Total Health Insurance Fund	125 303	138 947	157 480	171 274

(a) Includes benefits and payments for Northern Territory residents insured with South Australian organisations.

(b) Includes payments for Northern Territory residents insured with South Australian organisations and covers Subsidised Health Benefits Plan fund benefit reimbursements and Special Account Advance and Deficit payments.

(c) Includes benefits paid to Australian citizens whose hospital care was undertaken overseas.

(d) Excludes payments under the *States Grants (Hospital Operating Costs) Act 1976*.

(e) Includes Northern Territory.

Insurance Medical Benefits

All registered medical benefits organisations are required to operate a basic medical benefits table and may, in addition, operate other tables of benefits.

The basic medical benefits table must, together with the Commonwealth benefit, cover either 85 per cent of the Schedule fee for each medical service or the Schedule fee less \$10, whichever is the greater amount, where the Schedule fee is charged. The organisations may not refuse to accept members to the basic table on the grounds of state of health, nor may they refuse to pay basic table benefits on the basis of pre-existing illness and chronic illness, or limit benefits to a maximum number of services.

Registered organisations can impose a two months waiting period from the date a new member joins a basic benefits table until fund benefits are payable. The Commonwealth benefit component (30 per cent) of basic medical benefits is, however, payable immediately.

The organisations may also operate other tables of benefits with the proviso that at least the basic level of benefits are paid and that total medical benefits do not exceed the Schedule fee or the amount charged by the doctor, whichever is the lesser amount. These tables may also provide benefits for a wide range of paramedical services and aids, dental services, etc.

Hospital Insurance Benefits

Hospital fees in recognised public hospitals are determined by the State Governments. The Commonwealth declares standard fees for benefit purposes. Private hospitals charge varying fees and there is no Government fee control over the private hospital sector.

All registered hospital benefits organisations are required to operate a basic hospital benefits table and may, in addition, operate other tables of benefits.

The basic table currently provides the following benefits;

- (a) hospital fund benefit equal to the standard fee for shared-ward accommodation in a recognised hospital. This benefit may also be utilised to partly cover the fee for a private room in a recognised hospital or for accommodation in a private hospital;
- (b) benefits to cover fees raised for 'professional services' rendered to private patients in recognised hospitals by doctors employed by the hospitals. This situation arises where a private patient chooses to be treated by doctors engaged by the hospital rather than by a private doctor;
- (c) outpatient benefits in respect of outpatient services provided in those States where recognised hospitals charge for these services.
- (d) long stay nursing home type patients accommodated in hospitals.

As in the Medical basic table, the organisations may not refuse to accept members to the basic hospital table on the grounds of state of health. Although the organisations may not refuse fund benefits at the basic level because of pre-existing illness, chronic illness etc., they do receive financial assistance from the Government to maintain benefit payments to persons who require extensive hospitalisation. This assistance is provided under the Hospital Benefits Reinsurance Trust Fund, which will be referred to later.

In addition to the basic hospital benefits table, the hospital benefits organisation may also operate other tables of benefits with the proviso that the total benefits will not exceed the amount of the charge. Most organisations operate a supplementary table which, when combined with the basic table provides cover equal to the charge for a private room in a recognised hospital. Benefits under these tables may, in combination with the basic benefit table also be used to at least partly cover the net cost of accommodation in a private hospital. Some organisations also have additional tables of

benefits to cover higher private hospital charges and to cover some paramedical services and aids.

Insurance Contribution Rates

Private medical and hospital insurance coverage is voluntary. It is Government policy that the contribution rates for medical benefits tables and hospital benefits tables are to be based on the community rating principle, *i.e.* all contributors to a table pay the same contribution regardless of such factors as age, sex, state of health, etc. The only permitted exception to this rule is that persons without dependants need only pay half the normal rate of contribution.

Contributions to basic hospital and/or basic medical insurance are eligible for a taxation rebate at the rate of 30.67 per cent for the 1982-83 income year and 30 per cent in subsequent years.

Hospital Benefits Reinsurance Trust Fund

Hospital benefits organisations are permitted to transfer to their reinsurance accounts benefits at the basic table rate for those contributors who spend more than thirty-five days in hospital in any one year.

The Commonwealth Government contributes \$100 million per year to the Reinsurance Trust Fund and the remaining benefits liability is shared equitably between the hospital benefits organisations according to claims experience and total membership of the basic table.

The reinsurance arrangements ensure that the financial liability for long-term hospital patients (*i.e.* the aged and chronically ill) is shared by the Government and all hospital benefits organisations in an equitable manner.

Long-term (Nursing Home Type) Patients

In general long-term patients accommodated in hospitals who no longer require hospital treatment are reclassified as nursing home type patients and are required to contribute towards their care and accommodation in the same way as patients in nursing homes. A 'nursing home type patient' is an in-patient whose hospitalisation exceeds 60 days, unless a certificate has been issued by a medical practitioner to certify that a patient is in need of acute care. The arrangements operate in all hospitals except New South Wales and Northern Territory public hospitals.

Government Nursing Home Benefits

There are two forms of Commonwealth benefit payable in respect of patients accommodated in premises approved as nursing homes under the National Health Act. These benefits are as follows:

(a) Basic Nursing Home Benefit

The Commonwealth pays basic nursing home benefits in respect of all qualified nursing home patients other than those who are eligible to receive benefits from some other source such as workers compensation or third party insurance. Basic benefit levels are reviewed and adjusted annually to a level whereby the fees charged in respect of 70 per cent of beds in non-government nursing homes, approved under the National Health Act, (*i.e.* participating nursing homes) are covered by a combination of the prescribed minimum patient contribution (explained below) plus the Commonwealth basic nursing home benefit. As the general level of fees in these nursing homes varies between States, the amount of basic benefit payable also varies between States under the above formula. As at 5 November 1981, the maximum

amount of basic nursing home benefit payable per day in each State and Territory was: New South Wales and Australian Capital Territory \$23.00; Victoria \$31.65; Queensland \$20.40; South Australia and Northern Territory \$27.60; Western Australia \$18.55; and Tasmania \$20.65.

(b) *Commonwealth Extensive Care Benefit*

The Commonwealth extensive care benefit is payable at the rate of \$6 a day, in addition to the Commonwealth basic benefit, in respect of patients who need and receive 'extensive care' as defined in the National Health Act. Application must be made for payment of the extensive care benefit. As in the case of the Commonwealth basic benefit, the extensive care benefit is payable in respect only of qualified patients who are not entitled to receive such benefits from workers compensation or third party insurance.

Minimum Patient Contribution

Generally speaking, all participating nursing home patients are required to make a minimum contribution towards the cost of their accommodation in the nursing home. Patients are required to make this contribution towards the cost of their accommodation and care in recognition of those costs which would otherwise be incurred outside the nursing home; the nursing home is usually a long-term residence for most patients and the patient contribution is related to the pension which is paid to assist towards the cost of living.

The minimum patient contribution equals 87.5 per cent of the sum of the standard pension plus supplementary assistance and at 6 May 1982 was \$10.25 a day.

Where the fees charged by a participating nursing home are in excess of the combined total of nursing home benefits plus the minimum patient contribution, the difference must be met by the patients. Conversely, where the nursing home fee is less than this combined total, the basic benefit is reduced by that amount.

Fees charged to patients in Government nursing homes are determined by State Governments. Patients in these homes also attract basic and extensive care benefits from the Commonwealth Government.

Deficit Financing Arrangements

As an alternative to the provision of patient benefits under the National Health Act (as outlined above), the *Nursing Homes Assistance Act 1974* provides for direct funding of nursing homes conducted by local government and charitable and benevolent organisations.

Under the deficit financing arrangements the Commonwealth meets the approved operating deficits and the cost of approved asset replacements of nursing homes. Financial assistance is provided by way of monthly advances based on a budget approved by the Department. An annual settlement is effected when audited financial statements are forwarded to the Department.

Nursing homes wishing to participate in the deficit financing arrangements must enter into a formal agreement with the Government for that purpose. Patients in deficit financed nursing homes are required to pay a prescribed fee equivalent to the minimum statutory patient contribution. Higher fees are prescribed for patients entitled to damages or compensation.

Domiciliary Nursing Care Benefit

The Commonwealth Government provides a benefit to assist people who choose to care, in their own homes, for chronically ill or infirm relatives who would require admission to a nursing home if this care in their own home was not available. Patients who qualify for this benefit are, typically, those people who are incapable of caring for themselves and of being left unsupervised for any significant period.

This benefit, the domiciliary nursing care benefit, is payable at the rate of \$42 per fortnight. The basic criteria for the payment of the benefit are that the patient must be aged sixteen years or over and be in need of continuing nursing care and receiving regular visits by a registered nurse.

Australian Residents Overseas

Generally speaking, Australian residents who are temporarily absent from Australia overseas, are eligible to receive Commonwealth medical benefits provided they are either insured with a registered medical benefits organisation or an eligible pensioner. Commonwealth medical benefits payable in respect of medical treatment overseas are based on the Schedule fees for equivalent services in New South Wales. All other persons must meet costs for medical treatment overseas from their own resources.

The Commonwealth does not provide any assistance in respect of hospital accommodation overseas for Australian residents.

Visitors to Australia

Visitors to Australia, along with all Australian residents who do not qualify for special Government assistance, are responsible for the full cost of their medical and hospital treatment.

Visitors to Australia can insure themselves with travel agents, commercial insurers or health insurance organisations prior to arrival or on arrival in Australia. There is normally a two month waiting period before benefits become payable by the registered health insurance organisation although Commonwealth medical benefits are immediately available.

Pharmaceutical Benefits

Under the Pharmaceutical Benefits Scheme certain medicines, when prescribed by a doctor, are made available to the general public upon the payment of \$4 (at 1 January 1983).

Pharmaceutical Benefits, South Australia

Year	Number of Benefit Prescriptions	Cost of Benefit Prescriptions			Additional Cost to Common- wealth Government (a)
		Total Cost	Patients Contributions	Net Cost to Common- wealth Government	
	'000			\$'000	
1978-79	8 031	33 382	11 116	22 267	420
1979-80	7 491	32 344	10 360	21 984	309
1980-81	7 892	35 208	10 770	24 438	999
1981-82	8 659	44 217	12 946	31 271	1 112

(a) Payments to hospitals and miscellaneous services.

Eligible pensioners are supplied free of cost while persons in special need who hold either a Health Care card or a Pharmaceutical Benefits Concession card pay a reduced patient contribution of \$2 per benefit item. The drugs and medicinal preparations available as pharmaceutical benefits are determined on the advice of the Pharmaceutical Benefits Advisory Committee which also recommends the maximum quantities that can be prescribed. Pharmaceutical benefits are obtained through registered pharmacists.

Tuberculosis Allowances

The national campaign to eradicate tuberculosis operated from 1948 to 1976. Under the terms of the arrangements, the Commonwealth Government paid for all capital expenditure on tuberculosis projects and equipment, and reimbursed the State the proportion of maintenance expenditure incurred in the diagnosis, treatment and control of tuberculosis in excess of that amount borne by the State in 1947-48.

Tuberculosis Allowances, South Australia

Commonwealth Government Expenditure	1977-78	1978-79	1979-80	1980-81	1981-82
			\$'000		
Allowances paid to sufferers	60	27	35	44	51
Maintenance expenditure (a)	39	—	—	—	—
Total	99	27	35	44	51

(a) Includes administrative expenses not paid from National Welfare Fund.

The Commonwealth Government pays allowances to people suffering from tuberculosis to encourage them to give up work and undergo treatment. The allowances paid to persons suffering from tuberculosis are subject to an income test.

At 1 July 1982 the maximum income permitted before allowances were affected was \$24.50 per week for a single person and \$20.40 for each married person.

At 1 July 1982, the allowance payable to a married person and his spouse was \$66.50 a week each. In addition, an amount of \$13.20 a week was paid for each dependent child who was under sixteen years of age or undergoing full-time education and under twenty-five years of age. This amount was apportioned evenly between the sufferer and the spouse. A single person without dependants, if not hospitalised, received \$81.40 a week or, if receiving hospital treatment free of charge, \$69.70 a week. Widows or widowers with dependent children either under sixteen years of age or undergoing full-time education and under twenty-five years of age received \$80.60 a week, plus \$12.20 a week for each dependent child plus a mothers or guardians allowance of \$7.90 a week. An additional mothers or guardians allowance of \$3 a week was also paid where there was a dependent child under six years of age or a dependent invalid child requiring full-time care.

REPATRIATION BENEFITS

Service Pensions

Service pensions are payable to ex-servicemen who served in a theatre of war and have reached the age of sixty years (fifty-five for women) or who are permanently unemployable. Before November 1978, incapacity from pulmonary tuberculosis was also a basis of eligibility. The service pension is equivalent in amount to the social

services age and invalid pensions and is subject to the same income test, except that pensions received in respect of service related disabilities are disregarded. It also confers eligibility for a full range of medical and dental treatment, provided the separate income limit for fringe benefits is not exceeded. The dependants of service pensioners may continue to receive their appropriate allowance upon the death of the pensioner. All service pensioners aged seventy years and over have received the pension free of the income test from May 1975.

Service Pensions, South Australia ^(a)

Pensions in Force at End of Year					
Year	Ex-servicemen	Dependants of Pensioner Ex-servicemen	Dependants of Deceased Pensioners	Total	Expenditure
		Number			\$'000
1977-78	12 044	6 770	316	19 130	37 234
1978-79	13 337	7 827	306	21 470	43 953
1979-80	15 076	9 696	324	25 096	53 439
1980-81	17 104	11 282	313	28 699	71 258
1981-82	18 773	12 712	300	31 785	84 948

(a) Includes Northern Territory.

Disability Pensions

Disability pensions are paid by way of compensation to ex-servicemen and women who suffer incapacity because of war service, to their eligible dependants, and to the dependants of those whose death is related to service. Since 7 December 1972 serving members of the armed forces and eligible dependants have also been eligible for disability pensions if incapacity or death is related to defence service.

Disability Pensions, South Australia ^(a)

Pensions in Force at End of Year					
Year	Incapacitated Ex-servicemen	Dependants of Incapacitated Ex-servicemen	Dependants of Deceased Ex-servicemen	Total	Expenditure
		Number			\$'000
1977-78	17 452	20 409	4 651	42 512	34 784
1978-79	16 993	19 467	4 576	41 035	34 266
1979-80	16 605	18 936	4 477	40 018	35 634
1980-81	16 191	18 424	4 414	39 029	40 832
1981-82	15 832	17 888	4 419	38 139	41 780

(a) Includes Northern Territory.

There are four main classes of disability pensions.

The special (TPI) rate (\$148.00 a week from 11 November 1982) is payable to those who are deemed totally and permanently incapacitated.

The intermediate rate (\$101.90 a week from 11 November 1982) is payable to an ex-serviceman who, because of the severity of his service-related incapacity, can work only part-time or intermittently and in consequence is unable to earn a living wage.

The general rate is payable to those who suffered service-related disabilities but still retained some earning capacity. The pension payable depends on the degree of incapacity, the maximum from November 1982 being \$55.80 a week. Pensions are also payable for a wife and each child under sixteen years of age under both special and general pensions. Student children also qualify.

The widow's rate is payable to widows of ex-servicemen who died as a result of service, and to any children under sixteen years of age. An additional domestic allowance is payable to certain classes of widow. From November 1982, the widow's rate was \$77.25 a week and the domestic allowance \$12.

Medical Services

The Department of Veterans' Affairs provides hospital treatment, general practitioner services, specialist facilities, pharmaceutical benefits, dental treatment, and nursing home benefits for eligible persons. A comprehensive rehabilitation and social worker service is also available. Medical treatment is provided for all service-related disabilities, pulmonary tuberculosis, and all forms of malignant cancers. Treatment for all non-service-related disabilities is made available to: veterans receiving a disability pension at or above the 100 per cent general rate; veterans of the Boer and 1914-18 Wars or a disability pension at or above 50 per cent of the general rate plus a service pension; veterans with service related amputations or loss of vision in one eye who are in receipt of a disability pension; veterans who are ex-prisoners of war; veterans in receipt of service pensions (subject to income being within the limits governing the provision of free medical treatment and other fringe benefits); widows and certain dependants of deceased male veterans whose deaths have been accepted as related to service or who at the time of their death were receiving the Special Rate Pension for total and permanent incapacity or blindness.

In-patient and out-patient treatment is provided at the Repatriation General Hospital, Daw Park. Facilities at the Out-patient Department include radiological, pathological, physiotherapy, and podiatry services in addition to medical specialist examinations.

The Repatriation Artificial Limb and Appliance Centre, as well as attending to repatriation needs, provides appliances and services for other government departments and provides artificial limbs free of charge to all disabled members of the community.

Department of Veterans' Affairs: Medical Services, South Australia ^(a)

Year	In-patients: Total Treated		Out-patients: Number of Visits		Pharmaceutical Benefits
	Daw Park	Other Hospitals	Daw Park	Visits to or by Medical Officer	
			Number		\$
1977-78	5 543	334	76 224	170 627	2 462 517
1978-79	5 835	301	76 048	180 618	2 562 799
1979-80	6 395	479	81 314	182 563	2 927 296
1980-81	6 608	592	85 242	186 456	2 985 541
1981-82	7 447	779	87 791	205 448	3 776 382

(a) Includes Northern Territory.

Education and Training

Assistance in education and training is provided, through the Department of Veterans' Affairs for children of ex-servicemen whose death, blindness or total and permanent incapacity is accepted as service-related. The Soldiers' Children Education Board guides and supervises the progress of children receiving such assistance.

Other Services

Other assistance, through the Department of Veterans' Affairs, includes gift cars for certain disabled ex-servicemen, aids for blinded ex-servicemen and business re-establishment loans. Funeral grants of up to \$500 are paid on the death of certain ex-servicemen and dependants.

ABORIGINAL ADVANCEMENT

By agreement with the South Australian Government on 1 December 1973 the Commonwealth Government assumed responsibility in relation to Aboriginal affairs policy, planning, financial administration, information and co-ordination. These functions are administered in South Australia by officers of the Department of Aboriginal Affairs in Adelaide, Port Augusta and Ceduna. The Commonwealth Government assists those Aboriginals who wish to adopt, wholly or partly, a European lifestyle. At the same time, the Government encourages self-management by Aboriginals and preservation of their cultural heritage.

The following table shows funding by the Department of Aboriginal Affairs on various aspects of Aboriginal advancement.

Department of Aboriginal Affairs: Funding, South Australia				
Particulars	1979-80	1980-81	1981-82	
Direct Funds:		Dollars		
Housing (a)	1 106 629	637 868	—	
Health	956 306	1 057 007	989 910	
Education	674 850	748 968	802 500	
Welfare	426 973	423 210	489 700	
Community councils	2 884 680	2 827 828	2 891 651	
Recreation	55 000	17 000	79 634	
Legal aid	449 981	592 900	681 184	
Employment	1 430 181	2 030 480	2 068 784	
Enterprises (a)	225 314	—	—	
Training	331 590	334 404	237 599	
Total	8 541 504	8 669 665	8 240 962	
State Grants:				
Department for Community Welfare	648 500	659 000	743 700	
Education Department	1 237 000	1 377 000	1 585 831	
South Australian Housing Trust (b)	2 087 000	2 746 500	3 810 000	
Department of Further Education	588 900	695 000	829 680	
South Australian Health Commission	1 361 500	1 394 000	1 611 938	
South Australian Public Service Board	18 800	26 000	4 492	
Total	5 941 700	6 897 500	8 585 641	

(a) Transferred to the Aboriginal Development Commission from 1981-82.

(b) From 1981-82 this grant was paid from Department of Social Security funds.

The policy of the Commonwealth Government is that, wherever possible, Aboriginal people should avail themselves of the normal facilities provided for the total community, for example, welfare, health and education, and the State or Commonwealth Government departments responsible for these functions will continue to provide such services. Where special additional programs are needed for Aboriginal people the Commonwealth Government will provide the finance to enable these to be carried out through the appropriate Government or voluntary agency, with the co-ordination of arrangements

being handled by the Regional Director of the Department of Aboriginal Affairs. Funds in 1981-82 were also made available direct to thirty-three Aboriginal organisations and communities within South Australia for eighty-one programs designed to develop Aboriginal self-management and achievement. In addition, eighty-two Aboriginals were employed on forty-one Special Work Projects with an expenditure of about \$360 000. Up to 448 Aboriginals were employed on Community Development Employment Projects at Ernabella, Fregon, Yalata and Pipalyatjara with an expenditure of \$1 708 780.

On 1 July 1980 the Aboriginal Development Commission (ADC) was established. It replaced the Aboriginal Land Fund Commission and the Aboriginal Loans Commission, and took over the Aboriginal enterprises program from the Department of Aboriginal Affairs. Responsibility for direct funding of Aboriginal Housing Associations passed from the Department to the ADC on 1 July 1981. The ADC is able to acquire land for Aboriginal communities and groups, lend money to Aboriginals for housing and personal purposes, and finance business enterprises.

Aboriginal Development Commission: Funding, South Australia

	1980-81	1981-82
	Dollars	
General fund:		
Land acquisition	—	550 000
Housing grants	—	884 000
Enterprises loans	160 000	293 300
Enterprises grants	61 000	115 060
Total	221 000	1 842 360

In September 1979 a State Ministry of Aboriginal Affairs was established. An office of Aboriginal Affairs was created, with the main responsibilities of advising the Minister on policies and issues, the co-ordination of special services provided by State Government departments for Aboriginal people, and liaison and co-operation with the Commonwealth Department of Aboriginal Affairs.

The Office is not a functional or service delivery department. Those responsibilities rest with the normal departments in the areas of health, education, welfare and housing.

The Commonwealth Department of Aboriginal Affairs funds special services provided by the various State departments, and these are co-ordinated through the South Australian Aboriginal Co-ordinating Committee.

The Committee provides an opportunity for senior officers of departments to meet regularly with Aboriginal representatives, and to travel to remote areas of the State to consult with Aboriginal communities.

The Office of Aboriginal Affairs provides the Secretariat for the Co-ordinating Committee.

Specific needs in education were met with the establishment, in 1973, of both the Aboriginal Community College, as part of what is now the Underdale campus of the South Australian College of Advanced Education, and the Aboriginal Task Force at the South Australian Institute of Technology (SAIT). The Community College provides remedial work-oriented training and self-development courses for Aboriginals who have had difficulty in maintaining work continuity. Task Force students can enter SAIT on special entry and study for an Associate Diploma in Social Work or Business Administration. Successful students may be eligible to proceed to degree work in various departments of SAIT. Students can be awarded a Community Development Certificate after their first or second years. The Certificate is recognised by the Commonwealth and

South Australian Public Service Boards as equivalent to matriculation. In 1983, the Aboriginal Task Force introduced a Bachelor of Arts in Aboriginal Affairs Administration Degree; Australia's first degree-level course to train Aboriginals for positions in government, education and private enterprise.

Teacher-training programs for Aboriginal people were introduced by the Underdale Campus of the South Australian College of Advanced Education in 1978. These programs, along with courses of study about Aboriginal life, were brought under one roof with the establishment in 1981 of an Aboriginal Studies and Teacher Education Centre on the campus.

Aboriginal people decided in 1975 to set up the South Australian Woma Committee to deal with prevention of alcohol abuse and rehabilitation. Since then, eight sub-committees have been set up in various parts of South Australia and all follow programs based on medical input and using therapy programs to change behaviour patterns.

The Aboriginal Housing Board is an incorporated Aboriginal organisation which works in co-operation with the South Australian Housing Trust and the Aboriginal Development Commission to develop housing policies and approaches, determine funding priorities and assist Aboriginal communities to plan and implement effective housing programs.

STATE WELFARE SERVICES

EXPENDITURE

The following table shows outlay by State Authorities from Consolidated Revenue Account on various aspects of social security and welfare. For further details of the classifications in the table see Part 11.3 State Government Finance.

State Authorities: Outlay on Social Security and Welfare, South Australia ^(a)

Purpose	1977-78	1978-79	1979-80	1980-81
	\$'000			
General administration, regulation and research	10 692	11 689	13 069	13 441
Care of and assistance to:				
Aged persons	10 824	13 442	15 199	17 295
Incapacitated and handicapped persons ..	1 567	1 090	985	1 543
Unemployed and sick persons	10 005	3 904	2 564	830
Ex-servicemen	154	81	90	110
Widowed and deserted spouses	6 933	8 013	6 556	1 498
Families and children ^(b)	4 776	5 827	5 716	6 164
Other social security and welfare services:				
Services to Aboriginals n.e.c. ^(c)	1 163	1 214	1 401	1 584
Other	1 042	875	2 783	3 648
Total	47 156	46 135	48 363	46 113

^(a) Charges for goods and services supplied have been excluded from receipts and deducted in calculating outlay.

^(b) Excludes reformatory institutions.

^(c) Includes only programs designed to meet specific needs of persons of Aboriginal descent.

COMMUNITY WELFARE

The Department for Community Welfare promotes the general well-being of the community, encourages the welfare of the family as the basis of community welfare, promotes co-ordination of services and collaboration among various agencies and promotes research, education and training in community welfare.

The Community Welfare Act provides for the establishment of community welfare

centres or district offices at selected locations throughout the State and the full range of the Department's services is available from these centres. District offices have been established to service Adelaide city, the Adelaide Hills, Berri, Brighton and Glenelg, Campbelltown, Ceduna, Coober Pedy, Elizabeth, Enfield, Gawler, Kadina, Leigh Creek, Marion, Mitcham, Modbury, Mount Gambier, Murray Bridge, Norwood, Noarlunga, Nuriootpa, the 'Parks' area, Port Adelaide, Port Augusta, Port Lincoln, Port Pirie, Salisbury, Thebarton, Woodville and Whyalla, and branch offices to service Clare, Hillcrest, Hindmarsh, Ingle Farm, Kangaroo Island, Maitland, Millicent, Naracoorte, Peterborough, Renmark, Unley, Waikerie, West Torrens, Woodside and Victor Harbor.

The decentralisation program has led to a new sense of involvement in the community and its many welfare needs. There is greater flexibility and opportunity to support local efforts to provide new services for youth, the aged, single parents and others in need.

The Department for Community Welfare's library has one of the most comprehensive collections in Australia on social welfare and related topics, and is used by staff, tertiary students, foster parents and other people in contact with the Department.

The Department has developed and extended its ties with Commonwealth and other State Government departments and with local government and voluntary bodies. A Community Welfare Grants Advisory Committee, established in 1972, recommends grants to assist voluntary community welfare organisations with both capital and operating costs. During 1982, \$1 156 830 was provided in grants to 182 organisations.

Neighbourhood Youth Workers help local people learn the skills and develop the resources to establish a wide variety of activities for young people. The Duke of Edinburgh's Award scheme in South Australia provides a wide range of activities for the personal development of young people.

A special 24-hour emergency service in the Adelaide metropolitan area helps in personal and family crises. This service works in close co-operation with the Police Department. Crisis Care workers especially trained to help people under stress, provide on-the-spot assistance to individuals and families, and cars fitted with two-way radios ensure prompt attention, where necessary.

A Budget Advice service operates from thirty-one locations to help people manage their budgets, re-arrange debts and plan their spending.

Care and Supervision of Children

Under the Children's Protection and Young Offenders Act, 1979-1982, a balance is sought between the care and guidance of the young people before Childrens Aid Panels and Childrens Courts and the protection of the community. The importance of the family in the child's development is also given emphasis.

Where the Minister is of the opinion that a child (up to eighteen years) is in need of care, the Department for Community Welfare makes application to the Childrens Court for a declaration. If the Court finds the child to be in need of care it can place the child under the guardianship of the Minister or, alternatively, the control of the Director-General.

The Education Department institutes proceedings before a Childrens Aid Panel and sometimes subsequently a Childrens Court for truancy matters for children up to the school leaving age of fifteen years.

Screening panels, constituted by a police officer and a community welfare worker, have been established to decide whether a young person alleged to have committed an offence is appropriately dealt with by a Court or a Childrens Aid Panel.

For young people found guilty of an offence the Childrens Court has a variety of orders available. These include fines, bonds, attendance at a Project centre, sentence of detention or a suspended sentence of detention.

Many of these orders involve the Department in the young person's life for a specific period of time. Whilst the aim is to preserve and strengthen the relationship between the young person and his/her parents, sometimes placement away from home is necessary and there are a variety of types of homes available.

The Youth Project Centre, Magill, provides intensive non-residential treatment facilities for young offenders, and the Regional Youth Project services provide a similar service from decentralised locations. The Norwood Project Centre helps children who are referred with learning and behavioural difficulties. The Western and Northern Suburbs Project Teams provide a similar service to schools and departmental district offices in the Northern and Western metropolitan areas.

The Intensive Neighbourhood Care scheme, implemented in 1979, provides personal care for young offenders who would otherwise be sent into care; they live with specially selected and trained families.

Childrens Aid panels provide a non-judicial setting in which to deal with young people who are alleged to have committed an offence. Each panel is constituted of a police officer and a community welfare worker, who meet with the child and his family to discuss the offence and the family situation. Panels sit in most of the district office locations. When the panel is dealing with truancy a representative from the Education Department replaces the police panelist.

Childrens Court Services

Reports are presented on most young people appearing before a court. Officers from the Department for Community Welfare appear in the Childrens Courts to present these reports and make any further submission required. These officers liaise with the field staff involved with the child and his family.

Childrens Courts officers also make applications to the Court on behalf of the Minister and conduct 'in need of care' proceedings.

Residential Care

During 1979-80 the Department instigated a re-organisation of its community-based residential care facilities. The new system provides metropolitan regions with regional admission units for short-term crisis care, assessment and outreach for teenage offenders and regional group homes for teenage offenders who need therapeutic care. The changes have provided greater staffing resources in the areas of most need.

At 30 June 1982, there were 1 208 children under guardianship or control orders, of whom 108 were in departmental homes and centres and 1 100 in their own homes or placed in foster families.

The centres under the control of the Department include SA Youth Training Centre for older youths remanded in custody or who have been sentenced to detention by a Childrens Court following an offence, and the South Australian Youth Remand and Assessment Centre which provides for girls, generally from twelve to eighteen years, and (since September 1978) for boys from ten to fifteen years.

Lochiel Park is a training centre for boys, generally between the ages of fourteen and eighteen years, who are slightly mentally retarded and under care and control of the Minister. In addition, cottage and family homes provide a family-like atmosphere for small groups of boys and girls.

Details of the number of children under the guardianship of the Minister of Community Welfare are given in the following table.

Children Placed under Guardianship or Control Orders for the First Time, 1981-82

Particulars	Males	Females	Total	Proportion of Total
	Number			Per cent
From the Childrens Courts:				
Guardianship of the Minister of Community Welfare (a)	47	51	98	60.12
Control of the Director-General of Community Welfare	26	22	48	29.45
Admitted under Community Welfare Act:				
Guardianship of the Minister of Community Welfare	3	4	7	4.29
Transfer of control (interstate)	6	4	10	6.14
Total (b)	82	81	163	100.0

(a) Includes short-term guardianship during periods of adjournment.

(b) In addition to the above, there were 150 children (76 boys and 74 girls) admitted to the temporary Guardianship of the Minister of Community Welfare. During the year, 143 children (69 boys and 74 girls) were released when the short-term need for assistance had ceased.

There were 942 children placed on bonds requiring supervision by Departmental officers during 1981-82 and the total number of such children at 30 June 1982 was 645 (563 boys and eighty-two girls).

The importance of keeping a child in his own home whenever possible cannot be over-emphasised and children are placed out of departmental homes and centres as soon as possible. Review boards consider the social background of each child under the Department's control and make recommendations regarding action to be taken for the child's benefit and welfare.

When a child is returned to his own home from an alternative placement, support is continued to the whole family through counselling, motivation of self-help programs, and through the full utilisation of appropriate resources throughout the Department and the community. The same services are available to all children under care and control or on bonds with supervision as well as to other families in the community seeking help.

Other responsibilities of the Department's welfare workers include the investigation of allegations that children are ill-treated or in need of care, and the counselling of youths and children voluntarily referred to departmental officers. Six regional panels have been set up under the Community Welfare Act to consider cases of child abuse. The panels aim to minimise both the number of cases occurring and their severity.

Licensing of Foster Parents and Childrens Homes

Under the Community Welfare Act, every foster parent caring for a child under the age of fifteen years must be approved by the Director-General of Community Welfare, who is responsible for each child's welfare. Departmental officers visit such homes regularly.

Consultant and licensing services are also provided for child care, family day care and baby-sitting agencies. Family Day Care Co-ordinators are working in nineteen districts.

The Department is responsible for licensing non-statutory childrens homes in which more than five children under the age of eighteen are cared for apart from their parents or near relatives. Recommendations concerning approval, residential care practice, standards and funding of childrens homes are made by the Residential Child Care

Advisory Committee comprising four Government and four non-statutory agency members appointed by the Minister.

Joint Departmental Projects for Early Childhood Services

The Department for Community Welfare is involved with other Government departments and community groups in providing child care at Campbelltown, Brompton, Nangwarry and Thebarton. The Department also works in co-operation with the Education Department and local groups to provide early childhood resource facilities at Elizabeth West, Alberton and Christies Beach. Mobile toy libraries operate in three areas as a joint venture with the Kindergarten Union.

Adoptions

South Australia has had an Adoption of Children Act since 1925, the current legislation being the Adoption of Children Act, 1966-1978. Under this Act the interests of the children are considered paramount. The right to place children for adoption is restricted to the Director-General of Community Welfare or to private adoption agencies which the Director-General has approved. The adoptive parents, who must be approved by the Director-General, become the legal parents after the adoption order is made by an Adoption Court (usually about six months after placement).

The following table refers to all types of adoption where the Court order has been finalised during the financial years shown.

Number of Adoptions, South Australia

Age of Child (a)	1977-78	1978-79	1979-80	1980-81	1981-82
Under one year	141	120	163	166	129
One year and under two	71	47	33	21	15
Two years and under six	132	83	104	31	83
Six years and over	162	155	177	168	139
Not stated (b)	—	10	—	119	30
Total	506	415	477	505	396

(a) At date of adoption order. (b) Where the prospective adopting parents applied directly to the court for an adoption order the Department for Community Welfare has no details.

Adoptions made in other Australian States are recognised in South Australia; similarly South Australian adoptions are recognised in the other States. A more detailed account of the South Australian legislation was included on pages 221-4 of the *South Australian Year Book* 1968.

There are two types of adoptions:

- (a) adoptions where a child surrendered by its natural parent(s) is placed with approved adoptive parents and the identity of either party is kept secret;
- (b) adoptions where the identity of one or both parties is disclosed, mainly the adoption of children by step-parents but also including adoptions by relatives or foster parents and of children from other countries (inter-country adoptions).

On 10 August 1978 new regulations came into effect which provide criteria for the selection of people wishing to adopt Australian children: these criteria are based on recommendations of the Community Welfare Advisory Committee on adoption matters.

The next table gives for the two types of adoption the number of adoption orders granted, the number of applications and the number of children placed during the financial year. The number of children placed does not include children adopted by

step-parents or relatives *i.e.* those situations where an agency has not actively arranged the placement of the child.

Adoptions, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
Number of adoptions granted:					
Identity not disclosed	164	146	138	125	106
Particular person—identity known	219	213	311	323	226
Inter-country	123	56	28	52	60
Particular person—inter-country (a)	—	—	—	5	4
Total	506	415	477	505	396
Number of applications received:					
Identity not disclosed	300	224	225	219	201
Particular person—identity known	373	335	332	269	250
Inter-country	135	100	103	85	59
Particular person—inter-country (a)	—	—	—	6	10
Total	808	659	660	579	520
Number of children placed (b):					
Australian born	153	160	117	115	93
Inter-country	50	25	73	54	58
Total	203	185	190	169	151

(a) Before 1980-81, adoptions in this category were included in the one category of inter-country adoption.

(b) The average waiting time for a child to be placed varies from year to year depending on the number of applicants and the number of children surrendered.

Legal Services

Applications for a declaration that a child is in need of care are carried out by officers of the Department for Community Welfare except where the case is contested. In such cases the Law Department appears on behalf of the Department. The Department assists by providing reports on the social background of children whose cases are considered by the Courts, as well as Assessment Panel reports in certain cases.

The Department provides a free service to deserted wives and other persons with maintenance, matrimonial and domestic problems. Officers interview and advise wives and husbands and negotiate with other parties and solicitors for settlements.

When necessary the officers institute legal proceedings and appear in Court on behalf of those seeking assistance to obtain Orders for separation, custody of children, access and maintenance. The Department does not take action for divorce. Some 2 300 maintenance payments are collected and paid weekly to deserted wives by the Department. Assistance is given to unmarried mothers in affiliation cases.

Emergency Financial Assistance

The Director-General of Community Welfare may, subject to any directions of the Minister, provide assistance to families or individuals in need. The assistance may be provided in the form of money or commodities or the provision of other services which

will promote the welfare of the family or individual. Before November 1980 this assistance was also available to sole parents waiting to qualify for Supporting Parent's Benefit (i.e. the first six months after application). Since then the Department of Social Security has assumed responsibility for income support for all sole parents, although many initially apply to the Department for Community Welfare, and may receive emergency on-the-spot assistance.

During 1981-82 financial assistance was issued in 27 236 cases and the amount paid totalled \$780 586.

The Department provides residential care in a home at Magill for aged people in special need, most of whom are pensioners. The daily average occupancy of the Magill home was 113 during 1981-82.

Rates Remission Scheme

A remission of rates and taxes scheme for pensioners and others able to demonstrate exceptional circumstances of hardship is operated by the State Government. The scheme provides for a remission of up to 60 per cent of the cost of water and sewerage rates, and council rates charged on dwellings, including flats and units owned and occupied by eligible applicants. Pensioners receive a direct remission from the rating authority on application. Applications from non-pensioners are processed by the Department and in 1981-82, 13 170 claims totalling \$627 852 were approved. The total cost of remissions by all authorities was met by the Department and totalled \$13 962 911 for 1981-82 in the following categories:

	\$
Water, sewerage	6 494 138
Local government	6 840 921
Remissions to non-pensioners	627 852

Aboriginal Lands Trust

The Aboriginal Lands Trust was established by the South Australian Government in 1966 to hold the permanent freehold titles of existing Aboriginal Reserves, together with the titles to other land which would be purchased in future years for the use of Aboriginals.

The Trust carries out its work on behalf of all Aboriginal people in South Australia and is completely independent of the Government.

Currently, policy of the Trust is to act essentially as a land title holding body only and to lease its land and assets to Aboriginal communities, organisations and individuals without interference in the running or use of those properties.

Communities incorporated under the Associations Incorporation Act have an elected council. Advisory and/or managerial staff are appointed according to the degree of control and management responsibility accepted by the community.

In March 1979, the South Australian Government set up a working party to examine the Aboriginal Lands Trust Act, 1966-1975. It was established to examine the system of land acquisition and holding, the functions of the Trust and the number and method of appointing members. It was also charged with reviewing provisions of the Act in respect of mining on lands held by the Trust. The report was submitted in September 1979.

Pitjantjatjara Land Rights Act

In March 1977 a working party was established by the State Government to enquire into the feasibility of establishing a separate Pitjantjatjara Lands Trust. The working party submitted its report in June 1978.

The Pitjantjatjara Land Rights Act was proclaimed on 1 October 1981, granting on a freehold basis to the Pitjantjatjara people the whole of the existing North West Aboriginal Reserve and adjacent pastoral leases mostly operated by Aboriginal people. There are special provisions for the control of the land by the Aboriginal people, including control of mining activities, access to the land, and for the payment of mining royalties.

PRIVATE WELFARE SERVICES

There are numerous charitable and benevolent organisations working within South Australia. A large proportion of these derive revenue from regular donations, subscriptions and income from bequests; nearly all derive revenue from special functions. A number also receive Commonwealth, State or local government grants. The Collections for Charitable Purposes Act, 1939-1947, requires the registration of charitable organisations before they may actively solicit funds.

Organisations which have a wide range of activities include the Australian Red Cross Society, Marriage Guidance Council, Service to Youth Council, the welfare bureaux and missions of the various churches, and organisations catering for ex-servicemen and their dependants. Most of these agencies maintain full-time staff and generally employ professional social workers. Other organisations cater for more specific needs, covering a wide range of physical and sociological disabilities. This includes the care of physically and mentally handicapped persons such as crippled children, the blind, deaf-mutes and alcoholics; also of specific groups such as aged persons, Aboriginals and migrants. Many of these organisations depend largely or entirely on voluntary aid.

For details of the numerous bodies concerned with social welfare, reference should be made to the *Directory of Social Welfare Resources* published jointly by the South Australian Council of Social Services and the Citizens Advice Bureau. For those in need, the Citizens Advice Bureau advises on how to benefit from and how to use wisely the many services provided by the Commonwealth and State Governments and the various voluntary organisations.

REGISTERED MEDICAL AND HOSPITAL BENEFIT ORGANISATIONS

In 1953 Australia introduced a system of voluntary health insurance supervised and financially supported by the Commonwealth Government. Medical benefits and full hospital benefits are payable to members of a registered organisation. In most cases both medical and hospital benefits were provided by the one organisation.

The contributions (premiums) payable to hospital benefits organisations depend on the scale of fund benefits required. Contribution rates to medical and hospital organisations may vary slightly between funds, and single and family rates are available.

FRIENDLY SOCIETIES

Friendly Societies are mutual organisations paying medical, hospital and other benefits to members and dependants in time of need. These societies are required to register under the Friendly Societies Act, 1919-1982. The Act is administered by the Chief Secretary through the Public Actuary who approves the table of contributions, the level of benefits and generally sees that the societies' rules and practices are in accordance with the law. Two Friendly Societies are registered to pay Commonwealth Government medical and hospital benefits (see previous section), while others re-insure such benefits through a society created for this purpose.

Amendments to the Friendly Societies Act limit to \$10 000 any payment for endowment or funeral benefits and to \$21 any weekly payment to members for sickness or superannuation. The Act also places a limit of \$20 000 on insurance that is primarily for investment purposes.

Friendly Societies, South Australia

Particulars	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Number of registered societies (a)	11	11	10	9	9	9
Number of members (a) (b) ...	48 057	45 815	43 051	41 575	39 431	n.y.a.
Revenue (c):			\$'000			
Contributions and levies	18 805	39 802	48 068	50 626	59 877	61 333
Interest, dividends and rent	2 242	3 061	3 676	3 473	3 156	4 505
Other	5 015	3 268	635	1 253	1 905	10 553
Total revenue	26 063	46 132	52 379	55 352	64 939	76 392
Expenditure (c):						
Sick pay	150	134	124	120	155	61
Medical attendance and medicine	4 472	15 386	30 487	26 746	26 972	29 816
Sums payable at death	167	175	170	180	163	325
Hospital benefits	11 597	15 864	18 269	19 610	17 885	15 464
Administration	3 317	4 709	5 851	6 554	14 095	15 100
Other	2 508	754	1 366	1 262	5 666	11 666
Total expenditure	22 212	37 022	56 267	54 472	64 936	72 432
Total funds	31 277	40 387	36 499	37 379	31 261	38 761

(a) At 30 June.

(b) Full benefit members; does not include those who contribute for medical and hospital benefits only.

(c) Receipts and payments of Commonwealth Government medical and hospital benefit subsidies excluded.

The Friendly Societies' Medical Association Incorporated operates thirty pharmacies in the metropolitan area and one at Port Pirie where medicines are dispensed for Friendly Societies' members at concession prices. The United Friendly Societies' Dispensary Inc. operates a shop at Mount Gambier.

The Friendly Societies Act also prescribes the nature of assets which societies may hold. Their most important investment is in property mortgages and in particular in housing loans to members. They may also invest in government securities.

6.7 MARRIAGE

Registration of marriage has been compulsory in South Australia since 1842 when Acts 'for regulating Marriages in the Province of South Australia' and 'for registering Births, Deaths and Marriages in the Province of South Australia' were passed. The present legislation relating to marriages is the Commonwealth *Marriage Act 1961* which came into full operation on 1 September 1963 superseding, in South Australia, the *Marriage Act, 1936-1957*.

The Principal Registrar of Births, Deaths and Marriages in South Australia carries out the statutory duties under the Act and has supervision over ministers of religion (as regards their duties under the Marriage Act), the District Registrars appointed to the twenty-two registration districts, and other persons authorised to perform marriages.

After a marriage the celebrant is required to forward the official certificate of marriage to the Principal Registrar who maintains a register of all marriages celebrated in South

Australia. In addition, a copy of the marriage certificate is forwarded by the office of the Principal Registrar to the District Registrar who maintains a register of the marriages celebrated in that district.

The total marriages and marriage rates for selected years from 1846 are shown in the Statistical Summary, Appendix A. Particulars relating to first marriages, remarriages and crude marriage rates for the last five years are shown in the following table. The crude marriage rate rose throughout the sixties from 6.99 in 1960 to 9.38 in 1970, gradually declined to a level of 8.72 in 1974 and fell substantially to 7.86 in 1975. The 1976 rate of 8.55 coincided with the introduction of the Family Law Act and a significant increase in the number of divorced persons remarrying. Rates for 1977 (7.87), 1978 (7.55) and 1979 (7.51) indicated a continuation of the decline apparent from the beginning of the decade. However, the proportion of divorced persons remarrying to total persons marrying gradually increased over the same period. In 1981 a record 4 275 divorced persons remarried (20.8 per cent of all persons marrying) which has probably accounted for the increase in the marriage rate to 7.77.

Previous Marital Status of Persons Marrying, South Australia

Year	Bridegrooms			Brides			Total Marriages	Rate (a)
	Bachelor	Widower	Divorced	Spinster	Widow	Divorced		
1976	8 515	391	1 996	8 659	459	1 784	10 902	8.55
1977	7 672	334	2 120	7 863	398	1 865	10 126	7.87
1978	7 515	297	1 988	7 622	348	1 830	9 800	7.55
1979	7 403	292	2 083	7 545	370	1 863	9 778	7.51
1980	7 678	298	2 088	7 725	352	1 987	10 064	7.69
1981	7 757	331	2 164	7 769	372	2 111	10 252	7.77

(a) Per 1 000 of mean population.

Between 1970 and 1979 the absolute numbers of both brides and bridegrooms marrying for the first time declined, although 1980 and 1981 saw a reversal of this trend. From 1973 to 1981 the number of marriages between bachelors and spinsters declined from 9 214 to 6 882 (from 85.3 to 67.1 per cent of all marriages). The number of divorced persons remarrying rose significantly. The following table shows the decline in the proportion of marriages between bachelors and spinsters, and the increase in marriages where at least one partner was divorced, for the years 1973 to 1981.

Previous Marital Status: Selected Marriages, South Australia

Year	First Marriages: Neither Party Previously Married		Remarriages: At Least One Party Previously Divorced	
	No.	Percentage of Total Marriages	No.	Percentage of Total Marriages
1973	9 214	85.3	1 268	11.7
1974	9 045	84.0	1 354	12.6
1975	8 012	81.4	1 549	15.7
1976 (a)	7 715	70.8	2 817	28.8
1977	6 903	68.2	2 940	29.0
1978	6 745	68.9	2 803	28.6
1979	6 660	68.1	2 862	29.3
1980	6 844	68.0	2 970	29.5
1981	6 882	67.1	3 092	30.2

(a) The Family Law Act took effect from January 1976.

Age at Marriage and Previous Marital Status, South Australia, 1981

Age	Previous Marital Status							
	Bridegrooms				Brides			
	Bachelor	Widower	Divorced	Total	Spinster	Widow	Divorced	Total
Under 20 years	320	—	—	320	1 814	—	1	1 815
20-24 years	4 375	2	50	4 427	4 478	6	207	4 691
25-29 years	2 202	3	457	2 662	1 064	17	572	1 653
30-34 years	540	7	518	1 065	273	33	490	799
35-39 years	170	12	388	570	73	20	344	437
40-44 years	64	12	272	348	29	39	209	277
45 years and over	86	295	479	860	35	257	288	580
All ages	7 757	331	2 164	10 252	7 769	372	2 111	10 252

During 1981 the median age (that age at which one half of the total number of persons are below the age and the other half exceed it) of persons marrying for the first time was 24.1 years for bachelors and 21.8 years for spinsters, a difference of 2.3 years. The following table shows median ages for the last five years of all persons marrying, classified by previous marital status at the time of marriage.

Median Age at Marriage and Previous Marital Status, South Australia ^(a)

Year	Median Age of Bridegrooms (Years)				Median Age of Brides (Years)			
	Bachelor	Widower	Divorced	Total	Spinster	Widow	Divorced	Total
1977	23.3	60.8	35.0	24.7	21.0	52.4	31.8	21.9
1978	23.5	61.3	35.0	24.9	21.2	53.6	32.0	22.2
1979	23.6	61.1	35.5	25.0	21.4	54.0	32.5	22.4
1980	23.8	58.9	35.4	25.1	21.6	52.8	32.5	22.7
1981	24.1	60.6	35.7	25.5	21.8	54.2	32.7	23.0

(a) The term 'median age' refers to that age which divides total age distribution into two parts of equal magnitude.

The next table shows that brides tend to marry bridegrooms older than they are.

Relative Age Differences of Parties to Marriage, South Australia

Elder Partner of Marriage	Number of Marriages			Proportion of Total Marriages		
	1979	1980	1981	1979	1980	1981
Per cent						
Bridegroom:						
8 years or more	1 216	1 196	1 208	12.4	11.9	11.8
7 years	310	308	400	3.2	3.1	3.9
6 years	418	435	428	4.3	4.3	4.2
5 years	593	588	669	6.1	5.9	6.5
4 years	832	920	914	8.5	9.1	8.9
3 years	1 155	1 110	1 147	11.8	11.0	11.2
2 years	1 336	1 382	1 369	13.7	13.7	13.4
1 year	1 305	1 388	1 308	13.3	13.8	12.8
No age difference	1 029	1 053	1 032	10.5	10.5	10.1
Bride:						
1 year	566	536	596	5.8	5.3	5.8
2 years	343	342	349	3.5	3.4	3.4
3 years	197	219	226	2.0	2.2	2.2
4 years	135	163	187	1.4	1.6	1.8
5 years or more	343	424	419	3.5	4.2	4.1
Total	9 778	10 064	10 252	100.0	100.0	100.0

MARRIAGE RITES

The proportion of marriages performed by civil officers in South Australia during the decade from 1960 to 1969 accounted for 10.9 per cent of all marriages, increased to 34.3 per cent in 1979 and reached a record level of 36.1 per cent in 1981.

Marriages: Marriage Rites, South Australia

Rites	Number of Authorised Celebrants at January 1981	Number of Marriages			Proportion of Total Marriages		
		1979	1980	1981	1979	1980	1981
Denomination:		Per cent					
Anglican	223	1 191	1 166	1 131	12.2	11.6	11.0
Baptist	89	235	254	244	2.4	2.5	2.4
Catholic	243	1 545	1 606	1 664	15.8	15.9	16.2
Churches of Christ	79	269	199	208	2.8	2.0	2.0
Lutheran	158	485	498	503	5.0	4.9	4.9
Orthodox	24	185	173	204	1.9	1.7	2.0
Presbyterian	5	25	37	40	0.2	0.4	0.4
Salvation Army	48	70	70	81	0.7	0.7	0.8
Uniting Church	308	2 076	2 050	2 049	21.2	20.4	20.4
Other denominations	240	346	393	381	3.5	3.9	3.8
Total	1 417	6 427	6 446	6 550	65.7	64.0	63.9
Civil Ceremonies by:							
State Officers	33	2 265	2 261	2 251	23.2	22.5	22.0
Other civil celebrants	37	1 086	1 357	1 451	11.1	13.5	14.2
Total	1 487	9 778	10 064	10 252	100.0	100.0	100.0

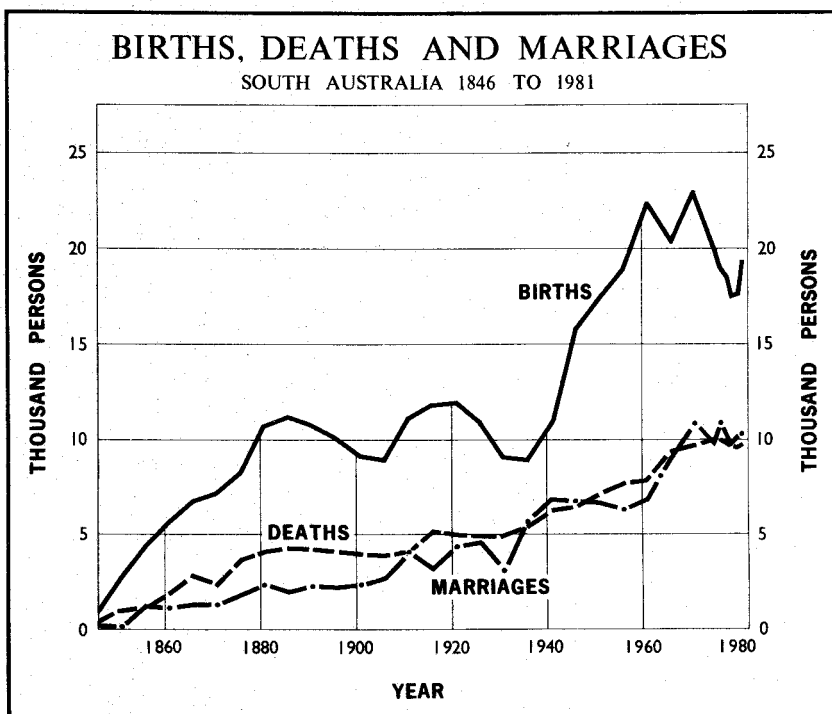
MARRIAGE OF MINORS

The *Marriage Act 1961* stipulates the marriageable age to be eighteen years or over for a male and sixteen years or over for a female. Under exceptional circumstances a judge or magistrate can, upon application by a party who has not attained marriageable age but who is at least sixteen in the case of a male or fourteen in the case of a female, authorise him or her to marry a particular person who is of marriageable age.

Figures relating to the marriages of persons under twenty-one years of age for the five years to 1981 are shown in the following table.

Marriages of Persons Under 21 Years of Age, South Australia

Year	Age in Years							Total Under 21	Percentage of Total Marriages
	Under 15	15	16	17	18	19	20		
BRIDEGROOMS									
1977	—	—	—	13	165	421	795	1 394	13.8
1978	—	—	1	6	133	340	692	1 172	12.0
1979	—	—	—	12	123	311	664	1 110	11.4
1980	—	—	—	6	108	280	612	1 006	10.0
1981	—	—	—	3	102	215	608	928	9.1
BRIDES									
1977	—	6	119	322	898	1 301	1 362	4 008	39.6
1978	—	4	79	271	800	1 228	1 279	3 661	37.4
1979	—	4	81	212	688	1 130	1 273	3 388	34.6
1980	—	3	49	191	616	1 041	1 287	3 187	31.7
1981	—	3	47	177	585	1 003	1 207	3 022	29.5



Before 1 July 1973 prior consent had to be obtained from either both parents, one parent, a guardian or guardians, or other prescribed authority, according to the circumstances, where a party to a marriage was under twenty-one years. From 1 July 1973 the age of majority for purposes of the Marriage Act was reduced to eighteen years.

Further References

Additional information may be found in the following publications:

3304.4 *Marriages—South Australia*

3306.0 *Marriages—Australia*

6.8 DIVORCE

The Supreme Court of South Australia had exclusive jurisdiction in divorce under the Matrimonial Causes Act, 1858 from 1 January 1859. Uniformity throughout Australia of dissolution of marriage and other matrimonial causes operated since 1 February 1961 under the *Matrimonial Causes Act 1959* which granted jurisdiction to hear and determine causes under the Act to the Supreme Courts of the States and Territories. The South

Australian Registry of the Family Court of Australia commenced operations under the *Family Law Act 1975* on 5 January 1976. The Supreme Court had concurrent jurisdiction, to deal with outstanding applications presented before that date, until 31 May 1976.

The jurisdiction of the Supreme Court allowed petitions for nullity of marriage, judicial separation, restitution of conjugal rights and jactitation of marriage in addition to the most common petition for dissolution of marriage, *i.e.* divorce.

Family Court (SA Registry)

Matrimonial causes within the jurisdiction of the Court include dissolution of marriage, maintenance, custody, property settlement, enforcement and injunction proceedings. The hearing of applications for dissolution began on 1 March 1976 although hearings of the other matrimonial causes were held before that date.

Under the provisions of the *Family Law Act 1975* the sole ground for dissolution of marriage is irretrievable breakdown, established by twelve months separation. Prospective applicants are encouraged to seek help from marriage counsellors attached to the Family Court or from voluntary marriage guidance organisations.

Maintenance entitlement is determined largely by the needs of the applicant and the capacity of the respondent to pay. Any transfer or settlement of property is also taken into consideration.

In custody proceedings the welfare of children is regarded as paramount. The Court can order that children be separately represented in matters affecting their custody or maintenance. Both parties are considered liable for their maintenance according to their respective financial resources. If the proceedings are contested, both parties may be referred to a welfare officer, and the Court may then require a report on the circumstances of affected children.

In settling disputes over matrimonial property the Court takes into account any maintenance order and the effective contribution of each party to that property.

Decrees Granted

The following table shows the number of decrees granted for the years 1976 to 1981.

Divorces: Decrees Granted, South Australia

Decree	1976	1977	1978	1979	1980	1981		Total
						To Husband	To Wife	
MATRIMONIAL CAUSES ACT								
Dissolution of marriage	1 402	..	..	..	..	..	..	..
Nullity of marriage	5	..	..	..	..	..	..	..
Judicial separation .....	—	..	..	..	..	..	..	..
Total	1 407	..	..	..	..	..	..	..
FAMILY LAW ACT								
Dissolution of marriage	4 740	4 419	3 805	3 794	4 203	1 645	2 487	4 132
Nullity of marriage(a)	1	3	1	3	..	..	..	..
Total	4 741	4 422	3 806	3 797	4 203	1 645	2 487	4 132
ALL DECREES GRANTED								
Total	6 148	4 422	3 806	3 797	4 203	1 645	2 487	4 132

(a) Not collected from 1980.

In 1981 there were 4 132 decrees granted for divorce, a decrease of 1·7 per cent on the 4 203 decrees granted in 1980. Figures since 1976 suggest that the number of divorces granted annually has now stabilised following introduction of the Family Law Act.

In 1977 the *Matrimonial Causes Act 1959* ceased to operate and all divorces granted from 1977 are granted under the *Family Law Act 1975*.

Details of the relative ages at marriage of husbands and wives for decrees granted in 1981 are contained in the following table.

Divorces: Ages of Parties at Time of Marriage, South Australia, 1981

Age of Husband (Years)	Age of Wife (Years)								Total Husbands
	Under 20	20-24	25-29	30-34	35-39	40-44	45 and Over	Not Stated	
Under 20	360	94	6	—	—	—	—	2	462
20-24	1 030	1 156	90	19	3	3	—	5	2 306
25-29	184	413	153	26	6	3	—	1	786
30-34	34	105	83	34	12	4	—	1	273
35-39	3	22	28	17	24	6	2	—	102
40-44	1	6	15	16	20	14	8	—	80
45 and over	—	5	9	19	15	14	54	—	116
Not stated	2	1	2	1	—	—	—	1	7
Total wives ..	1 614	1 802	386	132	80	44	64	10	4 132

The following table shows the duration of marriage, *i.e.* the interval between marriage and the date the decree was made absolute, for decrees granted during the five years to 1981.

Divorces: Duration of Marriage, South Australia

Year	Duration of Marriage (Years)							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 and Over	
1977	811	1 329	868	535	381	278	217	4 419
1978	745	1 119	746	431	360	218	186	3 805
1979	791	1 081	700	446	322	223	231	3 794
1980	863	1 212	763	503	392	235	235	4 203
1981	861	1 235	820	454	336	228	198	4 132

For decrees granted in 1981 the following two tables show the relative ages of husbands and wives at the time the decree was granted, and the duration of marriage and number of children of the marriage.

Divorces: Ages of Parties at Time of Dissolution, South Australia, 1981

Age of Husband (Years)	Age of Wife (Years)								Total Husbands
	Under 25	25-29	30-34	35-39	40-44	45-49	50 and Over	Not Stated	
Under 25	185	28	5	1	—	—	—	1	220
25-29	356	520	57	8	1	1	—	3	946
30-34	48	429	414	37	10	4	1	1	944
35-39	16	67	289	236	27	6	—	1	642
40-44	—	19	64	195	151	26	4	1	460
45-49	—	3	11	48	142	113	26	1	344
50 and over	—	2	16	25	54	138	333	1	569
Not stated	1	1	2	—	—	1	1	1	7
Total wives ..	606	1 069	858	550	385	289	365	10	4 132

Divorces: Duration of Marriage and Number of Children of the Marriage, South Australia 1981 ^(a)

Duration of Marriage (Years)	Decrees Granted to Marriages with							Total Decrees Granted	Total Children
	No Children	1 Child	2 Children	3 Children	4 Children	5 Children	6 or more Children		
Under 5	549	202	82	21	5	2	—	861	459
5-9	483	322	336	71	20	2	1	1 235	1 303
10-14	118	127	398	129	40	4	4	820	1 514
15-19	28	62	180	134	38	8	4	454	1 040
20-24	82	123	97	25	6	1	2	336	434
25-29	136	66	20	5	1	—	—	228	125
30 and over	164	25	7	1	1	—	—	198	46
Total dissolutions	1 560	927	1 120	386	111	17	11	4 132	..
Total children .....	..	927	2 240	1 158	444	85	67	..	4 921

(a) Number of children living and under 18 years at time of application.

The following table shows the number of children of marriages dissolved in the years 1977 to 1981.

Divorces: Children of the Marriage, South Australia ^(a)

Year	Decrees Granted to Marriages with							Total Decrees Granted	Total Children
	No Children	1 Child	2 Children	3 Children	4 Children	5 Children	6 or more Children		
1977	1 533	1 043	1 140	461	170	47	25	4 419	5 780
1978	1 347	861	1 009	425	108	41	14	3 805	4 878
1979	1 429	846	998	371	118	22	10	3 794	4 602
1980	1 587	933	1 097	432	116	28	10	4 203	5 092
1981	1 560	927	1 120	386	111	17	11	4 132	4 921

(a) Number of children living and under 18 years at time of application.

Further References

Additional information may be found in the following publications:

3305.4 *Divorces—South Australia*

3307.0 *Divorces—Australia*

PART 7

LABOUR

7.1 EMPLOYMENT

THE LABOUR FORCE

Particulars of the number of persons who constitute the labour force in South Australia are available from periodic population censuses. For the 1966 Census the definition of the labour force was revised to accord with the recommendations of the Eighth International Conference of Labour Statisticians, and the revised approach has been retained for subsequent censuses. The major factor in this change was the inclusion of a number of females working part-time who did not previously consider themselves as 'engaged in an industry, business, profession, trade or service'.

The use of sample processing in 1976 may result in minor differences between the sum of estimated components and estimated totals, and between totals in different tables. In the first table, population at the 1976 and 1981 Censuses is classified by occupational status, which refers to the status of each person in his or her occupation *e.g.* employer, worker on own account, working for wages, etc. Those persons reporting themselves as not engaged in an industry, business, profession, trade or service take as their occupational status 'not in the labour force'.

Although the female proportion of the labour force has continued to increase, from 36.7 per cent in 1976 to 38.3 per cent in 1981, there has been a decrease in the proportion of married females in the labour force, from 24.6 per cent in 1976 to 23.6 per cent in 1981.

Occupational Status of Persons in South Australia ^(a)
Censuses 1976 and 1981

Occupational Status	30 June 1976			30 June 1981		
	Males	Females	Persons	Males	Females	Persons
In labour force:						
Employer	18 986	8 904	27 890	20 063	9 345	29 408
Self-employed ...	36 182	16 807	52 989	37 658	18 123	55 781
Employee	291 670	166 638	458 308	279 888	177 389	457 277
Helper	1 489	6 659	8 148	1 155	4 291	5 446
Unemployed	10 608	8 947	19 555	27 611	17 945	45 556
Total labour force	358 934	207 955	566 889	366 375	227 093	593 468
Not in labour force	261 221	416 641	677 862	269 321	422 244	691 565
Total persons	620 156	624 596	1 244 752	635 696	649 337	1 285 033

(a) Census count not adjusted for underenumeration.

The following table shows the employed population at the 1981 Census classified by occupation. Occupation refers to the kind of work a person normally performs e.g. carpenter, clerk, and is classified according to the Australian Classification of Occupations which has been adapted from and closely adheres to the principles embodied in the International Standard Classification of Occupations issued by the International Labour Office, Geneva 1958 and as revised in 1968. It contains eleven major groups subdivided into seventy-three minor groups further subdivided into 389 individual categories.

Employed Persons: Occupation, South Australia, 30 June 1981 ^(a)

Occupation Group	Males	Females	Persons	
			Number	Proportion of Total
				Per cent
Professional, technical and related workers	39 928	39 889	79 817	14.6
Administrative, executive and managerial workers	28 209	5 204	33 413	6.1
Clerical workers	27 056	58 161	85 217	15.6
Sales workers	22 794	24 872	47 666	8.7
Farmers, fishermen, hunters, timbergetters and related workers	33 395	11 770	45 165	8.2
Miners, quarrymen and related workers	1 307	49	1 356	0.2
Workers in transport and communication	21 519	3 329	24 848	4.5
Tradesmen, production-process workers and labourers (n.e.i.)	134 369	18 152	152 521	27.8
Service, sport and recreation workers	15 671	32 207	47 878	8.7
Members of armed services, enlisted personnel	3 231	160	3 391	0.6
Occupation inadequately described or not stated	11 285	15 356	26 641	4.9
Total employed persons	338 764	209 149	547 913	100.0

(a) Census count not adjusted for underenumeration.

Industry refers to the branch of productive activity, trade or service in which the individual works or carries out his occupation. The Australian Standard Industrial Classification (ASIC), designed primarily as a system for classifying establishments (e.g. individual mines, factories, shops etc.) by industry, was used as a basis for the 1981 Census. Tabulations derived for the census divide the whole field of industry into twelve

major industry divisions, which in turn are divided into forty-eight subdivisions, 124 groups and 451 classes. For census purposes a number of additional 'undefined' categories were added to qualify imprecise or generalised descriptions of industrial activities reported in census schedules.

In the next table the number of employed males and females aged fifteen years and over at the 1981 Census are classified according to industry. The proportion of employed persons engaged in community services increased from 15.3 per cent in 1976 to 17.5 per cent in 1981. The percentage recorded as employed in manufacturing industries continued to fall, from 20.8 per cent in 1976 to 19.0 per cent in 1981, in contrast to the opposite trend evident between 1933 and 1966.

Employed Persons: Industry, South Australia, 30 June 1981 ^(a)

Industry Group	Males	Females	Persons	
			Number	Proportion of Total
				Per cent
Agriculture, forestry, fishing, etc.	30 114	11 998	42 112	7.7
Mining	3 633	518	4 151	0.8
Manufacturing	80 842	23 202	104 044	19.0
Electricity, gas and water	9 565	597	10 162	1.9
Construction	26 470	3 447	29 917	5.5
Wholesale and retail trade	57 314	42 632	99 946	18.2
Transport and storage	21 163	3 427	24 590	4.5
Communication	7 759	2 598	10 357	1.9
Finance, business services, etc.	21 042	17 389	38 431	7.0
Public administration, defence	19 263	7 314	26 577	4.9
Community services	33 706	61 957	95 663	17.5
Recreation, personal services, etc.	11 432	16 262	27 694	5.1
Other and not stated	16 459	17 807	34 266	6.3
Total employed persons	338 762	209 148	547 910	100.0

(a) Census count not adjusted for underenumeration.

The following table shows the age distribution of the labour force at the 1976 and 1981 Censuses.

**Age Distribution of the Labour Force, South Australia
Censuses 1976 and 1981**

Age Group (Years)	30 June 1976			30 June 1981		
	Males	Females	Persons	Males	Females	Persons
15-19	34 513	31 426	65 939	35 627	32 978	68 605
20-24	46 532	34 519	81 051	50 090	39 467	89 557
25-34	90 085	47 164	137 250	98 295	56 831	155 146
35-44	66 832	40 651	107 483	73 050	46 362	119 412
45-54	68 829	36 251	105 080	62 191	33 558	95 749
55-59	26 501	10 413	36 913	27 956	10 618	38 574
60-64	18 429	4 560	22 989	13 515	3 999	17 514
65 and over	7 215	2 972	10 187	5 651	3 260	8 911
Total labour force	358 935	207 955	566 890	366 375	227 093	593 468

Labour Force Survey

In addition to complete census counts, estimates of the civilian labour force are prepared from the results of surveys based on a sample of dwellings throughout Australia. These surveys began in 1960 on a quarterly basis and were initially confined to the six State capital cities, but in 1964 were extended to include non-metropolitan urban and rural areas, thereby enabling derivation of estimates of the total civilian labour force

in Australia. From February 1978, the surveys have been conducted on a monthly basis. The proportion of the population included in the surveys varies from State to State (1 per cent in South Australia) but in aggregate about 0.67 per cent of the Australian population is included.

Statistics obtained from the surveys include numbers employed and unemployed; labour force participation and unemployment rates; duration of unemployment; analyses of reasons for working less than thirty-five hours per week; as well as age, sex, occupation and industry characteristics.

Labour Force Status of the Civilian Population Aged 15 Years and Over, South Australia

August	Employed	Unemployed		Total	Labour Force	Not in Labour Force	Civilian Population Aged 15 years and Over	Un-employment Rate (a)	Participation Rate (b)
		Looking for Full-time Work	Looking for Part-time Work						
		Per Cent							
MALES ('000)									
1973	352.9	4.2	(c)	5.3	358.3	72.7	430.9	1.5	83.1
1974	358.5	5.2	(c)	5.8	364.3	75.9	440.2	1.6	82.8
1975	355.0	10.3	(c)	11.5	366.5	81.7	448.2	3.1	81.8
1976	361.0	9.4	(c)	11.0	372.0	85.3	457.3	3.0	81.3
1977	359.2	17.3	3.3	20.6	379.8	86.5	466.3	5.4	81.5
1978	350.2	27.5	(c)	28.4	378.7	96.7	475.3	7.5	79.7
1979	348.8	23.2	(c)	24.0	372.8	105.9	478.8	6.4	77.9
1980	348.5	24.9	(c)	26.8	375.3	109.4	484.7	7.1	77.4
1981	351.8	27.2	(c)	27.9	379.7	112.0	491.7	7.3	77.2
1982	344.7	27.1	(c)	28.8	373.6	124.9	498.5	7.7	74.9
FEMALES ('000)									
1973	188.0	4.4	4.1	8.4	196.5	247.4	443.9	4.3	44.3
1974	190.9	5.9	4.1	10.0	200.9	252.0	452.9	5.0	44.4
1975	194.3	11.5	5.6	17.0	211.3	251.9	463.2	8.0	45.6
1976	203.2	9.1	4.6	13.7	217.0	254.3	471.3	6.3	46.0
1977	208.7	13.1	4.7	17.8	226.6	254.1	480.7	7.9	47.1
1978	203.2	12.4	3.4	15.8	219.0	271.5	490.4	7.2	44.6
1979	198.6	16.6	4.6	21.3	219.9	275.0	494.9	9.7	44.4
1980	201.9	16.6	4.3	20.9	222.8	279.0	501.8	9.4	44.4
1981	204.4	16.7	3.7	20.4	224.8	279.5	504.3	9.1	44.6
1982	204.4	15.7	5.9	21.6	226.0	284.8	510.8	9.5	44.2
PERSONS ('000)									
1973	541.0	8.6	5.2	13.7	554.7	320.1	874.8	2.5	63.4
1974	549.4	11.0	4.8	15.8	565.2	327.9	893.1	2.8	63.3
1975	549.3	21.7	6.8	28.5	577.8	333.7	911.4	4.9	63.4
1976	564.2	18.5	6.2	24.7	589.0	339.6	928.6	4.2	63.4
1977	568.0	30.5	8.0	38.5	606.4	340.6	947.0	6.3	64.0
1978	553.4	39.8	4.4	44.2	597.6	368.1	965.8	7.4	61.9
1979	547.4	39.9	5.4	45.3	592.7	380.9	973.6	7.6	60.9
1980	550.4	41.5	6.2	47.7	598.1	388.4	986.6	8.0	60.6
1981	556.3	43.9	4.3	48.3	604.5	391.4	996.0	8.0	60.7
1982	549.2	42.8	7.6	50.4	599.6	409.7	1 009.2	8.4	59.4

(a) The unemployment rate for any group is the number unemployed expressed as a percentage of the labour force (i.e. employed plus unemployed) in the same group.

(b) The labour force participation rate for any group is the civilian labour force expressed as a percentage of the civilian population aged 15 years and over in the same group.

(c) Subject to sampling variability too high for most practical uses.

In the labour force survey a new sample of dwellings was selected and a revised questionnaire was introduced for the October 1982 survey. The new sample of dwellings was chosen in order to reflect the changes in the distribution of the population shown by the 1981 Population Census results, and the labour force series will be revised accordingly.

Since the estimates are based on a sample, they may differ from the figures that would

have been obtained from a complete census using the same questionnaire and procedures. One measure of the likely difference is given by the standard error, which indicates the extent to which an estimate might have varied by chance because only a sample and not the whole population was enumerated. The smaller the estimate the higher is the relative standard error. For example, the standard error of an estimate for South Australia of 500 000 persons is approximately 3 300 (0.7 per cent), while that of an estimate of 3 000 is approximately 550 (18.3 per cent). There are about two chances in three that a sample estimate will differ by less than one standard error from the figures that would have been obtained from a comparable complete enumeration, and about nineteen chances in twenty that the difference will be less than two standard errors.

The definition of the labour force used in the population census is similar to that used in the survey. However, data from the labour force survey is based upon a sample employing a personal interview approach, while census data is obtained from census schedules completed by householders. Evidence indicates that the personal interview approach tends to identify a larger number of persons as being in the labour force than does the filling in of the questions on the census schedule by the householder. This should be borne in mind when making comparisons between the two sets of data.

Further details may be obtained from the following bulletins: *The Labour Force—Australia (Preliminary)* (Catalogue No. 6202.0); *The Labour Force—Australia* (Catalogue No. 6203.0). In addition, *Labour Force—South Australia* (Catalogue No. 6201.4) contains detailed figures for South Australia.

Special Studies

The sample of dwellings referred to in respect of the labour force survey has provided the framework for a number of special studies. These have recently included: the labour force status and other characteristics of families; transition from education to work; the distribution of weekly earnings of wage and salary earners; information on persons not in the labour force; information about persons who had recently been looking for work; methods of job search; information about changes of employment or job location and other aspects of the mobility of the labour force; the career path of tradesmen; and information about the highest educational qualifications attained by persons in the labour force. Brief summaries of some of these studies are given in the following pages.

Since the estimates provided in these studies are based on sample surveys they are subject to sampling error, the magnitude of which is described in some detail in the bulletins for each topic.

Transition from Education to Work

In May 1982, a survey was conducted in conjunction with the labour force survey in order to obtain, among other things, information about persons aged 15 to 24 years who had attended full-time at a school, university or other educational institution at some time during 1981. Separate information was obtained in respect of persons who had returned to full-time education in 1982 and those who had not returned to full-time education. The latter group was defined as being leavers.

The number of leavers aged 15 to 24 years who entered the labour force, expressed as a percentage of total leavers aged 15 to 24 years, describes their labour force participation rates. This rate for South Australian males in May 1982 was 95.1 per cent compared with the national rate of 95.9 per cent while the equivalent rate for females was 93.5 per cent in this State and 90.8 per cent for Australia. Of the 28 000 leavers in this State, 19 600 were employed and 6 700 unemployed.

Further details may be obtained from the bulletin *Transition from Education to*

Work—Australia (Including leavers from schools, universities and other educational institutions) (Catalogue No. 6227.0).

Persons Looking for Work

In July 1982 the labour force survey was supplemented to obtain information about unemployed persons who had been recently looking for work, including particulars of their last job, difficulties experienced in finding a job, educational attainment, steps taken to find work, whether they had had offers of employment and whether they would move interstate or intrastate if offered a suitable job. In addition, data were collected on the number of families with some unemployment, families in which the husband or head was unemployed and on the family status of individuals looking for work. Similar surveys were also conducted in the years 1976 to 1981.

The following table gives details of the difficulties experienced in finding work by persons looking for work.

Persons Looking for Work: Difficulties in Finding Work, South Australia, July 1982

Difficulties in Finding Work	Main Difficulty	All Difficulties Reported(a)		
	Persons	Males	Females	Persons
		'000		
Own ill health or handicap	(b)	2.4	(b)	3.7
Considered by employers to be too young or too old	9.2	8.2	9.9	18.2
Unsuitable hours	(b)	(b)	2.0	3.0
Too far to travel/transport problems	2.2	4.0	5.4	9.4
Lacked necessary education, training or skills	3.1	7.4	6.8	14.3
Insufficient work experience	5.5	6.0	8.4	14.4
No vacancies in line of work	6.4	11.6	8.1	19.6
No vacancies at all	11.4	13.4	9.8	23.2
Other difficulties (c)	2.6	3.0	2.8	5.8
No difficulties reported	2.1	(b)	(b)	2.1
Total	45.0	..	..	..

(a) These estimates differ from those shown under 'main difficulty' because some respondents reported more than one difficulty in finding work.

(b) Subject to sampling variability too high for most practical uses.

(c) Includes persons who reported language difficulties.

Further details regarding the above survey, including the difference between 'looking for work' and 'unemployed' and comparability with previous similar surveys, may be obtained from the bulletin *Persons Looking for Work—Australia* (Catalogue No. 6222.0).

Persons Not in the Labour Force

In September 1982, the labour force survey included questions to obtain information about persons aged 15 to 64 years who were not in the labour force: in particular, whether they wanted a job (and, if they did, why they were not looking for work) and whether they had ever held a regular job and, if so, how long ago and for what reason they had left.

The following table shows for persons not in the labour force and who wanted a job, the reason for not looking for work. It should be noted that estimates from September 1979 onwards are not strictly comparable with those obtained from previous surveys because the definition of 'persons who wanted a job' has been widened to include those persons who, although claiming to have looked for work in the four weeks up to and including survey week, had not taken active steps to find employment.

**Persons Aged 15 to 64 Years Who Were Not in the Labour Force and Who Wanted a Job
Reason for Not Actively Looking for Work, South Australia, September 1982 ^(a)**

Reason for Not Actively Looking for Work	Number
	Males ('000)
Personal considerations (b)	10.7
Discouraged (c)	(d)
Total males (e) (f)	13.4
	Females ('000)
Had a job to go to	(d)
Personal considerations (b)	11.9
Family considerations (g)	21.9
Discouraged (c)	5.3
No jobs in locality or line of work	3.1
No jobs in suitable hours	(d)
Other reasons (f)	3.3
Total females (f)	45.8

(a) Highest-ranked reason only.

(b) Includes 'own ill health, physical disability or pregnancy', 'studying' and 'no necessity to work'.

(c) Defined as those who wanted a job but were not actively looking for work because they believed they would not be able to find a job for any of several reasons, including 'no jobs in locality or line of work'.

(d) Subject to sampling variability too high for most practical uses.

(e) Includes reasons not shown separately.

(f) Includes those who gave no reason.

(g) Includes 'ill health of another person', 'inability to find child care', 'preference for looking after children' and 'disapproval by spouse'.

For further details refer to the bulletin *Persons Not in the Labour Force—Australia* (Catalogue No. 6220.0).

CIVILIAN EMPLOYEES

Details of the number of wage and salary earners in civilian employment were estimated on a monthly basis up to and including April 1980. Publication of the estimates was suspended after that date, pending a review of the series and of estimates obtained from the labour force survey. As a result of the review it was decided to terminate the private sector component of the civilian employees series, which was based mainly on data from payroll tax returns and to replace it with a new series based on a quarterly survey of private employers. The new survey will commence in late 1983. For further details of the review refer to the information paper *Review of ABS Employment Statistics* (Catalogue No. 6239.0).

The government sector component of the civilian employees series has been continued. However, the figures shown in the following table are not strictly comparable with the labour force survey estimates shown on page 325. Persons in the survey are allocated to an appropriate labour force category according to their activity during the survey week. If they had more than one job in that week only the job in which they usually worked the greater number of hours is considered. The government employment figures below are derived from direct returns from government bodies and, although some returns are adjusted to exclude some part-time employees considered to have full-time jobs elsewhere, some persons will be included even though their government job is not their main one. Other reasons for differences are that the survey estimates are subject to sampling variability, and that the reference periods of the two collections are different.

Government Civilian Employees, South Australia ^(a)

June	Commonwealth		State		Local		Total		
	Males	Females	Males	Females	Males	Females	Males	Females	Persons
	'000								
1973	23.7	6.5	53.7	31.3	6.6	0.9	84.0	38.7	122.7
1974	24.4	7.1	55.5	36.2	4.7	0.9	84.6	44.2	128.8
1975	25.0	7.5	59.1	40.8	6.8	1.1	90.9	49.5	140.4
1976	24.5	7.5	61.2	43.7	5.8	1.0	91.5	52.2	143.7
1977	24.2	7.5	62.9	46.1	5.7	1.1	92.8	54.7	147.5
1978	(b) 31.4	(b) 8.1	(b) 56.2	(b) 47.3	6.0	1.3	93.6	56.7	150.3
1979	30.7	8.1	55.5	46.6	5.6	1.4	91.9	56.1	148.0
1980	29.9	8.1	54.6	46.8	5.5	1.5	90.0	56.4	146.4
1981	29.6	8.3	53.6	47.1	5.4	1.5	88.5	57.0	145.5
1982	29.1	8.2	52.5	46.4	5.4	1.6	86.9	56.2	143.2

(a) Excludes members of the permanent defence forces and employees engaged in agriculture and services to agriculture. (b) On 1 March 1978 the majority of employees of the South Australian Railways were transferred to Australian National.

For further information regarding the above series refer to the bulletin *The Labour Force—Australia* (Catalogue No. 6203.0).

UNEMPLOYMENT

Labour Force Surveys

Estimates of unemployment are derived from the monthly population survey. Until February 1978, surveys were conducted quarterly in February, May, August and November each year. From February 1978, the surveys have been conducted on a monthly basis.

The following table contains estimates of the number of unemployed persons in South Australia with the corresponding unemployment rates, and the standard error of each estimate. For an explanation of the standard error, see page 326.

Unemployed Persons, South Australia

August	Number ('000)					Unemployment Rate (Per Cent) (a)				
	Looking for Full-time Work					Looking for Full-time Work				
	Aged 15-19 Years	Aged 20 Years and Over	Total	Looking for Part-time Work	Total	Aged 15-19 Years	Aged 20 Years and Over	Total	Looking for Part-time Work	Total
1980	16.3	25.2	41.5	6.2	47.7	26.1	5.8	8.4	6.1	8.0
1981	14.3	29.7	43.9	4.3	48.3	24.1	6.7	8.8	4.2	8.0
1982	14.5	28.3	42.8	7.6	50.4	26.5	6.5	8.8	6.8	8.4
STANDARD ERROR OF ESTIMATE (b)										
1980	1.1	1.3	1.5	0.7	1.6	1.8	0.3	0.3	0.7	0.3
1981	1.0	1.4	1.6	0.7	1.6	1.7	0.3	0.3	0.7	0.3
1982	1.0	1.3	1.5	0.8	1.6	1.7	0.3	0.3	0.7	0.3

(a) The unemployment rate for any group is the number unemployed expressed as a percentage of the labour force (i.e. employed plus unemployed) in the same group.

(b) A guide to the standard errors of annual movements may be obtained by multiplying the standard errors of estimates by 1.4.

For the purpose of the survey, unemployed persons are those aged fifteen years and over who were not employed during the survey week and:

(a) had actively looked for full-time or part-time work at any time in the four weeks up to the end of the survey week and;

- (i) were available for work in the survey week, or would have been available except for temporary illness (*i.e.* lasting for less than four weeks to the end of the survey week); or
- (ii) were waiting to start a new job within four weeks from the end of the survey week and would have started in the survey week if the job had been available then; or
- (b) were waiting to be called back to a full-time or part-time job from which they had been stood down without pay for less than four weeks up to the end of the survey week (including the whole of the survey week) for reasons other than bad weather or plant breakdown.

Further details may be obtained from the following bulletins: *The Labour Force—Australia (Preliminary)* (Catalogue No. 6202.0); *The Labour Force—Australia* (Catalogue No. 6203.0). In addition, *Labour Force—South Australia* (Catalogue No. 6201.4) contains detailed figures for South Australia.

JOB VACANCIES

Estimates of the number of job vacancies are derived from quarterly surveys of employers which are conducted by telephone. Surveys were conducted annually in March from 1974 to 1978, and quarterly from May 1977 to May 1978 before being suspended because of a lack of resources. The present series of quarterly surveys was re-introduced in May 1979.

For the purposes of the survey a job vacancy is defined as a job available for immediate filling on the survey date and for which recruitment action had been taken by the employer.

Since the estimates are based on information obtained from a sample of employers, they may differ from the figures that would have been produced if the information had been obtained from all employers within the scope of the survey.

Job Vacancies, South Australia

Particulars	Nov. 1980	Nov. 1981	Nov. 1982
		('000)	
Manufacturing (c)	(a) 0.7	0.8	0.2
Other Industries (d)	0.7	(b)	0.6
Private	0.9	(a) 1.5	0.3
Government	(a) 0.5	0.4	0.5
Total Vacancies	1.4	(a) 2.0	0.8

(a) Standard error greater than 20 per cent but less than 30 per cent.

(b) Subject to sampling variability too high for most practical uses.

(c) Australian Standard Industrial Classification (ASIC) Division C.

(d) ASIC Division A-L excluding Division C (Manufacturing), Subdivisions 01, 02 (Agriculture, etc.), 94 (Private Households Employing Staff) and defence forces.

Further details may be found in the bulletin *Job Vacancies—Australia* (Catalogue No. 6231.0).

EMPLOYMENT SERVICES

The Commonwealth Employment Service, administered by the Department of Employment and Industrial Relations, commenced operations in South Australia in May 1946. The main function of the Employment Service is to assist people seeking employ-

ment to obtain positions best suited to their training, experience, abilities and qualifications; and to assist employers seeking labour to obtain employees best suited to the demands of the employers' particular class of work.

The Department of Employment and Industrial Relations is also responsible for the administration of several manpower and training programs. The former includes the Community Youth Support Scheme (CYSS) designed to encourage communities to assist local unemployed young people to develop their capacity for obtaining and retaining employment, and also to become more self-reliant during periods of unemployment. Through CYSS, grants are made to, and administered by, local community bodies. The grants assist them to operate projects which offer young unemployed people the opportunity to be more able to support themselves while developing closer links with their community. Among the training programs is assistance for trade and skills training, provided to employers and individuals through a number of programs aimed at helping industry to meet its requirements for skilled labour and at supporting individuals who would otherwise be disadvantaged in obtaining stable and rewarding employment. The Youth Training Program supports the Commonwealth Commitment to Youth Policy by providing programs to assist the young unemployed to obtain stable and worthwhile employment. Specific programs include assistance for the transition from school to work, pre-apprenticeship support and assistance in training and work experience. In addition, special programs, allowances and subsidies are available to some groups in the community who, because of background and circumstances beyond their control, face additional disadvantages in gaining and maintaining employment. Two such groups are Aborigines and the disabled. Further information on these programs is contained in Part 6.2, Education.

The State Government has a number of programs designed to alleviate unemployment in South Australia. The Department of Labour runs Community Improvement Through Youth (CITY) which assists young unemployed people to gain skills and confidence through the planning and management of community service projects. The Self Employment Ventures Scheme assists unemployed people attempting self-employment by providing theoretical and practical skills in operating a small business.

A payroll tax refund program (administered by the Department of Labour and a payroll tax exemption scheme (administered by the State Treasury Department) were introduced from October 1979 to provide incentives for the employment of people under 20 years of age.

There are also a number of private employment agencies, all of which are required to register with the Department of Labour. At 31 December 1982 there were thirty such agencies registered.

7.2 ARBITRATION AND INDUSTRIAL ORGANISATIONS

INDUSTRIAL ARBITRATION

In Australia a unique system of conciliation and arbitration by Government tribunals has been developed, with the Commonwealth and the State Parliaments each passing their own industrial legislation.

Under Section 51 of the Constitution, the Commonwealth Parliament may make laws in relation to 'conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State'. In addition the Parliament may legislate under certain industrial powers for the stevedoring industry, the maritime industry, the Commonwealth Public Service, certain national projects, the Snowy

Mountains Area and flight crew officers. Commonwealth arbitration is binding only on the parties to a dispute and decisions need not be of general application to an industry.

Employees not specifically covered by Commonwealth awards are subject to State industrial jurisdiction, but where an award or determination of a State industrial tribunal is inconsistent with an award of a Commonwealth tribunal, the latter prevails to the extent of the inconsistency.

Commonwealth Industrial Tribunals

Before 1956 a Court of Conciliation and Arbitration was responsible for the prevention and settlement of industrial disputes extending beyond the limits of any one State. In that year substantial amendments were made to the Conciliation and Arbitration Act separating the judicial and arbitral functions of the Court by the establishment of the Australian Industrial Court and the Australian Conciliation and Arbitration Commission.

In February 1977 a further change was made when the jurisdiction exercised by the Industrial Court was transferred to the Industrial Division of the Federal Court of Australia.

The Conciliation and Arbitration Commission comprises a President and as many Deputy Presidents and Commissioners as are necessary.

The Commission carries out its functions of conciliation and arbitration through panels. The President assigns an industry or a group of industries to a panel consisting of a Presidential Member and one or more Commissioners.

Certain matters cannot be determined by a single member of the Commission. Those matters which must be determined by a Full Bench of at least three members of the Commission, consisting of at least two Presidential Members, include standard hours, national wage cases, the minimum wage, equal pay principles, annual leave and long service leave.

The jurisdiction of the Commission is limited to conciliation and arbitration of industrial disputes between employers and employees which extend beyond the limits of any one State. The employees must be engaged in employment that is 'industrial' in nature.

State Industrial Tribunals

The South Australian legislation governing State intervention in industrial relations is the Industrial Conciliation and Arbitration Act, 1972-1982, the principal Act having come into operation on 1 January 1973. This Act provides for:

- (a) an Industrial Court which deals with questions of law, interpretations of awards and industrial agreements, claims for sums of money due to employees, re-employment matters, industrial offences and a number of other matters;
- (b) an Industrial Commission which makes awards covering workers not under the jurisdiction of Conciliation Committees and which has jurisdiction to hear and settle disputes and demarcation matters; and,
- (c) Conciliation Committees which make or vary awards for an industry or area of the State in relation to which each Committee is appointed.

The Commission is composed of a President, six Deputy Presidents and four Commissioners. Arbitral functions of the Commission may be exercised by a Presidential Member or a Commissioner as directed by the President. The Registrar and other officers of the Court and Commission are appointed under the Public Service Act.

The Commissioners are Chairmen of Conciliation Committees consisting of an equal number of representatives of employers and employees. Conciliation Committees have the same jurisdiction in industrial matters as the Commission. If the process of concili-

ation before a Committee fails then the Chairman sits as a Commissioner to determine the unresolved matters.

The Industrial Court is composed of the President and Deputy Presidents of the Commission as well as five Industrial Magistrates.

Proceedings before the Industrial Commission may be commenced by an application submitted by:

- (a) the Minister of Labour;
- (b) an employer, or group or registered association of employers in an industry employing, in aggregate, not less than twenty employees or 75 per cent of the employees within an industry, whichever is the lesser;
- (c) a group or registered association consisting of not less than twenty employees or 75 per cent of the employees within an industry, whichever is the lesser.

Employer or employee associations may apply for registration which confers a legal corporate status and allows ready access to the Commission.

Further details regarding State Industrial Tribunals may be found in the *South Australian Year Book 1977* and in the Annual Report of the Department of Labour.

EMPLOYEE ORGANISATIONS

At 31 December 1981 there were 141 separate unions operating in South Australia and of these seventy-three were registered with the South Australian Industrial Commission. Although a number of unions exist only in this State, branches of interstate or federated unions account for the majority of total membership. Some of these are bound under a system of unification with centralised control while others are practically independent and self-governing, the federal bond existing only for limited specified purposes.

The following table gives particulars of the number of separate unions and union membership for the years 1976 to 1981. The table includes estimated percentages of trade union members to total employees.

Trade Unions, South Australia, At 31 December

Year	Separate Unions	Members			Proportion of Members to Total Employees		
		Males	Females	Persons	Males	Females	Persons
	No.		'000		Per cent		
1976	143	187.0	69.9	256.9	62	37	52
1977	143	190.3	76.9	267.2	64	41	55
1978	142	191.4	78.9	270.4	66	43	57
1979	142	191.1	81.1	272.2	(a) 66	(a) 47	(a) 59
1980	143	186.3	85.3	271.6	(a) 65	(a) 49	(a) 58
1981	141	178.0	85.1	263.1	(a) 62	(a) 48	(a) 56

(a) Based on employment estimates from the Labour Force Survey from 1979.

Estimates for 1976 to 1979 are based on estimates of employees as published in *Civilian Employees—Australia* (Catalogue No. 6213.0). As this series was suspended from April 1980, the proportions of employees shown for 1979, 1980 and 1981 have been calculated by using estimates of employees from the labour force survey. The percentages shown should be regarded as giving only a broad indication of the extent of union membership among wage and salary earners because they are based on estimates of employed wage and salary earners that are subject to revision. The degree of unemployment of reported union members would affect the percentages for a particular year

and comparisons over time. Further details are contained in the bulletin *Trade Union Statistics—Australia* (Catalogue No. 6323.0).

The central labour organisation for the State is the United Trades and Labor Council of South Australia, and combined union councils exist for Mount Gambier, Port Augusta, Port Lincoln, Port Pirie, the Upper Murray, Leigh Creek and Whyalla. These central organisations, together with individual unions are affiliated with the Australian Council of Trade Unions (ACTU). All major unions are affiliated with the ACTU, which was founded at an All-Australian Trade Union Congress in 1927. The Trades and Labor Council is the State branch of the ACTU and has the right to appoint one representative to act on the executive of the ACTU.

A historical summary of the growth of the trade union movement in South Australia was included on pages 280-1 of the *South Australian Year Book* 1969.

EMPLOYER ORGANISATIONS

At the end of December 1981 there were nine associations of employers registered with the South Australian Industrial Commission. In industrial matters four are dominant:

- (a) The South Australian Employers Federation Inc. represents the interests of its members, both individual employers and trade associations in both Commonwealth and State industrial jurisdictions. Services provided include the preparation and presentation of cases before industrial tribunals, advice as to legal obligations and award provisions, the negotiation and drafting of industrial agreements and dispute settlements. It also plays a unique role in co-ordinating industrial relations for major construction projects in the State.
- (b) The Chamber of Commerce and Industry (SA) Inc. works under both the Commonwealth Conciliation and Arbitration Act and the State Industrial Conciliation and Arbitration Act, and has individual members who subscribe directly to the Chamber for the industrial and other services provided. Where appropriate, members are grouped into trade associations. The Chamber's industrial advocates represent members in the making and variation of awards, and assist members in the settlement of disputes. The Chamber monitors Bills presented to the Parliaments and, where appropriate, makes representations on behalf of its members seeking amendments to legislation. Other services include matters of trade and tariffs, exports and imports and the provision of a range of industry-based training functions.
- (c) The Metal Industries Association, South Australia (MIASA) is the principal employers organisation registered under the provisions of the Commonwealth Conciliation and Arbitration Act. It represents the varied interests of the State's metal and engineering industry sectors in the areas of industrial relations, education and training, trade, economic and legislative matters.
- (d) The South Australian Automobile Chamber of Commerce Inc., also registered under the Commonwealth Conciliation and Arbitration Act, is an industrial organisation aimed at representing the interests of employers in the motor industry, both in the retail sector, with over fifteen trade associations and in the distribution and manufacturing sectors. Services provided include manpower development and education, apprenticeship selection and testing, industrial relations, technical and trade advice.

INDUSTRIAL DISPUTES

In the following table industrial disputes occurring during 1981 are compiled according to the 1978 Edition of the *Australian Standard Industrial Classification* (ASIC). A dispute involving workers in more than one industry group is counted once only and is included in the industry group which has the largest number of workers involved.

Industrial Disputes: Industries, South Australia, 1981 ^(a)

Industry	Disputes	Workers Involved (b)	Working Days Lost	Estimated Loss in Wages
	No.	'000	'000	\$'000
Agriculture, forestry, fishing and hunting	2	1.8	14.8	1 052
Mining	1	0.3	1.7	79
Manufacturing:				
Food, beverages and tobacco	6	1.6	4.9	232
Textiles, clothing and footwear	3	1.0	5.5	251
Wood, wood products and furniture	3	0.7	1.1	46
Paper and paper products, printing and publishing	4	1.6	9.6	523
Chemical, petroleum and coal products	1	0.1	0.1	7
Metal products, machinery and equipment (c)	22	25.2	45.9	2 107
Other manufacturing (d)	7	1.8	5.1	231
Electricity, gas and water	3	0.7	3.3	163
Construction	17	2.0	7.9	421
Wholesale and retail trade	6	1.5	6.7	307
Transport and storage, communication:				
Water transport	6	0.7	1.2	66
Railway transport, air transport	8	1.8	3.1	154
Road transport, other transport and storage, communication	8	10.0	27.6	1 270
Entertainment, recreation, restaurants, hotels and personal services	3	0.1	0.3	10
Other industries	26	16.1	20.1	1 073
Total	126	67.0	158.8	7 993

(a) Disputes involving a stoppage of work of ten man-days or more.

(b) Includes workers indirectly involved at the establishments where the stoppages occurred.

(c) Includes basic metal products, fabricated metal products, transport equipment and other industrial machinery and equipment and household appliances.

(d) Includes non-metallic mineral products and leather, rubber and plastic products.

Details of the total number and extent of industrial disputes occurring in South Australia are shown in the next table. Effects on other establishments because of lack of materials, disruption of transport services, power cuts, etc. are not included in these statistics.

Industrial Disputes, South Australia ^(a)

Period	Disputes	Workers Involved (b)	Working Days Lost	Estimated Loss in Wages
				\$'000
1976	118	130 400	151 800	4 285
1977	93	26 400	30 600	940
1978	119	50 000	79 100	2 639
1979	96	92 500	186 500	6 785
1980	94	24 200	59 400	2 598
1981	126	67 000	158 800	7 993

(a) Disputes involving a stoppage of work of ten man-days or more.

(b) Includes workers indirectly involved at the establishments where the stoppages occurred.

Particulars of all disputes in progress during the year are included in the annual figures. Consequently, details of the number of disputes and of workers involved in the disputes which commenced in any year, and were still in progress during the following year, are included in the figures for both years. Working days and wages lost are included in the appropriate year. Workers involved in more than one dispute during the year are counted once for each dispute. Because of difficulties in identifying all participants in every dispute the statistics should be regarded as giving only a broad measure of the extent of work stoppages.

Further details may be found in the bulletin *Industrial Disputes—Australia* (Catalogue No. 6322.0).

EMPLOYEE PARTICIPATION

As part of its more general activities in labour relations the State Government encourages the adoption of employee participation by organisations to: develop better co-operation between employers, management and employees; increase the opportunities for employees to be involved in their organisation's decision-making; improve productivity; improve job satisfaction and the quality of work life; and achieve greater organisational effectiveness. An Employee Participation Branch is established in the Department of Labour to assist organisations in achieving these aims. The work of the Branch includes assistance in developing participation schemes, providing help to organisations involved in implementing some form of employee participation, and providing basic information concerning employee participation to organisations and the public at large.

The main development in the private sector has been directed towards achieving more effective work structures and relationships between employers and employees, and in creating and enlarging the opportunity and the ability of people at work to influence decisions which affect their worklife. It aims to encourage the introduction of employee participation in the form of joint consultative and joint decision-making arrangements and the redesign of work tasks. The Government's role is to advise and assist employees and management to initiate such schemes when requested. A particular feature in the private sector has been a developing interest in schemes by which employees are given a share in the company employing them.

7.3 WAGES AND HOURS

WAGES

Before the National Wage Cases of 1967, wages consisted of two distinct elements, a basic or living wage and a margin or loading which was appropriate to the employee's occupation. A more detailed description of these elements was included on pages 253 and 257-8 of the *South Australian Year Book* 1967.

The total wage concept was accepted by the decision of the Conciliation and Arbitration Commission in June 1967. The application of this concept (until the introduction of wage indexation guidelines in 1975) limited the number of national wage cases in any year to one and provided the Commission with a flexible basis for decisions.

National Wage Fixation

The *Conciliation and Arbitration Act 1904* gives the Australian Conciliation and Arbitration Commission power to make an award or to certify an agreement 'making provision for, or altering, rates of wages, or the manner in which rates of wages are to be ascertained, on grounds predominantly related to the national economy and without examination of any circumstance pertaining to the work upon which, or the industry in

which, persons are employed'. The Commission holds wage inquiries from time to time with its findings applicable to industrial awards within its jurisdiction. A detailed account of the history of national wage fixation before the introduction of the total wage concept appears in the Arbitration Reports and a summary was included on pages 257-60 of the *South Australian Year Book* 1968.

In the 1975 National Wage Case, principles were adopted which included indexing award wages to changes in the Consumer Price Index. The system operated until July 1981 when it was abandoned. For details of wage changes during indexation see page 325 of the *South Australian Year Book* 1982.

From July 1981 until December 1982 the Commission dealt with applications as filed and the various provisions of the Conciliation and Arbitration Act applied. Claims were dealt with on an award by award basis. Most were varied by consent involving diverse pay increases and in some cases shorter hours of work. In the December 1982 National Wage Case a six month wage pause from further general increases in labour costs was adopted. The Commonwealth Government also legislated a twelve month wage freeze for its employees.

State Wage Fixation

For many years award fixation in South Australia was based on a living wage plus a margin for skill but, since September 1975 wages have been fixed on the basis of a total wage. Likewise, for many years the Full Commission granted flow-ons of the Commonwealth national wage determinations annually but as from May 1975, the concept of quarterly wage indexation was introduced. In December 1975, the Full Commission adopted the Commonwealth wage indexation guidelines but reserved the right to deal with anomalous situations outside the scope of wage indexation and in June 1976 it ruled that under State awards service payments, leading hand rates and other special allowances should be included in the ordinary rates to which indexation rises apply.

On 19 December 1978 the Full Commission heard and granted the first wage increase based on the new six-monthly hearings in lieu of the previous three-monthly hearings. In April 1979 the revised principles allowing wage increases to rectify inequities of different employees doing similar work for dissimilar pay were adopted. In addition a new 'unusual or extra-ordinary circumstances' clause was inserted, providing for pay increases outside indexation where the Commission accepts there is a pay anomaly where by reason of unusual or extraordinary circumstances there are compelling reasons for the making of a one-time adjustment to found a fair and proper basis for the ongoing application of indexation adjustments.

On 29 August 1980 the Commission set out new guidelines which provided for a once-only adjustment to wages in awards where there had been no general non-economic adjustment since 1 July 1978 or where a general non-economic adjustment of an average amount of less than \$8 per week had been made.

On 3 July 1981 the Full Commission departed from the Commonwealth national wage determination handed down in May 1981. The South Australian decision granted the full Consumer Price Index rise of 4.5 per cent to workers under State awards earning up to \$250 per week; workers earning over \$250 per week were granted the national wage increase of 3.6 per cent.

In 1967 the concept of a minimum wage for adults was introduced into State awards and this has been the same as the minimum wage in Commonwealth awards.

The Full Commission rescinded its wage indexation guidelines from 31 July 1981. Since the rescission of the guidelines claims have been considered under the normal principles of comparative wage justice and under the provisions of the Industrial Conciliation and Arbitration Act and the Temporary Provisions Act. The latter two acts

were amended on 31 August 1981 to make industrial authorities pay due regard to the public interest and the state of the economy in arriving at determinations affecting remuneration and working conditions.

Following a decision by the Australian Conciliation and Arbitration Commission on 23 December 1982, the South Australian Industrial Commission in a decision on 20 January 1983, brought into effect a six months wage freeze in respect of wages and salaries for the 40 per cent (approximately) of the South Australian workforce under State Industrial Awards and Agreements. The freeze remains in force until 30 June 1983 and thereafter until altered or rescinded by the National Wage Bench of the Australian Commission. The State guidelines follow the Federal guidelines almost to the letter. However the South Australian guidelines give a limited number of unions more scope to claim exceptions for pay and allowances rises than is possible under the Federal guidelines. The Commission also gave employers more room to manoeuvre in opposing pay rises in the areas which have not received increases equivalent to the metal industry standard since indexation was abandoned.

Applications for awards and variations to awards are commenced by summons filed in the Registry. The President usually assigns the application to a member of the Commission for hearing and determination.

Proceedings before Conciliation Committees are commenced by requisition to the Chairman of the Committee. Conciliation Committees have power to make awards by way of 'round table' discussion and conciliation rather than by a first instance resort to an arbitral tribunal. If the Committee cannot agree to a matter then the Chairman refers the matter to a normal Commission hearing before himself for arbitration and eventual decision. At the end of 1982 there were 173 State awards and thirty-seven Conciliation Committee awards in existence.

Equal Pay

In a decision handed down on 15 December 1972, the Full Bench of the Australian Conciliation and Arbitration Commission decided to enlarge the concept of 'equal pay for equal work' to that of 'equal pay for work of equal value', i.e. award rates for all work should be considered without regard to the sex of the employee. The new principle is applied to all awards of the Commission. However, it was considered that the social and economic consequences of the decision would be wide-ranging and so under normal circumstances implementation would take place by three equal instalments so that one-third of any increase was payable no later than 31 December 1973, half of the remainder by 30 September 1974 and the balance by 30 June 1975. Under principles established in 1969, equal pay was to be given for equal work and the decision was not intended to rescind those principles under which females could become entitled to equal pay earlier than they would under the December 1972 decision.

In the 1972 decision, the Commission rejected the claim that adult females be paid the same minimum wage as adult males because of the family considerations involved in male minimum wages. However, in the 1974 National Wage Case the Commission discarded the family component concept and decided to extend the male minimum wage to females in three stages, the rates for both males and females becoming equal from the beginning of the pay-period in which 30 June 1975 occurred.

Following an amendment to the Industrial Conciliation and Arbitration Act in September 1975, the concept of a separate State living wage for both males and females was abolished by a decision of the Full Bench of the South Australian Industrial Commission handed down on 15 December 1975.

A historical discussion on the relativities of male and female wage rates was included on pages 290-2 of the *South Australian Year Book* 1970.

Award Rates of Pay

The minimum weekly amounts provided in awards, determinations, and registered agreements under Commonwealth and State jurisdiction are known as award rates. Weighted averages of minimum weekly rates of pay have for many years been published as Wage Rate Indexes. From September 1982 the Wage Rate Indexes were replaced by a new and more comprehensive series of Award Rates of Pay Indexes. The scope was broadened to include salary earners although a wage earner series is available for comparison with the old Wage Rate Index. The new series has been rebased to June 1976 using data from the May 1976 Survey of Employee Earnings and Hours. For the purpose of constructing the indexes wage earners are defined as those engaged mainly in manual work and/or employed in blue collar occupations while salary earners are those engaged mainly in non-manual work and/or employed in white collar occupations. Remuneration for wage earners is usually stated in terms of a weekly wage while for salary earners it is an annual salary. Excluded from the indexes are employees in the defence forces, agriculture, services to agriculture and private households.

Index of Weekly Award Rates of Pay: Wage and Salary Earners, Industry, South Australia
At 30 June
(Base of Index: June 1976 = 100·0)

Industry	1978	1979	1980	1981	1982
ADULT MALES					
Mining	118·7	127·1	133·2	153·6	183·8
Manufacturing:	118·1	129·5	140·1	158·1	184·8
Food, beverages and tobacco	118·2	130·6	140·3	158·2	174·2
Metal products, machinery and equipment	118·2	130·2	141·7	159·1	190·3
Transport equipment	117·7	128·3	139·8	156·5	188·8
Other manufacturing (a)	118·0	128·7	137·6	157·7	182·0
Electricity, gas and water	117·2	126·5	138·3	157·6	179·2
Construction	127·6	138·0	147·5	169·1	190·5
Wholesale trade	119·3	129·7	138·2	158·7	180·3
Retail trade	118·4	127·9	138·6	157·4	180·0
Transport and storage	117·4	127·0	137·2	153·8	177·6
Communication	116·6	125·6	137·9	157·5	181·4
Finance, property and business services	116·5	125·1	135·0	152·7	167·5
Public administration and defence (b)	15·8	124·3	133·9	153·6	167·2
Community services	116·8	125·5	131·3	154·0	171·1
Recreation, personal and other services	117·4	126·0	136·1	152·3	156·7
All industries (c)	118·5	128·6	138·5	157·6	179·5
ADULT FEMALES					
Manufacturing:	119·1	129·0	137·7	158·6	180·6
Metal products, machinery and equipment	118·3	129·3	138·9	157·9	186·7
Retail trade	118·1	126·7	133·5	155·6	173·3
Finance, property and business services	117·8	126·4	133·6	152·6	169·0
Public administration and defence (b)	117·1	125·8	132·7	151·3	164·4
Community services	117·4	126·0	132·5	155·2	172·8
Recreation, personal and other services	117·2	125·8	137·1	155·0	167·1
All industries (c)	118·2	127·1	134·7	155·8	174·0

(a) Includes wood, wood products and furniture, non-metallic mineral products and miscellaneous manufacturing.

(b) Excludes members of the permanent defence forces.

(c) Excludes members of the permanent defence forces, employees in agriculture, services to agriculture and in private households.

The tables show indexes for wage and salary earners combined for South Australia. Further details may be found in the bulletin *Award Rates of Pay Indexes—Australia* (Catalogue No. 6312.0).

Index of Weekly Award Rates of Pay: Wage and Salary Earners
Federal and State Awards, South Australia
 (Base of Index: June 1976 = 100.0)

June	Federal Awards		State Awards	
	Adult Males	Adult Females	Adult Males	Adult Females
1977	110.3	111.1	111.3	111.0
1978	117.8	118.8	119.0	118.0
1979	128.6	128.8	128.4	126.7
1980	140.1	138.9	137.2	133.1
1981	157.8	157.4	157.1	154.8
1982	183.5	179.4	176.4	172.6

EARNINGS

Various measures of earnings of employees are available, the principal of which is the quarterly average weekly earnings series. For many years estimates were derived from particulars of employment and wages and salaries recorded on payroll tax returns, from other direct returns and from estimates of the unrecorded balance. Particulars of wages and salaries were not available for males and females separately and average earnings were expressed in terms of 'male units'. Male units represented total male employees plus a proportion of female employees based on the approximate ratio of female to male average earnings. Because of this and other deficiencies in the payroll tax based estimates, a sample survey of employers was introduced from September quarter 1981. Information on earnings in respect of a specified pay week generally at or about the middle of each quarter is sought. Data are sought at a finer level of disaggregation in each December quarter survey. The sample is drawn from the register of economic units maintained by the ABS and the survey results are subject to sampling error.

Some details of the new series from December quarter 1981 are shown below. For more information on the survey, see *Average Weekly Earnings—Australia* (Catalogue No. 6302.0).

Average Weekly Earnings of Employees, South Australia

Quarter	Males			Females		
	Full-time Adults		All Males	Full-time Adults		All Females
	Ordinary Time	Total		Ordinary Time	Total	
Dollars						
December 1981	284.90	301.70	274.60	237.10	243.10	178.70
March 1982	299.50	318.80	292.20	247.20	252.70	187.80
June	306.30	322.90	293.10	261.10	266.30	199.60
September	318.70	336.10	304.70	266.30	270.10	202.90
December	330.90	347.70	314.40	278.10	281.70	211.60
March 1983	336.50	350.50	319.30	277.20	280.40	207.10

Because of the differences in coverage, concepts, and methodology between the old and new series it is difficult to make direct comparisons. For users who wish to obtain movements in earnings for a period which spans the old and new series a link is available between the new 'all males' series and the old 'male units' series.

An indication of the likely distribution of earnings among employees is obtained from another employer based survey of Earnings and Hours of Employees. This survey was conducted in May of each year until 1981, when the frequency was reduced to biennial. In this survey a selected sample of employers complete individual returns for a random sample of their employees in accordance with instructions supplied by the Australian Bureau of Statistics.

The following table shows the estimated distribution of gross weekly earnings for a selected week in the month of May in 1979, 1980 and 1981. Earnings include one week's proportion of payments made other than on a weekly basis and excludes pay in advance, retrospective pay and annual or periodic bonuses.

Also shown are the mean and median earnings. The median earnings is the amount which divides the distribution into two equal groups, one having earnings above the median and the other having earnings below it.

For details of the standard errors involved and for more information on the survey, see *Earnings and Hours of Employees, Distribution and Composition—Australia* (Catalogue No. 6306.0).

Another indication of the likely distribution of earnings of all persons aged 15 years and over who were employed as wage or salary earners in their main job is obtained from the household based survey conducted in August in conjunction with the labour force survey, see *Weekly Earnings of Employees (Distribution)—Australia* (Catalogue No. 6310.0).

Distribution of Average Weekly Earnings of Employees, South Australia

Weekly Earnings	Proportion of Employees					
	Males			Females		
	May 1979	May 1980	May 1981	May 1979	May 1980	May 1981
	Per cent					
Under \$40	2.3	3.3	2.8	5.9	5.4	5.0
\$40 and under \$80 ..	3.0			9.3	6.1	6.1
\$80 and under \$120	3.3	3.6	2.7	13.9	12.6	10.0
\$120 and under \$160	9.9	5.2	3.6	24.2	18.2	12.4
\$160 and under \$200	29.1	19.7	10.0	28.1	29.1	21.7
\$200 and under \$240	21.0	24.9	23.2	10.1	14.3	23.7
\$240 and under \$280	12.9	15.7	18.9	8.6	14.4	20.9
\$280 and under \$320	7.2	11.1	13.3			
\$320 and over	11.2	16.4	25.2			
Total	100.0	100.0	100.0	100.0	100.0	100.0
	Dollars					
Median weekly earnings	204.10	228.00	254.00	155.40	171.30	190.80
Mean weekly earnings	216.90	242.40	272.90	152.40	169.60	188.40

HOURS OF WORK

In September 1947, just before the introduction of the forty hour week, the weighted average standard hours (excluding overtime) for a full working week, as prescribed in awards, determinations and agreements in all industries in South Australia, except rural, shipping, and stevedoring was 43·83 hours for adult males. Following introduction of the forty hour week, which was introduced from January 1948 minimum hours for wage earners changed very little until the nineteen seventies. At June 1976 the figure stood at 39·92 hours. From June 1976 details were also compiled for salary earners and their inclusion reduced the weighted average minimum hours. The coverage and weighting structure of the series also changed. At June 1976 the weighted average for wage and salary earners combined was 39·57 hours for males and 39·40 for females. By June 1982 these figures had reduced to 39·06 for males and 39·24 for females.

The following table shows the relative distribution of employed civilian wage and salary earners in South Australia according to the number of hours worked in a specified week, as recorded in the August labour force surveys. The distribution is based on actual hours worked, including overtime, rather than hours paid for, and is therefore affected by public holidays, leave, absenteeism, temporary absence from work because of sickness, accident and industrial disputes, and work stoppages caused by plant breakdowns and weather.

Employed Wage and Salary Earners: Hours Worked, South Australia ^(a)

August	Proportion who Worked the Following Hours in the Specified Week							Total
	0	1-29	30-34	35-39	40	41-48	49 and Over	
	Per cent							
1980	4·9	16·5	6·8	14·7	34·0	13·6	9·5	100·0
1981	5·1	16·7	6·3	16·0	33·6	13·5	8·8	100·0
1982	5·8	18·7	7·0	19·8	27·9	11·7	9·1	100·0

(a) Employed civilian population, fifteen years of age and over.

Overtime

Information about overtime hours worked is obtained from a sample survey of employers which is conducted by telephone.

The surveys commenced in July 1979 on a monthly basis. However, in the two year period following its introduction the overtime series did not show sufficient month to month variation to warrant the continuation of the survey on a monthly basis. It was therefore decided that June 1981 would be the last survey in the monthly series. The surveys are now conducted quarterly and generally in respect of the last week of the pay period ending on or before the third Friday of the survey month. However, to ensure that the survey timetable is met it is necessary to accept data for other periods from some respondents.

All employees in Commonwealth, State and local government employment are represented in the survey, but the private sector sample was selected from payroll taxpayers and the employees of employers not subject to payroll tax (excluding hospitals) are excluded. Also excluded are employees in agriculture and in private households employing staff, and members of permanent defence forces.

For the purposes of the survey, overtime is time worked in excess of award, standard

or agreed hours of work for which payment is received. Excluded is any overtime for which employees would not receive payment, *e.g.* unpaid overtime worked by managerial, executive, etc. staff, normal shiftwork and standard hours paid for at penalty rates. Overtime hours represent the number of hours of overtime actually worked.

The results of the survey are subject to sampling variability, one measure of which is standard error. Standard errors of the differences between estimates are approximately the same as the standard errors of the estimates themselves. For further details see *Overtime—Australia* (Catalogue No. 6330.0).

Overtime, South Australia

Quarter	Average Weekly Overtime Hours				Proportion of Employees in the Survey Working Overtime	
	Per Employee in the Survey		Per Employee Working Overtime		Per Cent	Standard Error
	Hours	Standard Error	Hours	Standard Error		
1981:						
November	1.10	0.05	6.07	0.13	18.20	0.72
1982:						
February	1.15	0.05	5.85	0.13	19.59	0.73
May	1.05	0.06	6.37	0.15	16.47	0.71
August	1.05	0.06	6.05	0.16	17.28	0.84
November	0.94	0.07	6.42	0.20	14.58	0.83
1983:						
February	0.89	0.07	6.45	0.22	13.80	0.83

HOLIDAYS AND LEAVE

Public Holidays

A number of days are observed each year throughout the State as public holidays and additional days may be proclaimed either on a State-wide basis or applicable to particular localities. Employees required to work on public holidays are paid at penalty rates. Unless elsewhere provided in awards, South Australian Government employees required to work on public holidays are paid a penalty of 150 per cent or are granted a day in lieu. From 1971 authorised public holidays are:

New Year's Day (1 January or the following Monday if that day falls on a Saturday or Sunday),

Australia Day (first Monday after 25 January),

Good Friday,

Easter Saturday,

Easter Monday,

Anzac Day (25 April or the following Monday if 25 falls on a Sunday),

Adelaide Cup Day (third Monday in May),

Queen's Birthday (usually observed on a Monday early in June),

Labour Day (second Monday in October),

Christmas Day (25 December or the following Monday if 25 falls on a Saturday or Sunday), and

Proclamation Day (28 December or the following Monday if 28 falls on a Saturday or Sunday).

The Holidays Act, 1910-1975 makes provision for other days to be proclaimed in lieu of the authorised holidays. Additional holidays may also be proclaimed.

Annual Leave

Under Federal awards generally, four weeks annual recreation leave is granted to employees who have completed twelve months continuous service. Federal public servants were granted four weeks annual recreation leave from 1 January 1973.

Under State awards the Commonwealth standard of four weeks annual recreation leave has generally been adopted. The State Industrial Commission is empowered to determine a general standard of annual leave for all employees not bound by an award although no such standard has yet been finally determined.

Employees of the South Australian Public Service are entitled to four weeks annual recreation leave. However, with the exception of some employees engaged in essential services, *e.g.* hospitals, motor vehicle registrations, etc., State public servants are required to take three days of their recreation leave between the Christmas and New Year holidays.

Payment in lieu of annual leave or proportionate leave on termination of employment must be made to all employees, whether subject to an award or not, irrespective of the reason for, or manner of, termination of the employment.

Certain employees in special occupations or where regular shift work is involved *e.g.* police officers, nurses, etc., are entitled to annual recreation leave in excess of four weeks.

In 1973 the State Industrial Commission handed down a decision which enabled part-time workers, when taking annual leave, to be paid the normal weekly wage that they would have received had they been at work.

In addition to normal holiday pay many employees receive an annual leave bonus of 17.5 per cent of the payment they would have received had they not been on leave. Officers of the South Australian and the Australian Public Service receive a 17.5 per cent leave loading on their salary up to a maximum of average weekly earnings for the March quarter of the year ending in June in which the leave accrued (in the case of the South Australian Public Service) and the September quarter of the year ending in December in which the leave accrued in the case of the Australian Public Service.

Sick Leave

The Industrial Conciliation and Arbitration Act, 1972-1982 provides that all full-time employees whether bound by an award or not, shall be eligible to receive annually not less than ten days cumulative sick leave on full pay. The Act was amended from February 1982 to enable employees to take sick leave when ill for more than three consecutive days during annual leave. Most Federal awards provide for two weeks sick leave a year.

Long Service Leave

In 1964 the Australian Conciliation and Arbitration Commission included, for the first time in a Federal award, long service leave, granting employees in the graphic arts and metal trades industries leave on the basis of thirteen weeks for twenty years service in respect of employment before the date of the decision, and eight and two-thirds weeks in respect of each ten years of subsequent service; these provisions have been extended to many other Federal awards. In a number of other cases, registered agreements provide for thirteen weeks leave after fifteen years service.

The South Australian Long Service Leave Act, 1967-1972 entitles employees, in respect of continuous service after 1 January 1972, to thirteen weeks leave for each ten years service. In respect of service before 1 January 1972 the entitlement is calculated at the rate of thirteen weeks for fifteen years service for the period 1 January 1966 to 31 December 1971 and at the rate of thirteen weeks for twenty years service for the

employment period up to 31 December 1965. The obligation to grant leave is imposed on all employers in South Australia except in regard to employees entitled to long service leave pursuant to an award of the Australian Conciliation and Arbitration Commission. The Industrial Commission has the power to exempt an employer from the provisions of the Act where the employees involved have access to benefits not less favourable than those prescribed by the Act. Other provisions of the Act relate to payment for leave, deferment of leave, claim for leave on termination of employment, and notice of granting of leave.

Entitlement to long service leave also applies to casual employees provided that the service with the employer is continuous within the meaning of the Long Service Leave Act.

State and local government employees are in general entitled to ninety calendar days leave after ten years service which equates to nine days leave per year, and Australian Government employees to three months after ten years service. However, from 1 July 1975, State public servants with over fifteen years continuous service accumulate long service leave benefits at the rate of fifteen days leave per year for each year of service after the fifteenth. The long service leave provisions which apply to State public servants are also extended to teachers employed under the Education Act.

The various long service leave arrangements provide for additional *pro rata* periods of leave for service in excess of the minimum, and for *pro rata* payments for employees who have completed a specified term of service but who, through the termination of their services or through death, do not complete the full entitlement period.

Maternity Leave

Since 1973 the Australian Public Service has provided maternity leave for its female employees whether permanent or temporary. The current provision is for twelve weeks paid leave and up to fifty-two weeks leave in total in respect of each confinement. A qualifying period applies for the paid leave.

Maternity leave provisions also exist for female employees of the South Australian Public Service. The maximum special leave without pay is fifty-two weeks but leave on full pay to which the officer has an entitlement may be substituted for the special leave.

There are provisions in the Education Act for maternity leave for teachers in the South Australian Education Department with the maximum leave being fifty-eight weeks and the minimum fourteen weeks although these limits may be respectively extended or reduced in special circumstances. Leave is taken without pay except when long service credits are used.

Maternity leave provisions are inserted in some South Australian awards. The South Australian provisions are based on those granted in March 1979 by the Australian Conciliation and Arbitration Commission for Federal awards. The provisions allow women employed full-time or part-time by a firm, and with not less than twelve months continuous service, to take a minimum of six weeks or a maximum of fifty-two weeks maternity leave. The leave is unpaid and seasonal and casual workers are not eligible.

7.4 INDUSTRIAL SAFETY

SAFETY REGULATIONS AND INSPECTION

General principles on safety, health and welfare applicable to all employed persons in industry (primary as well as secondary), commerce and in State Government are contained in the Industrial Safety, Health and Welfare Act, 1972-1981. It authorises the making of detailed provisions by regulations for different industries and different

processes. The Act is progressively coming into operation for different industries as regulations are prepared. The Construction Safety Regulations, 1974-1977 were the first to be prepared and some of the most recent were the Pesticides (Safe Handling) Regulations, 1979.

At present most of the legislation directed at industrial safety is administered by the Department of Labour, although other authorities hold responsibilities in certain fields.

Department of Labour

The general working conditions in industrial premises (factories, shops, offices and warehouses) are regulated by the Industrial Safety Code Regulations and the Commercial Safety Code Regulations. Inspections are made by Departmental officers to ensure that the requirements of the Safety Regulations with respect to safeguarding of machinery, safety of processes, cleanliness and general working conditions on industrial premises are being observed.

The registration and inspection of steam boilers and other pressure vessels is provided for under the Boilers and Pressure Vessels Act, 1960-1978. The Lifts and Cranes Act, 1960-1972, regulates the use of lifts, escalators, cranes and hoists, and requires the Department to approve new installations and to inspect regularly existing lift equipment. The Dangerous Substances Act, 1979-1980 regulates the storage of flammable liquids and liquefied petroleum gas and the transport of these and other dangerous substances.

Department of Mines and Energy

Regulations under the Mines and Works Inspection Act, 1920-1978 provide for the health and safety of persons engaged in mining, quarrying or associated treatment plants and for the protection of the general public. Mining sites and camps must be maintained in safe condition with specific attention given to ventilation, sanitation, the use of explosives and the protection of the area amenity and environment. All mining operators are required to achieve some form of rehabilitation of areas disturbed by mining. The legislation includes operations conducted by local government authorities and road and rail construction authorities.

Officers of the Department inspect mines and quarries; ensure there is no undue impairment of the environment; check old workings; investigate mining accidents and complaints associated with mining activities and give advice to industry on matters pertaining to mining and explosives.

South Australian Health Commission

The Occupational Health and Radiation Control Branch provides a consultative, educative and investigative service on all matters relating to worker health, for the South Australian community. There is a strong commitment to prevention of industrial injury and disease.

From the legislative viewpoint, the Branch is responsible for administering the Radiation Protection and Control Act, 1982, which controls the use of ionizing and non-ionizing radiation, and the Pesticide Regulations under the Health Act. The staff includes doctors, nurses, physicists, chemists and ergonomists. Problems tackled range from the control of hazardous chemicals to the elimination of repetition injuries.

Department of Services and Supply (Chemistry Division)

The Explosives Act, 1936-1982 regulates the importation, manufacture, carriage, storage, sale and possession of explosives. The Chemistry Division is responsible for the operation of the Government Magazines, Dry Creek, and licenses and inspects other

explosives storages. Vehicles used for the carriage of explosives are also licensed. Commercial explosives entering the State are subject to inspection by the Division.

Electricity Trust of South Australia

Consumers' electrical installations are required to conform to the service rules of the Electricity Trust and the wiring rules of the Standards Association of Australia, and are subject to inspection by Trust officers. Persons engaged in installation, maintenance or repair of electrical installations and permanently connected equipment must be licensed to do this work in accordance with the provisions of the Electrical Workers and Contractors Licensing Act, 1965-1978. Under the Electrical Articles and Materials Act, 1940-1967 certain classes of electrical articles and materials may only be sold or hired or offered for sale or hire if they are of a type approved by the Trust or a recognised interstate authority.

WORKERS COMPENSATION

Legislation

Provisions describing assistance for workers sustaining personal injury out of or in the course of their employment are included in the Workers Compensation Act, 1971-1982. The provisions of the Act extend to injuries arising out of or in the course of employment and cover accidents during recess periods, travelling to or from work, travelling to or from or while in attendance at a place of pick up, travelling to or from or attending a trade or technical school, travelling for a medical certificate or medical treatment while on compensation or travelling to seek or receive compensation.

An injury may be physical or mental, including diseases contracted and the aggravation or recurrence of an injury or disease and a pre-existing coronary heart disease.

Compensation is payable when the injury results in death, or in total or partial, permanent or temporary incapacity. Where death results from the injury, the Act provides for payment to members of the family wholly or partly dependent on the earnings of the deceased. For full dependants, compensation will be an amount equal to the sum of the worker's earnings in the six years before the accident plus \$1 000 for each dependent child, with a minimum of \$16 000 and a maximum of \$50 000 (plus \$1 000 per dependent child), as well as funeral expenses to a maximum of \$1 000. If the worker has not been in the same employment for six years the amount will be his average weekly earnings in the job at which he was working at the time of the accident multiplied by 312, with the above maxima and minima. Where a worker dies leaving no dependants, compensation covering medical, funeral (\$1 000 maximum) and other expenses will be paid into the estate.

Where the injury does not result in death, the most common form of compensation is weekly payment. If incapacity is for one week or more compensation is an amount equal to average weekly earnings during the twelve months preceding the incapacity. The maximum liability of an employer is \$36 000, unless the worker is totally and permanently incapacitated, when it is \$50 000 or such greater amount as may be fixed by the Court having regard to the special circumstances of the case. Weekly payments must begin within two weeks of the worker providing the employer with a medical certificate and his declaration in the correct form stating that he believes himself entitled to compensation. Payments must be made to the worker on his usual pay days.

Provision is made for lump sum payments in lieu of weekly payments. Such payments are arranged by agreement or by proceedings in the Industrial Court of South Australia on application of either employer or employee.

Lump sum payments are payable for certain specified injuries e.g. loss of limbs, for

permanent injuries which may involve total or partial incapacity for work whether actual or potential e.g. speech or hearing loss, or no incapacity for work e.g. severe facial scarring.

In addition to other compensation reasonable medical, hospital, nursing, constant attendance, rehabilitation and ambulance expenses are paid and compensation is provided to \$150 for loss or damage to clothing and personal effects and \$300 for loss or damage to tools of trade.

Excluded from the scope of the Act are members of the crews of fishing vessels remunerated by a share in the profits or the gross earnings of the working of such vessels, certain persons who are contestants in sporting or athletic activities, service personnel and Australian Government employees. Compensation for employees of the Australian Government is provided by the *Compensation (Commonwealth Government Employees) Act 1971*.

Workers Rehabilitation Advisory Unit

The 1982 amendments to the Workers Compensation Act saw the establishment of a Rehabilitation Advisory Unit within the Department of Labour. Its functions are;

- (a) to assess the prospects for rehabilitation of workers injured badly enough to need help;
- (b) to advise workers on ways to go about rehabilitating themselves;
- (c) to advise employers on the resources they can call on in rehabilitating employees;
- (d) to consult with employers about helping injured employees to get back to work;
- (e) to encourage the establishment of rehabilitation programs by employers.

Employers are obligated to report all cases where the incapacity has lasted longer than twelve weeks to the Unit within twenty-one days. However, a case may be referred at any time to the Unit by the employer, doctor or injured employee.

Workers Compensation Insurance

The Workers Compensation Act requires every employer, unless specifically exempted, to obtain from a licensed insurance company a policy which fully covers his liability under the Act. The exemptions are the State Government, which provides its own cover through the State Government Insurance Fund, and any employer who can satisfy the Minister of Labour of his ability to meet all probable claims and who is accordingly issued with a certificate of exemption.

During 1980-81, approximately 72 400 claims were lodged under the Workers Compensation Act, 1971-1979, and compensation payments totalling \$78.3 million were made for wages lost, hospital and medical expenses and lump sum settlements. Further details may be obtained from the bulletin *Industrial Accidents—South Australia 1980-81* (Catalogue No. 6301.4) published by the South Australian Office of the Australian Bureau of Statistics.

INDUSTRIAL ACCIDENTS AND DISEASES

The statistics set out in this section have been compiled from reports of workers compensation claims submitted by insurance companies, self-insurers, and State Government departments, through the South Australian Department of Labour.

Only claims within the coverage of the South Australian Workers Compensation Act, 1971-1979 are included. Notable exclusions are self-employed persons (although persons supplying labour only in contracts have been included from 1 January 1974) and all Australian Government employees. The exclusion of self-employed persons is likely to have considerable effect in industries where self-employment is significant (e.g. retail

trade, rural industries). Because of the exclusion of Australian Government employees, defence services and Government communications industry groups are not covered, while coverage is reduced in other industries (e.g. building and construction). Because of the movement of employees across State boundaries some reports received may refer to accidents occurring in States other than South Australia. The number of such reports is thought to be negligible.

From 1980-81, statistics represent accidents and diseases which occurred during the year, rather than accidents and diseases for which claims were closed during the year as for years before 1980-81. This change follows the introduction of a new reporting system from 1 July 1980 which provides that for events which occur during a year, reports are to be completed progressively as claims are closed. For claims unclosed three months after the end of the year concerned (i.e. at 30 September), insurers are required to submit reports during October and include their estimates of total compensation payments and absence. However, not all relevant reports were received in time for inclusion in the 1980-81 statistics and year to year changes in the number of events should therefore be interpreted with caution. Figures for 1980-81 were classified for the first time by outcome, i.e. fatal, permanent total, permanent partial and temporary disability.

Industrial Accidents

An 'industrial accident' is defined as an event following an isolated and sudden exposure to a hazard resulting in a compensatable work injury. For the purpose of this collection, accident claims are included only if they result in death, permanent total disability or absence from work of one week or more.

Accidents While Working: Industry, Number and Disability, Average Time Lost and Amount Paid, South Australia, 1980-81

Industry	Number of Accidents					Average Time Lost (a)	Average Amount Paid (b)
	Fatal	Disability			Total		
		Permanent		Temporary			
		Total	Partial				
						Weeks	\$
Agriculture, forestry, fish- ing and hunting	1	4	49	705	759	5.4	2 885
Mining	—	1	20	249	270	6.0	5 951
Manufacturing	7	10	449	5 037	5 503	5.3	3 321
Electricity, gas and water	3	4	22	472	501	5.1	2 777
Construction	4	7	76	1 193	1 280	5.6	3 222
Wholesale trade	—	1	52	739	792	5.0	2 661
Retail trade	—	1	65	896	962	5.1	2 813
Transport, storage and communication	2	2	32	841	877	4.7	2 808
Finance, property and business services	1	1	34	251	287	8.3	5 241
Public administration	—	1	35	483	519	5.6	2 934
Community services	1	6	97	1 400	1 504	6.1	3 148
Recreation, personal and other services	—	2	30	453	485	5.8	2 671
Total	19	40	961	12 719	13 739	5.4	3 211

(a) Time lost applies only to cases of permanent partial and temporary disability.

(b) Includes compensation for wages lost, hospital and medical expenses, and lump sum settlements.

In the above table, the workplace of the injured worker is classified to an industry in accordance with the 1978 edition of the *Australian Standard Industrial Classification* (ASIC). Only accidents which occurred while working are included.

Industrial Diseases

The International Labour Office distinguishes an occupational disease from a work injury in that it exhibits one or more of the following characteristics:

- the slow and protracted nature of its cause;
- its ascribability to repeated or continuous action of a mechanical, physical or chemical cause; it is not the effect of a single event but of a cause acting imperceptibly and constantly;
- indeterminateness of the time of its beginning due to its slow and insidious development;
- the possible importance of individual predisposition as a factor in the development of the pathological conditions.

In this collection, where there is any evidence at all that a disease has resulted from an initial injury, the episode is classified as an injury rather than a disease. Disabilities caused by repetitive movement of a joint are classified to a disease if so described or to an injury if no disease has been specified on the report.

The following table gives details of diseases which resulted in death, permanent total disability or absence from work of one week or more.

**Diseases: Number and Disability, Average Time Lost and Amount Paid
South Australia, 1980-81**

Diseases	Number of Diseases					Average Time Lost (a)	Average Amount Paid (b)
	Fatal	Disability		Total			
		Permanent	Temporary				
					Total			Partial
Infectious and parasitic	—	1	2	187	190	5	\$ 2 008
Nervous system and sense organs	—	2	15	45	62	12	6 872
Circulatory system	13	4	5	16	38	19	16 744
Respiratory system	2	—	1	16	19	11	9 940
Skin and subcutaneous tissue	—	1	17	164	182	5	3 192
Musculoskeletal system and connective tissue	—	4	45	317	366	8	4 478
Other	—	3	10	37	50	13	7 781
Total	15	15	95	782	907	8	4 651

(a) Time lost applies only to cases of permanent partial and temporary disability.

(b) Includes compensation for wages lost, hospital and medical expenses and lump sum settlements.

In addition, noise-induced hearing loss disease claims involving less than one weeks' absence from work were reported for the first time in 1980-81 when 750 cases were reported.

Fatal Accidents and Diseases

While reservations continue to be held regarding the completeness of reporting of fatal events, the latest available information is set out in the table below.

Workers Compensation Claims: Fatal Events, South Australia

Year of Occurrence	Accident			Disease	Total
	While Working	During Journey	During Recess		
1975-76	18	<i>n.a.</i>	<i>n.a.</i>	17	35
1976-77	16	<i>n.a.</i>	<i>n.a.</i>	11	27
1977-78	11	<i>n.a.</i>	<i>n.a.</i>	8	19
1978-79	20	<i>n.a.</i>	<i>n.a.</i>	9	29
1979-80	21	<i>n.a.</i>	<i>n.a.</i>	11	32
1980-81 (a)	19	9	—	15	(a) 43

(a) From 1980-81 includes 'journey' and 'recess' cases.

Further References

Additional information may be found in the following publication:

6301.4 *Industrial Accidents—South Australia*

PART 8

PHYSICAL DEVELOPMENT

8.1 WATER SUPPLY AND SEWERAGE

WATER SUPPLY

Water conservation is of vital importance to South Australia as 96 per cent of the State receives less than 500 millimetres of rain a year, while high temperatures encourage a higher use of water and a high rate of evaporation causes heavy losses from reservoirs.

The Waterworks Act, 1932-1978 gives the Minister of Water Resources power to divert and impound the water from any streams or springs and take the water found in or under any lands for the purpose of constructing, completing, extending or maintaining any waterworks or for supplying water to or in any water district. The Act also gives the Minister power to declare any district, place or town a water district. The function of exploiting water resources is performed through the Engineering and Water Supply Department.

In 1973, the State Government announced its new water resources management policy. This statement embraced the same important principles contained in a document *Proposed National Approach to Water Resources Management*, being developed under the auspices of the Australian Water Resources Council and adopted by the Commonwealth and State Governments in 1976.

With the Water Resources Act coming into effect on 1 July 1976, the Control of Waters Act and Underground Preservation Act were repealed.

The Water Resources Act provides for the assessment, conservation, development

and management of the water resources of the State by the Minister of Water Resources and for the control and management of their utilisation, quality and other purposes.

Its provisions include the establishment of a South Australian Water Resources Council, Regional Water Resources Advisory Committees, the Water Resources Appeal Tribunal and a Well Drillers' Examination Committee. Six Regional Water Resources Advisory Committees, River Murray, Padthaway, Northern Adelaide Plains, Arid Areas, North Para and Angus-Bremer have been established.

The Water Conservation Act, 1936-1975 provides for the control of small reservoirs, bores, tanks etc. established in remote areas as emergency water supplies or to assist local development.

The following table gives details of water supplies in South Australia at 30 June for the three years to 1982.

Water Supplies, South Australia

At 30 June	Aggregate Capacity		
	1980	1981	1982
	Megalitres		
Adelaide Metropolitan reservoirs	208 840	208 840	207 440
Country reservoirs	34 290	34 290	33 980

It should be noted that storage includes service reservoirs, and that both natural and River Murray water are stored in Northern and Metropolitan Reservoirs. Capacities of Little Para Reservoir and Baroota Reservoir have been re-assessed owing to spillway modifications. The total length of water mains at 30 June 1982 was 23 013 kilometres.

Water Filtration

Adelaide's first water filtration plant at Hope Valley began supplying filtered water to the Metropolitan Distribution System in November 1977. Since then, plants have been commissioned at Anstey Hill and Barossa, and construction has continued on the Little Para water filtration plant which will be commissioned in mid-1984.

DISTRIBUTION OF WATER RESOURCES

Drainage Systems

In agreement with the States, the Australian Water Resources Council has divided Australia into twelve surface water drainage divisions. The divisions which constitute major surface water resources for South Australia are the South Australian Gulf Drainage Division which lies wholly within the State and in which are located all important State reservoirs, and the Murray-Darling Division, of which only a part is located in South Australia, and the waters of which are allocated between this State, Victoria, and New South Wales in accordance with the terms of the River Murray Waters Agreement (see page 362).

Part of the large Lake Eyre Drainage Division covers the northern and eastern areas of the State, but, although streams in the area may flood extensively on occasions, they are generally unreliable and significant only to the local pastoral industry. The section of the South-East Coast Drainage Division which intrudes into the south-east corner of South Australia has no good dam sites but a high rainfall in the area provides a good underground water resource of considerable importance to the State. Underground

resources on the seaward edge of the Western Plateau Division, which covers the south-western part of the State, are recharged also from local rainfall.

South Australian Gulf Drainage Division

The eastern boundary of this Division is formed partly by the Mount Lofty Ranges, which rise to a maximum of 727 metres east of Adelaide and to over 1 000 metres north of Burra, and further north it follows the Flinders Ranges which reach a height of 1 166 metres at St Mary Peak. The boundary then rounds Lake Torrens and, further south, the western boundary is formed by a discontinuous line of hills on Eyre Peninsula. Kangaroo Island is also included, so that in all, the Division covers the whole perimeter of the South Australian gulfs. The individual river basins in this Division are all very small.

Most of the South Australian reservoirs are situated in this Division as can be seen from the map on page 356. The Little Para Dam, constructed on the Little Para River north of Adelaide at a cost of \$11 million, began service in January 1979. The capacity of this reservoir is 20 800 megalitres and the waterspread is 150 hectares. The following table shows the capacity, area at full supply level and the catchment area of the eleven largest reservoirs at 30 June 1982.

Major Reservoirs, South Australia, At 30 June 1982

Reservoir	Capacity	Area at Full Supply Level	Catchment Area
	Megalitres	Hectares	km ²
South Para	51 300	444	228
Mount Bold	45 900	308	388
Myponga	26 800	280	124
Kangaroo Creek	24 400	121	289
Little Para Dam	20 800	150	83
Millbrook	16 500	178	233
Happy Valley	12 700	188	451
Tod River	11 300	134	196
Bundaleer	6 370	85	1 671
Baroota	6 120	63	136
Warren	4 770	103	119

Rainfall in excess of 750 millimetres a year occurs only on a very small area in the Mount Lofty Ranges, while in the north-west of the Division the annual average is less than 150 millimetres. In the southern parts of the Division, average precipitation generally exceeds potential evaporation only from May to August, and over most of the Division monthly evaporation rates exceed rainfall throughout the year.

The average annual run-off in this Division at the lowest practical dam sites is estimated at 430 000 megalitres but is subject to considerable variation. The two best streams, the Onkaparinga and the Torrens, account for 135 000 megalitres of the average flow and the combined annual flow of these two has varied between 467 000 megalitres down to 8 600 megalitres in the last eighty years.

After the major dam sites in the Mount Lofty Ranges had been developed because of the small size of the individual catchments in the Division, and the relatively low run-off and its high variability, it was found more economical to provide additional water to Adelaide and other high demand centres *via* pipelines from the River Murray. No further reservoirs or major pipelines for metropolitan Adelaide will need to be built this century. When augmentation of the water supply system is necessary in the first part of the next century it is likely that the supply source will be the River Murray, possibly by way of

another pipeline plus a new reservoir in the Mount Lofty Ranges to act as a balancing storage for River Murray water.

The present average annual extraction of water by the Engineering and Water Supply Department from the Gulf Drainage Division is about 120 000 megalitres; private diversion may take a further 13 000 megalitres.

River Murray

The River Murray is the most important source of water supply for South Australia. Under the terms of the River Murray Waters Agreement (see page 363), South Australia is entitled to 1 850 000 megalitres of water annually, subject to the declaration of restriction by the River Murray Commission. Losses by evaporation and seepage account for about 1 150 000 megalitres per annum. Over the past ten years, irrigation diversions have averaged 390 000 megalitres per annum and town, domestic, industrial and stock supplies have averaged 116 500 megalitres per annum. Town, domestic, industrial and stock supplies have been as high as 234 000 megalitres per annum.

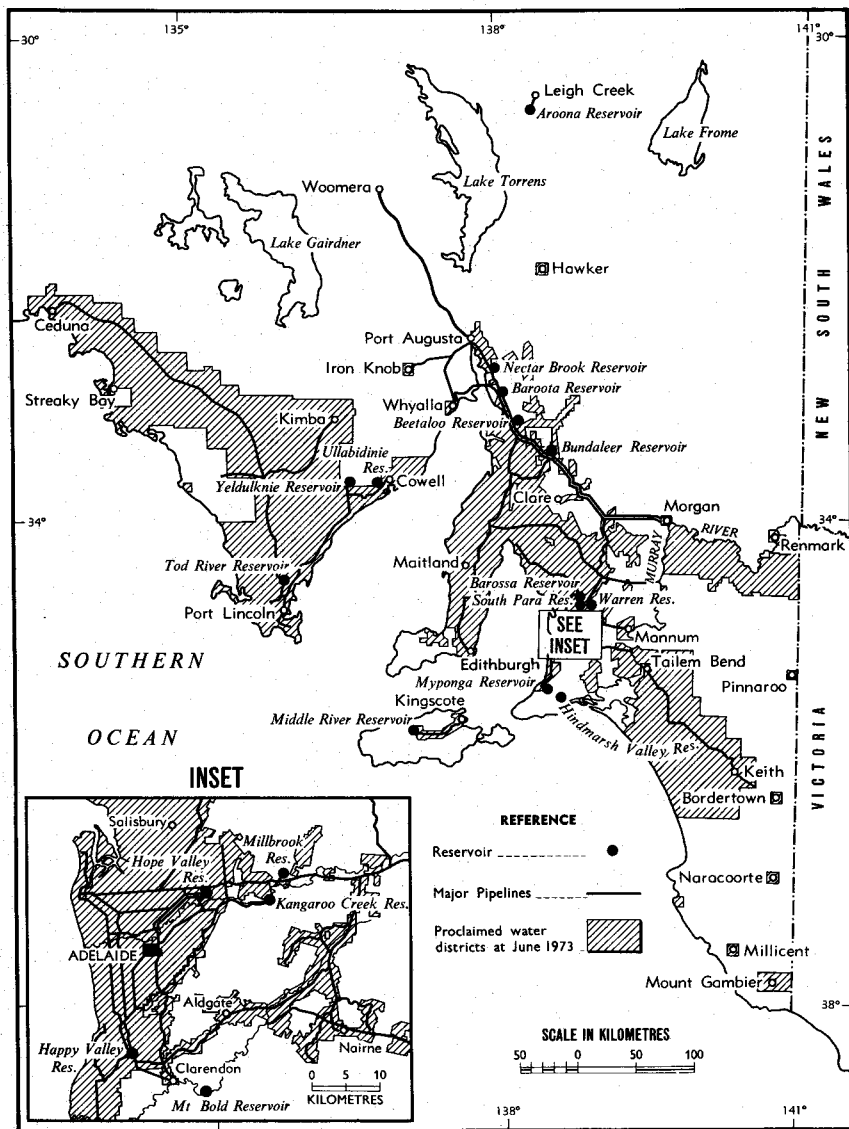
Adelaide metropolitan water supplies are supplemented by River Murray water through the Mannum-Adelaide and Murray Bridge-Onkaparinga pipelines. The Morgan-Whyalla, Swan Reach-Stockwell and Tailem Bend-Keith pipelines provide the water supply for extensive country areas or augment local resources in these areas. The first water pumped through the Mannum-Adelaide Pipeline reached the metropolitan system in 1954. The water is drawn from the River at Mannum nearly 67 kilometres in a direct line from Adelaide, and is raised by three pumping stations a total of 457 metres to a 137 megalitre summit storage near Tungkillo. At first the water flowed into the Torrens and Onkaparinga Rivers and hence into the metropolitan system; later the pipeline was extended to a terminal storage near Modbury. The Mannum-Adelaide Pipeline is also connected to the Warren Reservoir on the South Para River and branches serve many country areas *en route*.

A second large pipeline to augment the metropolitan supply was completed in 1973. The pipeline extends for 48 kilometres from the River Murray near Murray Bridge to the River Onkaparinga near Hahndorf, and the water is distributed through the reservoirs on the latter stream. Three pumping stations lift the water 418 metres over the first 40 kilometres of the pipeline to a summit storage from which an 8-kilometre gravity section of the line discharges into the Onkaparinga. A branch main supplies the town of Murray Bridge and other branch mains supply areas in the Mount Lofty Ranges.

The Morgan-Whyalla Pipeline, completed in 1944, includes four pumping stations which lift the water 478 metres over a distance of 92 kilometres from Morgan to a summit storage at Hanson. From here the water gravitates 267 kilometres *via* Port Augusta to Whyalla. Branch lines have been laid to Woomera (177 kilometres) and other country centres. The Morgan-Whyalla Pipeline, being an additional source of supply for the Bundaleer system, has permitted reticulation over most of Yorke Peninsula. A second main was completed in 1966 and appurtenant works comprising additional storages and four new pumping stations were commissioned early in 1970. The second main which more than doubles the capacity of the scheme, parallels the original main to Baroota Reservoir, then extends westerly to Whyalla *via* a 12-kilometre undersea crossing of Spencer Gulf.

A 53-kilometre pipeline between Swan Reach and Stockwell which connects to the distribution section served by Warren Reservoir commenced operating in 1969 to supplement the supplies for lower northern areas from the Murray. A 143-kilometre pipeline between Tailem Bend and Keith completed in 1969 forms the backbone of a scheme involving 800 kilometres of branch mains subsequently laid to supply River

PORTION OF SOUTH AUSTRALIA WATER SUPPLIES



Murray water to towns and farmlands in the Upper South East. The River Murray also supplies towns along its banks by means of direct pumping.

Other Water Resources

Eyre Peninsula

Eyre Peninsula has no perennially flowing streams with the Tod River the only stream that can be relied upon in normal years to provide some flow of water. Underground basins, mainly in the southern portion of Eyre Peninsula provide most of the water supplies. Port Lincoln is supplied entirely with underground water available at shallow depth in the Lincoln Basin and Uley South Basin. The Uley-Wanilla Basin supplies Cleve and Cowell via the East Coast Main and also supplements the natural intake of the Tod Reservoir which was built in 1922 on a tributary of the Tod River.

A trunk main, 384 kilometres in length, from the Tod Reservoir to Ceduna and Thevenard was laid between 1923 and 1926 and a program of replacement and enlargement was completed in 1974. A 106-kilometre trunk main from Lock on the Tod Trunk Main supplies water to Kimba and intervening farmlands. This supply is augmented with water from the Polda underground basin.

South East

The hydrology of the South East covers a complex of surface and underground waters with up to 80 per cent of all water used derived from underground aquifers. The productivity of large areas of land has been greatly improved by the construction of a large drainage network as discussed on pages 363-4.

Eight Mile Creek to the east of Port MacDonnell carries a permanent natural overflow from the springs of the Ewen Ponds area and discharges 68 000 megalitres a year into the Southern Ocean and there are other visible outlets. The Blue Lake now provides 4 000 megalitres annually to Mount Gambier. There is scope for considerable development in the South East and it is likely that up to 650 000 megalitres could be used annually from the underground water resources of the region.

Other Underground Supplies

Many other areas of the State are dependent on underground supplies, particularly for stock drinking water. The aquifers of the North Adelaide Plains provide the major source of water for market gardens and related irrigation, but the demand level of 21 000 megalitres has been found to be beyond the permanent capability of the area. Usage is subject to Government control, and investigations on means of prolonging the life of the aquifers are in progress. Further discussion on underground water appears on pages 24-5.

Metropolitan Water Supply

In the following table, details of metropolitan services as well as revenue and expenditure are given for the metropolitan water supply district for the years 1977-78 to 1981-82.

Adelaide Metropolitan Waterworks, South Australia

Particulars (a)	1977-78	1978-79	1979-80	1980-81	1981-82
Length of mains (kilometres)	7 470	7 555	7 630	7 678	7 710
Number of services	308 728	313 410	317 597	321 843	327 096
Revenue:			\$'000		
Rates and other services	38 743	44 296	47 339	53 293	61 194

Adelaide Metropolitan Waterworks, South Australia (continued)

Particulars (a)	1977-78	1978-79	1979-80	1980-81	1981-82
	\$'000				
Expenditure:					
Working expenses	25 960	24 673	26 300	31 457	34 672
Interest	14 632	15 750	17 594	19 637	23 601
Total	40 592	40 423	43 894	51 094	58 273
Surplus	-1 849	3 873	3 445	2 199	2 921

(a) Includes particulars relating to near country areas supplied by extensions of the Metropolitan distribution system.

Water Consumption

The following table gives details of water used during the year and storage capacity of major reservoirs at the end of the year for metropolitan and country districts for the years 1978-79 to 1981-82. The quantity of water pumped from the River Murray through the major pipelines is also shown.

Water Storage and Consumption, South Australia

Particulars	1978-79	1979-80	1980-81	1981-82
	Megalitres			
Capacity of major storages (at end of year):				
Adelaide metropolitan water supply(a)	209 440	208 840	208 840	207 440
Country water supply	34 860	34 290	34 290	33 980
Water consumption:				
Adelaide metropolitan water supply(b)	164 925	170 508	177 060	168 617
Country water supply(c)	80 322	83 706	89 336	90 217
Pumped from River Murray:				
Mannum-Adelaide Pipeline	50 568	42 215	56 656	22 392
Murray Bridge-Onkaparinga Pipeline	23 746	17 066	39 176	11 890
Morgan-Whyalla Pipeline	17 884	20 290	24 695	21 064
Other supply systems	14 533	17 603	13 693	13 471

(a) Includes storages on the Mannum-Adelaide and Murray Bridge-Onkaparinga Pipelines.

(b) Consumption within the Adelaide Statistical Division.

(c) Includes consumption in various areas outside of the Adelaide Statistical Division supplied from the Metropolitan distribution system.

WATER RATES AND CHARGES

Water rates are levied on all properties served from or abutting a water main except where specific exemption from rating applies or the property is in an area not subject to rating.

Amounts payable by individual ratepayers are determined by a base water rate on the annual value of a property and a water rate per kilolitre. Payment of the base rate on property permits use of a water allowance which is determined by dividing the sum involved by the water rate per kilolitre. Water used in excess of the allowance is charged at the rate per kilolitre.

Valuation equalisation was introduced in Metropolitan and Country Water Districts from 1 July 1975. This system provides for a more even distribution of rates and

properties of equal market value pay approximately the same base water rates irrespective of location or year of valuation. A minimum charge of \$48 is applicable.

In Country Lands Water Districts (farm lands) the current base water rate is 47 cents for each hectare located within 1.6 kilometres of a main. A minimum charge of \$48 is applicable.

The current water rate per kilolitre applicable in City, Township and Country Lands Water Districts is 32 cents per kilolitre. Where water is supplied to properties outside of proclaimed water districts or otherwise beyond ratable limits it is supplied by measure at the ruling rate per kilolitre.

Approved churches, charitable institutions and schools are exempted from payment of water rates on annual values and water is supplied to them by measure at concessional prices. A remission of up to 60 per cent of water rates, with a maximum of \$75 a year, is provided to eligible pensioners.

Services from mains to property boundaries are installed and maintained by the Engineering and Water Supply Department. Connection fees are uniform throughout the State and are currently \$145 for a 20 millimetre service and \$205 for a 25 millimetre service with commensurately higher fees for larger services.

SEWERAGE

ADMINISTRATION

Sewerage of cities and towns in South Australia is undertaken by the State Government under the authority of the Sewerage Act, 1929-1977. The Act is administered by the Engineering and Water Supply Department for the Minister of Water Resources and provides for water borne sanitary sewerage schemes within proclaimed drainage areas. As a general rule the Government sewerage schemes are provided only in densely populated cities and towns where they are essential for public health or in areas where it is necessary to protect surface or underground water resources from pollution by domestic or industrial wastes.

Local Government authorities are empowered under the Local Government Act, 1934-1982 to provide sanitary drainage schemes and in recent years a number of these authorities have installed common septic tank effluent drainage schemes discharging to biological filters or oxidation ponds.

METROPOLITAN SEWERAGE

Sewerage for Adelaide was first authorised by an Act of Parliament in 1878. Construction began in 1879 and by 1881 sewerage from the city and inner suburbs was admitted to a sewage farm at Islington. Since then continual expansion of sewerage systems has kept pace with development of the metropolitan area as far as physical and financial factors permit and Adelaide is now the most completely sewered of the Australian capital cities.

The proclaimed Adelaide Drainage Area at 30 June 1982 served an estimated population of 927 100 persons and covered 697 square kilometres of the Adelaide Plains between Darlington and Gawler, the area between Port Noarlunga and Aberfoyle Park and portion of the Blackwood and Belair area. Subdivision developers are required to make capital contributions towards the cost of sewer and water extensions for all new allotments in areas capable of being served within the Drainage Area.

Four major sewerage systems are employed, each draining to separate sewage treatment works at Bolivar, Glenelg, Port Adelaide and Christies Beach. Islington Sewage Farm was abandoned in 1966 when the Bolivar Treatment Works was put into service.

The Christies Beach Treatment Works began operating in August 1971, and will eventually serve the whole of the area between Coromandel Valley and Moana Beach. At present there are a number of small temporary treatment works installed in the Reynella-Morphett Vale area which will be phased out following connection of the developed areas to the Christies Beach Works.

A large number of common effluent drainage systems have been installed in fringe areas by local government authorities and most of these have been, or are planned to be, connected to the sewerage systems. A charge for each house connected is levied against local government authorities whose common effluent drainage systems discharge to sewer mains. Property owners pay an annual rate for the service to the local government authority concerned.

Metropolitan Sewers, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
Adelaide drainage area (km ²)	674	682	683	697	697
Length of sewers (km)	4 887	4 978	5 045	5 169	5 222
Number of connections	324 366	327 582	332 246	339 520	341 364
	\$'000				
Revenue:					
Rates and other services	25 324	30 417	34 066	36 583	41 234
Expenditure:					
Working expenses	16 626	17 639	18 453	20 392	22 273
Interest	10 509	11 867	13 163	15 405	17 957
Total	27 135	29 506	31 616	35 797	40 230
Surplus	-1 811	911	2 450	786	1 004

COUNTRY SEWERAGE

At 30 June 1981 the drainage areas of country sewerage schemes constructed and operated by the Engineering and Water Supply Department totalled 114 square kilometres; the length of sewers laid was 803 kilometres and the number of connections totalled 37 144. Sewerage schemes are located at Angaston, Balhannah, Gumeracha, Hahndorf, Lobethal, Mannum, Millicent, Mount Gambier, Murray Bridge, Myponga, Naracoorte, Oakbank, Port Augusta, Port Lincoln, Port Pirie, Stirling, Victor Harbor and Whyalla.

Construction of the Oakbank, Port Augusta, Stirling and Victor Harbor sewerage systems is still in progress. In 1981-82, 31 kilometres of sewers and 1 507 new connections were laid in country drainage areas. In addition, the Engineering and Water Supply Department has constructed schemes at Mount Burr and Nangwarry townships for the Woods and Forests Department and numerous schemes to serve country hospitals, institutions etc., operated by other authorities.

Common effluent drainage schemes have been installed by local government authorities in fifty-four localities.

The Australian National railways has provided schemes for settlements in the areas of Stirling North, Hesso and Pimba while the Department of Aboriginal Affairs has provided schemes at Point McLeay, Point Pearce, Nepabunna, Ernabella, Amata, Davenport and Gerard Aboriginal reserves.

Construction of systems is currently being carried out at Ardrossan, Balaklava and Freeling. It is anticipated that these projects will be completed during 1983.

SEWER RATES AND CHARGES

The Engineering and Water Supply Department provides sewer connections to property boundaries but internal drainage systems which are the responsibility of landholders must conform to regulations under the Sewerage Act and must be installed by authorised plumbers. Standard fees for sewer connections are \$80 and \$115 for 100-millimetre and 150-millimetre sizes respectively.

Sewer rates are levied on properties connected to or abutting a sewer, with a minimum annual charge of \$48. Valuation equalisation, as applicable to water rating, applies also to sewer rating. A marginally higher rate is charged in country areas. A remission of up to 60 per cent of sewer rates to a maximum of \$75 is provided to eligible pensioners.

Rates levied by local government authorities on properties connected to common effluent schemes are usually proportionate to the costs and interest charges involved in the schemes.

STATE WATER LABORATORIES

The Engineering and Water Supply Department has the responsibility to control pollution of the State's water resources, to maintain public water supplies at an acceptable quality and to operate sewerage systems. For this purpose, the Department maintains the State Water Laboratories at Bolivar, where a staff of chemists, biologists and other scientists and technical personnel examine over 55 000 samples of water, effluent and industrial wastes each year. A more detailed discussion on these laboratories was included on pages 369-71 of the *South Australian Year Book* 1975.

8.2 IRRIGATION AND DRAINAGE

IRRIGATION

The development of irrigation areas in South Australia has been carried out by both Government authorities and private interests. Since 1930 the administrative authority for Government irrigation areas has been the Department of Lands with the Engineering and Water Supply Department the constructing authority for the Minister of Irrigation, but from 30 June 1978, the authority has been transferred to the Minister of Water Resources with the Engineering and Water Supply Department being the responsible administrative department. A more detailed historical discussion of irrigation in South Australia was included on pages 314-6 of the *South Australian Year Book* 1970.

Irrigation areas are confined almost exclusively to the Murray Valley and can be classified into two groups; highland areas requiring the pumping of water, and reclaimed lands watered by gravitation. During 1980-81, 455 846 megalitres of water were diverted from the River Murray in South Australia for irrigation purposes.

Highland Areas

With the major exception of the Mypolonga Irrigation Area, highland irrigation is located in the hot and dry zone along the River Murray between Morgan and the Victorian border.

These areas are largely devoted to vineyards and citrus and stone fruit orchards which are irrigated by water pumped and distributed *via* both open concrete-lined channels or low pressure piped mains. The Government is currently engaged in a major program of rehabilitating those areas still using channels, which are being replaced by sealed pipe mains and metered connections to each property in the Government irrigation areas. There is a general change in irrigation practice from furrow irrigation to a variety of

improved irrigation practices including overhead and undertree sprinklers, micro jet and drip irrigation. The incentives include reduced water use, increased application efficiency, reduced drainage and reduced labour. The increased control with the new systems allows irrigation schedules to be adjusted to more closely meet plant demand which results in increased productivity. The type of improved practice employed depends on the crop, terrain and soil type. Generally furrow irrigation is being retained in areas with gentle flat slopes and well drained soils.

Landholders on Government controlled areas and on private lands constituted under special Parliamentary Acts pay an annual rate for irrigation and a charge is made for additional water, either on a measurement basis where meters have been installed, or on an hourly basis where channels are still utilised. The Renmark Irrigation Trust also supplies water on a volume basis to landholders in its district.

Irrigation systems must also provide for the removal of surplus water which accumulates beneath the surface of the land. Holdings have internal drainage systems leading to comprehensive drainage systems which convey the water to evaporation basins.

Reclaimed Areas

On the lower Murray between Mannum and Wellington, a series of swamp and overflow areas have been reclaimed by Government and private agencies.

Although these reclaimed areas contain some market gardens they are devoted principally to the growing of green fodder for dairy herds and sheep flocks. These lands are watered by gravitation and surplus water is run into main drains from which it is pumped back into the river. Approximately 526 hectares of highlands adjacent to reclaimed areas have also been developed for the production of fodder crops through the use of spray irrigation and there are 327 hectares at Mypolonga used for horticulture.

Areas Irrigated, South Australia

Areas Irrigated	1979-80	1980-81	1981-82
	Hectares		
Government controlled:			
Highland	12 998	12 978	13 000
Reclaimed swamp lands	4 089	4 089	4 000
Non-government:			
Highland	24 187	24 187	24 200
Reclaimed swamp lands	1 940	1 940	1 900

THE RIVER MURRAY AGREEMENT

The *River Murray Waters Act 1915* ratified an agreement between the Commonwealth Government and the States of New South Wales, Victoria and South Australia. The River Murray Agreement provides that the minimum quantity of water to be allowed to be passed for supply to South Australia in each year shall be sufficient to maintain certain specified monthly flows in the lower river. The flow at Albury is shared equally by New South Wales and Victoria and each of these States has full control of its tributaries below Albury, subject in each case to the fulfilment of the South Australian allocation.

Works, to regulate the flow and control of the level of the River Murray, have included the construction of a number of storage areas and the erection of a series of locks and weirs. By 1928 Lake Victoria, in New South Wales adjacent to the South Australian border, had been converted into a large storage area supplying water for the South Australian irrigation settlements. South Australia is responsible also for the control and

operation of Lake Victoria storage and the section of the River Murray downstream of its inlet channel. This section of the river contains three locks. Between 1922 and 1930 six locks and weirs were erected between Blanchetown and the Victorian border. In addition, five barrages were placed at the Murray mouth to prevent the ingress of salt water from the sea and to maintain a higher level in the River for the use of the reclaimed areas. These barrages were completed in 1940.

The major storage area, the Hume Reservoir above Albury, was completed in 1936. Further works, the last being completed in 1961, have doubled the original capacity to more than 3 million megalitres. Except for that held in various lock pools, no water from the Murray is stored in South Australia. In 1962 agreement was reached for the construction of a reservoir of over 6 million megalitres covering 1 300 square kilometres with its dam at Chowilla, just inside the State border, but early in 1969 the River Murray Commission recommended that an alternative dam be built at Dartmouth in Victoria before further consideration be given to the completion of the Chowilla Dam. Legislation ratifying an agreement based on the Commission's recommendation was passed by the Commonwealth, New South Wales and Victorian Parliaments in 1970 and an Act ratifying the agreement was passed in the South Australian Parliament in August 1971. In June 1974 the River Murray Commission accepted a tender for the construction of the Dartmouth Dam and appurtenant works. Fourteen million cubic metres of earth and rockfill material comprised the main embankment. The river diversion tunnel was plugged on 3 November 1977 and filling commenced at that time. The Dam was subsequently completed on 9 November 1979. South Australia's annual entitlement was increased from 1 550 to 1 850 gigalitres in accordance with the River Murray Waters Agreement.

DRAINAGE

With the exception of the reclaimed areas along the lower Murray, already discussed in the previous section, and certain works associated with metropolitan development, drainage schemes in South Australia are confined to the south-east corner of the State. The topography of this area reveals a series of fertile valleys or flats interspersed by low infertile ranges running parallel to the sea and thus preventing the natural drainage of the land. In consequence, drainage schemes have been constructed to reclaim these areas.

The first major drainage scheme was commenced in 1863 and completed in 1885. This scheme, the Millicent Drainage System, reclaimed 40 000 hectares of land at a cost of \$300 000, this cost subsequently being included in the land allotment price. The system is maintained by the Millicent District Council from funds provided by the State Government.

Following this early success the Government undertook the construction of further drains during the next ninety years. These drains were constructed under three sets of conditions: *National Drains* were constructed at Government expense, the cost being absorbed in the price of the land when sold; *Petition Drains* were constructed on request from landholders who agreed to repay the full cost to the Government over a period of forty-two years; *Scheme Act Drains* commenced in 1908, provided for the Government and the landholders to share the cost, the landholders share being repayable over forty-two years. After the Scheme Act Drains had been completed it was found that the cost exceeded the benefit derived, and subsequently, following a royal commission, the landholders' liability was reduced.

The passing of the South-Eastern Drainage Act Amendment Act, 1948 marked a new stage in the development of south-eastern drainage. Previously attention had been devoted to the construction of a system of drains removing large quantities of water from general areas and providing above all for the rapid removal of floodwaters. By 1948, 700

kilometres of drains had been constructed at a capital cost of \$1.4 million. However, in 1948, with the establishment of the Western Division Drainage Scheme, emphasis was placed on a complete drainage program as achieved by the earlier Millicent scheme. The Western Division Drainage Scheme, which aimed at the comprehensive drainage of 160 000 hectares of land between the Millicent and Kingston districts, has now been completed. In 1960 the Eastern Division Drainage Scheme, for the drainage of 300 000 hectares of flats lying between Kalangadoo and 65 kilometres north of Lucindale, was commenced and construction on this scheme was completed in November 1969, with some added minor work being undertaken in 1970 and 1972.

Under the schemes introduced since 1948 landholders were required to repay an amount based on a 'betterment assessment' of their property. As in the other schemes this amount was repayable over forty-two years. The 1971 amendment to the South-Eastern Drainage Act extinguished the liability of landholders to make a capital contribution in respect of existing drainage construction.

The Act was revised and substantially amended in June 1980. Drainage rates were abolished and drainage schemes in the area are now funded by the State Government. The Board's authority was also expanded to enable it to participate in water conservation and utilisation programs, including water diversions, restoration of wetlands, and the construction of weirs.

Approximately 1 450 kilometres of drains (excluding the Millicent scheme) have been constructed at a capital cost of \$20 000 000. These drains vary considerably in size from only a few metres to over 60 metres bottom width.

The Board now also maintains the Eight Mile Creek Drainage Scheme which is located 35 kilometres south of Mount Gambier near Port MacDonnell. Fifty kilometres of drains remove excess spring and rain water from 16 660 hectares of peat land on which 32 dairy properties are situated.

In addition to new construction, continual attention must be paid to the prevention of silting and of weed growth and to the upkeep of over 700 bridges and other structures along the system.

The system is administered by the South-Eastern Drainage Board under the South-Eastern Drainage Act, 1931-1980.

8.3 ROADS

Roads in South Australia are officially classified either as main roads, being those proclaimed as such under the provisions of the Highways Act, or district roads. Main and district roads within local government areas are vested in the various local government authorities who primarily are responsible for construction and maintenance works within their respective areas. However, there is provision in the Highways Act for the Commissioner of Highways to construct, reconstruct, and maintain important roads after due notice has been given, and in practice most of the roads carrying heavy traffic are constructed and maintained by the Highways Department. In areas outside the control of local government authorities roads are vested in the Minister of Local Government under the control and management of the Commissioner of Highways.

The National Association of Australian State Road Authorities (NAASRA) has defined a nine-level classification system which is used jointly by the Highways Department and the Bureau of Transport Economics for planning purposes. The Commonwealth Department of Transport has adopted a three-level system of road classification, based generally on the NAASRA system, for funding purposes.

The latter classification is used in the following table to show the length of roads, customarily used by the public, according to type of surface at 30 June 1982.

**Length of Roads: Type of Surface, South Australia
At 30 June 1982**

Class of Road	Type of Surface		Total
	Sealed	Unsealed	
Kilometres			
National roads (a):			
National highways (b)	1 807	787	2 594
Arterial roads (c):			
Rural	8 025	1 869	9 894
Urban	887	6	893
Local roads (d):			
Rural	4 502	77 354	81 856
Urban	5 556	1 346	6 902
Total	20 777	81 362	102 139

(a) Roads declared by the Commonwealth Minister for Transport to be national highways or developmental roads under the provisions of the *Roads Grants Act 1981*.

(b) Selected roads linking Adelaide with other State capital cities including Darwin and Canberra.

(c) Roads declared by the Commonwealth Minister for Transport to be arterial roads under the provisions of the *Roads Grants Act 1981*.

(d) Roads not included in above categories.

In closely settled areas, particularly in the metropolitan area and country towns, most roads are surfaced with bituminous concrete or by bituminous penetration of a macadam base. In rural districts where traffic is light, roads may be formed of natural materials or be only lightly gravelled but the more important country roads are constructed of gravel or crushed rock and are improved as traffic warrants, by the addition of a bituminous seal.

A continuous program of road improvement is carried out by reconstructing and widening arterial roads in the metropolitan area and the reconstruction, construction and sealing of important rural roads. Extensive road construction is carried out also in new housing development areas.

Ferry services across the River Murray are provided on a free and continuous basis and are under the control and management of the Commissioner of Highways. The Commissioner also operates a free ferry across Cooper Creek, on the Birdsville Track in the far north of the State, when the Creek is in flood.

ROAD FINANCE

For South Australia, the main sources of funds for road works during 1981-82 were:

- the net proceeds of fees imposed by the State Government for the registration of motor vehicles and the licensing of drivers;
- the net collections from motor fuel licence fees levied pursuant to the Business Franchise (Petroleum Product) Act, 1979;
- Commonwealth Government grants to the States and Northern Territory pursuant to the *Roads Grants Act 1981*; and
- property rates and other levies imposed by municipal and district councils.

In 1981-82 funds received from the first three sources were expended by the Highways

Department on works authorised by the Minister of Transport. The Highways Department also received funds from a number of other sources, and these included the receipts from the sale of surplus land, the rent from properties acquired for road purposes, the sale of surplus plant and machinery, the receipts from the operation of the trailer ship *Troubridge* and the rent for houses erected for occupation by employees.

During the year the Department reviewed its accounting methods to more clearly identify its activities. Accordingly, the format of the Department's receipts and payments statement was altered to coincide with this reclassification.

The following table shows Highways Department receipts and payments for the year 1981-82.

Highways Department: South Australia, Receipts and Payments

Particulars	1981-82
	RECEIPTS (\$'000)
Motor registrations and drivers' licences	34 806
Business Franchise (Petroleum Products) licence fees	23 737
Commonwealth Government grants	56 302
Land sales	4 431
Rents from properties acquired for road purposes	3 009
Other (a)	3 424
Total	125 709
	PAYMENTS (\$'000)
Construction and reconstruction of roads and bridges	62 966
Maintenance of roads and bridges	34 147
Establishment, maintenance and operation of all Departmental land and buildings not acquired for roads	3 303
Plant purchase less depreciation	2 075
Other (b)	20 034
Total	122 525

(a) Includes sales of plant and machinery, operation of the trailer ship *Troubridge*, and rents from departmental properties.

(b) Includes planning and research, variation in value of roadside materials and stores, undistributed general administration, operating expenses of the trailer ship *Troubridge* and repayment of loan funds.

Exact figures are not available for total expenditure in South Australia on the construction, reconstruction and maintenance of roads, streets, bridges, ferries, and associated works. Approximate expenditure by State and local government authorities during 1981-82 was \$154 million. This figure includes the cost of land purchased for new roads and for road widening and charges for depreciation of plant and machinery. The biggest single element of roads expenditure omitted from the above figure is the cost of work carried out under the provisions of the Planning and Development Act, which requires persons and authorities who subdivide land for housing to provide roads to certain specifications.

Commonwealth Government Road Grants

Road grants by the Commonwealth Government have been made to the States since 1923 when the Commonwealth Government became involved in road funding. The road grant arrangements for 1981-82 are contained in the *Roads Grants Act 1981* which provides financial assistance for roadworks to the States and Northern Territory by way of non-repayable Section 96 grants for the financial year ending 30 June 1981. The

allocation to South Australia for 1981-82 was \$56.3 million or 8.2 per cent of the total of all States and Northern Territory grant.

The following table shows Commonwealth Government road grant allocations to national roads, arterial roads and local roads for South Australia.

Commonwealth Government Road Grants: South Australia, 1981-82

	\$'000
National roads (a)	27 240
Arterial roads	16 659
Local roads	12 403
Total grant	56 302

(a) Incorporates approved construction and maintenance costs of declared national highways and approved construction costs of declared developmental roads.

ROADS ASSESSMENT

In June 1977 the Commonwealth Bureau of Roads and the Bureau of Transport Economics (established in 1970) were amalgamated to form a new Bureau of Transport Economics. The duties of this new body include evaluations of the Australian road situation, and the provision of advice and assistance to the Commonwealth Government in its consideration of financial assistance to the States for roads and road transport.

Pursuant to the above general road advisory functions the Bureau of Transport Economics is currently undertaking a major study of Australia's road system. The overall report is due to be completed in 1984 and is to consider, in particular, the following aspects:

- (a) changes in the condition and performance of the road system in each State and Territory over the past 10 years;
- (b) trends in the levels and patterns of funding of road programs by the three levels of government in Australia, and their impact on development of the system;
- (c) an economic assessment of alternative levels and patterns of expenditure on road construction and maintenance for each State and Territory for the period 1985-86 to 1989-90; and
- (d) the likely impact on the system of alternative levels of road funding over the same period commenting, as necessary, in the regional impact of these alternative levels.

In addition to the above, the National Association of Australian State Road Authorities (NAASRA) decided in May 1980, to carry out a comprehensive study covering all classes of roads on an Australia-wide basis. The Study, known as the NAASRA Roads Study (NRS), commenced in late 1980, and is scheduled for completion by early 1984 in order to provide an input into the formulation of the next Commonwealth road grants legislation.

The primary objectives of the NAASRA Roads Study are:

- (a) to provide a clear picture in measurable terms of the nature and condition of the Australian road system;
- (b) to provide a basis (along with earlier surveys and continuing surveys) for assessing changes in (and the rate of change of) the nature and condition of the Australian road system;

- (c) to provide a basis for assessing the effects of alternatives for the management of the road system; and
- (d) to illustrate the physical effect on the Australian road system, and on the cost of transportation on it, of various levels of funding.

Future Development

The *South Australian Year Book* 1970, on pages 319-25, contained some details of the reports of two major studies: these were the reports of the Town Planning Committee of South Australia (Metropolitan Development Plan), submitted in 1962, and the Metropolitan Adelaide Transportation Study (MATS) report, released in 1968. In June 1970 the Government undertook to review the MATS proposals with particular reference to public transport. The resultant Adelaide Transportation Report 1970 or 'Breuning Report' was discussed in the *South Australian Year Book* 1971, on pages 317-8.

One outcome of the Breuning Report was the appointment of a Director-General of Transport to advise the Minister on transport policy. In 1973 the Director-General submitted a report to the Minister, entitled *Public Transport in Metropolitan Adelaide*. The report contained a program of improvements to urban public transport ranging from specific projects to be executed in the near future to a broad program for up to thirty years in the future. A further report *Transport Policy and Planning in South Australia* was completed in December 1975. This report contained a review of progress in transport policy and planning in South Australia. Its scope was limited to matters which had been of direct concern to the Director-General of Transport.

In 1976 the Department of Transport and the Highways Department jointly commissioned the Metropolitan Adelaide Data Base Study. The objectives of the study were the collection and assembly of up-to-date data sets describing current travel characteristics within Metropolitan Adelaide, and the development of a range of analytical models and procedures to enable the quantitative aspects of future transport planning for Adelaide to be undertaken on a sound basis. The study was completed in 1978.

Projections of future travel demand derived from the forecasting models developed in the study have been utilised by the Department of Transport and the Highways Department as the basis for reviewing and developing proposals for the improvement of the urban transport system.

RESEARCH

Because of the great area of South Australia and the wide variety of climate and soil, special sections of the Highways Department are engaged in constant investigation and testing of soils, materials, and construction methods to ensure that a high standard of road construction is maintained and that methods meet the needs of particular areas.

South Australia contributes to Australian road development through its active participation in the National Association of Australian State Road Authorities. Specialist committees deal with bridge design, materials research, traffic engineering, bituminous pavements, plant and equipment, and long-term planning. The Association in 1960 established the Australian Road Research Board as a national centre for road research information and for the correlation and co-ordination of road research activities.

8.4 RAILWAYS

Railway systems in South Australia are operated by both the Commonwealth and South Australian Governments. Management of the Australian National railways is vested in the Australian National Railways Commission.

In 1851 a 'Board of Undertakers' was appointed in connection with the construction of the Adelaide to Port Adelaide railway and in 1856 a Board of Railways Commissioners was appointed to control South Australian railway operations. This Board was abolished in 1859 and from then until 1887 control was vested in the Commissioner of Public Works. The South Australian Railways Commissioners Act of 1887 gave almost complete authority for management and administration to three Railways Commissioners, reserving (as in the past) financial control to Parliament. The powers of the three Commissioners passed to one Commissioner in 1892. The South Australian Railways Commissioners Act, 1936-1975, under which the Commissioner was appointed for a period of seven years, incorporated many of the provisions of the 1887 Act, including those for financial control.

In August 1975 the State Government approved the transfer of non-urban railways to the Australian National Railways Commission, although the actual transfer did not become operative until 1 March 1978. For further details of the operation of railways in South Australia during the transfer period and after the transfer date *see* page 513.

In South Australia the only private railways open to general traffic are the lines owned by the Broken Hill Proprietary Co. Ltd from Iron Knob and Iron Baron to Whyalla (82 kilometres) used for the carriage of iron ore; and from Coffin Bay to Port Lincoln (40 kilometres) used for the carriage of limesand.

Only a small portion of the Adelaide metropolitan area is served by railways, the main trunk routes passing through northern and southern suburbs. The line to Noarlunga Centre serves south-western suburbs and carries passenger traffic and goods traffic to Port Stanvac and Lonsdale. This line serves the rapidly expanding industrial and housing development along the coast south of Adelaide.

The North Gawler line serves industrial and residential areas on the plains to the north of Adelaide.

The Port Adelaide line, its extensions to Outer Harbor, the branch line to Grange, and spur lines to industrial establishments provide better coverage in north-western suburbs than is achieved elsewhere in Adelaide.

The service to the residential areas of Blackwood and Stirling is by the Adelaide to Bridgewater section of the Adelaide to Melbourne line.

A more detailed historical survey on railways in South Australia was included on pages 263-6 of the *South Australian Year Book* 1966.

Standardisation of Rail Gauges

Narrow, standard, and broad gauge systems exist in South Australia. For many years railway administrators have been greatly concerned about the increased costs and decreased efficiency associated with the transshipment of goods and passengers and with the provision, maintenance and operation of different sets of rollingstock. During recent years there has been increasing pressure for standardisation of rail gauges in the interests of efficiency and economy of operation of transport services as a whole.

Details of lines that were standardised before the transfer of the non-urban railways are shown on pages 347-8 of the *South Australian Year Book* 1978.

Following the amalgamation of the non-urban railways with the Australian National Railways Commission, steps were taken to initiate the Adelaide to Crystal Brook standardisation project which will link Adelaide to the standard gauge connection with Alice Springs, Sydney and Perth. Trains commenced operation on the line in December 1982 and the whole project (including terminals) is due for completion in 1983-84. Greatly

improved transit times will enhance the potential of South Australian based manufacturing firms.

Tarcoola-Alice Springs Railway

Construction of the 831 kilometres standard gauge line was completed a year ahead of schedule and within the budget of \$145 million. The line, which became fully operational in December 1980, provides a passenger service linking Adelaide and Alice Springs within twenty-four hours instead of nearly three days on the old line through Marree; reduction of time for freight train schedules has also been achieved.

Alice Springs-Darwin Railway

The Commonwealth Government has made provision for \$10 million to be spent on preliminary work over the next three years on the 1 500 kilometres Alice Springs to Darwin link. Work began early in 1981.

8.5 HARBOURS AND AERODROMES

HARBOURS

The State of South Australia, including Kangaroo Island, has a coastline of more than 3 850 kilometres. There are two large indentations, Gulf St Vincent and Spencer Gulf, which have many harbours for shipping.

Of the many seaports in South Australia, seventeen are used by commercial shipping: eleven of these have State-owned wharves or jetties and six have privately-owned wharves or jetties. In addition the State maintains jetties or wharves for promenade and fishing purposes at forty-four ports that are no longer used by commercial shipping and many jetties are leased to district councils.

The Broken Hill Proprietary Co. Ltd owns and operates bulk handling facilities at Ardrossan, Whyalla and Proper Bay, while the Colonial Sugar Refining Co. Ltd owns and operates a bulk loading installation at Ballast Head, Kangaroo Island. Australian National operates the wharf at Port Augusta on behalf of the Commonwealth and the Port Stanvac oil terminal is operated by Petroleum Refineries (Aust.) Pty Ltd.

Adelaide Brighton Cement Holdings Ltd owns and operates limestone quarrying and loading facilities at Rapid Bay. A new port costing \$40 million at Stony Point in Spencer Gulf to service the Cooper Basin Oil and gas project of Santos Ltd came into initial use in early 1983. Ownership and operation on completion will revert to the Department of Marine and Harbors. Other infra-structure facilities to be owned and operated by Santos Ltd are under construction.

There are six other deep-sea ports operated by the State, namely Port Adelaide, Port Pirie, Port Lincoln, Thevenard, Wallaroo and Port Giles while overseas vessels are also accommodated at Port Stanvac, Whyalla and Ardrossan.

CONTROL OF HARBOURS

The control of all harbours (including the River Murray) is vested in the Minister of Marine; he is responsible for the control of navigation within harbours and for all harbour facilities including lights, buoys, beacons, bulk loading plants and fishing boat accommodation and in addition for the control of the competency of masters and others in charge of intrastate vessels and fishing vessels, and the seaworthiness and safety of such vessels. Relevant legislation includes the Harbors Act, 1936-1978, the Marine Act, 1936-1976, the Fisheries Act, 1971-1982 and the Boating Act, 1974-1980.

Department of Marine and Harbors
Indebtedness, Revenue and Expenditure

Year	Loan Fund Indebted- ness	Revenue	Expenditure from Revenue			Surplus (+) or Deficit (-)
			Working Expenses	Interest	Total	
			\$'000			
1977-78	93 316	13 955	12 643	6 576	19 219	-5 264
1978-79	96 278	17 448	13 463	7 238	20 701	-3 252
1979-80	99 381	23 057	15 372	7 476	22 848	+ 209
1980-81	102 345	22 618	17 595	8 387	25 982	-3 364
1981-82	108 261	25 095	19 122	9 622	28 744	-3 649

In 1981-82 the State-owned ports handled 8 108 217 tonnes of cargo or approximately 53 per cent of the total tonnage of 15 428 056 tonnes passing through all the ports in South Australia; the balance, consisting mainly of bulk mineral shipments, being handled independently at the privately owned wharves.

HISTORICAL

For a detailed description of development in the nineteenth century *see* pages 270-1 of the *South Australian Year Book* 1966.

Trend of Development

As shipping has increased through growth in trade many wharves and jetties have been strengthened or replaced by better structures. To keep most harbours open for larger vessels it has been necessary to deepen and widen navigation channels, deepen existing berths and extend jetties into deeper water. Since the establishment of new soldier settlements in the 1950s, shipping to and from Kangaroo Island has increased. Additional harbour facilities were made available with the provision of a trailership berth at Kingscote for the roll-on roll-off vessel *M. V. Troubridge* which went into service in November 1961. Trailership berths were also built at Port Adelaide and Port Lincoln.

A change in the pattern of intrastate shipping has occurred progressively since 1952 with the provision of bulk handling facilities for grain at major ports. These facilities are now available at Port Adelaide, Port Pirie, Wallaroo, Port Lincoln, Thevenard and Port Giles, and also at Ardrossan under agreement with the owner of the private wharf. Grain is railed or trucked overland to terminal silos and loaded aboard ocean-going vessels by means of conveyors, so eliminating ketch trade from the smaller ports. Competition from intrastate road and rail transport has affected the larger ports as well, so that very little general cargo is carried between ports in this State.

Future developments at ports other than Adelaide are likely to be concerned primarily with bulk trades and the increasing size of bulk carriers. For example, bulk handling facilities, involving extension of an existing jetty to provide two outer berths for loading grain ships and an inner berth for unloading phosphate-rock carriers, have been completed at Port Lincoln. The phosphate-rock berth caters for ships up to 35 000 tonnes. The first conveyor loader system was commissioned in May 1977 and the first ship loaded grain on 26 May 1977. A second ship loader, commissioned in February 1978, doubled the input capacity to 4 000 tonnes an hour. The two grain berths cater for ships up to

60 000 tonnes but could be modified for ships of 100 000 tonnes. The overall cost of the whole project (including dredging) was almost \$13 million.

Development of Port Adelaide

The Greater Port Adelaide Plan, details of which were released in 1949, included proposals for twenty projects for port development over the ensuing fifty years. Among those projects were:

- (a) the improvement and extension of wharves and allied cargo facilities;
- (b) the deepening, and widening of the shipping channels and provision of larger swinging basins;
- (c) the reclamation and development of low-lying land adjacent to the port for the creation of industrial, commercial and dock estates.

Some of these projects have been completed while others are still in progress, *e.g.* the Port River has been deepened to 9.1 metres at Low Water and five swinging basins provided. The river channel has been widened to a minimum width of 152 metres. The material dredged in this operation is being used to reclaim part of the 800 hectares of low-lying land intended to be used for industrial and commercial sites and for port extensions.

To ensure the future of Port Adelaide as a major port, a cellular roll-on roll-off container berth, capable of accommodating the largest cellular container ships likely to serve Australia in the foreseeable future, has been established at Outer Harbor. The berth, channel and swinging basin are suitable for ships of 290 metres in length, 11 metres in working draft and a capacity of almost 3 000 containers. The approach channel has been deepened to a depth of 12.3 metres so that ships are not delayed by tide movements. The berth was officially opened on 17 March 1977 and 49 vessels used the facilities during 1981-82.

Five container depots have been built by private enterprise in the dock industrial estate and offer acceptance, forwarding, packing and unpacking facilities for international and interstate containers and other unit loads: to facilitate shipment of wool in containers a large wool store and a high density wool dumping centre have been established adjacent to these depots. The port is also a recognised container design, manufacture, repair and maintenance centre.

An interstate roll-on roll-off terminal in No. 3 Dock was opened early in 1971 and later extended to serve larger roll-on roll-off vessels engaged in overseas trade. A berth in No. 1 Dock provides a reinforced concrete pad for the stern-loading type of vessel operating between Port Adelaide and ports in Tasmania. Other developments include a steel handling berth to accommodate roll-on roll-off vessels and modifications to an outer harbour berth to serve larger overseas roll-on roll-off vessels.

AERODROMES

There were twenty-nine civil aerodromes in South Australia at 30 June 1981 including eight owned and operated by the Commonwealth Government and twenty-four licensed aerodromes owned and operated by local authorities or private interests. In addition there are numerous authorised landing and alighting areas which are fields prepared for the operation of aircraft but not open to public use. The Commonwealth Government specifications covering these fields are less exacting than those used in the development of government owned or licensed aerodromes. Government and licensed aerodromes in South Australia are listed on the next page.

<i>Government Owned</i>		
Adelaide	Mount Gambier	Port Lincoln
Ceduna	Oodnadatta	Whyalla
Kingscote	Parafield	
<i>Licensed</i>		
Amata	Indulkana	Moomba
Cleve	Innaminka	Mount Dare
Coober Pedy	Kimba	Naracoorte
Cordillo Downs	Leigh Creek South	Port Pirie
Cowell	Loxton	Renmark
Ernabella	Marree	Streaky Bay
Fregon	Millicent	Tieyon
Granite Downs	Minnipa	Waikerie

The main terminal in South Australia is the Adelaide Airport at West Beach, which is an international airport with scheduled services to Europe, the Far East and New Zealand. It is on the scheduled flights of interstate services from Sydney, Melbourne, Perth, Canberra and Darwin and is the terminus of intrastate services.

Since the opening of the Adelaide Airport the aerodrome at Parafield, about eighteen kilometres north of Adelaide, has been restricted principally to use by light aircraft.

Other aerodromes are situated near the larger towns *e.g.* Mount Gambier, Whyalla, Port Lincoln and Port Pirie. About half of the licensed aerodromes are on stations, missions, etc. in the northern part of the State.

In addition to the civil aerodromes there are two major aerodromes, one at Woomera controlled by the Department of Defence, through the Defence Research Centre, and the other at Salisbury (Edinburgh Airfield) which are used by aircraft associated with trials operations and by civil charter aircraft carrying passengers and freight. Edinburgh Airfield is also the base for two Royal Australian Air Force maritime squadrons.

A joint Government Advisory Committee consisting of representatives from Commonwealth Government departments, South Australian Government departments and local government authorities recently considered future airport requirements for the Adelaide region.

Control of Aerodromes

At a conference of Commonwealth Ministers and State Premiers in May 1920, it was agreed that the Commonwealth should introduce a Bill to give effect to the Convention for the Regulation of Air Navigation signed in Paris on 13 October 1919. The *Air Navigation Act 1920*, under which a Controller of Civil Aviation was appointed as head of the Civil Aviation Branch which came under the jurisdiction of the Department of Defence, had three main objectives:

- (a) generally to regulate civil aviation activities in Australia;
- (b) to carry out the provisions of the Convention on Air Navigation signed in Paris;
- (c) to apply the principles of the Convention to domestic as well as international flying operations.

Regulations were drawn up under this Act to provide, *inter alia*, for the registration and periodic inspection of aircraft, licensing of aerodromes, examination and licensing of personnel engaged in flying and in upkeep of machines, control of aircraft movements, and the application of rules of the air.

The South Australian Parliament passed the Commonwealth Powers (Air Navigation)

Act, 1921 in which it referred to the Commonwealth powers to make regulations in connection with international and interstate air navigation. The Air Navigation Act, 1937 provided for the application of the Commonwealth Air Navigation Regulations to and in relation to air navigation within the State of South Australia and repealed the earlier Act.

The Commonwealth civil aviation legislation at present includes the *Air Navigation Act 1920*, the *Australian National Airlines Act 1945* and several other Acts, while the State legislation in South Australia includes the 1937 Act and the Civil Aviation (Carriers' Liability) Act, 1962-1971.

Civil aviation administration was a separate department under the Minister for Civil Aviation from 1939 until 1 December 1973 when it was incorporated in the Department of Transport. In May 1982 a new Department of Aviation was created to deal only with aviation matters.

Historical

A description of early aerodromes in South Australia and development was included on pages 277-8 of the *South Australian Year Book 1966*: an article describing the first flight from England to Australia, in 1919, appeared on pages 334-5 of the *South Australian Year Book 1969*.

8.6 ENERGY

AUSTRALIAN SITUATION*

Australia is an energy-rich country with greater reserves of coal and uranium per head than any other country. In addition, natural gas reserves per head are exceeded only by those of the USSR and Middle East countries. Although oil is the only fossil fuel in short supply, our oil reserves per head are greater than many other countries.

While oil comprises only about 1 per cent of Australia's total fossil fuel reserves, nearly half of its current annual energy consumption is based on oil. At present, Australia produces about two thirds of its requirements of crude oil with the balance imported from overseas. However, if there are no new discoveries, Australia will be importing about 40 per cent of its oil supplies by 1990. Natural gas comprises 4 per cent of Australia's energy reserves, while its annual consumption is 14 per cent of total energy usage. Coal supplies about 40 per cent of Australia's needs yet makes up 95 per cent of reserves. (See also table on page 375).

It is feasible that world reserves of oil could be exhausted early in the next century, but the possibility of significant new discoveries, improved recovery techniques, changing consumption patterns and the introduction of alternative fuels, prevent accurate predictions being made.

SOUTH AUSTRALIAN SITUATION

The geographic distribution of indigenous resources is important and unfortunately many of South Australia's energy resources are remote from centres of energy use. Coal deposits are either remote from existing power stations or contain impurities restricting their use, thereby increasing the cost of exploitation. On the other hand, South Australia's oil and gas reserves, by reason of their fluid nature and energy value, are more readily exploited and transportable over long distances.

South Australia shares with Australia and the rest of the world the problem of the future provision of adequate fuel for transport equipment and mobile plant. A problem

* The assistance of officers from the South Australian Department of Mines and Energy, the Electricity Trust of South Australia and the South Australian Gas Company in the preparation of this segment is gratefully acknowledged.

more specific to South Australia is associated with the future supply of fuel for the major energy utilities, the South Australian Gas Company and the Electricity Trust of South Australia. Each of these relies either wholly or partly on the supply of natural gas from the Cooper Basin in the north east of the State. It is estimated that the currently proven, economically recoverable gas reserves available to meet the combined demand of South Australian and New South Wales users will be exhausted by the mid-1990s; however a contract exists to supply natural gas to New South Wales until the year 2006. To overcome this problem further exploration and development is being undertaken to identify and prove up additional reserves.

In addition to using natural gas as a source of energy for power generation, the Electricity Trust uses coal from Leigh Creek at its Port Augusta Power Station. However, there is a limit to the availability of economically recoverable coal at the Leigh Creek field and the Trust is actively considering other proven coal reserves for use in future power stations.

Because natural gas and presently exploitable coal deposits are valuable and limited resources, there are sound arguments for conserving their use. Energy conservation policies and programs will allow more time for providing additional resources and have the additional important advantage of postponing to some extent the raising of the very large amounts of capital required for expanding gas and electricity supplies.

Energy Consumption Patterns

South Australia depends on coal, natural gas and oil for the principal part of its energy requirements and will do so for the foreseeable future. However, it is expected that the relative significance of each will change over time.

South Australia's present energy use pattern with respect to gas and coal is very different from that of the nation as a whole. The following table shows that natural gas comprises a more significant part of the State's energy use, with coal not being used to the same extent as in the rest of Australia. This situation has arisen because of the large quantities of natural gas used by the Electricity Trust for electricity generation; this additional consumption was needed to make the delivery of gas to Adelaide cost effective. Quality, location and relative cost of South Australian coal are also factors contributing to this difference.

Fossil Fuel Usage, South Australia and Australia, 1980-81

	South Australia	Australia
	Per cent	
Natural Gas	35	14
Coal	24	42
Oil	41	44
Total	100	100

Source: South Australian Dept of Mines and Energy.

The primary energy derived from these fuels is used in the South Australian economy in the following proportions; transport 33 per cent, industrial (mainly manufacturing) 41 per cent, domestic and commercial 26 per cent.

South Australia's Energy Resources

Although South Australia has a reasonably varied energy resource base, the State depends almost entirely on non-renewable fossil fuels for its energy needs. Details of

these resources, namely coal, natural gas, liquid petroleum gas (LPG), crude oil and condensate and some others, are given below.

Coal

South Australia, by comparison with the eastern mainland States, is not well endowed with proven deposits of readily exploitable coal. However, near surface deposits of coal occur widely throughout the State in basins of Permian, Triassic, Jurassic and Tertiary age. Proven and indicated reserves presently total 8 000 million tonnes. These low rank non-coking coals are of comparatively poor quality and contain impurities such as moisture, sodium, chlorine, sulphur and ash.

Extensive seams of Permian bituminous coal have been delineated during the course of exploration for hydrocarbons in the Cooper and Pedirka Basins, but they are too deep (1 000-3 000 metres) and too remote to be mined economically. *In situ* gasification may ultimately provide a means of tapping this vast resource which has reserves in the order of several million, million tonnes.

At Leigh Creek, the only operational coal mine in South Australia, quantities of about 1.5 million tonnes of lignite are currently being removed annually for steam raising at the Thomas Playford (Port Augusta) Power Station to supply about one fifth of the State's electricity requirements.

It is anticipated that by the year 2000, coal-fired electricity generation will satisfy 80 per cent of the State's total electricity requirements compared with 21 per cent at present. Proven reserves of the Telford Basin (Leigh Creek) are sufficient to supply the existing 330 megawatt Thomas Playford Power Station at Port Augusta and the nearby new Northern Power Station which comprises two 250 megawatt units expected to be commissioned in the period 1984 to 1986.

The following South Australian coal deposits are possible fuel sources for new power stations.

Leigh Creek

This mine, which provides on-going supplies for the Thomas Playford Power Station, has been the sole basis for coal-fired electricity generation in South Australia for many years. Mining will be extended to depths significantly greater than the current sixty metres and has already necessitated the relocation of the township of Leigh Creek. Total reserves to a depth of 1 200 metres are about 500 million tonnes. Use of the deeper, not economically recoverable, coal for power generation by *in situ* gasification is being investigated.

Lock

A Jurassic coal deposit near Lock on central Eyre Peninsula has indicated reserves of about 260 million tonnes. Although the coal has a high ash content, its sodium/ash ratio is the lowest of the known South Australian sub-bituminous coals and its assumed heat value is comparable with that of Leigh Creek coal. Problems associated with the exploitation of this deposit include its proximity to the fresh water basin supplying lower Eyre Peninsula and a higher cost of recovery than for some other deposits.

St Vincent Basin

Extensive lignite deposits of Eocene age have been located in the Northern St Vincent Basin. Five separate deposits have been identified containing reserves in excess of 3 000 million tonnes. The most important of these are the Bowmans and Lochiel deposits.

The Bowmans deposit contains 1 600 million tonnes of coal in seams up to twenty-two metres thick at depths of between sixty and ninety metres. This is the biggest deposit so far identified, but contains relatively high levels of sodium, chlorine and sulphur.

The Lochiel deposit contains 550 million tonnes of coal in three seams which aggregate to fourteen metres in thickness. Overburden thickness ranges from twenty to sixty metres. Levels of sodium, chlorine and sulphur are less than those found in the Bowmans deposit.

Coal from the Northern St Vincent Basin is difficult to burn in conventional boilers because of high sodium levels which cause slagging and boiler fouling. A 700 tonne sample of Bowmans coal, extracted from a trial pit, was tested in pilot scale combustors in USA and Germany during 1981. A 200 tonne sample extracted from the Lochiel deposit by drilling is to be tested in the USA in 1983. The Electricity Trust is constructing its own test combustor for use on its own and other coals from 1984.

Testing of the Bowmans coal is also being undertaken to determine whether its impurities can be removed by beneficiation and the South Australian Government and the Sumitomo Corporation of Japan are conducting a joint study into its possible gasification.

Kingston (South-East)

Drilling has indicated the availability of 1 000 million tonnes of lignite. Samples have been taken from large diameter boreholes for testing in conjunction with testing of coal from the Bowmans, Lochiel and Sedan deposits.

Sedan

Reserves of 290 million tonnes have been established at this deposit. Sodium and chlorine contents are lower than those found in the other South Australian lignite deposits but its sulphur content is expected to cause greater problems. Samples have been extracted for combustion testing.

Arckaringa Basin

Exploration has identified extensive sub-bituminous coal deposits occurring in Permian sediments at Lake Phillipson and Wintinna. Proven and indicated reserves total 3 000 million tonnes. Considerable further work is required to establish the suitability of these deposits for local power generation and other uses.

South Australian coals generally have a low calorific value and are difficult to burn efficiently in conventional pulverised coal burners. Methods of treating the coal before combustion to remove deleterious sodium, chlorine and sulphur are being investigated. In the meantime, high-grade bituminous coal is being imported from the eastern States mainly for the production of coke in the local iron and steel industry.

Natural Gas

As it is the second largest energy supply source after oil, natural gas (largely methane) has played a vital part over the last decade in South Australia's energy consumption pattern. In 1980-81, natural gas supplied 35 per cent of the State's primary energy and was utilised as follows; electricity generation 69 per cent, industrial 23 per cent, domestic 6 per cent, commercial 2 per cent.

This State was one of the earliest users of natural gas in Australia with first supplies arriving in Adelaide from the Cooper Basin in November 1969. More than two thirds of this gas is presently consumed in electric power generation at the Electricity Trust of South Australia power stations at Torrens Island and Dry Creek. The Trust's use of natural gas provided the economic justification for the construction of the 790 kilometre pipeline needed to deliver the gas to Adelaide. The remainder is reticulated to homes, industry and commercial premises for use directly in heating and drying applications.

Although the potential resources of the Cooper Basin are considered by some to be significant, proven and probable gas reserves are at present fully committed to New South Wales (75 per cent) and South Australian (25 per cent) users. On the basis of existing agreements and present reserves of economically producible gas, supplies are not available for South Australia beyond 1987.

A three year accelerated gas exploration program, intended to prove up additional gas reserves, is presently being undertaken in the Cooper Basin. This work will also provide further information on the ultimate potential of the South Australian segment of the Cooper Basin.

The South Australian Oil and Gas Corporation is also testing a technique for obtaining additional gas supplies by fracturing low permeability sandstones within the Cooper Basin.

In addition, discussions aimed at introducing gas sharing arrangements are proceeding, and the South Australian Government is examining the potential of interstate supply sources and the production of a synthetic replacement for natural gas as possible long term alternatives to Cooper Basin natural gas.

In the absence of significant new discoveries, it is likely that the future use of natural gas for electricity generation will be limited to meeting periods of peak demand.

Liquid Petroleum Gas (LPG)

Proven LPG reserves in the Cooper Basin are about 90 million barrels. LPG (propane and butane) could be an important substitute for petrol in South Australia. The Government is actively promoting its use as a motor fuel to reduce the State's dependence on imported petroleum products for transport fuel and make greater use of indigenous resources (two thirds of LPG currently consumed here is imported from Victoria). A promotional program for the conversion of motor vehicles to LPG is being implemented. Also, the use of LPG as an alternative to diesel fuel in State Transport Authority buses is currently being evaluated—a six-bus trial commenced in 1983.

The South Australian Gas Company plans the construction of an LPG storage and loading terminal at Port Bonython, near Whyalla. It is expected that this terminal will supply most of South Australia's LPG needs and will be fully operational in 1984. The Port Stanvac refinery will continue to supply a small amount of LPG for local distribution. Contracts have also been written for the export of LPG to Japan for a five-year period commencing in 1984.

The potential use of LPG as a transport fuel will depend on the maintenance of the price differential between LPG and motor spirit, the extent of the distribution network for LPG and standardisation of LPG componentry throughout Australia. A significant basis for the greater use of LPG is provided by the rapid growth in the number of retail automotive LPG outlets—this State now has more outlets per head of population than any other State.

Crude Oil and Condensate

Oil is an extremely convenient energy source because of its ease of handling and storage, high energy value per unit volume and broad range of uses. It is one of the most widely used fuels in this State and currently satisfies over 40 per cent of energy demand. While Australia is better off than many other countries in the world in terms of having a local source of oil, this State currently imports about 90 per cent of its crude oil requirements from overseas and the remainder from Barrow Island to meet the needs of both refineries at Port Stanvac.

Oil discoveries in the Cooper and Eromanga Basins indicate that South Australia has a share in the largest onshore petroleum rich region in Australia. Information provided by the South Australian Department of Mines and Energy indicates that discovered fields in the South Australian segment of this region contain 105 million barrels of recoverable crude oil and condensate (liquids recoverable from gas wells), which represents about 5 per cent of Australia's current reserves. This figure is approximately seven times the amount being processed annually at Port Stanvac.

While oil products are important to this State's economy in general, most are used in transportation. Details of the share of oil used by each sector of the economy are shown in Figure 1 below.

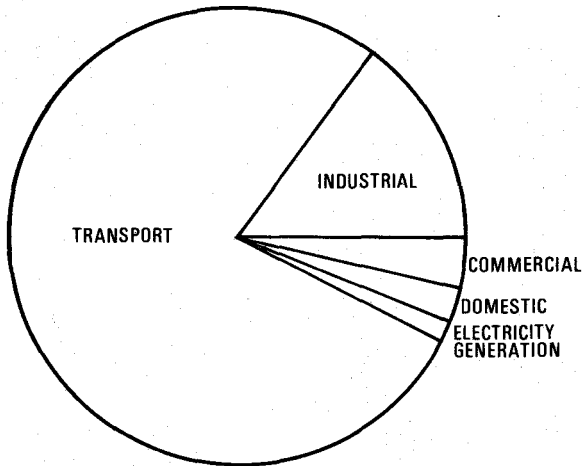


Figure 1: Share of Oil Use by Sector in South Australia 1980-81.

Source: South Australian Department of Mines and Energy.

In addition to providing most of the energy (99 per cent) used in transport in this State during 1980-81, oil products supplied 22 per cent of all energy used in industry, and 18 per cent to the commercial and domestic sector, as well as minor contributions to the generation of electricity and for the production of synthetic natural gas (from LPG), which is reticulated as town gas in Whyalla and Mount Gambier.

Wood

Approximately 3 per cent of this State's annual energy demand is met by wood. Its main use is in the domestic sector as a heating fuel, although some is used in industry, particularly in the forestry industry and for generating some electricity in the South-East of the State. Currently, most wood supplies come from the State's forestry areas in the South-East and from the Riverland mallee scrub.

Solar

South Australia, because of its latitude and dry climate has a significant potential for utilising direct or radiant solar energy. Solar hot water systems for industrial and domestic applications and for swimming pools are already in use and offer the potential for some energy savings. Solar energy also offers immediate benefits if taken into account in building design. However, it is low in intensity and variable in distribution. Its full potential will only be realised with advances in technology and improvements in relative cost: there is already increasing scope for the use of photo-voltaic cells to generate electricity in remote areas for specialised purposes such as telecommunications.

The Cooper and Eromanga Basins

A significant increase in the search for petroleum resources in South Australia occurred in the mid-1950s. As a result, the Gidgealpa natural gas field in the Cooper Basin was discovered in 1963 by Santos Limited and Delhi Australia Petroleum Limited. The Cooper Basin is located near the north-east South Australian and south-west Queensland borders. Following the discovery of a second major gas field at Moomba, a 790 kilometre long pipeline was constructed from Moomba to Adelaide, and came into operation in 1969. In addition to meeting all of South Australia's requirements, underground pipelines transport the gas to markets in New South Wales and the Australian Capital Territory. The Cooper Basin now supplies more than 40 per cent of Australia's natural gas requirements. Oil was first discovered in the Cooper Basin in 1970; in 1978 it was discovered in the Eromanga Basin which overlies the Cooper Basin. At the present time, more than thirty gas fields and sixteen oil fields have been discovered in the South Australian sector of the Cooper and Eromanga Basins.

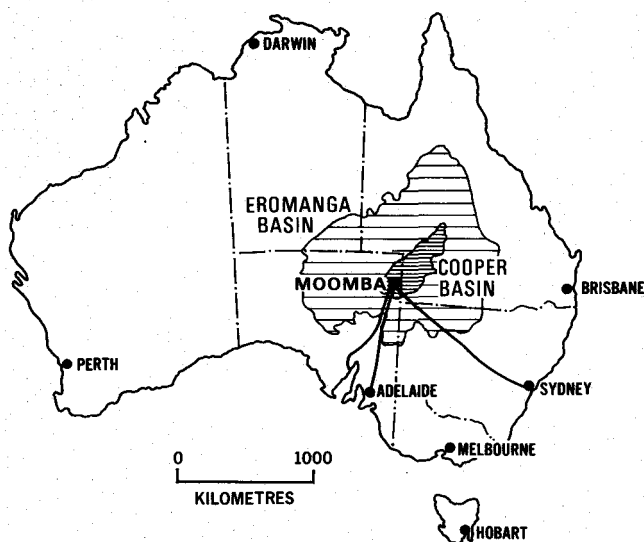


Figure 2: The Cooper and Eromanga Basins.

Source: South Australian Department of Mines and Energy.

The discovery of oil and the presence of the liquids associated with natural gas—ethane, propane, butane, condensate—has led to the establishment of the Cooper Basin Liquids Project, the first onshore petroleum development of its type in Australia. Oil and natural gas liquids are piped 659 kilometres to fractionation and storage facilities at Port Bonython near Whyalla. From there crude oil and condensate are transported to users by sea or road.

Commencing in 1984 it is also planned to remove ethane from the gas stream to underground storage for future recovery and sale. The liquids project is being undertaken by a consortium of eleven companies with Santos Limited appointed as operator of the project.

South Australian Energy Flows

The flow of energy in South Australia from primary energy sources (such as coal or natural gas) through secondary forms of energy (such as petrol and electricity) to the final end use of the fuel is shown in Figure 3. The relative contribution of each primary and secondary form of energy is shown for both the State as a whole and for the various end uses of fuel: this contribution is denoted by the relative thickness of the bars. In addition to identifying the different sources of energy, this diagram is helpful in showing how basic energy resources can be converted to other more useful forms and the amount of energy that is dissipated on each conversion. Overall only about 40 per cent of primary energy is transformed into useful energy. Thus there is considerable potential for improving the efficiency of energy usage.

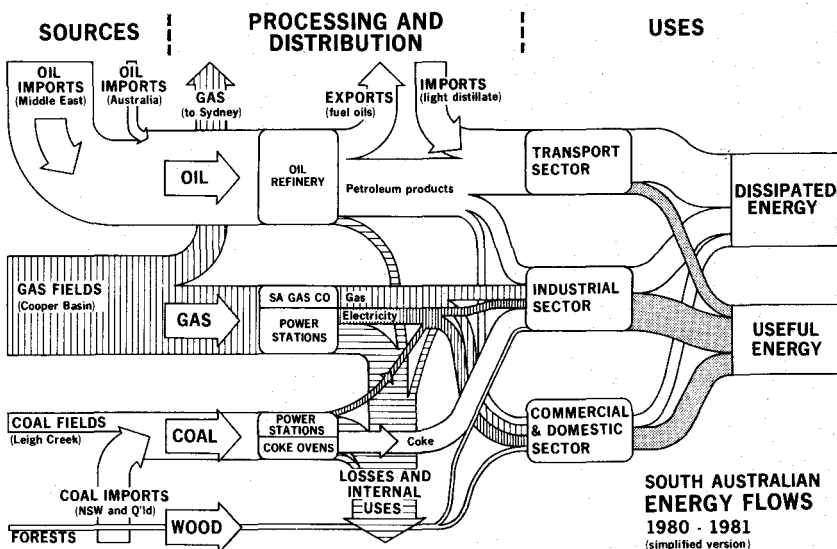


Figure 3: Energy Flows, South Australia.

Source: South Australian Department of Mines and Energy.

The ability to change an energy resource from one form to another can add to the flexibility of the energy supply system, by enabling an energy resource to be converted to a more convenient form of energy. For example, coal can be burned directly to provide heat or used as a boiler fuel to generate electricity. Natural gas can be burned directly to generate heat, used as a boiler or turbine fuel to generate electricity, or used directly in compressed or liquefied form as a transport fuel. Crude oil can be refined to produce a number of specific liquid products, which can be used for heating, electricity generation, petrochemical production and transportation. The relationships between primary energy sources, their secondary energy products and their end uses are summarised in Figure 4. The importance of the different forms of energy in terms of their end use is shown in Figure 5.

As can be seen, liquid fuels and natural gas dominate supply in South Australia.

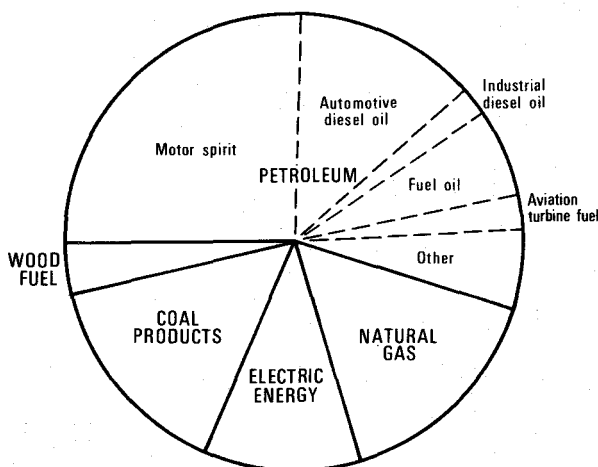


Figure 4: Relationship between Primary Energy Sources, Secondary Fuels and End Use in South Australia.

Source: South Australian Department of Mines and Energy.

Conservation

Energy conservation programs are directed towards determining the means of reducing waste and improving efficiency in the production and end use of energy resources, *i.e.* managing better with the limited energy resources available rather than doing without the valuable and necessary functions that energy can provide.

As indicated in the section on energy flows, up to 60 per cent of a primary energy resource can be dissipated during conversion into 'useful' energy. Therefore, in industrialised countries such as Australia, there is scope for improving the efficiency with which energy is used without adversely affecting levels of economic activity or current lifestyles.

Australian conservation policies have been developed as part of the National Energy Conservation Program which is supported by the Commonwealth and State Governments. The program encourages conservation through media advertising, publications and awards and provides funds for a variety of energy awareness activities.

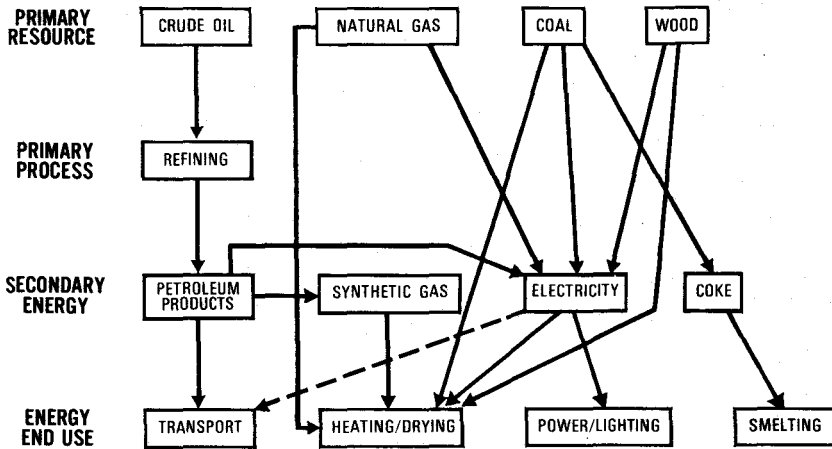


Figure 5: Total Energy by Fuel in South Australia, 1980-81.
Source: South Australian Department of Mines and Energy.

In the past, emphasis was given to petroleum conservation rather than energy conservation generally. However, conservation programs are now being actively pursued in respect of all forms of energy. For example, electricity conservation is receiving greater attention. In South Australia, programs to conserve electricity and thereby reduce natural gas consumption are especially appropriate. Programs directed towards reducing petroleum demand and to substituting more abundant, locally available fuels for oil based products are continuing. Such policies not only extend the life of existing resources, but also give the extra time needed to develop both indigenous fossil fuel reserves and alternative energy sources.

Other measures include a national conservation publicity campaign, voluntary fuel economy goals for motor vehicles, fuel and electricity saving within government departments and the provision of taxation incentives for businesses (e.g. for replacement of oil or LPG burning plant) and households (installation of insulation). As petrol engine vehicles account for about 40 per cent of Australia's usage of crude oil, conservation measures in this field are of great importance. Potential savings are also possible in the manufacturing sector.

It is important that there is community wide understanding of the issue and an appreciation of the methods by which energy can be saved. Energy conservation is a matter for the entire community through the cooperation of individuals and institutions, industry and governments.

Energy in Buildings

Approximately 60 per cent of all electricity generated in this State is consumed in the lighting, heating and cooling of commercial and domestic buildings. In addition large quantities of natural gas are delivered directly to buildings for heating. Buildings have a relatively long life so that building design and construction which does not take into account the amount of energy which will be required for heating and cooling will result

in a continuing wasteful use of energy over a relatively long period. Incorporation of simple design features such as insulation, orientation, landscaping etc in new buildings will help reduce this waste.

The South Australian government has established an Energy in Buildings Consultative Committee to provide advice on the formulation of policies, guidelines and action measures necessary to promote and achieve conservation and more efficient utilisation of energy in buildings. Major areas of interest studied by the Committee include: insulation; energy audits and management; design guidelines; solar hot water. The Committee has also published low energy guides for South Australian domestic and commercial buildings.

National Energy Survey

In November 1980 a survey was conducted throughout Australia by the Australian Bureau of Statistics to obtain information about the number and type of selected domestic appliances held by households. The survey was carried out as a supplement to the monthly Population Survey.

The main results of the survey of the estimated 443 000 households in South Australia during November 1980 were as follows; 73 per cent have fixed heating installations of various types: gas, 25 per cent; wood fire/solid fuel, 15 per cent; oil, 13 per cent; electric, 6 per cent; central heating, 3 per cent; and combinations of above, 11 per cent.

In addition 83 per cent of all households have portable heaters; 59 per cent use electricity as the main fuel for water heating, and 37 per cent use gas; 55 per cent have an electric stove, and 43 per cent a gas stove; 34 per cent have refrigerative air conditioning and 13 per cent an evaporative unit; 37 per cent have a clothes drier and 9 per cent a dishwasher; 58 per cent have ceiling insulation and 9 per cent wall insulation.

A similar survey was conducted in June 1983.

Port Stanvac Refinery

This refinery commenced operations in 1963 and a lubricating oil refinery on the same site began operations in 1976. Although it produces a range of products it does not supply all of the State's petrol and diesel requirements. It is almost totally dependent on Middle East crude oils for processing because of its need for a heavy feedstock for lubricating oil manufacture. With present capabilities the refinery produces more heavy fuel oil than can be used locally but insufficient petrol and aviation fuel to satisfy local demand.

It is expected that the demand for most products other than motor spirit, diesel and liquefied petroleum gas can be met from current refining capacity at Port Stanvac until the late 1980s. Additional refining capacity could reasonably be expected after that date although the increased demand may be met from interstate or overseas imports.

Pipelines Authority of South Australia

The Authority was established by the Pipelines Authority Act, 1967 as the Natural Gas Pipelines Authority and became the Pipelines Authority of South Australia in 1974.

The Authority is empowered to purchase and sell hydrocarbons and construct and operate pipelines for their conveyance. It may also acquire an interest or share in any licence, permit or authority granted by the State or Commonwealth relating to the exploration for or exploitation of a petroleum resource.

The Authority is the owner and operator of the natural gas pipeline between Moomba and Adelaide. It purchases natural gas from the Cooper Basin producers and transports the gas for resale to the South Australian Gas Company, the Electricity Trust of South Australia and other major users.

As part of the Cooper Basin Liquids Project, the Authority is also responsible for the maintenance of the Moomba-Port Bonython liquids pipeline.

South Australian Oil and Gas Corporation Pty Limited

In 1974, the Commonwealth Government purchased from Delhi International Oil Corporation, a share of that company's interests in the natural gas and oil reserves in the Cooper Basin and in certain exploration areas outside the Cooper Basin. In 1977 agreement was reached for the further sale of these interests to the South Australian Government, and the South Australian Oil and Gas Corporation Pty Limited was incorporated to become owner of the acquired natural gas and oil interests.

The Corporation is now responsible for the continuing control and supervision of those interests and for the expenditure on exploration of funds provided by the South Australian Government or accumulated as a result of its operations as a member of the consortium of companies operating in the Cooper Basin.

The Corporation is currently involved in an extensive exploration program in the Cooper Basin aimed at proving up additional reserves of natural gas to meet South Australia's demands beyond 1987.

Ownership of the Corporation is held by the South Australian Government (majority interest) and the South Australian Gas Company.

Department of Mines and Energy

The South Australian Department of Mines and Energy celebrated its centenary year in 1982. The objectives of the Department are to: provide advice to the Government and private industry on the exploration, development and processing of the State's energy, mineral and underground water resources; encourage exploration for energy and mineral resources by private companies; provide advice to the Government on energy development, use and conservation, including alternative energy sources; ensure that industries engaged in exploring, extracting and processing energy and mineral resources adopt effective safety precautions within their operations; ensure that the Government's policies on environmental protection are adopted by the energy, minerals and underground water industries; provide research and specialist services in the geosciences; store geoscientific data on South Australia and make it available to the mining and energy industries, other Government departments and the general public.

The fulfilment of these objectives is undertaken by the Energy, Oil and Gas, Resources, Mining and Engineering Services Divisions of the Department.

Energy Information Centre

The Centre, located at 175 North Terrace, Adelaide, was opened in June 1981. It is a branch of the Department of Mines and Energy and provides information and advice to the public, industry and commerce on a wide range of issues related to the supply, use and conservation of energy.

The aims of the Centre are: to promote the efficient use of energy in homes, buildings, transport, industry and agriculture by improving public knowledge and awareness; to provide an educational service for schools and speakers at conferences and meetings; to provide information on the selection and use of energy efficient equipment; to provide up-to-date information on sources, supply, use and conservation of energy and relevant information on energy research and development projects.

The Centre has a wide range of displays covering all major aspects of energy; these include South Australia's energy resources, uses and alternatives; energy in buildings; domestic solar hot water systems; insulation; domestic appliances; solar pool heating; energy in industry; energy in transport; and renewable sources of energy. Several

displays feature push-button models which generate public involvement, and audio-visual presentations are available for individual or group viewing. A comprehensive selection of written material is also available.

The Centre's staff is available to discuss technical and non-technical inquiries and prospective house-builders can bring in models of their dwellings to check on the Centre's solar angle simulator, sunshine and shading effects throughout the year. A telephone inquiry service is also provided.

South Australian Energy Council

The South Australian Energy Council was established by the South Australian Government in May 1978. It comprises fifteen Government-appointed members, who as a group, represent a wide range of interests and expertise.

The function of the Council is to consider the development of energy policy in South Australia and to monitor local and international energy needs and supplies; make recommendations on energy conservation; recommend specific priority areas for energy research funding; consider strategies for dealing with emergency shortages of energy.

A sub-committee of the Energy Council, the State Energy Research Advisory Committee, is responsible for the allocation of State Government funds for South Australian energy research programs conducted by companies, academic institutions and private individuals.

The Council has established a close and effective liaison with the major national energy councils, including the National Energy Advisory Committee and the National Energy Research Development and Demonstration Council. These links with parallel bodies throughout Australia assist coordination of activities, are an important source of information on general energy matters and enable the particular energy problems of South Australia to be considered in a national context.

Energy Resources and Technologies for the Future

Australia's forecast consumption of oil to the year 1990 approximately equals current domestic reserves. While at present 44 per cent of energy in Australia is consumed as oil, only 1 per cent of the total fossil fuel reserves are oil. Australia currently imports about one third of its oil requirements and this is forecast to rise to about 40 per cent by about 1990. Consumption of oil is expected to increase by about 0.5 per cent per annum over this period (compared with an expected overall growth in energy demand of over 2 per cent per annum).

There is considerable justification for Governments and industry to look now at future alternative fuels which may be required when petroleum-based fuels reduce in supply or increase in price to a level which makes alternative fuels price competitive.

In considering the suitability of alternative fuels as replacements for petroleum-based fuels, it is important to recognise the difficulty of changing the pattern of energy use because of the investments already committed to vehicles, machinery and other equipment. Thus alternative fuels need to be reasonably compatible with existing vehicles and facilities if they are to be acceptable, at least in the short to medium term.

In the immediate future, policies to conserve petroleum and to replace it with other fossil fuels are most likely to be effective and will provide a period of time in which longer-term alternatives can be assessed and their use planned for and implemented. The most immediate alternative fuel for South Australia is LPG. The potential Cooper Basin LPG production is sufficient to meet about 30 per cent of this State's automotive fuel requirements over a twenty-year period.

At present, natural gas is not widely utilised as a transport fuel in South Australia, although the South Australian Gas Company has twenty-six vehicles running on

compressed natural gas (CNG) in an experimental program. Whilst CNG is a suitable transport fuel, particularly for fleet vehicles, it is expected to have very limited application in the foreseeable future.

Alternative sources of hydrocarbon fuels are not expected to influence significantly the demand for crude oil unless there are appreciable alterations in the relative economics of production. However, in the long-term the continuing demand for hydrocarbon fuels may stimulate the introduction into Australia of alternative production technologies, particularly the liquefaction of coal.

A possible alternative to liquid transport fuels is electricity which in most areas of the State is available at, or slightly above, metropolitan prices. The main problems with electric vehicles at present are their limited mileage and bulk, but progress in these areas is likely to result from technological improvements to battery size and performance. Despite this, the overall contribution in the next decade is not likely to be significant.

The remaining options are clearly longer-term because either the technology for their production is uncertain or their present cost is significantly greater than that of petroleum-based fuels. These options include synthetic fuels from oil shale (not found in South Australia), and indirect solar fuels such as alcohol and hydrocarbons from plants. Most of the potential liquid fuels from biomass (plant) options are not practical in South Australia because of the limits in rainfall and suitable arable land. However, some of the arid zone crops being developed could have potential. Thus for the remainder of this century, the demand for fuels and other petroleum products for motor vehicles is unlikely to be affected significantly by alternative technologies.

While South Australia has extensive reserves of uranium, there is little likelihood of the development of domestic nuclear power reactors in the foreseeable future, because anticipated electricity requirements are too small to absorb the output of an economically sized nuclear power station and the cost of such power would not be competitive with that generated by conventional fuels (most probably coal).

Wind has long been used as a means of generating electricity and pumping water on a small scale. While it will continue to be useful for such applications in remote and rural areas, it is unlikely to be a major source of energy.

There is also a potential for the use of direct solar energy. However, it is expected that the contribution of solar energy to total energy needs will be less than 5 per cent until the turn of the century. Until then, solar energy will be mainly used for domestic water heating and in some industrial processes although the use of photo-voltaic cells offers some promise as their relative costs are reduced.

Summary

Whilst South Australia has a potentially large and varied energy resource base, it is expected that the State will continue to depend on conventional forms of non-renewable energy resources for a long time to come. Alternatives, such as biomass and solar energy, may make minor but important contributions. The extent to which South Australia increases its self-sufficiency in energy will depend on how successful it is in converting its major energy resources into readily usable energy.

There are significant low grade coal deposits available and, despite their poor quality, the level of coal utilisation for the generation of electricity is expected to increase.

Oil and gas reserves are limited and a continued program of exploration is needed to make new discoveries to provide for future requirements.

While there are large identified reserves of uranium in South Australia they are unlikely to be used to meet local energy needs in the foreseeable future.

One of the best and most immediate initiatives available is energy conservation by

improving the efficiency of utilisation of the State's energy resources and by reducing energy waste. This has considerable potential for widespread adoption.

ELECTRICITY

In 1946 the Electricity Trust of South Australia (ETSA), a public corporation, acquired the assets of the Adelaide Electric Supply Company and since then the Trust has been responsible for electricity generation and distribution throughout most of the State. The Trust is an autonomous body, with a board of seven members appointed by the Government, and it reports to Parliament through the Minister of Mines and Energy. It is responsible for its own finances (including loan raising) and pays all normal State taxes such as payroll tax, land tax and Local Government rates. Over the years indigenous fuels—coal from Leigh Creek and natural gas from the north-east of the State—have largely supplanted imported fuels. A detailed description of the development of electricity supply was included on pages 278-81 of the *South Australian Year Book* 1966.

Power Generation

The Osborne 'A' station produced all of the requirements of the South Australian electricity network from 1923 until 1947 when the 'B' station commenced operations and the 'A' station was subsequently closed in 1968. At 30 June 1981 the remaining generating capacity at Osborne (excluding emergency generating plants) was 240 megawatts.

A major decision by the Trust was the construction of the Thomas Playford Power Station at Port Augusta, designed to burn Leigh Creek coal exclusively. The 'A' section was completed in 1954 while the 'B' section was completed in 1964 to give a combined total generating capacity of 330 megawatts.

Following the passing of the Electricity Trust of South Australia (Torrens Island Power Station) Act in 1962 work commenced on the construction of section 'A' of the Torrens Island Power Station. Section 'A' was completed in the first half of 1971 and comprises four 120 megawatt turbo-generators with associated boiler equipment. Stage 1 of Section 'B' comprising two 200 megawatt turbo-generators was completed in October 1976. Stage 2 of Section 'B' also has two 200 megawatt turbo-generators. The first has been operational since 1979, and the second since early 1981. The combined capacity of 'A' and 'B' sections of Torrens Island Power Station is 1 280 megawatts.

At the Dry Creek Power Station, three gas turbine generators each with a capacity of 52 megawatts have been installed to meet high load demands of short duration. Three 25 megawatt gas turbine generators have been erected at Snuggery in the South East. These generators are fuelled by distillate and the plant is normally operated by remote control from System Control Centre, Adelaide.

Electricity Generation, South Australia
Installed Capacity of Generating Plant in Power Stations at 30 June

Power Stations	1973	1976	1980	1981	1982
Electricity Trust:			Megawatts		
Osborne	240	240	240	240	240
Port Augusta	330	330	330	330	330
Torrens Island	480	480	1 080	1 280	1 280
Dry Creek .....	..	156	156	156	156
Mount Gambier	22	22	..	..	..
Port Lincoln	9	9	..	9	9
Snuggery .....	..	..	75	75	75
Total ETSA	1 081	1 237	1 890	2 090	2 090

To meet future demands, a power station comprising two 250 megawatt turbo-generators and boiler units is being constructed on a site immediately south of the existing station at Port Augusta. The boilers, specially designed to burn Leigh Creek coal, will be fitted with electrostatic precipitators to reduce dust emission. These units are due for commissioning in the period 1984 to 1986.

Fuels

At the present time the Trust relies heavily on natural gas as its main fuel with 80 per cent of its total generation in 1981-82 coming from this source. Gas has been used at the Torrens Island Power Station since 1969 and at the Dry Creek (gas turbine) Power Station since 1973.

Under existing contracts between the Cooper Basin producers and users in New South Wales and South Australia, only about one quarter of currently proven reserves are available to South Australia, the remainder having been committed to New South Wales. The South Australian contracts expire in 1987. An exploration program is being undertaken to find additional gas reserves.

All present economically recoverable reserves of Leigh Creek Coal are needed for future fuel supplies at the Playford and the new Northern Power Stations. Therefore, the Trust has moved to examine alternative fuel sources. It has been confirmed that the next stage of power station development should be based on local or imported coals.

All known large coal deposits within the State which are suitable for power station development have been examined and at present detailed investigations are being focused on the Bowmans, Kingston and Sedan deposits. At Lochiel a significant deposit of low grade lignite has been discovered. Evaluation of this deposit is also in progress.

Because of the continuing reduction in wood waste supplies, the Trust ceased operating the Mount Gambier Power Station in October 1976 and arrangements were made for some of the plant to be taken over by the Woods and Forests Department to generate electricity for internal use.

Electricity Trust of South Australia, Fuels Consumed in Power Stations

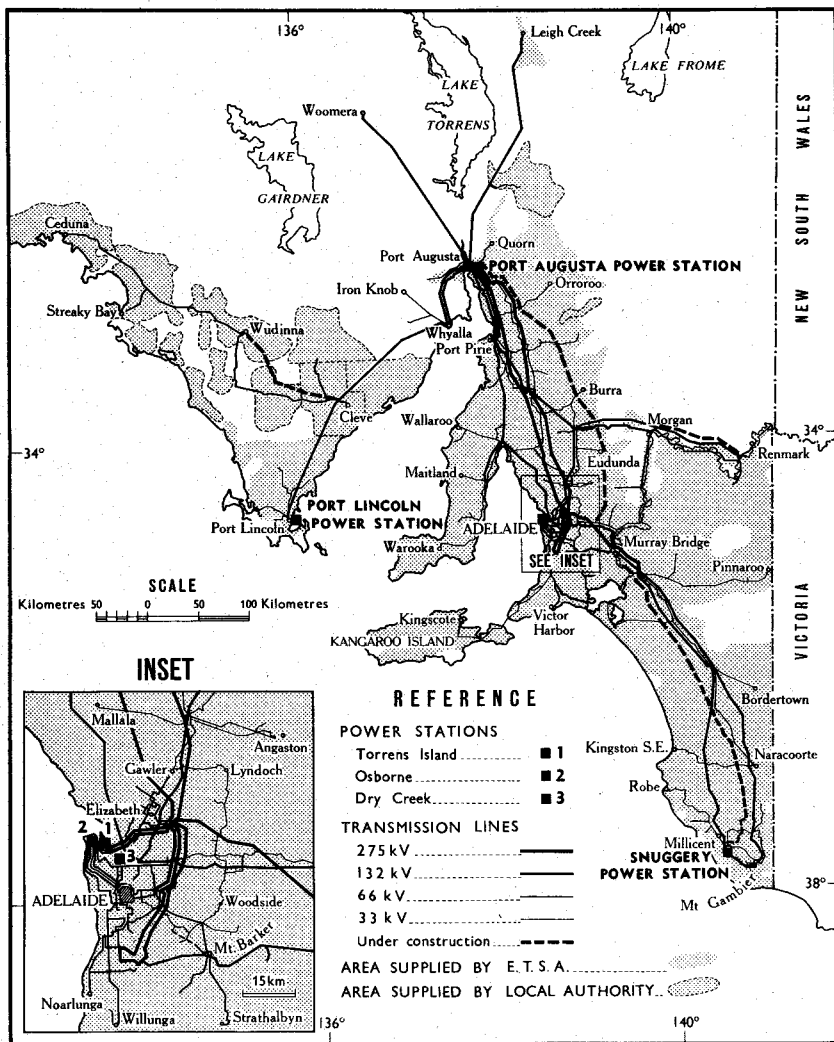
Year	NSW Coal	Leigh Creek Coal	Oil	Wood (a)	Distillate	Natural Gas
			Tonnes			Millions of MJ
1969-70	3 400	2 155 000	299 200	185 600	—	5 700
1972-73	—	1 589 000	37 900	198 500	—	29 000
1975-76	—	1 869 000	84 200	125 400	—	36 700
1978-79	—	1 603 000	70 300	—	2 010	52 900
1979-80	—	1 672 000	45 400	—	590	54 400
1980-81	—	1 650 000	12 200	—	350	57 300
1981-82	—	1 446 000	18 800	—	500	61 200

(a) Mill waste.

Transmission and Distribution

The Electricity Trust expanded its area of supply in the post-war years and this expansion required an extensive construction program of transmission and distribution lines. In the first ten years of the Trust's operations the length of transmission and distribution lines rose from 4 400 kilometres to 12 800 kilometres. Expansion over the next ten years was equally as active primarily because of the construction of 13 600 kilometres of the single wire earth return system. This system allows supply in country areas where consumers are so scattered that supply by conventional methods would be impracticable. Most of the State is now covered by the Trust's system and expansion in recent years has been to meet the increased load on the system.

SOUTH AUSTRALIA ELECTRICITY SUPPLY



Electric power is transmitted over considerable distances at very high voltages and is stepped down at substations and distribution centres.

Transmission lines of 275 kV link power stations at Port Augusta and Torrens Island to a major substation at Para from which 275 kV connections radiate to Magill, Cherry Gardens and Happy Valley substations serving the Adelaide metropolitan area. A further 275 kV line has been built to Tailem Bend substation, which is the main supply point for the Lower Mallee and the South-East. One line from Port Augusta is tapped into a substation at Brinkworth to reinforce distribution to the mid-north area of the State.

An additional 275 kV line is under construction from the new Port Augusta power station to the Adelaide metropolitan area. Future planning involves the construction of a 275 kV line from Port Augusta to Whyalla, and also between the Adelaide metropolitan area and the South East of the State.

Electricity Trust of South Australia, Transmission Lines
At 30 June

Rated Voltage Unit	1973	1976	1980	1981	1982
Route Kilometres					
275 kV	745	846	893	893	900
132 kV	2 581	2 581	2 595	2 606	2 608
66 kV	1 246	1 328	1 627	1 627	1 627
33 kV	3 487	3 602	3 659	3 686	3 694
19 kV (SWER)(a)	18 694	19 734	20 417	20 545	20 734
11 and 7.6 kV	12 076	13 701	15 447	15 867	16 206
Total	38 830	41 792	44 638	45 224	45 769

(a) Single wire earth return system.

Two 132 kV lines extend from Port Augusta to Adelaide and further 132 kV lines extend to Port Lincoln, Woomera and Leigh Creek. Other 132 kV lines connect Adelaide and Mannum, Cherry Gardens and Mobilong, Mannum and Tailem Bend. Two lines connect Tailem Bend and Mount Gambier.

Additional 132 kV lines will be built in the near future to reinforce supply to the Central Eyre Peninsula, and also to the River Murray and South East regions.

About ninety per cent of new housing subdivisions are underground mains areas. In these sub-divisions 11 kV and low voltage lines are installed underground and developers pay the additional cost above that of conventional street mains. The Electricity Trust and local government authorities share the costs of conversion schemes from overhead to underground reticulation in areas where aesthetic benefit to the general public would be gained.

During 1981-82 the Electricity Trust approved 13 new schemes recommended by its Electricity Reticulation Advisory Committee bringing the total number of schemes approved to seventy-nine.

The total number of consumers supplied directly by the Electricity Trust at 30 June 1982 was 566 874. During the past ten years, the number of consumers has increased by 121 327 or 27 per cent. The Trust indirectly supplies a further 9 000 consumers through a bulk supply system operated chiefly by local government authorities.

In the next table the numbers of Electricity Trust consumers in the various categories are given at selected dates.

Electricity Trust of South Australia, Number of Consumers, at 30 June

Consumers	1973	1976	1980	1981	1982
Residential	392 314	431 859	470 918	477 549	484 275
Commercial	43 738	45 828	50 434	51 191	51 830
Industrial	25 615	28 221	29 923	30 295	30 752
Bulk and traction	12	11	17	17	17
Total	461 679	505 919	551 292	559 052	566 874

The next table shows electricity sold by the Electricity Trust for the last five years.

**Electricity Trust of South Australia, Sales of Electricity
Year Ended 30 June**

Particulars	1978	1979	1980	1981	1982
	MWh				
Residential	2 249 688	2 413 188	2 382 745	2 502 023	2 609 296
Industrial	1 737 863	1 884 600	1 989 503	1 959 442	2 086 270
Commercial	1 019 160	1 101 538	1 144 681	1 232 760	1 289 915
Bulk supply	72 620	89 449	90 876	86 216	94 884
Public lighting	38 664	40 694	42 544	43 589	50 320
Pumping for major water pipelines	393 212	177 213	148 123	207 725	113 760
Total	5 511 207	5 706 682	5 798 472	6 031 755	6 244 445

GAS

The South Australian Gas Company, a privately owned company regulated by State legislation, was incorporated by Act of Parliament in 1861 to supply gas to Adelaide and surrounding villages. The first gas was produced at Brompton in 1863 and subsequent plants were opened at Port Adelaide in 1866 and Glenelg in 1875.

An Act authorising a second company, the Provincial Gas Company, was assented to in 1869. This company established a metropolitan works at Thebarton in 1871 and country works were opened at Gawler, Kapunda and Strathalbyn. In 1878 this undertaking was absorbed by the South Australian Gas Company and manufacturing at the Thebarton plant ceased. The country works were kept in operation until 1917. Gas was first produced at Port Pirie in 1892.

Following the development of higher pressure distribution facilities the South Australian Gas Company was able to centralise its metropolitan production at Brompton with the Port Adelaide and Glenelg plants ceasing production in 1922 and 1923 respectively. These plants together with the earlier Thebarton works were retained as holder stations. In 1928 a new gas works was opened adjacent to the Port River at Osborne. The Osborne Works were closed for several years during the 1930s depression.

Since the 1939-45 War a considerable expansion of manufacturing capacity and distribution facilities has taken place. This is evident from the following table which gives details of capital employed, number of consumers and length of mains at 30 June in selected years.

South Australian Gas Company: Capital, Consumers and Mains
At 30 June

Particulars	1950	1960	1970	1980	1982
Capital employed (\$m) (a)	6.0	19.4	40.0	51.7	58.5
Number of consumers (b)	84 629	121 720	186 670	250 545	255 445
Length of mains (km)	1 677	2 525	3 603	4 967	5 087

(a) Total assets less current liabilities.

(b) Includes consumers of bottled gas.

The manufacture of gas by the carbonisation of black coal imported from New South Wales was the conventional method of production until the end of the 1939-45 War. Under this process large quantities of coke and tar are produced as by-products but a declining market for these residuals together with the development of alternative production methods has resulted in less emphasis in recent years on this method of production.

In 1948 and 1950 the company installed plant at Osborne and Brompton for the manufacture of carburetted water gas from oil distillate and coke. This plant was introduced to help meet peak winter loads and could be brought into production much more rapidly than carbonising retorts.

In 1964 the first of four reforming plants was installed at Brompton. These plants operated initially on refinery tail gases and modifications were subsequently made to enable all four plants to reform a wider range of feedstocks, including light virgin naphtha and natural gas. A similar plant was in operation at Port Pirie for reforming light virgin naphtha.

When natural gas became available, the South Australian Gas Company contracted with the producers for a supply of this indigenous fuel. Coal carbonising and carburetted water gas plants making gas for distribution in the metropolitan area were shut down and the reforming plants ceased to operate in 1971 when the conversion of all appliances to use natural gas was completed. One section of the coal carbonising plant was retained at the Osborne Works for the manufacture of metallurgical grade coke until 1979.

These contracts expire in 1987 and arrangements for future supplies are under consideration.

Port Pirie has been supplied with natural gas since the completion of a \$2.5 million pipeline in June 1976. Natural gas from the line is supplied direct to industry, including Broken Hill Associated Smelters, and to all domestic consumers since conversion of domestic appliances to natural gas was completed in October 1977.

Natural gas is reticulated through most of the Adelaide metropolitan area and Port Pirie. Liquefied petroleum gas is distributed by reticulation at Mount Gambier and at Whyalla, and is available elsewhere as bottled gas.

An inter-connected system of high and intermediate pressure mains traverses the metropolitan area, extending south to Moana, north-east to Tea Tree Gully and north to Gawler. The pressure in these mains is reduced by means of governors for distribution to consumers.

The conversion of the metropolitan distribution system to use straight natural gas brought a marked change in the Company's operations. The Company is now concerned largely with the distribution and marketing of gas, rather than manufacturing. Great emphasis is placed on marketing gas to industry, where as a cheap, non-polluting fuel it is able to compete successfully with other fuels. This has produced the situation where industrial gas sales made up 66.2 per cent of all gas sold in 1982 compared with 17 per cent in 1970.

8.7 HOUSING AND BUILDING

HOUSING

A feature of housing development in South Australia has been the change from the use of stone to brick as the major building material. The familiar old-style stone houses are still to be seen in most of the settled parts of the State, especially in rural areas. The 1947 Census was the first at which houses with outer walls of brick outnumbered those with walls of stone.

The building materials used have been determined largely by the availability of building stone and deposits of clay suitable for brickmaking, and by the relative lack of natural timbers suitable for houses. In recent years brick veneer homes have become more popular, particularly in Urban Adelaide, but this is partly because of the poor building soil in some areas.

DWELLINGS: CENSUS DATA

Information on housing is obtained mainly from particulars of dwellings collected at each census. For the purpose of the census a 'dwelling' is any habitation occupied by a household group living together as a domestic unit, whether comprising the whole or only part of a building. The term 'dwelling' includes houses, home units and flats, and in addition habitations ranging from a single-roomed shack to a multi-roomed hotel or institution. Dwellings have been classified as 'private' or 'non-private'. A private dwelling is normally a house or flat but it can also be a tent, houseboat, or caravan (if standing on its own block of land and not occupied by members of the same household resident in an adjacent dwelling). Non-private dwellings are hotels, hostels, hospitals, non-private boarding houses, gaols, religious and charitable institutions, defence establishments and other communal dwellings. A caravan in a caravan park (whether permanently or temporarily) is treated as part of a non-private dwelling, as are self-contained units provided by commercial enterprises such as hotels, motels or guest houses.

Dwelling counts from the nine censuses to 1981 are shown in the next table: figures for censuses before 1966 exclude dwellings occupied solely by full-blood Aborigines.

Dwellings in South Australia, Censuses 1921 to 1981

Census	Occupied			Unoccupied	Total Dwellings
	Private	Non-private	Total		
1921	104 295	3 619	107 914	4 431	112 345
1933	136 611	2 663	139 274	5 353	144 627
1947	166 118	2 420	168 538	3 547	172 085
1954	212 095	3 206	215 301	8 524	223 825
1961	259 344	2 564	261 908	17 061	278 969
1966	299 933	2 693	302 626	25 110	327 736
1971	342 064	2 048	344 112	30 553	374 665
1976	390 514	1 739	392 253	39 768	432 021
1981	432 136	1 703	433 839	42 407	476 246

Occupied Dwellings

The next table gives details from the 1981 Census of dwellings and their occupants, according to the class of dwelling.

Dwellings and Number of Inmates by Class of Dwelling, South Australia, Census 1981

Class of Dwelling	Dwellings		Persons	
	Number	Proportion of Total	Number	Proportion of Total
		Per cent		Per cent
Separate house	337 626	70.9	1 034 675	80.5
Semi-detached house	33 418	7.0	95 015	7.4
Row or terrace house	4 152	0.9	7 683	0.6
Medium density housing	47 224	9.9	79 668	6.2
Flats over three storeys	828	0.2	1 443	0.1
Caravan, houseboat etc.	1 094	0.2	2 288	0.2
Improvised home	697	0.1	1 890	0.1
Dwelling attached to non-dwelling	2 709	0.6	7 962	0.6
Not stated	4 389	0.9	12 000	0.9
Total occupied private dwellings	432 136	90.7	1 242 616	96.7
Non-private dwellings	1 703	0.4	41 086	3.2
Total occupied dwellings	433 839	91.1	1 283 702	99.9
Campers out, migratory	—	—	1 331	0.1
Unoccupied private dwellings ..	42 407	8.9	—	—
Total dwellings and persons	476 246	100.0	1 285 033	100.0

The classification of different types of dwellings changed between the 1976 and 1981 Censuses. Intercensal comparisons are therefore restricted to total dwellings only.

The percentage of persons enumerated in private dwellings was 96.1 at the 1971 Census, and by 1976 this percentage had increased slightly to 96.4. At the 1981 Census the percentage of persons enumerated in non-private dwellings had decreased to 3.2 while the percentage in private dwellings was 96.7.

Occupied Private Dwellings

There were 390 514 occupied private dwellings at 30 June 1976 and by 30 June 1981 this number had increased to 432 136. Characteristics of these dwellings are shown in the tables which follow.

The number of rooms includes kitchen and enclosed sleep-out, but does not include bathroom, toilet, pantry, laundry or storerooms or halls. A combined living-dining room was counted as one room.

**Occupied Private Dwellings by Number of Rooms, South Australia
Censuses 1976 and 1981**

Number of Rooms per Dwelling	30 June 1976	30 June 1981			
	Total	Separate Self- contained Dwellings	Other	Total	Proportion of Total
					Per cent
1	1 308	253	1 351	1 604	0.4
2	4 578	1 002	2 888	3 890	0.9
3	16 708	4 116	14 333	18 449	4.3

Occupied Private Dwellings by Number of Rooms, South Australia
Censuses 1976 and 1981 (continued)

Number of Rooms per Dwelling	30 June 1976	30 June 1981			
	Total	Separate Self- contained Dwellings	Other	Total	Proportion of Total
					Per cent
4	48 946	25 997	34 273	60 270	13.9
5	141 716	118 839	30 266	149 105	34.5
6	103 824	105 866	6 813	112 679	26.1
7	42 850	50 008	1 437	51 445	11.9
8 and over	25 512	29 651	1 025	30 676	7.1
Not stated	5 072	1 894	2 124	4 018	0.9
Total	390 514	337 626	94 510	432 136	100.0
Average number of rooms per dwelling(a) ..	5.4	5.8	4.3	5.4	..

(a) Excludes 'Not stated'.

In 1971 six-roomed dwellings were 20.3 per cent of all occupied dwellings. By 1976 this percentage had increased to 26.6; however the 1981 Census shows a decline in six-roomed dwellings to 26.1 per cent.

The following table gives details of occupied private dwellings by the type of occupancy. The proportion of dwellings owned, or being purchased by instalments, increased from 67.6 per cent in 1976 to 69.3 per cent in 1981, whereas rented dwellings declined from 26.3 per cent to 25.5 per cent over the same period.

Occupied Private Dwellings by Nature of Occupancy, South Australia
Censuses 1976 and 1981

Nature of Occupancy	30 June 1976		30 June 1981	
	Total	Proportion of Total	Total	Proportion of Total
		Per cent		Per cent
Owner	114 710	29.4	140 050	32.4
Purchaser	148 352	38.0	152 956	35.4
Owner/Purchaser undefined	1 114	0.3	6 253	35.4
Tenant of Housing Trust	36 224	9.3	41 486	9.6
Tenant, other	66 598	17.1	68 612	15.9
Other	17 992	4.6	14 718	3.4
Not stated	5 524	1.4	8 061	1.9
Total	390 514	100.0	432 136	100.0

Occupied Private Dwellings: Number of Bedrooms by Type of Dwelling, South Australia Censuses 1976 and 1981

Number of Bedrooms per Dwelling	30 June 1976	30 June 1981						Total
	Total	Separate House	Semi- detached House	Row or Terrace House	Other Medium Density	Flats 3 + Storeys	Other including Not Stated	
0	1 528	21	2	6	49	—	12	90
1	22 418	8 047	2 212	1 318	13 218	185	1 982	26 962
2	83 064	71 627	8 493	2 034	29 129	561	2 127	113 971
3	221 976	215 631	20 864	663	3 821	62	2 882	243 923
4	47 948	35 841	1 559	54	171	—	603	38 228
5	6 766	3 708	38	5	28	—	92	3 871
6+	1 742	884	17	7	61	—	135	1 104
Not Stated	5 072	1 867	233	65	747	17	1 056	3 985
Total	390 514	337 626	33 418	4 152	47 224	825	8 889	432 134

The five year period from 1976 to 1981 showed a significant increase in the number of two and three bedroom dwellings (37.2 per cent and 9.9 per cent respectively), but a decrease in four and five bedroom dwellings (20.3 per cent and 42.8 per cent).

At each Census since 1966 each householder was asked to state the number of motor vehicles used by members of that household (excluding motor cycles, scooters and tractors) which were garaged or parked at or near that dwelling on Census night. Data were obtained only for occupied private dwellings.

Occupied Private Dwellings by Number of Motor Vehicles, South Australia Censuses 1971, 1976 and 1981

Number of Vehicles	1971		1976		1981	
	Dwellings	Proportion of Total	Dwellings	Proportion of Total	Dwellings	Proportion of Total
		Per cent		Per cent		Per cent
No vehicles	56 964	16.7	52 306	13.4	55 431	12.8
One vehicle	173 834	50.8	184 214	47.2	196 862	45.6
Two vehicles	78 907	23.1	108 262	27.7	125 806	29.1
Three or more vehicles	27 338	8.0	36 528	9.4	44 754	10.4
Not stated	5 021	1.5	9 204	2.4	9 283	2.1
Total	342 064	100.0	390 514	100.0	432 136	100.0

BUILDING

BUILDING CONTROL

The Building Act, 1923-1965 (the repealed Act) gave local government authorities power to control building operations within their municipality or district. This power was not automatic but followed a request from a local government authority for all, or a specified portion, of its area to be brought under the Act. The Building Act, 1970-1982 has brought each area of a local government municipality or district within the State under its provisions. However, the Act provides that any council to the area of which, or portion of the area of which, the repealed Act did not apply may petition the Governor for a proclamation that the Act (or any specified portion of the Act) shall not apply within its area or portion of its area.

Persons wishing to erect or alter buildings on land within an area to which the Building Act applies are required to submit to the local government authority technical details, particulars, plans, drawings and specifications of the work proposed and to receive

written approval before commencing operations. Authorities concern themselves with such things as the materials used, the height of ceilings and the provision of ventilation and drainage. They have the power to disapprove building work only where such work does not comply with the requirements of the Act and the Building Regulations, 1973-1980, subject to a right of appeal to building referees. Following the approval of the building work, local government building inspectors normally visit the construction site to inspect footings and foundations and may visit the site at other times to check that the requirements of the regulations are being complied with.

The Builders Licensing Board of South Australia was established under the Builders Licensing Act, 1967-1976 to issue, subject to the provisions of the Act, general builders licences, provisional general builders licences and restricted builders licences to applicants.

BUILDING ACTIVITY

From July 1980 a new Building Activity Survey replaced the previous quarterly Building Operations Census. The major features of the new survey are as follows:

- (a) replacement of the previous complete enumeration of private sector jobs involving new house construction or alterations and additions valued at \$10 000 or more to houses by a sample survey; and
- (b) continuation of the complete quarterly enumeration of jobs involving construction of new dwellings other than private sector houses, construction of new other buildings with an approval value of \$10 000 or more and all alterations and additions with an approval value of \$10 000 or more to buildings other than private sector houses.

The statistics relate to building structures and exclude railways, roads, bridges, earth-fill dams and all other non-building construction. Repairs and maintenance are also excluded. Site preparation works which comprise part of the overall building construction are, however, included in the statistics.

As a result of the introduction of sample survey techniques, statistics of commencements, completions, value of work done, etc. for building jobs involving new house construction or alterations and additions valued at \$10 000 or more to houses in the private sector are only available at the Australian and State/Territory levels.

Differences in concept between the Building Activity Survey and the previous Building Operations Census are minor but there is a break in the continuity of the statistics from the beginning of 1980-81. Building Approval statistics are not subject to this break in series.

All values shown exclude the value of land and unless otherwise stated represent the anticipated or actual value of buildings upon completion.

Location of New Dwellings

In recent years the greatest development has occurred in the local government areas of Salisbury and Tea Tree Gully. The number of new dwellings approved in these areas and other selected local government areas during the years 1978-79 to 1981-82 are included in the following table.

Location of New Dwellings Approved, South Australia

Local Government Area	1978-79	1979-80	1980-81	1981-82
Adelaide (C)	66	124	178	232
Burnside (C)	80	87	84	89
Campbelltown (C)	181	224	224	296
Elizabeth (C)	128	52	1	75
Enfield (C)	46	50	65	111
Glenelg (C)	62	63	48	181
Marion (C)	337	357	403	539
Meadows (DC)	456	464	414	479
Mitcham (C)	195	210	237	206
Mount Barker (DC)	168	134	128	149
Mount Gambier (C)	93	108	121	84
Munno Para (DC)	378	312	183	168
Murray Bridge (DC)	106	139	168	117
Noarlunga (C)	434	569	298	460
Port Adelaide (C)	117	108	162	182
Port Augusta (C)	131	280	172	132
Port Elliot and Goolwa (DC)	179	141	142	155
Port Lincoln (C)	75	92	67	95
Salisbury (C)	907	639	648	489
Stirling (DC)	183	162	162	147
Tea Tree Gully (C)	703	805	633	509
Unley (C)	103	124	122	79
Victor Harbour (DC)	107	95	80	95
West Torrens (C)	37	94	153	100
Whyalla (C)	25	50	66	114
Willunga (DC)	140	68	95	108
Woodville (C)	292	389	509	559
Other (a)	2 430	2 761	2 241	2 172
Total State	8 144	8 678	7 821	8 122

(a) Includes unincorporated areas.

(C) Municipality with city status (M) Municipality (DC) District Council

Building Approvals

The next table shows the value of new building, and alterations and additions valued at \$10 000 and over on completion for which approval was given during 1980-81 and 1981-82.

In addition to information on permits issued to private persons and organisations for building in areas subject to building control, particulars have been included of buildings known to be projected or to have been started in areas outside building control and details of contracts let or expenditure authorised by government and semi-government authorities.

In using approvals as an indicator of building activity it should be noted that certain projects may be cancelled, delayed or altered and resubmitted for approval, that large projects may be spread over a number of years, and that building costs may vary over the period of construction.

Building Approvals, South Australia

Type of Building	1980-81			1981-82		
	Private	Public	Total	Private	Public	Total
	\$'000					
New houses	196 251	24 443	220 694	192 998	24 706	217 703
New other dwellings	29 106	13 814	42 920	52 883	24 327	77 210
Alterations and additions to dwellings	34 173	1 482	35 656	38 460	496	38 955
Hotels, etc.	33 688	150	33 838	15 844	—	15 844
Shops	19 533	12 172	31 705	19 144	338	19 482
Factories	20 192	2 154	22 346	29 363	19 848	49 212
Offices	17 678	30 362	48 040	28 712	8 846	37 558
Other business premises	14 484	4 961	19 445	17 157	17 956	35 113
Education	3 599	26 503	30 101	6 220	19 740	25 960
Religion	5 127	—	5 127	3 716	—	3 716
Health	8 588	6 574	15 162	5 948	11 891	17 839
Entertainment and recreation	9 998	7 476	17 473	10 317	5 377	15 694
Miscellaneous	25 991	5 068	31 059	10 935	30 602	41 537
Total value of building	418 408	135 159	553 567	431 697	164 126	595 823

Buildings Under Construction

At the end of 1981-82 buildings with an anticipated value when completed of \$432 998 000 were in the process of construction, with work done on these buildings valued at \$250 million. There were 1 970 houses and 1 435 other dwellings in the course of construction, having an anticipated value when completed of \$140 560 000.

Value of Work Done

One of the measures of building activity is that of value of work done, *i.e.* of work actually carried out on buildings during the period. Details of value of work done for the years 1977-78 to 1981-82 are given in the following table.

Buildings: Value of Work Done
South Australia

Type of Building	1977-78	1978-79	1979-80	1980-81	1981-82
	\$'000				
Houses	254 831	213 937	227 887	231 411	219 838
Other dwellings	50 226	37 582	37 767	39 880	61 984
Total dwellings	305 057	251 519	265 654	271 291	281 820
Alterations and additions to dwellings	19 226	20 796	25 501	35 014	34 625
Hotels, etc.	9 372	6 558	13 956	13 250	36 754
Shops	25 732	45 600	44 868	37 400	35 942
Factories	26 457	21 205	25 973	27 294	51 874
Offices	51 364	43 709	50 239	60 819	44 597
Other business premises	13 941	14 589	25 635	19 004	28 675
Education	51 165	55 160	36 871	36 371	34 145
Religion	4 060	2 447	2 263	5 015	4 811
Health	29 847	28 398	19 709	22 590	20 379
Entertainment and recreation	10 323	17 606	19 058	22 336	17 499
Miscellaneous	12 940	17 051	21 921	36 008	36 328
Total buildings	559 483	524 637	551 645	586 389	627 451

Buildings Commenced

A building is regarded as having been commenced when expenditure on building work is first reported. In the following table, commencements during 1980-81 and 1981-82 have been classified according to ownership at the date of commencement.

Buildings Commenced, South Australia ^(a)

Type of Building	1980-81			1981-82		
	Private	Public	Total	Private	Public	Total
	\$'000					
New houses	193 762	30 823	224 584	189 235	30 002	219 237
New other dwellings	28 563	12 442	41 006	54 973	23 428	78 401
Alterations and additions to dwellings ..	34 998	1 665	36 663	35 781	497	36 279
Hotels, etc.	30 038	240	30 278	15 360	—	15 360
Shops	28 929	12 077	41 006	19 270	18	19 288
Factories	29 197	9 359	38 557	25 575	18 584	44 158
Offices	26 494	38 845	65 338	23 772	10 426	34 198
Other business premises	15 662	4 741	20 403	20 515	15 861	36 376
Education	4 707	24 825	29 531	7 033	18 691	25 724
Religion	5 986	—	5 986	3 952	—	3 952
Health	12 327	12 737	25 066	6 536	11 367	17 903
Entertainment and recreation	13 311	8 109	21 420	7 128	3 792	10 920
Miscellaneous	30 434	26 511	56 944	11 900	10 240	22 138
Total value of buildings	454 406	182 374	636 780	421 028	142 907	563 936

(a) Anticipated completion value.

Buildings Completed

Details of new dwellings and buildings completed for the years 1977-78 to 1981-82 are given in the next two tables.

Number of New Dwellings Completed, South Australia

Type of Dwelling	1977-78	1978-79	1979-80	1980-81	1981-82
Private:					
Houses (a)	7 387	5 492	5 834	5 170	4 610
Other dwellings	1 974	968	1 044	986	1 156
Total private dwellings (a)	9 361	6 460	6 878	6 160	5 770
Public:					
Houses	1 609	1 316	817	1 199	997
Other dwellings	707	621	610	674	552
Total public dwellings	2 316	1 937	1 427	1 873	1 549
Total all dwellings (a)	11 677	8 397	8 305	8 030	7 320

(a) From 1980-81 numbers are rounded to the nearest ten units.

Buildings Completed, South Australia

Year	Number of Dwellings		Value of Building				Total
	Houses (a)	Other Dwellings	Houses	Other Dwellings	Alterations and Additions to Dwellings	Other	
	\$'000						
1977-78	8 996	2 681	272 770	59 797	19 414	245 245	597 226
1978-79	6 808	1 589	221 273	38 822	20 279	231 821	512 196
1979-80	6 651	1 654	226 291	40 008	25 099	297 634	589 033
1980-81	6 370	1 660	231 094	41 260	33 353	248 857	554 565
1981-82	5 610	1 708	221 749	47 823	35 603	249 877	555 052

(a) From 1980-81 number of houses is rounded to the nearest ten units.

The value of buildings, other than dwellings completed over the same period is shown below. Included under 'other business premises' are service stations, warehouses and communication buildings and under 'miscellaneous' are defence establishments, buildings for law and order, and certain institutional premises.

Value of Buildings Other Than Dwellings Completed, South Australia

Type of Building	1977-78	1978-79	1979-80	1980-81	1981-82
			\$'000		
Hotels, etc.	7 484	7 479	12 496	6 596	9 567
Shops	20 040	25 710	64 153	39 521	28 568
Factories	33 091	21 681	29 659	20 727	34 540
Offices	45 900	52 416	46 485	61 050	45 190
Other business premises	16 963	13 203	25 118	20 999	21 194
Education	43 875	58 645	38 704	31 874	30 958
Religion	4 313	2 545	2 085	5 185	3 911
Health	52 513	23 074	35 779	13 203	25 613
Entertainment and recreation	9 925	13 748	18 333	24 316	13 034
Miscellaneous	11 141	13 319	24 825	25 384	37 302
Total	245 245	231 821	297 634	248 857	249 877

THE SOUTH AUSTRALIAN HOUSING TRUST

The South Australian Housing Trust was established under the South Australian Housing Trust Act, 1936. In 1940, when the Housing Improvement Act was assented to, the Trust became the housing authority to administer the Act and the Trust's powers were extended.

Founded to provide housing for those in need, at a price within their capacity to pay and near to places of employment, the Trust has developed and changed its policies throughout its history to meet changing needs. In the late 1940s the Trust's prime concern was the alleviation of the housing shortage. In the 1950s and early 1960s the Trust was a total development authority, fostering both industrial development and new areas of residential settlement. More recently, the Trust has again concentrated on meeting housing needs including the development of new forms of housing and housing assistance.

Rental Dwellings

At 30 June 1982 the Trust rental stock comprised 45 285 rental dwellings. This total consisted of 28 644 attached houses, 2 529 flats, 8 589 single unit houses, 2 807 pensioner cottage flats all built by the Trust and 2 614 existing dwellings purchased and 102 houses leased from the private sector.

Weekly rents of five roomed (three bedrooms) semi-detached bungalows ranged from \$33.50 to \$37.00. Single unit rents ranged between \$40.00 and \$52.50 per week. Two bedroomed villa flats were let at \$38.00 per week whilst the weekly rentals of two or three storey flats in the Adelaide metropolitan area ranged from \$31.00 for one bedroomed flats to \$33.00 for two bedroomed flats. With few exceptions, rentals for attached, one and two storey maisonettes and town houses with three bedrooms ranged between \$40.00 and \$49.00 per week.

The exceptions were town houses at West Lakes, Hackney, Kent Town and in the City of Adelaide where rents range from \$47.50 for two bedroom houses to \$84.50 for three bedroom houses with a family room.

A record total of 13 119 applications for rental accommodation were registered during 1981-82 compared with 11 501 in the previous year.

The total waiting list at 30 June 1982 was 23 924. The majority of these applicants are people experiencing a combination of financial hardship and social disadvantages; lone parents, the elderly, the disabled and the unemployed. Approximately 96 per cent of applicants for Trust rental accommodation in 1981-82 had incomes of less than 85 per cent of average weekly earnings at the time of application.

To assist those who have difficulty in meeting the rent required, the Trust has developed a rent reduction scheme. At 30 June 1982, 55 per cent of the Trust's tenants were paying reduced rents. This cost the Trust \$19.6 million in the amount of rent foregone during 1981-82.

Housing for Aboriginals

The Trust, in association with the Aboriginal Housing Board of South Australia administers the Aboriginal Funded Program, to supply much needed, special housing assistance to Aboriginal families throughout the State. The scheme maintains a high percentage of Aboriginal involvement at every level of the program.

Housing Management Committees comprising elected Aboriginals are established in eight regions of the State and assist with the allocation of houses and tenancy matters.

Representation from these committees, together with several government departments and agencies, form the Aboriginal Housing Board which considers policy, programming and the financial aspects of the Funded Program. The Trust believes this co-operative arrangement ensures that Aboriginal needs and desires are effectively expressed and met.

A total of \$3.8 million was made available for Aboriginal housing in 1981-82. There were sixty-four houses added to the program during the year bringing the total number of houses used exclusively for Aboriginals to 1 027. In addition, many Aboriginal families were housed through the Trust's general program. Of the 246 applications received under the program 235 new tenants were housed.

Housing for the Aged

In 1953 the Trust began building cottage flats for pensioners and elderly people. By 30 June 1982 the Trust had built and let 2 807 cottage flats and built 1 002 units for charitable and non-profit organisations. The Trust's rent for pensioners was \$9.00 per week for a one person cottage flat and \$15.00 per week for a two person cottage flat.

The rents of all Trust accommodation occupied by the aged are heavily subsidised and the growing proportion of the elderly in the community has major financial as well as social implications for the Trust.

Purchase of Houses for Rental Purposes

In the year ended 30 June 1982 the Trust purchased a further 445 established houses making a total of 2 614 acquired since 1973. After renovation these houses are let to applicants whose particular circumstances require that they live in inner suburbs with established services such as public transport, kindergartens, schools, medical, paramedical and other support services.

Special Purpose Housing

The Trust continued in 1981-82 to provide rental accommodation to various public, private and voluntary organisations whose work caters for the needs of some of the disadvantaged members of the community; in particular, the handicapped, the aged, lone parents with dependent children and homeless youth.

Priority Housing Assistance

There were 784 requests for assistance under the Trust's Priority Referral Scheme in the year 1981-82. These were received from the Department for Community Welfare and other agencies: public, private and voluntary.

Of the 784 referrals received, 517 (66 per cent) were afforded a priority in housing, each submission having been considered on its merits.

Dwellings for Sale

All Trust sale and rental houses are built by private building contractors under Trust architectural supervision following the calling of public tenders.

Tenants of trust rental accommodation may purchase the house at market value after one year's occupation.

Details of dwellings completed by the Trust since its inception, both for rental and sale, are given in the following table.

South Australian Housing Trust, Number of Dwellings Completed

Period	Dwellings				Total
	Single Units	Attached Houses	Cottage Flats	Flats	
1937-77	(a) 49 387	27 385	2 715	2 346	81 833
1977-78	1 752	121	199	123	2 195
1978-79	1 596	210	68	54	1 928
1979-80	938	117	292	61	1 408
1980-81	879	307	225	11	1 422
1981-82	690	161	310	34	1 195
Total	55 242	28 301	3 809	2 629	89 981

(a) Includes 2 909 emergency and temporary dwellings (which have since been removed) and 1 234 rural and soldier settlers dwellings.

Industrial and Commercial Properties

The Trust is involved in the construction of industrial and commercial properties to assist in the State's development. The construction or purchase of factories by the Trust requires the recommendation of the Industries Development Committee and the consent of the Governor. The factories are usually leased with an option to purchase or occupied under mortgage arrangements.

During 1981-82 the Trust completed one factory at Lonsdale and extensions to three factories at Elizabeth.

Ten hectares of land was made available for industrial development at Lonsdale, Elizabeth West, Salisbury South, Port Augusta, Holden Hill and Mount Gambier.

Further development of commercial and community facilities at Noarlunga Centre proceeded with the opening of a hardware store and public library. Construction of a mini-golf centre also commenced.

The Trust entered into a long term lease with Elizabeth Town Centre Pty Ltd to enable the centre to be substantially upgraded and expanded over the next few years.

Commercial sites were sold at Elizabeth, Whyalla, Salisbury North and Mount Burr.

At 30 June 1982 the number of shops let by the Trust was 293.

Sub-standard Housing

To regulate the rents for sub-standard housing the Housing Improvement Act, 1940-1978 vests in the South Australian Housing Trust power to declare a house sub-standard, and fix a maximum rent on it for such time as the declaration remains in force.

Since 1 July 1981 the Trust has initiated rent control for sub-standard housing only if local Boards of Health issued orders under Part III of the Housing Improvement Act. During 1981-82 the Trust issued no notices under the Act.

Also during the year the Trust inspected 1 956 houses and in respect of those subject to existing notices under the Act, maximum rents were fixed on 65 houses and fixed maximum rents were revised on a further 280.

HOUSING AGREEMENTS

Several Housing Agreements between the Commonwealth and the State have operated over the years and details of the earlier legislation were included on pages 374-5 of the *South Australian Year Book 1978*.

In terms of current Commonwealth legislation, the *Housing Assistance Act 1978*, the Commonwealth advanced to the State during 1981-82 a total of \$20 761 000, of which \$5 761 000 was made available to the South Australian Housing Trust for housing purposes and the balance of \$15 million to Home Purchase Assistance Account. Advances made under the Agreement will be repaid over fifty-three years and attract a concessional rate of interest of 4.5 per cent per annum.

Advances for Housing, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
	\$'000				
Advances for year:					
Housing Trust	34 810	22 565	9 000	9 960	5 761
Home builders accounts (a)	23 650	24 803	14 984	15 000	15 000
Total	58 460	47 368	23 984	24 960	20 761
Liability at end of year (b):					
Housing Trust	293 110	313 144	319 420	326 511	329 247
Home builders accounts	217 127	240 336	253 536	266 602	279 512
Total	510 237	553 480	572 956	593 113	608 759

(a) From 1978-79, the Home Purchase Assistance Account.

(b) Under Housing Agreements only.

HOME DEPOSIT ASSISTANCE SCHEME

The Commonwealth Government's Home Deposit Assistance Scheme, effective from 18 March 1982, is administered by the Department of Social Security.

Under the scheme people contracting to buy or build their first home, or owner builders starting to build their first home may be eligible for a grant of up to \$2 500, subject to an income means test and acceptable savings.

Persons eligible for a Home Deposit Assistance Grant may also be eligible for a Family Bonus.

A Family Bonus of \$500 is paid for one dependent child and \$1 000 for two or more dependent children. A family with a child or children born or adopted up to eleven months after home acquisition, may also be eligible for the Bonus as long as by the end of that period they received the Department of Social Security family allowance. A dependent child includes a student aged sixteen to twenty-five years.

The combined taxable income of all applicants is subject to an income test.

For homes purchased during the financial year 1982-83, a full grant may be payable where the applicant's combined taxable income for 1981-82 does not exceed \$21 700, a partial grant reduced proportionately when income is less than \$24 900 and no grant when the combined taxable income is \$24 900 or greater.

Acceptable forms of savings include savings bank accounts, fixed deposits with trading banks, savings with registered building societies and credit unions, Australian Savings Bonds purchased as Inscribed Stock or for safe custody with a bank, and payments made for land on which the house is being built.

A grant may be made for a new or an established house, home unit or flat in the city or the country. Grants may be made to people who contracted to buy or build, and to owner builders who started to build, on or after 18 March 1982. Eligibility includes persons young or old, married or single. Persons under sixteen at the date of the contract must be married or engaged to be married. At least one applicant must have the right of permanent residence in Australia before a grant can be paid, but this right may be obtained after date of home acquisition.

Explanatory leaflets and application forms are available at banks, building societies, credit unions and the Department of Social Security.

DEFENCE SERVICE HOMES SCHEME

The *Defence Service Homes Act 1918* assists certain former and serving members of the Defence Force to acquire a home on concessional terms.

The Defence Service Homes Corporation is, subject to the direction of the Minister for Veterans' Affairs, responsible for the administration of the Defence Service Homes Act.

Persons eligible for assistance under the Act include members of the Australian forces and nursing services enlisted or appointed for or employed on active service outside Australia or on a ship of war during the 1914-18 and 1939-45 Wars; persons who served in the operations in Korea or Malaya or who have served on 'special service' as defined in the *Repatriation (Special Overseas Service) Act 1962*; and members of the Defence Force who serve on continuous full-time service and national servicemen whose periods of service ended not earlier than 7 December 1972 and who meet certain prescribed conditions. The categories of eligible persons also include the widows and, in some circumstances, the widowed mothers of eligible persons, and persons domiciled in Australia and employed in certain sea-going service during the 1914-18 and 1939-45 Wars.

Defence Service Homes Scheme, South Australia ^(a)

Year	Activities During Year			Number of Loan Accounts at 30 June
	Loans Granted	Capital Expenditure	Loan Repayments	
	No.	\$'000	\$'000	
1977-78	582	9 769	5 068	16 456
1978-79	559	7 992	6 578	16 131
1979-80	450	6 235	7 361	15 600
1980-81	495	8 413	8 096	15 099
1981-82	709	15 299	7 921	14 871

(a) Includes Northern Territory.

The following loan conditions have applied since 20 August 1980. The maximum loan

available is \$25 000 and the interest rate is 3·75 per cent for the first \$12 000 lent, 7·25 per cent on the balance of the loan above \$12 000, but not in excess of \$15 000, and 10 per cent on the balance above \$15 000. The maximum repayment period permitted by the Act is 45 years or, in the case of the widow or widowed mother of an eligible person, 50 years. Normally however, the repayment period is limited to 32 years.

Since the inception of the Defence Service Homes Scheme in 1919, 370 743 loans have been granted to persons eligible for assistance under the Act. All figures shown include homes which were provided originally under the Housing Agreements with the States, and taken over in accordance with those agreements.

HOUSING LOANS INSURANCE CORPORATION

The Housing Loans Insurance Corporation was established by the *Housing Loans Insurance Act 1965* to administer the Commonwealth Government's Housing Loans Insurance Scheme under which approved lenders may be insured against losses arising from the making of housing loans. The Corporation consists of a Chairman (who is also Managing Director) and a Deputy Chairman, who are full-time members, and three part-time members, all of whom are appointed by the Governor-General.

An amendment to the Act in 1977 broadened the scope of the Corporation's activities so that loans for the purchase of vacant land and commercial housing propositions are insurable as well as loans for the purchase or construction of homes for owner occupancy.

Owner occupancy loans are insurable without limit on loan amount, interest rate or term. Loans for the purchase of vacant land are insurable where the borrower intends to erect his home at a later date. In the commercial field, loans for rental housing ranging from single houses or home units to multi-storey structures together with loans for the purchase and development of land and the building of project housing (including home units) are acceptable.

A once only premium is charged by the Corporation at the time the loan is made. The premium is payable by the borrower but lenders may agree to add it to the amount of the loan for repayment by the borrower over the period of the loan. With owner occupancy loans comprising 94 per cent and 95 per cent of the valuation of a home the premium is 1·4 per cent of the amount of the loan. Loans from 95 per cent to 100 per cent of valuation carry a loading of 10 per cent on the maximum 1·4 per cent rate. On loans less than 94 per cent of valuation, the premium falls progressively down to 0·25 per cent on loans of less than 76 per cent of valuation except that a concessional premium of 0·1 per cent is applicable where the loan is less than 76 per cent of valuation and relates to an owner occupied home. Premium rates for the purchase of vacant land are the same as for home ownership.

The Corporation will insure a loan made to enable a borrower to buy or build a house, to buy a home unit, or to discharge an existing mortgage. Loans for alterations and extensions and loans to meet expenses of providing or improving lighting, sewerage, drainage, fences, roads, etc. are also insurable. In addition to loans secured by a registered first mortgage, there is provision for the insurance of second mortgage loans and cover is available for amortised, fixed term or five-year loans.

Further References

Additional information may be found in the following publications:

- 8701.4 *Building Approvals—South Australia*
- 8702.0 *Building Approvals—Australia*

PHYSICAL DEVELOPMENT

- 8703.0 *Building Statistics, Number of New Dwellings (Preliminary Estimates)—Australia*
- 8704.0 *Building Activity (Preliminary)—Australia*
- 8705.0 *Building Activity—Australia*
- 8707.4 *Number of New Dwellings Commenced—South Australia*
- 8708.4 *Building Activity—South Australia*

PART 9

PRODUCTION

9.1 RURAL INDUSTRIES

South Australia has a semi-arid Mediterranean type climate with mild and humid winters and hot and dry summers. Cereal production and livestock are the main components of agriculture.

The State can be divided into three main zones based on rainfall. The dry inland area is known as the pastoral zone with the main activity being low intensity grazing of livestock. In the cereal zone of intermediate rainfall, major production is of cereal and livestock products. The higher southern rainfall zone has a more reliable growing season and farming is based on higher intensity grazing of sheep and cattle on improved pasture, as well as cereal and horticultural crops. Areas adjacent to the River Murray and to Adelaide are devoted mainly to horticulture and viticulture.

RURAL INDUSTRY ORGANISATIONS

The South Australian Department of Agriculture provides advisory, regulatory and research services to all farming industries in this State. These services are complemented by educational and research organisations (see Part 6.2 Education and Part 6.3 Scientific and Research Organisations) and private firms which also provide expertise in the field of agriculture. Other organisations, many established by State or Commonwealth legislation, also influence the State's rural industries. The following table gives details on some of these bodies.

Rural Industry Organisations and Major Activities, South Australia

Organisation	Activities
Australian Wheat Board	Sole authority for receival and marketing of wheat.
Australian Barley Board	Provides a marketing system for barley and oats.
South Australian Co-operative Bulk Handling Ltd	Bulk handles all wheat, barley and oats in South Australia.
Australian Wool Corporation	Controls marketing of wool in Australia and overseas.
Australian Meat and Livestock Corporation	Promotes the sale of meat and livestock in Australia and overseas.
South Australian Potato Board	} Regulate marketing and pricing of their respective products.
Dried Fruits Board	
Citrus Industry Organisation	
Committee of SA	} Regulate production and marketing of their respective products in the Adelaide metropolitan area.
South Australian Egg Board	
Metropolitan Milk Board	
South Australian Meat Corporation	

RURAL INDUSTRY ASSISTANCE

Details of financial assistance provided to the rural sector by the State Government are given in Part 4.2 Land Settlement Schemes.

RURAL STATISTICS

Most rural statistics are prepared from the annual Agricultural Census in which returns are collected from establishments with agricultural activity, regardless of the main activity of the establishment. Particulars relate to rural operations for one complete year ended 31 March, but where harvesting of some crops (mainly fruit) has not been completed by that date, growers are asked to estimate production or provide details at a later date *via* supplementary collections (*e.g.* main crop potatoes and grapes). An owner or occupier who works more than one rural establishment is normally required to report details for each. However, where they are near to one another and are in effect worked as one, a composite return is obtained, and is treated as covering a single rural establishment in the district in which the main farm is situated.

In recent years, in order to minimise respondent burden and reduce processing costs, the ABS has been gradually excluding from the census those establishments which make only a small contribution to overall agricultural production. Since 1976-77, establishments with agricultural activity have been included in the Agricultural Census if the operating enterprise had, or was expected to have, an estimated value of agricultural operations of \$1 500 or more. In 1981-82 this figure was raised to \$2 500 in order to minimise the effects of inflation on the scope of the Agricultural Census.

While these changes have resulted in some changes in the numbers of establishments appearing in publications, the effect on the statistics of production of major commodities is small. Statistics of minor commodities normally associated with small scale operations may be affected to a greater extent.

The number and area of rural establishments, *i.e.* establishments with an estimated value of agricultural operations above the cut-off, in each statistical division for the past two years are shown in the following table.

Rural Establishments: Statistical Divisions, South Australia

Statistical Division	Establishments(a)		Area of Establishments	
	1980-81	1981-82	1980-81	1981-82
	Number		'000 hectares	
Adelaide	2 131	1 960	65	61
Outer Adelaide	4 820	4 590	943	926
Yorke and Lower North	3 136	2 998	1 852	1 844
Murray Lands	4 878	4 761	3 798	4 192
South East	3 486	3 386	1 831	1 807
Eyre	2 061	2 014	5 437	5 426
Northern	1 736	1 693	48 510	48 640
Total	22 249	21 402	62 437	62 897

(a) Beekeepers without a fixed land-base are included in statistical divisions.

In 1975 additional information was sought to assess structural details of the agricultural industry in Australia to enable compatibility and comparisons with other industries through financial data.

The economic units defined are similar to those used for other industries, namely the enterprise and the establishment. The identification of these units within the agricultural sector has allowed the production of more meaningful statistics of economic size, legal status and industry classification. It has also provided some insight into the activities of agricultural enterprises in other sectors of the economy and the activities of non-agricultural enterprises in the agricultural sector.

The enterprise is that unit comprising all operations in Australia of a single operating legal entity. An agricultural enterprise is an enterprise mainly engaged in agricultural activities. The estimated value of operations of these enterprises includes the estimated value of non-agricultural operations.

The establishment is the smallest economic unit in the system. An agricultural establishment is an establishment which is engaged mainly in agricultural activities. The estimated value of operations of these establishments includes the estimated value of non-agricultural operations.

The following table shows the number of agricultural enterprises in South Australia cross-classified by industry and estimated value of operations. Further details are contained in the publication *Agricultural Sector, Australia—Structure of Operating Units* (Catalogue No. 7102.0) published by ABS.

Agricultural Enterprises: Industry and Estimated Value of Operations, South Australia 1980-81

ASIC Code (a)	Industry of Enterprise	Estimated Value of Operations (\$'000)					Total Enter- prises
		2-19	20-49	50-99	100-199	200 and more	
0124	Poultry for meat	13	20	18	3	2	56
0125	Poultry for eggs	22	17	19	20	28	106
0134	Grapes	960	589	84	10	2	1 645
0136	Orchard and other fruit	557	510	316	194	63	1 640
0143	Potatoes	23	32	53	43	30	181
0144	Vegetables (except potatoes)	393	370	114	44	32	953
0181	Cereal grains (incl. oilseeds n.e.c.)	441	660	1 054	795	204	3 154
0182	Sheep—cereal grains	456	1 589	1 831	739	92	4 707

**Agricultural Enterprises: Industry and Estimated Value of Operations, South Australia
1980-81 (continued)**

ASIC Code (a)	Industry of Enterprise	Estimated Value of Operation (\$'000)					Total Enter- prises
		2-19	20-49	50-99	100-199	200 and more	
0183	Meat cattle—cereal grains	46	50	44	20	4	164
0184	Sheep—meat cattle	262	350	241	122	43	1 018
0185	Sheep	796	740	477	179	41	2 233
0186	Meat cattle	649	110	62	22	36	879
0187	Milk cattle	419	702	210	22	4	1 357
0188	Pigs	133	93	62	24	9	321
0195	Nurseries	16	10	49	26	12	113
0196	Agriculture n.e.c.	410	112	43	18	3	586
Total (ASIC Code 01)		5 596	5 954	4 677	2 281	605	19 113

(a) ASIC Code 1978 edition.

Agricultural Finance Survey

Estimates of the financial performance of the rural sector of the economy are derived from information obtained in the Agricultural Finance Survey. Before 1977-78 this was an annual collection, but is currently a triennial collection which samples a representative cross-section of all agricultural enterprises in Australia.

Since 1976-77 the Agricultural Finance Survey has been conducted using a single (field) phase sample of approximately 3 500 enterprises throughout Australia, the interviews with selected businesses being carried out by trained ABS interviewers over a six-month enumeration period.

Financial Estimates of Agricultural Enterprises: South Australia

Items	1977-78		1980-81	
	\$m	SE%	\$m	SE%
Sales from crops	187.0	5	559.3	4
Sales from livestock	156.0	5	278.1	5
Sales from livestock products	170.4	4	281.9	4
Turnover	530.3	3	1 143.5	2
Purchases and selected expenses	266.9	3	515.2	3
Value added	234.7	6	651.8	3
Adjusted value added	198.8	6	594.6	4
Gross operating surplus	142.6	9	508.7	4
Cash operating surplus	149.0	8	448.7	5
Total net capital expenditure	69.0	9	184.4	6
Gross indebtedness	323.5	8	571.0	8

The above table contains estimates of selected financial aggregates of South Australian agricultural enterprises for the years 1977-78 and 1980-81; the associated standard error (SE) for each estimate is also given, being a measure of the sampling error resulting from the use of sampling techniques as opposed to undertaking a complete census. More detailed information both on the statistics shown and the terms used are contained in the publication *Agricultural Industries—Financial Statistics—Australia* (Catalogue No. 7507.0) published by the Australian Statistician.

Caution should be exercised when making comparisons between estimates derived from the Agricultural Finance Survey and those compiled annually by ABS in its Value of Agricultural Production series. Some of the major reasons for differences between the estimates are as follows:

- (1) to enable a comparison to be made with statistics produced for other sectors of the economy, the Survey is conducted on an integrated basis which excludes from the survey enterprises which undertake some agricultural activity but their predominant activity is non-agricultural;
- (2) the Value of Agricultural production estimates measure the income accruing from production for a particular year irrespective of whether the total production has been marketed or not. The Survey on the other hand operates generally on a cash basis recognising income only when payment has been received;
- (3) the Survey includes only the value for crops sold, whereas the Value of Agricultural production estimates include the value of crops and seed produced and consumed on the farm.

LAND UTILISATION

Most of the land area of South Australia is arid or semi-arid and cannot be used for crop production. This severe natural limitation means that even with modern farming methods only 6 million of 63 million hectares in rural establishments are devoted to cropping or permanent improved pasture.

As shown in the following table the area under crop in recent years has varied between 2.5 and 3.0 million hectares. Most of this is planted to cereals for the production of grain, hay and forage and about 54 000 hectares are used for the production of fruit and vegetables.

Land Utilisation of Rural Establishments, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
'000 hectares					
Area used for:					
Crops (a)	2 565	2 827	2 771	2 773	2 865
Sown pastures;					
Lucerne	107	77	63	52	49
Lucerne based	640	558	502	506	488
Clovers, grasses and medics	2 502	2 641	2 646	2 629	3 106
Balance of holdings (b)	56 680	56 552	56 804	56 477	56 389
Total area of holdings	62 494	62 655	62 786	62 437	62 897

(a) Excludes duplication on account of area double cropped for 1977-78 to 1980-81. Excludes pastures harvested for hay and seed which have been included in 'Area used for sown pastures'.

(b) Used for grazing, lying idle, etc.

The cereals—wheat, barley and oats—sown for grain account for about 90 per cent of the total area cropped in South Australia. In addition to hay and green forage the remainder of the area is devoted mainly to orchards, vineyards and vegetable production. Climatic conditions, particularly the relatively low winter rainfall and the dry hot summer, favour cereal growing, one advantage being the low incidence of stem rust, a serious disease in the moister areas of the Australian wheat belt.

The area sown to the more important crops during the last five seasons is given in the following table.

PRODUCTION

**Area Sown to Principal Crops
South Australia**

Crop	1977-78	1978-79	1979-80	1980-81	1981-82
'000 hectares					
Cereals for grain:					
Wheat	1 090.0	1 295.3	1 424.2	1 445.3	1 427.5
Barley	1 073.4	1 091.1	983.6	988.5	1 031.7
Oats	130.0	170.5	129.0	105.5	127.3
Rye	23.0	37.7	17.9	15.3	25.9
Crops for hay:					
Oaten	41.3	52.5	35.4	32.2	42.7
Other	21.6	20.9	13.2	12.6	17.6
Crops for green forage	74.8	43.4	44.3	40.1	47.3
Vegetables:					
Potatoes	3.6	3.6	3.5	3.8	3.7
Tomatoes	0.4	0.4	0.4	0.4	0.4
Other	4.3	6.0	3.4	3.6	3.6
Fruit:					
Orchards	15.7	15.7	15.7	15.8	16.0
Vineyards	31.5	31.3	30.7	30.4	30.3
Other crops	55.0	58.4	70.1	79.7	90.6
Total area of crops	2 564.6	2 826.7	2 771.6	2 773.2	2 864.8

IRRIGATED CULTURE

The following table shows the area of all irrigated culture in South Australia for the seasons 1973-74 to 1980-81. Of the areas shown below, about 55 per cent of both orchards and vineyards and about 15 per cent of pastures are in the River Murray irrigation areas listed in the table on page 415.

**Area Under Irrigated Culture
South Australia**

Season	Orchards	Vineyards	Vegetables	Other Crops	Pasture	Total
Hectares						
1973-74	13 211	16 973	5 599	1 434	42 960	80 177
1974-75	13 263	17 987	5 888	2 396	39 414	78 948
1975-76	13 132	18 387	5 601	2 205	38 569	77 894
1978-79(a)	12 338	18 892	6 409	4 571	36 176	78 386
1980-81	12 627	20 253	5 676	2 028	38 890	79 474

(a) Irrigation details collected on an irregular basis.

The most important irrigation areas are those located in the Murray Valley. A description of the development and types of irrigation schemes along the River Murray is given in Part 8.2.

River Murray Irrigation Areas: Area of Pasture and Area and Production of Vineyards and Orchards, 1981-82 ^(a)

Irrigation Area	Area				Production			
	Pasture (b)	Vineyards		Orchards	Vineyards		Orchards	
		Bearing	Not Bearing		Total Grapes Produced	Grapes used for Wine	Oranges	Peaches
Hectares				Tonnes				
Upper Murray:								
Berri	28	1 973	106	1 078	33 469	27 595	11 189	1 038
Cadell	—	96	6	172	1 208	921	1 385	59
Cobdogla	n.p.	539	14	6	11 400	10 266	50	—
Cooltong	n.p.	186	n.p.	276	3 900	3 764	5 353	n.p.
Holder	—	118	13	121	2 466	2 364	1 618	16
Loveday	n.p.	864	16	108	18 445	16 269	1 326	n.p.
Loxton	n.p.	1 483	49	1 109	30 732	27 396	26 642	352
Moorook	—	160	6	161	2 159	1 830	2 272	23
Nookamka	—	729	25	53	14 477	12 811	394	6
Rai Rai	n.p.	290	11	117	4 284	3 236	138	372
Renmark	196	1 930	160	1 617	29 086	23 584	11 054	3 744
Sunlands	—	47	n.p.	535	1 258	1 258	14 894	n.p.
Waikerie	n.p.	571	56	909	10 640	10 221	14 446	637
Other	—	354	36	888	5 669	4 673	15 853	581
Total Upper Murray ...	360	n.p.	503	n.p.	n.p.	n.p.	106 615	6 848
Lower Murray:								
Cowirra	445	—	—	—	—	—	—	—
Jervois	2 549	—	—	n.p.	—	—	—	—
Monteith	495	—	—	—	—	—	—	—
Mypolonga	687	n.p.	—	425	n.p.	n.p.	5 425	237
Neeta	307	—	—	—	—	—	—	—
Pompoota	447	—	—	—	—	—	—	—
Other	625	—	n.p.	n.p.	—	—	—	—
Total	5 915	9 345	505	7 578	169 246	146 241	112 040	7 085

(a) Excludes areas and yields of crops grown by irrigation on the River Murray and elsewhere not in the above irrigation areas. (b) Includes non-irrigated pastures.

The main crops in the Upper Murray irrigation areas are grapes, citrus fruit and stone fruit while the reclaimed swamp areas of the Lower Murray irrigation areas are used mainly for pastures.

FERTILISERS

Principal Crops and Pasture Fertilised, South Australia, 1981

Type of Crop	Fertiliser Used				
	Area Fertilised	Super-phosphate	Other	Total	Per Hectare
	'000 hectares	Tonnes			kg
Wheat	1 388	162 894	13 389	176 283	127.02
Barley and oats	1 166	144 763	17 605	162 368	139.21
Vegetables	6	3 874	8 289	12 163	1 904.04
Fruit trees and vines	27	7 548	10 207	17 755	661.66
Other and unspecified crops	89	12 238	1 052	13 290	148.66
Total crops	2 677	331 317	50 542	381 859	142.66
Pasture	1 782	213 371	9 217	222 588	124.88
Total	4 459	544 688	59 759	604 447	135.55

Nearly all soils in the agricultural areas of South Australia are deficient in phosphorus, and superphosphate is used on both crops and pastures in large quantities to overcome this deficiency. In some areas trace elements (manganese, copper, zinc and molybdenum) are added to the superphosphate to rectify the chronic shortage of these elements.

Use of Artificial Fertilisers: Statistical Divisions, South Australia, 1981

Statistical Division	Crops			Pastures	
	Area Fertilised	Proportion of Total Area Cropped	Fertiliser Used	Area Fertilised	Fertiliser Used
	'000 ha	Per cent	Tonnes	'000 ha	Tonnes
Adelaide	12	70.29	8 568	9	1 477
Outer Adelaide	129	86.10	22 391	293	41 799
Yorke and Lower North	617	94.46	89 702	146	16 490
Murray Lands	571	92.91	76 991	228	27 844
South East	118	82.98	20 080	911	113 875
Eyre	992	95.85	136 269	145	15 602
Northern	238	94.02	27 858	52	5 501
Total	2 677	93.44	381 859	1 782	222 588

Use of Artificial Fertilisers, South Australia

Year	Wheat			Pastures	
	Area Fertilised	Proportion of Total Area Cropped	Fertiliser Used	Area Fertilised	Fertiliser Used
	'000 ha	Per cent	Tonnes	'000 ha	Tonnes
1977	1 022	39.87	123 339	1 607	204 468
1978	1 233	43.62	144 479	1 614	206 805
1979	1 325	47.80	170 208	1 811	239 011
1980	1 378	49.70	179 932	1 894	242 967
1981	1 388	48.44	176 283	1 782	222 588

CEREALS

WHEAT

Wheat has always been a crop of major importance to the economy of this State. South Australia produced 10 per cent of the Australian wheat production in 1981-82.

In the past twenty years a feature of the industry has been that average yields have fluctuated about a higher level of average yield mainly because of improved farming practices, including the adoption of nitrogen-building legumes in the rotation. The average yield per hectare for the 1981-82 season was 1.18 tonnes, lower than the record 1.65 tonnes set in the 1979-80 season. Production of wheat in 1981-82 was 1 695 000 tonnes, the record of 2 349 000 tonnes having been set in 1979-80.

Wheatgrowing Districts

Wheatgrowing in South Australia is virtually restricted to the belt between the 200 millimetre and 450 millimetre rainfall isohyets for the period April-November inclusive. The principal wheat producing districts are in the Eyre, Yorke and Lower North, Murray Lands and Northern Divisions. These districts accounted for about 94 per cent of the area sown in 1981-82.

Wheat Sown for Grain: Area and Production, Statistical Divisions, South Australia

Statistical Division	Area		Production	
	1980-81	1981-82	1980-81	1981-82
	'000 hectares		Tonnes	
Adelaide	2	2	3 082	2 282
Outer Adelaide	44	39	61 187	57 548
Yorke and Lower North	250	228	400 404	395 191
Murray Lands	289	274	260 685	264 872
South East	48	41	80 649	72 939
Eyre	653	691	606 524	679 992
Northern	160	153	237 859	221 909
Total	1 445	1 427	1 650 390	1 694 733

Varieties of Wheat

In each of the Australian States a committee has been set up to examine and recommend the wheat varieties which should be grown by farmers for marketing through the Australian Wheat Board. The South Australian Advisory Committee on Wheat Quality was established in 1962. Recommendation or approval of wheat varieties is decided each year by the Committee which brings together relevant available information on breeding, testing, commercial production, handling and end usage of wheat and more particularly of specific varieties. The Department of Agriculture and the Australian Wheat Board encourage growers to produce wheat with uniform characteristics in both the Hard class and Australian Standard White (ASW) class and this can be done more successfully if only a few of the best varieties are grown by the farmers.

The Advisory Committee has divided the State into seven wheat growing zones and each year recommends to farmers those wheat varieties which are likely to give the best results as far as the protein content and rate of yield are concerned.

Marketing**Australian Wheat Board**

The Board has legislative powers over the receipt and disposal of all wheat and wheat products. Under the stabilisation plan the Board is the sole authority for marketing wheat in Australia and for marketing wheat and flour for export.

In its first full season, 1939-40, the Wheat Board received 5.3 million tonnes. Deliveries to the Board in 1981-82 totalled 15.5 million tonnes.

Deliveries to the Australian Wheat Board ^(a)

Season	South Australia	Australia	Season	South Australia	Australia
	'000 tonnes			'000 tonnes	
1972-73	711	5 438	1977-78	416	8 542
1973-74	1 672	11 199	1978-79	1 976	17 448
1974-75	1 377	10 704	1979-80	2 231	15 327
1975-76	1 042	11 247	1980-81	1 533	10 056
1976-77	725	10 932	1981-82	1 581	15 545

(a) Mostly in bulk, but includes weight of bags where used.

In the past the Wheat Board's crop year was from 1 December to 30 November, but it has now been changed to the year ended 30 September. During the 10 months ended 30 September 1982, total exports of wheat (including wheat equivalent of flour and wheat products) were 11·1 million tonnes.

Bulk Handling

The South Australian Co-operative Bulk Handling Ltd, is the sole bulk grain handling authority in this State, and is owned, financed and controlled by the growers.

The bulk handling operations of the State have been divided into seven divisions—Ardrossan, Port Giles, Wallaroo, Thevenard, Port Lincoln, Port Pirie and Port Adelaide—each of which provides a terminal port as a shipping outlet for the country silos within the division. The following table shows the total bulk capacity, expressed in tonnes of wheat, of the respective divisions.

Bulk Handling Capacity, South Australia, 31 December 1982 ^(a)

Division	Total Permanent Storage ^(b)
	Tonnes
Ardrossan	283 400
Port Adelaide	1 177 500
Port Giles	164 100
Port Lincoln	1 033 300
Port Pirie	554 700
Thevenard	481 630
Wallaroo	441 400
Total	4 136 030

^(a) Includes current contracts let.

^(b) As grain is well protected, storage previously classed as temporary is now accepted by insurers as permanent.

The system by which payments are made to growers changed from the 1975-76 season. Previously growers forwarded claim forms through the bulk handling authority, after the delivery of wheat. Now a claim form containing the pre-harvest information required by the Board is forwarded by each grower. The form enables the prompt payment of the first advance, on a fortnightly basis after 1 October throughout the harvest period, by directly crediting the net payments to growers' individual bank accounts.

Under the system of pooling wheat, the cost of handling wheat by the Co-operative is reimbursed by the Wheat Board.

Grading of Wheat

To aid the Wheat Board in the marketing of wheat each season, a separate standard sample is determined for the various classes of exportable wheat produced in each State. Samples of the various classes of wheat are then packed in sealed bags and forwarded by the Wheat Board to the potential purchasers of Australian wheat.

In South Australia, the classes of wheat for which official standards are declared each season are South Australian Hard and Australian Standard White (ASA). An official standard sample will also be determined for the class known as General Purpose in seasons when sufficient is available for export.

The segregation of South Australian wheat into classes was first introduced in the 1957-58 season when wheat was separated into a Semi-hard wheat class (after 1966 called Hard wheat) and into what, up to that time, was the long established FAQ (Fair Average Quality) class. This has been done in each season since 1957-58.

Test weights of the standard samples for the three classes of wheat segregated in season 1981-82 were declared as follows:

Class of Wheat	Kilograms per Hectolitre
ASW	82.7
Hard	82.0
General Purpose	<i>n.a.</i>

Prices

The following table shows the trend in export and domestic prices of Australian wheat for the years 1977-78 to 1981-82. The export prices shown in the table are the basic selling prices for ASW bulk wheat f.o.b., terminal ports.

Export and Domestic Prices of Australian Wheat

Year	Export Price per Tonne (a)	Home Price per Tonne
	\$	\$
1977-78	116.48	111.16
1978-79	137.62	116.61
1979-80	153.19	130.78
1980-81	151.58	156.12
1981-82 (b)	152.50	187.20

(a) Based on the average of the daily quoted price, year ended November to 1980-81, and year ended September from 1981-82.

(b) The 1981-82 figures apply to the ten months ended 30 September 1982.

BARLEY

Production

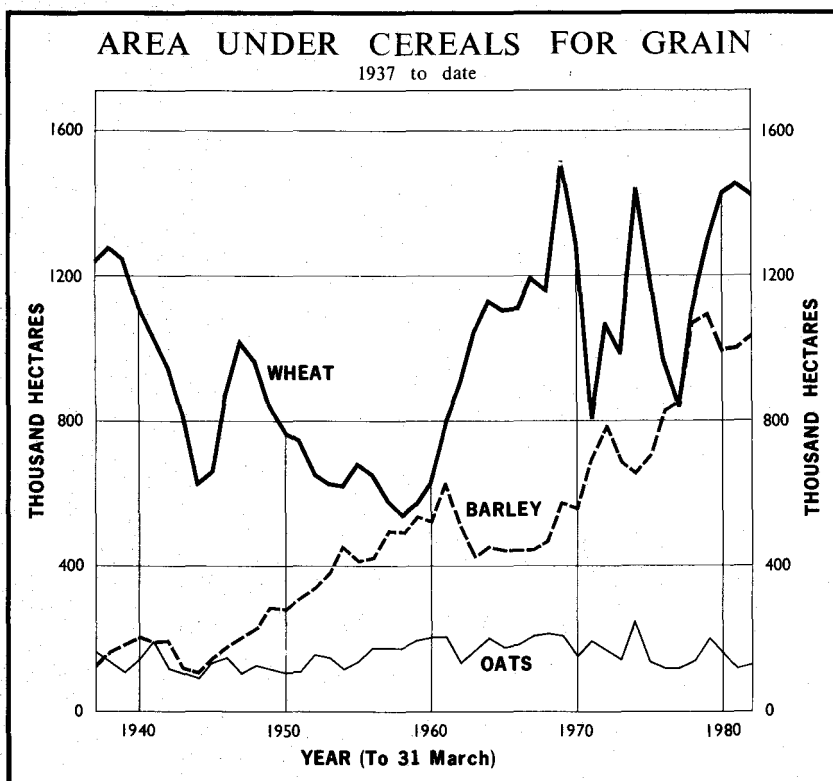
In 1981-82 the area sown to barley for grain in South Australia represented 38 per cent of the Australian total, and the production was 35 per cent of the total grain produced. Of the area sown for grain 99 per cent was 2-row barley reflecting the suitability of certain areas of the State for its production. Much of 2-row grain is used for malting but small amounts are milled for human consumption and the balance used for animal feed. The ideal malting barley has a dry, plump undamaged grain with a thin skin; it should be starchy but with a rather low protein content. Production of this type requires an area of dependable and moderate rainfall, and with a ripening period somewhat prolonged by cool conditions without high temperature or drying winds.

Total area sown to barley in 1981-82 was 1 046 000 hectares, 1 032 000 hectares being sown for grain. Production in 1981-82 was 1 227 000 tonnes, lower than the 1979-80 record of 1 528 000 tonnes.

Unlike wheat, barley growing has nearly always been confined to very suitable districts resulting in high and remarkably stable yields, the record yield being 1.62 tonnes per hectare in 1974-75.

Yorke Peninsula is the major barley-producing district in South Australia. In the 1981-82 season this area contributed approximately 44 per cent of the total crop. It has an ideal climate for barley growing as the moisture-laden breezes off the gulfs on either side retard ripening.

The following graph illustrates variations in areas sown to the major cereal crops in South Australia since 1937.



Area and Production of Barley for Grain: Statistical Divisions, South Australia

Statistical Division	Area		Production	
	1980-81	1981-82	1980-81	1981-82
	'000 hectares		'000 tonnes	
Adelaide	4	4	7	6
Outer Adelaide	55	56	76	75
Yorke and Lower North	326	353	492	546
Murray Lands	241	237	192	192
South East	30	36	40	47
Eyre	268	271	255	253
Northern	64	74	97	109
Total	989	1 032	1 158	1 227

Marketing

The marketing of barley is under the control of the Australian Barley Board which operates in South Australia and Victoria and provides an orderly marketing system for barley grown in these States. In the 1981-82 season the Board received a total of 1 120 000 tonnes, considerably less than the record of 1 886 000 tonnes in 1979-80. Since 1966-67 receivals of bulk barley have been greater than receivals of bagged barley.

For marketing purposes all barley is classified on sample before delivery. Classification is firstly by row variety and secondly by quality. With the wide acceptance of Clipper barley as the prime malting variety, the Board renumbered its barley standards for South Australia for season 1975-76 and subsequent seasons to South Australian Clipper Barley Nos. 1 and 2 Grade, South Australian Two Row Barley Nos. 3 and 4 Grade, and South Australian Six Row Barley Feed Grade.

Australian Barley Board Receivals, South Australia

Season	2-Row				6-Row	Total
	No. 1 Grade	No. 2 Grade	No. 3 Grade	No. 4 Grade	Feed	
	'000 tonnes					
1977-78	10	67	398	8	1	484
1978-79	117	325	861	28	9	1 340
1979-80	195	451	783	23	4	1 456
1980-81	41	198	781	17	3	1 040
1981-82	64	200	781	15	—	(a) 1 120

(a) Total includes 2-Row Weeah Malting Barley.

The price of malting barley is determined on the basis of an agreed formula and subsequently the prices of barley for distilling and pearling are calculated—the prices for feed purposes are determined monthly. The home consumption prices determined by the Board for barley for the seasons 1979-80 to 1981-82 are shown below.

Price per Tonne of Barley for Home Consumption

Season	No. 1 Grade	No. 2 Grade	No. 3 Grade	No. 4 Grade
Bagged Barley		Dollars		
1979-80:				
3 year Contract	—	—	111·15	109·25
Other	127·78	124·78	117·00	115·00
1980-81:				
3 year Contract	—	—	137·75	135·85
Other	156·12	153·12	145·00	143·00
1981-82:				
3 year Contract	—	—	134·90	133·00
Other	190·20	184·20	142·00	140·00

OATS

The milling qualities of most oats grown in South Australia do not meet the requirements of overseas markets and only a small proportion of the harvest is exported; most of the crop is used as animal fodder. As is the case with barley, some of the area sown for grain and hay is grazed until June or July then closed to sheep to allow re-growth to a crop. Part of the area sown for forage is left to stand until it is used as dry grazing in autumn, when other fodder is not plentiful.

The following table shows details of oats sown in recent years.

Oats, South Australia

Season	Area Sown for			Total Area	Production	
	Grain	Hay	Forage		Grain	Hay
	'000 hectares				'000 tonnes	
1977-78	130	41	41	212	55	75
1978-79	171	52	29	252	177	163
1979-80	129	35	32	196	144	119
1980-81	105	32	27	165	96	73
1981-82	127	43	33	202	98	97

RYE

Rye is a minor crop, but it has been used to control sand drift and particularly to stabilise the light soils of the Murray Mallee. Because the sands are deficient in two main nutrients (nitrogen and phosphorus), a mixed superphosphate-ammonia fertiliser is sown with the rye seed early in the season. The rapid early growth of the rye while the ground is still warm and before the strong winds of winter cause sandblast is at present the most effective form of controlling drifting sand. Rye provides early greenfeed while some grain is produced on a number of farms. Although most grain is used for stock feed, varying quantities are exported in different years for milling. Rye hay is of poor nutritional quality and only a few hundred tonnes are produced each year.

In 1981-82, 26 000 hectares of rye for grain yielded 10 000 tonnes. The record production, set in 1978-79, is 17 000 tonnes from 38 000 hectares.

HAY

The quantity of hay produced varies considerably from year to year according to seasonal conditions and the need to replace stocks used during the previous season. The main crops cut for hay in recent years have been oats, lucerne, and clover and grass hay which together account for most of the hay produced.

Hay: Area and Production, South Australia

Season	Oaten	Wheaten	Lucerne	Barley and Rye	Clover and Grass	Total
			AREA ('000 hectares)			
1979-80	35	8	14	6	97	160
1980-81	32	8	13	5	103	161
1981-82	43	10	14	8	119	194
			PRODUCTION ('000 tonnes)			
1979-80	119	24	58	15	294	509
1980-81	73	19	53	9	285	440
1981-82	97	23	57	15	279	471

Between 20 000 and 50 000 tonnes of silage are produced in most years and in certain areas this is an important supplementary stock food; in 1981-82 production was 13 000 tonnes.

PASTURES

The Murray Mallee and Eyre Peninsula have been transformed from unstable farming districts to highly productive areas through the sowing of more and improved pastures. In earlier years most pasture plants available flourished only in the higher rainfall zones of the State. At that time Mount Barker subterranean clover was the predominant pasture. New varieties have been introduced, including Clare, Geraldton, Dwalganup and Yarloop subterranean clovers. These are suited to the hard setting soils of the important wheatgrowing area extending northward from Adelaide to Jamestown.

Another type of legume, known as medics, has been found to be suitable for the drier cereal country, especially the mallee soils. Five medics are grown: Hannaford, Jemalong Barrel, Harbinger Strand, Gama Paragosa and Snail. Lucerne is also extensively grown; it thrives under irrigation yet still grows in areas with as little as 250 millimetres of rainfall a year—it is both salt-resistant and drought-resistant. Strawberry clover is the important legume on the black soils of the South East.

The most important perennial grasses in the better rainfall areas are phalaris tuberosa, perennial rye grass and cocksfoot while the annual, wimmera rye grass is most widely used in the medium to low rainfall areas. The naturalised annual grasses which occur over the whole of the State contribute substantially to total pasture production.

There has been a significant increase in the area of sown pastures over the past twenty years. Area under pasture for the years 1977-78 to 1981-82 is shown for statistical divisions in the table below.

Area Under Pasture: Statistical Divisions, South Australia ^(a)

Statistical Division	1977-78	1978-79	1979-80	1980-81	1981-82
'000 hectares					
Adelaide	15	16	14	14	14
Outer Adelaide	368	371	358	357	378
Yorke and Lower North	242	262	241	229	291
Murray Lands	723	728	695	663	807
South East	1 239	1 231	1 205	1 241	1 296
Eyre	575	585	614	597	745
Northern	88	84	84	85	113
Total	3 249	3 276	3 211	3 187	3 643

(a) Lucerne, clovers (all kinds), rye grasses (all kinds), cocksfoot, paspalum, phalaris, primrose, sudan and veldt.

PASTURE SEEDS

Sown pastures form the basis for efficient farming in the cereal and high rainfall zones of the State. Legumes (clovers and medics) maintain or increase soil fertility by harbouring rhizobial bacteria which convert nitrogen from the atmosphere. Legumes generally have high nutritive value as livestock feed, and by decaying, or returned as manure, increase soil nitrogen which can be utilised by cereals or other pasture grasses. The seed industry has pioneered many overseas markets for legumes. While many crops

are grown each year the industry quickly adapts to fill special demands; this accounts for some of the fluctuations shown in the table below. Lucerne is the most important perennial legume in South Australia and growers supplied approximately 30 per cent of national production in 1981-82.

Pasture and Grasses Harvested for Seed: Area and Production, South Australia

Crop	Area			Production		
	1979-80	1980-81	1981-82	1979-80	1980-81	1981-82
	Hectares			Tonnes		
Lucerne	7 982	8 212	9 359	1 410	1 604	1 690
Clovers:						
Rose, Shaftal	501	46	231	144	11	50
Strawberry	907	589	565	88	55	64
Subterranean	2 993	4 626	4 056	1 188	1 835	1 341
Cocksfoot	182	209	236	45	46	77
Fescue	512	361	260	101	48	94
Medics:						
Barrel	4 340	1 299	1 568	1 257	361	278
Harbinger	640	530	286	175	98	84
Snail	350	264	669	112	92	183
Other (a)	49	76	944	23	10	210
Phalaris Tuberosa	553	692	833	124	107	213
Other n.e.i.	624	545	740	66	161	198
Total	19 633	17 449	19 747	4 735	4 427	4 482

(a) Area and production of Gama Medic (notably the Paraponto and Sapo cultivars) increased significantly in 1981-82.

OILSEEDS

In recent years there has been a significant increase in the area sown to oilseeds. These have proved an alternative to wheat, wool and meat production and are mainly grown under contract to processors and stockfeed manufacturers. The seed is crushed to yield oils which have both domestic and industrial applications and the high protein meal by-product is used for the manufacture of stockfeeds. Details of area and production of selected oilseeds since 1977-78 are shown in the following table.

Selected Oilseed Crops: Area and Production, South Australia

Season	Linseed	Rapeseed	Safflower	Sunflower
	AREA (Hectares)			
1977-78	3 759	9 794	893	9 501
1978-79	1 079	11 655	1 084	11 206
1979-80	1 338	12 213	580	7 841
1980-81	1 154	10 000	1 090	5 952
1981-82	1 059	7 477	1 211	4 914
	PRODUCTION (Tonnes)			
1977-78	2 221	9 895	783	9 499
1978-79	1 174	13 825	922	9 814
1979-80	1 915	15 599	487	8 540
1980-81	1 414	9 299	945	5 817
1981-82	1 177	7 932	1 061	4 281

VEGETABLES

The market garden industry in South Australia is characterised by a large number of growers, most of whom cultivate only a few hectares. Many of the gardens form part of a larger holding. Much of the production of the industry comes from properties with easy access to the Adelaide market.

Of the total area of approximately 8 000 hectares devoted to market gardens, districts adjacent to Adelaide account for 4 300 hectares producing all types of vegetables, including large quantities of celery and early tomatoes for export. Over 1 000 hectares are cultivated in the South East Division, mainly potatoes. An area of some 90 hectares in Northern Division (mainly on the coastal plains near Port Pirie) is used for the production of peas, potatoes and early tomatoes for Adelaide and for export to the Melbourne market. Approximately 1 900 hectares along the River Murray are devoted to production of potatoes, pumpkins and melons for the Adelaide market, tomatoes for local markets and small areas of most other vegetables.

The bulk of the potato production comes from the central and southern Adelaide Hills and from the Mount Gambier area. The average yield has risen progressively largely because of better quality seed, improved fertilisers and advances in pest and disease control.

The Adelaide plains produce most of the South Australian tomatoes which are grown in glasshouses. Significant quantities, mostly for canning and juice production in local factories, are now grown in the Upper Murray irrigation areas. In recent years, high yields have resulted from the introduction of new varieties.

Vegetables for Human Consumption, South Australia

Vegetable	Area		Production	
	1980-81	1981-82	1980-81	1981-82
	Hectares		Tonnes	
Brussels sprouts	(a)	96	(a)	1 697
Cabbages	260	263	8 354	8 388
Carrots	372	400	9 632	11 116
Cauliflowers	261	250	9 544	9 511
Celery	70	74	4 117	4 989
Cucumbers	(a)	53	(a)	2 404
Lettuce	308	297	4 586	4 500
Onions	1 062	1 167	28 537	34 892
Peas	99	(a)	193	(a)
Potatoes	3 751	3 697	96 748	100 160
Pumpkins	(a)	465	(a)	6 794
Sweet corn	162	134	1 349	1 279
Tomatoes	435	387	14 257	12 927
Turnips	74	(a)	901	(a)
Other	890	417	..	..
Total	7 745	7 699	..	..

(a) Included in 'Other'.

GRAPES

Approximately 45 per cent of Australia's vineyard area is located in South Australia where the bulk of the grapes are used for winemaking. In 1981-82 South Australia produced 274 million litres of wine and 5 575 tonnes of dried vine fruit representing 68.0 per cent and 6.0 per cent respectively of total Australian production. The following table shows the area and production of vineyards in South Australia for the seasons 1977-78 to 1981-82.

Area and Production of Vineyards, South Australia

Season	Vines		Production of Grapes for		
	Bearing Age	Not yet Bearing	Wine	Table	Drying
	Hectares		Tonnes		
1977-78	28 443	3 100	269 449	2 358	24 576
1978-79	28 844	2 433	279 129	2 152	16 922
1979-80	28 509	2 225	308 475	2 690	14 744
1980-81	28 109	2 308	284 181	2 545	10 395
1981-82	28 024	2 300	328 747	2 668	21 794

The area planted to vines at harvest 1982 was 30 324 hectares, 1 219 hectares below the record area of 31 543 hectares at 31 March 1978. Total production in 1981-82 was a record 353 210 tonnes, 27 301 tonnes more than the previous record of 325 909 tonnes achieved in 1979-80.

Grubbings increased in 1981-82 by 20 per cent to 1 006 hectares but are still below the 1978-79 record of 1 134 hectares. Approximately 70 per cent of 1981-82 grubbings were of red grape varieties.

About one-third of the State's wine-grape crop is received by the co-operative wineries. Nearly all of this is grown by members who receive a down payment on each tonne, followed by further payments over a period of up to five years according to realisation made on the product. The balance of the crop is processed by proprietary wineries which purchase grapes from the growers. Minimum prices, according to variety, are determined by a committee of which the Prices Commissioner is chairman. The proprietary wineries also purchase a large proportion of the wine, brandy and spirits made by co-operatives.

The following table shows the area, production and utilisation of grapes for the seasons 1977-78 to 1981-82.

Area, Production and Utilisation of Grapes, South Australia

Season	Area of Vines	Total Grape Production (Fresh)	Wine Production (a)	Dried Fruit Production		
				Currants	Sultanas	Raisins
	Hectares	Tonnes	'000 litres		Tonnes	
1977-78	31 543	296 383	203 219	1 745	4 243	421
1978-79	31 277	298 203	202 050	1 840	2 350	422
1979-80	30 734	325 909	234 323	2 030	1 730	295
1980-81	30 418	297 121	220 384	1 145	1 449	185
1981-82	30 324	353 210	273 711	2 360	2 852	363

(a) Excludes grape spirit added.

Grape Growing Districts

The grape growing districts of South Australia are subject to substantial variety in geographical location, climatic variations and soil conditions and can be divided into six easily recognisable regions ranging from the Clare-Watervale district in the north to the southern limit of the grape growing area at Coonawarra in the south-east of the State and bounded by the warm irrigated areas of the River Murray to the east.

Supplementary irrigation is carried out in some grape growing districts which have not been officially designated as irrigation areas, especially Langhorne Creek and Coonawarra where approximately 50 to 60 per cent of all vines are under irrigation. The other areas are mainly dependent on winter rainfall stored in the sub-soil by careful dry-farming methods to be used during the summer growing season of the vine—the yields in the non-irrigated districts are more variable than the Upper Murray irrigation areas.

District average yields in the irrigated areas are 15 to 18 tonnes per hectare although individual vineyard yields of 35 to 40 tonnes per hectare are not uncommon. In the non-irrigated districts the average is 4 to 8 tonnes per hectare with individual vineyards producing 20 to 25 tonnes per hectare in favourable years.

Grape Varieties

This year saw a moderate reversal in the shift from dried vine fruits to wine grapes when compared to the trend over the last decade. The production of dried grapes doubled in 1982 with Sultanas and Currants being the main drying varieties. The production of wine from multi-purpose grapes did not increase at the same rate, indicating that most of the increased production from the record harvest in Sultanas, Currants, Waltham Cross, Gordos and Doradillos went into dried fruit.

There has been increased interest in the premium wine varieties, with significant new plantings of Cabernet Sauvignon, Rhine Riesling, Chardonnay, and Traminer. This has been at the expense of the bulk wine varieties, with large areas of Mataro, Grenache, and Shiraz (irrigated) having been grubbed.

Principal Varieties of Vine, South Australia

Variety	March 1979	March 1980	March 1981	March 1982
	Hectares			
Cabernet Sauvignon	2 417	2 294	2 264	2 342
Chardonnay	<i>n.a.</i>	160	314	478
Crouchen (a)	1 006	964	938	959
Doradillo	1 628	1 538	1 462	1 371
Grenache	4 727	4 408	4 149	3 858
Mataro	1 455	1 284	1 203	1 071
Muscat Gordo Blanco	2 136	2 190	2 243	2 283
Palomino and Pedro Ximenez	2 289	2 173	2 182	2 118
Rhine Riesling	3 010	3 286	3 445	3 681
Shiraz	5 455	5 245	4 842	4 631
Sultana	2 574	2 576	2 548	2 564
Traminer	<i>n.a.</i>	234	314	338
Other	4 580	4 382	4 514	4 630
Total	31 277	30 734	30 418	30 324

(a) Previously called Clare Riesling.

ORCHARD FRUIT

A wide variety of fruit crops is grown in South Australia. The main types are oranges, peaches and apricots (predominantly grown in the irrigation settlements of the Upper Murray) and apples (nearly all grown in the Adelaide Hills).

The following table of citrus trees of bearing age and production during the past five seasons shows the predominance of navel and valencia oranges. Other types of oranges, lemons and limes, mandarins, grapefruit, etc., together represent approximately 16 per cent of total citrus production in 1981-82.

Citrus Fruit: Trees and Production, South Australia

Season	Oranges			Lemons and Limes	Mandarins	Grape- fruit	Total Citrus
	Navel	Valencia	Other				
TREES OF BEARING AGE ('000)							
1977-78	504	783	11	101	62	63	1 524
1978-79	496	785	8	106	63	72	1 531
1979-80	502	818	7	116	(a)	(a)	n.a.
1980-81	488	887	8	121	67	77	1 649
1981-82	485	855	6	120	72	80	(b) 1 618
PRODUCTION (Tonnes)							
1977-78	49 961	87 468	881	9 655	4 162	8 155	160 283
1978-79	54 904	85 820	675	10 571	5 189	8 436	165 594
1979-80	55 879	98 558	697	10 128	(a)	(a)	n.a.
1980-81	61 406	92 899	704	14 727	6 347	10 022	186 106
1981-82	50 426	91 951	409	10 957	4 066	10 860	168 670

(a) Data not collected for mandarins and grapefruit. (b) 'Other citrus' included in total.

Citrus growing is concentrated in the irrigation settlements of the Upper Murray where approximately 72 per cent of the total crop is produced. The industry has shown great expansion in the last decade; in 1980-81 a record production of 186 106 tonnes was achieved. The previous record production of 165 594 tonnes was obtained in 1978-79. Total production in 1981-82 was 168 670 tonnes.

Apple growing is the principal non-citrus fruit industry and is concentrated in the Adelaide Hills. A record production of 33 000 tonnes was achieved in 1940-41, while production in 1981-82 was 18 260 tonnes.

Pears are grown in the Adelaide Hills, in the Barossa Valley and on the Murray irrigation settlements. The yield from the 1970-71 harvest was a record 13 000 tonnes from 636 hectares. Production in 1981-82 was 5 941 tonnes.

The stone fruits industry became important following development of the irrigation schemes. Production of peaches has shown the greatest increase: the 1951-52 yield of 3 000 tonnes from 835 hectares was typical for the crop until that time, but by 1966-67 the yield was a record 29 000 tonnes from 1 924 hectares. In the same period production of apricots rose from 11 000 to 28 000 tonnes. South Australia is the major apricot-producing State, with the greater part of the crop being dried and much of the remainder being canned.

A large proportion of Australia's almonds are produced in South Australia, mainly in the Willunga and Riverland areas. In 1980-81 a record crop of 2 397 tonnes was produced from 528 000 trees of bearing age. In 1981-82 a total number of 517 000 trees of bearing age produced 1 174 tonnes. It should be noted that production in 1981-82 was collected in kernel weight rather than the shell weight of previous years.

Cherries, plums and prunes, and strawberries are the most important of the remaining crops.

Non-citrus Orchard Fruit: Trees and Production, South Australia

Season	Apples	Apricots	Cherries	Peaches	Pears	Plums and Prunes
TREES OF BEARING AGE ('000)						
1977-78	445	320	41	244	126	58
1978-79	446	318	40	234	120	56
1979-80	433	316	38	229	112	n.a.
1980-81	437	311	38	222	104	55
1981-82	441	312	37	207	99	55
PRODUCTION (Tonnes)						
1977-78	17 085	14 679	1 003	16 624	8 041	1 795
1978-79	20 092	16 499	792	14 536	7 120	1 860
1979-80	17 420	14 701	485	14 132	7 111	n.a.
1980-81	18 460	17 022	625	14 434	6 872	1 688
1981-82	18 260	16 639	449	9 374	5 941	1 006

The Upper Murray irrigation areas and the Barossa Valley of South Australia account for almost the entire Australian production of dried apricots, peaches, pears and nectarines. A small proportion of the Australian production of dried prunes is produced in the Barossa Valley and in the Noarlunga district.

OTHER CROPS

Other crops cultivated in South Australia include field peas, canary seed, triticale, lupins, vegetable seeds and coriander.

In 1981-82, 47 048 hectares of field peas were grown for grain yielding 56 347 tonnes; virtually all of this area is located in the cereal growing districts north of Adelaide. Field peas are grown mainly as a livestock fodder or for processing into split peas.

Lupin grain is used mainly in stock feed, as a protein source for poultry and pigs and also to some extent as a protein supplement for ruminants. In 1981-82, 19 460 tonnes of lupins were grown for grain from 21 879 hectares—approximately 90 per cent being produced in the Murray Lands and South East.

A considerable portion of the area devoted to nurseries is found in the vicinity of Adelaide. In addition there are several fruit tree nurseries in the horticultural districts of the River Murray.

Establishments which undertake propagation, cultivation or growing-on of nursery produce for sale provide information about their operations triennially. Latest figures (for the 1981-82 season) show that the area used for nurseries (including flower growing) and cultivated turf production has increased from 198 hectares in 1977-78 to 287 hectares.

VALUE OF AGRICULTURAL PRODUCTION

The value of agricultural production may be expressed in terms of gross value and local value. Gross value is defined as the value placed on recorded production at wholesale prices realised in principal markets. Where products are absorbed at a local point or become raw material for a secondary industry the value in each case is presumed

to be the value of the principal market. Local value equals the gross value of production less marketing costs.

VALUE AND PRICES OF CROPS

The gross value of crops (including pastures) for South Australia in the 1981-82 season was estimated at \$738 169 000.

In the following table gross values of principal crops for the seasons 1976-77 to 1981-82 are shown.

Gross Value of Principal Crops, South Australia

Commodity	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82 ^p
	\$'000					
Cereals:						
Wheat	73 726	50 349	265 159	357 058	253 599	265 983
Barley	93 807	50 553	118 303	192 758	165 418	168 757
Oats	5 698	4 075	9 976	11 455	14 039	10 819
Rye	566	647	1 220	484	949	1 531
Crops for hay	6 015	6 659	6 969	4 501	6 423	11 897
Lupins for grain	915	568	1 106	1 988	2 964	2 527
Rapeseed	963	1 817	2 765	3 185	2 352	1 586
Sunflower	1 188	2 147	2 316	1 786	1 490	997
Field peas	1 488	1 153	4 479	5 506	7 513	8 270
Orchard and berry fruit:						
Citrus	20 480	26 670	30 470	31 935	33 693	31 638
Apples	8 892	7 371	9 729	8 050	12 426	13 005
Apricots	6 776	7 215	8 864	8 904	11 207	11 949
Peaches	5 128	4 567	4 484	4 536	4 177	3 548
Other	7 753	9 971	9 988	10 933	11 614	11 245
Vine fruit:						
Wine grapes	37 593	36 729	40 923	48 890	50 235	61 679
Table grapes	739	1 224	1 601	2 176	2 323	2 361
Dried currants, raisins, etc.	2 958	6 000	4 423	4 749	4 491	6 883
Vegetables:						
Potatoes	10 997	10 443	14 684	15 321	22 373	22 680
Tomatoes	8 540	9 803	9 963	8 312	10 608	8 653
Onions	5 060	5 328	6 439	6 626	9 369	16 379
Other	15 591	21 407	24 383	18 422	22 567	26 940
Other crops	5 540	8 649	13 281	15 144	13 112	17 315
Total crops (excluding pastures)	320 413	273 345	591 526	762 722	662 944	706 644
Pastures:						
Pasture seed	3 328	3 729	5 493	8 401	9 221	6 678
Pastures cut for hay	6 657	12 696	12 594	14 725	21 427	24 847
Total pastures	9 985	16 425	18 087	23 126	30 648	31 524
Gross value of crops	330 398	289 769	609 613	785 848	693 592	738 169

Market prices of principal crops grown in South Australia for the years 1976-77 to 1981-82 are set out in the following table.

Prices of Principal Crops, South Australia

Commodity	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82 ^p
Dollars per tonne						
Cereals:						
Wheat (a)	90.36	102.20	127.83	153.24	154.92	159.61
Barley (a)	106.52	88.37	83.95	126.84	144.99	139.47
Oats	71.90	88.49	67.61	86.57	155.81	121.00
Rye	123.17	116.79	74.67	119.62	179.17	152.00
Fruit:						
Apples	540.00	476.00	540.00	500.00	703.00	740.00
Apricots	518.00	563.00	612.00	804.00	722.00	830.00
Peaches	681.00	638.00	867.50	1 071.00	990.00	929.00
Pears	460.00	476.00	460.00	499.00	619.38	601.00
Oranges;						
Navel (a)	146.12	180.47	188.97	197.00	191.87	201.46
Other (a)	141.92	149.75	179.94	170.40	178.81	188.02
Grapes;						
Table	513.00	519.00	743.75	809.00	913.00	812.00
Wine (b)	134.21	136.31	146.61	158.49	176.77	187.38
Vegetables:						
Potatoes (a)	131.79	115.64	164.26	167.38	231.25	234.49
Onions	226.00	214.67	235.33	220.50	332.00	472.83
Tomatoes;						
Glasshouse	615.00	777.00	819.00	678.00	886.00	817.00
Other	481.00	517.00	373.00	557.00	769.04	876.00

(a) Average price realised.

(b) Weighted average price at winery.

PASTORAL AND DAIRYING

Pastoral activities, with sheep grazing predominant, are widespread in South Australia under widely varying climatic conditions from the arid saltbush plains in the Far North through to the lush, well-watered pastures of the South East.

Cattle numbers reached their highest peak of 1 891 000 in 1975-76, but have dropped in the following years to nearly half that number. In 1977-78 sheep numbers fell to their lowest level for nearly twenty years, but since then have steadily recovered to seventeen million in 1982.

The Dog Fence

This fence is an unbroken barrier of wire netting about 2 metres high extending for more than 8 000 kilometres through South Australia, along the South Australia-New South Wales and the New South Wales-Queensland borders and through part of Queensland. It has been erected to protect the sheep lands of these States from dingoes (native dogs).

SHEEP

Numbers and Distribution

At 31 March 1970 a record number of 19 747 000 sheep were being maintained in South Australia but drought conditions reduced the number to 16 709 000 at 31 March 1982.

The next table shows the total number of sheep in statistical divisions at 31 March for the years 1978 to 1982.

Sheep Numbers: Statistical Divisions, South Australia, At 31 March

Statistical Division	1978	1979	1980	1981	1982
			'000		
Adelaide	159	60	64	76	64
Outer Adelaide	1 676	1 781	1 912	2 033	2 021
Yorke and Lower North	1 919	2 146	2 354	2 490	2 350
Murray Lands	1 885	2 001	2 127	2 255	2 273
South East	3 942	4 135	4 347	4 673	4 545
Eyre	1 902	2 050	2 246	2 360	2 388
Northern	2 591	2 767	2 997	3 170	3 069
Total	14 073	14 940	16 046	17 056	16 709

Breeds of Sheep

The predominant breed in South Australia is the Merino which accounts for 85 per cent of the total sheep numbers. The South Australian Merino, having a robust constitution and a capacity to travel long distances to water, has adapted well to the hot, dry conditions of the interior.

Breeds of Sheep, South Australia, At 31 March

Breed	1970	1971	1974	1977	1980
			'000		
Merino	16 749.3	16 304.1	14 212.0	13 174.3	13 590.9
Corriedale	973.1	940.6	646.2	557.1	607.2
Dorset Horn	67.4	77.9	46.5	45.6	95.4
Poll Dorset			35.0	58.3	132.7
Border Leicester	29.6	27.7	25.8	108.8	119.0
Polwarth	139.6	147.6	137.3	120.0	131.3
Romney Marsh	21.1	17.6	11.4	18.4	31.4
Ryeland	6.7	5.7	4.0	6.2	4.2
Southdown	4.9	4.7	3.1	2.3	1.9
Suffolk	14.9	18.4	19.0	23.9	41.0
Other	3.8	4.3	7.7	9.6	17.0
Merino-Comeback	168.4	214.7	133.6	73.5	156.9
Crossbred	1 568.3	1 402.6	1 149.3	934.2	1 117.3
Total	19 747.1	19 165.8	16 430.9	15 132.3	16 046.3

Of the remaining recognised breeds, the Australasian breeds, Corriedale and Polwarth, are most important, with Poll Dorset numbers increasing dramatically. The Corriedale and Polwarth are dual purpose sheep breeds used for mutton and at the same time producing wool of good quality. The Corriedale is a fixed cross between Lincoln rams and Merino ewes while the Polwarth is a fixed comeback breed from the mating of Merino rams with Lincoln-Merino ewes.

British longwools (Border Leicester, Cheviot and Romney Marsh) are used for mating with the Merino or crossbred ewes mainly to produce fat lambs but useful types of comeback and crossbred wools, are also yielded. British shortwools (Dorset Horn,

Ryeland, Suffolk, Southdown and Shropshire) are used principally for production of export lambs.

The following table shows the age and sex of sheep in South Australia at 31 March from 1978 to 1982.

Age and Sex of Sheep, South Australia, At 31 March

Year	Rams	Breeding Ewes	Other Ewes	Wethers	Lambs and Hoggets (under one year)	Total Sheep
'000						
1978	203	7 407	516	3 133	2 814	14 073
1979	215	7 866	449	3 145	3 265	14 940
1980	223	8 042	525	3 232	4 024	16 046
1981	234	8 433	541	3 683	4 164	17 056
1982	235	8 391	551	3 637	3 894	16 709

Lambing

In 1969 a record 8 598 000 ewes were mated and the number of lambs marked totalled 7 193 000. In 1981, 7 841 000 ewes were mated and the number of lambs marked was 6 084 000.

Details of lambs marked and the lambing percentage in each statistical division in 1980 and 1981 are given in the next table.

Lambing: Statistical Divisions, South Australia

Statistical Division	Lambs Marked		Lambing Percentage (a)	
	1980	1981	1980	1981
'000				
Per cent				
Adelaide	27	26	86.45	84.03
Outer Adelaide	770	745	83.35	79.04
Yorke and Lower North	930	869	79.76	76.78
Murray Lands	920	926	79.67	77.10
South East	1 866	1 815	87.73	83.36
Eyre	746	732	76.12	73.78
Northern	1 056	972	78.24	71.17
Total	6 315	6 084	81.67	77.60

(a) Percentage of lambs marked to ewes mated.

Sheep Shearing and Wool-clip

In the agricultural areas of the State there is a predominance of shearing during the late winter and spring months, August to November. Shearing in the South East Division occurs somewhat later, with 50 per cent of the wool-clip being obtained in the period October to November. In the northern pastoral areas (Northern Division) there are two main seasons, February-March and August-September. The next table gives details of sheep and lambs shorn, wool-clip and average fleeceweight in South Australia for the years 1977-78 to 1981-82.

Sheep and Lambs Shorn: Wool-clip and Average Fleeceweight, South Australia

Classification	1977-78	1978-79	1979-80	1980-81	1981-82
NUMBER SHORN ('000)					
Sheep	13 499	12 960	13 421	14 452	15 102
Lambs	3 200	3 314	4 129	4 442	4 310
Total	16 699	16 273	17 550	18 894	19 412
WOOL-CLIP ('000 kg)					
Sheep	73 571	73 319	79 249	86 588	86 101
Lambs	5 392	6 011	7 862	8 438	8 032
Crutchings	3 925	3 801	4 094	4 430	4 307
Total	82 888	83 131	91 205	99 456	98 440
AVERAGE FLEECEWEIGHT (kg) (a)					
Sheep	5.74	5.95	6.21	5.99	5.70
Sheep and lambs	4.96	5.11	5.20	5.26	5.07

(a) Includes crutchings.

The total wool-clip, including crutchings, exceeded 100 million kg for the first time in 1966-67 and has returned to that level in 1980-81. Approximately 87 per cent of the total wool is obtained from adult sheep.

The average fleeceweight in South Australia is approximately 6 kg a head for adult sheep, with a record 6.39 kg a head being achieved in 1974-75. This is significantly higher than the yield obtained in other States, and is primarily because of the larger size of the South Australian Merino, its broader wool quality and longer thicker-stapled fleece.

A breakdown of the State figures for 1981-82 by statistical divisions is given in the next table. This shows the high average fleeceweight obtained in the northern pastoral areas. The relatively light average fleece obtained in the South East Division is explained partly by the lower proportion of Merino sheep in the area (at 31 March 1980 only 68 per cent of total sheep in the South East Division were Merinos, compared with a total State figure of 85 per cent), but more importantly by the lighter wool quality of the smaller framed sheep in this area.

Sheep and Lambs Shorn: Wool-clip and Average Fleeceweight, Statistical Divisions South Australia, 1981-82

Statistical Division	Number Shorn			Wool-clip			Average Fleeceweight(a)	
	Sheep	Lambs	Total	Sheep	Lambs	Total (a)	Sheep	Sheep and Lambs
		'000			'000 kg		kg	
Adelaide	104	11	114	386	18	427	3.72	3.73
Outer Adelaide	1 846	464	2 310	9 899	788	11 156	5.36	4.82
Yorke and Lower North	2 149	575	2 723	12 689	1 076	14 395	5.90	5.28
Murray Lands	2 044	650	2 694	12 062	1 127	13 796	5.90	5.12
South East	4 148	1 252	5 400	21 995	2 292	25 355	5.30	4.69
Eyre	2 125	557	2 682	12 796	919	14 336	6.02	5.34
Northern	2 686	802	3 488	16 275	1 813	18 974	6.05	5.44
Total	15 102	4 310	19 412	86 101	8 032	98 440	5.70	5.07

(a) Includes crutchings.

WOOL INDUSTRY

Production of Wool

Total wool production consists of shorn wool (including crutchings) plus fellmongered wool, dead wool and wool exported on skins. Fellmongering is the process of removing wool from the pelt by bacterial action (sweating) or by treatment with chemicals. Dead wool is picked from the carcasses of dead sheep.

From 1965-66 to 1975-76, wool production exceeded 100 million kg each year. In the past three years with improved seasonal conditions flock numbers have increased and total wool production has risen from 87 million kg in 1977-78 to over 100 million kg in 1981-82. Wool prices have varied markedly resulting in the gross value of production being as low as \$65 million in 1970-71 and as high as \$261 million in 1981-82.

Wool Production and Value, South Australia

Season (b)	Production			Value of Wool Production
	Shorn Wool	Other (a)	Total	
		'000 kg		\$'000
1977-78	82 888	4 205	87 092	149 768
1978-79	83 131	4 224	87 355	162 349
1979-80	91 205	4 254	95 459	187 807
1980-81	99 456	5 596	105 052	246 646
1981-82	98 440	5 178	103 617	260 548

(a) Includes fellmongered wool, dead wool and wool exported on skins. (b) Year ended 31 March.

Wool Quality and Marketing

For many years approximately 9 per cent of the wool grown in South Australia was sold outside the auction system. This percentage reached 19 per cent in 1972-73, fell to 14 per cent in 1973-74, recovered to 22 per cent in 1976-77 and is now approximately 15 per cent. Of the South Australian wool passing through the auction system approximately 80 per cent is received by the Adelaide selling centre with the remainder predominantly of South Eastern origin, going to Victorian selling centres. A similar inflow of wool occurs from western New South Wales, and to a lesser extent from western Victoria.

Because of the development of a system of Objective Measurement for wool the traditional method of displaying wool for sale, whereby sample bales are opened for inspection by buyers, is declining in importance and much wool is now sold by sample. A high standard of clip preparation is required for sale by sample as there must be very little variation between the bales of wool of each grade.

When a suitable lot is received into store a core sample is taken and is tested to give measures of average fibre diameter (mean micron), degree of vegetable fault, and yield of wool (by three methods) and this information is entered on a certificate. As various other factors (e.g. length of wool, type of vegetable fault) must be assessed, a grab sample of 8 kg is taken from each lot and this is displayed on a show floor, together with the Objective Measurement certificate, for examination by buyers.

An advantage of the Objective Measurement system of clip preparation is that the sample may be inspected at a site remote from the location of the bulk of the clip. This has enabled wool held in Adelaide stores to be inspected, and sold, in Melbourne sales,

which is of particular value to growers who deliver wool in late autumn and winter when there may be six to eight weeks between sales in Adelaide.

Quality Analysis of Greasy Wool Sold at Auction in South Australia

Mean Micron Classification	1977-78	1978-79	1979-80	1980-81	1981-82
	Per cent				
20 and finer	6.0	2.9	1.8	1.7	2.8
21	18.3	9.2	4.9	5.6	7.1
22	25.0	23.3	15.6	19.4	20.8
23	22.7	20.6	18.3	20.3	20.2
24	11.9	18.8	22.9	23.0	22.1
25	5.6	10.4	14.9	14.9	12.4
26	3.1	5.2	9.0	6.5	5.6
27 to 38	5.6	7.0	11.3	7.9	7.2
Coarser	—	—	—	—	—
Oddments	1.8	2.6	1.5	1.9	1.8
Total	100.0	100.0	100.0	100.0	100.0

The incidence of vegetable matter reduces the yield of all wool types. If the extent of vegetable fault is greater than 14 per cent of the wool's greasy weight the wool has to be treated by the carbonising process. In most seasons approximately 70 per cent of South Australian wool is free of, or contains only light burr and seed; almost 15 per cent contains medium or heavy burr and seed and some 10 per cent is carbonising wool.

Incidence of Vegetable Fault in Wool Sold at Auction in South Australia

Season	Free or Near Free	Light Burr and/or Seed	Medium Burr and/or Seed	Heavy Burr and/or Seed	Carbonising Wool	Carding/Combing Oddments	Total
Percentage of Total Number of Bales							
1977-78	44.2	32.1	9.1	1.6	11.2	1.8	100.0
1978-79	39.3	32.6	13.6	2.4	9.5	2.6	100.0
1979-80	32.3	37.5	14.5	4.0	10.2	1.5	100.0
1980-81	35.0	37.0	13.4	3.4	9.4	1.8	100.0
1981-82	39.4	34.5	11.6	2.6	10.1	1.8	100.0

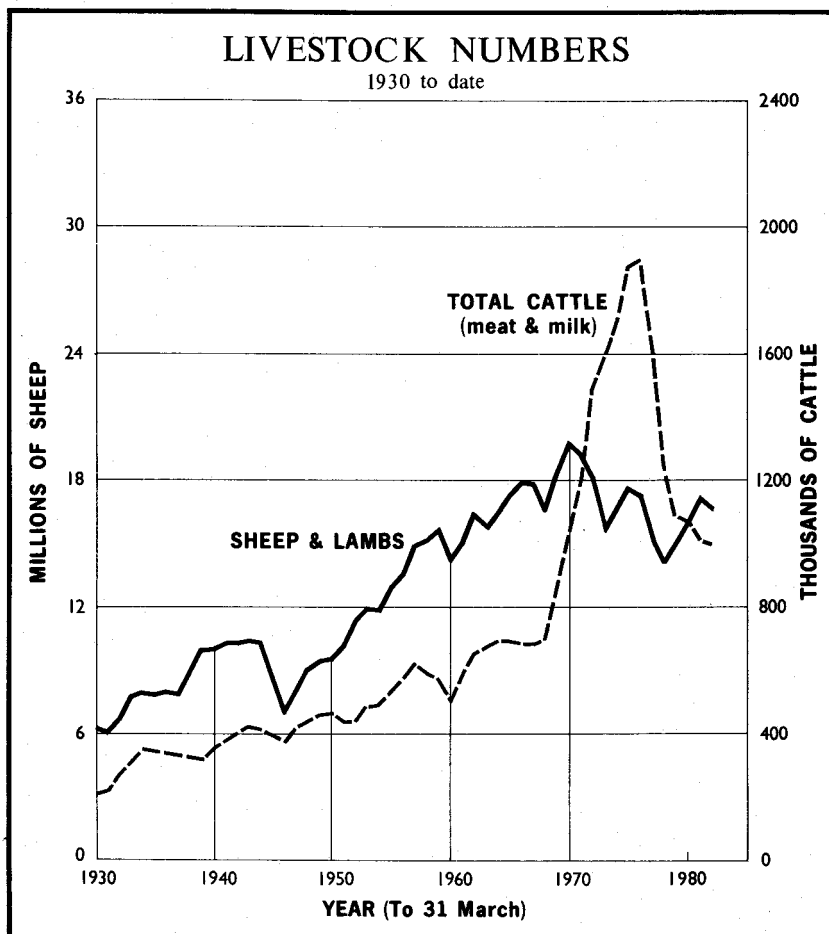
Details relating to Adelaide wool sales during the past three seasons are shown in the following table.

Adelaide Wool Sales

Season	Wool Sold (Scoured and Greasy)		Amount Realised	Average Price Per kg (Greasy)	In Store at End of Season
	Bales	Weight			
	Number	'000 kg	\$'000	Cents	Bales
1979-80	420 974	69 575	156 239	224.56	16 414
1980-81	457 745	76 131	186 935	245.55	15 014
1981-82	465 914	77 962	204 922	262.85	18 154

Wool Prices

Prices paid for wool sold in South Australia tend to be on average less than prices realised in other States, this being partly attributable to the large proportion of medium to broad quality wools grown in South Australia and in western New South Wales. In 1981-82 the average price for wool sold at auctions in Australia was 264·69 cents per kg greasy, compared with 262·85 cents per kg in South Australia.



CATTLE

In comparison with other States, cattle grazing is not a major industry in South Australia. Of the cattle in Australia at 31 March 1982 just over 4 per cent of those used mainly for meat production and about 6 per cent of those for milk production were in South Australia. At 31 March 1982 the total number of cattle was 1 012 500.

Cattle Numbers: Statistical Divisions, South Australia, At 31 March 1982

Classification	Statistical Division							Total
	Adelaide	Outer Adelaide	Yorke and Lower North	Murray Lands	South East	Eyre	Northern	
	'000							
Cattle for milk production:								
Bulls (a)	0.1	1.1	0.2	0.4	0.7	0.1	0.1	2.6
Cows	3.0	47.5	3.5	21.4	21.3	0.8	1.1	98.6
Heifers	0.8	14.1	1.1	6.2	6.4	0.3	0.3	29.1
Calves under one year	0.7	11.2	1.1	5.4	5.0	0.4	0.3	24.0
House cows	0.1	0.6	0.6	0.6	0.6	0.7	0.3	3.5
Total	4.8	74.5	6.4	33.9	33.9	2.3	2.0	157.8
Cattle for meat production:								
Bulls (a)	0.2	2.4	1.2	1.7	9.8	1.0	4.4	20.7
Cows and heifers	5.9	53.6	21.1	42.9	218.1	19.1	97.0	457.8
Calves under one year	3.2	28.7	11.6	28.3	111.9	11.8	50.7	246.0
Other cattle	1.1	10.9	5.4	8.4	66.2	2.2	36.0	130.2
Total	10.5	95.5	39.3	81.3	406.0	34.1	188.1	854.7
Total cattle	15.2	170.0	45.7	115.2	440.0	36.3	190.1	1 012.5

(a) Used or intended for service.

Cattle for Meat Production

Numbers of cattle for meat production have increased in South Australia. At 31 March 1964, 424 000 cattle for meat production were recorded (this figure is not strictly comparable with earlier figures because of a change of classification adopted in 1964); by 31 March 1969, 631 000 cattle were reported for meat production on 8 706 rural establishments. The number at 31 March 1976 had risen to 1 683 000 cattle, but since then numbers have declined significantly and at 31 March 1982 there were 855 000 cattle for meat production.

In the northern pastoral areas, Shorthorns are the predominant breed and there are lesser numbers of Herefords; in the South East, Herefords and Shorthorns are the main breeds and there are substantial numbers of Aberdeen Angus while near Adelaide, where a number of studs are located, several breeds are well represented. In recent years several European breeds have been introduced, most notably the Charolais.

Cattle for Milk Production

From March 1964 to March 1968 the total number of cattle for milk production declined by 39 000 to 231 000. A further decline in total numbers began in 1972-73 and the total number at March 1982 was 158 000. Distribution within the State is little changed although there has been some tendency for concentration in the principal dairying areas.

Properties in South Australia on which dairying is the main activity are situated mainly in the areas where high rainfall or irrigation permits the growing of sown pastures, but many of the mixed farms in the better cereal growing areas carry herds used mainly for milk production. Dairy production on these farms is almost entirely in the form of cream

for butter making, whereas the properties in the sown pasture areas mainly market whole milk, either for consumption in the Adelaide area or for cheese making.

The Adelaide Hills district, comprising the Mount Lofty Ranges and areas as far south as Cape Jervis and Encounter Bay, embraces some of the best dairy land in the State and includes most of the properties devoted specifically to dairy farming. Of the breeds used mainly for milk production, Friesians and Jerseys predominate, with Guernseys, Australian Illawarra Shorthorn, Ayrshires and their crosses in use to a lesser extent.

The Lower Murray swamps extending from Mannum to Wellington are reclaimed areas ideally suited to dairying pursuits, combining the attributes of suitable climate, good soil, and an abundant water supply. The area has a very high carrying capacity of predominantly Friesian cattle.

The Lakes District owes much to the barrages across the mouth of the Murray which have helped to maintain the waters of Lake Alexandrina and Lake Albert in a reasonably fresh state. These have greatly contributed to the improvement of the productivity of this area and also have had the effect of maintaining a greater control over the level of the water in the river, thereby greatly facilitating irrigation of the reclaimed swamps upstream. The cattle for milk production are principally Jersey breed.

The most important dairying area not serving the Adelaide market is the Lower South East, where the high rainfall and low evaporation rate combine to allow a fairly long growth period after the autumn and winter rains and spring flush of feed. Most breeds are well represented in the district, the Jersey and Friesian being slightly more popular.

DAIRY PRODUCE

Milk

Total milk production in any one year is not known precisely. However, as details are known of two major components of total milk utilisation in South Australia, namely the amount consumed by factories in the production of milk, cheese, butter and other milk products and home consumption in the Metropolitan Milk Board area, an estimate can be made.

The following table shows the estimated production of whole milk and the quantity of this milk used for various purposes in 1981-82 and earlier seasons.

Production and Utilisation of Milk, South Australia

Year	Total Milk Produced	Milk Used for		
		Factory Cheese (a)	Home Consumption (b)	
			Milk Board Area	Outside Milk Board Area
'000 litres				
1978-79	321 199	140 504	91 068	39 587
1979-80	331 096	138 949	90 858	39 496
1980-81	319 438	131 037	92 302	39 136
1981-82	305 648	128 404	93 961	39 770

(a) Factory production accounts for virtually all cheese produced. Cheese production before 1979-80 is based on ABS collections; 1979-80 data and following years are supplied by the Australian Dairy Corporation.

(b) Includes cream sales.

PIGS

In South Australia pigs were normally kept as a sideline on mixed farms or in conjunction with dairy cattle, but the trend is towards specialising in pigs.

There have been substantial fluctuations in the pig population from year to year induced by the exceptional variability of prices. Until 1979 the numbers generally declined. The total number exceeded 200 000 for the first time in 1966 and has continued to exceed that number in subsequent years. Of the 374 000 pigs at 31 March 1982, approximately 55 per cent were in Outer Adelaide, and Yorke and Lower North Divisions. The principal breeds in South Australia are Large White, Berkshire, Landrace and Tamworth.

The following table shows the number of pigs on rural establishments at 31 March for the last five years.

Pig Numbers, South Australia

At 31 March	Boars	Breeding Sows	All Other	Total
1978	3 897	39 763	267 286	310 946
1979	3 946	42 727	283 743	330 416
1980	4 362	51 888	341 455	397 705
1981	3 959	48 626	340 931	393 516
1982	3 587	49 202	321 589	374 378

In the following table, rural establishments with pigs at 31 March 1982 are classified according to the size of the pig herd and the number of breeding sows. Of the 21 402 establishments of all types, 2 300 carried pigs.

**Rural Establishments Classified to Number of Breeding Sows and Size of Pig Herd
South Australia, 1981-82 ^(a)**

Number of Breeding Sows	Size of Pig Herd (Numbers)					Establishments with Breeding Sows
	1-9	10-19	20-49	50-99	100 and Over	
1-4	178	154	166	11	1	510
5-9	24	32	202	156	13	427
10-19	—	14	48	190	120	372
20-49	—	—	6	31	280	317
50-99	—	—	—	1	106	107
100 and over	—	—	—	—	65	65
Total	202	200	422	389	585	1 798

(a) Excludes 502 establishments with pig herds which carried no breeding sows.

MEAT PRODUCTION AND MARKETING

South Australia is a relatively small meat producer, providing approximately 8 per cent of total Australian production. The following table shows the number of livestock slaughtered for human consumption (including exports) and the production of meat during the last five years. Slaughterings and meat production on rural establishments are included in these figures.

Livestock Slaughtered and Meat Produced, South Australia

Season	Livestock Slaughtered for Human Consumption			Meat Production (Bone-in Weight)			
	Cattle and Calves	Sheep and Lambs	Pigs	Beef and Veal	Mutton and Lamb	Pigmeat	Total
		'000			Tonnes		
1977-78	744	3 240	376	125 011	56 796	21 334	203 141
1978-79	658	2 523	402	116 500	47 766	24 145	188 411
1979-80	502	3 451	472	90 643	64 259	28 751	183 653
1980-81	539	3 549	519	93 785	67 907	31 448	193 140
1981-82	580	3 339	528	100 789	61 603	32 281	194 673

Livestock, Average Prices at Adelaide Market

Class of Stock	1977	1978	1979	1980	1981	1982
	Dollars					
Fat cattle:						
Bullocks and steers;						
Prime, medium	132.88	208.63	422.85	405.43	n.a.	n.a.
Young, 120-150 kg medium	n.a.	n.a.	n.a.	248.46	221.02	197.96
Steers, 250-300 kg medium	n.a.	n.a.	n.a.	405.43	354.00	327.59
Bullocks, 300-350 kg medium	n.a.	n.a.	n.a.	467.18	395.80	365.10
Cows;						
Good	61.31	105.64	229.05	255.97	n.a.	n.a.
160-250 kg medium	n.a.	n.a.	n.a.	286.42	249.43	228.71
Calves;						
Prime vealers	44.71	76.47	155.23	172.00	151.73	133.91
Good	30.08	57.73	97.86	107.78	114.56	84.80
Fat sheep:						
Wethers;						
Prime	13.98	16.84	21.44	24.48	n.a.	n.a.
Over 22 kg medium	n.a.	n.a.	n.a.	24.01	21.56	16.84
Ewes;						
Under 22 kg medium	n.a.	n.a.	n.a.	18.43	16.60	10.80
Lambs;						
Prime, medium	14.82	17.42	23.68	24.32	n.a.	n.a.
16-19 kg medium	n.a.	n.a.	n.a.	23.42	22.18	18.65
Young 16-19 kg medium	n.a.	n.a.	n.a.	24.45	19.43	20.49

Livestock, Average Prices at Adelaide Market (continued)

Class of Stock	1977	1978	1979	1980	1981	1982
Dollars						
Pigs:						
Choppers	111.39	142.46	203.92	144.44	141.52	195.75
Baconers	67.45	76.74	98.52	91.08	106.42	121.96
Porkers	40.83	46.23	62.96	55.64	65.84	82.22

On 1 December 1979 new livestock descriptions were introduced in South Australia which are standardised with other States (in particular New South Wales, Victoria and Western Australia) to allow more precise comparisons between markets in other States, and with other markets in South Australia. These descriptions are based on carcass classifications developed for cattle, sheep and lambs by the Australian Meat and Livestock Corporation. The new descriptions are categorised on the basis of sex and age, then subdivided into carcass weight, and then further divided on the basis of fatness using visual estimates of fat depth at the 10/11 rib position ranging from Very Lean to Very Fat. In the table above which shows average market prices of some of the principal classes of livestock, the discontinued descriptions (Prime, medium; Good etc.) have been estimated for 1980 to allow comparison of prices between the old and new descriptions over the years shown. No changes to classification of calves and pigs have been made.

GROSS VALUE OF LIVESTOCK PRODUCTS AND SLAUGHTERINGS

Gross value is the value placed on recorded production at the wholesale prices realised in principal markets. The following table shows for the past five years the gross value of livestock products, and livestock slaughterings and disposals.

**Gross Value of Livestock Products and Livestock Slaughterings and Disposals
South Australia**

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82p
LIVESTOCK PRODUCTS (\$'000)					
Wool	145 277	161 985	215 423	246 646	260 548
Whole milk used for:					
Butter	2 834	2 745	2 574	} 23 000	27 052
Cheese	11 044	13 126	16 299		
Human consumption and other purposes ..	20 415	21 536	23 468	25 953	24 911
Eggs	17 351	17 825	20 564	23 080	22 511
Honey and beeswax	3 298	2 262	3 952	3 194	2 956
Total livestock products	200 220	219 480	282 279	321 873	337 977
LIVESTOCK SLAUGHTERINGS AND DISPOSALS (\$'000)					
Cattle and calves	98 197	142 852	107 295	125 836	134 751
Sheep and lambs	64 261	56 365	98 827	103 014	121 451
Pigs	23 459	29 543	37 006	42 548	54 388
Poultry	22 673	24 617	30 312	35 497	37 803
Total livestock slaught- erings and disposals	208 589	253 376	273 440	306 896	348 393

OTHER RURAL INDUSTRIES

Poultry Farming

Poultry farming is a specialised and distinct industry and it is from the specialised hatcheries and chicken raising establishments that the bulk of commercial production is obtained. The industry can be divided into two categories; the production of eggs, and the raising of poultry for meat. Chickens, scientifically bred for rapid weight gain and known as 'broilers', account for over 90 per cent of total poultry slaughtered.

The main production centres for both categories of this industry are located within an 80 kilometre radius of Adelaide, near the processing works and main consumption outlets. Particular concentrations of growers are at Murray Bridge and Gawler, with some broiler growers established in the Adelaide Hills.

The trend in the egg industry in South Australia is towards a reduction in the total number of poultry farms, but an increase in average flock size. Housing of birds for commercial purposes is largely planned on the intensive principle, with deep litter pens or single and multiple bird cage units. Laying stock consists mainly of a specially produced crossbreed between the White Leghorn and Australorp breeds.

The annual average egg production controlled by the South Australian Egg Board was 10.1 million dozen in the five years ended 1965-66, 15.4 million dozen over the next five years and 19.6 million dozen in the five years ended 1975-76. However, these figures do not take into account movement of eggs interstate independently of the Egg Board, which may represent a significant proportion of total egg production.

Poultry Numbers and Egg Production: South Australia, At 31 March ^(a)

Particulars	1978	1979	1980	1981	1982
			'000		
Hens and pullets	1 448	1 512	1 529	1 532	1 321
Other fowls and chickens	2 737	2 957	3 267	2 921	2 867
Ducks	9	9	10	5	5
Turkeys	7	5	9	8	11
Egg production (b)	203 028	205 573	210 723	189 406	206 625

(a) Excludes poultry kept in backyards.

(b) Recorded by the South Australian Egg Board. Year ended 30 June.

Broiler Industry

The following table shows details of poultry slaughtered for human consumption for the last five years.

Poultry Slaughtered for Human Consumption, South Australia ^(a)

Period	Chickens (Broilers, Fryers or Roasters)	Hens and Stags	Ducks and Drakes	Turkeys	Total
	NUMBER SLAUGHTERED ('000)				
1977-78	19 452	421	16	4	19 894
1978-79	19 867	465	26	5	20 363
1979-80	22 937	451	23	12	23 423
1980-81	24 608	366	15	21	25 011
1981-82	24 660	303	11	33	25 007

Poultry Slaughtered for Human Consumption, South Australia ^(a) (continued)

Period	Chickens (Broilers, Fryers or Roasters)		Hens and Stags	Ducks and Drakes	Turkeys	Total
	DRESSED WEIGHT OF POULTRY SLAUGHTERED (Tonnes)(b)					
1977-78	21 892	722	33	21	22 667	
1978-79	22 351	801	46	33	23 230	
1979-80	25 943	739	41	62	26 786	
1980-81	27 975	598	27	104	28 704	
1981-82	27 281	500	23	177	27 980	

(a) Excludes geese slaughtered.

(b) Dressed weight of whole birds, pieces and giblets as reported by producers.

The broiler industry in South Australia has grown rapidly during the past 20 years, annual production increasing from about half a million birds in 1959 to approximately 23 million birds at the present time. Broilers are specially bred meat strain birds of either sex, that are slaughtered between eight and ten weeks of age at a live weight of approximately 1.5 kg. This rapid growth and efficient conversion of feed to meat has been achieved by extensive breeding programs; the use of specially prepared high protein and energy value poultry feeds; growth promotion and disease control drugs; and by the development of enclosed, factory-like broiler houses, with controlled temperature, ventilation and light, conducive to fast growth.

Beekeeping

Beekeeping in South Australia is a small industry—in 1981-82 there were 394 beekeepers with forty or more hives. Most commercial apiarists operate on a migratory basis, following the flowering of the various species of honey flora. The production of honey and beeswax fluctuates considerably from year to year, depending upon seasonal conditions.

Beekeeping, South Australia ^(a)

Season	Beekeepers	Hives		Honey Produced	Yield of Honey per Productive Hive	Beeswax Produced
		Productive	Un- productive			
	No.	No.	No.	'000 kg	kg	'000 kg
1977-78	433	78 907	14 020	4 316	55	81
1978-79	433	72 775	20 172	3 048	42	62
1979-80	438	81 459	15 827	5 098	63	98
1980-81	442	80 191	23 328	3 604	45	75
1981-82	394	73 611	19 275	3 955	54	86

(a) Excludes particulars for producers having less than forty hives.

Further References

Additional information may be found in the following publications:

7103.4 *Agriculture—South Australia*

7114.4 *Principal Agricultural Commodities (Preliminary Estimates)—South Australia*

- 7203.0 *Livestock Statistics—Australia*
- 7202.4 *Livestock and Livestock Products—South Australia*
- 7205.0 *Meat Statistics—Australia*
- 7208.0 *Milk Statistics—Australia*
- 7212.0 *Wool Statistics—Australia*
- 7214.0 *Beekeeping—Australia*
- 7303.0 *Fruit Statistics—Australia*
- 7310.0 *Viticulture—Australia*
- 7321.4 *Crops and Pastures—South Australia*
- 7322.4 *Fruit—South Australia*
- 7503.0 *Value of Agricultural Commodities Produced—Australia*
- 7503.4 *Value of Agricultural Commodities Produced—South Australia*

9.2 MINING, FORESTRY AND FISHERIES

MINING

South Australia has a well developed mineral industry and in recent years natural gas has surpassed iron ore as the major product. The State also has very large resources of industrial minerals which make up a significant proportion of the total annual value of mineral production.

MINING ADMINISTRATION

The Mining Act, 1971-1982 reserves all minerals to the Crown and regulates and controls all mining operations in South Australia.

The state and conditions of the mine, machinery, ventilation, and all other matters relating to the safety, health and well-being of the employees and general public are regulated by the Mines and Works Inspection Act, 1920-1978.

The Petroleum Act, 1940-1982 and the Petroleum (Submerged Lands) Act, 1967-1974 provide for the control of petroleum exploration and the production, conservation and distribution of petroleum by pipeline.

The administration of these Acts is the responsibility of the Minister of Mines and Energy and the Director-General, Department of Mines and Energy. The principal functions of the Department of Mines and Energy are:

- (i) the administration of mining and petroleum legislation including the granting of titles and collection of royalties and fees;
- (ii) geological and geophysical investigations to ascertain the extent and nature of the State's mineral resources;
- (iii) drilling to test mineral deposits, petroleum reserves and underground water supplies;
- (iv) the testing and treatment of minerals, generally in arrangement with the Australian Mineral Development Laboratories;
- (v) control of mining and rehabilitation;
- (vi) co-ordinating State Government activities and formulating policy advice in the discovery, assessment and development of all energy resources within the State.

MINERAL INDUSTRY STATISTICS

A mining establishment is one predominantly engaged in an activity specified in Division B of the Australian Standard Industrial Classification (ASIC). The ASIC defines 'mining' as including the extraction of minerals occurring naturally as solids such as coal and ores, liquids such as crude petroleum, or gases such as natural gas, by such processes as underground mining, open-cut extraction methods, quarrying, operation of wells or evaporation pans, dredging or recovery from ore dumps or tailings. Establishments mainly engaged in dressing or beneficiating ores or other minerals by crushing, milling, screening, washing, flotation or other, including chemical beneficiation processes, or mainly engaged in briquetting or iron ore pelletising are included because the processes are generally carried out at or near mine sites as an integral part of mining operations. Natural gas absorption and purifying plants are also included.

Excluded are establishments mainly engaged in refining or smelting, or in the manufacture of products of mineral origin.

The following two tables detail mining establishments operations in South Australia for 1980-81 classified according to industry subdivision.

**Mining Establishments: Summary of Operations by Industry Subdivision
South Australia, 1980-81**

Industry Subdivision	ASIC Code (a)	Number of Establishments Operating at 30 June 1981	Persons Employed (b)			Wages and Salaries
			Males	Females	Total	
\$ million						
Metallic minerals	11	6				
Coal	12	1	2 049	236	2 285	38.9
Crude petroleum including natural gas	13	1				
Construction materials	14	67	681	66	747	11.7
Other non-metallic minerals	15	43	387	15	402	5.7
Total mining, excluding services to mining .....	..	118	3 117	317	3 434	56.3

(a) Australian Standard Industrial Classification 1978 edition.

(b) At 30 June 1981; includes working proprietors.

**Mining Establishments: Turnover and Value Added by Industry Subdivision
South Australia, 1980-81**

Industry Subdivision	ASIC Code (a)	Turnover	Stocks at 30 June		Purchases, Transfers in and Selected Expenses	Value Added
			1980	1981		
\$ million						
Metallic minerals	11	204.9	28.8	35.2	101.3	110.1
Coal	12					
Crude petroleum including natural gas	13					
Construction materials	14	40.5	3.9	3.6	14.1	26.1
Other non-metallic minerals	15	31.6	3.8	4.9	21.2	11.5
Total mining, excluding services to mining .....	..	277.0	36.5	43.7	136.6	147.7

(a) Australian Standard Industrial Classification 1978 edition.

Statistics on the operations of establishments in Division B are collected each year in

the mining census, which since 1968-69 has been conducted on an integrated basis with other economic censuses.

Metallic minerals (copper and iron ore being the major industries), coal and natural gas operations accounted for 66.5 per cent of mining employment. Construction materials (building stone, gravel, sand and road materials) industries employed 21.8 per cent of total mining employment.

MINERAL COMMODITY STATISTICS

Mineral commodity statistics published in the *South Australian Year Book* are those recorded by the Director-General of Mines and Energy. The quantity and value of production of the major minerals for the years ended 30 June 1981 and 1982 are listed in the following table.

Mining and Quarrying Production, South Australia ^(a)

Mineral	Unit of Quantity	Quantity		Value (b)	
		1980-81	1981-82	1980-81	1981-82
\$'000					
Metallic:					
Copper	'000 tonnes	13	16	12 267	13 803
Iron ore	'000 tonnes	2 370	2 241	21 142	20 057
Other .....	..	..	..	322	511
Non-metallic:					
Barite	'000 tonnes	14	18	522	407
Kaolin	'000 tonnes	7	9	184	252
Coal (c)	'000 tonnes	1 737	1 425	23 633	31 814
Dolomite	'000 tonnes	822	617	1 928	1 800
Gypsum	'000 tonnes	853	1 208	2 727	3 618
Limestone	'000 tonnes	2 019	2 120	2 864	4 688
Opal (d) .....	..	..	..	35 160	30 500
Salt	'000 tonnes	755	712	2 937	2 809
Talc, soapstone	'000 tonnes	18	21	740	739
Other .....	..	..	..	919	1 222
Construction material quarrying	'000 tonnes	9 173	8 798	26 358	31 079
Natural sand products	'000 tonnes	2 172	2 892	6 610	8 912
Natural clay products	'000 tonnes	2 783	2 131	2 646	2 250
Natural gas (e)	millions of m ³	3 870	4 360	85 141	104 911
Total .....	..	..	..	226 100	259 372

(a) Quantities disposed of as recorded by the Department of Mines and Energy.

(b) Ex-mine site.

(c) Value of coal production was estimated by the Department of Mines and Energy.

(d) Estimated.

(e) Value at Moomba plant outlet.

Details of mining of individual minerals are given below. Reference should also be made to Part 1.3 which contains particulars of the location of mineral resources.

Iron Ore

The only proved high grade iron ores of South Australia lie in the Middleback Ranges to the west of Whyalla. The ranges are composed primarily of iron-rich rocks containing local concentrations of high grade ore.

The Iron Monarch deposit near Iron Knob has provided the bulk of the iron ore for Australia's steel industry for many years. Production from this and the smaller deposits of Iron Prince and Iron Baron is maintained by the Broken Hill Proprietary Company Limited (BHP)—in 1981-82 production was 2·2 million tonnes.

Copper

Copper mining was very important in the early days of the settlement of South Australia. The rich discoveries at Kapunda in 1842, Burra in 1845, and Wallaroo-Moonta in 1859-60 came at a time when the colony's development was stagnating and severe financial difficulties were being encountered. Many small copper mines, scattered throughout the central metalliferous areas, were also opened but most of the mines only lasted until the richer secondary copper cut out at depths mostly less than 150 metres.

From 1842 to 1923, when the great Wallaroo-Moonta mines closed, copper was by far the State's most important mining produce. The copper products accounted for over 80 per cent of the State's recorded mineral production (construction materials were not recorded and so not included). The copper products sold during this period contained 450 000 tonnes of copper metal and were worth \$33 million giving an average of \$72 per tonne of copper in the products.

During the next forty-five years (1924-1968), until the commencement of the mining boom, copper production was very small and intermittent with a production of only 5 600 tonnes of copper in the mineral products.

The renewed interest in copper mining during the boom led to the discovery of new, but lower grade, ore bodies at the old copper fields of Kanmantoo and Mount Gunson, and the working of remnant low-grade ore at Burra. These deposits are worked by open-cut methods which can produce much larger tonnages than the underground methods used to produce most of South Australia's copper during the earlier period of copper mining.

There were only two copper producers in 1981-82 because the continued low world copper prices had caused the closure of the smaller producers and Kanmantoo mine which is being run on a care and maintenance basis until world copper demand increases. In 1981-82 the Mount Gunson and Burra mines together produced 16 000 tonnes of copper in concentrates and copper oxide. This was 33 per cent higher than the output of 12 000 tonnes of copper for 1980-81.

The bulk of the production came from the Mount Gunson mine which sells copper sulphide flotation concentrates to Japanese smelters. Adelaide and Wallaroo Fertilizers Ltd at Burra uses the ammonia leaching process to produce high quality black copper oxide of seventy-seven per cent grade copper which is sold direct to industry in Australia and overseas.

The ex-mine site value of the copper products sold in 1981-82 was \$14·0 million.

Zinc

In South Australia the only production of zinc comes from a high grade (about forty per cent zinc) deposit of zinc silicate found at Puttapa near Beltana in the Flinders Ranges. Several other smaller occurrences of this unusual zinc ore have been found in this part of the State but they are not being mined at present. The deposit is of high enough grade not to need concentration but is mined, crushed, and then sent to various markets in Europe, Africa and to Risdon in Tasmania with small amounts going direct to the Australian fertiliser industry for use as trace element supply for zinc deficient soils.

The plant at Puttapa has been placed on a care and maintenance basis with sales from stockpiles. In 1981-82 no sales were negotiated.

Barite

There are widespread occurrences of barite (barytes) throughout the Adelaide System rocks of South Australia. Deposits are located in a number of areas including the Mount Lofty and Flinders Ranges and also the Olary district. Barite is still used in the paint and other industries, but its main use is in drilling mud for oil exploration where the grade does not have to be so high. Production of barite totalled 18 281 tonnes in 1981-82.

The company operating the Oparapinna Mine in the Flinders Ranges is the major Australian producer of barite. In recent years it has been the main supplier of high grade ore for industrial use.

Gypsum

South Australian deposits contain by far the largest part of Australian reserves of gypsum. The deposits in general have been formed in coastal basins cut off from the ocean, giving rise to extensive deposits of rock gypsum. The most important coastal deposits are found at Lake MacDonnell and on Kangaroo Island. Inland deposits mainly of seed gypsum occur at Moonabie, Lake Fowler, Cooke Plains and along the Murray River. The gypsum deposits have been worked extensively over the past fifty years to provide the bulk of Australasian requirements for the plaster industry and for portland cement manufacture. In 1981-82 production was in excess of 1.2 million tonnes.

Reserves of high grade gypsum at Lake MacDonnell have been proved by the Department of Mines and Energy to exceed 500 million tonnes, sufficient to meet Australasian requirements for the plaster industry and for portland cement for many years.

Salt

The semi-arid climate and high evaporation rate along much of South Australia's coastline, together with the high salinity of the gulf waters, create very favourable conditions for the production of salt by solar evaporation. In the early days the availability of sites close to cheap transport led to the establishment of solar salt works at the head of Spencer Gulf near Port Augusta and at Whyalla, at Price on the eastern shore of Yorke Peninsula, and in 1940 at Dry Creek near Adelaide. In addition several operators recover salt from shallow salt-lakes on Yorke Peninsula and elsewhere.

There were 712 000 tonnes of salt produced in 1981-82. The industry in South Australia is capable of expansion, but the future export market appears to have been largely captured by salt development in Western Australia.

Opal

The estimated value of raw opal production in 1981-82 was \$30.5 million, a 14 per cent decrease on 1980-81. In terms of value it was the third most important mineral produced in South Australia during 1981-82.

In spite of the value of opal being won at present, opal mining remains a small scale operation at Coober Pedy, Andamooka and Mintabie. The distances from Port Augusta to Andamooka and from Port Augusta to Coober Pedy are 290 and 630 kilometres respectively. Mintabie is 340 kilometres north west of Coober Pedy.

Mining at all centres is relatively shallow, rarely exceeding 30 metres.

Talc

The principal occurrences of talc are to be found at Mount Fitton in the northern Flinders Ranges and in the Gumeracha and Lyndoch districts. From these sources 21 000 tonnes were mined in 1981-82. The Mount Fitton talc is of a particularly high grade, and is in demand for use by the cosmetics industry. Lower grade material is used in the rubber, paint, and ceramics industries.

Coal

South Australia is deficient in accessible bituminous coal resources and the only mining is of sub-bituminous coal at Leigh Creek. The present development of the field commenced with Department of Mines drilling operations in 1941. The Electricity Trust of South Australia assumed control of the field in 1948 and developed it as a source of fuel for the Port Augusta power station. Meanwhile testing by the Department of Mines and Energy continued for some years, proving a total of fifty-two million tonnes of coal available by open-cut methods and a further 370 million tonnes of underground reserves. Changing economic conditions have caused these estimates to be revised to 150 million tonnes and 280 million tonnes respectively, of which in excess of forty million tonnes has been mined to date by open-cut methods. Combined mining development of the Telford Basin at Leigh Creek required the relocation of Leigh Creek township and Leigh Creek South was completed in November 1981.

Coal production in 1981-82 was approximately 1.4 million tonnes. Almost the entire production is railed to Port Augusta for use in power generation.

Natural Gas

The natural gas production in 1981-82 was 4 360 million cubic metres valued at the plant outlet at \$105 million, a thirteen per cent increase in volume and a twenty-three per cent increase in value of production in 1980-81.

Limestone and Dolomite

The combined quantity of limestone and dolomite extracted for use in industry (*i.e.*, excluding roadstone, etc.) during 1981-82 was 2.7 million tonnes. The principal deposits mined are limestone at Rapid Bay and dolomite at Ardrossan for the steel industry; limestone at Penrice, near Angaston, for the chemical and cement industries; and limestone at Klein Point for the cement industry.

Details of limestone production for the years 1978-79 to 1981-82 are given in the following table.

Limestone Production, South Australia
(Excluding Limestone Used as Building Stone, Road Materials, Etc.)

Classification	1978-79	1979-80	1980-81	1981-82
	'000 tonnes			
Flux	534	457	379	326
Cement	1 044	1 139	1 071	1 057
Chemical	418	491	518	684
Other	46	47	50	54
Total	2 042	2 133	2 019	2 120

Clay

South Australia possesses a wide variety of clays which are used for industrial purposes such as cement manufacture, building bricks and roofing tiles, refractory ware, pottery and ceramic purposes.

Because of the scarcity of local timber supplies, softwood excepted, much greater use is made of clay bricks for construction in South Australia than in other parts of Australia.

The clay brick industry is concentrated near Adelaide. There are also widely distributed occurrences of special clays for ceramic and refractory ware.

The Department of Mines and Energy, together with the Australian Mineral Development Laboratories, is continually engaged in investigations relating to the usage of clay deposits encountered during geological surveys throughout the State.

Details of natural clay products for the years 1980-81 and 1981-82 are given in the following table.

Clay Production, South Australia

Classification	Quantity		Value	
	1980-81	1981-82	1980-81	1981-82
	'000 tonnes		\$'000	
Cement shale	29	84	31	170
Coloured shale	463	289	983	596
Fire clay	13	7	40	36
Red plastic clay	25	7	51	13
Rubble	2 021	1 481	1 012	752
White plastic clay	63	37	182	123
White shale	169	226	347	560
Other	—	—	—	—
Total	2 783	2 131	2 646	2 250

Construction Material Quarrying

Post-war industrial expansion, accompanied by extensive housing programs and highway construction, has resulted in a rapidly increasing demand for construction materials. Production of aggregate, sand and roadstone (including all building stone) was 8.8 million tonnes in 1981-82 compared with 2.2 million tonnes in 1947.

Construction Materials, South Australia

Type of Material	Quantity		Value	
	1980-81	1981-82	1980-81	1981-82
	'000 tonnes		\$'000	
Dimension (building) stone	28	26	885	953
Dolomite/limestone	5 646	5 394	13 178	15 435
Quartzite/sandstone	2 770	2 811	10 522	12 537
Other	729	567	1 772	2 153
Total	9 173	8 798	26 358	31 079

The most significant of South Australian building stones is the Mt Gambier limestone which has been worked since the 1840s. Quarried as large ashlar, the stone is light, easily worked and is sufficiently durable for dwelling construction.

Wistow, Mintaro, Jones Hill and Willunga are sources of slate and flagstone, of which most is used as random (or crazy) paving, though smaller amounts are sawn as paving tiles.

Granite production is dominated by two varieties, black granite (or Norite) from Black

Hill, north-east of Mannum and red granite from Calca near Streaky Bay. Most granite is used in monuments with smaller amounts in buildings.

Sandstone is worked at several locations in the Adelaide Hills, the largest producers have quarries at Carey Gully and Basket Range.

Details of dimension (building) stone for the years 1980-81 and 1981-82 are given in the following table.

Dimension (Building) Stone, South Australia

Type of Stone	Quantity		Value	
	1980-81	1981-82	1980-81	1981-82
	'000 tonnes		\$'000	
Dolomite/limestone	16	14	231	259
Granite	3	4	312	378
Quartzite/sandstone	2	1	39	22
Slate	6	7	303	282
Gneiss	—	—	—	12
Total	28	26	885	953

MINERAL DEVELOPMENTS

Development activity in the Cooper Basin escalated in 1981-82. Dullingari gas field development was completed and fully integrated with the natural gas system. The liquids pipeline from Moomba to Stony Point was two-thirds completed and a number of oil and gas liquids fields were being developed, including Tirrawarra, Merrimelia and Strzelecki.

Exploration activities in the past year led to a number of discoveries of both oil and gas in the Cooper and Eromanga Basins, while six exploration wells were drilled outside the Cooper Basin area. Two of these wells were drilled in the offshore Poldia Basin, the first such offshore drilling activity since 1975; the other holes drilled were in the Pedirka, Pirie-Torrens and onshore Otway Basins. The most notable discovery for the year was the multi-zone Mesozoic oil and gas accumulation found in the Merrimelia Field in the Cooper Basin, highlighted by the lower Jurassic oil flow of 2 738 barrels per day from the Merrimelia No. 6 well.

At 30 June 1982, ten petroleum exploration licences and sixteen petroleum production licences plus two pipeline licences were current onshore. In addition seven permits were held for petroleum exploration offshore.

Mineral exploration and development continue following the announcement by Western Mining Corporation Ltd (WMC) of a major copper and uranium discovery with significant contents of gold, silver and rare earths at Olympic Dam on Roxby Downs Station, 260 kilometres north of Port Augusta and west of Andamooka. This has stimulated interest in the entire area of the Stuart Shelf and has resulted in continuing exploration by WMC and other companies.

At 30 June 1982, 372 mineral exploration licences were current.

BP Australia Ltd has joined Western Mining Corporation Ltd in a partnership agreement for the future development of the Olympic Dam project. The Joint Venture companies have formed Roxby Management Services Pty Ltd to act as the project manager.

At Olympic Dam, the Whenan exploration shaft has been completed to 500 metres to enable the recovery of bulk ore samples for pilot plant processing on site.

This will provide necessary information for detailed mill design and mining feasibility studies which are expected to be completed towards the end of 1984.

Future power generation in South Australia will require an increase in the use of coal and the South Australian Department of Mines and Energy has been carrying out a review of the State's coal resources.

During 1981, exploration for coal reached a new level of interest and expenditure of over \$9 million was recorded on Exploration Licences. The upsurge in activity has resulted in several new discoveries and upgrading of tonnages of known deposits:

Leigh Creek

Open cast mining of this high-ash Triassic coal began in 1943; this field now supplies coal to the power station at Port Augusta. Current annual production is 1.56 million tonnes and this will increase to about four million tonnes when the new Northern Power Station is commissioned in 1985. The increased coal requirements will involve mining to much greater depths and include coal that underlay the former site of the township of Leigh Creek, which has been relocated.

Northern St Vincent Basin

Lignite deposits exist about 100 kilometres north of Adelaide in sediments of Tertiary age within the St Vincent sedimentary basins. Exploration began during the 1920s in the Inkerman-Balaklava area and in 1977-78 the Electricity Trust explored the area near Bowmans in detail. A trial pit was excavated to a depth of seventy metres in the Bowmans Deposit during 1980 to provide a bulk sample of lignite for combustion testing overseas.

Anna-Sedan

The Anna deposit which occurs in Tertiary sediments along the western edge of the Murray Basin was first investigated in the 1920s. In 1979, exploration by CSR Ltd resulted in the discovery of the Sedan deposit about eight kilometres southwest of Anna and a total of about 290 million tonnes has been outlined. Bulk sampling through recovery of one metre diameter drill cores has been undertaken to provide material for combustion testing overseas.

Kingston

Western Mining Corporation discovered lignite deposits in sediments of Tertiary age near Kingston in 1979 and reserves of 1 000 million tonnes have since been defined. Mining, environmental, and hydrogeological studies are being carried out. A bulk sample obtained from one metre diameter drill cores, has been sent overseas for combustion testing.

Arckaringa Basin

Exploration has continued on the extensive black coal deposits occurring in Permian sediments of the Arckaringa Basin at Lake Phillipson and Wintinna. Considerable further work is required to establish their suitability for supply for local power generation or other uses.

Lock

Jurassic coal deposits exist near Lock on Central Eyre Peninsula. Indicated reserves are about 100 million tonnes. Although the coal has a high ash content, its sodium/ash

ratio is the lowest of the known South Australian brown coals and its assumed heat value is comparable with that of Leigh Creek coal.

Other Developments

Uranium is associated with the copper-silver-rare earth deposits at Olympic Dam on Roxby Downs Station. Other smaller deposits of uranium in the Lake Frome area have been examined and the further development and testing of the uranium deposits at Honeymoon (south-east of Lake Frome) and Beverley continues.

The Australian Mineral Foundation Inc., established at Frewville, four kilometres to the east of the centre of Adelaide, provides short-term specialist training at professional and sub-professional levels for the mining and petroleum exploration and production industries.

The Australian Mineral Development Laboratories (AMDEL), also at Frewville, continue to carry out valuable research, development and laboratory service work for the mineral industry of Australia and neighbouring countries.

The Department of Mines and Energy spent approximately \$9.0 million in 1981-82 (\$8.4 million in 1980-81) on geological and other investigations, drilling and mineral research work to assist the State's mineral industry.

The following table shows details of private mineral exploration, other than petroleum, in South Australia for 1980-81 and 1981-82.

Private Mineral Exploration (Other than Petroleum)
South Australia ^(a)

Particulars	Unit	On Current Producing Leases		On Other Areas		Total Private Exploration	
		1979-80	1980-81	1979-80	1980-81	1979-80	1980-81
Depth drilled:							
Core	'000 m	—	—	49	44	49	44
Non-core	'000 m	n.p.	1	n.p.	238	232	239
Total	'000 m	n.p.	1	n.p.	282	281	283
Expenditure:							
Drilling:							
Core	\$'000	—	n.p.	2 245	n.p.	2 245	2 992
Non-core	\$'000	n.p.	n.p.	n.p.	n.p.	3 003	3 760
Total	\$'000	n.p.	79	n.p.	6 673	5 248	6 752
Other	\$'000	n.p.	1 349	n.p.	18 751	13 629	20 101
Total	\$'000	270	1 428	18 607	25 424	18 877	26 853

(a) Excludes exploration for water and all development work. Excludes details of exploration by business undertakings operated by State and local government authorities.

Details of private petroleum exploration and development for South Australia are shown in the following table for the years 1978 to 1981.

Private Petroleum Exploration and Development, South Australia ^(a)

Particulars	Unit	1978	1979	1980	1981
Wells drilled (b)	No.	8	5	11	25
Depth drilled	'000 m	20.3	14.3	22.9	58.3
Expenditure:					
Private sources (c)	\$'000	8 096	10 542	17 519	51 696

(a) Source: Bureau of Mineral Resources, Geology and Geophysics.

(b) Number of wells reaching total depth during year.

(c) Includes payments under the *Petroleum Search Subsidy Act 1959*.

FORESTRY

(Source: South Australian Woods and Forests Department)

There are an estimated six million hectares of land classified as wooded in South Australia, but much of this is too small or scattered to be of current economic value for wood production or is better retained in its present form for environment protection reasons. Some 780 000 hectares carry forest or forest woodland, a decreasing part of which is still exploited for minor quantities of timber and fencing or firewood materials. Many of the forested or wooded areas are of considerable value for soil conservation, watershed protection, shelter, shade and conservation of indigenous plants and animals.

Certain areas have been set aside as State forest reserves, the total area thus reserved at 30 June 1982 being 132 677 hectares. In addition the Woods and Forests Department is responsible for 2 176 hectares of reservoir lands, of which 1 066 are planted with pines.

Considerable damage was done to the State's forests by the bushfires of February 1983. The estimated area of forests destroyed amounted to more than 20 000 hectares. This represented about a quarter of the plantings in the South East, and roughly the same proportion of Central region plantations.

A more detailed history of forestry development in South Australia was included on pages 432-4 of the *South Australian Year Book 1970*.

Indigenous Forests

The natural forests of South Australia consist of eucalypt hardwoods restricted principally to the Mount Lofty Ranges, the lower Flinders Ranges, the southern portion of Eyre Peninsula, and the South East. A few species are of commercial value and these are used to a limited extent for the production of poles, posts, rails and sleepers.

Some areas of forest reserves not planted with conifers are maintained under native hardwoods but it is unlikely that further hardwood plantations will be established for timber purposes.

Plantations

Seedlings raised in nurseries are planted out in the forest at densities of 1 700-2 200 trees to the hectare. A series of thinnings, starting when the trees are about twenty metres high, reduces density to about 150 trees to the hectare by about age forty. These thinnings are carried out on a commercial basis and make the major contribution to present timber and pulpwood output. The final felling age is aimed at forty to fifty years although for management purposes some earlier felling has been carried out in the past. Trees of the same age may vary in height; on some sites trees reach twenty metres after ten years of growth, but on other sites this may not be reached until after twenty years of growth.

State Forests, South Australia
Area Planted During 1981 and Net Area of Plantations at 30 June 1982

Location	Planted during 1981			Plantations at 30 June 1982		
	Softwoods		Hard-woods	Softwoods		Hard-woods
	<i>Pinus radiata</i>	Other <i>Pinus</i>		<i>Pinus radiata</i>	Other <i>Pinus</i>	
Hectares						
Northern Region;						
Bundaleer	—	—	—	1 363.9	35.8	196.5
Wirrabara	43.0	—	—	2 048.5	62.7	44.0
Other forests	—	—	—	—	—	146.6
Total Northern	43.0	—	—	3 412.4	98.5	387.1
Central Region;						
Mount Crawford	125.6	—	—	6 301.5	306.4	36.4
Kuitpo	51.3	—	—	2 319.5	385.8	114.0
Blackwood	—	—	—	7.4	—	—
Second Valley	56.7	5.6	—	1 854.4	162.8	27.2
Total Central	233.6	5.6	—	10 482.8	855.0	177.6
Riverland Region;						
Parilla	—	—	—	—	6.1	48.6
Total Riverland	—	—	—	—	6.1	48.6
South Eastern Region;						
Penola	104.7	—	—	12 267.7	1 868.3	1.2
Comaum	—	—	—	2 963.8	302.8	6.4
Mount Burr	110.5	—	—	9 051.2	556.4	76.8
Noolook	164.3	—	—	3 787.5	4.0	—
Mount Gambier	105.4	—	—	7 273.4	705.8	8.9
Kongorong	—	—	—	1 321.8	6.3	—
Tantanoola	163.9	—	—	7 867.1	951.5	6.3
Caroline	737.4	—	—	5 689.6	225.9	1.1
Myora	64.4	—	—	5 764.7	207.3	—
Cave Range	—	—	—	206.9	105.2	—
Total South East	1 450.6	—	—	56 193.7	4 933.5	100.7
Western Region;						
Wanilla	—	—	4.7	46.6	24.7	359.6
Waterworks reserves	—	—	—	943.2	122.5	3.6
Total State forests ...	1 727.2	5.6	4.7	71 078.7	6 040.3	1 077.2

In addition to the above forest areas the Woods and Forests Department estimates that there are approximately 21 000 hectares of privately owned *Pinus radiata* forest in the South Eastern region and an additional 1 000 hectares in the Central region.

Extensive damage from bushfires in South Australia in February 1983 will have a

significant effect on the above areas. Early estimates after the fires indicated a loss of 17 000 hectares of forest in the South East. Mount Burr and Penola were the districts involved and the area affected constitutes approximately 23 per cent of the South East plantations. In the Adelaide Hills the estimated area is 3 086 hectares or 23 per cent of Central region plantations. Kuitpo and Mount Crawford were the areas involved.

Exotic softwoods accounted for approximately 99 per cent of the planted forest area at 30 June 1982. As can be seen from the above table, the majority of the planted forest is in the Lower South East. The 625 mm rainfall line roughly divides the South East in two; the Lower South East, with an annual rainfall in excess of 625 mm is quite suitable for commercial forestry, but the Upper South East is not.

The previous table clearly illustrates the predominant importance of one species, *Pinus radiata*, in the composition of South Australian forests. Areas of other species are now minor, although over a hundred species have been tried in earlier years.

FOREST ADMINISTRATION

State Forests

State forests are administered by the Woods and Forests Department which is responsible for the establishment, maintenance and exploitation of State forests, including the management of forest reserves and operation of mills for processing timber produced by those forests. The Forest Reserves are organised into Districts and are under the charge of professionally trained foresters. The Department is also the major timber producer in South Australia, and operates three sawmills and two wood preservation plants through its Commercial Division.

In earlier years, when large areas of plantations were being established, expenditure by the Department exceeded revenue, but since 1942-43 the revenue has exceeded expenditure including depreciation and interest on loans. By 1954-55 accumulated surpluses had matched expenditure on establishment and maintenance of plantations, and annual surpluses of the Department are now paid to Consolidated Revenue.

Funds employed by the Woods and Forests Department, including its milling operations, amounted to \$72 980 000 at 30 June 1982 of which \$33 555 000 was timber and land at net cost. The present value of the State-owned pine forests is approximately \$210 million at current royalty rates.

PRODUCTION

Log production is met from final fellings and thinning operations, and planned forest management ensures that the amount of timber cut each year does not exceed new growth. For many years thinnings have provided the bulk of the logs produced but with the increasing age of the plantations the quantity of logs coming from final fellings is rising. In 1981-82 approximately forty per cent of total log production was from final fellings (Woods and Forests Department only). With the increasing area of forest reaching the stage of regular and repeated thinning at intervals of about seven years, log production is rising steadily towards the full annual yield which can be cut indefinitely.

In 1983 a salvage operation, aimed at harvesting those trees which remained unaffected in plantations burned by the bushfires in February, was mounted with the financial assistance of the State and Commonwealth Governments.

The following table gives the quantity of forest logs used during the years 1977-78 to 1981-82.

Forest Log Usage, South Australia

Year	Softwoods	Hardwoods
Cubic metres		
1977-78	973 683	2 602
1978-79	933 065	4 396
1979-80	(a) 901 214	(b)
1980-81	(a) 852 014	(b)
1981-82	(a) 794 506	(b)

(a) Woods and Forests only.

(b) Minor usage no longer included.

EMPLOYMENT

The number of persons directly employed by the Woods and Forests Department in forestry activity in recent years is given in the following table. The Department also employs 821 persons in milling activities.

The extraction of timber from State forests is carried out by contractors.

State Forestry Employees, South Australia

At 30 June

Classification	1977	1978	1979	1980	1981	1982
Professional staff:						
Foresters	49	51	50	48	47	48
Other	27	29	24	34	33	32
Non-professional field staff	42	44	39	41	40	44
Clerical staff	131	138	141	135	136	135
Labour (forest workers, etc.)	262	278	298	252	265	270
Total	511	540	552	510	521	529

RESEARCH AND ADVISORY SERVICES

The virtual dependence of the South Australian forestry industry on a single species necessitates continued research into the maintenance and improvement of *Pinus radiata* resources, as well as into forestry in general.

The Woods and Forests Department maintains its own research facilities and works very closely with the South Australian Regional Station of the Division of Forest Research of the Commonwealth Scientific and Industrial Research Organization (CSIRO) at Mount Gambier. Certain aspects of forestry research are also undertaken by the Soils Division of CSIRO, the Waite Agricultural Research Institute, the University of Adelaide, the Flinders University and the Department of Forestry of the Australian National University.

Research activities aimed at an expansion of forestry production include the development of fertiliser use, both to stimulate growth and to bring into production land previously considered unsuitable, and the improvement of planting stock through selective breeding. Silvicultural research is concerned with the maintenance of soil fertility and with combating various diseases and pests. Permanent sample plots are maintained in departmental forests for research into various aspects of forest yield and management.

The Woods and Forests Department provides an advisory service in arboriculture and

distributes, through its nurseries at Murray Bridge, Belair, Cavan and Berri, a wide variety of trees suitable for planting in various climatic and soil conditions.

FOREST PROTECTION

The hot dry summer conditions normal to the State require forest management to take considerable precautions and to maintain constant vigilance against forest fire. The clearing of undergrowth, the maintenance of fire-breaks, the staffing of observation towers and the constant readiness of fire fighting units are all an integral part of forestry practice.

Other protective measures include spraying to prevent plant disorders, measures to control insect pests in the forest, and the eradication of the various weeds and pests which threaten young plants.

Since the discovery of the *Sirex* wood wasp in Victorian forests in 1961 constant watch has been maintained for any sign of this pest in South Australian pine forests, and the State has contributed to development of biological control measures.

FISHERIES

Commercial fishing is undertaken along the entire South Australian coastline with the exception of the unpopulated area west of Fowlers Bay. In the sheltered waters of the Gulfs, the Coorong and the West Coast bays, operators take prawns or various scale fish species while in offshore waters tuna and shark are sought. Rock lobster is taken along the more exposed parts of the coast, while abalone is dived for in most areas. A smaller quantity of freshwater fish is caught in the River Murray and associated lakes.

The most commercially valuable species are prawns and rock lobster, with tuna, abalone, shark and whiting also making significant contributions. The general marine scale fishery supports the greatest number of fishermen, both amateur and professional. The total value of fisheries produce landed commercially in South Australia in 1981-82 was \$52 million.

FISHING VESSELS

A wide range of vessels operates in the various fisheries. Vessels exceeding fifteen metres in length are engaged primarily in tuna poling and prawn trawling while the majority of vessels in the nine metres to fifteen metres range are used for rock lobster fishing. Abalone divers generally operate from small aluminium or fibreglass boats between five metres and nine metres in length, but the majority of the smaller boats are engaged in the inshore general scale fishery.

Fishing: Boats Engaged, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
Boats engaged:					
Under 6 metres	1 226	1 351	1 345	1 042	942
6 metres and under 9	292	315	310	273	403
9 metres and under 12	168	168	172	167	167
12 metres and under 15	116	114	118	123	135
15 metres and under 18	49	50	58	60	74
18 metres and under 21	23	23	23	23	26
21 metres and over	18	17	38	22	39
Total	1 892	2 038	2 064	1 710	1 786

ADMINISTRATION

The exploitation of fish resources adjacent to South Australia is controlled by three Acts, the South Australian Fisheries Act, 1971-1980, the Commonwealth *Fisheries Act 1952* and the *Continental Shelf (Living and Natural Resources) Act 1968*. A new State Fisheries Act was proclaimed in 1983.

Under the State Act, which is administered by the Department of Fisheries, provision is made for the licensing of fishermen and the registration of boats and gear. Control of fishing activity is maintained by licensing, zoning and seasonal closures, the establishment of size limits, bag limits and closed areas, the regulation of amount and type of gear, the prohibition of the use of explosive or noxious substances in any waters and the establishment of aquatic reserves. Controls of this nature are considered necessary for the orderly and efficient use of fish resources, which are in effect 'common property' resources.

PRODUCTION

Finfish

The major marine species of finfish taken in South Australian waters are tuna, shark, Australian salmon, whiting, snapper and garfish. The catches of these and other significant commercial species are given in the following table.

Finfish: Production by Species, South Australia
Estimated Live Weight

Species	1977-78	1978-79	1979-80	1980-81	1981-82
	'000 kg				
Marine:					
Australian salmon	1 169	450	702	683	608
Bream (black)	12	31	73	76	55
Garfish	318	341	463	491	652
Leatherjacket	9	19	14	17	25
Mullet	274	291	282	336	411
Mulloway	72	72	52	45	34
Ruff	354	249	316	337	312
Shark	1 055	1 033	1 098	1 505	1 624
Short finned pike	131	119	147	128	121
Snapper	385	339	362	308	311
Tuna	4 992	4 845	7 180	9 680	14 825
Whiting	831	794	795	975	894
Other marine species	337	133	109	86	97
Total	9 939	8 716	11 593	14 667	19 969
Freshwater:					
Golden perch (callop)	74	130	72	49	147
Murray cod	6	11	10	10	21
Bony bream	82	136	273	271	579
European carp	207	437	443	371	591
Other freshwater species	10	13	15	15	15
Total	379	728	812	716	1 352
Total finfish production	10 318	9 444	12 405	15 383	21 321

Tuna are taken in the waters west and south of Eyre Peninsula and Kangaroo Island. Occasional catches are taken beyond the continental shelf. Although other methods have been attempted, the most successful technique to date for taking tuna is pole fishing with live bait. The use of spotting aircraft has increased the efficiency of fishing operations. Most tuna are landed at Port Lincoln or Streaky Bay although occasional landings have been made at Port Adelaide.

Shark fishing extends from the Victorian border in the east to Fowlers Bay in the far west. The main ports of landing are Port Lincoln, Thevenard/Ceduna, Victor Harbor, Port Adelaide and the South East rock lobster ports. The two most important species, namely school and gummy sharks, are mainly taken with large mesh gill nets and, to a lesser extent, with long-lines.

Operators using purse-seine nets take Australian salmon in waters adjacent to the moderately exposed coastline of southern Yorke and Eyre Peninsulas, Kangaroo Island and the West Coast. The main species of whiting taken is King George whiting which is captured commercially in Spencer and St Vincent Gulfs, Investigator Strait and the West Coast bays. In many areas hand-lining continues to provide profitable catches as this fish attracts a high price. In the inshore waters of the gulfs and certain bays along the West Coast, large quantities of whiting and garfish are taken using hauling nets. Of the other species, mullet, black bream and snapper are regarded highly as table fish. Mullet and black bream are netted mainly in the Coorong and waters adjacent to the River Murray Mouth area. Snapper are mainly taken by hand-line throughout State waters, with relatively small catches being made by long-lines and netting in the northern waters of both gulfs.

The River Murray Lakes area and Coorong are the only commercial sources of fresh water fish in the State because of the general lack of permanent streams and lakes. The River Murray has been sectioned into 'reaches' and 'reserves' for fishing purposes and each commercial river fisherman is issued with a permit to fish a separate reach.

Gross value of production of the major marine species are shown in the following table.

Finfish: Production by Marine Species, South Australia
Gross Value of Production

Species	1977-78	1978-79	1979-80	1980-81	1981-82
			\$'000		
Tuna	2 250	2 377	5 960	8 470	8 863
Whiting	2 686	2 648	2 800	3 512	3 410
Snapper	555	535	562	530	650
Garfish	573	662	848	800	1 063
Australian salmon	427	198	351	383	261
Shark	801	800	985	1 629	1 710
All other	819	866	914	931	1 009
Total	8 111	8 086	12 420	16 255	16 967

Crustaceans

Prawn trawling is undertaken in Spencer and St Vincent Gulfs, Investigator Strait and on the West Coast of the State. Management of the prawn fisheries has been greatly enhanced by the adoption of permanent and seasonal closures designed to protect small prawns. This in turn, maximises the value of the catch by directing fishing to periods when prawns are larger and of higher quality.

Prawn Production, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
Estimated gross weight ('000 kg)	2 276	2 475	2 445	2 395	3 082
Value (\$'000)	6 313	11 586	10 264	10 840	13 649

Pots by which Southern rock lobster are taken are positioned from the shore to the edge of the continental shelf. The south-east coast between Kingston and the Victorian border is the main fishing area. Good catches are also taken from grounds around Kangaroo Island, near Althorpe Islands and Port Lincoln, and along the West Coast.

To prevent over exploitation, both the rock lobster and prawn fisheries are 'limited entry' fisheries with constraints being placed on the number and size of vessels that may fish and the type or number of units of gear that may be used.

Rock Lobster Production, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
Estimated gross weight ('000 kg)	1 912	1 938	1 971	2 810	2 720
Value (\$'000)	7 307	8 237	9 410	15 304	16 294

Although prawns and rock lobsters are the principal species of crustaceans fished in South Australia, there has been a recent increase in commercial fishing for crabs. The main species taken are blue and sand crabs.

Molluscs

Abalone is by far the most important mollusc taken in South Australia and is found in greatest numbers at depths of 12 to 30 metres on the extensive limestone bottom off the shores of western Eyre Peninsula. Smaller numbers are taken in Spencer Gulf, around Kangaroo Island and off the South East coast.

The abalone fishery is also subject to licence limitation with each diver required to have an authority to take abalone on his commercial fishing licence.

Abalone Production, South Australia

Particulars	1977-78	1978-79	1979-80	1980-81	1981-82
Gross (in shell) weight ('000 kg)	770	843	795	938	1 036
Value (\$'000)	1 337	1 462	2 148	3 283	3 546

Other molluscs taken in South Australian waters include squid (valued at \$386 000 in 1981-82), cockles (\$149 000) and octopus (\$122 000). In addition, experiments have been made in the culture of Pacific oysters at Dry Creek.

MARKETING AND PROCESSING

Marketing and processing arrangements vary according to the species. Traditionally, most of the tuna landed in South Australia is canned (not necessarily in South Australia)

for domestic consumption. Surplus tuna is normally exported in whole frozen form. Southern rock lobster are tailed and frozen for export at most of the main ports, but some are cooked for local consumption. Some prawns are cooked and sold locally but most are frozen and exported. Abalone are either canned or frozen for export. Shark are gutted and headed at sea and are frozen at the port of landing for interstate markets. Other fish are generally iced for dispatch to the Adelaide market or are scaled, filleted and frozen for general distribution. A proportion of the prime species landed in South Australia are sold and consumed in Australian east coast markets.

All of the main landing ports have chilling or freezing facilities and many have processing plants. Several of these are operated by individual buyers or co-operatives, the largest of the latter being SAFCOL Holdings Limited. In addition to collecting, processing and distributing fish from the outports, SAFCOL also operates the Adelaide fish market. This is an auction market which markets fish for both members and non-members.

RESEARCH

On-going research is important for effective fisheries management. Scallop, squid, tuna and abalone resources are being investigated by joint Commonwealth and State Government research groups consisting of the Division of Fisheries and Oceanography of the Commonwealth Scientific and Industrial Research Organization (CSIRO), the Fisheries Division of the Commonwealth Department of Primary Industry, and the Fisheries Departments of New South Wales, Victoria, Tasmania and South Australia. In addition, the State Fisheries Department conducts rock lobster, prawn, yabbie, blue crab, abalone, freshwater fish, squid, whiting, snapper and oyster research programs including tagging, stock sampling, and market measuring. The Department also undertakes research into aspects of its fisheries management programs.

To encourage fisheries research, the Commonwealth and State Governments established a joint fisheries Research and Development Fund in 1966 while the Commonwealth Government established the Fishing Industry Research Trust Account in 1969. The latter makes available from Commonwealth Government revenue an amount equal to that collected from the fishing industry by the State fisheries authorities and is used to finance worthwhile research projects.

Conservation

The importance of protecting the marine and freshwater environment against pollution and other man-caused degradation is recognised in Section 56 of the Fisheries Act, 1971-1980 which enables the Governor to make regulations for regulating or prohibiting the discharge, placing or flow into waters of any matter (whether solid, liquid or gaseous) declared by the regulations to be poisonous or injurious to fish or their spawn, and generally for protecting fish and their spawn against destruction or injury by the discharge, placing or flow of any such matter into waters.

The State Department of Fisheries has pioneered, in Australia, the concept of marine national parks and has created 11 aquatic reserves with a total area of 13 400 hectares. Seal colonies, mangrove communities and areas of scientific and educational interest have been protected. Mangrove communities and allied samphire flats have received particular attention because of their recognised contribution to the productivity of the near-shore marine environment. All mangroves in South Australia are fully protected.

Recreational fishing in South Australia is an important leisure activity which has a real value not readily measured by the quantity of fish caught. The management of fish resources takes this aspect into account.

9.3 MANUFACTURING

DEVELOPMENT

Early factory production was oriented to local needs; thus brick kilns, flour mills, tanneries, distilleries and a candle and soap works were among factories recorded in the 1840s. Also in operation were the smaller establishments of saddlers and coachbuilders, while various food and clothing industries were being established. Heavy industry can probably be traced to the production of agricultural machinery, beginning with the stripper of 1843 and including the stump-jump plough of 1876.

The discovery of copper in 1842 provided an impetus to certain industrial activities but the finding of gold in Victoria in 1851 encouraged many skilled persons to leave South Australia and the Colony's infant industries did not fully recover for two decades.

A highlight in the industrial progress of the State was the establishment at Port Pirie in 1889 of smelters for the processing of silver-lead ore from Broken Hill. This was primarily responsible for building up of Port Pirie's population from about 900 at the 1881 Census to some 8 000 twenty years later, making the town at that time the largest country centre in South Australia.

Despite some industrial growth, South Australia in the 1930s was predominantly a primary producing State, but since then a rapid growth in the relative contribution of secondary industry to total production has taken place. Development in the 1930s coincided with Government action which reduced company taxation and wharfage charges, and provided for a program of low-cost housing. The needs of war provided a further stimulus to the industrialisation process during the 1940s but it is since the 1939-45 War that the most impressive development has taken place.

Extensive development has occurred particularly in the consumer durable industries (e.g. motor vehicles, electrical and household appliances) and these industries now employ a significant proportion of the State's labour force. Major improvements also have been made in the State's energy sources with the development of the Port Augusta and Torrens Island Power Stations and the Port Stanvac Oil Refinery, and the introduction of natural gas as a fuel.

ASSISTANCE TO INDUSTRY

Department of State Development

The Department of State Development assists and encourages firms to locate or expand their operations in South Australia. It has a co-ordinating function aimed at increasing and sustaining job opportunities and works in close co-operation with the various State Departments involved in development matters including Marine and Harbours, Mines and Energy, Woods and Forests, Agriculture and Fisheries.

The aims of the Department are to:

- (a) develop and strengthen existing industries;
- (b) diversify the State's industrial base;
- (c) attract new industry;
- (d) expand interstate and overseas trade; and
- (e) assist small business.

The Department locates potential investors and negotiates to secure development projects for the State. It administers the Government's financial incentive schemes and promotes the State both interstate and overseas. General assistance is provided to industry including management and financial advice on specific problems. The Department provides communication and liaison between industry and government.

Small Business Advisory Bureau

Free counselling is available to persons involved in the small business sector. Operating as an autonomous unit within the Department of State Development the Small Business Advisory Bureau offers advice and guidance to people starting in business on their own or experiencing problems in running existing businesses.

Technology Park Adelaide

Technology Park Adelaide is Australia's first comprehensively planned centre for scientific research and high technology manufacturing. The Park promotes an environment conducive to research and development. It is located thirteen kilometres north of Adelaide adjacent to the Levels Campus of the South Australian Institute of Technology.

Other Assistance

Other specific forms of financial assistance made available to industry by the State Government includes payroll tax rebates, relocation grants, consultancy grants, export bridging finance and assistance in the provision of services. Serviced land is available in government industrial estates. Factories may be constructed through the South Australian Housing Trust either for sale or under agreed financial arrangements. Assistance may also be given through government representations located in the United Kingdom, Hong Kong, Japan, Singapore and the Philippines.

MANUFACTURING INDUSTRY STATISTICS

For the year ended June 1969, the Censuses of Manufacturing and Electricity and Gas Establishments were conducted for the first time on an integrated basis with Censuses of Mining, Retail Trade and Selected Services, and Wholesale Trade. The electricity and gas industries, which were previously included in the Annual Factory Census, were the subject of separate censuses in 1968-69. As well as this change in the method of obtaining information on economic activities, different criteria have been used to define manufacturing and this has resulted in a significant fall in the number of establishments. In particular, service establishments such as dry cleaners and motor repair workshops are no longer classified as manufacturing. In addition to the changes in industry classification, information is now collected for all activities (including such things as installation work or wholesaling) undertaken by manufacturing establishments.

Thus, manufacturing industry statistics collected for the 1968-69 Census and subsequent censuses are not comparable with figures obtained from previous censuses. A more detailed explanation of these changes was included on pages 440-4 of the *South Australian Year Book 1972*.

Also, from 1974-75, detailed statistics have not been collected from single establishment enterprises employing fewer than four persons as their contribution to statistical aggregates other than the number of establishments is only marginal. In 1980-81 there were 899 establishments employing fewer than four persons.

LEGISLATION

Industrial legislation is dealt with in Part 7 Labour. Other legislation is concerned with the location of factory premises and with the processes carried out therein.

Under the Local Government Act, 1934-1982, local government authorities may make by-laws restricting the erection of factory premises to certain sections of the area under their jurisdiction. The Manufacturing Industries Protection Act, 1937, provides for the proclamation of certain areas wherein proprietors and occupiers of factories are protected against civil action for noise and vibration problems. This Act, which takes

precedence over zoning by-laws, currently applies to four relatively small zones. Regulations made under the Noxious Trades Act, 1943-1965, have defined certain processes as noxious trades for which a licence must be obtained. In addition an area between Wingfield and Dry Creek in the outer northern suburbs has been declared a noxious trade area with persons operating therein being protected from civil action.

Similarly the licensing of noisy trades may be required under a section of the Local Government Act. Excessive noise from industrial premises is regulated under the Noise Control Act, 1976-1977. Protection against health hazards is provided under the Health Act, 1935-1980.

CLASSIFICATION OF MANUFACTURING ESTABLISHMENTS

The Australian Standard Industrial Classification (ASIC) described in the publication *Australian Standard Industrial Classification, Volume 1* (Catalogue No. 1201.0) classifies the industries in the economy for statistical purposes, thus permitting the scope of the different economic censuses to be specified without gaps or overlapping between them.

As from the 1977-78 Census, statistics of manufacturing establishments are based on the 1978 Edition of the Classification.

In order to provide a link between past and future series a summary of operations table has been published in the bulletin *Manufacturing Establishments, Details of Operations by Industry Class* (Catalogue No. 8203.0) with data classified according to the 1969 Edition of ASIC. This bulletin also contains an explanation of the main changes in industrial classification at the ASIC subdivisional level.

STRUCTURE AND LOCATION OF SECONDARY INDUSTRY

Industrialisation since the 1939-45 War, to a considerable extent, has evolved around three major industrial groups. The motor vehicle, the electrical goods and the household appliance industries, together with their peripheral suppliers of components and services, have accounted for much of the post-war expansion. These industries are located in, or near Adelaide. In fact the tendency for manufacturing industries, particularly those supplying consumer goods, to congregate near their market, has resulted in a heavy concentration of South Australian secondary industries in or near Adelaide.

The following tables based on the 1978 Edition of ASIC show this concentration of manufacturing activity in the Adelaide Statistical Division (ASD).

Manufacturing Establishments: Summary of Operations, Adelaide Statistical Division and South Australia, 1980-81 ^(a)

Item	Unit	Adelaide Statistical Division	South Australia	ASD as percentage of SA
Establishments at 30 June	number	1 682	2 131	79
Average employment:				
Males	number	63 334	81 449	78
Females	number	19 020	23 306	82
Wages and salaries	\$'000	996 156	1 282 968	78
Turnover	\$'000	4 339 728	6 067 292	72
Value added	\$'000	1 837 195	2 387 358	77

(a) Excludes single establishment enterprises employing fewer than four persons.

**Manufacturing Establishments: Summary of Manufacturing Operations
by Statistical Division, 1980-81 ^(a)**

Statistical Division	Establish- ments at 30 June	Average Employ- ment	Wages and Salaries	Turnover	Value Added
	Number			\$'000	
Adelaide	1 682	82 354	996 156	4 339 728	1 837 195
Outer Adelaide	122	4 036	43 743	291 484	106 175
Yorke and Lower North	48	799	8 056	53 211	19 463
Murray Lands	82	3 154	38 600	249 430	76 041
South East	91	5 026	59 777	291 888	108 510
Eyre	38	663	7 543	53 285	18 996
Northern	68	8 723	129 094	788 265	220 979
Total State	2 131	104 755	1 282 968	6 067 292	2 387 358

(a) Excludes single establishment enterprises employing fewer than four persons.

Generally, industrial plants outside the Adelaide Statistical Division are located near the sources of supply of raw materials. At country centres there are either meat slaughtering, dairy produce or fish processing factories processing regional produce for local and export markets. There are exceptions to this, including the production of agricultural machinery at Mannum, woollen mills at Lobethal, clothing production at Mount Gambier and heavy engineering at Whyalla. Wallaroo and Port Lincoln, being central to their markets, are the sites of chemical fertiliser production.

A summary of manufacturing operations by industry subdivision within the Adelaide Statistical Division is detailed below and the distribution of activity between this Division and the rest of the State can be seen by comparing this and the subsequent table.

**Manufacturing Establishments: Summary of Operations by Industry Subdivision
Adelaide Statistical Division, 1980-81 ^(a)**

Industry Subdivision	Establish- ments at 30 June	Average Employ- ment	Wages and Salaries	Turnover	Value Added
	Number			\$'000	
Food, beverages and tobacco	173	9 627	110 177	629 170	240 376
Textiles	28	n.p.	n.p.	n.p.	n.p.
Clothing and footwear	83	n.p.	n.p.	n.p.	n.p.
Wood, wood products and furniture	257	5 154	55 891	231 160	89 675
Paper, paper products, printing and publishing	158	6 317	74 394	257 995	136 428
Chemical, petroleum and coal products	43	n.p.	n.p.	n.p.	n.p.
Non-metallic mineral products	87	3 077	42 160	216 111	96 993
Basic metal products	33	n.p.	n.p.	n.p.	n.p.
Fabricated metal products	297	7 706	85 368	380 644	162 342
Transport equipment	98	17 190	228 001	938 233	411 986
Other machinery and equipment	261	15 910	186 922	745 024	325 630
Miscellaneous manufacturing	164	5 710	68 613	279 265	119 552
Total manufacturing	1 682	82 354	996 156	4 339 728	1 837 195

(a) Excludes single establishment enterprises employing fewer than four persons.

The two most important undertakings beyond the vicinity of Adelaide are the iron and steel complex at Whyalla and the lead smelters at Port Pirie. These undertakings together with the power station at Port Augusta are sited for important mineral sources. Other factories are located near sources of primary products—these include the sawmills and paper pulp industries of the South East, the fruit processing plants of the Riverland, the wineries and distilleries of the Barossa Valley and the Riverland, and various dairy produce factories and fish processing plants.

In the following table details of manufacturing establishments for 1980-81 are classified according to industry subdivision.

**Manufacturing Establishments: Summary of Operations by Industry Subdivision
South Australia, 1980-81 ^(a)**

Industry Subdivision	Establishments at 30 June	Average Employment	Wages and Salaries	Turnover	Value Added
	Number			\$'000	
Food, beverages and tobacco	372	17 238	194 472	1 218 781	422 843
Textiles	31	2 582	30 973	150 431	53 606
Clothing and footwear	86	4 164	37 850	129 715	61 292
Wood, wood products and furniture	304	7 806	87 137	379 671	147 656
Paper, paper products, printing and publishing	195	7 664	92 632	336 298	172 608
Chemical, petroleum and coal products	50	2 927	44 525	248 435	93 997
Non-metallic mineral products	131	3 562	49 061	257 136	115 219
Basic metal products	36	9 465	143 503	886 922	246 475
Fabricated metal products	353	8 791	99 255	442 559	187 671
Transport equipment	114	18 085	238 807	958 092	426 616
Other machinery and equipment	287	16 566	194 155	768 930	336 916
Miscellaneous manufacturing	172	5 905	70 599	290 322	122 459
Total manufacturing	2 131	104 755	1 282 968	6 067 292	2 387 358

(a) Excludes single establishment enterprises employing fewer than four persons.

Transport equipment accounted for 18 per cent of value added while fabricated metal products and other machinery and equipment, accounted for 22 per cent. Employment in these industries was 17 per cent and 24 per cent respectively of the total manufacturing employment. Also of considerable importance to South Australia are the food and drink industries (18 per cent of value added, 16 per cent of employment) particularly milk processing and winemaking.

The importance of manufacturing industry in South Australia relative to Australia as a whole can be gauged from the following comparison.

**Manufacturing Establishments: Summary of Operations, South Australia and Australia
1980-81 ^(a)**

Item	Unit	South Australia	Australia	South Australia as a percentage of Australia
Establishments at 30 June	number	2 131	27 681	7.7
Average employment:				
Males	number	81 449	859 092	9.5
Females	number	23 306	290 746	8.0
Wages and salaries	\$'000	1 282 968	14 911 425	8.6
Turnover	\$'000	6 067 292	73 711 784	8.2
Stocks, closing	\$'000	1 103 880	12 409 709	8.9
Value added	\$'000	2 387 358	28 531 142	8.4
Fixed capital expenditure	\$'000	257 829	2 882 685	8.9

(a) Excludes single establishment enterprises employing fewer than four persons.

Although there were 2 131 establishments operating at 30 June 1981 only 201 or 9.4 per cent had an employment in excess of 100 persons while 907 establishments, or 42.6 per cent of the total, employed less than 10 persons. The 26 largest establishments employed 33 566 persons or 32.0 per cent of the total.

In the following table manufacturing establishments are grouped according to the number of persons employed.

Manufacturing Establishments: Selected Variables by Size of Establishment
South Australia, 30 June 1981 ^(a)

Size of Establishment (Average Employment)	Establish- ments	Persons Employed	Turnover	Value Added
	Number			\$'000
Fewer than 10	907	5 393	249 764	94 263
10 but fewer than 20	451	6 283	305 745	118 556
20 but fewer than 50	402	12 565	688 763	263 767
50 but fewer than 100	170	11 904	706 940	277 574
100 but fewer than 200	116	15 914	886 967	360 569
200 but fewer than 500	59	17 314	1 096 923	449 167
500 or more	26	33 566	2 115 429	819 541

(a) Excludes single establishment enterprises employing fewer than four persons.

Details of persons employed and distribution of employment in manufacturing establishments for 1980-81 are given in the following tables. Females constituted 22.2 per cent of the total employment, but industries traditionally associated with female employment had a much higher component; textiles, clothing and footwear industries, in particular, employ a large number of females.

Manufacturing Establishments: Average Employment, South Australia 1980-81 ^(a)

Industry Subdivision	Males	Females	Persons	Percentage of Total Employment
Food, beverages and tobacco	12 035	5 203	17 238	16.5
Textiles	1 491	1 091	2 582	2.5
Clothing and footwear	1 168	2 996	4 164	4.0
Wood, wood products and furniture	6 639	1 167	7 806	7.5
Paper, paper products, printing and publishing	5 542	2 122	7 664	7.3
Chemical, petroleum and coal products	2 468	459	2 927	2.8
Non-metallic mineral products	3 234	328	3 562	3.4
Basic metal products	8 730	735	9 465	9.0
Fabricated metal products	7 240	1 551	8 791	8.4
Transport equipment	16 441	1 644	18 085	17.3
Other machinery and equipment	12 373	4 193	16 566	15.8
Miscellaneous manufacturing	4 088	1 817	5 905	5.6
Total manufacturing	81 449	23 306	104 755	100.0

(a) Excludes single establishment enterprises employing fewer than four persons.

Manufacturing Establishments: Average Employment by Type of Employment, South Australia, 1980-81 ^(a)

Industry Subdivision	Working Proprietors	Employees	Total
Food, beverages and tobacco	185	17 053	17 238
Textiles	4	2 578	2 582
Clothing and footwear	38	4 126	4 164
Wood, wood products and furniture	222	7 584	7 806
Paper, paper products, printing and publishing	106	7 558	7 664
Chemical, petroleum and coal products	—	2 927	2 927
Non-metallic mineral products	33	3 529	3 562
Basic metal products	5	9 460	9 465
Fabricated metal products	118	8 673	8 791
Transport equipment	40	18 045	18 085
Other machinery and equipment	72	16 494	16 566
Miscellaneous manufacturing	57	5 848	5 905
Total manufacturing	880	103 875	104 755

(a) Excludes single establishment enterprises employing fewer than four persons.

WAGES AND SALARIES

The following table shows wages and salaries paid classified by industry subdivision and based on 1978 Edition of ASIC. Wages and salaries paid to administrative, office, sales and distribution employees were 28·7 per cent of total wages paid, but in the paper, paper products, printing and publishing, and chemical, petroleum and coal products industries a much higher component was paid to these employees.

Manufacturing Establishments: Wages and Salaries, South Australia, 1980-81 ^(a)

Industry Subdivision	Wages and Salaries Paid to		
	Administrative, Office, Sales and Distribution Employees	Production and All Other Workers	All Employees
		\$'000	
Food, beverages and tobacco	61 022	133 450	194 472
Textiles	7 088	23 885	30 973
Clothing and footwear	7 727	30 123	37 850
Wood, wood products and furniture	21 846	65 291	87 137
Paper, paper products, printing and publishing	35 353	57 279	92 632
Chemical, petroleum and coal products	17 476	27 050	44 525
Non-metallic mineral products	14 487	34 573	49 061
Basic metal products	41 700	101 803	143 503
Fabricated metal products	30 187	69 069	99 255
Transport equipment	61 595	177 212	238 807
Other machinery and equipment	51 084	143 071	194 155
Miscellaneous manufacturing	18 266	52 333	70 599
Total manufacturing	367 829	915 139	1 282 968

(a) Excludes single establishment enterprises employing fewer than four persons.

SELECTED FACTORY PRODUCTS

The factory products listed in this section are not necessarily the principal items produced in this State. Where publication of details of an individual product would enable the output of a particular manufacturer to be determined, these figures are treated as confidential and are not separately available for publication. As a considerable number of products are produced in this State by industries containing one or two dominant firms, the list of publishable items is considerably restricted.

Selected Articles Produced: South Australia ^(a)

Item	Units of Quantity	1979-80			1980-81		
		Production	Sales and Transfers		Production	Sales and Transfers	
		Quantity	Quantity	Value	Quantity	Quantity	Value
Aerated and carbonated waters	'000 L	102 168	100 610	\$'000 37 064	107 615	107 043	\$'000 49 458
Barrels, kegs, vats, drums and tanks .....	..	..	..	8 090	..	..	10 521
Blinds and awnings:							
Metal venetian .....	..	..	..	828	..	..	1 165
Outdoor, canvas .....	..	..	..	1 829	..	..	2 362
Outdoor, metal .....	..	..	..	1 179	..	..	1 414
Bread, total value .....	..	..	..	48 189	..	..	55 803
Cakes, pastry, pies and puddings (not canned) .....	..	..	..	36 371	..	..	41 102
Cheese (excluding processed cheese)	'000 kg	16 585	16 292	n.a.	15 964	16 439	n.a.
Cheese, total value .....	..	..	..	23 641	..	..	33 329
Flour, white	tonnes	71 720	70 522	14 817	74 239	75 184	18 353
Fluorescent light fittings .....	..	..	..	6 769	..	..	n.a.
Furniture:							
Sheet metal .....	..	..	..	10 354	..	..	10 186
Wooden .....	..	..	..	51 693	..	..	63 617
Gloves, work	doz.	..	..	..	..	..	..
Ice	pairs	31 708	34 190	1 345	26 433	31 440	1 180
..	tonnes	15 102	15 102	585	15 868	15 881	672
Machinery:							
Conveyors, appliances and parts .....	..	..	..	5 419	..	..	9 281
Hoists, cranes, lifting machinery .....	..	..	..	4 760	..	..	4 651
Pumping .....	..	..	..	10 559	..	..	12 755
Milk, liquid whole, packed	'000 L	..	111 622	37 355	..	112 028	41 158
Newspapers and periodicals printed and published .....	..	..	..	19 947	..	..	23 508
Paints:							
Architectural and decorative; Primers and undercoats	'000 L	624	592	1 325	626	610	1 721
Finishing coats	'000 L	4 229	4 306	9 976	4 126	4 040	11 209
Ready-mixed concrete	m ³	1 050 047	1 050 047	52 296	1 001 398	1 019 505	58 715
Smallgoods .....	..	..	..	29 816	..	..	31 824
Steel, fabricated constructional	tonnes	..	..	29 800	..	..	66 944
Tallow, inedible	'000 kg	26 480	26 442	14 664	25 307	23 962	10 210
Tarpaulins .....	..	..	..	636	..	..	998
Tents, flies and marquees .....	..	..	..	668	..	..	630
Window frames, aluminium .....	..	..	..	15 958	..	..	19 768
Wine:							
Fortified	'000 L	31 035	35 482	36 242	29 598	33 580	38 351
Unfortified	'000 L	147 889	140 745	112 585	155 769	164 836	143 326

(a) Includes details for Northern Territory.

INDIVIDUAL INDUSTRIES

In this section details are given of major South Australian secondary industries. However, statistics relating to a number of important industries are not published in order to maintain confidentiality of details for individual businesses. The classification used is based on the 1978 Edition of ASIC.

Meat and Abattoir By-products

Most of the abattoirs in South Australia are located in country areas but the two largest establishments are within the Adelaide Statistical Division. Details of country butchers who slaughter livestock mainly for sale in their own retail shops are not included.

Meat and Abattoir By-products, South Australia, 1980-81 ^(a)

Statistical Division	Establishments	Average Employment	Wages and Salaries	Purchases, Etc.	Turnover	Value Added
	Number			\$'000		
Adelaide	12	1 600	17 288	45 327	79 129	33 606
Other	22	1 597	18 532	92 819	119 489	29 685
Total	34	3 197	35 820	138 146	198 618	63 291

(a) Excludes single establishment enterprises employing fewer than four persons.

Wood and Wood Products

The major activities in this sector of manufacturing are log sawmilling, resawn and dressed timber and joinery and wooden structural fittings industries. In 1980-81 wood and wood products industries accounted for 5.0 per cent of manufacturing employment in South Australia.

Wood and Wood Products, South Australia, 1980-81 ^(a)

Statistical Division	Establishments	Average Employment	Wages and Salaries	Purchases, Etc.	Turnover	Value Added
	Number			\$'000		
Adelaide	148	n.p.	n.p.	n.p.	n.p.	n.p.
Other	41	n.p.	n.p.	n.p.	n.p.	n.p.
Total	189	5 232	62 493	181 083	283 098	104 430

(a) Excludes single establishment enterprises employing fewer than four persons.

Printing and Allied Industries

There are two large establishments producing newspapers in Adelaide. Newspaper printing offices are also located in most large towns, and a number of these produce newspapers for more than one locality. Particulars of general printing establishments, including the activities of the Government Printing Division of the Department of Services and Supply, are also incorporated in the following table.

Printing and Allied Industries, South Australia, 1980-81 ^(a)

Statistical Division	Establishments	Average Employment	Wages and Salaries	Purchases, Etc.	Turnover	Value Added
	Number			\$'000		
Adelaide	144	n.p.	n.p.	n.p.	n.p.	n.p.
Other	34	n.p.	n.p.	n.p.	n.p.	n.p.
Total	178	5 958	69 804	97 534	220 919	126 318

(a) Excludes single establishment enterprises employing fewer than four persons.

Cement and Concrete Products

There are two firms producing cement at three locations in South Australia. One firm produces cement at two locations, one at Birkenhead and the other at Angaston. The Angaston cement plant, based on the limestone deposits, is an example of a manufac-

turing location being established near the source of the raw material. In 1980-81, fifty plants produced ready-mixed concrete, of which twenty-four were in the Adelaide Statistical Division and twenty-six were in country areas. Two firms produce concrete pipes at five separate locations of which two are in the country.

Cement and Concrete Products, South Australia, 1980-81 ^(a)

Statistical Divisions	Establishments	Average Employment	Wages and Salaries	Purchases, Etc.	Turnover	Value Added
	Number			\$'000		
Adelaide	49	1 116	15 934	64 965	104 104	39 090
Other	34	374	5 894	21 015	37 174	16 149
Total	83	1 490	21 828	85 981	141 278	55 239

(a) Excludes single establishment enterprises employing fewer than four persons.

Basic Iron and Steel

In 1941 a blast furnace was installed at Whyalla to utilise the iron ore from the Middleback Ranges. The ore is transported by rail a distance of fifty-five kilometres to Whyalla. Before 1965 Whyalla was the major source of Australia's foundry iron but this changed in 1965 when the Basic Oxygen Steelmaking plant began producing steel.

There are a number of large pipe and tube making firms located in and near Adelaide. These firms accounted for slightly less than 20 per cent of the Australian output of ferrous pipes, tubes and fittings.

Transport Equipment (Motor Vehicles and Parts)

The largest single industry in South Australia and a major contributor to industrial growth since 1945 is the motor vehicle industry. However, as there are only a few firms engaged in motor vehicle production, no detailed figures are published for confidentiality reasons.

Immediately after the 1939-45 War, General Motors-Holden Pty Ltd prepared for the production of an Australian-built car, and volume production commenced in 1948. A number of major increases in productive capacity have been made by this firm involving not only considerable expansion at the Woodville site but also the establishment of a plant at Elizabeth.

Tonsley Park has become the centre of manufacturing operations for Mitsubishi Motors Australia Limited (formerly Chrysler Australia Ltd) and in July 1967 the company expanded its operations to include a large foundry and engine plant at Lonsdale, near Port Stanvac.

These large motor vehicle plants in turn absorb the products of many establishments producing vehicle components. Other manufacturers produce omnibus and commercial vehicle bodies, fork lift trucks, garage equipment, trailers, caravans, and a wide range of vehicle accessories.

Transport Equipment (Motor Vehicles and Parts), South Australia, 1980-81 ^(a)

Statistical Division	Establishments	Average Employment	Wages and Salaries	Purchases, Etc.	Turnover	Value Added
	Number			\$'000		
Adelaide	74	n.p.	n.p.	n.p.	n.p.	n.p.
Other	5	n.p.	n.p.	n.p.	n.p.	n.p.
Total	79	15 333	207 205	470 198	883 629	387 029

(a) Excludes single establishment enterprises employing fewer than four persons.

In 1980-81 establishments mainly engaged in the manufacture of motor vehicles and parts contributed 14.6 per cent of South Australia's total employment in manufacturing. It should be noted that this figure understates the importance of the motor vehicle industry to South Australia as some firms involved in the manufacture of components and accessories are classified to other industries. (For example, firms making rubber components for the motor industry are considered to be in the rubber industry.)

Transport Equipment (Other than Motor Vehicles)

In 1980-81 the transport equipment (other than motor vehicles) industries accounted for 2.6 per cent of the employment in manufacturing in South Australia.

Motor vehicles and parts and other transport equipment together accounted for 17.3 per cent of total South Australian manufacturing employment.

Transport Equipment (Other than Motor Vehicles), South Australia, 1980-81 ^(a)

Statistical Division	Establishments	Average Employment	Wages and Salaries	Purchases, Etc.	Turnover	Value Added
	Number			\$'000		
Adelaide	24	n.p.	n.p.	n.p.	n.p.	n.p.
Other	11	n.p.	n.p.	n.p.	n.p.	n.p.
Total	35	2 752	31 602	38 508	74 464	39 586

(a) Excludes single establishment enterprises employing fewer than four persons.

Appliances and Electrical Equipment

For many years South Australia has been one of the leading States in the production of the larger household appliances, including refrigerators, washing machines and stoves. These items constitute a significant part of the total activity shown in the next table. Also represented are manufacturers of radio and television components, water-heating systems, batteries and other electrical machinery and equipment.

This group of industries is the second most important in the State and in 1980-81 employed nearly 9.2 per cent of total manufacturing employment in South Australia.

Appliances and Electrical Equipment, South Australia, 1980-81 ^(a)

Statistical Division	Establishments	Average Employment	Wages and Salaries	Purchases, Etc.	Turnover	Value Added
	Number			\$'000		
Adelaide	83	n.p.	n.p.	n.p.	n.p.	n.p.
Other	3	n.p.	n.p.	n.p.	n.p.	n.p.
Total	86	9 617	109 251	271 505	466 699	192 310

(a) Excludes single establishment enterprises employing fewer than four persons.

Further References

Additional information may be found in the following publications:

- 8202.0 *Manufacturing Establishments: Summary of Operations by Industry Class—Australia*
- 8202.4 *Manufacturing Establishments: Details of Operations by Industry—South Australia*
- 8203.0 *Manufacturing Establishments: Details of Operations by Industry Class—Australia*

- 8203.4 *Manufacturing Establishments: Small Area Statistics—South Australia*
- 8204.0 *Manufacturing Establishments: Selected Items of Data Classified by Industry and Employment Size—Australia*
- 8204.4 *Manufacturing Establishments: Selected Items of Data Classified by Industry and Employment Size—South Australia*
- 8303.0 *Manufacturing Commodities: Principal Articles Produced—Australia*

PART 10

COMMERCE

10.1 INTERNAL TRADE

Extensive statistics of retail trade have been collected and published over many years but the first full census of wholesale trade was conducted as part of the integrated Economic Censuses of 1968-69 which was discussed in detail on pages 446-57 of the *South Australian Year Book* 1971.

RETAIL TRADE

A Census of Retail Establishments and Selected Service Establishments was conducted for the year ended 30 June 1980 (1979-80 Retail Census). The scope of the 1979-80 Retail Census included all establishments classified to the Australian Standard Industrial Classification 1978 Edition (ASIC) Subdivision 48 (Retail Trade) and the 'selected service' classes from ASIC Division L (Recreation, Personal and Other Services). The ASIC classes from Division L were 9133—Motion picture theatres, 9231—Cafes and restaurants, 9232—Hotels, etc. (mainly drinking places), 9233—Accommodation, 9241-3—Licensed clubs, 9340 Laundries and dry cleaners, 9351—Men's hairdressers and 9352—Women's hairdressing and beauty salons.

Retail trade, as specified in the ASIC generally includes the resale of new or used goods to final consumers for personal or household consumption. To conform with the concepts and definitions used in the Australian National Accounts, sales of certain commodity items were treated as wholesale rather than as retail sales. These commodity items were building materials; builders' hardware and supplies such as tools of trade,

paint, etc.; commercial refrigerators; business machines; tractors, farm machinery and implements; earth moving equipment and grain, feed, fertilisers and farm supplies.

Some types of establishments were excluded from the census even though they would have been classified to industries covered by it, because of difficulties in ensuring adequate coverage. These were door-to-door salesmen, independent van salesmen (of all kinds other than independent bread and milk vendors), and occasional stall holders. In addition, details were not collected from organisations operating vending machines on the premises of other businesses. It is also likely that some types of accommodation establishments which do not hold liquor licenses (e.g. guest houses and holiday flats), included in this census for the first time, may not have been fully covered.

The aim of the census was to include all retail and selected service establishments which operated at any time during the year ended 30 June 1980. Seasonal businesses, which normally operate during certain periods of the year, were included as far as possible even if they were not operating at 30 June 1980. However, establishments which ceased operations during the year or commenced operations during the last two months of the year were included in census results only if their contribution to statistical aggregates was significant.

Retail and Selected Service Establishments: Summary of Operations
by Industry Class, South Australia, 1979-80 ^(a)

Industry Class	Establishments at 30 June	Persons Employed at 30 June		Wages and Salaries	Retail Sales	Turnover (b)
		Males	Females			
		Number			\$'000	
Retail establishments:						
Department and general stores;						
Department stores	32	3 200	7 768	76 433	408 965	432 465
General stores	67	243	493	5 389	37 133	38 582
Clothing, fabrics and furniture stores;						
Men's and boys' wear stores ..	168	468	322	5 584	39 285	40 239
Women's and girls' wear stores	467	234	1 628	10 524	79 261	79 616
Footwear stores	220	291	704	5 907	42 036	42 339
Shoe repairers	33	53	5	406	70	1 611
Fabrics and household textile stores	174	168	571	4 696	30 076	30 554
Floor coverings stores	78	328	152	3 930	33 991	36 163
Furniture stores	154	672	380	9 003	69 933	71 009
Household appliance and hardware stores;						
Domestic hardware stores	133	210	295	2 486	20 030	22 811
Watchmakers and jewellers	172	285	494	4 833	29 774	32 936
Music stores	106	198	165	2 088	22 039	22 506
Household appliance stores	270	1 321	635	17 141	142 216	173 000
Electric appliance repairers n.e.c.	39	208	67	2 638	1 286	10 545
Motor vehicle dealers, petrol and tyre retailers;						
New motor vehicle dealers	776	6 157	1 317	61 714	523 134	817 915
Used motor vehicle dealers	315	1 040	264	9 993	159 894	166 248
Service stations	716	2 651	1 399	18 130	(c) 247 389	(c) 271 847
Smash repairers	265	1 495	253	12 308	602	39 839
Motor cycle dealers	60	286	72	2 714	20 363	26 203
Boat and caravan dealers	82	288	85	2 729	29 834	32 242
Tyre and battery retailers	158	1 005	135	10 077	65 997	77 930
Food stores;						
Grocers, confectioners and tobacconists	1 662	5 607	9 987	66 202	788 394	799 732
Butchers	716	1 828	491	12 890	112 830	114 042
Fruit and vegetable stores	242	394	638	2 742	30 453	30 805
Liquor stores	77	171	90	1 712	29 702	29 879
Bread and cake stores	161	192	593	3 391	17 497	17 793
Fish shops, take away food and milk bars	769	1 585	2 546	12 260	90 382	94 400

**Retail and Selected Service Establishments: Summary of Operations
by Industry Class, South Australia, 1979-80 ^(a) (continued)**

Industry Class	Establishments at 30 June	Persons Employed at 30 June		Wages and Salaries	Retail Sales	Turnover (b)
		Males	Females			
		Number			\$'000	
Other retailers;						
Pharmacies	455	670	1 711	16 156	92 537	95 416
Photographic equipment stores	73	93	113	1 324	8 342	11 258
Sports and toy stores	223	475	299	3 673	34 332	35 920
Newsagents, stationers and booksellers	418	649	861	6 329	62 370	67 325
Secondhand goods dealers	197	307	263	3 277	17 759	18 252
Nurserymen and florists	134	239	456	3 407	17 302	17 887
Retailing n.e.c.	110	183	179	1 835	10 308	11 724
Total retail establishments ...	9 722	33 194	35 431	403 919	3 315 516	3 811 032
Selected service establishments:						
Motion picture theatres	69	399	385	4 786	3 129	16 016
Restaurants, hotels and accommodation;						
Cafes and restaurants	372	1 842	3 015	23 116	22 109	76 051
Hotels, etc. (mainly drinking places)	595	3 933	4 914	51 487	213 802	260 102
Accommodation	411	990	1 945	16 574	4 792	51 870
Licensed clubs;						
Licensed bowling clubs	18	44	10	364	1 127	1 559
Licensed golf clubs	26	216	100	2 224	2 077	6 188
Licensed clubs n.e.c.	174	556	742	6 781	20 946	29 311
Laundries and dry cleaners	148	491	901	10 505	339	23 329
Hairdressers, beauty salons;						
Men's hairdressers	18	26	39	310	127	844
Women's hairdressing and beauty salons	198	238	921	6 960	1 795	14 970
Total selected service establishments	2 029	8 735	12 972	123 107	270 244	480 239
Total retail and selected service establishments	11 751	41 929	48 403	527 026	3 585 760	4 291 271

(a) Excludes all bread and milk vendors and single establishment enterprises with turnover of less than \$50 000 (except for hotels and accommodation establishments).

(b) Sales of goods (retail and wholesale) and all other operating revenue.

(c) The retail sales and turnover figures for service stations do not reflect sales of petrol on commission.

A comparison of retail trading in South Australia and in Australia during 1979-80 is shown in the following table. In this and in the earlier table showing employment and wages, employment figures include working proprietors but wages exclude the drawings of working proprietors.

Retail and Selected Service Establishments: South Australia and Australia, 1979-80 ^(a)

Particulars	South Australia	Australia
	Number	
Establishments at 30 June 1980	11 751	135 652
Persons employed at 30 June 1980	90 332	1 004 150
	\$ million	
Wages and salaries	527.0	6 072.7
Retail sales	3 585.8	42 301.1
Turnover	4 291.3	52 458.4

(a) Excludes all bread and milk vendors and single establishment enterprises with turnover of less than \$50 000 (except for hotels and accommodation establishments).

**Retail and Selected Service Establishments: Number of Establishments
and the Value of Retail Sales by Commodity Item, South Australia, 1979-80 ^(a)**

Commodity Item	Establishments at 30 June	Retail Sales of Goods		
		Value	Value Per Establishment	Value Per Head of Population
		\$'000	\$	\$
Groceries and confectionery	3 572	543 066	152 034	418.0
Fresh meat	1 102	161 380	146 443	124.2
Fresh fruit and vegetables	1 324	69 985	52 859	53.9
Bread, cakes and pastries	1 918	55 025	28 689	42.4
Ready to eat take away food, including fresh seafoods	1 628	78 972	48 509	60.8
Ice cream, soft drinks, milk drinks, etc. for immediate consumption	2 568	35 854	13 962	27.6
Beer, wine and spirits	1 276	278 447	218 219	214.3
Cigarettes and other tobacco products	3 901	93 579	23 988	72.0
Furniture, mattresses, awnings, blinds, etc.	427	88 785	207 927	68.3
Floor coverings, carpets, lino, floor tiles, etc.	267	46 618	174 599	35.9
Fabrics, piece goods, drapery, manchester, blankets, soft furnishings, etc.	548	74 208	135 416	57.1
Clothing and accessories—men's and boys'	691	106 225	153 726	81.8
Clothing—women's, girls' and infants'	983	198 087	201 512	152.5
Footwear	723	68 861	95 243	53.0
Radios, record players, tape recorders, television sets, etc.	440	60 966	138 559	46.9
Musical instruments, records, sheet music, etc.	304	30 316	99 724	23.3
Domestic refrigerators, washing machines, stoves, air conditioners, etc.	298	49 789	167 077	38.3
Other household appliances	468	56 536	120 803	43.5
Kitchenware, china, and garden equipment	964	66 223	68 696	51.0
Petrol, oils and motor lubricants, etc. ^(b)	1 262	231 282	183 266	178.0
New motor vehicles	296	335 767	1 134 348	258.5
New parts and accessories for motor vehicles	1 183	83 863	70 890	64.6
Used motor vehicles	552	248 707	450 556	191.4
Used parts and accessories for motor vehicles	171	12 846	75 123	9.9
New and used motor cycles, motor scooters, parts and accessories	166	24 279	146 259	18.7
New and used tyres, tubes and batteries	1 049	73 174	69 756	56.3
Boats, outboard motors and trailers	107	18 556	173 421	14.3
New and used caravans	53	11 308	213 358	8.7
Cosmetics, perfumes, toiletries	1 121	56 731	50 607	43.7
Prescription and patent medicines and therapeutic appliances	573	58 245	101 649	44.8
Photographic equipment and supplies	516	15 435	29 913	11.9
Watches, clocks, jewellery, silverware	558	39 585	70 941	30.5
Sporting and camping goods, bicycles, toys	752	57 364	76 282	44.2
Books, newspapers, religious goods	1 742	87 921	50 471	67.7
Antiques, disposal goods, unredeemed pledges and other secondhand goods	225	18 433	81 924	14.2
Cut flowers, garden seeds, shrubs, trees and other nursery stock	239	18 623	77 921	14.3
Goods not included above	923	30 722	33 285	23.6
Total retail sales of goods .....	..	3 585 760	..	2 760.2

(a) Excludes all bread and milk vendors and single establishment enterprises with turnover of less than \$50 000 (except for hotels and accommodation establishments).

(b) Excludes sales of petrol, oils etc. on commission.

Surveys of Retail Establishments

During periods between censuses, estimates of the value of retail sales are calculated from returns received from a sample of retail establishments covering businesses which account for approximately 45 per cent of all retail sales in Australia.

The following table shows the value of retail sales of goods in South Australia in broad commodity groups for the 1979-80 Census, and retail survey estimates for the years

1978-79, 1980-81 and 1981-82. Retail sales of motor vehicles and parts, petrol, etc., and of delivered milk and bread are excluded.

Value of Retail Sales: Commodity Groups, South Australia

Commodity Group	Value of Retail Sales of Goods			
	1978-79	1979-80	1980-81	1981-82
	\$ million			
Groceries	444.1	543.1	547.9	625.8
Fresh meat	143.2	161.4	179.6	202.1
Other food	252.7	239.8	318.5	357.2
Total food and groceries	840.0	944.3	1 046.0	1 185.1
Beer, wine and spirits	254.2	278.4	312.1	344.4
Clothing, drapery, etc.	361.8	378.5	425.9	466.6
Footwear	64.0	68.9	75.8	83.5
Hardware, china, etc.	96.5	105.8	124.3	137.4
Electrical goods	187.7	197.6	228.3	254.0
Furniture and floor coverings	132.2	135.4	157.4	170.8
Chemist goods	111.9	115.0	129.9	142.3
Newspapers, books and stationery	84.0	87.9	98.4	104.1
Other goods	212.4	234.2	254.0	293.5
Total	2 344.7	2 546.0	2 852.1	3 181.7

WHOLESALE TRADE

The term wholesale trade was used in the wholesale census in the broad sense to include the resale (by agents or principals) of new or used goods to retailers or other wholesalers or to institutional (including government), professional or other business users (including farmers and builders). The more important types of business engaged in wholesale trade are wholesale merchants, who take title to the goods they sell; manufacturers sales branches; commission agents, including import and export agents and purchasing agents; petroleum products distributors; and co-operative and marketing boards engaged in marketing farm products.

INTERSTATE TRADE

Although a wide range of statistics of production, domestic sales and overseas trade in goods have been prepared for many years, knowledge of trading patterns in the South Australian economy was deficient because of the absence of statistics of the interstate trade undertaken by businesses in this State.

To overcome this deficiency, surveys of interstate trade in merchandise were undertaken in respect of the years ended 30 June 1979 and 1982.

Results from the latest survey are shown in the following three tables.

Value of Interstate Trade by Commodity, South Australia, 1981-82

Commodity Group	Exports		Imports	
	\$m	SE%	\$m	SE%
Livestock, food, animal and vegetable oils and fats	381.6	(7.1)	395.3	(10.3)
Australian wine and brandy	194.3	(5.8)	10.9	(3.2)
Other beverages	50.4	(1.4)	21.6	(10.2)
Tobacco and tobacco products	23.7	(20.6)	100.8	(33.2)
Mineral fuels, lubricants and related materials	192.0	(1.2)	363.6	(5.2)
Chemicals and chemical products	136.6	(4.8)	444.3	(17.7)
Other crude materials (inedible)	125.9	(1.6)	229.4	(1.1)
Leather, rubber, wood and paper products	296.4	(1.2)	244.7	(16.5)
Clothing and footwear	103.0	(5.0)	293.8	(10.6)
Textile yarn, fabrics and related products n.e.c.	81.5	(5.3)	164.2	(21.3)
Metal products	613.7	(1.4)	474.7	(7.6)
Road motor vehicles and parts	887.7	(0.5)	546.9	(5.8)
Other transport equipment	9.5	(12.3)	31.2	(15.8)
Domestic appliances and equipment	282.2	(10.9)	142.7	(22.2)
Other machinery and equipment	462.3	(23.6)	391.4	(7.6)
Sanitary, plumbing, heating, lighting equipment and furniture	51.5	(6.6)	56.2	(18.4)
Non-metallic mineral manufactures	51.1	(4.1)	58.4	(14.4)
Other manufactured goods	104.3	(5.7)	318.2	(25.2)
Total	4 047.7	(2.9)	4 288.4	(3.4)

Value of Interstate Trade by Industry, South Australia, 1981-82

Industry	Exports		Imports	
	\$m	SE%	\$m	SE%
Manufacturing	3 137.3	(0.8)	1 737.9	(3.1)
Mining	50.3	(0.3)	39.5	(5.1)
Construction	8.9	(13.5)	4.9	(10.8)
Wholesale trade	707.3	(16.3)	1 570.0	(6.4)
Retail trade	61.0	(7.0)	787.2	(11.4)
Transport	15.8	(-)	28.3	(12.3)
Other	67.1	(1.3)	120.7	(3.6)
Total	4 047.7	(2.9)	4 288.4	(3.4)

Value of Interstate Trade by Destination/Origin, South Australia, 1981-82

Destination/Origin	Exports		Imports	
	\$m	SE%	\$m	SE%
New South Wales (incl. ACT)	1 271.4	(3.0)	1 455.6	(4.3)
Victoria	1 352.0	(1.4)	2 416.3	(4.8)
Queensland	508.3	(5.5)	115.9	(15.3)
Western Australia	420.5	(10.2)	103.8	(21.3)
Tasmania	89.7	(2.8)	43.3	(33.7)
Northern Territory	169.3	(3.5)	24.6	(1.3)
Overseas via interstate ports	236.4	(6.8)	128.8	(13.0)
Total	4 047.7	(2.9)	4 288.4	(3.4)

The estimates of interstate trade are based on information obtained from a sample survey and are subject to sampling variability; that is, they may differ from the figures that would have been produced if all businesses had been surveyed. One measure of the likely difference is given by the standard error (SE). There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all units had been included, and about nineteen chances in twenty that the difference will be less than two standard errors.

For example, the 1981-82 estimate of the total value of South Australia's interstate export trade of \$4 047.7 million has a standard error of 2.9 per cent (\$117.4 million). There are two chances in three that a complete enumeration would give an estimate in the range of \$3 930.3 million and \$4 165.1 million and nineteen chances in twenty that the estimate would be in the range of \$3 812.9 million and \$4 282.5 million.

Results have shown that manufacturing industries are significant net interstate exporters, while the service industries, particularly wholesale and retail trade, are net interstate importers. The estimates shown for trade in commodities reflect the importance of wine and brandy production and processed metal products (including machinery and equipment) to the State's economy. Significant net imports have been recorded for tobacco products, mineral fuels, chemicals and clothing.

TOURIST ACCOMMODATION

The importance of tourism is recognised by a wide cross section of the community and this has caused a demand for comprehensive statistics on the industry. To satisfy requests from various organisations expressing a need for statistics on tourism, the Bureau conducted a Census of Tourist Accommodation Establishments for the year ended 30 June 1974 to identify and measure the amount, type and location of accommodation available.

The 1979-80 Retail Census covered establishments classified to the Australian Standard Industrial Classification 1978 Edition Classes 9232—Hotels, etc. (mainly drinking places) and 9233—Accommodation. Establishments were classified as follows:

- (a) Establishments providing tourist accommodation—comprises hotels, motels etc. and caravan parks which provide predominantly short term accommodation (*i.e.* for periods of less than 2 months) available to the general public. Hotels, motels etc. must have breakfast available in some form for guests, and caravan parks must provide powered sites for caravans (or on-site vans), and toilet, shower and laundry facilities for guests.
- (b) Establishments providing other accommodation—comprises establishments mainly engaged in providing long term accommodation (*i.e.* for continuous periods of 2 months or more) or in providing short term accommodation except tourist accommodation as defined above.
- (c) Establishments not providing accommodation—includes those establishments in ASIC class 9232—Hotels, etc. (mainly drinking places).

Hotels and Accommodation Establishments: Summary of Operations by Size and Type of Establishment, South Australia, 1979-80

Size of Establishment	Establish- ments at 30 June	Employment at 30 June(a)		Wages and Salaries (b)	Takings from Accommo- dation	Turnover
		Full-time	Other			
		Number		\$'000		
ESTABLISHMENTS PROVIDING TOURIST ACCOMMODATION						
LICENSED HOTELS						
Rooms, Units, Suites, Cabins:						
1-9	242	1 226	1 437	14 519	1 216	84 110
10-15	105	829	1 002	10 618	1 407	53 272
16-25	55	381	579	5 426	1 704	26 756
26 and over	39	536	967	10 923	7 905	40 664
Total	441	2 972	3 985	41 487	12 230	204 801

Hotels and Accommodation Establishments: Summary of Operations by Size and Type of Establishment, South Australia, 1979-80 (continued)

Size of Establishment	Establishments at 30 June	Employment at 30 June(a)		Wages and Salaries (b)	Takings from Accommodation	Turnover
		Full-time	Other			
ESTABLISHMENTS PROVIDING TOURIST ACCOMMODATION (continued)						
		Number		\$'000		
MOTELS, ETC.						
1-9	19	31	46	240	330	1 311
10-15	28	34	67	219	1 141	1 352
16-25	39	78	250	1 262	2 847	4 680
26 and over	54	386	908	8 898	15 974	26 302
Total	140	529	1 271	10 618	20 291	33 645
CARAVAN PARKS						
Powered and Unpowered Sites:						
1-50	37	39	27	145	372	379
51-100	46	68	50	325	1 386	1 542
101 and over	60	111	78	1 166	3 637	4 317
Total	143	218	155	1 636	5 394	6 238
ESTABLISHMENTS PROVIDING OTHER ACCOMMODATION						
Rooms, Units, Suites, Cabins:						
1-9	77	285	322	2 593	411	13 543
10-15	35	39	50	301	450	1 671
16-25	6	5	10	59	133	186
26 and over	15	61	184	1 621	1 922	4 332
Total	133	390	566	4 574	2 916	19 733
Powered and Unpowered Sites:						
1-50	14	10	10	20	89	94
51-100	8	11	10	39	209	230
101 and over	11	32	41	464	907	1 562
Total	33	53	61	522	1 205	1 887
OTHER ESTABLISHMENTS NOT PROVIDING ACCOMMODATION						
Total	116	761	821	9 225	2	45 668
TOTAL ALL ESTABLISHMENTS						
Rooms, Units, Suites, Cabins:						
1-9	338	1 542	1 805	17 352	1 957	98 964
10-15	168	902	1 119	11 139	2 998	56 295
16-25	100	464	839	6 747	4 683	31 621
26 and over	108	983	2 059	21 441	25 799	71 299
Total	714	3 891	5 822	56 678	35 437	258 179
Powered and Unpowered Sites:						
1-50	51	49	37	165	462	473
51-100	54	79	60	364	1 594	1 772
101 and over	71	143	119	1 628	4 543	5 880
Total	176	271	216	2 157	6 599	8 125
Other establishments (not providing accommodation)	116	761	821	9 225	2	45 668
Total all establishments	1 006	4 923	6 859	68 061	42 038	311 972

(a) Includes working proprietors.

(b) Excludes drawings by working proprietors.

To support census information, a series of tourist accommodation surveys was introduced in September quarter 1975 to provide an indication of the utilisation of accommodation available by measuring occupancy rates. The surveys include estab-

lishments which provide accommodation predominantly to short term visitors and calculates occupancy rates as the proportion of guest rooms or sites occupied to the number of rooms or sites available for accommodating paying guests. Establishments in the surveys are grouped into three categories—licensed hotels with facilities *i.e.* bath or shower and toilet in most guest rooms; licensed or unlicensed motels, private hotels or guest houses with facilities; and caravan parks with powered sites for caravans, and toilet, shower and laundry facilities available for guests. Caravan parks were included in the surveys from the September quarter 1977. Excluded at that time were licensed hotels, private hotels and guest houses without facilities.

The number of establishments identified in the survey is determined by the nature of the services and facilities provided, and 114 licensed hotels with facilities, 156 motels and 159 caravan parks were included in June 1982. The following table shows occupancy rates and takings from accommodation from June quarter 1981 to June quarter 1982.

Tourist Accommodation Survey, South Australia

Particulars	Unit	Quarter				
		June 1981	Sept. 1981	Dec. 1981	Mar. 1982	June 1982
LICENSED HOTELS WITH FACILITIES						
Room occupancy rate	%	46.7	46.6	47.1	50.9	49.6
Takings	\$'000	3 214	3 404	3 533	3 888	3 946
MOTELS ETC. WITH FACILITIES						
Room occupancy rate	%	57.9	53.4	57.7	66.2	57.0
Takings	\$'000	6 447	6 163	6 795	8 126	6 883
CARAVAN PARKS						
Site occupancy rate	%	16.9	12.0	17.4	26.8	17.5
Takings	\$'000	1 444	1 124	1 735	2 437	1 712

Further References

Additional information may be found in the following publications:

- 8501.0 *Retail Sales of Goods—Australia (Monthly)*
- 8502.4 *Interstate Trade—South Australia*
- 8503.0 *Retail Sales of Goods—Australia (Quarterly)*
- 8602.4 *Census of Wholesale Establishments—South Australia*
- 8603.4 *Tourist Accommodation—South Australia*
- 8622.0 *Census of Retail Establishments and Selected Service Establishments, Details of Operations by Industry Class, Australia, 1979-80*
- 8622.4 *Census of Retail Establishments and Selected Service Establishments, Details of Operations by Industry Class, South Australia, 1979-80*
- 8623.4 *Census of Retail Establishments and Selected Service Establishments, Industry Details by Statistical Retail Area and Local Government Area, 1979-80—South Australia*
- 8624.4 *Census of Retail Establishments and Selected Service Establishments, Hotels and Accommodation, 1979-80—South Australia*
- 8625.4 *Census of Retail Establishments and Selected Service Establishments, Commodity Sales and Service Takings, 1979-80—South Australia*
- 8626.4 *Census of Retail Establishments and Selected Service Establishments, Industry and Commodity Details by Size of Establishment, 1979-80—South Australia*
- 8635.0 *Tourist Accommodation—Australia*

10.2 OVERSEAS TRADE

LEGISLATION AFFECTING OVERSEAS TRADE

The power to make laws with respect to trade and commerce with other countries was conferred on the Commonwealth Parliament by the Commonwealth of Australia Constitution Act, Section 51 (i). Under Section 86 of the Constitution, the collection and control of duties of customs and excise passed to the Commonwealth Government on 1 January 1901. Other references to trade and commerce are contained in Sections 87 to 95 of the Constitution.

The legislation affecting overseas trade includes the Customs Act, the Customs Tariff, and the Customs Tariff (Anti-Dumping) Act. The Customs Act is the administrative Act under which the Australian Customs Service within the Department of Industry and Commerce operates, while the Customs Tariff provides the statutory authority for imposing the actual rates of duty operative from time to time and the Customs Tariff (Anti-Dumping) Act provides protection for Australian industry against various forms of unfair trading.

The Customs Tariff

The first Australian Customs Tariff was introduced by Resolution on 8 October 1901, from which date uniform duties for each State came into effect throughout Australia. The tariff has since been extensively amended—a major amendment was in 1965 when the tariff was re-issued in Customs Co-operation Council Nomenclature (CCCN) form. A new Simplified Tariff, also based on the CCCN, was introduced on 1 January 1983. This followed detailed inquiry by the Industries Assistance Commission.

The Australian Customs Tariff has been developed in conformity with the policy of protecting economic and efficient Australian industries and of granting preferential treatment to particular imports from certain countries with which Australia has established particular trade interests. Duties are also imposed on some goods, generally of a luxury nature, for revenue purposes. Customs collections are an important source of revenue, but in its protective character the tariff has an influence also on the Australian economy. The tariff provides for preferential and general rates of duty.

Preferential rates apply to certain goods being the produce or manufacture of Canada, New Zealand, Papua New Guinea, declared preference countries, developing countries and countries specified in the schedules to the Customs Tariff.

General rates apply to goods from all countries which do not qualify for preferential rates of duty under a particular tariff classification.

By-laws

Under certain Customs by-laws, goods may be admitted free of duty or at rates of duty lower than those normally applicable. A pre-requisite for such admission is that suitably equivalent goods are not reasonably available from Australian production. In November 1982 the Commonwealth Government announced that this system of concessional duties would be replaced from 1 July 1984 by a Commercial Tariff Concession Scheme. Concessions would be granted in respect of imported goods where no goods serving similar functions were produced, or capable of being produced in the normal course of business in Australia. Certain other considerations are also relevant to the granting of a Concession. There are provisions under Customs by-law for remitting duty in certain circumstances on imported goods which are to be incorporated in goods for export.

Anti-Dumping Legislation

The *Customs Tariff (Anti-Dumping) Act 1975* provides protection for Australian industry against various forms of unfair trading. This Act authorises the imposition of a dumping duty when goods are sold to Australia at a price which is less than the normal value of the goods, or a countervailing duty on subsidised goods, where the dumping or subsidy causes or threatens material injury to an Australian industry. Special duties may be collected also if dumped or subsidised goods are imported to the detriment of the trade of a third country in the Australian market.

Import Controls

The effects of the world wide recession in the early 1970s necessitated the imposition of quota controls over particular commodities to protect employment and investment in some important Australian industries. At present controls mainly apply to imports of motor vehicles and textiles, clothing and footwear.

The decision to impose import controls either in the form of import licensing or tariff quotas is made by the Commonwealth Government based on the recommendations of the body inquiring into the industry; usually the Industries Assistance Commission but if the matter is urgent, the Temporary Assistance Authority. A Departmental Standing Committee on Industries Assistance (SCIA) also examines the reports and provides advice to the Government before a decision is made.

Both forms of control are usually applied on a global basis and are intended to provide short term assistance to an industry but there are significant differences in their application.

Licensing is a non-tariff form of protection that imposes an absolute restriction on the quantity, weight or value (as appropriate) of the goods that may be imported in a certain period. Goods imported without a licence cannot be entered for home consumption and may be subject to seizure as prohibited imports.

The legal basis for import licensing is the Customs (Import Licensing) Regulations prescribed under the Customs Act.

In respect of goods subject to tariff quotas, By-laws are made pursuant to Section 271 of the Customs Act and Ministerial Determinations are issued pursuant to Section 273 of the Customs Act. These provide for goods to be imported and cleared for home consumption at normal rates of customs duty up to a ceiling level specified by the Government for a particular period. Additional temporary (or penalty) duties are applied to goods entered for home consumption outside the quota arrangements.

The Customs (Prohibited Imports) Regulations list those commodities the import of which is prohibited absolutely, or restricted, on social grounds. Other items are prohibited, or restricted, on health grounds (human, animal or plant) by the *Quarantine Act 1908* and the *Therapeutic Goods Act 1966*.

Export Controls

Under Section 112 of the Customs Act the export of goods from Australia may be prohibited absolutely, prohibited to a specific place, or prohibited unless prescribed conditions or restrictions are observed.

The *Banking Act 1959* contains provision to ensure that the full proceeds of goods exported from Australia are received into the Australian banking system and that these proceeds are received in the currency and in the manner prescribed by the Reserve Bank of Australia.

ADVISORY AUTHORITIES ON ASSISTANCE TO INDUSTRIES

Industries Assistance Commission

The Industries Assistance Commission is an independent statutory authority whose main functions are to advise the Commonwealth Government on the nature and extent of assistance which should be given to Australian industries, and to report annually on the general structure of industry assistance in Australia and its effects on the economy. The Commission was established on 1 January 1974, under the *Industries Assistance Commission Act 1973*. It replaced the Tariff Board, which had a more limited field of inquiry.

Generally, the Act requires the Minister responsible for the Commission, currently the Minister for Administrative Services, to seek the Commission's advice before changes are made to the assistance afforded industries by way of tariffs, import restrictions and financial assistance. The Minister also has power to refer a wide range of other matters to the Commission.

The Act requires that an inquiry conducted by the Commission shall be held in public. This provides an opportunity for interested parties, including producers, trade unions, importers, retailers and consumers, to present their views and to comment on the submissions of other interested parties and on papers prepared by the Commission. The Act does not oblige the Government to accept the Commission's advice. The final responsibility for determining the level and nature of assistance given to particular industries rests with Parliament.

Temporary Assistance Authority

Under the *Industries Assistance Commission Act 1973* the Minister for Administrative Services may request the Temporary Assistance Authority to inquire and report as to whether urgent action is necessary to provide assistance to an Australian industry which is experiencing difficulties because of import competition. The Temporary Assistance Authority's report must be submitted to the Minister within forty-five days of the making of the request. Short term assistance provided following a report of the Temporary Assistance Authority may be subject to review by either the Temporary Assistance Authority or the Industries Assistance Commission, depending upon circumstances.

ENCOURAGEMENT OF OVERSEAS TRADE

Trade Commissioner Service

The Trade Commissioner Service has its statutory base in the *Trade Commissioners Act 1933*. The function of the Service is the promotion of Australia's commercial interests overseas. In pursuing this objective, one of the more important tasks for a Trade Commissioner is to provide the marketing information for Australian exporters to enable them to exploit commercial opportunities in overseas markets.

The Service comprises 162 Trade Commissioners and Assistant Trade Commissioners who serve at 53 posts in 43 countries.

Australian exporters and export organisations are provided with the following facilities:

- surveys of market prospects;
- advice on selling and advertising methods;
- introduction to buyers and agents;
- reports on the standing of overseas firms;
- advice and assistance to business visitors;
- help in organising and carrying through trade missions, trade displays, newspaper supplements and other promotional and publicity activity;

information on import duties, import licensing, economic conditions, quarantine and sanitary requirements, and other factors affecting the entry and sale of goods and services.

Trade Commissioners are also required to service the market information requirements and other needs of Government departments and agencies including the Departments of Primary Industry, Business and Consumer Affairs, Resources and Energy, Transport, Industry and Commerce, the Export Finance and Insurance Corporation and the Australian Overseas Projects Corporation.

In a number of cities where there is a diplomatic or consular mission but no Trade Commissioner, Marketing Officers are appointed to assist Australian businessmen. They work under the direction of the Trade Commissioner whose territory includes the city in which the Marketing Officer is based.

Export Incentives Grants

The Export Development Grants Board administers two Acts of the Commonwealth Parliament, namely, the *Export Market Development Grants Act 1974*, which has been extended to operate until 1988, and the *Export Expansion Grants Act 1978* which will expire on 30 June 1988.

The Export Market Development Grants Scheme provides for taxable cash grants to a maximum of \$200 000 and aims to encourage Australian exporters to seek out and develop overseas markets for goods, services, industrial property rights and expertise which are substantially of Australian origin. The scheme covers also the promotion of eligible internal services, eligible tourist services and services provided by way of computer maintenance, management consultancy and leasing and hiring.

Under the Export Expansion Grants Scheme, taxable cash grants are provided on a formula applied to the increase in exports in the grant year over the average annual exports in the three preceding years in respect of specified eligible goods, services, expertise and industrial property rights. This scheme also covers services provided by way of computer maintenance, management consultancy and leasing and hiring.

Export Finance and Insurance Corporation

The Export Finance and Insurance Corporation (EFIC) is a statutory corporation of the Commonwealth Government. It operates on commercial lines and is self-supporting. Its commitments are ultimately backed by the Australian Government. EFIC was established by an Act of Parliament in 1974 to succeed the Export Payments Insurance Corporation (EPIC) which was established in 1956.

EFIC functions to encourage Australia's export trade in goods and services by providing a specialised range of insurance, guarantee and financing facilities not normally available from commercial sources.

Since its inception, the Corporation has progressively expanded the range of facilities it offers exporters, and has assumed an increasingly important role in the development of Australian exports. The Corporation's facilities support approximately ten per cent of Australian exports and have proved a valuable aid to Australia's export industries.

Australian Overseas Projects Corporation

The Australian Overseas Projects Corporation was established by the Commonwealth Government with the primary objective of assisting consultancy and construction

organisations to compete for contracts for overseas development projects. Its major functions are to act as prime contractor, consortium member or agent on behalf of Australian organisations.

South Australian Trade and Investment Representatives

The functions of South Australia's Agent-General in London are to foster Australian trade, investment and tourism from the United Kingdom and Western Europe. There are also agencies with similar responsibilities in Hong Kong, Singapore and Tokyo.

The Government also has an Export Bridging Finance Scheme to assist South Australian exporters.

TRADE AGREEMENTS

Multilateral Agreements

The General Agreement on Tariffs and Trade (GATT), which came into force on 1 January 1948, is a multilateral trade agreement designed to facilitate trading relations and improve trading opportunities between participating countries by reducing tariff and other barriers to the free exchange of goods, and providing rules for the conduct of international trade. The Agreement includes a framework within which negotiations can be held to further reduce barriers to trade, and a structure for embodying the results of such negotiations in a legal instrument.

Australia is one of the original Contracting Parties to the GATT. GATT membership now covers eighty-seven countries with a further thirty-two countries applying its rules on a *de facto* basis.

There have been seven major rounds of multilateral tariff negotiations under the provisions of the Agreement, and a number of smaller scale negotiations preceding the accession of individual countries. As a result, the tariff rates for a great many items entering into world commerce have been reduced and/or bound against increase.

The Tokyo Round of Multilateral Trade Negotiations (MTN), the seventh under the auspices of the GATT, were inaugurated at a meeting of Ministers in Tokyo in September 1973. Almost one hundred countries (both members and non-members of GATT) participated in the negotiations which were substantively concluded during 1979. Fourteen agreements or understandings which aim at liberalising and stabilising international trade in both industrial and agricultural products were finalised in the Tokyo Round. The subjects covered were subsidies and countervailing duties; government procurement; customs valuation; standards; import licensing; anti-dumping; trade in civil aircraft; reciprocity; more favourable treatment and fuller participation for developing countries; trade measures for balance of payments purposes; safeguard action for development purposes; notification, consultation, dispute settlement and surveillance; export restrictions; arrangements relating to bovine meat and dairy products.

Most of the developed-country participants in the negotiations had indicated, by February 1980, that they would accede to the various arrangements. Australia has acceded or intends to accede to those on customs valuation, anti-dumping, import licensing, standards, subsidies, countervailing duties, the framework texts and the agreement on bovine meat and dairy products.

Within the context of the MTN, various participants have held bilateral negotiations with the aim of exchanging tariff and access concessions. Australia has concluded bilateral agreements with the USA, EEC, Japan and Canada which, among other things, provide for better access of Australian beef, dairy products and wool.

Bilateral Agreements

Agreements, most of which provide for the exchange of most-favoured-nation (MFN) treatment in trade matters, are in force between Australia and the following countries:

Greece	(1940)	Philippines	(1975)
Japan	(1957)	Republic of Korea	(1975)
Malaysia	(1958)	Romania	(1975)
USSR	(1965)	India	(1976)
Yugoslavia	(1970)	Brazil	(1978)
Czechoslovakia	(1972)	Poland	(1978)
Indonesia	(1972)	Bahrain	(1979)
China	(1973)	Thailand	(1979)
German Democratic Republic		Iraq	(1980)
	(1974)	Saudi Arabia	(1980)
Bulgaria	(1974)	Pacific Islands	(1980)
Hungary	(1974)	Oman	(1981)
Vietnam	(1974)	Kuwait	(1982)

In addition, preferential agreements are currently operative with Canada and New Zealand. In general these agreements provide for the exchange of preferential rates of duty on a range of commodities traded between Australia and the countries concerned.

There are also agreements establishing free trade areas between Australia and New Zealand (NAFTA) and between Australia and Papua New Guinea (PATCRA).

METHOD OF RECORDING IMPORTS AND EXPORTS

Overseas trade statistics are compiled by the Australian Bureau of Statistics from documentation submitted by exporters and importers, or their agents, to the Bureau of Customs as required by the Customs Act.

Exports

In general, 'State' overseas export statistics until 1977-78 were compiled on the basis of the State in which the appropriate export documentation was lodged with the Bureau of Customs. While at one time this was generally synonymous with the State of origin of the goods, the advent of containerisation and centralisation of company accounts had resulted in a drift sufficient to make 'lodgment' a meaningless concept upon which to base State statistics, particularly in the case of South Australia where a considerable volume of goods are transported by road or rail to Melbourne for export shipment.

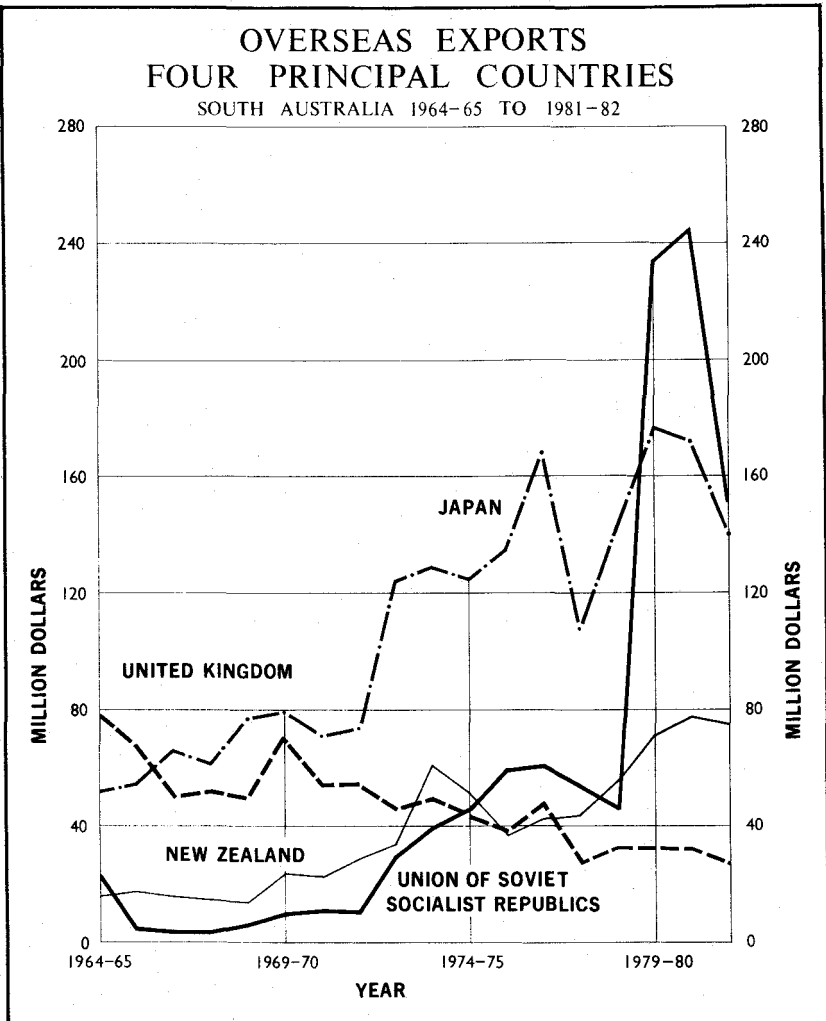
The ABS has changed the basis of recording State details in Australian export statistics from 'State of Lodgment' (of export documents) to 'State of Origin' (of exported goods). State of origin is defined as the State in which the final stage of production or manufacture occurs. This new recording base became operative from 1 July 1978 so that 1978-79, 1979-80, 1980-81 and 1981-82 statistics in the following export tables are therefore on a 'State of Origin' basis, and caution should be exercised when making comparisons with earlier periods.

A 'State of Loading' recording base has simultaneously been developed by ABS. The table on page 497 shows for comparative purposes, South Australian exports (principal commodity groups) by both 'State of Loading' and by 'State of Origin'.

Imports

Imports continue to be collected and published on a 'State of Lodgment of Import

Documents' basis and there is no break in the series. Imports do not provide a record of the overseas goods used or consumed in South Australia, as some of the goods pass subsequently to other Australian States and, more commonly, some goods imported through other States pass into South Australia.



Commodity Classification

From 1 July 1978, exports and imports have been classified according to the new Australian Export Commodity Classification (AECC) and Australian Import Commodity Classification (AICC) which is based on the United Nations' Standard International Trade Classification, Revision 2 (SITC R2). This classification is closely related to the Customs Co-operation Council Nomenclature (CCCN) which is used as the basis for the Australian Customs Tariff.

Valuation

Exports

Goods actually sold to overseas buyers before shipment are valued at the free-on-board (f.o.b.) (*i.e.* the charges and expenses involved in delivering the goods are excluded) Australian port of shipment equivalent of the actual price at which the goods were sold. Goods shipped on consignment are valued at the f.o.b. Australian port of shipment equivalent of the current price offering for similar goods of Australian origin in the principal markets of the country to which the goods are dispatched for sale. The recorded value of exports includes the value of the outside package, other than international containers used for containerised cargo.

Imports

The recorded value of imports is the customs value (formerly referred to as the value for duty). On 30 November 1981, Australia changed its system of valuation from the Brussels Definition of Value (BDV) to the GATT Agreement on Customs Valuation. The Agreement reflects one of a number of trade related codes of conduct established during the round of Multilateral Trade Negotiations (MTN) concluded in 1979.

The GATT Agreement differs from the Brussels Definition of Value in that it offers a set of practical rules on the valuation of imports rather than a list of conceptual guidelines. Under the Agreement the primary basis for establishing the customs value is the price actually paid or payable, provided a number of conditions are met. The most important condition is that the buyer and seller must be independent of each other. If the conditions are not met the practical rules are used to determine the customs value.

The recording of the value of imports remains on a f.o.b. basis. The recorded value also continues to include the value of the outside package, other than international containers used for containerised cargo. The change in the basis of valuation is expected to have a negligible effect on value and duty import statistics.

Exclusions

The following are excluded from recorded export and import statistics:

- (a) direct transit trade, *i.e.* goods being trans-shipped or moved through Australia for purposes of transport only;
- (b) bunkers and stores supplied to vessels and to aircraft prior to departure overseas (exports) or supplied to vessels or aircraft prior to arrival in Australia (imports);
- (c) migrants' and passengers' effects exported or imported and parcels post exports or imports of small value for which Customs entries are not required;

- (d) certain materials under inter-governmental agreements for defence and similar projects for which Customs entries are not required;
- (e) vessels and aircraft engaged in the transport of passengers or goods between Australia and other countries;
- (f) the sale or purchase of any vessel and/or aircraft intended for use on overseas routes;
- (g) fish and other sea products landed abroad directly from the high seas by Australian vessels (exports) or landed in Australia directly from the high seas by Australian vessels (imports);
- (h) export or import consignments where the value of the goods in each transaction is less than \$250;
- (i) interstate trade.

The value of stores loaded on overseas operating vessels and aircraft in South Australia amounted to \$25.6 million in 1981-82.

Countries

'Country of origin' appearing in import tables should be taken to mean the country of production. 'Country of consignment' appearing in export tables means the country to which goods were consigned so far as this can be determined at the time of export.

OVERSEAS TRADE OF SOUTH AUSTRALIA

EXPORTS

The total value of exports of goods of South Australian origin during 1981-82 was \$1 275.9 million. This value is 8.9 per cent lower than 1980-81 and 20.2 per cent lower than 1979-80, which was a record year. Most major commodity groups recorded a decline, particularly cereal grains which returned to a more normal level after two record harvests. Against a general slackening of demand for Australian exports, increases were recorded for exports of South Australian live sheep and lambs, rock lobster and prawns and petroleum products.

The following table shows the quantity and value of exports of the major commodities for the period 1977-78 to 1981-82.

Overseas Exports from South Australia

Principal Commodities

Commodity	1977-78	1978-79	1979-80	1980-81	1981-82
QUANTITY					
Live sheep and lambs ('000)	1 957	1 069	1 821	1 590	2 158
Beef, veal, lamb and mutton (tonnes)	35 402	65 238	60 657	65 070	55 750
Wheat (tonnes)	470 148	825 503	2 471 101	1 773 029	1 291 241
Barley (tonnes)	423 452	846 020	1 590 723	982 740	637 214
Wool:					
Greasy (tonnes)	52 175	60 214	64 582	74 191	63 841
Other (tonnes)	3 059	6 230	7 825	7 630	6 949
Rock lobster, prawns and shrimps (tonnes)	1 670	2 323	2 395	3 381	4 330
Lubricating petroleum oils ('000 litres)	92 180	96 807	107 874	59 659	104 502
Lead and lead alloys, unworked (tonnes)	141 409	161 060	174 681	141 562	168 448
Iron and steel; blooms, billets etc. (tonnes)	336 951	399 750	145 433	77 966	206 778
VALUE (\$'000)					
Live sheep and lambs	39 380	25 398	49 370	45 284	58 630
Beef, veal, lamb and mutton	34 994	85 630	98 633	99 829	89 710
Wheat	48 361	100 221	375 695	304 529	211 144
Barley	39 512	71 470	191 806	153 118	105 280

Overseas Exports from South Australia
Principal Commodities (continued)

Commodity	1977-78	1978-79	1979-80	1980-81	1981-82
Wool:					
Greasy	104 628	127 138	156 199	193 014	185 074
Other	9 889	19 872	27 546	32 322	28 163
Rock lobster, prawns and shrimps	13 198	22 450	25 111	30 120	43 568
Lubricating petroleum oils	14 267	14 680	26 861	16 387	48 934
Lead and lead alloys, unworked	73 894	108 127	180 458	95 235	101 669
Iron and steel; blooms, billets etc.	39 211	62 207	26 899	14 903	33 874

Overseas Exports from South Australia
Principal Commodity Groups

Commodity Group	1978-79	1979-80	1980-81	1981-82
\$'000				
Food and live animals chiefly for food:				
Live animals chiefly for food	25 876	51 285	48 804	61 638
Meat and meat preparations	90 653	107 324	112 070	101 727
Dairy products and birds' eggs	6 410	8 966	10 071	5 868
Fish and fish preparations	27 258	36 497	37 745	55 421
Cereals and cereal preparations	179 211	582 573	482 139	343 648
Vegetables and fruit	14 053	23 540	20 687	21 580
Sugar, sugar preparations and honey	939	1 253	1 228	974
Feeding-stuff for animals	2 163	2 593	3 812	4 653
Other	37	240	266	516
Beverages and tobacco	3 685	4 844	6 662	7 808
Crude materials, inedible (except fuels):				
Hides, skins and fur skins, raw	21 095	19 050	11 016	12 902
Textile fibres and their wastes	147 125	183 837	225 400	213 355
Crude fertilisers and crude minerals	3 278	4 044	5 498	5 552
Metalliferous ores and metal scrap	35 616	57 261	34 243	26 283
Other	4 501	6 448	9 083	7 089
Mineral fuels, lubricants and related materials	24 041	39 665	62 467	78 453
Animal and vegetable oils, fats and waxes	10 668	7 571	6 726	7 467
Chemicals and related products, n.e.c.	843	13 049	9 909	6 317
Manufactured goods classified chiefly by material:				
Non-metallic mineral manufactures, n.e.c.	14 259	12 475	13 322	12 015
Iron and steel	88 575	69 394	33 066	44 204
Non-ferrous metals	130 692	226 852	136 358	124 983
Manufactures of metals, n.e.c.	4 110	5 388	6 738	9 514
Other	17 469	31 920	6 842	6 208
Machinery and transport equipment:				
Machinery	21 642	30 711	32 570	34 177
Transport equipment	26 739	25 450	22 853	23 095
Miscellaneous manufactured articles	15 242	17 160	17 877	20 964
Commodities and transactions, n.e.c.	6 574	29 811	42 576	39 527
Total exports	922 754	1 599 199	1 400 028	1 275 938

Although exports of manufactured goods have generally been increasing, the bulk of exports is still of goods usually classified as primary products. In 1981-82 the 'Crude materials, inedible' group accounted for \$265.2 million, or 20.8 per cent of exports (including wool \$213.2 million, 16.7 per cent), and the 'Food and live animals' group accounted for \$596.0 million or 46.7 per cent.

The following table shows the value of exports by commodity groups to principal countries for the year 1981-82.

Overseas Exports from South Australia to Principal Countries

Commodity Groups, 1981-82

Commodity Group	Japan	New Zealand	Saudi Arabia	USA	USSR	Total (a)
\$'000						
Food and live animals chiefly for food:						
Live animals chiefly for food	—	170	28 459	—	—	61 638
Meat and meat preparations	13 642	4	6 028	43 228	1 175	101 727
Dairy products and birds' eggs	809	—	113	277	—	5 868
Fish and fish preparations	30 048	278	463	10 426	—	55 421
Cereals and cereal preparations	32 347	7 426	63 753	—	75 258	343 648
Vegetables and fruit	1 815	2 997	69	2 872	—	21 580
Sugar, sugar preparations and honey	—	—	16	—	—	974
Feeding-stuff for animals	444	—	897	—	—	4 653
Other	—	—	150	—	—	516
Beverages and tobacco	335	1 607	1	838	13	7 808
Crude materials, inedible (except fuels):						
Hides, skins and fur skins, raw	600	10	—	76	—	12 902
Textile fibres and their wastes	27 348	—	—	3 616	75 127	213 355
Crude fertilisers and crude minerals	804	1 756	—	116	—	5 552
Metalliferous ores and metal scrap	16 267	76	—	3 284	—	26 283
Other	657	412	—	234	—	7 089
Mineral fuels, lubricants and related materials	—	18 669	—	2	—	78 453
Animal and vegetable oils, fats and waxes	9	—	—	23	—	7 467
Chemicals and related products, n.e.c.	517	763	248	3 234	—	6 317
Manufactured goods classified chiefly by material:						
Non-metallic mineral manufactures, n.e.c.	239	242	—	4 681	229	12 015
Iron and steel	—	6 257	—	—	—	44 204
Non-ferrous metals	10 283	11 711	—	9 112	—	124 983
Manufactures of metal, n.e.c.	65	1 116	358	2 502	—	9 514
Other	31	1 582	—	311	—	6 208
Machinery and transport equipment:						
Machinery	394	6 057	670	971	—	34 177
Transport equipment	129	9 991	306	1 114	—	23 095
Miscellaneous manufactured articles	738	2 550	331	4 671	205	20 964
Commodities and transactions, n.e.c.	2 893	1 171	71	1 073	15	39 527
Total exports	140 415	74 844	101 933	92 661	152 021	1 275 938

(a) To all countries.

Overseas Exports from South Australia, Principal Countries

Country of Consignment	1977-78	1978-79(a)	1979-80	1980-81	1981-82
\$'000					
China:					
Excluding Taiwan Province	16 764	29 058	104 304	77 119	44 841
Taiwan Province only	15 330	33 165	37 373	28 207	19 389
Egypt, Arab Republic of	14 352	10 885	33 659	37 675	4 425
France	15 733	16 869	18 278	13 578	28 367
Germany, Federal Republic of	21 653	24 698	24 055	16 610	14 660
Hong Kong	10 321	32 423	39 658	25 127	41 268
India	22 985	23 896	45 575	35 185	38 882
Indonesia	11 322	11 386	31 009	22 028	32 831
Iran	53 024	48 236	52 097	25 084	21 425
Iraq	7 047	44 277	72 098	16 876	63 585
Italy	13 132	39 290	55 550	37 466	29 020
Japan	107 307	140 056	175 944	171 570	140 415
Korea, Republic of	12 712	32 478	21 521	20 720	36 746
Kuwait	14 019	10 959	16 151	58 649	32 377
Malaysia	5 803	12 360	40 724	12 357	17 218
New Zealand	43 020	52 940	70 637	77 410	74 844
Saudi Arabia	18 221	17 350	58 915	68 089	101 933
Singapore, Republic of	13 217	13 451	43 409	51 778	49 160
United Kingdom	27 160	31 847	32 185	31 805	26 919
United States of America	41 360	84 539	103 120	75 567	92 661
USSR	53 870	45 695	233 095	244 215	152 021
Yemen, People's Democratic Rep. of	3 423	9 049	15 817	22 708	21 639
Other	120 112	157 847	274 025	230 205	191 312
Total	661 887	922 754	1 599 199	1 400 028	1 275 938

(a) From 1978-79 export statistics are on a 'State of Origin' basis.

The table above shows the value of exports to principal countries. Japan replaced United Kingdom as South Australia's principal export market in 1966-67 and retained that position until 1978-79. For the most recent three years USSR has been the principal export market taking goods valued at \$152.0 million in 1981-82 (11.9 per cent of total exports).

Exports of Wheat

The total value of wheat exported from South Australia in 1979-80, \$375.7 million, was far in excess of any previously recorded value. Two record harvests in succession were experienced by South Australia for the seasons 1978-79 and 1979-80.

Overseas Exports of Wheat from South Australia

Country of Consignment	1977-78	1978-79	1979-80	1980-81	1981-82
			\$'000		
Bangladesh	—	—	18 728	8 163	—
China:					
Excl. Taiwan Province ...	10 879	10 626	70 046	47 174	16 347
Taiwan Province only	—	—	—	—	—
Egypt, Arab Republic of	2 801	4 107	17 720	26 454	—
Iraq	4 562	33 947	63 890	—	53 748
Korea, Democratic People's Republic of	6 294	13 312	15 789	—	—
Kuwait	—	—	—	31 255	—
New Zealand	—	3 913	8 172	9 428	7 420
Saudi Arabia	3 674	—	12 238	9 440	10 293
Sri Lanka	7 518	8 884	7 954	5 316	—
United Arab Emirates	11	3 560	—	—	4 993
USSR	3 312	2 134	91 344	121 703	75 258
Vietnam, Socialist Republic of	—	6 998	13 537	1 672	—
Yemen, Arab Republic of ..	—	—	13 288	12 659	11 268
Yemen, People's Democratic Republic of	3 172	7 676	7 831	21 560	21 186
Other	6 149	8 624	35 158	9 705	10 631
Total	48 361	103 781	375 695	304 529	211 144

Exports of Wool

In 1981-82 the major export markets for South Australian wool were USSR (\$75.1 million, 35.2 per cent) and Japan (\$27.3 million, 12.8 per cent).

Overseas Exports of Wool from South Australia

Country of Consignment	1977-78	1978-79	1979-80	1980-81	1981-82
			\$'000		
China:					
Excl. Taiwan Province ...	—	1 831	2 563	2 814	8 981
Taiwan Province only	1 756	5 845	3 172	6 605	6 309
Czechoslovakia	3 936	2 846	5 302	9 065	8 581
France	4 315	5 397	5 417	6 154	6 522
Germany, Federal Republic of	7 179	8 535	9 359	9 000	7 828

Overseas Exports of Wool from South Australia (continued)

Country of Consignment	1977-78	1978-79	1979-80	1980-81	1981-82
			\$'000		
India	3 512	2 518	3 333	7 210	5 377
Italy	2 657	9 080	12 561	16 213	12 543
Japan	15 392	26 999	27 242	29 052	27 348
Korea, Republic of	2 869	5 176	6 357	8 414	9 850
Poland	2 617	4 611	4 978	6 775	6 243
USSR	43 886	42 139	64 890	85 529	75 127
Yugoslavia	5 595	10 661	8 660	7 559	11 025
Other	20 803	21 372	29 911	30 946	27 502
Total	114 517	147 010	183 745	225 336	213 236

Value of Exports by 'State of Loading' and by 'State of Origin'

The following table shows a comparison between the two methods of compiling State export statistics (refer to explanatory notes on page 490). The net increases, within certain limitations, represent the excess of the value of South Australian produced goods which are shipped for overseas export through ports in other States (principally the Port of Melbourne), over goods produced in other States which are shipped through South Australian ports.

Overseas Exports from South Australia, Principal Commodity Groups, 1981-82

Commodity Group	State of Loading—SA	State of Origin—SA	Net Difference
		\$'000	
Food and live animals chiefly for food:			
Live animals chiefly for food	70 070	61 638	-8 432
Meat and meat preparations	39 281	101 727	62 446
Dairy products and birds' eggs	628	5 868	5 240
Fish and fish preparations	9 154	55 421	46 267
Cereals and cereal preparations	324 443	343 648	19 205
Vegetables and fruit	12 671	21 580	8 909
Sugar, sugar preparations and honey	335	974	639
Feeding-stuff for animals	3 265	4 653	1 388
Other	482	516	34
Beverages and tobacco	2 385	7 808	5 423
Crude materials, inedible (except fuels):			
Hides, skins and fur skins, raw	8 356	12 902	4 546
Textile fibres and their wastes	124 823	213 355	88 532
Crude fertilisers and crude minerals	3 641	5 552	1 911
Metalliferous ores and metal scrap	77 036	26 283	-50 753
Other	3 801	7 089	3 288
Mineral fuels, lubricants and related materials	78 428	78 453	25
Animal and vegetable oils, fats and waxes	7 005	7 467	462
Chemicals and related products, n.e.c.	1 324	6 317	4 993
Manufactured goods classified chiefly by material:			
Non-metallic mineral manufactures, n.e.c.	8 687	12 015	3 328
Iron and steel	37 018	44 204	7 186
Non-ferrous metals	98 275	124 983	26 708
Manufactures of metal, n.e.c.	4 401	9 514	5 113
Other	1 007	6 208	5 201
Machinery and transport equipment:			
Machinery	13 076	34 177	21 101
Transport equipment	5 161	23 095	17 934
Miscellaneous manufactured articles	4 719	20 964	16 245
Commodities and transactions, n.e.c.	16 893	39 527	22 634
Total exports	956 364	1 275 938	319 574

IMPORTS

The total value of overseas imports passing through Customs recording points in South Australia during 1981-82 was \$1 337.3 million, \$264.9 million greater than in 1980-81.

Overseas Imports to South Australia, Principal Commodity Groups

Commodity Group	1978-79	1979-80	1980-81	1981-82
			\$'000	
Food and live animals chiefly for food	16 530	18 810	15 645	18 743
Beverages and tobacco	3 265	3 877	4 062	4 268
Crude materials, inedible (except fuels):				
Cork and wood	19 454	22 331	16 160	18 294
Crude fertilisers and crude minerals	20 782	15 856	23 653	24 462
Other	7 338	9 535	23 578	21 133
Mineral fuels, lubricants and related materials	200 285	310 655	401 382	438 231
Animal and vegetable oils, fats and waxes	475	565	783	761
Chemicals and related products, n.e.c.				
Organic chemicals	6 372	8 271	7 638	8 272
Inorganic chemicals	2 771	3 813	5 169	5 628
Artificial resins and plastic materials, and cellulose esters and ethers	8 464	9 211	10 016	15 983
Other	10 845	12 925	14 605	18 461
Manufactured goods classified chiefly by material:				
Rubber manufactures	11 789	14 458	14 322	17 118
Paper, paperboard and manufactures thereof	20 301	22 759	23 304	31 586
Textile yarn, fabrics and made-up articles	27 052	40 442	36 166	34 752
Non-metallic mineral manufactures, n.e.c.	13 223	15 729	18 035	16 058
Iron and steel	24 263	20 678	33 418	69 839
Non-ferrous metals	8 874	3 114	3 293	3 879
Manufactures of metal, n.e.c.	15 272	18 856	18 826	24 510
Other	6 789	8 106	9 442	10 904
Machinery and transport equipment:				
Power generating machinery and equipment	25 120	26 285	27 802	43 905
Machinery specialised for particular industries	42 698	40 348	54 065	100 765
Metalworking machinery	7 596	5 511	10 694	23 842
General industrial machinery and equipment, n.e.c.	32 676	31 194	40 859	51 267
Office machines and ADP equipment	3 297	2 935	2 840	2 832
Telecommunications and sound recording and reproducing apparatus and equipment	10 896	11 919	13 726	19 218
Electrical machinery, apparatus and appliances, n.e.c.	29 462	27 051	27 910	32 956
Road vehicles	112 921	100 768	125 727	131 959
Other transport equipment	124 629	11 734	4 575	58 778
Miscellaneous manufactured articles:				
Footwear, articles of apparel and clothing accessories	6 770	6 838	7 199	7 907
Professional, scientific and controlling instruments; photographic and optical goods, clocks and watches	10 545	12 596	14 874	21 449
Other	30 394	36 174	37 966	44 238
Commodities and transactions, n.e.c.	4 405	9 112	24 693	15 302
Total	865 554	882 457	1 072 426	1 337 301

Overseas Imports to South Australia, Principal Countries

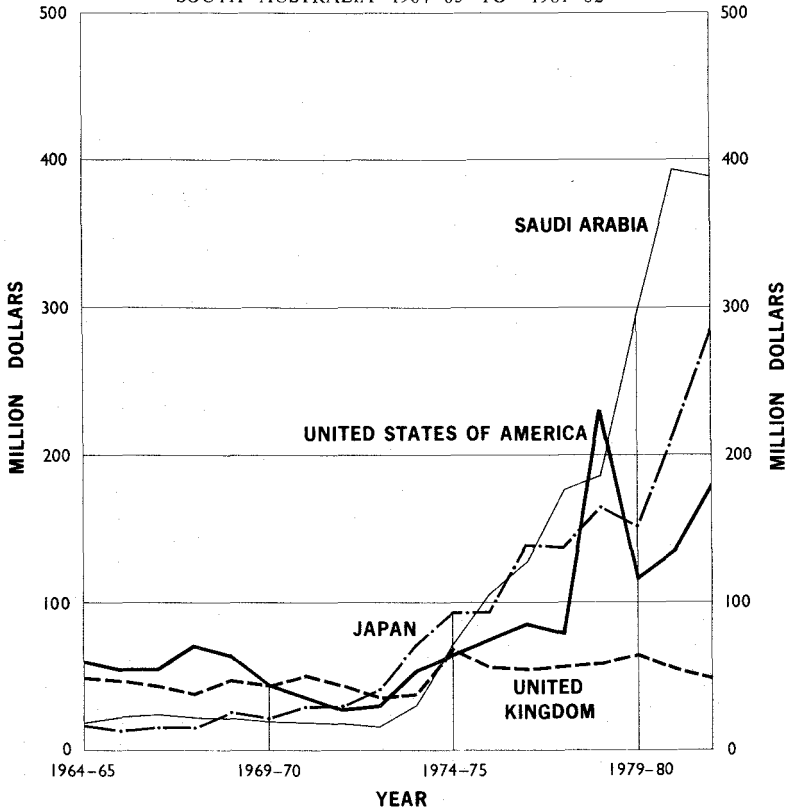
Country of Origin	1977-78	1978-79	1979-80	1980-81	1981-82
			\$'000		
Canada	17 714	18 164	23 180	26 089	42 773
China:					
Excluding Taiwan Province	2 940	3 069	4 507	4 909	5 272
Taiwan Province only	8 737	10 628	15 011	16 575	20 266
Christmas Island	1 442	2 206	1 935	2 637	5 073
Finland	2 078	4 008	6 064	5 829	6 475
France	7 528	9 089	8 904	10 411	12 614
Germany, Federal Republic of	32 751	43 757	38 775	38 257	95 459
Hong Kong	7 381	8 237	12 756	13 259	17 324
India	3 687	3 732	4 793	4 006	4 781
Italy	13 930	19 014	19 531	18 830	22 866
Japan	136 985	164 210	152 196	214 527	284 060
Korea, Republic of	3 726	3 708	3 802	5 922	8 734
Malaysia	7 159	15 998	19 791	10 424	10 523
Nauru, Republic of	3 992	11 933	4 469	8 241	12 088
Netherlands	9 181	7 402	7 029	5 352	11 140
New Zealand	13 988	13 276	15 316	14 638	17 739

Overseas Imports to South Australia, Principal Countries (continued)

Country of Origin	1977-78	1978-79	1979-80	1980-81	1981-82
			\$'000		
Norway	1 450	2 071	2 222	1 829	15 862
Philippines	4 361	4 701	8 369	10 040	5 816
Saudi Arabia	174 679	185 918	293 045	394 317	388 601
Singapore, Republic of	3 581	5 028	5 444	8 305	59 233
South Africa, Republic of	2 458	1 955	2 796	6 769	7 040
Sweden	4 230	4 906	8 993	5 210	6 094
Thailand	2 087	1 872	2 914	3 361	4 494
United Kingdom	55 637	58 370	63 317	54 409	49 362
United States of America	78 382	231 518	115 482	134 555	178 911
Other	28 484	30 784	64 996	79 814	44 701
Total	628 568	865 554	905 637	1 151 515	1 337 301

OVERSEAS IMPORTS
FOUR PRINCIPAL COUNTRIES

SOUTH AUSTRALIA 1964-65 TO 1981-82



The proportions of imports obtained from the major sources have changed considerably in the years since the 1939-45 War *e.g.* in 1953-54 Japan supplied only 0.46 per cent of the total value of imports into South Australia but in 1981-82 accounted for 21.2 per cent; United Kingdom which supplied over half the imports in 1953-54 accounted for only 3.7 per cent in 1981-82. Saudi Arabia was the major source of imports into South Australia in 1981-82 with \$388.6 million, representing 29.1 per cent of the total value of imports. Japan (\$284.1 million) and USA (\$178.9 million) were the second and third largest sources of imports.

The following table shows, by commodity groups, the imports from principal countries during the year 1981-82.

**Overseas Imports to South Australia from Principal Countries
Commodity Groups, 1981-82**

Commodity Group	Germany, Federal Republic of	Japan	Saudi Arabia	Singapore, Republic of	USA	Total (a)
				\$'000		
Food and live animals chiefly for food	820	1 281	—	142	1 975	18 743
Beverages and tobacco	78	—	—	—	10	4 268
Crude materials, inedible (except fuels):						
Cork and wood	36	—	—	493	4 959	18 294
Crude fertilisers and crude minerals	9	630	—	22	2 165	24 462
Other	144	3	—	216	2 427	21 133
Mineral fuels, lubricants and related materials	102	142	388 601	47 808	794	438 231
Animal and vegetable oils, fats and waxes	—	—	—	5	108	761
Chemicals and related products, <i>n.e.c.</i> :						
Organic chemicals	467	2 434	—	—	1 672	8 272
Inorganic chemicals	527	707	—	42	556	5 628
Artificial resins and plastic materials, and cellulose esters and ethers	1 472	1 994	—	567	5 825	15 983
Other	1 559	402	—	218	6 703	18 461
Manufactured goods classified chiefly by materials:						
Rubber manufactures	955	5 716	—	12	2 932	17 118
Paper, paperboard and manufactures thereof	672	2 864	—	27	2 798	31 586
Textile yarn, fabrics and made-up articles	470	5 616	—	83	5 829	34 752
Non-metallic mineral manufactures, <i>n.e.c.</i>	1 047	3 458	—	765	1 521	16 058
Iron and steel	1 022	56 004	—	211	2 590	69 839
Non-ferrous metals	433	172	—	—	1 058	3 879
Manufactures of metal, <i>n.e.c.</i>	3 616	3 524	—	382	6 451	24 510
Other	354	109	—	881	425	10 904
Machinery and transport equipment:						
Power generating machinery and equipment	3 790	19 323	—	1	16 123	43 905
Machinery specialised for particular industries	10 796	10 410	—	436	49 726	100 765
Metalworking machinery	1 571	18 386	—	36	1 512	23 842
General industrial machinery and equipment, <i>n.e.c.</i>	5 676	7 128	—	2 435	19 951	51 267
Office machines and ADP equipment	9	582	—	—	1 975	2 832
Telecommunications and sound recording/ reproducing apparatus and equipment	1 817	14 637	—	561	544	19 218
Electrical machinery, apparatus and appliances, <i>n.e.c.</i>	1 991	9 939	—	253	9 108	32 956
Road vehicles	11 227	108 916	—	39	5 309	131 959
Other transport equipment	39 742	15	—	—	1 725	58 778
Miscellaneous manufactured articles:						
Footwear, articles of apparel	191	193	—	12	443	7 907
Professional, scientific and controlling instruments: photographic and optical goods, clocks and watches	1 638	4 171	—	462	9 507	21 449
Other	2 495	4 705	—	1 987	9 256	44 238
Commodities and transactions, <i>n.e.c.</i>	763	598	—	1 138	2 933	15 302
Total	95 459	284 060	388 601	59 233	178 911	1 337 301

(a) From all sources.

CUSTOMS AND EXCISE DUTY

Excise duty is levied on specific goods of Australian manufacture, principally for the purpose of raising revenue. Although these excise goods do not form a part of overseas trade, the rate of excise duty is in some cases related to the import duty on similar goods. The following table gives details of the value of customs duty and excise duty collected in South Australia during the years 1979-80 to 1981-82.

Customs and Excise: Gross Revenue, South Australia

Customs Tariff and Excise Tariff Item	1979-80	1980-81	1981-82
CUSTOMS			
		\$'000	
Live animals; animal products	53	46	72
Vegetable products	33	59	84
Animal and vegetable oils and fats	9	12	37
Prepared foodstuffs; beverages; vinegar; tobacco:			
Spirituous and alcoholic preparations	11 683	12 936	13 016
Tobacco, cigarettes, etc.	1 015	779	1 471
Other	708	678	645
Automotive spirit and other mineral products	156	163	204
Chemicals and products thereof	908	986	1 205
Plastics, resins, rubber and manufactures thereof	5 131	4 984	6 284
Hides, skins, leather and articles thereof	435	320	519
Wood and articles thereof	2 497	2 357	2 463
Paper-making material; paper and paper manufactures	1 224	1 143	1 789
Textiles and textile articles	7 204	8 231	8 328
Footwear, headgear, umbrellas, etc.	611	456	570
Articles of stone, cement, ceramics, glass, etc.	1 607	2 010	2 107
Pearls, precious stones and metals, imitation jewellery, coin, etc.	387	335	457
Base metals and articles thereof	4 027	5 092	8 063
Electrical and mechanical machines and machinery ...	14 957	18 472	21 454
Transport equipment and parts thereof	21 873	25 048	26 882
Optical, surgical and scientific instruments, etc.	1 039	1 034	1 531
Arms and ammunition and parts thereof	25	14	40
Miscellaneous manufactured articles	1 823	1 980	2 728
Works of art, antiques, etc.	5	7	5
Other customs revenue	8	895	38
Primage	309	258	33
Total gross customs and primage duties	77 727	88 297	100 025
EXCISE			
Petroleum products	70 603	70 932	73 430
Spirits	15 819	16 760	16 534
Tobacco, cigars and cigarettes	67 605	67 231	66 886
Other	70 507	74 756	n.a.
Total gross excise duties	224 534	229 679	n.a.
Total gross customs, primage and excise revenue	302 260	317 975	n.a.

Further References

Additional information may be found in the following publications:

- 5409-0 *Overseas Trade, Part 1: Exports and Imports—Australia*
- 5410-0 *Overseas Trade, Part 2: Comparative and Summary Tables—Australia*
- 5411-0 *Australian Exports, Country by Commodity*
- 5413-0 *Australian Imports, Country by Commodity*

10.3 PRICES

MEASUREMENTS OF PRICE MOVEMENTS

The prices of a wide range of commodities and services are recorded at regular intervals by the Australian Statistician for the purpose of compiling various price indexes or for publication of series showing actual price levels.

Price indexes aim to measure the degree of change in price levels, or more specifically the proportionate change in the aggregate price, of specified quantities and qualities of a list of selected items. These indexes measure changes through time and it is traditional for presentation purposes to select a certain year, known as the base year, to equate the average aggregate price (of the list of items) in that year to 100 or some other suitable number, and to adjust other years on a proportionate basis.

When index numbers for different places are compared (e.g. Consumer Price Index, Capital Cities) the only legitimate comparison is the relative change *i.e.* that prices increased or decreased more in one place than another. Even when a common base year is used the actual levels of prices, equated to 100 in each case, may differ substantially from place to place; in addition, selected items, qualities or weights may differ from place to place.

In constructing a price index it is necessary to limit attention to a selected list of items because it would clearly be impossible to determine at regular intervals the price of all items entering into a given field of expenditure (e.g. household expenditure in the case of the Consumer Price Index). The list of items selected must be as representative as possible of the field to be covered and consist of items for which price variations can be ascertained accurately at regular intervals. Each item must be assigned a relative importance (weight) in approximate proportion to actual expenditures on that item within the total field of expenditure being considered. Particular care must be taken to detect, assess, and make allowance for changes in quality of selected items.

Over time it becomes necessary to substitute new grades, qualities or types of articles for those formerly used as indicators of price movements in an effort to keep an index representative of current patterns of expenditure. These substitutions can normally be achieved without invalidating the index. From time to time major changes in the overall pattern of expenditure are noted, and in the past these have prompted the abandonment of an existing index in favour of a different index, the composition and weighting of which were more representative of expenditure at that time.

RETAIL PRICE INDEXES

A brief historical review of early price indexes was included on page 494 of the *South Australian Year Book 1970*. Details of movements in the 'C' Series Index from 1901 to 1959 are shown in the Statistical Summary, Appendix A.

Consumer Price Index

The Consumer Price Index (CPI) is a chain of 'fixed weight aggregative' linked indexes with significant changes in composition and weighting effected at regular short intervals. Links have been effected at June quarter 1952, June quarter 1956, March quarter 1960, December quarter 1963, December quarter 1968, December quarter 1973 (a minor link at September quarter 1974), September quarter 1976 and June quarter 1982.

During each period between links the weighting pattern remains unchanged. At times of linking the weighting pattern is brought up-to-date and the content of the Index is reviewed. Under this method, in effect, average percentage price movements are assessed on one pattern up to the time of the link and on another pattern thereafter. The process of linking ensures that the series reflects only price variations and not differences in cost of the old and new combinations and lists of items. The introduction of new items and weights by linking does not, of itself, raise or lower the level of the Index.

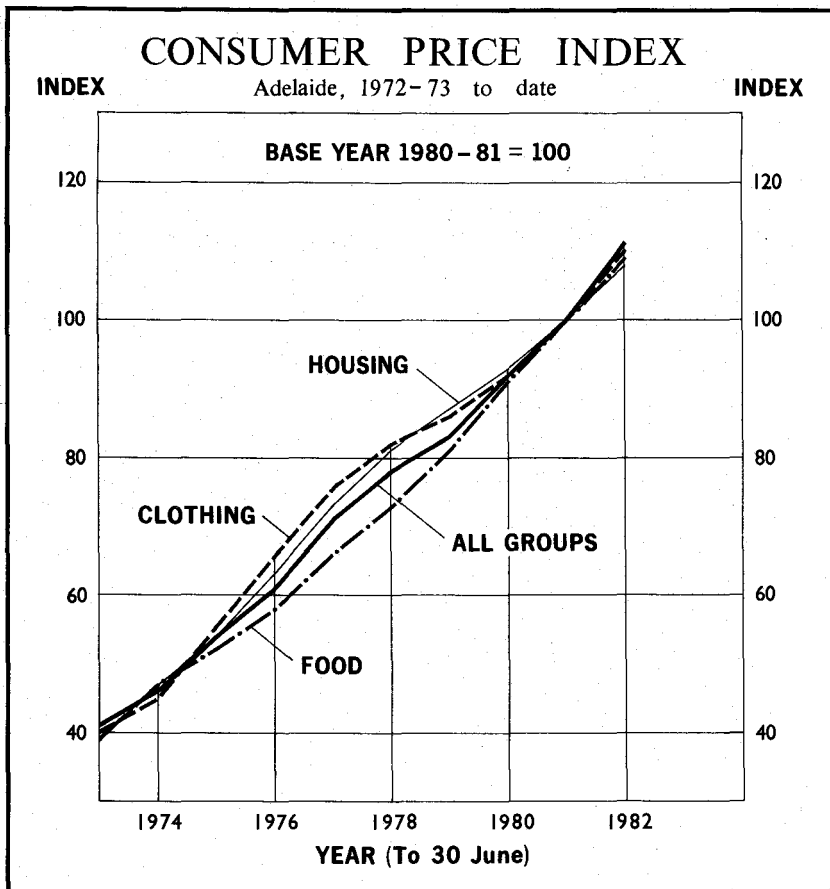
The weighting pattern of the ninth series introduced in 1976 was derived from the Household Expenditure Survey 1974-75 and represented more than 90 per cent of defined household expenditure by a target group of the population. This target group comprised metropolitan wage and salary earner households with total income of more than the minimum adult wage, but excluding the top 10 per cent of such households, and deriving at least 75 per cent of that income from wages and salaries. This target group was in keeping with the previous general description of the Consumer Price Index as a measure of variations in prices of goods and services affecting a high proportion of the expenditure of wage earner households in the aggregate.

The tenth series of the index was introduced in June quarter 1982 with a weighting pattern based on estimated household expenditure in 1979-80 and a reference base 1980-81 = 100. There are 105 expenditure classes or groupings of like items within the index and each class has its own weight or measure of relative importance. In calculating the index, price changes for the various expenditure classes are combined using these weights. The weighting pattern for the average of the eight capitals used in the tenth series is shown in the following table.

Consumer Price Index: Weighting Pattern
Average Eight Capital Cities

Group	Percentage Contribution to the All Groups Total
Food	21-287
Clothing	7-826
Housing	13-508
Household equipment and operation	13-627
Transportation	16-377
Health and personal care	7-303
Recreation and education	11-417
Tobacco and alcohol	8-455
All Groups	100-000

The wide range of commodities and services in the Consumer Price Index are arranged in eight major groups, with index numbers compiled for each of these groups as well as a total for all items. Index numbers for Adelaide for these individual groups and for 'All Groups' are recorded in the next table.



Consumer Price Index, Adelaide

Base Year: 1980-81 = 100.0

Quarter	Food	Clothing	Housing	Household Equipment and Operation	Trans- portation	Tobacco and Alcohol	Health and Personal Care	Recreation and Education (a) (b)	All Groups
1980:									
March	92.1	93.0	93.2	91.8	92.1	93.6	94.7	..	92.6
June	95.0	95.9	95.2	93.6	95.6	96.1	96.2	..	95.3
September	96.7	96.9	96.8	96.9	94.6	98.8	97.7	..	96.6
December	98.6	99.2	99.4	99.5	96.5	98.8	98.9	..	98.5
1981:									
March	101.7	100.1	100.7	101.1	101.9	100.6	101.1	..	101.2
June	102.9	103.7	103.0	102.6	107.1	101.8	102.3	..	103.7
September	106.6	104.5	104.8	106.7	106.6	105.4	103.6	..	105.8
December	108.0	107.5	109.3	109.7	110.3	106.3	126.2	..	110.0

Consumer Price Index, Adelaide
Base Year: 1980-81 = 100.0 (continued)

Quarter	Food	Clothing	Housing	Household Equipment and Operation	Transportation	Tobacco and Alcohol	Health and Personal Care	Recreation and Education (a) (b)	All Groups
1982:									
March	109.2	107.8	111.8	111.8	111.8	110.1	127.9	100.0	111.7
June	111.4	110.3	114.5	115.3	116.2	112.0	129.2	101.0	114.4
September	114.5	111.6	117.8	118.5	120.1	117.5	147.3	103.3	118.6
December	117.1	114.3	122.8	122.7	122.5	122.8	149.7	104.8	121.8

(a) New group index replacing former Recreation group.

(b) Base: March quarter 1982 = 100.0.

The 'All Groups' index for Adelaide is shown in the following table with that for each of the other capital cities. The geographic coverage of the index was expanded to include a full index for Darwin from 1980-81, the index number for 1981-82 being 111.1. It is emphasised that these numbers reflect changes in prices within each individual city, but they do *not* measure differences in the level of prices between cities, and the Consumer Price Index should *not* be regarded as a 'cost of living' index.

Consumer Price Index, Adelaide and Other Capital Cities
Base Year: 1980-81 = 100.0

Year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Six State Capital Cities	Canberra
1972-73	41.8	41.1	41.6	40.5	40.7	40.9	41.3	41.4
1973-74	47.2	46.6	47.3	46.1	44.9	46.0	46.7	46.8
1974-75	54.9	54.3	54.6	54.4	53.1	53.8	54.5	54.1
1975-76	62.0	61.3	61.7	61.0	60.6	61.3	61.5	61.4
1976-77	69.6	70.1	70.5	70.5	70.2	70.2	70.1	69.8
1977-78	75.8	77.0	77.1	77.5	77.8	77.1	76.7	76.1
1978-79	82.4	83.1	83.4	83.2	84.1	83.1	83.0	82.3
1979-80	91.1	91.4	91.5	91.6	91.9	91.6	91.4	91.1
1980-81	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1981-82	110.2	110.4	110.7	110.5	111.2	110.0	110.4	110.7

Household Expenditure Surveys

During the financial years 1974-75 and 1975-76, the Australian Bureau of Statistics conducted two surveys in order to obtain information about the expenditure patterns of private households. Apart from limited attempts in 1910-11 and 1913 to assess the spending patterns of Australian households, these surveys were the first official collections of household expenditure statistics conducted in this country.

The collection of data relating to expenditure at the household level is important in providing information for use in improving the representativeness of the items and the weighting pattern used to compile the Consumer Price Index.

The 1975-76 survey sampled 5 869 households in all regions of Australia. Only private dwellings were sampled, including houses, home units, flats, caravans, tents and any other structures being used as private places of residence at the time of the survey.

Hotels, boarding houses, institutions, etc. were defined as special dwellings outside the scope of the survey.

Information was collected on a household basis rather than for selected individuals in the population, because many items of expenditure such as food, accommodation and household goods and appliances relate to the household as a unit.

All categories of households (or persons) in selected private dwellings were included in the survey except: (a) foreign diplomats and their staff; (b) foreign servicemen and their families stationed in Australia; (c) persons from overseas countries touring or holidaying in Australia; (d) visitors staying with the household for less than six weeks after the initial interview (four weeks in the 1974-75 survey); (e) usual residents absent at the time of the initial interview and not returning within seven days; and (f) usual residents who were going away during the first half of the diary keeping and not returning before the end of diary keeping.

Each household was asked for details of large or infrequent items of expenditure (e.g. purchase of vehicles and property, and the payment of household bills such as electricity and gas) and for details of income from all sources. In addition, a diary was provided to each household member aged 15 years or more, in which they were requested to record, on a daily basis, a description and value of all items purchased over the following two weeks. Because of anticipated differences in spending patterns in rural areas compared with metropolitan and other urban areas, members of rural households selected in the 1975-76 survey were issued with four-week diaries.

In the lower income ranges, average expenditure exceeded average income as defined (this does not imply that all households in the lower income ranges have expenditure which exceeds income), while in the higher income ranges average income substantially exceeded average expenditure. It should be noted that some households will have financed some items of expenditure from savings and from other sources such as loans, receipts of maturing insurance policies, gifts, windfall gains and profits from the sale of assets which are not included as income as defined for the survey. In addition, some households classified to the lower income ranges may have had lower than usual income during the data reference period, while still maintaining their normal level of expenditure. For the medium and higher income ranges, income tax payments (included in other payments) are a large part of the difference between income and expenditure as defined.

The larger items of average weekly household expenditure in 1975-76 were transport and communication (\$32.42), food (\$31.93), and current housing costs (\$19.80).

Household Expenditure by Household Income, South Australia, 1975-76

Particulars	Weekly Household Income						All Households
	Under \$80	\$80-\$139	\$140-\$199	\$200-\$259	\$260-\$339	\$340 or more	
Number of households in sample ...	104	85	107	96	81	77	550
Estimated total number of households in population ('000)	64.3	53.3	71.0	69.6	58.8	57.6	374.6
Average number of persons per household	1.64	2.23	3.16	3.01	3.36	3.75	2.86
Average age of household head (yrs)	62.32	49.38	41.01	40.83	38.42	43.61	45.82
Average weekly household income (\$)	54.16	112.05	168.24	227.50	291.79	468.62	217.27
Average Weekly Household Expenditure (\$)							
Commodity or service:							
Current housing cost(a)	7.51	13.15	17.58	22.37	26.60	32.38	19.80
Fuel and power	2.15	2.53	4.69	3.63	3.02	4.32	3.43
Food	17.06	21.36	32.02	33.74	38.84	48.97	31.93
Bread, cakes and cereals	2.44	2.45	4.03	3.80	4.26	4.65	3.62
Meat and fish	4.45	5.14	7.29	7.51	7.96	10.88	7.20
Dairy products, oils and fats	2.81	3.56	5.08	4.70	4.68	6.30	4.53
Fruit and vegetables	2.68	2.89	4.38	4.27	4.55	6.57	4.22
Other food	4.68	7.32	11.24	13.47	17.38	20.58	12.37

Household Expenditure by Household Income, South Australia, 1975-76 (continued)

Particulars	Weekly Household Income						All Households
	Under \$80	\$80- \$139	\$140- \$199	\$200- \$259	\$260- \$339	\$340- or more	
Average Weekly Household Expenditure (\$)							
Commodity or service: (continued)							
Alcohol and tobacco	1.86	7.96	7.87	9.06	12.20	17.01	9.16
Clothing and footwear	4.74	7.02	10.25	15.91	18.90	29.60	14.23
Household equipment and operation	6.07	9.13	11.96	21.69	30.64	24.70	17.25
Medical care and health expenses	2.14	4.73	5.93	5.48	5.23	8.84	5.36
Transport and communication	14.19	26.08	27.67	31.68	48.61	48.84	32.42
Recreation and education	3.65	8.19	13.82	20.61	30.32	27.70	17.26
Miscellaneous goods and services	5.48	9.13	10.16	16.02	17.36	27.07	14.03
Total expenditure	64.84	109.29	141.94	180.20	231.73	269.43	164.87
Selected other payments(b)	8.64	14.96	26.22	49.52	56.69	97.54	41.68

- (a) Included in current housing costs are both principal and interest components of any housing loan repayments. Excluded are outright purchase of, or deposit on, dwellings or land, and other payments of a capital nature.
- (b) The main components of this item are income tax, superannuation contributions, life insurance premiums, purchases of and deposits on dwellings and land, and gambling payments. Receipts from sales of dwellings and land, and gambling winnings, are offset against payments.

Further details on methodology and definitions may be obtained from the bulletin *Household Expenditure Survey 1974-75, Bulletin 1, 'An Outline of Concepts, Methodology and Procedures'* (Catalogue No. 6507.0).

OTHER PRICE INDEXES

At December 1981 the following indexes covering non-retail sectors of the economy had been prepared and published by the Australian Statistician:

Export Price Index,

Price Index of Metallic Materials Used in the Manufacture of Fabricated Metal Products,

Price Index of Copper Materials Used in the Manufacture of Electrical Equipment,

Price Index of Materials Used in Manufacturing Industry,

Price Index of Articles Produced by Manufacturing Industry,

Price Index of Materials Used in House Building,

Price Index of Materials Used in Building Other than House Building.

Separate State figures are published for the latter two indexes, and these are further explained below. Details of the other indexes are available in bulletins published by the Australian Statistician and, in addition, a brief explanation of the Price Index of Articles Produced by Manufacturing Industry was included in the *South Australian Year Book* 1977.

Price Index of Materials Used in House Building

This index was introduced in November 1970. It measures changes in prices of selected materials used in the construction of houses. It is a fixed weights index, the composition of which is in accordance with the usage of materials in actual houses which were selected as representative for the purpose. The index does not purport to represent buildings of any kind other than houses.

Although the reference base of the index is given as 1966-67, the same as that previously given for the Price Index of Materials Used in Building Other than House Building, much of the weighting reflects usage of material used in house building in 1968-69 when the weighting source data were collected. Each State capital city has a

unique weighting pattern which reflects the difference in the estimated relative importance of given items between cities.

Prices are collected at the mid-point of the month to which the index refers, or as near thereto as practicable. They relate to specified standards of each commodity and are obtained in all State capital cities from representative suppliers of materials used in house building.

Further information concerning the method of compiling the index, as well as more detailed group index numbers and the separate weighting patterns for the six State capital cities may be found in the publication *Price Index of Materials Used in House Building* (Catalogue No. 6408.0). A full description of the Index is also given in the *Labour Report* No. 58, 1973, and the *Year Book Australia*.

The following table shows, for separate groups of materials and all groups combined, the index numbers for Adelaide and the weighted average index numbers for the six State capital cities.

Price Index of Materials Used in House Building

(Base of each Index: 1966-67 = 100.0)

Group	Adelaide			Weighted Average Six State Capital Cities		
	1979-80	1980-81	1981-82	1979-80	1980-81	1981-82
Concrete, etc.	321.4	382.4	437.6	292.8	334.1	373.8
Cement products	361.2	416.3	484.7	336.3	383.1	438.5
Clay bricks, tiles, etc.	323.3	387.6	435.7	294.8	334.9	375.9
Timber, board, etc.	398.1	444.4	481.3	331.5	377.8	406.8
Steel products	339.6	396.1	444.5	341.0	389.4	435.0
Other metal products	263.3	285.4	312.1	281.7	314.7	343.1
Plumbing fixtures, etc.	288.1	329.2	362.0	278.1	319.3	351.5
Electrical installation materials	261.0	292.4	326.3	282.1	316.0	345.9
Installed appliances	244.2	267.4	293.0	217.6	240.6	263.9
Plaster and plaster products	243.1	266.8	300.4	222.8	244.6	271.1
Miscellaneous materials	297.9	346.6	379.5	278.2	319.6	348.7
All Groups	338.5	386.1	427.2	302.9	344.0	377.9

The 'All Groups' index for Adelaide and each of the other State capitals is shown in the following table. It is emphasised that these numbers reflect price changes within each individual city, but they do not measure differences in the level of prices between cities.

Price Index of Materials Used in House Building

All Groups, State Capital Cities

(Base of each Index: 1966-67 = 100.0)

Year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted Average Six State Capital Cities
1977-78	254.0	238.6	265.1	270.7	253.4	256.7	252.0
1978-79	272.7	251.4	281.3	292.1	268.2	273.6	268.1
1979-80	309.5	283.4	315.0	338.5	299.4	304.2	302.9
1980-81	347.6	324.7	363.7	386.1	337.6	338.2	344.0
1981-82	378.5	355.1	407.2	427.2	373.2	371.7	377.9

Price Index of Materials Used in Building Other than House Building

This index was introduced in April 1969. (The composition and weighting of the index has been reviewed and a new series from 1979-80 replaces the previous index which had a reference base of 1966-67 = 100.0). It measures changes in prices of selected materials used in the construction of buildings other than houses and low-rise flats. It is a fixed weights index, the composition of which is in accordance with the materials usage in building projects selected as representative for the purpose: such usage was derived from reported values of each material used in construction of buildings other than houses commenced in the six State capital cities in the three years ended June 1977. The reference base of the index is the year 1979-80 = 100.0. The weighting base corresponds broadly with the reference base, but does not exactly coincide because of the nature of the data from which the weights were derived.

Prices are collected at the mid-point of the month to which the index refers, or as near thereto as practicable. They relate to specified standards of each commodity and are obtained in all State capital cities from representative suppliers of materials used in building.

Index numbers for separate groups of materials and the 'All Groups' index for Adelaide and each of the other State capitals are shown in the following tables. These numbers reflect price changes within each individual city, but they do not measure differences in the level of prices between cities.

Price Index of Materials Used in Building Other than House Building

(Base of each Index: 1979-80 = 100.0)

Group	Adelaide			Weighted Average Six State Capital Cities		
	1979-80	1980-81	1981-82	1979-80	1980-81	1981-82
Clay bricks	100.0	121.6	138.9	100.0	114.2	128.3
Ready mixed concrete	100.0	117.9	135.9	100.0	113.2	123.7
Precast concrete products	100.0	114.9	133.1	100.0	111.5	125.4
Galvanised steel decking, cladding, etc.	100.0	113.1	125.4	100.0	113.4	127.4
Structural steel	100.0	116.2	133.0	100.0	114.5	128.1
Reinforcing steel bar, fabric and mesh	100.0	115.6	127.4	100.0	114.6	126.4
Aluminium windows	100.0	114.5	134.0	100.0	112.5	126.3
Sand, aggregate and filling	100.0	124.3	137.4	100.0	120.2	140.2
Special purpose index (a)	100.0	115.1	129.3	100.0	113.7	126.2
All electrical materials	100.0	109.6	121.4	100.0	109.7	122.0
All mechanical services	100.0	109.9	121.3	100.0	111.0	123.5
All plumbing materials	100.0	109.4	120.5	100.0	110.7	122.2
All Groups	100.0	113.8	127.4	100.0	112.9	125.4

(a) All groups excluding electrical installation materials and mechanical services components.

Price Index of Materials Used in Building Other than House Building

All Groups, State Capital Cities

(Base of each Index: 1979-80 = 100.0)

Period	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted Average Six State Capital Cities
1979-80	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1980-81	113.1	112.7	113.2	113.8	112.2	111.6	112.9
1981-82	126.6	123.6	126.3	127.4	123.8	122.9	125.4

Further information on the method of compiling the index may be found in the publication *Price Index of Materials Used in Building Other than House Building* (Catalogue No. 6407.0). A full description of the Index is in *Labour Report* No. 58, 1973.

COMMODITY PRICES

Retail Prices of Food

The next table shows the average retail prices of selected food items in Adelaide during recent years. Items included are those which are considered identical or sufficiently comparable from place to place to warrant publication of comparative prices.

Average Retail Prices of Selected Food and Grocery Items, Adelaide

Item	Unit	1978	1979	1980	1981	1982
Cents						
Milk, bottled, delivered	600 mL	22.4	24.3	26.5	29.9	34.3
Cheese, processed	250 g	55.8	58.0	65.3	(a)137.8	(a)156.5
Butter	500 g	90.0	93.5	103.8	121.0	143.0
Bread, white loaf, sliced, supermarket sales	680 g	55.0	58.5	63.3	69.3	80.8
Biscuits, dry	225 g	41.5	44.3	50.5	(b)60.3	(b)68.0
Breakfast cereal, corn based	500 g	68.8	73.3	83.8	93.8	105.3
Flour, self-raising	1 kg	41.8	44.0	48.5	53.8	60.0
Rice	500 g	36.3	36.8	35.8	40.5	43.0
Beef:						
Rib (without bone)	1 kg	251.5	387.3	413.8	401.3	407.5
Rump steak	1 kg	406.0	592.8	691.0	671.3	665.8
Corned silverside	1 kg	268.5	408.3	463.3	455.0	451.3
Sausages	1 kg	126.8	189.0	232.8	243.3	255.0
Lamb:						
Leg	1 kg	270.0	308.8	346.0	353.3	349.3
Loin chops	1 kg	325.0	372.8	414.0	417.8	401.0
Forequarter chops	1 kg	283.0	328.8	355.0	344.5	330.3
Pork:						
Leg	1 kg	358.8	412.8	428.3	441.3	481.3
Chops	1 kg	359.8	433.5	464.0	492.8	555.3
Chicken, frozen	1 kg	196.0	212.8	228.0	258.0	271.5
Bacon, middle rashers, pre-packed	250 g	122.5	142.5	157.5	176.5	203.8
Salmon, imported pink	220 g	97.3	104.0	121.8	125.8	127.8
Potatoes	1 kg	37.0	44.3	47.5	66.8	54.3
Onions	1 kg	45.8	49.3	45.3	117.3	54.0
Peaches, canned	825 g	63.3	69.3	71.3	82.3	89.3
Peas, frozen	500 g	61.0	62.3	67.3	79.8	89.3
Eggs (55 grams)	doz.	118.8	123.8	139.3	158.0	170.0
Sugar	2 kg	67.5	82.0	91.0	97.3	106.5
Tea	250 g	82.5	74.0	71.8	75.3	79.3
Coffee, instant, jar	150 g	285.3	259.3	290.0	278.0	282.5
Tomato sauce	300 mL	38.8	40.8	45.3	(c)80.8	(c)91.3
Margarine, poly-unsaturated	500 g	79.0	86.0	93.0	100.8	101.0

(a) 500 g. (b) 250 g. (c) 600 mL.

Other Commodity Prices

South Australian prices of agricultural products are shown in the table on page 430, and separate details of wheat, barley, wool and livestock are given under the appropriate headings in Part 9.1.

PRICE CONTROL

Following the outbreak of the 1939-45 War the Commonwealth Government, acting under the authority of the National Security Act, established price control in Australia. A Commonwealth Prices Commissioner was appointed and given extensive powers in the regulation of prices. The National Security Act expired at the end of 1946 but temporary legislation provided for the continuation of price control until the end of 1948.

During 1948 the Commonwealth Government held a referendum seeking authority for permanent control over prices and rents. However, the proposal was rejected and the States agreed to assume responsibility for price control. In South Australia the necessary administrative structure was established by the Prices Act of 1948. Provision was made for the retention of existing Commonwealth Government price regulation orders altered in accordance with the State Act.

Under the provisions of the Prices Act, 1948-1982 the South Australian Department of Public and Consumer Affairs determines maximum prices for controlled goods and services and investigates complaints concerning excessive prices for goods and charges for services whether subject to price control or not. The list of goods subject to price control was reduced following a review in 1979-80.

The Commonwealth Government held a further referendum in December 1973 seeking power to control the level of prices and incomes, but, as was the case in 1948, the proposal was rejected.

The Prices Justification Tribunal was established in August 1973 under the provisions of the *Prices Justification Act 1973*. The Tribunal was a fully discretionary body appointed under the Act to consider the justification for proposed price increases put to it by companies subject to the Act. It was not a price regulating authority.

The Tribunal consisted of a Chairman and such number of other members as were from time to time appointed in accordance with the Act. The Office of the Prices Justification Tribunal consisted of persons appointed or employed under the *Public Service Act 1922*.

The Prices Justification Tribunal ceased operations on 25 June 1981. All records relating to the production and supply of petroleum products as defined in the *Petroleum Products Pricing Act 1981* were transferred to the Petroleum Products Pricing Authority.

RENT CONTROL

Rent control was introduced in South Australia at the beginning of the 1939-45 War, with the passing of the Increase in Rent (War Restrictions) Act, 1939, which pegged rents at the level prevailing at 1 September 1939. In 1942 this Act was replaced by the Landlord and Tenant (Control of Rents) Act. Although providing the same benchmark, this Act allowed the South Australian Housing Trust to determine a variation in rent, upon application by either the landlord or tenant, or in certain cases on its own initiative. An appeal against such a determination could be made to a Local Court. From the beginning of 1943 to the end of 1962, 60 180 applications for rent determinations were dealt with by the Trust, of which twenty-nine were varied by a Local Court.

Following an inquiry held in 1951 on the future of rent control, proportionate loadings were introduced to allow for increases in property costs since 1939. The gradual relaxation of rent control was achieved through periodic extensions of these loadings and through the exclusion of long-term leases from the provisions of the Act.

At the end of 1962 the Landlord and Tenant (Control of Rents) Act was replaced by the Excessive Rents Act, which in turn has been repealed and incorporated into the Residential Tenancies Act, which came into operation in December 1978. The Residential Tenancies Act introduced a general regulation of all aspects of the relationship between landlords and tenants. Administered by the Commissioner for Consumer Affairs, the Act established a Residential Tenancies Tribunal with exclusive jurisdiction to hear and determine a wide range of landlord and tenant disputes and empowered the Commissioner to investigate and report on all matters affecting the parties to residential tenancy agreements.

The Act also codified the existing common law of landlord and tenant by implying

certain terms in all residential tenancy agreements. It proscribed undesirable practices by the creation of a range of offences and established prescribed procedures and forms covering the commencement, due performance and termination of agreements.

All security bonds received in tenancy agreements for premises within the Consolidated Metropolitan Development Plan must be paid to the Tribunal and lodged in the Residential Tenancies Fund.

Further References

Additional information may be found in the following publications:

- 6401.0 *Consumer Price Index—Australia*
- 6407.0 *Price Index of Materials Used in Building other than House Building—Australia*
- 6408.0 *Price Index of Materials Used in House Building—Australia*
- 6440.0 *A Guide to the Consumer Price Index—Australia*
- 6507.0 *Household Expenditure Survey 1974-75, Bulletin No. 1—Australia*

10.4 TRANSPORT

A network of sea, rail, road and air services has been established between South Australia and the other States of Australia. Transport between the eastern States and Western Australia, and to a lesser extent Northern Territory, is made via South Australian services. Distances between Adelaide and other Australian capital cities, and Darwin, are shown in the following table.

Distances Between Adelaide and Other Capital Cities

Method of Travel	Canberra	Sydney	Melbourne	Brisbane	Perth	Hobart	Darwin
				Kilometres			
Road (a)	1 206	1 410	737	2 047	2 721	..	3 169
Rail	1 620	1 656	777	2 643	2 655	..	..
Sea .....	..	1 833	949	2 761 (b)	2 509	1 436	(c) 5 799
Air	988	1 196	660	1 967	2 216	1 283	2 766

(a) In some cases shorter but less popular routes are available. (b) To Fremantle. (c) via Fremantle.

TRANSPORT CONTROL AND OPERATIONS

STATE TRANSPORT AUTHORITY

The State Transport Authority is constituted as a body corporate under the State Transport Authority Act, 1974-1981. Some of the functions of the Authority described in the Act are:

- (a) to provide public transport services and to conduct operations for or related to the provision of public transport services;

- (b) to establish, maintain, extend, alter or discontinue public transport systems; and
- (c) such other functions;
 - (i) as are incidental or ancillary to the foregoing, or
 - (ii) may be assigned to the Authority by the Minister.

The services of the Authority may be provided within or outside the State.

The main role of the State Transport Authority set out in its corporate charter is:

- (a) to provide passenger transport services for the people of the Adelaide Metropolitan area, through an integrated network of bus, tram and rail routes which offers reasonable access, with emphasis on the large numbers of people who travel regularly and have similar destinations; and
- (b) in accordance with Government policy and with the resources available, the Authority will provide a level and standard of service, consistent with demand, in the most cost effective manner. It will actively plan and develop services and facilities required to serve the needs of its market.

Under the legislation, which was proclaimed in December 1975, the South Australian Railways, the Municipal Tramways Trust and the Transport Control Board were dissolved and the assets, powers and functions of each were transferred to the Authority. An additional function was also conferred on the Authority of ensuring, as far as practicable, that adequate public transport services are provided within the State. The Authority, through its direct control of State-operated services and its regulatory control of privately-operated bus services, was empowered to co-ordinate public transport services in the State and ensure the optimum utilisation of the transport resources available. This regulatory function was transferred to the Department of Transport (Road Safety and Motor Transport Division) in 1981.

From July 1975, by virtue of the Railways (Transfer Agreement) Act, 1975 and the *Railways Agreement (South Australia) Act 1975*, the Australian National Railways Commission acquired the non-metropolitan portion of the South Australian Railways, i.e. the country and interstate passenger services and all freight services, subject to a number of conditions and controls exercised by the State. Facilities within the metropolitan area concerned with the handling of freight and the servicing and repair of rollingstock also became the property of the Commission. The State Transport Authority's railway system extends generally from Adelaide to the extremities of the metropolitan area at Outer Harbor, North Gawler, Belair and Noarlunga and includes interconnecting loops and branch lines. Under the terms of the Act the Commission and the Authority have the right to run their rollingstock over the railways of each other and the Commission is required to make available to the Authority, so far as is practicable, such numbers of employees as are agreed from time to time for work on the State metropolitan railway system. Separate agreements have been made between the two organisations which detail the terms and conditions of these arrangements.

The Authority continued to operate the South Australian non-metropolitan railways on behalf of the Commission until 1 March 1978, when management responsibility was transferred to the Commission. On the same date the former Rail Division and Bus and Tram Division of the Authority were merged, allowing the Authority to operate metropolitan public transport services as an integrated organisation.

Further amendments were made to the State Transport Authority Act, 1974-1981 on 19 November 1981 and the Bus and Tramways Act, 1935-1978 and the Railways Act, 1936-1979 were repealed.

The following table lists selected non-financial details for the years 1980-81 and 1981-82 and the table after shows income and working expenses for 1981-82.

State Transport Authority: Selected Non-financial Details

Particulars	Unit	1980-81	1981-82
Passenger journeys	'000	61 200	62 870
Traffic vehicle kilometres run:			
Bus	'000 km	37 197	38 067
Tram	'000 km	802	806
Rail	'000 km	9 620	9 910
Total route kilometres:			
Bus	km	951·11	951·11
Tram	km	11·38	11·38
Rail	km	141·12	141·12
Vehicle fleet at 30 June:			
Buses (a)	No.	814	773
Tramcars	No.	26	26
Rail power cars	No.	121	122
Rail trailer cars	No.	41	42
Number of employees at 30 June (b)	No.	3 658	3 543

(a) Includes charter and tour buses.

(b) Includes staff made available by Australian National.

State Transport Authority: Income and Working Expenses, 1981-82

	\$'000	
Income:		
Traffic receipts	28 011	
Sundry receipts	3 830	
Interest on investments	5 873	
Total income		37 714
Operating cost:		
Traffic operation	36 654	
Maintenance	24 525	
General expenses	16 081	
Fuel, oil and power	7 629	
Depreciation	5 418	
Interest on loans	7 522	
Lease payments	2 171	
Total operating cost		100 000
Excess of operating cost over income		62 286
Contributions from South Australian Government		55 350
Net deficit		6 936

From the beginning of the financial year 1978-79 State Transport Authority accounts are prepared on a combined basis with no financial differentiation between rail, bus and tram operations. However, non-financial data is collected for each transport mode.

METROPOLITAN PRIVATE MOTOR BUS SERVICES

At 30 June 1982, there were three private bus services licensed to operate wholly within the Adelaide metropolitan area. These services operate over a total route length of 117 kilometres. A large number of private bus licensees operate a varied fleet of vehicles within the State, ranging from mini buses to luxury coaches and provide services for the carriage of school children, charter parties, tours and special exercises.

ROAD PASSENGER TRANSPORT CONTROL

Private Services

Legislation covering the regulation of private bus operations in South Australia is included in Part IVb of the Road Traffic Act, 1961-81 as amended, and is enforced by the Department of Transport's Division of Road Safety and Motor Transport.

Private operations are regulated via a licensing system which includes the issuing of licences authorising route service, tour and charter, community bus, school children and other special categories. Route service licences have a currency of seven years, with other licences having varied tenures ranging from single trip periods up to twelve months.

At 30 June 1982, current route service licences numbered twenty-eight. During the year ended 30 June 1982, 132 charter licences, 206 school bus and handicapped children's bus licences, nine workmen's bus licences, forty-four special tourist licences, fifty school councils (restricted charter) and three regular tourist licences were issued. In addition, four interstate services were licensed to carry passengers in remote areas where alternative services were not available. Other licences issued during the period (*i.e.* authorising shoppers' services, airline ground services, community services and miscellaneous operations) totalled thirty-six.

Country Town Bus Services

Commencing in May 1975, the State Government offered financial assistance through local government, to urban bus services outside the metropolitan area. Under the arrangement, financial responsibility for the provision of bus services is vested in the local government authority, but the State Government contributes two-thirds of the operating loss.

Councils have the option of acquiring local bus fleets or arranging for a local bus proprietor to provide the bus service under contract. In the case of the contract system, the fare revenue is retained by the local government authority and the contractor is paid an agreed sum per kilometre to operate buses on routes and within specified timetables determined by a three-person management committee. The committee consists in each case of an elected Council representative, the Town Clerk or his deputy, and a representative of the State Government.

Contract services are operated in Port Pirie, Port Augusta, Port Lincoln and Mount Gambier. In Whyalla the City Council purchased the assets of the former bus proprietor and since 30 October 1975 the bus service has been municipally owned and operated.

Interstate and Country Services

Regular interstate coach services and special charters and tours operate to all mainland States. In addition, a network of bus route services operates on radial routes from Adelaide to all parts of the State. These services are provided by eleven private companies, under licences issued by the Division of Road Safety and Motor Transport and are operated from two adjacent terminals situated in Franklin Street, Adelaide. The services operate over a total route length of 13 500 kilometres.

Intrastate passenger route services on all routes are controlled by the Division of Road Safety and Motor Transport. Generally, pick-up and set-down rights on the routes are non-competitive with other route service operations. The Division also regulates tour and charter operations within the State.

TAXI-CABS

The Metropolitan Taxi-Cab Act, 1956-1978, administered by the Metropolitan Taxi-Cab Board, is the governing legislation providing for the control of taxi-cabs and hire cars within the Metropolitan Planning Area as defined by Section 5(1) of the Planning and Development Act, 1966-1978, together with the whole of the Municipality of Gawler and from 2 September 1982 the district council area of Mount Barker. The Board is responsible for the granting of licences or permits to operate taxi-cabs, the allotment of vehicles to stands and the charging of permit fees.

Regulations under the Act provide for the examination of taxi-cabs: all taxi-cabs are examined for roadworthiness, and all meters are checked and tested twice a year on the Board's premises by mechanics employed by the Board. It is compulsory for cabs to be fitted with meters which record progressively the cost of each journey at rates prescribed from time to time. From 6 December 1982 the rates are \$1.10 for 'flag fall' and the first 196 metres, then 10 cents each additional 196 metres. From 7 p.m. to 6 a.m. Monday to Friday and from 1 p.m. Saturday to 6 a.m. Monday and on public holidays the rates are \$1.10 flag fall and the first 156 metres, then 10 cents for each additional 156 metres. For journeys which extend beyond the Metropolitan Planning Area radius contract rates not to exceed 33.5 cents per outward and return kilometre are charged. Hire car fares are by contract between the driver and the hirer.

Licences issued at 30 June 1982 include taxi-cabs, white plates (*i.e.* restricted) 250; green plates 594; hire cars 53, and funeral cars 13. Drivers licences current totalled 2 903.

Taxi licence fees are \$71 a year and private hire licence fees are \$55. Revenue received by the Board during 1981-82 was \$54 871 from taxi licences, \$2 968 from hire car licences and \$30 985 from drivers licences. Total revenue from all sources was \$241 728, and expenditure was \$220 729.

In areas not under the control of the Metropolitan Taxi-Cab Board, taxi licences are issued by local government authorities under the provisions of the Local Government Act.

MOTOR VEHICLES

Control of Road Traffic

Legislation covering the registration of motor vehicles, licensing of drivers and third party insurance in South Australia is contained in the Motor Vehicles Act, 1959-1981.

The present legislation for the control of road traffic in South Australia is set out in the Road Traffic Act, 1961-1982 and the Motor Vehicles Act, 1959-1983.

New Motor Vehicle Registration

New motor vehicle registrations during the financial years 1977-78 to 1981-82 are shown in the following table.

New Motor Vehicle Registrations, South Australia ^(a)

Type of Vehicle	1977-78	1978-79	1979-80	1980-81	1981-82
Cars	32 976	33 285	31 548	29 508	29 238
Station wagons	5 998	6 459	6 526	7 121	7 652
Utilities	2 916	2 575	2 643	2 942	2 926
Panel vans	2 917	2 209	2 100	2 506	3 063

New Motor Vehicle Registrations, South Australia ^(a) (continued)

Type of Vehicle	1977-78	1978-79	1979-80	1980-81	1981-82
Trucks	3 643	3 043	3 201	3 182	3 213
Other truck type vehicles (b)	282	224	156	161	204
Buses	434	405	206	270	222
Motor cycles	4 313	3 699	5 518	6 596	7 050
Total	53 479	51 899	51 898	52 286	53 568

(a) Includes Commonwealth Government owned vehicles except defence services vehicles.

(b) Includes truck type vehicles not designed for freight carrying e.g. tow trucks and fire engines; and ambulances and hearses.

Registration of Motor Vehicles

Under the provisions of the Motor Vehicles Act, 1959-1983 all motor vehicles, unless specifically exempted, must be registered with the Registrar of Motor Vehicles at the Motor Registration Division of the Department of Transport before being driven on any road.

The Motor Vehicles Act defines a motor vehicle as:

(a) a vehicle, tractor or mobile machine driven or propelled by a steam engine, internal combustion engine, electricity or any other power not being human or animal; or

(b) a caravan or a trailer;

but does not include a vehicle run upon a railway or tramway or a mobile machine controlled and guided by a person walking.

Permits to use vehicles, without registration, between farm blocks may be granted by the Registrar. A fourteen-day permit to drive a motor vehicle pending registration may be issued, under certain circumstances, by a member of the police force stationed at a police station more than forty kilometres from the GPO, Adelaide, except in those places where a branch of the Motor Registration Division is in operation.

Registration fees vary according to the power-mass (PM) of the vehicle; this is calculated by a formula which takes into account the diameter of the cylinders, the number of pistons and the vehicle's mass in kilograms. A special formula applies for vehicles fitted with non-piston engines. Fees for trailers and caravans are based on unladen mass and vehicles fitted with solid rubber or metal tyres are subject to higher rates.

Motor vehicles used for certain purposes are registered without fee, e.g. vehicles owned by the Fire Brigades Board and other firefighting organisations, ambulances (for the use of which no charge is made), council vehicles used solely or mainly for the collection and transport of household refuse, etc. Registration at reduced rates is allowed for primary producers' commercial vehicles and tractors, prospectors' vehicles and for vehicles used wholly or mainly in outer areas. Reduced rates are available to incapacitated ex-service personnel also, and to some persons who, as holders of State Concession Cards or pensioner entitlement cards, are entitled to travel on public transport in South Australia at reduced fares. Vehicles used solely for interstate trade can be registered for \$5 for a period of twelve months.

The Act provides for registered vehicles to carry number plates and for a registration label to be affixed to each registered vehicle. It also provides for the issue of general traders plates and limited traders plates.

Motor Vehicles on Register

The following table shows the number of motor vehicles on the register at 30 June from 1978 to 1982.

Motor Vehicles on Register, South Australia ^(a)
At 30 June

Type of Vehicle	1978	1979	1980	1981	1982
			'000		
Cars	458.5	465.5	476.7	484.2	494.1
Station wagons	75.5	76.4	78.2	80.7	85.1
Commercial vehicles	116.9	117.7	120.0	123.8	129.0
Motor cycles	30.5	29.7	33.7	36.7	36.6
Total on register	681.3	689.3	708.6	725.4	744.7
			Persons		
Population per vehicle	1.89	1.88	1.83	1.80	1.76
			'000		
Tractors, plant, equipment	7.6	7.1	6.4	7.2	7.0
Trailers and caravans	151.8	155.8	158.1	162.9	166.9
Traders plates	3.5	3.1	3.0	2.9	2.9

(a) Includes Commonwealth Government owned vehicles except defence services vehicles.

Drivers Licences

From 19 March 1979, the following classes of drivers licences have applied in South Australia:

- Class 1: to drive (a) any motor car or (b) any motor vehicle, the mass of which (excluding the mass of any trailer) does not exceed 3 000 kilograms, except an articulated motor vehicle, a motor cycle or a motor omnibus;
- Class 2: to drive any motor vehicle except an articulated motor vehicle, a motor cycle or a motor omnibus;
- Class 3: to drive any motor vehicle except a motor cycle or a motor omnibus;
- Class 4A: to drive any motor cycle up to 250 cubic centimetres engine capacity;
- Class 4: to drive a motor cycle;
- Class 5: to drive a motor omnibus.

A licence may be endorsed with more than one class number.

The Motor Vehicles Act provides that an applicant must apply for a permit to learn to drive a motor vehicle and will be issued with a learners permit once he or she has passed a written examination on the rules of the road. The permit is for a period not exceeding six months during which time the holder is expected to undergo a practical test conducted by a Motor Registration Division examiner. As from 1 June 1980 learner drivers who pass the practical driving test are issued with a licence, for one year, for the class of vehicle in which the test was passed, endorsed with probationary conditions. These conditions are:

- (1) must clearly display 'P' plates to the front and rear of the vehicle (rear only for motor cycles),
- (2) must not drive a motor vehicle on a road in any part of the State at a speed exceeding 80 kilometres per hour,

- (3) must not drive a motor vehicle or attempt to put a motor vehicle in motion where there is present in his blood the prescribed concentration of alcohol.

The same conditions apply to holders of learners permits except that 'L' plates must be displayed.

Provision is also made for the testing of drivers suspected of being incompetent or suffering from a disease or disability which may impair their ability to drive, and for the suspension of their licences should they fail the test. Persons who will reach the age of seventy years during the currency of their next licence are tested before that licence is issued and also at age 73, 76, 79 and annually thereafter. Medical and optical tests are also imposed from age seventy years on an annual basis before renewal of the licence.

Drivers attract demerit points for contravention of various sections of the Road Traffic Act. The offences that attract points have been carefully selected with a view towards road safety. Points allotted range from six for serious offences down to one for minor offences.

In 1982 warning notices were sent to 35 037 drivers who had accumulated six or more points in the previous three years and 4 508 drivers with twelve or more demerit points had their drivers licence suspended for a period of three months.

Before July 1976, licences were issued for a period of one year: from July 1976 three-year licences were introduced initially on a staggered basis so that some drivers were issued with one-year licences, some with two-year licences and some with three-year licences. From July 1977 all drivers were issued with three-year licences except those aged 70 years and over who will have to continue renewing their licences annually (fee \$8) subject to passing the required tests. The fee for a learners permit is \$4 per three-month period. Licences and permits are not issued to persons under sixteen years of age.

In 1961 licences for motor driving instructors were introduced and are compulsory where instruction is given for reward. The licence fee is \$50 for a period of three years.

Drivers and riders licences current at 31 December 1982 totalled 779 110. The number in force first exceeded 100 000 in 1931, totalled 215 157 by 1951, 315 044 by 1957, and had risen to 447 985 at December 1965.

Revenue from Registrations and Licences

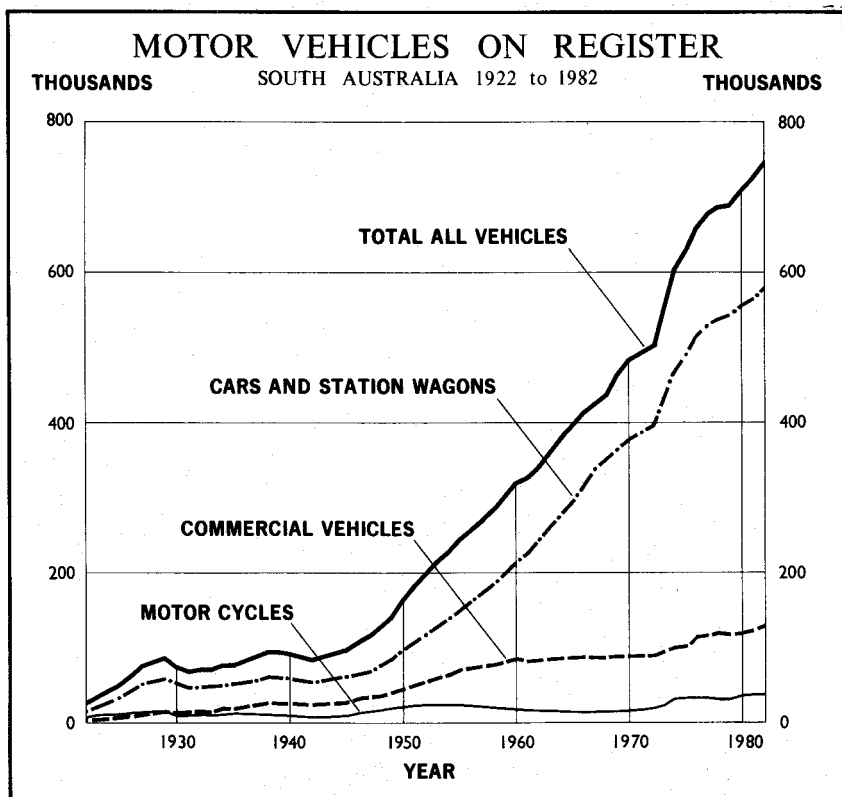
Revenue from registration fees and drivers licence fees totalled \$49 746 000 in 1981-82 compared with \$44 366 400 in 1980-81. Registration fees were increased by 11.6 per cent from 28 April 1982. Licence fees were increased from \$6 per annum to \$8 per annum from 16 September 1981.

These fees are paid into Consolidated Revenue Account; but after deductions have been made for sinking fund and interest on loans raised for roads and bridges, and the administration expenses of the Highways Department and Motor Registration Division of the Department of Transport, the balance is paid into the Highways Fund.

Third Party Insurance

Under the Motor Vehicles Act, 1959-1983 every motor vehicle driven on a road, unless specifically exempted, must be covered by an insurance policy. This policy insures the owner of the motor vehicle and any other person who at any time drives the vehicle in respect of all liability that may be incurred in respect of the death of, or bodily injury to, any person caused by, or arising out of the use of the vehicle in any part of Australia.

Insurance must be effected with the State Government Insurance Commission, which is now the only approved third party insurer. Liabilities of the insurer, set out in the



Motor Vehicles Act, include the liability to pay for emergency treatment and hospital treatment to a person injured (including fatally injured) by or arising out of the use of an insured motor vehicle.

Where the driver of a motor vehicle has caused death or bodily injury in the use of that vehicle and the identity of the vehicle cannot be ascertained, then a person who could have obtained a judgment against the driver may recover by action against a nominal defendant appointed by the Minister of Transport and published in the Government Gazette. Payment by the nominal defendant is out of money contributed by the Commission.

A person claiming damages in respect of death or bodily injury caused by negligence in the use of an uninsured motor vehicle on a road may bring an action for the recovery of those damages against the nominal defendant. Payments made by the nominal

defendant are recoverable from the driver of the motor vehicle or any person liable for the negligence of that driver.

An injured person may claim against his or her spouse where the spouse is an insured person and has caused that person bodily injury in the use of a motor vehicle.

A committee appointed by the Governor on the recommendation of the Minister of Transport having all the powers of a royal commission periodically inquires into and determines what premiums for third party insurance are fair and reasonable.

The following table shows the actual and increase in third party annual premiums for the main classes of motor vehicles from 6 July 1983.

Increase in Third Party Premiums, South Australia, July 1983

Class of Vehicle	Metropolitan Area(a)		Country Area	
	Increase	Premium	Increase	Premium
	\$	\$	\$	\$
Private and business cars	16	146	13	113
Goods carrying vehicles not exceeding two tonnes	19	169	13	113
Goods carrying vehicles exceeding two tonnes	24	213	15	138
Primary producers and prospectors goods carrying vehicles	7	66	4	30
Taxi-cabs	66	592	28	250
Hire and drive-yourself cars	28	250	28	250
Omnibuses	79	624	13	113
Omnibuses not for hire, fare or reward	10	89	5	79
Motor cycles, engine capacity not exceeding 50 cc	3	30	2	14
Motor cycles, engine capacity not exceeding 250 cc	8	74	3	26
Motor cycles, engine capacity exceeding 250 cc	27	239	12	111
Miscellaneous vehicles, e.g.: Ambulances, tow trucks, mobile cranes, hearses, etc.	10	92	4	34

(a) Includes vehicles usually garaged within a radius of 40 kilometres of the GPO Adelaide.

Road Traffic Board

The Road Traffic Board of South Australia, set up in 1960 under the provisions of the Road Traffic Board Act, 1960, is now constituted under the Road Traffic Act, 1961-1982; its functions are to:

- (1) make recommendations to the Minister on roads and traffic generally, on the use of traffic control devices and other measures to be taken to prevent road traffic accidents;
- (2) promote uniformity in the design and use of traffic control devices;
- (3) conduct research and collect statistics relating to road traffic accidents and other traffic problems;
- (4) disseminate information and advice on road safety and traffic laws and regulations;
- (5) investigate and report on proposals for alterations of and additions to traffic laws and regulations.

Motor Vehicle Usage

A survey was conducted throughout Australia in late 1979 for the purpose of gathering information on the usage of motor vehicles. The period covered by the survey was for the twelve months ended 30 September 1979. Previous surveys were conducted in 1963, 1971 and 1976.

The survey population (motor vehicles on the register), from which the sample was drawn, was extracted from the registration systems of the Commonwealth Government

and State motor vehicle registration authorities; it was then stratified on the basis of vehicle type, trucks being further stratified by tare weight and number of axles.

Of the vehicles selected for the sample, 75 per cent were trucks, utilities and panel vans; 18 per cent cars, station wagons and motor cycles; and 7 per cent buses and minibuses. The emphasis on 'commercial' vehicles was necessary because of the diverse usage characteristics of commercial vehicles and because a major interest of users is in road freight transport.

Motor Vehicle Usage: Average Annual Distance Travelled, South Australia, 1979

Type of Vehicle	Average Annual Distance Travelled		Average Annual Distance Travelled for Business Purposes	
	'000 km	SE %	'000 km	SE %
Cars and station wagons	14.9	(2.6)	10.6	(8.8)
Utilities and panel vans	16.4	(5.0)	13.5	(6.7)
Trucks:				
Rigid:				
Tare weight,				
Under 3 tonnes	12.7	(4.9)	12.5	(5.1)
3 and under 4 tonnes	10.6	(4.3)	10.5	(4.2)
4 tonnes and over	17.3	(3.5)	17.1	(3.6)
Articulated:				
Tare weight,				
Under 9 tonnes	18.4	(3.4)	18.7	(3.4)
9 and under 11 tonnes	51.9	(2.8)	51.7	(2.8)
11 tonnes and over	95.0	(2.9)	95.0	(2.9)
Other truck type vehicles	14.1	(13.5)	14.3	(22.7)
Motor cycles	6.6	(7.8)	3.9	(17.1)

Being based on a sample, these statistics may differ from the figures which would have been obtained from a complete census using the same questionnaires and procedures. Measure of such imprecision, standard error (SE), is shown in the table as a percentage of the associated figure. The following table shows details of average annual fuel consumption for South Australia.

Motor Vehicle Usage: Average Rate of Fuel Consumption, South Australia, 1979

Type of Vehicle	Average Rate of Fuel Consumption			
	Petrol		Diesel	
	litres per 100 km	SE %	litres per 100 km	SE %
Cars and station wagons	12.5	(1.0)	9.0	..
Utilities and panel vans	14.9	(3.4)	11.5	(22.5)
Trucks:				
Rigid:				
2 axles	26.0	(1.7)	27.7	(2.4)
3 axles	50.6	(6.9)	38.5	(3.0)
More than 3 axles	26.7	(13.0)	42.6	(6.2)
Axles not stated	17.5	(32.3)	..	..
Articulated:				
Less than 5 axles	47.1	(3.1)	43.8	(1.1)
5 axles	46.8	(8.8)	52.1	(1.2)
6 axles	100.0	..	60.4	(2.6)
More than 6 axles .....	..	..	88.9	(13.9)
Axles not stated	47.3	(0.9)	..	..
Motor cycles	5.8	(3.1)	..	..

Additional details relating to South Australia and Australia are shown in the bulletin *Survey of Motor Vehicle Usage, Twelve Months Ended 30 September 1979* (Catalogue No. 9208.0). A survey of Motor Vehicle Usage, Twelve Months Ended 30 September 1982 has been completed but tabulations are not available for this issue of the South Australian Year Book.

Census of Motor Vehicles

A census of motor vehicles on the register in Australia at 30 September 1982 was completed during 1983: details relating to South Australia are shown in the bulletin *Motor Vehicle Census, 30 September 1982* (Catalogue No. 9301.4).

The following table classifies motor vehicles on register by type of vehicle and year of manufacture at 30 September 1982.

**Motor Vehicles on Register: Type of Vehicle and Year of Manufacture, South Australia
30 September 1982^(a)**

Year of Manu- facture	Type of Vehicle							Total (a)
	Motor Cars and Station Wagons	Utilities	Panel Vans	Rigid Trucks	Articu- lated Trucks	Other Truck Type Vehicles	Buses	
					'000			
Before 1965	31.1	3.4	0.9	6.5	0.1	0.7	0.2	42.9
1965-1967	38.0	3.5	1.1	3.3	0.2	0.3	0.2	46.5
1968-1970	72.0	5.5	2.0	4.7	0.4	0.6	0.4	85.7
1971	30.1	1.9	1.0	1.5	0.2	0.3	0.3	35.1
1972	30.1	2.4	1.1	1.6	0.2	0.3	0.2	35.8
1973	37.0	2.7	1.5	2.1	0.2	0.4	0.2	44.1
1974	42.3	3.3	1.9	2.1	0.3	0.5	0.2	50.5
1975	43.9	2.9	2.4	2.3	0.3	0.6	0.2	52.4
1976	45.5	3.3	2.8	2.7	0.4	0.5	0.3	55.6
1977	37.6	2.6	2.6	2.6	0.3	0.4	0.4	46.6
1978	36.3	2.4	2.2	2.5	0.4	0.3	0.3	44.4
1979	37.6	2.3	1.7	2.4	0.4	0.2	0.3	44.8
1980	35.3	2.5	1.9	2.8	0.4	0.2	0.2	43.3
1981	35.1	2.9	2.5	2.6	0.4	0.2	0.2	43.9
1982	28.7	2.0	2.5	1.8	0.2	0.2	0.1	35.5
Total	580.4	43.5	28.0	41.5	4.4	5.7	3.6	707.2

(a) Excludes motor cycles (36 818) and Commonwealth Government owned vehicles.

Road Safety

Some recent moves towards greater road safety were detailed on pages 514-5 of the *South Australian Year Book 1973*. These mainly related to the operations of the new Road Safety Instruction Centre and the points demerit scheme which came into operation on 29 April 1971.

Regulations under the Road Traffic Act require that any modification to a motor vehicle with a gross vehicle mass less than 4.5 tonnes (motor cycles excepted) must meet certain standards and that approval of the Road Traffic Board is necessary before certain types of modifications can be made.

All motor vehicles manufactured on or after 1 May 1971, must have affixed a

compliance plate showing that the vehicle has been approved by the Australian Motor Vehicle Certification Board and complies with Australian Design Rules for Motor Vehicle Safety applicable to the year of manufacture. Road Traffic Board exemption from this requirement is limited to immigrants or local residents returning from overseas with a vehicle they wish to register privately in this State.

Following an amendment to the Road Traffic Act, a different interpretation of 'STOP' signs became operative on 1 March 1975. Under this legislation, a driver facing a 'STOP' sign must give way to all traffic whether it is coming from the left or from the right. Previously, drivers had to give way only to the traffic from the right. The legislation conforms with the National Road Traffic Code.

In March 1980 the Road Traffic Act was amended to introduce the 'T' junction rule whereby motorists on the terminating leg of a 'T' junction are required to give way to vehicles on the other road. This requirement was also adopted in the legislation of the other States.

Random Breath Testing to determine blood alcohol levels of drivers was commenced in South Australia in October 1981, under legislation covering a three year term.

The Road Traffic Act now requires a seat belt to be worn by the driver and passenger of a motor vehicle where seat belts are fitted irrespective of the year of manufacture of the vehicle. An amendment to the Act, which came into operation on 1 March 1977, greatly strengthened the penalty provisions of the Act. The penalties are classified into (a) general penalty offences which include the majority of offences and carry a maximum penalty of \$300 and (b) special penalty offences which deal with the more serious offences (e.g. a driver convicted on a drink-driving offence for the first time can face the following charges, (i) disqualification from holding a drivers licence for not less than six months and (ii) a fine of not less than \$400 and not more than \$700 or imprisonment for not more than three months).

Road Traffic Accidents

Statistics of road traffic accidents are compiled from reports made to members of the South Australian Police Department by persons involved in such accidents. Section 43 of the Road Traffic Act sets out the obligations of the driver of a vehicle involved in an accident—he must stop his vehicle at once, render any assistance of which he is capable to anyone injured in the accident, state his name and address if requested to any person having reasonable grounds for such request, and report the accident to the Police as soon as possible, or at least within twenty-four hours of the accident. However, it is a defence against a charge relating to non-reporting of an accident if a defendant can prove either that he did not know that an accident occurred or that the only damage or injury resulting from the accident was to property and that a fair estimate of the damage did not exceed \$300.

For the purpose of these statistics, a road traffic accident is defined as an accident which occurs because of the presence of a moving vehicle on a road or other public thoroughfare (e.g. public car park, beach) and which involves property damage exceeding \$300 or casualty; a casualty occurring if the accident resulted in:

- (a) the death of any person within a period of thirty days of the accident; or
- (b) bodily injury to any person to an extent requiring surgical or medical treatment.

With the introduction of a more comprehensive accident report form on 1 October 1967, statistics have become available as a result of a joint effort by the South Australian Police Department, the Road Traffic Board of South Australia and the Australian Bureau of Statistics. Before this date, the South Australian Police Department was the sole authority preparing statistics of road traffic accidents.

The following table shows summary details of road traffic accidents for the years 1978

to 1981. During 1981 the total number of recorded road traffic accidents decreased by 3.1 per cent (from 31 552 in 1980 to 30 574 in 1981). The number of accidents which resulted in casualties decreased fractionally (from 7 336 in 1980 to 7 317 in 1981).

Road Traffic Accidents, South Australia

Year	Total Accidents Recorded	Accidents Involving Casualties	Persons Killed	Persons Injured	Rate per 100 000 Motor Vehicles on Register (a)			Rate per 100 000 of Mean Population		
					Total Accidents Recorded	Persons Killed	Persons Injured	Total Accidents Recorded	Persons Killed	Persons Injured
1978	35 042	8 160	291	11 209	5 142	43	1 645	2 721	23	870
1979	34 942	8 359	309	11 338	5 060	45	1 642	2 702	24	877
1980	31 552	7 336	269	9 875	4 453	38	1 393	2 429	21	761
1981	30 574	7 317	222	9 737	4 215	31	1 342	2 318	17	738

(a) 'Motor vehicles on register' is the number recorded at 30 June; includes Commonwealth Government owned vehicles except defence services vehicles; excludes tractors, trailers, plant, equipment and caravans.

In the following table, the types of road users killed and injured are shown according to age groups for 1981.

Road Traffic Accidents: Age Groups of Casualties, South Australia, 1981

Age Group of Casualty (Years)	Drivers of Motor Vehicles	Motor Cyclists	Pedal Cyclists	Passengers (a)	Pedestrians	All Other	Total
PERSONS KILLED							
Under 5	—	—	—	1	1	—	2
5-7	—	—	2	1	2	—	5
8-15	—	—	5	9	4	—	18
16-20	25	5	—	20	6	—	56
21-24	15	10	2	6	1	—	34
25-29	11	4	1	1	2	—	19
30-39	10	1	—	3	1	—	15
40-49	5	2	1	9	1	—	18
50-59	10	—	—	3	5	—	18
60 and over	8	—	1	8	19	—	36
Not stated	1	—	—	—	—	—	1
Total	85	22	12	61	42	—	222
PERSONS INJURED							
Under 5	—	—	1	123	39	5	168
5-7	—	—	31	98	50	1	180
8-15	8	8	212	393	110	26	757
16-20	946	523	96	721	95	14	2 395
21-24	606	283	42	285	47	3	1 266
25-29	505	191	35	163	41	2	937
30-39	730	119	35	194	44	2	1 124
40-49	421	35	24	126	39	1	646
50-59	352	32	26	149	50	1	610
60 and over	277	10	33	197	118	2	637
Not stated	222	98	44	582	56	15	1 017
Total	4 067	1 299	579	3 031	689	72	9 737

(a) Passengers include pillion motor cyclists.

Drivers (including motor cyclists) under twenty-one years of age, representing 14 per cent of licence holders at 30 June 1981, accounted for 19 per cent of drivers involved in accidents, 28 per cent of drivers killed and 21 per cent of drivers injured during 1981. For drivers aged twenty-one to twenty-nine years involvements were 21 per cent, deaths 37 per cent and injuries 22 per cent while their representation in the driving population was 24 per cent. Pedestrians sixty years and over accounted for 18 per cent of pedestrians involved, 19 per cent of pedestrians injured and 45 per cent of pedestrians killed.

The following table shows casualties by type of road user in each of the five years to 1981.

Road Traffic Accidents: Casualties, South Australia

Year	Drivers of Motor Vehicles	Motor Cyclists	Pedal Cyclists	Pass- engers	Pedes- trians	All Other	Total
PERSONS KILLED							
1977	108	42	9	96	51	—	306
1978	119	33	6	81	52	—	291
1979	117	43	9	91	49	—	309
1980	100	41	9	76	43	—	269
1981	85	22	12	61	42	—	222
PERSONS INJURED							
1977	4 140	1 625	554	3 646	810	6	10 781
1978	4 612	1 403	553	3 828	804	9	11 209
1979	4 678	1 408	606	3 817	819	10	11 338
1980	4 106	1 249	652	3 168	697	3	9 875
1981	4 067	1 299	579	3 031	689	72	9 737

Details of road traffic accidents for 1981 according to time and day of occurrence are shown in the next table. More accidents occurred on Fridays (5 515 accidents) and Saturdays (4 800) than on other days of the week and more accidents occurred between 4 p.m. and 6 p.m. than during any other two-hour period. More accidents occurred between 4 p.m. and 6 p.m. on Fridays than on other days in that period and more deaths resulted from accidents occurring on Fridays (45) and Saturdays (53).

Road Traffic Accidents: Day of Week and Time of Occurrence, South Australia, 1981

Time of Occurrence	Monday	Tuesday	Wednes- day	Thursday	Friday	Saturday	Sunday	Total
TOTAL ACCIDENTS								
After: Until:								
Midnight 2 a.m.	56	57	95	118	159	405	464	1 354
2 a.m. 4 a.m.	22	22	20	39	48	135	196	482
4 a.m. 6 a.m.	25	17	25	34	27	60	72	260
6 a.m. 8 a.m.	303	302	320	322	306	108	58	1 719
8 a.m. 10 a.m.	476	514	514	520	560	318	141	3 043
10 a.m. 12 noon	443	408	441	458	566	723	324	3 363
12 noon 2 p.m.	434	391	443	490	565	574	427	3 324
2 p.m. 4 p.m.	597	572	597	616	750	516	454	4 102
4 p.m. 6 p.m.	908	940	901	1 019	1 079	594	559	6 000
6 p.m. 8 p.m.	340	387	384	527	667	632	427	3 364
8 p.m. 10 p.m.	184	209	212	344	393	364	209	1 915
10 p.m. Midnight	155	160	180	221	387	366	151	1 620
Unknown	3	1	2	7	8	5	2	28
Total	3 946	3 980	4 134	4 715	5 515	4 800	3 484	30 574

Road Traffic Accidents: Day of Week and Time of Occurrence, South Australia, 1981
(continued)

Time of Occurrence	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
PERSONS KILLED								
After: Until:								
Midnight 2 a.m.	2	4	1	4	6	7	5	29
2 a.m. 4 a.m.	—	—	—	—	1	5	2	8
4 a.m. 6 a.m.	1	—	2	1	—	—	—	4
6 a.m. 8 a.m.	—	1	1	1	2	1	2	8
8 a.m. 10 a.m.	3	4	2	2	2	4	1	18
10 a.m. 12 noon	3	2	2	2	4	2	1	16
12 noon 2 p.m.	3	1	1	3	5	2	1	16
2 p.m. 4 p.m.	3	2	2	3	5	4	4	23
4 p.m. 6 p.m.	6	2	5	3	3	9	2	30
6 p.m. 8 p.m.	1	3	3	2	5	7	7	28
8 p.m. 10 p.m.	1	2	4	1	10	8	2	28
10 p.m. Midnight	2	—	—	5	2	4	1	14
Total	25	21	23	27	45	53	28	222
PERSONS INJURED								
After: Until:								
Midnight 2 a.m.	26	18	34	48	79	181	219	605
2 a.m. 4 a.m.	11	5	6	19	18	60	91	210
4 a.m. 6 a.m.	10	4	6	13	9	20	38	100
6 a.m. 8 a.m.	97	96	101	125	99	38	20	576
8 a.m. 10 a.m.	128	121	149	129	112	95	45	779
10 a.m. 12 noon	109	114	115	111	134	156	115	854
12 noon 2 p.m.	109	91	129	137	143	182	142	933
2 p.m. 4 p.m.	147	186	185	181	193	217	161	1 270
4 p.m. 6 p.m.	249	286	259	292	320	205	196	1 807
6 p.m. 8 p.m.	117	133	111	162	203	242	212	1 180
8 p.m. 10 p.m.	61	79	93	134	138	184	85	774
10 p.m. Midnight	66	61	75	90	167	126	50	635
Unknown	2	—	—	4	3	3	2	14
Total	1 132	1 194	1 263	1 445	1 618	1 709	1 376	9 737

Although more than two-thirds of all accidents occurred between 6 a.m. and 6 p.m. the reported severity of accidents, judged on the basis of death and injury rates, was considerably greater during the 'night hours', as can be seen from the following table.

Accidents and Casualties: Time of Day, Fatality and Injury Rates
South Australia, 1981

Time of Occurrence	Accidents Occurring	Persons Killed	Persons Injured	Persons Killed Per 100 Accidents Occurring	Persons Injured Per 100 Accidents Occurring
After: Until:					
Midnight 2 a.m.	1 354	29	605	2.1	44.7
2 a.m. 4 a.m.	482	8	210	1.7	43.6
4 a.m. 6 a.m.	260	4	100	1.5	38.5
6 a.m. 8 a.m.	1 719	8	576	0.5	33.5
8 a.m. 10 a.m.	3 043	18	779	0.6	25.6
10 a.m. 12 noon	3 363	16	854	0.5	25.4
12 noon 2 p.m.	3 324	16	933	0.5	28.1
2 p.m. 4 p.m.	4 102	23	1 270	0.6	31.0
4 p.m. 6 p.m.	6 000	30	1 807	0.5	30.1
6 p.m. 8 p.m.	3 364	28	1 180	0.8	35.1
8 p.m. 10 p.m.	1 915	28	774	1.5	40.4
10 p.m. Midnight	1 620	14	635	0.9	39.2
Unknown	28	—	14	—	50.0
Total	30 574	222	9 737	0.7	31.9

The following table shows the nature of accidents which occurred in 1981. Collisions between vehicles accounted for 72 per cent of all accidents and 47 per cent of deaths, while vehicles overturning or leaving the road and vehicles colliding with pedestrians accounted for about 5 per cent and 2 per cent of all accidents respectively. Vehicles overturning or leaving the road and vehicles colliding with pedestrians each accounted for 12 and 17 per cent of deaths respectively.

Road Traffic Accidents: Nature, South Australia, 1981

Nature of Accidents	Total Accidents Reported	Accidents Involving Casualties	Persons Killed	Persons Injured
Collisions between vehicles (a):				
Head on	960	308	41	563
Rear end	8 824	1 410	14	1 846
Right angles	7 607	1 885	35	2 651
Other	4 677	838	14	1 082
Vehicles:				
Overturning or leaving road (b)	1 690	835	27	1 146
Colliding with;				
Fixed object	3 134	982	48	1 327
Parked vehicle	2 417	193	4	238
Pedestrian	701	687	37	690
Other (c)	344	55	2	68
Other	220	124	—	126
Total	30 574	7 317	222	9 737

(a) Includes trains at railway level crossings, trams and vehicles stopped on carriageway.

(b) Includes collisions subsequent to vehicles leaving carriageway.

(c) Includes collisions with non-ridden animals, parked trailers, etc.

The following table shows the age group and sex of persons holding drivers licences and permits at 30 June 1981 and involvements in accidents during 1981 of drivers and riders within the same classifications. In this table figures for involvements relate to accidents occurring in South Australia whereas licence and permit holders are those licences, etc., issued in South Australia, and the licences on issue at 30 June are only an approximation of the average for the year.

It should be noted in particular that these figures do not measure exposure to risk: for example they take no account of distances driven, times of day into which driving may be concentrated or traffic conditions during those times.

The following additional limitations should be observed when interpreting the figures:

- (a) all figures include permit holders; the accident involvement of permit holders, who are permitted to drive a vehicle only when accompanied by a fully licensed driver, appears, from an examination of the relevant data, to be significantly lower than that of fully licensed drivers. At 1 July 1981, there were 14 640 permit holders; of these 5 917 or 40 per cent were aged 16 years and 11 143 or 76 per cent of the total were aged 20 years or less: thus if permit holders and their involvements in accidents were excluded from the table, it could be expected that the involvement rates in the lower age groups would be higher than those shown;
- (b) the number of involvements with ages not stated is high; and their age distribution, if known, might be different from that of known cases.

**Road Traffic Accidents: Age and Sex of Licensed Drivers and of Drivers and Riders
Involved in Accidents, South Australia, 1981 ^(a)**

Age (Years)	Licensed Drivers Riders and Permit Holders at 30 June 1981 (b)		Accident Involvement of Drivers and Riders (c)		Accident Involvement Rate per 100 Licensed Drivers and Riders	
	Males	Females	Males	Females	Males	Females
Under 21	51 208	35 921	8 001	2 482	15.6	6.9
21-24	46 887	37 378	4 693	2 033	10.0	5.4
25-29	55 937	46 359	4 020	1 881	7.2	4.1
30-34	54 387	44 704	3 297	1 695	6.1	3.8
35-39	42 820	34 403	2 488	1 277	5.8	3.7
40-44	35 883	26 668	2 067	957	5.8	3.6
45-49	31 959	21 451	1 805	692	5.6	3.2
50-54	34 691	21 513	1 957	667	5.6	3.1
55-59	32 507	19 615	1 600	494	4.9	2.5
60-64	25 042	14 262	1 073	358	4.3	2.5
65-69	20 407	10 278	753	252	3.7	2.5
70-74	11 793	4 904	477	128	4.0	2.6
75-79	5 743	2 044	216	106	3.8	5.2
80 and over	2 488	741	137	39	5.5	5.3
Not stated	—	—	8 726	2 216	—	—
Total	451 752	320 241	41 310	15 277	9.1	4.8

(a) Includes both licensed riders and permit holders.

(b) Details provided by Motor Registration Division, Department of Transport.

(c) Drivers and riders involved in more than one accident during the year are included once for each accident.

SHIPPING

Control of Shipping

The Commonwealth Parliament is empowered under the Constitution to make laws in respect of trade and commerce with other countries and among the States.

Navigation and shipping are regulated under the *Navigation Act 1912* and the provisions of the Act apply to ships registered in Australia (except those engaged solely in the domestic trade of any one State) and other British ships whose first port of clearance and whose port of destination are within Australia. Other shipping Acts under the trade and commerce power are the *Sea-Carriage of Goods Act 1924*, the *Seamen's Compensation Act 1911*, the *Seamen's War Pensions and Allowance Act 1940*, the *Australian Coastal Shipping Commission Act 1966*, the *Australian Coastal Shipping Agreement Act 1956* and the *Stevedoring Industry Act 1956*.

Shipping in South Australia is controlled by the *Navigation Act 1912* and, where this does not apply, by the *Harbors Act, 1936-1980* and the *Marine Act, 1936-1976*. Both of the State Acts are administered by the Department of Marine and Harbors.

Registration of Motor Boats

The *Boating Act, 1974-1980* gives power to the South Australian Minister of Marine to regulate boating and other activities within South Australian waters. The main provisions of the Act refer to the registration of motor boats and the licensing of motor boat operators.

Any boat that is propelled by an engine, whether or not that engine is the main means of propulsion, must be registered and have its registration number displayed on the hull.

The registration number consists of two letters followed by two digits and the letter 'S' denoting South Australia. From 1 March 1981 the annual registration fee was increased to \$12. A registration must be renewed annually, but, for a boat that is less than 3.048 metres in length and powered with an engine that develops less than 5 horsepower, a renewal fee is not required. At 30 June 1982 there were 41 244 motor boats registered.

Only persons, sixteen years of age or older, may be issued with a motor boat operators licence which remains in force without renewal unless cancelled or suspended under the Act or voluntarily surrendered. A person aged between twelve and sixteen years may be issued a permit to operate a motor boat subject to certain restrictions. At 30 June 1982 there were 81 191 licenced operators of motor boats. The other main provisions of the Act deal with unseaworthy boats, wrecks and abandoned boats, speed restrictions, rules for water ski-ing, reckless and dangerous operation, and the reporting of accidents.

Details of the minimum safety equipment required to be carried in a motor boat are listed in the Act's Regulations; these vary according to the length of the motor boat and whether it operates in in-shore or off-shore waters.

Registration of Ships

An Australian Register of Ships operative from 26 January 1982, was established in Canberra by the Commonwealth Government. It replaced the British Register of Ships, which, for a variety of reasons had become inappropriate as a means of registering Australian ships.

Four different measures of tonnage (gross, net, displacement, or deadweight) may be applied to a vessel. Gross tonnage is the total enclosed cubic capacity of the ship on a basis of 2.83 cubic metres a ton; net tonnage is the cubic capacity available for cargo in terms of 2.83 cubic metres a ton; displacement tonnage is the weight of water displaced by a ship; deadweight tonnage is the total weight of fuel, water, stores and cargo that a ship will carry. Passenger ships are commonly rated by the gross tonnage, cargo ships by their net tonnage, warships by their displacement tonnage and oil tankers by their deadweight tonnage.

Shipping Search and Rescue

The Shipping Search and Rescue organisation (SAR), administered by the Department of Transport, co-ordinates the marine search and rescue operations for which the Commonwealth Government is responsible. The SAR also co-operates with the appropriate authorities in other marine emergencies.

Overseas Shipping

Overseas shipping cargo statistics are compiled from returns submitted by shipping companies, or their representatives, to Customs Houses at each port in South Australia. The statistics relate to overseas vessels calling at or departing from South Australian ports for the purpose of carrying cargo from or to overseas ports except for naval vessels, yachts and other craft used for pleasure, foreign fishing vessels that neither load nor discharge cargo, geophysical, oceanographic research and seismic survey vessels; offshore oil drilling rigs and related service vessels, Australian registered fishing vessels operating from Australian ports and all vessels of 200 registered net tonnes and under.

Cargo statistics are recorded in both revenue tonnes and in gross weight tonnes. A revenue tonne is the unit of quantity used predominantly in the shipping industry. It is the basis on which freight is charged and is obtained by adding mass (tonnes weight) and volume (cubic metres) units. Because revenue tonnes are derived by adding mass and

volume units they should be used with care. Gross weight is the total weight of cargo, excluding the weight of containers, irrespective of the basis on which freight is charged.

The following tables show, for the year 1980-81, particulars of cargo loaded in South Australia for discharge overseas, and of cargo discharged in South Australia from overseas, classified according to major trade areas and overseas vessel calls and cargo discharged and loaded by South Australian ports.

**Shipping: Overseas Cargo Discharged and Loaded in South Australia
by Trade Area, 1980-81**

Trade Area	Cargo Discharged		Cargo Loaded	
	Revenue Tonnes	Gross Weight Tonnes	Revenue Tonnes	Gross Weight Tonnes
European area (a)	50 334	36 014	427 857	426 517
East Asian area	51 304	36 422	505 055	505 025
Japanese area (b)	402 573	206 534	1 299 676	1 299 676
North America:				
East Coast area	87 053	84 061	26 498	26 498
West Coast area	115 729	84 141	16 400	15 359
Central America and Caribbean area	5 730	5 730	3 446	381
South America:				
West Coast area	2	2	37 441	37 441
East Coast area	269	82	79 549	79 428
West Africa area	91	57	—	—
South and East Africa area	13 156	12 667	70 182	62 502
Red Sea area	—	—	461 404	456 648
Persian Gulf area	2 096 994	2 096 994	534 550	534 532
India:				
West Coast area	—	—	76 029	76 027
East Coast area	22 083	17 725	101 606	101 557
South-East Asia area	78 405	50 050	525 220	505 685
New Zealand area	—	—	—	—
Papua/New Guinea area	1 308	782	21 619	21 603
Central Pacific area	56	28	4 614	4 310
French Pacific area	—	—	307	135
Pacific Islands	149 822	149 822	14 700	14 700
Other	68 433	68 433	1 499	312
Total Cargo	3 143 342	2 849 544	4 207 652	4 168 336

(a) Includes USSR (Western Ports).

(b) Includes USSR (Eastern Ports).

Cargo Handled at Major Ports

The South Australian Department of Marine and Harbors records details of cargo handled at major ports in this State and the following table shows details for each of the last five years.

Cargo Handled: Major Ports, South Australia

Port	1977-78	1978-79	1979-80	1980-81	1981-82
'000 tonnes					
American River	32	29	34	36	35
Ardrossan	653	722	1 096	925	721
Ballast Head	153	170	168	207	184
Kingscote	114	114	102	112	107
Klein Point	736	732	781	705	675
Port Adelaide	3 176	3 635	4 081	3 836	3 701
Port Giles	40	68	183	169	85
Port Lincoln	491	759	1 239	961	862
Port Pirie	1 147	1 335	1 496	1 362	1 281
Port Stanvac	3 185	3 275	3 521	3 325	3 126
Proper Bay	19	21	64	64	31
Rapid Bay	309	436	366	289	169
Thevenard	589	787	1 110	866	1 192
Wallaroo	151	410	512	289	441
Whyalla	3 108	3 643	3 429	3 663	2 820
Total	13 904	16 138	18 182	16 810	15 428

Total cargo handled at major ports in South Australia decreased from 16 810 000 tonnes in 1980-81 to 15 428 000 tonnes in 1981-82, a decrease of 1 382 000 tonnes (8.2 per cent). With the exception of Thevenard and Wallaroo which recorded increases in the amount of cargo handled in 1981-82, all other ports recorded decreases, some significant.

Shipping: Overseas Vessel Calls and Cargo Discharged/Loaded by South Australian Ports, 1980-81

Port	Cargo Discharged			Cargo Loaded		
	Vessel Calls (a)	Revenue Tonnes '000	Gross Weight Tonnage '000	Vessel Calls (a)	Revenue Tonnes '000	Gross Weight Tonnage '000
Ardrossan	18	—	—	19	205	205
Port Adelaide	489	750	456	490	1 244	1 204
Port Giles	24	—	—	23	169	169
Port Lincoln	89	105	105	90	805	805
Port Pirie	95	39	39	93	760	760
Port Stanvac	44	2 097	2 097	36	163	163
Thevenard	49	—	—	43	405	405
Wallaroo	25	47	47	26	225	225
Whyalla	26	105	105	29	233	233
Other Ports	6	—	—	—	—	—
Total	865	(b) 3 143	2 850	849	(b) 4 208	4 168

(a) Includes one arrival call and one departure call for each port visited in South Australia.

(b) Includes Container Cargo—Discharged 79 000 tonnes; Loaded 130 000 tonnes.

Distances to Overseas Ports

Distances in kilometres from Port Adelaide to principal overseas ports are shown in

the following table. Distances by sea from Port Adelaide to the ports of other Australian capital cities are given on page 512.

Distances from Port Adelaide to Principal Overseas Ports

Port Adelaide to:	Kilometres	Port Adelaide to:	Kilometres
<i>Africa;</i>		<i>North America;</i>	
Cape Town	10 377	<i>East Coast,</i>	
<i>Asia;</i>		Baltimore	(a) 23 135
Colombo	7 982		(c) 19 059
Djakarta	5 643	Montreal	(a) 23 541
Hong Kong	8 856		(c) 21 368
Singapore	6 510	New York	(a) 22 961
Yokohama	9 780		(c) 19 200
<i>Europe;</i>		<i>West Coast,</i>	
Liverpool	(a) 21 630	San Francisco	13 653
	(b) 19 774	Vancouver	14 357
London	(a) 21 705		
	(b) 19 839	<i>Central America;</i>	
Marseilles	(a) 21 144	Panama	15 385
	(b) 16 688	<i>South America;</i>	
Naples	(a) 21 663	<i>East Coast,</i>	
	(b) 15 940	Buenos Aires	(d) 14 388
<i>New Zealand;</i>		Rio de Janeiro	(d) 15 901
Auckland	3 769	<i>West Coast,</i>	
Wellington	3 482	Valparaiso	12 353

(a) via Cape Town. (b) via Suez Canal. (c) via Panama Canal. (d) via Cape Horn.

CIVIL AVIATION

Control of Civil Aviation

In Australia, civil aviation is subject to the Commonwealth *Air Navigation Act 1920* and to regulations made under the Act. The South Australian Air Navigation Act, 1937 provided for 'the application of Commonwealth Air Navigation Regulations to, and in relation to, air navigation within the State of South Australia'. The regulations under the Commonwealth Act were drawn up to give effect to the 1944 Chicago Convention on Civil Aviation. Regulations based on the resolutions of the Paris Convention in 1919 were no longer adequate in the years after the 1939-45 War because of the immense wartime development of aerial transport.

The present regulations, administered by the Department of Aviation, cover the registration of aircraft and the issue of certificates of airworthiness, the licensing of aircraft services, aircraft operating crews, aerodromes, flying training schools, and the rules of the air. The Department is responsible for the provision and operation of air traffic services and rescue and fire fighting services and has assumed responsibility for co-ordination of search and rescue operations. It is also responsible for the prevention of undesirable effects of air traffic on the environment and of unlawful interference with aircraft and aviation facilities.

Under the *Australian National Airlines Act 1945* the Australian National Airlines Commission was established and empowered to operate Commonwealth Government owned air services. The Commission operates under the name Trans-Australia Airlines.

The *Civil Aviation Agreement Act 1952* ratified an agreement between the Commonwealth Government and Australian National Airways Pty Ltd to ensure the efficient and economical operation of air services within Australia by eliminating wasteful competition between that company and Trans-Australia Airlines and to rationalise the services of both airlines. The *Civil Aviation Agreement Act 1957* was enacted to extend the

privileges and obligations of the 1952 Act to the new proprietor of the major private airline after the purchase of Australian National Airways Pty Ltd by Ansett Transport Industries Ltd. The Commonwealth Parliament passed the Airlines Equipment Act in 1958 and this provided for further financial assistance to both airlines for the purchase of new aircraft and empowered the Commonwealth Government to limit the aircraft capacity being provided on competitive routes by these two operators. This Act was amended by the *Airlines Equipment Amendment Act 1981* which effectively de-regulated air-cargo operations, and also increased the aircraft capacity which may be approved for use on passenger air services not subject to the Airlines Agreement as approved by the *Airlines Agreement Act 1981*.

The *Airlines Agreement Act 1981* consolidated the arrangements and principles developed by the Government to maintain and secure the competitive airline system on Australian domestic routes. This Act repealed the Civil Aviation Agreement Acts of 1952 and 1957 and the Airlines Agreement Acts of 1961, 1972 and 1973.

For reference to international agreements on civil aviation and international organisations see *Year Book Australia*.

Aircraft on Register

The total number of aircraft listed at 30 June 1982 on the Australian register was 6 806. The following table shows figures for registered aircraft based in the South Australia-Northern Territory Region, classified by type of operation.

Aircraft Based in South Australia-Northern Territory Region, Type of Operation

Type of Operation	At 30 June				
	1978	1979	1980	1981	1982
Regular public transport (a)	9	9	7	5	3
Private	370	413	481	484	489
Charter	151	163	168	171	210
Other (b)	133	142	142	135	151
Total	663	727	798	795	853

(a) Excludes major airlines servicing interstate routes.

(b) Includes agricultural work, ambulance, survey and pilot training functions.

General Air Services

International air services commenced through Adelaide on 2 November 1982. Qantas provides direct services to London via Singapore, Kuala Lumpur, Bahrain and to Auckland, New Zealand. British Airways provides direct services to London via Bombay or Djakarta, Abu Dhabi and to Auckland, New Zealand.

Domestic scheduled flights operating through Adelaide provide regular links with Sydney, Melbourne, Perth, Brisbane, Alice Springs, Darwin and Canberra.

Adelaide is also the terminus for intrastate services. Regular connections are made to various centres in the State by Ansett Airlines of South Australia and other approved commuter operators.

Since 1966-67, when the Commonwealth Government approved introduction of commuter services in country areas, there has been a significant increase in regular air services between country towns and areas which are either not served by the major airlines or had no direct air service with Adelaide or the nearest major provincial city. Such services usually utilize single or twin engined aircraft and operate to fixed and published time-tables.

The first commuter service in Australia, between Adelaide and the opal fields at Andamooka and Coober Pedy, commenced during 1966-67.

Civil Aviation Accidents

During 1981-82 there were no civil aviation accidents involving casualties in South Australia. The table below shows the details of civil aviation accidents involving casualties during the ten year period 1973 to 1982. There were no accidents involving regular public transport during this period.

Civil Aviation Accidents Involving Casualties, South Australia, 1973 to 1982 ^(a)

Class of Operation	No. of Accidents	Persons Killed	Persons Injured
Charter	1	2	1
Training	1	—	1
Private	16	36	3
Gliding	8	4	5
Other	1	1	2
Total	27	43	12

(a) Excludes parachutists killed or injured on contact with earth after an uninterrupted fall.

Passengers and Freight Carried

The number of passengers and the tonnage of freight carried on civil airlines and commuter services in South Australia are shown in the following tables.

Commuter Passenger, Freight and Aircraft Movements, South Australia, 1981-82

Airport	Passengers	Freight (Tonnes)	Aircraft Movements
Adelaide (a)	93 049	256	17 729
American River	9 370	9	1 609
Ceduna	1 579	1	280
Coober Pedy	3 595	30	926
Cummins	3 152	—	741
Kingscote	19 380	35	3 748
Kingston	3 465	63	969
Leigh Creek	4 950	69	1 505
Mount Gambier	5 488	59	1 974
Naracoorte	2 959	56	1 186
Olympic Dam	1 162	1	750
Parndana	4 729	1	4 066
Penneshaw	5 282	11	1 471
Port Augusta	3 196	9	3 206
Port Lincoln	19 396	21	2 998
Port Pirie	903	1	829
Renmark (a)	1 552	6	1 761
Tumby Bay	1 701	—	1 357
Whyalla	6 779	22	1 111
Woomera	1 295	5	776

(a) Figures contain estimates.

Principal Airports, South Australia
Passengers, Freight and Aircraft Movements

Airport	1977-78	1978-79	1979-80	1980-81	1981-82
PASSENGERS (a)					
Adelaide (b) (c)	1 761 932	1 801 084	1 931 395	1 930 219	1 852 906
Kingscote	65 072	65 242	62 906	52 642	50 778
Port Lincoln	69 731	69 354	65 040	59 124	59 824
Woomera	4 777	3 953	(f)	(f)	(f)
Whyalla	42 621	43 980	44 514	46 556	41 677
Mount Gambier	31 433	39 779	39 428	37 786	35 665
FREIGHT—TONNES (d)					
Adelaide (b) (c)	19 841	21 539	21 206	19 157	17 267
Kingscote	142	128	139	104	94
Port Lincoln	144	145	168	118	138
Woomera	20	16	(f)	(f)	(f)
Whyalla	86	80	76	74	64
Mount Gambier	90	89	68	51	65
AIRCRAFT MOVEMENTS (e)					
Adelaide (c)	32 288	25 863	25 889	24 853	23 822
Kingscote	2 108	2 175	2 089	1 814	1 721
Port Lincoln	2 374	2 422	2 336	2 154	2 182
Woomera	188	152	(f)	(f)	(f)
Whyalla	1 496	1 449	1 518	1 480	1 496
Mount Gambier	1 300	1 734	1 858	1 813	1 738

(a) Total of embarkations and disembarkations.

(b) Figures of passengers and freight movements are overstated to the extent of through traffic transferring between flights.

(c) Includes Edinburgh Airfield.

(d) Total of freight loaded and unloaded.

(e) Total of arrivals and departures.

(f) Airline service ceased April 1979.

10.5 COMMUNICATION

As a result of Federation all the former colonial post and telegraph services were taken over by the Commonwealth Government on 1 March 1901 and until 1 July 1975 were controlled, pursuant to the provisions of the *Post and Telegraph Act 1901*, by the Postmaster-General through the Postmaster-General's Department. A detailed history of Posts, Telegraphs and Telephones was included on pages 469-70 of the *South Australian Year Book 1967*.

In February 1973 a Commission was established to conduct an inquiry into what changes, if any, should be made in the organisation, administration and operations of postal and telecommunication services. In their Report, presented in April 1974, the Commissioners recommended establishment of separate postal and telecommunication corporations independent of the jurisdiction of the Public Service Board.

As a result of the Government's acceptance of this recommendation the Australian Telecommunications Commission and the Australian Postal Commission took over from the Australian Post Office on 1 July 1975 under the provisions of the *Telecommunications Act 1975*, the *Postal Services Act 1975*, and the *Postal and Telecommunications Commissions (Transitional Provisions) Act 1975*.

POSTAL SERVICES

The Australian Postal Commission, a statutory authority trading as Australia Post, took over the postal and ancillary services operated by the Postmaster-General's Department from 1 July 1975. The *Postal Services Act 1975*, specifically states that Australia Post must finance all its operating costs and at least 50 per cent of its capital expenditure from its own revenue. Since 1 July 1975 Australia Post has financed all its capital expenditure internally.

Australia Post services include surface and air mail services, both within Australia and to and from other countries, for the carriage of letters, cards, aerogrammes, newspapers, packages and parcels. Special services include express and priority paid mail, messenger delivery, cash on delivery, security mail services, response services, private boxes and locked bags. Several reduced rate services are provided including bulk direct mail advertising, bulk local delivery mail, bulk pre-sorted mail, unaddressed household delivery articles, and registered publication. A money transfer service (postal money orders) is operated and sales are also undertaken of postal products such as padded postal bags, postal stationery and philatelic items. Australia Post also services the public by acting as an agent for many services of Federal, State and local Government departments and authorities.

Details of Post Offices for the years 1978 to 1982 are given in the following table.

Post Offices: South Australia and Northern Territory

Number at 30 June

Particulars	1978	1979	1980	1981	1982
Post Offices:					
Official	169	166	164	162	157
Non-official	552	535	506	483	463
Total	721	701	670	645	620

Non-official post offices are conducted by persons who are not employed under the *Postal Services Act 1975* and who receive an allowance based on business transacted—in many instances this type of business is conducted in conjunction with some other business activity.

At 30 June 1982, there were 3 931 persons employed in postal services in South Australia and Northern Territory including 3 122 official staff employed under the *Postal Services Act 1975* and 579 non-official staff. In addition there were 230 mail contractors who held mail service contracts with Australia Post.

The Australia Post financial statements are prepared on an accrual accounting basis and in accordance with accounting principles generally applied in commercial practice. Gross postage receipts collected in South Australia and Northern Territory by Australia Post during 1981-82 totalled \$62.9 million including \$33.2 million from postage stamps, \$16.8 million from postal debtors and \$7.5 million from franking machines.

Postal Articles Handled

Details of articles handled by post offices in South Australia and the Northern Territory during the years 1977-78 to 1981-82 are shown in the following table.

Postal Articles Handled
South Australia and Northern Territory

Year	Standard Articles (a)	Non-standard Articles (a)	Parcels (b)	Registered Articles	All Articles
'000					
Posted for delivery:					
Within Australia;					
1977-78	156 052	17 517	1 784	412	175 765
1978-79	172 208	19 677	1 570	342	193 797
1979-80	177 539	20 067	1 812	324	199 742
1980-81	183 483	22 101	2 126	321	208 031
1981-82	191 183	23 354	2 238	306	217 081
Beyond Australia;					
1977-78	6 497	398	73	56	7 024
1978-79	5 863	385	78	64	6 390
1979-80	8 710	332	78	67	9 187
1980-81	7 386	695	85	71	8 237
1981-82	6 796	723	89	69	7 677
Received from beyond					
Australia:					
1977-78	5 802	1 634	95	34	7 565
1978-79	5 700	1 541	95	29	7 365
1979-80	5 913	1 442	90	26	7 471
1980-81	5 135	1 170	84	22	6 411
1981-82	4 679	1 141	78	22	5 920

(a) Includes Certified and Messenger Delivery and Priority Paid mail.

(b) Includes registered parcels.

Postal Money Orders

In November 1977 a new money transfer service called Postal Money Orders was introduced. This service replaced the Money Order and Postal Order services previously operated by Australia Post.

Details of Postal Money Orders for the years 1977-78 to 1981-82 are included in the following table.

Postal Money Orders Issued and Paid
South Australia and Northern Territory ^(a)

Year	Issued		Paid	
	Number	Value	Number	Value
	'000	\$'000	'000	\$'000
1977-78	981	30 138	766	27 350
1978-79	1 034	39 225	785	35 479
1979-80	1 144	49 857	895	44 026
1980-81	1 160	57 465	917	49 345
1981-82	982	59 927	876	54 399

(a) Before November 1977 includes combined Money Order and Postal Order services.

TELECOMMUNICATION SERVICES

Established by the *Telecommunications Act 1975*, the Australian Telecommunications Commission (Telecom Australia) is given the responsibility for the provision, maintenance and operation of telecommunications services and is required to perform its functions in such a manner as will best meet the social, industrial and commercial needs of Australian people. It is required to make its services available throughout Australia so far as is reasonably practicable. Revenue must cover current expenses each year and provide not less than half of capital requirements. Services are to be kept up to date and operated efficiently and economically with charges as low as practicable.

Telecom Australia has responsibility for telecommunications services within Australia, and provides:

- residential and business telephones;
- telex, data and leased private lines and telegrams;
- public telephones and leased coin telephones;
- mobile radio telephones;
- telefinder (radio paging);
- recorded information services;
- relay facilities for broadcasting and television programs;
- telephone directories;
- INWATS—Inward Wide Area Telephone Service.

Telecom Australia also operates equipment for the national broadcasting and television services and Radio Australia, as an agent of the Department of Communications.

At 30 June 1982 Telecom Australia in South Australia and the Northern Territory employed approximately 8 800 staff.

A new digital radio concentrator system, developed to provide high quality interference free performance in remote areas, is under test in South Australia.

In 1981-82 Telecom installed approximately 45 000 new telephone services.

The following table shows telecommunication services in South Australia and the Northern Territory for the period 1977-78 to 1981-82.

Telecommunication Services and Calls Made, South Australia and Northern Territory

Services	1977-78	1978-79	1979-80	1980-81	1981-82
Telephone exchanges	664	642	628	626	612
Telephone services in operation	390 852	420 871	449 724	480 873	507 234
Telex services in operation	2 479	2 833	3 224	3 628	3 964
Data modems in operation	1 269	1 932	2 556	3 223	4 076
Telefinder services in operation	1 883	3 396	4 260	5 361	6 621
Calls Made (millions)					
Local telephone	359	391	420	383	421
Manual trunk	8.424	7.944	6.918	6.009	5.247
Subscriber trunk dialling	25.333	32.243	41.698	50.999	58.669
Manual international	0.262	0.291	0.334	0.357	0.349
International direct dialled	0.101	0.184	0.280	0.379	0.475
Total originating telegrams	1.098	0.821	0.738	0.695	0.615
Total terminating telegrams	0.996	0.818	0.680	0.589	0.497
Telex calls within Australia	4.178	4.680	5.216	5.759	5.558
International telex	0.228	0.270	0.330	0.348	0.438

RADIO AND TELEVISION SERVICES

Broadcasting

The call sign, location and date service commenced of all radio and television stations operating in South Australia are shown in the following tables. Other aspects of radio and television services, including the composition of television programs, are included in Part 6.4 Culture and Recreation.

Radio Stations, 1 January 1983, South Australia

Call Sign	Location	Date Service Commenced	Call Sign	Location	Date Service Commenced
National Stations			Commercial Stations		
Medium Frequency (AM)			Medium Frequency (AM)		
5AN	Adelaide	15-10-1937	5AA	Adelaide	14-3-1976
5CL	Adelaide	20-11-1924	5AD	Adelaide	2-8-1930
5CK	Crystal Brook	15-3-1932	5DN	Adelaide	12-6-1924
5LC	Leigh Creek (South)	30-6-1971	5KA	Adelaide	25-3-1927
5LN	Port Lincoln	14-11-1950	5AU	Port Augusta	25-5-1938
5MG	Mount Gambier	26-9-1955	5MU	Murray Bridge	16-9-1934
5MV	Berri	31-7-1975	5PI	Crystal Brook	17-1-1932
5PA	Naracoorte	29-6-1957	5RM	Berri	30-9-1935
5SY	Streaky Bay	31-5-1972	5SE	Mount Gambier	3-7-1937
5WM	Woomera	18-9-1953			
National Station			Commercial Station		
Frequency Modulation (FM)			Frequency Modulation (FM)		
ABC-FM	Adelaide	24-1-1976	5SSA-FM	Adelaide	12-9-1980
Public Radio Station					
Medium Frequency (AM)					
5UV	Adelaide	3-3-1975			
Public Radio Stations					
Frequency Modulation (FM)					
5EBI-FM	Adelaide	5-1-1980			
5MMM-FM	Adelaide	22-12-1979			

National Television Stations, 1 January 1983, South Australia

Call Sign and Channel	Location	Date Service Commenced
ABS-2	Adelaide	March 1960
ABS-2/44	Adelaide foothills—UHF translator	April 1980
ABS-2	Bordertown—VHF translator	March 1970
ABS-2/4	Keith—VHF translator	July 1969
ABCS-7	Ceduna	July 1973
ABGS-1	Mount Gambier	December 1965
ABNS-1	Port Pirie	April 1965
ABNS-1/6	Cowell—VHF translator	March 1970
ABNS-1/6/3	Port Lincoln—VHF translator	May 1970
ABRS-3	Loxton	January 1971

National Television Stations, 1 January 1983, South Australia (continued)

Call Sign and Channel	Location	Date Service Commenced
ABWS-7	Woomera	November 1973
ABLCS-9	Leigh Creek	April 1977
ABLCS-9/7	Leigh Creek South—VHF translator	October 1982
ABQ-2/8	Andamooka	December 1980
ABQ-2/8	Coober Pedy	November 1980
ABQ-2/8	Marree	November 1980
ABN-2/10	Streaky Bay	December 1982
ABS-2/8	Wurrulla	December 1982

Commercial Television Stations, 1 January 1983, South Australia

Call Sign and Channel	Location	Date Service Commenced
ADS-7	Adelaide	October 1959
ADS-7/46	Adelaide foothills—UHF translator	April 1980
NWS-9	Adelaide	September 1959
NWS-9/49	Adelaide foothills—UHF translator	April 1980
SAS-10	Adelaide	July 1965
SAS-10/52	Adelaide foothills—UHF translator	April 1980
GTS-4	Port Pirie	March 1968
GTS-4/8	Cowell—VHF translator	May 1970
GTS-4/8/5	Port Lincoln—VHF translator	May 1970
RTS-5A	Renmark—Loxton	November 1976
SES-8	Mount Gambier	March 1966

OVERSEAS TELECOMMUNICATIONS SERVICES

The Overseas Telecommunications Commission (Australia) (OTC), established by the *Overseas Telecommunications Act 1946*, is a Commonwealth statutory authority responsible for the establishment, maintenance, operation and development of public telecommunications services between Australia and other countries, between Australia and its external territories and with ships at sea.

Communications into and out of Australia are transmitted by way of a complementary system of undersea coaxial cables, communications satellites and high-frequency radio.

In co-operation with Telecom Australia and communications carriers in other countries, OTC provides International Subscriber Dialling (ISD). Other international telephone, telegram, facsimile, photo-telegram, telex, leased circuit, audio broadcast and data transmission services are available to countries throughout the world by means of submarine cables, communication satellites and, in a decreasing number of cases, short-wave radio. Television relay is provided to and from countries with access to satellite communications facilities.

OTC operates fifteen coast radio stations for communication with ships at sea in Australian waters, and to provide high-frequency radio services with ships in any part of the world. It also has six satellite earth stations in Australia. Those at Carnarvon in Western Australia and Moree in New South Wales operate through the INTELSAT Pacific Ocean satellites to Pacific region countries. The two earth stations at Ceduna in South Australia operate through INTELSAT's Indian Ocean satellites to Asia, Europe and Africa.

PART 11

PUBLIC FINANCE

11.1 STRUCTURE OF PUBLIC FINANCE

The collection of public revenue and the expenditure of public money in South Australia are the responsibility of three groups of authorities: (i) Commonwealth Government; (ii) South Australian Government and State public corporations which together make up State Authorities; and (iii) local government.

The power to raise revenue from taxation is vested in the various governments and authorities by Acts of Parliament. Other revenue comes from the proceeds of the sale of goods and services to the public and to other governments and authorities. A major proportion of the revenue of the State Government, and a smaller proportion of the revenue of local government authorities and some public corporations is derived from grants from other levels of government. A further source of funds is the loan market; government securities are issued for loan raisings in Australia and overseas.

Authorisation for expenditure by Commonwealth and State Government departments is given by Appropriation Acts or by Special Acts of their respective Parliaments. Each State public corporation derives its authority for expenditure from the provisions of the specific Act under which it has been established. The Local Government Act, 1934-1983 contains sections relating to local government expenditure. The following sections of this Part provide details of the financial transactions of the public sector in South Australia; composite data being shown for State authorities with additional dissections for State government departments and public corporations, plus details for local government and Commonwealth Government financial transactions.

Commonwealth Government Transactions

Reference is made to the revenue and expenditure of the Commonwealth Government only to the extent that it affects the finances of the State Government. As indicated in more detail below, not all of the transactions listed relate directly to the State Budget; many of the items are negotiated wholly through State Trust Funds. The transactions which are included represent only a small proportion of total expenditure by the Commonwealth Government within South Australia. A more detailed analysis of Commonwealth Government finance may be obtained from the *Year Book Australia*.

State Government Accounts

Statistics relating to State Government accounts relate to the financial transactions of State Government Departments, Committees, Boards and Commissions which are not incorporated as public corporations and are derived mainly from the Consolidated Account prepared by the Treasurer each year and the Report of the Auditor-General of South Australia. Additional information is obtained from State Government Deposit and Suspense accounts, Trust Fund accounts and working accounts such as the Highways Fund through which a major portion of the State's roads expenditure is transacted and the Woods and Forests Working Account which includes most of the transactions of forest operations in South Australia.

Receipts into these accounts include details of loan raisings, grants made by the Commonwealth Government, taxation, fees, rents, proceeds of services provided by trading undertakings, and other sundry items. Disbursements are made for capital works, provision of services such as health, education and water supply, for general administrative expenses, and for interest and redemption payments.

Public Corporation Accounts

Much of the available data on public corporations have been combined with the transactions of State Government to provide a composite analysis of the receipts and outlays of all State authorities in South Australia. A limited dissection of the information is included in this Part to allow a brief comparison with other State authorities in terms of net public sector outlays.

Local Government Accounts

The information on local government authorities is prepared in a format similar to that used for the other public authorities. The original data are supplied by local councils in annual statements prepared in accordance with the 'Local Government Accounting Regulations, 1979' and subsequently are reclassified in a system which tabulates information on a uniform basis for all local authorities in Australia.

Consolidated State and Local Government and Public Corporations Accounts

An analysis of financial transactions of the Government sector would be incomplete without a comprehensive consolidation of all levels and funds of Government.

The tables which follow show figures on a consolidated net basis for State and local government and public corporations in South Australia for the five years to 1980-81. Net figures are those for which expenditures within a given classification have been reduced to the extent of any relevant receipt (and *vice versa*); and consolidated figures are those for which inter-authority, inter-level and inter-fund transactions are eliminated on consolidation of those authorities, levels and funds.

**State and Local Government Authorities and Public Corporations
South Australia, Receipts and Financing Items**

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Receipts:					
Taxes, fees, fines, etc.	424.8	445.4	483.5	522.6	558.9
Income from public enterprises ..	54.2	49.9	58.5	55.2	79.6
Property income;					
Interest	55.2	61.2	70.9	75.5	93.4
Land rent, royalties	7.4	8.7	9.4	11.1	12.6
Grants from the Commonwealth Government:					
For current purposes	674.5	800.3	860.5	956.4	1 063.3
For capital purposes	161.9	161.1	154.5	157.5	163.8
Total receipts	1 377.9	1 526.7	1 637.4	1 778.4	1 971.8
Financing items:					
Net borrowing;					
Local authority and public corporation securities	55.2	63.0	69.7	77.6	75.3
Other general government securities	6.8	16.7	17.2	21.7	7.2
Net advances from the Commonwealth Government;					
For loan works purposes	99.0	103.4	101.5	83.7	88.1
Other	75.6	88.6	60.5	25.9	22.3
Net receipts of private trust funds	10.1	10.2	14.1	9.5	16.1
Reduction in;					
Cash and bank balances	-21.2	53.7	-54.5	-71.0	42.3
Security holdings	1.3	-12.4	-8.1	-12.3	-10.3
Other funds available (including errors and omissions)	47.1	44.9	80.1	76.5	67.2
Total financing items	273.8	368.0	280.5	211.8	308.3
Total funds available	1 651.7	1 894.7	1 917.9	1 990.2	2 280.0

**State and Local Government Authorities and Public Corporations
South Australia, Outlay**

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Final consumption expenditure	886.4	1 039.3	1 111.5	1 201.3	1 402.5
Gross capital formation:					
Increase in stocks	3.9	4.7	-0.1	4.8	8.7
Expenditure on new fixed assets	489.7	516.7	484.4	494.6	537.6
Expenditure on existing assets (net)	35.5	22.5	21.5	6.6	-9.4
Total gross capital formation	529.1	544.0	505.8	506.0	536.9

State and Local Government Authorities and Public Corporations
South Australia, Outlay (continued)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Transfer payments:					
Interest	166.1	193.9	215.1	238.6	273.2
Personal benefit payments	17.5	18.3	20.1	23.2	19.5
Subsidies	3.8	5.4	5.2	7.3	11.1
Grants for private capital purposes	6.4	9.5	7.2	6.8	8.0
Total transfer payments	193.8	227.0	247.6	275.8	311.8
Net advances:					
To the private sector	11.6	49.7	17.4	—17.3	—0.8
To public financial enterprises	30.8	34.7	35.7	24.4	29.7
Total net advances	42.5	84.4	53.0	7.0	28.9
Total outlay	1 651.7	1 894.7	1 917.9	1 990.2	2 280.0
Current outlay	1 073.7	1 256.8	1 351.9	1 470.4	1 706.2
Capital outlay	578.0	637.9	566.0	519.8	573.8

Further References

Additional information may be found in the following publications:

5501.4 *State Authorities Finance—South Australia*

5502.4 *Local Government Finance—South Australia*

5504.0 *State and Local Government Finance—Australia*

11.2 COMMONWEALTH-STATE GOVERNMENTS FINANCIAL RELATIONS

The Commonwealth of Australia Constitution Act and the 1927 Financial Agreement represent significant events in Commonwealth-State financial relations. Under the former, the States surrendered the right to levy customs and excise duties which passed exclusively to the Commonwealth and under the latter, the Commonwealth became the borrowing agent for the States. Further details appear on page 537 of the *South Australian Year Book 1972*.

Since Federation the Commonwealth has made payments of various descriptions to the States. Before the 1939-45 War, Commonwealth payments were confined, for the most part, to special grants to assist the financially weaker States and to certain specific purpose grants relating to such matters as Commonwealth assistance for roads and contributions under the Financial Agreement. Since the 1939-45 War there has been a marked increase in the amount and variety of Commonwealth assistance to the States. This has reflected, among other things, increases in the range and variety of government activities which have accompanied economic and social developments in this period of rapid growth of the Australian economy; greater participation by the Commonwealth in matters which were previously considered to be the sole responsibility of the States; and

the effects of the introduction of uniform tax and of other changes on the allocation of financial resources between the Commonwealth and the States.

There are various ways of classifying Commonwealth payments to the States. They may be classified as 'capital' as opposed to 'current' transactions; to general purpose grants compared with payments for purposes specified by the Commonwealth; or in accordance with the constitutional authority under which the payments are made. Many of the recently introduced grants have been for specified purposes and instituted under Section 96 of the Commonwealth Constitution.

SPECIAL GRANTS

The Constitution provides, in Section 96, for the granting of special financial assistance to the States. Before 1933 financial assistance of varying amounts was granted to South Australia, Western Australia and Tasmania.

In 1933 the Commonwealth appointed the Grants Commission, of three members, to inquire into and report upon claims made by any State for a grant of financial assistance and any matters relevant thereto. From 1933 to 30 June 1959 applications were lodged by each of the three States already mentioned.

Since 1949 each recommendation by the Commission for payment of a special grant has normally consisted of two parts. One part is based on an estimate of the claimant State's financial need in the current financial year, and is treated as an advance payment subject to adjustment two years later when the Commission has compared in detail the financial positions of the claimant and standard States in that year. The other part represents the final adjustment to the advance payment made two years earlier and is known as the completion payment.

In arriving at its recommendations, the Commission makes a detailed comparison between the financial position of a claimant State and those of the 'standard' States. Before 1959-60 the Commission used a standard derived from the experience of New South Wales, Victoria and Queensland. Since 1959-60 the standard States have been New South Wales and Victoria.

Queensland has been the only applicant State in the period 1976-77 to 1980-81 (Tasmania applied for a special grant in respect of 1977-78 but subsequently withdrew the application). South Australia withdrew from the special grants system in 1975 as part of the agreement to transfer its non-metropolitan railway network to the Commonwealth.

Under the provisions of the agreement reached at the June 1982 Premier's Conference for the phasing-in of new tax sharing relativities over a three-year period commencing from 1982-83, there are to be no special grants payable to any State in relation to the years 1982-83 to 1984-85.

PERSONAL INCOME TAX SHARING ENTITLEMENT

Financial assistance grants, formerly called tax reimbursement grants, made up the bulk of the assistance provided for general revenue purposes before 1976-77 and were determined annually on the basis of an agreed formula. From 1976-77 the financial assistance grants were replaced by personal income tax sharing arrangements.

The income tax sharing arrangements with the States have been introduced in two stages. Under Stage 1, which commenced in 1976-77, the States receive a specified proportion of the net income tax collections made under the *States (Personal Income Tax Sharing) Act 1976*. Under Stage 2, in addition to the personal income tax imposed by the Commonwealth, each State has the right to impose a surcharge or grant a rebate on personal income tax in its State. The Commonwealth remains the sole collecting and

administrative authority for all personal income tax. Relevant legislation is the *Income Tax (Arrangements with the States) Act 1978*.

Following discussions at Premiers' Conferences held between May 1981 and June 1982, major changes have been made in the arrangements governing these payments.

Under previous tax sharing arrangements the overall level of funds allocated to the States each year was determined by a reference to a specified percentage of net personal income tax collections in the previous year. For 1982-83 and the subsequent two years, the States will receive a share of total Commonwealth tax collections in the preceding year. The definition of total tax collections base is set out in Schedule 1 to the *States (Tax Sharing and Health Grants) Act 1981*.

In 1981-82, a new form of general purpose (united) revenue grants, termed 'identifiable general purpose health grants', replaced the former hospital cost sharing grants to the four States other than South Australia and Tasmania and certain other specific purpose payments for health which had been provided to all the States. In the case of South Australia, the Hospital Cost Sharing Agreement remains in place, and the identifiable health grants cover only assistance in lieu of payments formerly made under community health and school dental programs.

After an extensive enquiry into tax sharing relativities between the States, the Commonwealth Grants Commission presented its Report on State Tax Sharing Entitlements 1981 on 9 June 1981. The Commission found that a change in the State factors which prescribe the per capita tax sharing relativities between the States was desirable.

Its report was considered at the Premiers' Conference in June 1981 at which concern was expressed by the three less populous States at the magnitude of the changes in the distribution of the grants which adoption of the Commission's assessments would entail. At the Conference it was decided that the Commission should be asked to produce a further report on its assessment of State relativities in the light of submissions to be put to it by the States and by the Commonwealth.

Further, in view of the financial difficulties that would be created for the less populous States if the Tax sharing grants for 1981-82 were to be based on the factors assessed by the Commission, it was decided that the relativities prescribed in the *States (Tax Sharing and Health Grants) Act 1981* should be used to distribute the 1981-82 tax sharing grants to which the States were entitled under the arrangements settled at the May 1981 Premiers' Conference.

However, in recognition of the likelihood that, following the further review, relativities could be adjusted in favour of the three more populous States, the Commonwealth agreed to provide additional grants to New South Wales (\$24.5 million), Victoria (\$15 million) and Queensland (\$20.5 million) in 1981-82.

The Commission presented its second report on 31 May 1982. While this report contained some changes in assessed relativities by comparison with its 1981 report, the Commission confirmed the view expressed in its earlier report that a change was desirable in the existing State factors which govern the distribution of shared tax revenue between the States.

The Commission's 1982 assessments were the subject of discussion between the Commonwealth and the States at a Premiers' Conference held in June 1982. At the Conference it was agreed, along with certain other proposals, to phase in the new relativities over three years ending 1984-85 at the rate of 33.3 per cent per year.

SPECIAL REVENUE ASSISTANCE

From time to time the Commonwealth has provided general revenue assistance to the

States in addition to that payable under the personal income tax sharing entitlements or by way of special grants recommended by the Grants Commission.

A Premiers' Conference was held in February 1975 to discuss special revenue assistance for 1974-75. The Commonwealth agreed to provide the States with an additional \$60 million of which South Australia received \$6.6 million. As part of arrangements for the transfer of the non-metropolitan railway system of South Australia and the railway system of Tasmania to the Commonwealth, payments classified as special revenue assistance were made to the two States during 1974-75. South Australia received \$10 million and Tasmania \$5 million. No such grants have been made since 1974-75.

CAPITAL GRANTS

At the June 1970 Premiers' Conference the Commonwealth undertook to provide a portion of the State's Loan Council programs in the form of capital grants. As a result of the *States Grants (Capital Assistance) Act 1970*, the Commonwealth distributed \$200 million to the States in 1970-71 in the same proportions as their borrowing programs.

The States Grants (Capital Assistance) Acts passed in 1972 provided for additional grants by way of capital assistance to the States for government primary and secondary schools during 1971-72 and 1972-73. These grants continued in the following years but from 1975-76 the capital grants have constituted one-third of each State's total Loan Council Program. During 1981-82, the Commonwealth paid grants totalling \$435.8 million to the States, including \$56.8 million to South Australia.

OTHER FINANCIAL ASSISTANCE

In addition to grants under the Financial Agreement, special grants recommended by the Grants Commission, personal income tax sharing entitlements, special revenue assistance and capital grants, the Commonwealth makes payments to the States for many specific purposes, some details of which are given in this section.

Figures in the following table are those which have been published in the latest issue of the budget paper 'Payments to or for the States, the Northern Territory and Local Government Authorities' and show the general pattern of Commonwealth Government payments to or for the State of South Australia for 1981-82 and four earlier years. Some amounts shown are repayable to the Commonwealth Government but repayable advances for war service land settlement are not included.

Commonwealth Payments To or For the States, South Australia

Particulars	1971-72	1978-79	1979-80	1980-81	1981-82
	\$'000				
Personal income tax sharing entitlements	158 491	559 841	630 392	691 540	761 027
Health grants	—	—	—	—	8 606
Special grants	7 000	—	—	—	—
Special revenue assistance	5 929	—	—	—	—
Loan Council borrowings	—	124 569	108 165	113 573	113 573
Capital grants	—	62 284	54 083	56 787	56 787
SPECIFIC PURPOSES PAYMENTS: RECURRENT PURPOSES (\$'000)					
Sinking Fund on State Debt	3 458	4 483	4 771	5 007	5 259
Schools	1 889	39 746	44 714	53 289	64 728
Technical and further education	—	5 116	6 661	7 801	8 338
Universities	6 676	57 917	63 161	70 280	80 332
Colleges of advanced education	1 651	42 477	46 612	52 248	56 154
Pre-school education	—	3 730	3 730	3 730	3 730
School dental scheme	—	2 814	3 433	3 471	—
Public hospitals running costs	—	104 287	110 207	124 826	121 437

Commonwealth Payments To or For the States, South Australia (continued)

Particulars	1971-72	1978-79	1979-80	1980-81	1981-82
SPECIFIC PURPOSES PAYMENTS: RECURRENT PURPOSES (\$'000) (continued)					
Child care services	—	1 858	2 036	2 534	2 700
Bovine Brucellosis and T. B. eradication	177	2 346	1 986	2 564	2 046
Aboriginal advancement	270	3 404	3 724	4 278	4 805
Assistance for Local Government ...	—	15 433	19 072	25 871	30 178
Other	9 240	16 158	14 975	15 117	10 554
Total recurrent purposes ...	23 361	299 769	325 082	371 016	390 261
SPECIFIC PURPOSES PAYMENTS: CAPITAL PURPOSES (\$'000)					
Schools	2 629	16 178	14 821	13 275	14 666
Technical and further education	1 130	6 901	8 697	8 718	11 207
Colleges of advanced education	1 699	5 177	4 666	3 237	3 218
Universities	1 818	6 439	3 482	3 599	4 126
Rural adjustment scheme	3 000	4 738	2 554	2 433	2 298
Aboriginal advancement	530	2 291	2 231	2 101	2 157
Welfare housing	—	47 368	23 984	24 960	20 761
Growth centres	—	1 201	1 311	—	—
Land acquisition	—	6 712	7 329	8 186	—
Salinity reduction control	—	250	1 341	2 305	1 825
Natural disaster relief	—	4 929	—270	—737	—
Urban water supply	—	4 490	2 555	2 600	2 360
Roads	25 500	43 207	46 439	51 617	56 302
Pensioner housing grants	1 002	1 343	2 856	2 945	3 033
Other housing assistance	—	—	7 495	7 790	7 110
Urban public transport	—	4 110	4 000	4 308	192
Other	6 783	3 695	4 727	7 030	8 666
Total capital purposes	44 091	158 779	138 218	142 062	136 096

Schools

The Commonwealth has been providing assistance for schools in the States since 1964-65 when it provided grants for science laboratories and equipment.

The range of assistance has been progressively extended and grants are being made for both government and non-government schools according to the following categories: general recurrent grants, general building grants, and grants for science laboratories and equipment, libraries, schools for the handicapped, disadvantaged schools, migrant children, teacher development, innovatory projects and information programs.

The Schools Commission, established by the *Schools Commission Act 1973*, administers these programs of assistance. Total payments to the States in 1981-82 were \$974.1 million, of which South Australia received \$79.4 million.

Universities

Grants to the States for recurrent expenditure of universities commenced in 1951-52; similar grants for capital works and equipment for universities were introduced in 1958. From 1974 the Commonwealth assumed full financial responsibility for universities.

The *Tertiary Education Commission Act 1977* established the Tertiary Education Commission as a replacement for the Universities Commission, the Commission on Advanced Education and the Technical and Further Education Commission. Relevant programs of assistance to the States towards these areas are administered by the

Commission and currently are authorised under the *States Grants (Tertiary Education Assistance) Act 1978*. Total payments to the States in 1981-82 were \$893.4 million, of which South Australia received \$84.5 million.

Colleges of Advanced Education

Grants to the States for colleges of advanced education commenced in March 1965. These grants were initially for capital purposes but at the start of the 1967-69 triennium were extended to cover recurrent grants. Grants to the States have been made since 1967-68 for teachers' colleges and since 1968-69 for pre-school teachers' colleges. In 1973-74 these grants were absorbed into an overall program of grants for colleges of advanced education. Assistance to the States for colleges of advanced education in 1981-82 was \$578.8 million, of which South Australia received \$59.4 million.

Public Hospitals Running Costs

From 1975-76 specific purpose assistance was provided to all States under agreements drawn up under Section 30 of the *Health Insurance Act 1973*. Essentially, these agreements provided for the Commonwealth to meet, on the basis of budgets approved by the Commonwealth and State Health Ministers, half of the net operating costs of 'recognised' State public hospitals, subject to certain agreements regarding charging policies.

Agreements with four of the States (New South Wales, Victoria, Queensland and Western Australia) expired on 30 June 1981. Payments for public hospitals in these states have been replaced by identified health grants within the arrangements for general purpose payments for 1981-82 and later years under the *States (Tax Sharing and Health Grants) Act 1981*.

The agreements with the two remaining States (South Australia and Tasmania) will remain in force until 30 June 1985 unless they voluntarily terminate them and like the other states take additional general purpose funds in lieu of specific purpose hospital payments. Both agreements have been amended to limit, with effect from 1 September 1981, eligibility for free hospital treatment to eligible pensioners, defined disadvantaged persons, and their dependents in line with the conditions applying under the funding arrangements for the other States.

Total payments to the States in 1981-82 were \$171.7 million, of which South Australia received \$121.4 million.

Welfare Housing

Under successive arrangements between the Commonwealth and the States financial assistance has been made available to the States in one form or another since 1945-46 for the provision of housing, including assistance with home ownership, for families of low or moderate means.

Under the *Housing Assistance Act 1981* a five-year Housing Agreement has been executed with the States and the Northern Territory covering the period 1981-82 to 1985-86. In accordance with the Agreement the Commonwealth is to provide base financial assistance to the States and the Northern Territory amounting to \$200 million in each year of the Agreement. The Commonwealth may also provide additional financial assistance each year depending on budgetary and other circumstances. Loans (previously called 'advances') are repayable over 53 years and attract a concessional fixed rate of interest of 4.5 per cent per annum.

Total payments made during 1981-82 were \$255.2 million with South Australia receiving \$14.0 million in the form of grants (including pensioner housing grants of \$3.0

million and \$3.8 million for Aboriginal rental housing), and \$20.8 million in the form of loans.

Land Acquisition

The *Land Commissions (Financial Assistance) Act 1973* authorised the provision of financial assistance to the States in respect of expenditure by approved State authorities on programs of land acquisition. South Australia was the first State to accept the principles of the Land Commission program and the South Australian Lands Commission began operating in 1973-74.

With the discharge of remaining commitments in 1977-78, this program came to an end. However, interest is being capitalised on advances in a similar manner as for growth centres. South Australia and Victoria have reached agreement with the Commonwealth to make lump sum payments over a number of years in settlement of loans provided in earlier years.

Rural Adjustment

The *States Grants (Rural Adjustment) Act 1976* provides for the Commonwealth to make available assistance for the purposes of a Rural Adjustment Scheme that embraces debt reconstruction, farm build-up, farm improvement, carry-on finance, rehabilitation and household support. Wine-grape producers became eligible in 1978-79 for carry-on finance assistance and assistance for beef and dairy producers was discontinued as from 1979-80.

Assistance given by the Commonwealth during 1981-82 was \$16.2 million with South Australia receiving \$2.3 million including \$1.9 million in the form of loans.

Natural Disaster Relief

Before 1971 State Governments were generally expected to contribute on a \$1 for a \$1 basis in meeting relief expenditure. This was changed in 1971 so that, for major disasters, the Commonwealth met all expenditures by a State in excess of a certain base amount set for that State. From 1978-79, above-base expenditures will be financed on a \$3 Commonwealth: \$1 State basis. The expenditures predominately are in the form of repayable advances.

During 1981-82 total assistance to the States was \$29.8 million. No assistance was provided to South Australia in 1981-82.

Urban Water Supply

Payments amounting to \$40.4 million have been provided to South Australia since 1974-75 under the *Urban and Regional Development (Financial Assistance) Act 1974* and *National Water Resources (Financial Assistance) Act 1978* to assist construction associated with the Adelaide water treatment scheme; of this amount, \$2.4 million was paid in 1981-82. A further amount of \$0.24 million was provided in 1981-82 to assist towards the construction of water filtration plants on the Morgan-Whyalla Pipeline.

Roads

Grants for road works have been made since 1923, and from 1931 to 1958 were based on a percentage of Commonwealth petrol taxation. A new scheme of assistance to the States for roads was established by the *Commonwealth Aid Roads Act 1959* in which the Commonwealth undertook to provide assistance for five-year periods.

Over the five years 1980-81 to 1984-85, the Commonwealth is to provide \$3 650 million to the States and Northern Territory as grants for road construction and maintenance

under the *Roads Grants Act 1981*. Of this amount, \$662.0 million was provided to the States in 1981-82 with South Australia receiving \$56.3 million.

In addition to assistance provided under the *Roads Grants Act 1981*, the Commonwealth is introducing a special Australian Bicentennial Road Development program with the overall aim of developing the Australian road system to a high standard by 1988, the bicentennial year. The program will be fully financed by a surcharge on excise on motor spirit and distillate. Assistance to the States and the Northern Territory under the program is to be made through the Australian Bicentennial Road Development Trust Fund.

Urban Public Transport

Since 1973-74 the Commonwealth has provided assistance to the States to meet certain costs of approved urban public transport projects. The current program of assistance is provided under the *States Grants (Urban Public Transport) Act 1978*.

During 1981-82 assistance of \$36.5 million was made available to the States with South Australia receiving \$0.2 million.

Assistance for Local Government

In 1973, new legislation passed by the Commonwealth Parliament laid down procedures for regional organisations of local government to apply for financial assistance from the Commonwealth. As a result of evidence placed before the Commonwealth Grants Commission, total grants of \$56.3 million in 1974-75 were recommended to be paid to local government authorities throughout Australia. South Australian authorities received \$4.8 million. As part of the new personal income tax sharing arrangements between the Commonwealth and the States introduced at the beginning of 1976-77, a new agreement was reached for general assistance to local government authorities; this provided that local government authorities throughout Australia would receive 1.52 per cent of net personal income tax in each year. Amendments to the *Local Government (Personal Income Tax Sharing) Act 1976* have increased the entitlement to 1.75 per cent for 1979-80 and 2 per cent for 1980-81 and subsequent years. From 1976-77 the Commonwealth Grants Commission has recommended the grant to be paid to each State for assistance to local government authorities in that State. State Grants Commissions subsequently apportion this among separate authorities with consideration to a *per capita* element and a needs element. Assistance of \$350.8 million was made available in 1981-82 with South Australia receiving \$30.2 million.

11.3 STATE AUTHORITY FINANCE

The system of public finance statistics has been designed to complement the various sectors included in Australian National Accounts. The statistics consolidate details of the transactions of public authorities so that their economic impact can be assessed and show the purposes being served by the individual functions or programs. Transfers between funds and accounts within the accounting systems are eliminated by consolidation of the various accounts to reflect the net transactions of the non-financial public sector with the rest of the economy. Public financial enterprises such as banks and insurance companies are excluded from the statistics on the ground that combining their income or outlay on capital transactions with equivalent transactions of the public trading enterprises and general government would provide a less meaningful account of the public sector activity.

Classification Schemes

The financial statistics for the public sector essentially are a reclassification of information published in accounting statements of the public authorities supplemented by additional dissections of the reported transactions. The statistics are classified in a dual classification to economic type and to purpose.

The economic type classification is used to identify transactions between the public sector and the private sector, and between one authority and another. The principal categories of the classification are final consumption expenditure, gross capital formation, transfer payments, and (net) advances. The final consumption expenditure and gross capital formation together form the 'real transactions' relating to the production and consumption of goods and services which, consolidated with similar transactions in all sectors, constitute gross domestic product and expenditure in the National Income and Expenditure Accounts.

Final consumption expenditure is the expenditure on goods and services by public authorities, other than those classified as public trading enterprises, which does not result in the creation of fixed tangible assets. Essentially the item consists of expenditure on wages, salaries and supplements plus purchases of goods and services from public trading enterprises and other sectors of the economy. Fees and charges for services rendered and sales of goods and services by general government bodies have been off-set against gross expenditure to give final consumption expenditure.

Gross capital formation is (net) expenditure on new and existing fixed assets for replacement or additions to the existing stock. The criteria followed for determining items of expenditure which can be classed as capital are mainly the durability of goods purchased and to some extent the accounting practices of the authorities concerned. Purchases charged to capital works and services votes or capitalised in the accounts of public enterprises are, in general, classed as capital.

Transfer payments shown in public finance statistics do not result directly in the purchase of goods and services nor in the acquisition of fixed tangible assets but are, in the main, transfers of funds from one authority to another and there is no economic impact until the recipients transact their outlays. Transfer payments within the public sector tend to be eliminated upon consolidation and those remaining in the table showing outlay of State authorities refer to transfer of funds to local government authorities and to the private sector. It will be noted that transfer payments in subsequent tables showing outlay of State Government are a significant portion of State Government outlay because of intra-sector grants to public corporations being passed through the Treasurers public accounts, such as the Consolidated Account.

Advances consist of (net) repayable loans to individuals, public corporations, local government authorities, and government banking and insurance enterprises.

The purpose classification used in public finance statistics brings together outlays on activities with similar objectives to reveal the purposes of public sector spending. In the outlay tables which follow the purpose classification shows the broad categories only and has been incorporated into final consumption expenditure and gross capital formation to indicate the major lines of expenditure.

Receipts and Outlay

Details of receipts and financing items of South Australian State authorities have been consolidated from the accounts of the State Government departments and corporations and are classified in the following table to show the major sources of funds. The classifications used in this and subsequent tables are in accord with those adopted by the United Nations in 'A System of National Accounts'. The Personal Income Tax Sharing Entitlement grants are the largest revenue source of State authorities.

State Authorities: Receipts and Financing Items, South Australia

Classification	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Receipts:					
Taxes, fees, fines, etc.	345.1	355.8	383.7	412.1	433.9
Income from public enterprises ...	54.4	50.0	58.6	54.8	79.2
Property income	59.6	65.6	75.7	81.8	99.1
Commonwealth grants:					
Education	165.2	187.5	189.4	201.7	222.7
Health	93.7	118.4	115.1	120.2	138.2
Economic services	47.5	46.9	50.4	54.9	61.9
General purpose:					
Tax sharing entitlement	433.2	507.8	559.8	630.4	691.5
Capital grants	59.3	62.3	62.3	54.1	56.8
Local government	11.9	14.2	15.4	19.1	25.9
State debt	1.4	1.4	1.4	1.4	1.4
Other	21.3	20.5	21.7	34.0	32.9
Other receipts	3.5	3.6	2.0	6.3	4.1
Total receipts	1 296.1	1 434.0	1 535.5	1 670.8	1 847.6
Financing items:					
Net borrowing	47.0	67.1	71.0	82.5	66.9
Commonwealth advances (net)	174.7	192.3	162.3	109.6	112.8
Other financing items	34.6	81.2	24.2	—3.0	109.1
Total financing items	256.3	340.7	257.4	189.2	288.7
Total funds available	1 552.4	1 774.6	1 792.9	1 860.0	2 136.3

Details in the next table of the outlay of State authorities during the five years to 1980-81 have been presented to include a dissection of final consumption expenditure and of gross capital formation classified to purpose of expenditure. Further information for education, health, and social security is given in Parts 6.2, 6.5, and 6.6.

State Authorities: Outlay, South Australia

Classification	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Final consumption expenditure:					
Law, order and public safety	75.1	87.9	98.1	111.4	133.4
Education	413.2	473.1	507.6	553.6	644.1
Health	225.5	267.5	277.5	290.9	344.2
Social security and welfare	14.8	18.8	20.3	21.3	25.1
Housing and community amenities	7.2	8.2	9.8	11.2	13.3
Recreation and related cultural					
services	14.0	17.1	20.3	25.0	26.3
Economic services	46.1	54.7	59.3	66.9	77.6
Other	40.7	46.4	47.3	54.9	58.1
Total final consumption					
expenditure	836.7	973.7	1 040.1	1 135.0	1 322.1

State Authorities: Outlay, South Australia (continued)

Classification	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Gross capital formation:					
Education	67.3	77.4	74.1	59.1	57.6
Health	46.6	40.8	36.1	25.7	24.5
Housing and community amenities	86.8	79.3	56.8	62.5	80.7
Economic services	218.5	230.0	231.5	242.9	257.0
Other	36.1	33.1	30.7	30.7	25.2
Total gross capital formation ...	455.2	460.9	429.3	420.8	444.8
Transfer payments:					
Interest	158.5	185.6	205.5	225.3	258.0
Personal benefit payments	17.5	18.3	20.1	23.2	19.5
Grants and subsidies	42.3	51.9	45.0	49.4	63.1
Net advances	42.2	84.3	52.9	6.3	28.8
Total outlay	1 552.4	1 774.6	1 792.9	1 860.0	2 136.3

The trend in public finances during the last five years is illustrated further in the graphs on pages 560-1, in which bar charts represent the values of receipts and outlays, and in the following table showing receipts and outlay items calculated in terms of *per capita* values or averages for each person of the State population. It will be seen, for example, that the percentage increase in the outlay of State authorities each year from 1976-77 to 1980-81 has been 14.3, 1.0, 3.7 and 14.9 respectively.

State Authorities: Receipts and Financing Items and Outlay, South Australia
Per Head of Population

Classification	1976-77	1977-78	1978-79	1979-80	1980-81
Dollars					
RECEIPTS AND FINANCING ITEMS					
Taxes, fees, fines, etc.	269.7	275.2	295.2	315.8	330.5
Commonwealth grants:					
Education	129.0	145.0	145.7	154.6	169.6
Health	73.2	91.6	88.6	92.1	105.3
General purpose	395.1	453.1	491.6	540.3	590.7
Other	53.7	52.1	55.5	68.1	72.2
Other receipts	91.8	92.2	104.9	109.5	138.9
Financing items	200.2	263.5	198.1	145.0	219.9
Total funds available	1 212.6	1 372.7	1 379.5	1 425.4	1 627.0
OUTLAY					
Final consumption expenditure:					
Law, order and public safety	58.7	68.0	75.5	85.4	101.6
Education	322.8	366.0	390.6	424.3	490.6
Health	176.1	206.9	213.5	222.9	262.2
Social security and welfare	11.6	14.5	15.6	16.3	19.1
Housing and community amenities	5.6	6.3	7.5	8.6	10.1
Recreation and related cultural activities	10.9	13.2	15.6	19.2	20.0

State Authorities: Receipts and Financing Items and Outlay, South Australia
Per Head of Population (continued)

Classification	1976-77	1977-78	1978-79	1979-80	1980-81
	Dollars OUTLAY				
Final consumption expenditure (continued):					
Economic services	36.0	42.3	45.6	51.3	59.1
Other	31.8	35.9	36.4	42.1	44.3
Total final consumption expenditure	653.6	753.2	800.3	869.8	1 006.9
Gross capital formation	355.6	356.5	330.3	322.5	338.8
Transfer payments	170.5	197.9	208.2	228.3	259.4
Net advances	33.0	65.2	40.7	4.8	21.9
Total outlay	1 212.6	1 372.7	1 379.5	1 425.4	1 627.0

State Taxation

Until the introduction of the uniform income tax scheme in 1942-43, income tax was the major source of taxation receipts in South Australia. Receipts from this form of taxation for the years 1939-40 to 1941-42 were \$4 718 000, \$4 952 000 and \$5 638 000 respectively or 51.70 per cent, 57.02 per cent, and 59.45 per cent of total receipts from taxation. The major forms of taxation then left to the State were payroll tax, motor tax, succession and stamp duties, and land tax, but legislative changes in 1980 have subsequently reduced the levels of succession duties, land tax, and gift duties. Stamp duty is payable on a wide range of instalment purchase, leasing and other lending transactions.

In addition to the fields of taxation open to the State Government, there are fields of taxation in which the Commonwealth Government has sole taxing authority, *e.g.* customs and excise duties and sales tax. Before 1942 the Commonwealth levied income tax in addition to that imposed by the States but since the commencement of uniform taxation the Commonwealth has been the sole levier of income tax. Commencing in 1977-78, under the new personal income tax-sharing arrangements, each State will have the right to impose a surcharge or grant a rebate on personal income tax in its State. Any State surcharges or rebates will be collected or paid by the Commonwealth on behalf of the States. Total taxation collected by the Commonwealth in South Australia far exceeds State taxation.

Donations to State authorities, *e.g.* Institute of Medical and Veterinary Science or the Libraries Board, normally coded as part of 'taxes, fees, fines, etc' in the economic type classification, have been excluded from State taxes in the following table. Court fees, which are normally coded as 'charges for services rendered', have been treated as a tax for the purposes of this table. In 1980-81 donations totalled \$3 095 000 and court fees were \$3 772 000.

State Authorities: Taxation, South Australia

Tax	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
To Consolidated Revenue:					
Land tax	18.3	19.6	22.0	21.3	17.3
Succession duty	18.9	17.2	16.1	17.7	2.5
Gift duty	1.6	1.5	1.3	0.8	0.3

State Authorities: Taxation, South Australia (continued)

Tax	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Racing tax	3.1	3.2	3.1	3.0	2.9
Motor tax	45.8	46.6	49.6	43.2	44.4
Stamp duties	78.4	76.2	83.0	86.7	96.5
Payroll tax	115.0	120.7	123.1	134.4	148.3
ETSA levy	7.0	8.0	9.1	10.3	12.2
Business franchises	8.8	9.1	12.0	26.3	33.0
Licences;					
Liquor	8.6	10.9	11.2	12.4	13.9
Other	2.9	2.9	3.0	3.8	4.0
Court fees and fines	5.5	7.1	8.2	9.1	11.9
Other	0.4	0.4	0.4	0.4	0.5
Total to Consolidated Revenue	314.3	323.5	342.3	369.5	387.5
To other accounts:					
Road maintenance charges	4.7	4.8	4.8	1.1	0.1
Lottery tax	5.7	7.9	14.4	16.0	15.8
Racing taxes	8.2	8.3	8.0	8.9	9.4
Stamp duty	2.1	2.2	2.3	2.3	2.3
Fire insurance contributions	9.0	8.3	9.6	11.1	12.8
Reserves contributions	1.2	1.0	0.6	0.5	0.5
Other	1.9	2.0	3.8	5.3	6.2
Total to other accounts	32.8	34.4	43.5	45.2	47.1
Total taxation	347.0	357.9	385.8	414.7	434.6

Public Trading Enterprises

Three government departments and a number of public corporations in South Australia are regarded, for statistical purposes, as public trading enterprises or business undertakings because they seek to cover a substantial part of their cost by selling goods and services to the public. The government departments concerned are Marine and Harbors, Engineering and Water Supply, and Woods and Forests while some of the larger public corporations similarly regarded as business undertakings are the Electricity Trust, Housing Trust, State Transport Authority, Pipelines Authority, and the Lotteries Commission. Particulars for all public trading enterprises during the last five years have been consolidated into industry type in the next table to show revenue, working expenses and gross operating surplus. Working expenses include provisions such as depreciation, long service leave and superannuation but exclude interest paid on borrowings and appropriations to reserves, e.g. future plant replacement.

State Authorities: Public Trading Enterprises, South Australia
Revenue and Working Expenses

Industry	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
REVENUE					
Housing and community amenities	71.5	90.5	111.9	88.5	82.6
Manufacturing	26.0	36.1	24.2	28.4	29.9
Electricity	149.1	172.2	195.9	219.4	261.0

State Authorities: Public Trading Enterprises, South Australia
Revenue and Working Expenses (continued)

Industry	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
	REVENUE				
Water supply, sewerage and drainage	70.0	80.8	94.7	102.4	113.4
Transport and communication:					
Sea transport	12.8	14.0	17.4	23.1	22.6
Urban transit systems	17.7	18.7	21.6	23.8	28.0
Pipelines	32.7	40.8	44.7	52.7	63.5
Economic services n.e.c.	50.3	55.4	73.2	86.7	94.1
Other	4.9	6.3	7.2	8.1	8.8
Total revenue	435.0	514.8	590.8	633.1	703.9
	WORKING EXPENSES				
Housing and community amenities	55.4	76.7	104.1	91.1	78.4
Manufacturing	27.3	39.3	23.9	27.0	29.4
Electricity	128.6	146.6	162.6	191.5	214.3
Water supply, sewerage and drainage	43.5	53.3	52.1	56.9	66.3
Transport and communications:					
Sea transport	10.0	11.8	12.4	14.0	16.2
Urban transit systems	43.3	52.9	67.6	70.1	79.2
Pipelines	28.9	36.7	40.6	48.1	58.7
Economic services n.e.c.	40.4	45.0	66.1	75.1	77.9
Other	5.6	6.9	7.2	8.6	8.9
Total working expenses	383.1	469.2	536.6	582.4	629.3
	GROSS OPERATING SURPLUS				
Housing and community amenities	16.1	13.8	7.8	-2.6	4.3
Manufacturing	-1.3	-3.2	0.3	1.4	0.5
Electricity	20.4	25.6	33.3	27.9	46.7
Water supply, sewerage and drainage	26.5	27.4	42.6	45.5	47.0
Transport and communication:					
Sea transport	2.7	2.2	5.0	9.1	6.4
Urban transit systems	-25.6	-34.2	-45.9	-46.4	-51.2
Pipelines	3.8	4.1	4.1	4.6	4.8
Economic services n.e.c.	9.9	10.4	7.2	11.6	16.3
Other	-0.6	-0.5	-0.2	-0.4	-0.2
Total gross operating surplus ...	51.9	45.6	54.2	50.7	74.6

STATE GOVERNMENT

State government finance is a component of State authorities finance and is concerned with the analysis and classification of the transactions which are published in the Treasurers public accounts, *i.e.* the Consolidated Account, Trust Fund Accounts, and Deposit and Suspense Accounts. Departmental expenditures comprise the majority of the expenditures in these accounts but also included are those Committees, Boards and Commissions which operate mainly through the public accounts and which are not analysed as separate statutory authorities for statistics of final consumption expenditure.

State government accounts are on a cash basis, revenue not being brought to account until received nor expenditure until the actual disbursement is made.

The following table on State government outlays consolidates details of the transactions from the Treasurers public accounts during the five years to 1980-81. These outlays, combined with details for public corporations, are included in the earlier table on State authorities and, as mentioned previously, transfer payments have a greater relative importance in the State government account because of the size of intra-sector grants passed to public corporations.

State Government: Outlay, South Australia

Classification	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Final consumption expenditure:					
Law, order and public safety	66.5	77.6	85.0	94.9	114.0
Education	365.3	420.6	451.9	495.0	574.8
Economic services	41.8	49.4	52.4	62.4	70.3
Other	285.1	339.3	111.8	125.6	139.6
Total final consumption expenditure	758.7	886.9	701.1	777.9	898.7
Gross capital formation	303.4	304.3	274.5	237.5	245.2
Transfer payments	246.0	308.0	545.8	588.6	678.2
Net advances	103.0	92.6	75.2	57.3	47.8
Total outlay	1 411.1	1 591.7	1 596.5	1 661.3	1 869.9

Consolidated Account

Following an amendment to the Public Finance Act, 1936-1982 the former Consolidated Revenue Account and Loan Account were amalgamated to form a single account known as the Consolidated Account. The amendment took effect from July 1981.

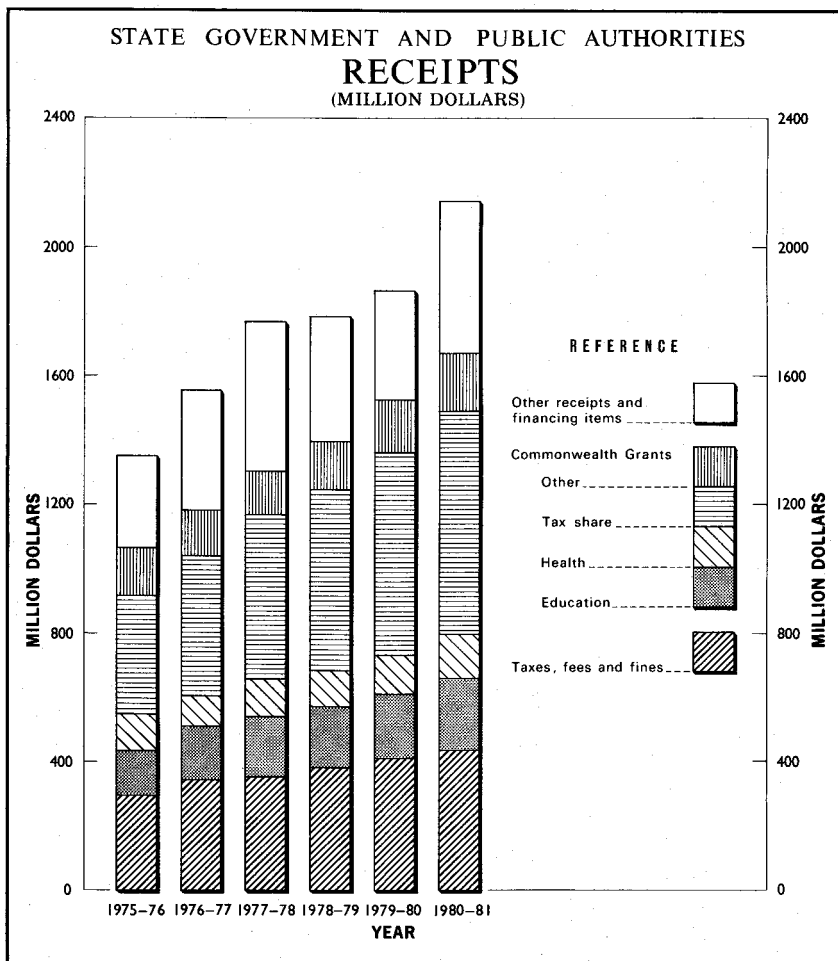
Recurrent Receipts and Payments

This section of the account is credited with receipts from many items of State taxation, fees, licences and charges for services, recoveries of interest and sinking fund, personal income tax sharing arrangements (originally entitled financial assistance grants) and some other Commonwealth grants. This section is debited with the cost of revenue collection, legislative and administrative functions, interest and sinking fund on the public debt, provision of education, health, social security and welfare and other services, operation of business undertakings and development of State resources.

Capital Receipts and Payments

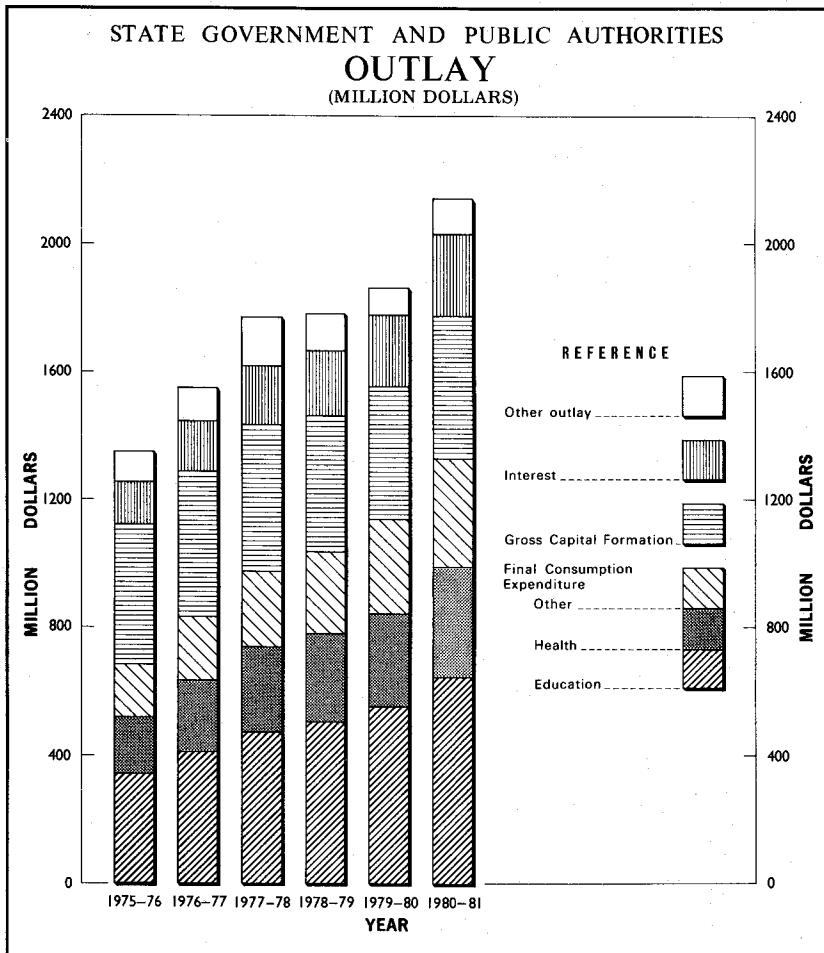
This section of the account records the capitalised payments for construction or acquisition of assets such as schools, reservoirs, hospitals, forests, plant and stores; advances to public authorities; and for primary production and housing. During recent years some capital grants (e.g. for housing) have also been made from loan funds.

State borrowing programs are subject to consideration and agreement at meetings of the Australian Loan Council. Funds are raised by the sale of Commonwealth securities on behalf of the State pursuant to the Financial Agreement which also provides for the redemption of such securities over specified periods from sinking funds contributed by the State and Commonwealth Governments to the National Debt Commission.



Trust Funds Accounts

These are principally moneys lodged with the Treasurer by public authorities and other bodies on current account; funds held for specific purposes pursuant to legislation, not necessarily expendable in any one year; contractors' and statutory deposits and unclaimed moneys. Section 35 of the Public Finance Act also authorises the State Treasurer to credit specific purpose Commonwealth grants to a suitable trust fund. At 30 June 1982 trust fund accounts showed a credit balance of \$84 795 000, representing approximately 3.1 per cent of the indebtedness of the South Australian Government.



Deposit and Suspense Accounts

Reference to these accounts was made in Part 11.1. Although the main function of many of them is to facilitate the allocation of charges and recoups to various headings of receipts and payments within the State Budget, some contain substantial transactions which are not reflected in the Budget. Deposit and Suspense Accounts showed a credit balance of \$68 523 000 at 30 June 1982.

LOAN RAISINGS AND THE PUBLIC DEBT

State Debts Taken Over by the Commonwealth

Under the Financial Agreement the Commonwealth took over on 1 July 1929 State responsibilities to bond-holders in respect of State debts existing on 30 June 1927; and all debts of each State existing on 1 July 1929 for money borrowed by that State are deemed to be money borrowed by the Commonwealth for and on behalf of the State. The Commonwealth agreed to contribute one-third of sinking funds required to repay those debts over a period of fifty-eight years.

Also for a period of fifty-eight years from 1 July 1927 the Commonwealth agreed to contribute the sum of \$15 169 824 (\$1 407 632 for South Australia) each year towards the interest payable on the State debts. The balance of the interest payable on State debts was to be paid into the National Debt Sinking Fund by the States.

The *Financial Agreement Act 1976* provided for the transfer of \$1 000 million of State debt to the Commonwealth from 30 June 1975. The Act also provided for new sinking fund arrangements in respect of State debt.

As a result of the transfer of the South Australian non-metropolitan railway system, \$124 000 000 of State debt was taken over by the Commonwealth.

Australian Loan Council

One of the main features of the Financial Agreement was the establishment of the Australian Loan Council which was set up to co-ordinate the borrowings of the Commonwealth and State Governments. It consists of the Prime Minister of Australia, or another Minister nominated by him, as chairman, and the State Premiers, or Ministers nominated by them.

Each year, the Loan Council examines the loan programs of the Commonwealth and State Governments and determines the total amount to be borrowed during the year. Borrowings by the Commonwealth for defence purposes are not subject to decisions of the Loan Council.

Subject to the decisions of the Loan Council the Commonwealth arranges for all borrowings for or on behalf of itself or any State, and for all conversions, renewals, redemptions, and consolidations of the securities issued on behalf of the Commonwealth and State Governments. If the Loan Council unanimously decides, however, a State may borrow outside Australia in its own name, and may issue securities for the amount so borrowed. The Commonwealth then guarantees that the State will fulfil its obligations to bond-holders in respect of the money so borrowed, and the money is deemed to be borrowed by the Commonwealth for and on behalf of the State.

Subject to any maximum limits decided upon by the Loan Council for interest, brokerage, discount, and other charges, the Commonwealth or any State Government may borrow within its own territory, for any purpose, money from any authorities, bodies, funds, or institutions (including savings banks) constituted or established under Commonwealth or State law or practice; borrow from the public by means of counter sales of securities; and use any available public moneys. However, any securities issued for moneys so borrowed or used must be Commonwealth Government securities on terms approved by the Loan Council.

Since 1936 the Australian Loan Council has, by the consent of its members, exercised substantial control over the limits of borrowing by local government and public corporations. The Loan Council determines maximum interest rates and other terms and

conditions of loans raised by authorities and also approves annual overall programs for larger authorities (for 1979-80 those borrowing more than \$1.2 million in the year).

Loan Council approval may be given to overseas borrowing under the normal semi-government borrowing program where it can be demonstrated that the program cannot be raised in Australia on satisfactory terms because of domestic market conditions.

National Debt Commission

The National Debt Commission and the National Debt Sinking Fund, which it administers, were created under the *National Debt Sinking Fund Act 1923*. All previously existing sinking funds relating to Commonwealth debt were merged in the National Debt Sinking Fund at the time of its establishment; and under the provisions of the Financial Agreement of 1927 all relevant interest and principal contributions by both the Commonwealth and State Governments, in respect of State debts, are negotiated through the Fund.

These contributions are not accumulated but are applied by the Commission to the redemption of the public debts of the States, and the repurchase of securities issued in respect thereof. Under the provisions of the Financial Agreement, repurchased or redeemed securities must be cancelled, and the debts of the States are reduced accordingly.

The Public Debt

The following table gives details of the public debt and total indebtedness of South Australian Government at 30 June 1982 and for the four previous years.

Public Debt and Total Indebtedness, South Australia

At 30 June	Public Debt—Being Interest Bearing Securities Outstanding		Other Interest Bearing Indebted- ness (a)	Non- interest Bearing Indebted- ness (a)	Total Indebtedness	
	Total	Per Head			Total	Per Head
	\$'000	\$	\$'000	\$'000	\$'000	\$
1978	1 605 834	1 237.35	675 065	21 941	2 302 840	1 774.42
1979	1 702 221	1 307.59	745 758	49 671	2 497 651	1 918.61
1980	1 781 600	1 361.35	792 299	89 092	2 662 991	2 034.84
1981	1 872 699	1 419.46	799 587	86 698	2 758 984	2 091.25
1982	1 962 590	1 474.08	727 863	65 248	2 755 701	2 069.78

(a) Gross less securities held on these accounts.

PUBLIC CORPORATIONS

For the purpose of determining the scope of public corporation finance statistics, a public corporation is defined as a body (other than a local government authority) created by or under legislation to carry out an activity or activities on behalf of a government, or a body in which a government has a controlling interest.

Activities carried out by public corporations include tertiary education, hospital services, power supply, public transport, banking services, fire control, irrigation and drainage in rural areas, control and regulation of milk supply, slaughtering of animals for human consumption, housing development, off-course totalisators and lotteries, and investigation of problems relating to the development of mineral resources.

Details of the financial transactions of public corporations have been combined with those of State government in the earlier tables for State authorities and, where appropriate, also in the table for public trading enterprises. A brief summary of the outlays of public corporations is given in the following table showing the economic type classification used for the public sector with the major purpose dissections from final consumption expenditure. It should be noted that net financial transactions are recorded in this table; the working expenses of the public corporations classified as public trading enterprises, for example, amounted to \$500.7 million in 1980-81 but in an outlay table such expenses are off-set against receipts to determine the operating surplus of the trading enterprises for a net presentation.

Public Corporations: Outlay, South Australia

Classification	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Final consumption expenditure:					
Health	13.5	15.4	259.1	273.1	322.4
Colleges of advanced education ..	39.6	43.0	45.2	47.9	56.4
Other	24.9	28.5	34.7	36.1	44.5
Total final consumption expenditure	78.0	86.9	339.0	357.1	423.3
Gross capital formation	151.8	156.6	154.9	183.2	199.7
Transfer payments	59.7	71.7	83.3	92.6	101.6
Total outlay	289.5	315.2	577.1	632.9	724.6

Further References

Additional information may be found in the following publications:

- 5501.4 *State Authorities Finance—South Australia*
- 5504.0 *State and Local Government Finance—Australia*

11.4 LOCAL GOVERNMENT FINANCE

For the purpose of determining the scope of local government finance statistics, a local government authority is defined as:

- (a) an authority set up under a local government Act to carry out the functions of local government in a defined area (known as a municipality or district council area) and the members of which are elected by persons enrolled as electors for the House of Assembly in respect of an address within the area, or who are ratepayers in respect of ratable property within the area. A body corporate is enrolled under the name of a nominated agent;
- (b) an authority created or acquired by a local government authority (as defined above) or by two or more local government authorities (in South Australia an authority established under Part XIX or Section 666(c) of the Local Government Act, 1934-1983).

The functions and organisation of local government authorities have been described in Part 3.5.

The expenditure of moneys by local government bodies is authorised by the Local Government Act, 1934-1983. Under the Act each council is required to prepare a balance sheet and statement of its accounts on an accrual basis for each financial year and these statements are the basis of the statistics published on local government finance.

Assessments

Assessments for property rating are based upon annual value or land value. Annual value is based on five per cent of the capital value of the land, or on the estimated gross annual rental at which a ratable property would be let from year to year with an allowance, not exceeding one-quarter, to cover all outgoings; whereas land value is an estimate of the value of the land (regardless of structural improvements) included in a property. A council may adopt the 'annual' valuations or the 'land' valuations of the State Valuer-General or may make its own valuation of properties. The Valuation of Land Act was amended in 1981 and all assessments for property rating now are based on capital value or site value.

Revenue Transactions

Rates are the principal source of revenue of local government authorities and represented 35.8 per cent of total revenue in 1980-81. Remissions are allowed on portions of the council rates levied on pensioner's and certain other properties but the value of remissions is refunded to the council by a State government subsidy. Details of rates shown in this Part refer to total rates accrued during the year plus *ex-gratia* receipts, i.e. net of all remissions and reductions but including penalties and subsidies. Some properties, e.g. those occupied by Commonwealth or State government authorities, are exempt from rating but an *ex-gratia* payment may be made by such authorities in lieu of rates.

The Commonwealth *Local Government (Personal Income Tax Sharing) Act 1976* specified that 1.75 per cent of net personal income tax collections in 1979-80 increasing to 2.0 per cent in 1980-81, be allocated to local government and that 30 per cent of this allocation be shared on a population basis with the remainder on a basis that ensures that each local governing body is able to function, by reasonable effort, at a standard not appreciably below the standards of other local governing bodies. These requirements are embodied in the South Australian Local Government Grants Commission Act, 1976 under which the States allocation is distributed as per head and special grants. These grants totalled \$25.8 million in 1980-81 and are shown as general purpose government grants in the following table. The specific purpose grants, \$19.5 million in 1980-81, are grants administered by relevant government departments and are identified in greater detail in a subsequent table. Details of revenue from ordinary services, as distinct from business undertakings, and loan receipts during the five years to 1980-81 are as follows.

**Local Government Authorities: Ordinary Services, Revenue and Loan Receipts
South Australia**

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
Rates (including penalties)	76.4	85.7	95.5	105.2	119.2
Licences, fees and fines	3.2	3.9	4.3	5.3	5.8
Charges for services	15.3	15.6	16.9	19.9	21.0
Contributions and donations				2.4	2.4
Reimbursements received	9.9	13.7	17.9	7.3	8.6
Interest received				4.8	7.1
Sale of land and other fixed assets ..				3.2	4.5

**Local Government Authorities: Ordinary Services, Revenue and Loan Receipts
South Australia (continued)**

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
\$ million					
Government grants:					
General purpose	11.9	14.2	15.4	19.0	25.8
Specific purpose	22.9	24.1	19.0	19.5	19.5
Total revenue	139.6	157.3	169.1	186.6	213.8
Loan receipts	20.4	19.0	23.7	25.4	25.9
Total revenue and loan receipts	160.1	176.3	192.8	211.9	239.6

The source data prepared by local governing bodies in the annual financial statements were supplied in accordance with the 'Local Government Accounting Regulations 1979' and are in a format different to that used in previous years. The changes in the new Regulations, which operated from 1 July 1979, resulted in more precise detail being available on the financial transactions of local authorities and many items identified from 1979-80 are not comparable directly with items reported in earlier years. To enable a better comparison with the transactions of Commonwealth and State authorities, as well as with all other local authorities throughout Australia, the transactions reported have been reclassified in a system which tabulates in all States local government finance data on a uniform basis.

**Local Government Authorities
Ordinary Services, Selected Revenue by Purpose, South Australia, 1980-81**

Particulars	Charges for Services	Contributions and Donations	Reimburse- ments	Specific Purpose Government Grants	
				Capital	Current
			\$'000		
General administration	1 324	—	—	—	—
Law, order and public safety	304	38	6	492	382
Health	176	12	20	7	30
Welfare	1 028	232	—	544	1 151
Housing and community amenities:					
Housing	379	—	—	2	—
Sanitary and garbage	855	—	—	—	—
Sewerage	64	—	—	1 597	—
Urban stormwater	—	754	—	723	—
Other	1 001	—	—	877	269
Recreation and culture	5 907	101	68	2 175	2 318
Economic services:					
Roadworks	—	1 228	5 526	6 713	469
Parking	4 879	—	—	10	—
Tourism and area promotion	1 752	—	2	294	60
Saleyards and markets	1 255	—	—	—	—
Other	1 677	4	209	75	645
Unclassified—other	377	—	2 803	295	332
Total	20 980	2 369	8 634	13 800	5 656

(a) Includes unemployment relief grants.

Selected revenue for 1980-81 is shown in a purpose classification in the table above; rates, licences and general purpose government grants are excluded because these items are not appropriate to a purpose classification.

Loan Receipts

Under the provisions of the Local Government Act councils may, with the consent of

electors, borrow money for carrying out permanent works and undertakings, on the security of the general rates and subject to conditions specified in the Act. Notice of the intention to borrow is published in the Gazette and in the local press. The consent of electors is deemed to be obtained unless objections in writing are submitted to the council office within one month in which case a poll is conducted. Loans in excess of \$1.2 million are subject to Loan Council approval.

Loans raised by local government authorities during 1980-81 totalled \$25.9 million for ordinary services and \$0.4 million for electricity undertakings. Most of these loans were raised with Australian banks.

Outlay Transactions

The functions of local government have been described earlier in this Year Book in Part 3.5: Constitution and Government—Local Government, and subsequent references. Outlay of funds for major functions are identified in the following two tables but the comparability of some data between 1980-81 and earlier years may be affected by changes in classifications and by reporting procedures associated with the adoption of the Local Government Accounting Regulations 1979 in South Australia and the introduction of the new local government finance system in all States.

A number of differences occur between the presentation of local government finance statistics and those of other levels of government. Public sector finance statistics generally are prepared on a net basis in which selected receipts are offset against relevant outlays, and *vice versa*, but in local government finance statistics transactions are shown as gross values and subsequently adjusted to the net basis when consolidated into the State and local government sector accounts. For this reason the tables which follow show 'current outlay on goods, services and land' rather than the net concept of final consumption expenditure.

A summary of ordinary services outlay of local government authorities during the five years to 1980-81 is shown in the next table.

Local Government Authorities: Ordinary Services, Outlay, South Australia

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
Outlay on goods, services and land:					
Capital:					
New fixed assets,					
Roadworks construction	23.8	29.7	30.0	30.3	34.2
Other	31.4	34.1	29.4	36.9	36.6
Land and other fixed assets	5.3	5.3	3.3	3.0	5.4
Current:					
General administration	14.3	17.0	18.8	21.3	25.0
Roadworks, maintenance	16.7	18.2	21.1	22.5	25.9
Other	50.3	64.0	69.3	66.9	78.3
Total outlay on goods, etc.	141.8	168.2	171.9	180.8	205.3
Debt charges:					
Interest	16.8	18.5	18.9	12.7	14.7
Debt redemption				9.5	10.4
Levies paid to government				4.3	4.2
Other				0.9	1.9
Total outlay	158.6	186.8	190.8	208.2	236.6

Local authorities engage in a number of trading activities or business undertakings such as electricity supply schemes and caravan parks, but these activities generally have not been classified as trading activities in the local government finance statistics unless annual revenue, measured in terms of 1977-78 prices, is greater than \$500 000. Consequently most activities of local government in South Australia are classified to the relevant general government function.

A third difference between the statistics of local government and other levels of government is the treatment of expenditure on roads. Where statistics are consolidated for all levels of government all expenditures on roads are treated as capital expenditure because of difficulties in achieving a consistent distinction between new construction and maintenance work. In the local government finance system, however, this distinction has been accepted arbitrarily on the basis of data reported by local authorities in the annual statements, these being prepared in accordance with guidelines contained in a *South Australian Local Government Accounting Manual* issued to all local government offices by the Department of Local Government.

Particulars of outlay from revenue and loan funds on goods, services and land for the year 1980-81 are classified by purpose in the following table. Construction and maintenance of roadworks accounted for 29.3 per cent of the outlay on goods, services and land.

**Local Government Authorities: Ordinary Services, Outlay on Goods, Services and Land
South Australia, 1980-81**

Purpose	Outlay from Revenue		Outlay from Loans		Total
	Capital	Current	Capital	Current	
			\$'000		
General administration	2 851	24 946	2 500	10	30 307
Law, order and public safety	1 203	2 036	88	—	3 326
Health	122	2 246	62	—	2 431
Welfare	659	2 769	46	—	3 475
Housing and community amenities:					
Sanitary and garbage	355	13 513	150	—	14 018
Sewerage	1 646	382	419	12	2 460
Urban stormwater	3 287	714	2 364	2	6 367
Other	3 230	6 398	1 478	—	11 106
Recreation and culture:					
Recreation and sport	5 537	20 009	1 906	41	27 492
Libraries	876	5 090	80	—	6 045
Other	531	1 971	445	—	2 946
Economic services:					
Roadworks	26 098	25 162	8 087	744	60 091
Parking	419	4 834	821	—	6 073
Other	1 202	12 333	279	—	13 814
Unclassified	5 900	5 982	3 516	—	15 399
Total outlay	53 915	128 384	22 242	808	205 349

Electricity Undertakings

Nine councils on Eyre Peninsula and in the northern areas of the State operate electricity supply schemes in which electricity is either generated or purchased from the Electricity Trust of South Australia and distributed to ratepayers on council power lines. During 1980-81 current outlay consisting of working expenses and interest paid on loans raised for these schemes totalled \$4.6 million. Gross capital formation and debt redemption-principal repayments totalled an additional \$0.4 million.

Electricity undertakings are classified as trading activities in local government finance

statistics and details of the transactions are not included in the ordinary services of local government authorities.

Further References

Additional information may be found in the following publications:

- 5501.4 *State Authorities Finance—South Australia*
- 5502.4 *Local Government Finance—South Australia*
- 5504.0 *State and Local Government Finance—Australia*

11.5 AUSTRALIAN NATIONAL ACCOUNTS

National accounting aims at providing a systematic summary of the transactions taking place in the economy, especially of those that relate to the production and use of goods and services, and to transfers of income or capital between sectors of the economy.

Concepts

The fundamental concepts of domestic product and national income and expenditure are described below.

Gross Domestic Product at Market Prices (usually referred to as Gross Domestic Product) is defined as the total market value of goods and services produced in Australia after deducting the cost of goods and services used up in the process of production but before deducting allowances for the consumption of fixed capital. It is the sum for all producers of the value of their sales (including any indirect taxes levied thereon), plus increases in their stocks, less their purchases of intermediate goods and services from other producers. For those producers, like general government, who do not generally sell their output, it includes output valued at cost instead of sales.

Gross Domestic Product at Factor Cost is that part of the cost of producing the Gross Domestic Product which consists of gross payments to factors of production (labour, land, capital and enterprise). It represents the value added by these factors in the process of production and is equivalent to Gross Domestic Product less indirect taxes plus subsidies. Gross Farm Product at Factor Cost is that part of Gross Domestic Product at Factor Cost arising from production in rural industries.

Domestic Factor Incomes is that part of the value added within a given period by factors of production which accrues as income to their suppliers after allowing for the depreciation of fixed capital. It is equivalent to Gross Domestic Product at Factor Cost less depreciation allowances.

National Income is the net income accruing within a given period to Australian residents from their services in supplying factors of production in Australia or overseas plus indirect taxes less subsidies. It is equivalent to Domestic Factor Incomes plus indirect taxes less subsidies and net income paid overseas. It is also equivalent to Gross Domestic Product less depreciation allowances and net income paid overseas.

National Disposable Income is the net income accruing within a given period to Australian residents from their services in supplying factors of production, from net indirect taxes and from redistributive transfers. It is equivalent to National Income less net transfers overseas.

National Turnover of Goods and Services is the total flow within a given period of final goods and services (i.e. excluding any goods and services used up during the period in the process of production) entering the Australian economy from production and imports. This value is equivalent to Gross Domestic Product plus imports of goods and services, or, to Gross National Expenditure plus exports of goods and services.

Gross National Expenditure is the total expenditure within a given period on final goods and services (i.e. excluding goods and services used up during the period in the process of production) bought by Australian residents. It is equivalent to Gross Domestic Product plus imports of goods and services less exports of goods and services.

Sectors

A brief description of the sectors into which the economy is divided for the purpose of National Accounts follows.

The *Corporate Trading Enterprise Sector* includes companies and public enterprises other than financial enterprises. It thus includes all trading enterprises other than unincorporated enterprises and dwellings owned by persons. This sector comprises only resident enterprises, but the concept of resident enterprises includes Australian subsidiaries and branches of overseas-owned companies and excludes overseas subsidiaries and branches of Australian companies. All public trading enterprises are included in this sector whether they are incorporated bodies or not.

The *Financial Enterprise Sector* includes both private and public financial enterprises. Financial enterprises are enterprises which are primarily engaged in financial transactions in the market consisting of both incurring liabilities and acquiring financial assets. These are organisations which are regarded as providing the financial mechanism for the functioning of the economy. They include life insurance and general insurance offices and superannuation funds as well as other organisations mainly engaged in borrowing and lending in the market.

The *Household Sector* includes all resident persons, their unincorporated enterprises located in Australia and dwellings owned by persons, and non-profit organisations serving households, other than non-profit organisations included in the Financial Enterprise Sector.

The *General Government Sector* excludes public financial and trading enterprises, but otherwise includes the whole of the activities of the Commonwealth Government, State Governments, local authorities and public corporations.

The *Overseas Sector Account* records all transactions between Australian persons, businesses and governments and overseas residents. Australian subsidiaries and branches of overseas companies are classified as resident units, while overseas subsidiaries and branches of Australian companies are classified as non-residents.

Description of the Accounts

The *Domestic Production Account* is shown as receiving the revenue from the sale of goods and services to final buyers; all intermediate goods and services are cancelled out, since they represent a cost to one producer to offset the revenue of the other. On the payments side are shown the payments of indirect taxes less subsidies and, since the account is presented from the point of view of the producing unit, the wages and salaries paid to employees.

The *National Income and Outlay Account* is shown as receiving wages, salaries and supplements, net operating surplus and indirect taxes less subsidies from the Domestic Production Account. From this income are deducted net payments of income and miscellaneous transfers to overseas, and the remainder is the National Disposable Income. The outlay side of the account shows this disposable income is largely used for final consumption expenditure and the balance is the nation's saving. The National Income and Outlay Account is a consolidation of the sector income and outlay accounts.

The *National Capital Account* is a consolidation of the sector capital accounts. It

shows on the receipts side depreciation allowances transferred from the Domestic Production Account and saving transferred from the National Income and Outlay Account (or from the sector income and outlay accounts). On the payments side are shown purchases by all sectors of new buildings and capital equipment, the increase in stocks of all sectors and a balance described as net lending to overseas. This concept of net lending to overseas includes the increases (and, negatively, decreases) in Australia's overseas monetary reserves. The net lending to overseas is also the balance on the current transactions in the Overseas Transactions Account.

The *Overseas Transactions Account* records all transactions of a current nature between Australian and overseas residents. Although this is an account for the Overseas Sector, the items are named from the Australian viewpoint. The account shows that Australia's current receipts from overseas consist of the value of (Australia's) exports of goods and services, property income received from overseas and transfers from overseas. These receipts are used for (Australia's) imports of goods and services and payments of property income and transfers to overseas; and the balance of current receipts represents net lending to overseas. Positive net lending to overseas corresponds to a surplus on current transactions with overseas and negative net lending corresponds to a deficit.

Domestic Production Account, 1980-81

	\$m		\$m
Wages, salaries and supplements	71 392	Final consumption expenditure:	
Gross operating surplus:		Private	78 609
Trading enterprises;		Government	22 204
Companies	16 243	Gross fixed capital expenditure:	
Unincorporated enterprises	15 023	Private	21 642
Dwellings owned by persons	8 955	Public enterprises	5 610
Public enterprises	3 030	General government	4 329
Financial enterprises	3 670	Increase in stocks	287
Less Imputed bank service charge	3 433	Statistical discrepancy	875
Gross Domestic Product at Factor Cost	114 880	Gross National Expenditure	133 556
Indirect taxes less subsidies	16 175	Exports of goods and services ...	22 267
		National turnover of goods and services	155 823
		Less Imports of goods and services	24 768
Gross Domestic Product	131 055	Expenditure on Gross Domestic Product	131 055

Overseas Transactions Account, 1980-81

	\$m		\$m
Exports of goods and services ...	22 267	Imports of goods and services	24 768
Property income from overseas	452	Property income to overseas	2 391
Transfers from overseas:		Transfers to overseas:	
Personal	706	Personal	433
Withholding Taxes	161	General government	627
		Net lending to overseas	-4 633
Current receipts from overseas	23 586	Use of current receipts	23 586

National Income and Outlay Account, 1980-81

	\$m		\$m
Final consumption expenditure:		Wages, salaries and supplements	71 392
Private	78 609	Net operating surplus	34 825
Government	22 204		
Saving	19 447	Domestic factor incomes	106 217
		Less Net income paid overseas ...	1 939
		Indirect taxes	17 189
		Less Subsidies	1 014
		National Income	120 453
		Less Net transfers to overseas ...	354
		Withholding taxes	161
Disposal of Income	120 260	National Disposable Income	120 260

National Capital Account, 1980-81

	\$m		\$m
Gross fixed capital expenditure:		Depreciation allowances	8 663
Private:		Saving:	
Dwellings	6 132	Increase in income tax pro-	
Other building and construc-		visions	853
tion	3 934	Undistributed (company)	
All other	11 576	income	2 846
Public enterprises	5 610	Retained income of public	
General Government	4 329	financial enterprises	628
Increase in stocks	287	Household saving	10 945
Statistical discrepancy	875	General government surplus	
Net lending to overseas	-4 633	on current transactions	4 175
Gross accumulation	28 110	Finance of gross accumulation	28 110

The next three tables give details for South Australia of farm income, household income, and private final consumption expenditure for the years 1976-77 to 1980-81.

Farm Income, South Australia ^(a)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
Gross value of farm production:					
Wool (including skin wool)	154	145	162	215	241
Livestock slaughtering	203	239	361	396	400
Wheat	74	50	265	357	244
Other grain crops	100	55	130	205	181
Other crops	157	187	214	225	267
Other livestock products	48	56	59	69	76
Total	736	732	1 191	1 467	1 409
Less Stock valuation adjustments ...	-12	2	24	27	-2
Less Production costs other than wages and depreciation:					
Marketing costs	64	63	112	150	590
Seed and fodder	65	86	70	106	
Other costs	186	200	232	280	

Farm Income, South Australia ^(a) (continued)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
Gross farm product at factor cost	433	381	753	904	821
Indirect taxes less subsidies	37	24	31	40	46
Gross farm product at market prices	470	405	784	944	867
Less Depreciation	75	77	86	97	290
Wages, net rent and interest paid and third party insurance transfers	108	124	132	159	
Indirect taxes less subsidies	37	24	31	40	
Farm income	250	180	535	648	531

(a) Includes Northern Territory.

Household Income, South Australia ^(a)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
Wages, salaries and supplements	4 547	4 913	5 232	5 718	6 606
Income of farm unincorporated enterprises	240	169	510	618	500
Income of other unincorporated enterprises	486	477	497	497	545
Income from dwellings	235	307	360	394	407
Transfers from general government	724	834	946	1 021	1 176
All other income	646	763	858	990	1 226
Total household income	6 878	7 463	8 403	9 238	10 460
<i>Less</i>					
Income tax paid	1 038	1 116	1 156	1 329	n.y.a.
Other direct taxes, fees, fines, etc.	73	74	73	71	n.y.a.
Consumer debt interest	101	121	127	135	n.y.a.
Transfers overseas					
Household disposable income	5 666	6 152	7 047	7 703	n.y.a.

(a) Includes Northern Territory.

Private Final Consumption Expenditure, South Australia ^(a)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
Food	843	950	1 051	1 170	1 331
Cigarettes and tobacco	126	122	137	152	164
Alcoholic drinks	250	267	296	331	365
Clothing, etc.	402	430	465	486	547
Health	305	330	406	426	468
Dwelling rent	668	799	912	1 019	1 141

Private Final Consumption Expenditure, South Australia ^(a) (continued)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
	\$ million				
Gas, electricity, fuel	88	104	120	131	155
Household durables	494	464	504	526	606
Newspapers, books, etc.	78	89	99	101	116
All other goods n.e.i.	218	243	270	301	338
Travel and communication	712	754	857	990	1 103
All other services	540	588	662	722	792
Total	4 724	5 140	5 779	6 355	7 126

(a) Includes Northern Territory.

Further References

Additional information may be found in the following publications:

5204.0 *Australian National Accounts—National Income and Expenditure*

PART 12

PRIVATE FINANCE

12.1 BANKING AND CURRENCY

BANKING

The banking system in Australia comprises a central bank (the Reserve Bank of Australia); thirteen trading banks (one owned by the Commonwealth Government, three by State Governments, and nine privately owned); the Commonwealth Development Bank and the Australian Resources Development Bank Ltd (specialist banks, owned respectively by the Commonwealth Government and a consortium of the four major trading banks), the Primary Industry Bank of Australia Ltd, and ten savings banks of which one is owned by the Commonwealth Government and three by State Governments, two are trustee savings banks, and four are associated with privately owned trading banks.

LEGISLATION

Under Section 51 of the Constitution Act the Commonwealth Parliament has power to legislate with respect to 'Banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money'.

The principal Acts at present in force relating to banking are:

- (a) the *Reserve Bank Act 1959*, providing for the constitution and management of the Reserve Bank and the management of the Australian note issue;

- (b) the *Commonwealth Banks Act 1959*, providing for the constitution and management of the Commonwealth Banking Corporation; and
- (c) the *Banking Act 1959*, providing for the regulation of banking and the protection of the currency and public credit of Australia.

The *Banking Act 1959* applies to all banks operating in Australia or its Territories, except State banks trading in their own State. The objects of the Act are: (1) to provide a uniform legal framework for regulating the banking system; (2) to safeguard depositors from loss; (3) to provide for the co-ordination of banking policy under the direction of the Reserve Bank; (4) to control bank interest rates and the volume of credit in circulation; (5) to provide machinery for the control of foreign exchange.

State banking legislation relates to the incorporation of banks and the constitution and management of State banks. South Australian Acts at present in force relating to banking are the State Bank Act, 1925-1978 and the Savings Bank of South Australia Act, 1929-1982.

RESERVE BANK OF AUSTRALIA

The Reserve Bank of Australia functions as a central bank, controls the Australian note issue through the Note Issue Department, provides special banking facilities through the Rural Credits Department, and acts as banker to the Commonwealth and some of the States. Liabilities and assets of each department of the Reserve Bank, taken from their Reports and Financial Statements, are shown in the table below.

Reserve Bank of Australia, Liabilities and Assets at 30 June 1982

Particulars	Central Bank Department	Note Issue Department	Rural Credits Department	Total (a)
LIABILITIES (\$'000)				
Capital	40 000	—	9 428	49 428
Reserves	1 119 756	1 307 956	79 774	2 507 486
Special Reserve:				
International Monetary Fund				
Special Drawing Rights	352 301	—	—	352 301
Notes on issue	—	5 837 490	—	5 837 490
Deposits:				
Statutory reserve deposits ...	2 118 376	—	—	2 118 376
Other trading banks deposits	22 968	—	—	22 968
Savings bank deposits	195 291	—	—	195 291
Other deposits	3 876 385	—	4 204	(a) 1 365 355
Other liabilities	250 412	42 278	272 659	(a) 298 238
Total	7 975 489	7 187 724	366 065	(a) 12 746 933
ASSETS (\$'000)				
Gold and foreign exchange (b) ...	4 964 070	1 554 448	—	6 518 518
Australian Government securities	1 772 669	2 998 573	—	4 771 241
Other assets	1 238 750	2 634 703	366 065	(a) 1 457 174
Total	7 975 489	7 187 724	366 065	(a) 12 746 933

(a) Inter-departmental accounts totalling \$2 782 345 000 have been offset in totals.

(b) Includes IMF Special Drawing Rights.

The policy of the Reserve Bank is determined by a Board consisting of the Governor of the Reserve Bank (Chairman), the Deputy Governor, the Secretary to the Treasury, and seven other members appointed by the Governor-General. The Bank is managed by the Governor, who acts in accordance with the policy of the Board and with any directions of the Board. The Bank is required to inform the Government of the monetary and banking policy of the Board. In the event of a disagreement between the Government and the Board as to whether the monetary and banking policy of the Bank is directed to the greatest advantage of the people of Australia, the Governor-General, acting with the advice of the Executive Council, may determine the policy to be adopted by the Bank.

Further details of the activities of the Reserve Bank are given in the *Year Book Australia*.

COMMONWEALTH BANKING CORPORATION

The Commonwealth Banking Corporation was established under the *Commonwealth Banks Act 1959* and commenced operations on 14 January 1960. It is the controlling body for the Commonwealth Trading Bank, the Commonwealth Savings Bank and the Commonwealth Development Bank.

Particulars relating to the Development Bank are given below, while details of the other two banks are included in later sections relating to trading banks and savings banks.

Commonwealth Development Bank

The Commonwealth Development Bank is a supplementary source of finance for primary production and for the establishment or development of industrial undertakings and does not compete with conventional lenders, but provides financial help when such help is thought desirable and finance is not otherwise available on suitable terms. The primary consideration of the Bank's operations in deciding whether finance should be made available is the prospect of success and not necessarily the value of security available.

In South Australia all the major private banks and the State Bank of South Australia are agents of the Commonwealth Development Bank for the receipt of loan applications. The averages of weekly figures for loans, advances and bills discounted for the month of June in the years 1979 to 1982 were \$482, \$526, \$562, and \$605 million respectively. Of the last mentioned amount, \$70 million was advanced in South Australia.

At 30 June 1982 the capital of the Commonwealth Development Bank was \$61.7 million.

AUSTRALIAN RESOURCES DEVELOPMENT BANK LIMITED

This corporation was formed by the major trading banks with the support of the Reserve Bank and was given bank status by an amendment to the Banking Act in 1967. It provides finance for the development of Australia's natural resources mainly in the form of refinanced trading bank loans but also by direct lending and equity participation. Other services offered to intending developers include the organising of consortia financing, assessments of feasibility and independent verification of reserves. The averages of weekly figures for loans and advances outstanding (including refinanced loans) for the month of June in the years 1979 to 1982 were \$643, \$743, \$723, and \$785 million respectively. This finance is provided from the Australian capital market (mainly in the form of public issues of transferable deposits) and from subordinated loans by the shareholding banks and the Reserve Bank of Australia. Overseas borrowing remains a minor source of funds.

Authorised capital of the Bank is \$20 million of which \$11 million had been issued as fully paid capital at 30 September 1982. The shareholders (the major trading banks) have approximately equal shareholdings. Although not a shareholder, the Reserve Bank of Australia initially subscribed \$2.1 million in loan capital on which interest is paid.

THE PRIMARY INDUSTRY BANK OF AUSTRALIA LIMITED

The Primary Industry Bank of Australia Limited commenced operations on 22 September 1978 under the authority of the *Primary Industry Bank Act 1977*. The Bank has also been brought within the scope of the *Banking Act 1959* including those provisions relating to the protection of depositors, advances policy, control of interest rates, furnishing of statistics, and alterations in the structure and ownership of the Bank.

The main objective of the Bank is to facilitate the provision of loans to primary producers for longer terms than are otherwise generally available. The Bank's role is restricted to refinancing loans made by banks and other financial institutions with terms of eight years or more but not exceeding thirty years.

The initial equity capital of the Bank is \$5 625 000 consisting of eight shares. Seven shares are held by the Commonwealth of Australia and three major trading banks while the eighth share is held equally by the four State banks.

TRADING BANKS

For statistical purposes trading banks are often divided into two groups, 'major' and 'other'. Due to two mergers in 1982-83 (see next page) there are now only three major private bank groups operating in Australia, and together with the Commonwealth Trading Bank they represent the 'major trading banks'. At June 1982 the major trading banks held approximately 86 per cent of all general trading bank assets in Australia.

The group 'other trading banks' consists of the three State Government banks (including the State Bank of South Australia) which trade mainly in their respective States, and four other banks (two of them overseas institutions) whose business is either specialised (e.g. financing overseas trade), or both specialised and limited to particular areas.

Banks Originating in South Australia

With a subscribed capital of \$500 000 in 50 000 shares of \$10 each, the first trading bank promoted in South Australia was The Bank of Adelaide which was opened for business on 11 December 1865. The Australia and New Zealand Banking Group Ltd effectively took over the operations of The Bank of Adelaide from 1 October 1980.

Pursuant to the State Advances Act of 1895 the State Bank of South Australia commenced business in 1896. The original Act directed that advances were to be made on first mortgage to farmers, other primary producers and local government authorities. The State Bank Act, 1925 repealed the State Advances Act, and enlarged the scope of the activities of the Bank by making provision for loans on overdraft and all business of general banking. The State Bank also administers the following Acts on behalf of the State:

- Advances to Settlers Act, 1930-1972;
- Loans to Producers Act, 1927-1980;
- Loans for Fencing and Water Piping Act, 1938-1975;
- Student Hostels (Advances) Act, 1961.

The State Bank of South Australia does not operate branches or agencies outside the State.

Assets

Under the provisions of the *Banking Act 1959* all trading banks (except State banks trading in their own State) have limitations on their portfolio of assets. These banks are required to maintain a fixed percentage of total deposits as a Statutory Reserve Deposit (SRD) with the Reserve Bank. The SRD ratio for major trading banks which had been 6 per cent from 6 December 1979, changed to 7 per cent from 6 January 1981.

The major trading banks are also required by agreement to hold a certain percentage of total deposits in the form of liquid assets or government securities. This minimum LGS ratio which had remained at 18 per cent from 1962 was changed temporarily to 23 per cent in February 1976 but reverted to 18 per cent on 1 April 1977.

The following table gives some particulars of assets held by trading banks in Australia. The figures are averages of assets at the close of business on each Wednesday in June 1982.

Trading Banks: Assets Within Australia, June 1982 ^(a)

Assets	Major Trading Banks	Other Trading Banks	All Trading Banks
		\$'000	
Gold, bullion and Australian notes	574 067	39 730	613 798
Cash with Reserve Bank	24 338	3 800	28 139
Commonwealth public securities:			
Commonwealth Government and State	5 028 857	457 765	5 486 622
Local authorities and public corporations	71 446	168 367	239 814
Statutory Reserve Deposit Account with Reserve Bank	2 070 384	42 755	2 113 139
Loans to authorised dealers in short-term money market	253 046	83 302	336 348
Other loans, advances and bills discounted	22 119 176	4 094 149	26 213 326
Bank premises, furniture and sites	576 799	137 984	714 783
Other assets	10 902 161	1 493 802	12 395 962
Total assets	41 620 275	6 521 656	48 141 930

(a) Excludes inter-branch accounts and contingencies.

Branches and Agencies

Of the eleven trading banks which operate in Australia, the seven banks listed below conduct business in South Australia:

Government banks;

Commonwealth Trading Bank of Australia

State Bank of South Australia

Private banks;

Australia and New Zealand Banking Group Ltd

Westpac Banking Corporation From 1 October 1982 the Bank of New South Wales joined with the Commercial Bank of Australia Ltd to form the Westpac Banking Corporation and trades as Westpac.

National Commercial Banking Corporation of Australia Ltd From 4 January 1983 the National Bank of Australasia Ltd merged with the Commercial Banking Company of Sydney Ltd to form the National Commercial Banking Corporation of Australia Ltd and trades as National Australia Bank.

Bank of New Zealand

Banque Nationale de Paris

Trading Banks: Branches and Agencies at 30 June, South Australia

Bank	Branches			Agencies		
	1980	1981	1982	1980	1981	1982
Commonwealth Trading Bank	72	75	77	27	27	27
State Bank of South Australia	40	41	44	17	17	16
Private banks	359	342	334	83	81	85
Total—Metropolitan area (a)	270	262	264	41	40	44
Country	201	196	191	86	85	84
Total State	471	458	455	127	125	128

(a) As determined by individual banks for administrative purposes.

Deposits, Advances and Debits to Customers Accounts

Deposits not bearing interest are on current account and may be withdrawn on demand. Deposits bearing interest include some deposits on current account but most are deposits for fixed terms ranging from three months to four years and for large amounts from thirty days to four years.

Debits to customers accounts generally represent the total of all cheques drawn by customers of the banks.

Trading Banks: Balance of Deposits and Advances and Debits to Customers Accounts
South Australia ^(a)

Year	Depositors Balances			Loans, Advances, and Bills Discounted (b)	Debits to Customer Accounts (c)	Proportion to Total Deposits	
	Bearing Interest	Not Bearing Interest	Total			Deposits Bearing Interest	Loans, Advances, and Bills Discounted (b)
			\$'000				Per cent
1978	871 839	429 677	1 301 516	1 419 266	848 596	67.0	109.0
1979	944 182	492 777	1 436 958	1 727 818	924 668	65.7	120.2
1980	1 105 581	546 384	1 651 965	1 938 230	1 021 644	66.9	117.3
1981	1 232 520	580 923	1 813 443	2 148 545	1 169 767	68.0	118.5
1982	1 329 021	571 649	1 900 670	2 390 441	1 700 281	69.9	125.8

(a) Average of weekly figures for month of June.

(b) Excludes loans to authorised dealers in the short-term money market.

(c) Includes the Rural Credits Department of the Reserve Bank and the Commonwealth Development Bank.

The following table relates to trading bank advances outstanding for all banks in South Australia and the Northern Territory except the State Bank of South Australia and the Banque Nationale de Paris. Advances are classified according to type of borrower in July of each year from 1978 to 1982.

Major Trading Banks, South Australia and Northern Territory
Advances to Resident Borrowers by Type of Borrower ^(a)
(At Second Wednesday in July)

Classification	1978	1979	1980	1981	1982
\$ million					
Business advances:					
Agriculture, grazing and dairying (b)	157.8	202.9	250.7	303.7	334.6
Manufacturing	94.0	105.9	126.0	130.6	161.3
Transport, storage and communication	17.9	18.6	22.5	33.2	40.0
Finance	32.6	32.8	46.8	53.7	56.4
Commerce;					
Retail trade	82.3	102.2	119.3	127.4	128.0
Wholesale trade (c)	36.1	49.7	50.4	52.4	64.1
Total commerce	118.4	151.9	169.7	179.7	192.1
Building and construction	44.1	47.9	47.9	49.0	51.6
Other business	126.9	150.4	185.8	182.8	197.2
Unclassified	13.6	18.4	19.3	19.1	63.5
Total business advances ...	605.4	728.9	868.6	951.8	1 096.6
Distribution of business advances:					
To companies	319.0	384.1	425.2	452.2	527.2
Other	286.4	344.7	443.4	499.6	569.4
Advances to public authorities	4.6	5.8	3.1	2.7	4.7
Personal advances:					
Building or purchasing own home	69.6	78.5	80.3	82.0	69.8
Other	369.3	445.6	521.4	552.1	619.1
Total personal advances ...	438.9	524.0	601.7	634.1	688.8
Advances to non-profit organisations	6.9	7.0	12.0	13.9	14.3
Total advances to resident borrowers	1 055.7	1 265.7	1 485.3	1 602.5	1 804.4

(a) Covers advances by the Commonwealth Trading Bank and all private trading banks, but excludes advances by the State Bank of South Australia and the Banque Nationale de Paris. 'Resident borrowers' comprise all institutions (including branches of overseas institutions) engaged in business in Australia and individuals permanently residing in Australia.

(b) Includes farm development loan component.

(c) Includes temporary advances to woolbuyers.

Interest Rates

Bank interest rates are not formally determined under the Banking Act. Maximum rates are fixed after discussions between the Reserve Bank and the banks, and with the approval of the Treasurer. State Government banks, although not bound by rulings of the Reserve Bank, tend to conform to them.

SAVINGS BANKS

Development of Savings Banks

The prime object of the foundation of savings banks in Australia was the encouragement of thrift. Generally, depositors cannot operate on their savings accounts by means of cheques, although most savings banks extend this facility to non-profit organisations

such as friendly, co-operative and charitable societies. In addition the Savings Bank of South Australia is one of only two banks in Australia which pays interest on personal cheque accounts. Savings accounts have the advantages that deposits may be withdrawn on demand and that depositors receive interest on their minimum monthly balances. No charge is made by the banks for keeping these accounts or the cheque accounts of some non-profit organisations. However, early in 1970 concessions relating to charges and interest on trading accounts were withdrawn from hospital and medical benefit organisations, building societies, credit unions and investment clubs.

Post Offices in South Australia acted as agencies for the Savings Bank of South Australia until 1912 when they became agents of the Commonwealth Bank.

Savings bank business was conducted exclusively by these two government banks until 1956, when the first of the private banks entered this field. Savings bank facilities in South Australia are now provided by the six banks listed below:

Government;

Commonwealth Savings Bank of Australia

Savings Bank of South Australia

Private;

Australia and New Zealand Savings Bank Ltd

Westpac Banking Corporation Savings Bank Ltd

National Australia Savings Bank Ltd

The Bank of New Zealand Savings Bank Limited

Savings Bank of South Australia

The Savings Bank of South Australia commenced operations on 11 March 1848 following the enactment of an ordinance in 1847. At 30 June 1982 there were 158 branches, 612 agencies and 843 school bank agencies within South Australia. The Savings Bank of South Australia has agent banks to act for it in other Australian States and has conducted its own office in Pall Mall, London, since September 1975.

The total of depositors balances at 30 June 1982 amounted to more than \$1 284 million. During 1981-82, the Bank made loans exceeding \$146.0 million to depositors for housing, for rural development and for institutional and other purposes, and at 30 June 1982 the total of such loans outstanding was over \$621 million.

Savings Bank of South Australia, Summary of Business

Year	Operative Accounts	Cash Turnover (a)	Depositors Balances (b)	Loans (b) (c)	Government Securities Held (b) (d)
	No.	\$m		\$'000	
1977-78	1 078 864	5 344	919 756	613 114	184 124
1978-79	1 086 560	6 277	1 023 805	707 623	172 308
1979-80	1 087 878	7 560	1 101 884	789 680	159 588
1980-81	1 096 445	9 076	1 206 547	874 869	156 365
1981-82	1 096 647	11 104	1 284 452	950 434	141 032

- (a) Sum of deposits and withdrawals; includes some duplication from amounts transferred by depositors from one type of account to another. (b) At end of year, as published in the Bank's Annual Report. (c) Includes loans guaranteed by South Australian Government and to statutory and local government bodies. (d) Commonwealth Government Securities only.

Branches and Agencies

The number of branches of savings banks increased considerably during the period 1961-1970, due mainly to the increase in branches of private banks in the metropolitan area. However since 1978 there has been a decline in the number of branches of private savings banks from 360 to 342. The number of agencies of savings banks has decreased each year since 1968.

Savings Banks: Branches and Agencies at 30 June, South Australia

Bank	Branches			Agencies		
	1980	1981	1982	1980	1981	1982
Commonwealth Savings Bank	84	85	85	596	599	589
Savings Bank of South Australia	157	158	158	626	617	612
Private banks	358	341	342	396	371	357
Total—Metropolitan area (a)	361	351	357	992	961	937
Country	238	233	228	626	626	621
Total State	599	584	585	1 618	1 587	1 558

(a) As determined by individual banks for administrative purposes.

School Banking

Special banking facilities for school children were introduced into South Australia with the inauguration of the School Banking Department of the Savings Bank of South Australia on 28 April 1908. The Commonwealth Savings Bank of Australia and some private banks provide similar services at some private schools. However, the Savings Bank of South Australia has sole access to State schools, and retains a major share of school banking business. With a view to encouraging thrift in school children, deposits as small as ten cents are accepted.

Details of school banking in this State are as follows:

	Agencies	Operative Accounts '000	Depositors Balances \$'000
30 June 1978	880	146	4 651
1979	879	141	4 902
1980	914	136	4 982
1981	887	131	5 045
1982	889	125	5 006

Assets

Under the provisions of the *Banking Act 1959* all savings banks (except State banks trading in their own State) are required to maintain in prescribed investments an amount that together with cash on hand in Australia is not less than the amount on deposit in Australia with the savings bank. These prescribed investments include deposits with the Reserve Bank, deposits with or loans to other banks, Commonwealth Government or State securities, loans for housing, loans to authorised dealers in the short-term money market and loans to the Australian Banks Export Refinance Corporation Ltd.

A further limitation on the portfolio of assets held by savings banks is that they are required to hold in cash and other prescribed assets, funds equivalent to 40 per cent of depositors balances. Within this amount, funds equivalent to 7.5 per cent of depositors balances must be held in deposits with the Reserve Bank and in Treasury notes. The ratio

was previously 45 per cent but was varied by an amendment to the Banking (Savings Bank) Regulations in August 1978.

Deposits

The total of depositors balances in savings banks per head of population has for this State been consistently well above the Australian average.

The following table shows details of savings banks accounts and deposits for South Australia and Australia at 30 June for the years 1979 to 1982.

Savings Banks: Accounts and Deposits, South Australia and Australia

At 30 June	South Australia			Australia		
	Operative Accounts	Depositors Balances	Deposits per Head of Population	Operative Accounts	Depositors Balances	Deposits per Head of Population
	(a)			(a)		
	'000	\$m	\$	'000	\$m	\$
1979	2 163	2 138.3	1 653	21 423	19 832.5	1 380
1980	2 178	2 276.9	1 753	21 861	21 260.9	1 460
1981	2 211	2 457.1	1 878	22 507	23 217.9	1 563
1982	2 233	2 595.8	1 953	23 199	25 047.0	1 658

(a) Excludes school bank and inoperative accounts.

The next table gives an indication of the amount of business conducted by savings banks during each of the last five years.

Movements in Savings Bank Deposits, South Australia

Year	Amount on Deposit at Beginning of Year	Deposits during Year (a)	Withdrawals during Year (a)	Interest Added during Year	Increase in Depositors Balances during Year	Amount on Deposit at End of Year
				\$million		
1977-78	1 780.8	5 036.3	4 974.3	102.5	164.5	1 945.3
1978-79	1 945.3	5 754.5	5 672.4	110.9	193.0	2 138.3
1979-80	2 138.3	6 620.7	6 604.4	122.4	138.6	2 276.9
1980-81	2 276.9	7 826.9	7 798.4	151.7	180.2	2 457.1
1981-82	2 457.1	9 493.8	9 549.8	194.6	138.7	2 595.8

(a) Includes inter-branch transfers.

Savings Bank Deposits, South Australia

At 30 June	Commonwealth Savings Bank	Savings Bank of South Australia	Private Savings Banks	Total
			\$million	
1978	452.0	919.8	573.7	1 945.3
1979	486.5	1 023.8	628.1	2 138.3
1980	511.6	1 101.9	663.5	2 276.9
1981	546.3	1 206.5	704.4	2 457.1
1982	582.2	1 284.5	729.1	2 595.8

The Savings Bank of South Australia has always held a very high proportion of the total of depositors balances in this State, although its share of total on deposit has dropped from about 75 per cent in 1961 to approximately 49 per cent in 1982. During that time the private banks have increased their share from less than 12 per cent to approximately 28 per cent.

CURRENCY

Under the Commonwealth Constitution the control of currency, coinage and legal tender in Australia is vested in the Commonwealth.

The Commonwealth Treasurer is empowered by legislation to arrange for the making and issuing of coins of specified denominations. Australia's coin requirements are met by the Royal Australian Mint in Canberra. Australian notes are printed by the Note Printing Branch of the Reserve Bank in Melbourne, while their issue is controlled by the Note Issue Department of that bank.

Notes in circulation are of the denominations \$1, \$2, \$5, \$10, \$20, and \$50. Coins in circulation are 1 cent and 2 cent (bronze) and 5, 10, 20 and 50 cents (cupro-nickel).

Notes in Circulation, Australia

Denomination	Last Wednesday in June				
	1978	1979	1980	1981	1982
			\$million		
\$1	60·8	64·7	68·6	74·1	78·8
\$2	136·0	140·6	145·1	152·7	158·4
\$5	126·7	135·5	143·2	153·9	165·6
\$10	604·5	582·4	567·6	555·9	546·7
\$20	1 620·5	1 756·4	1 903·9	2 060·0	2 169·8
\$50	1 121·7	1 427·7	1 757·8	2 190·7	2 718·2
Total	3 670·2	4 107·4	4 586·1	5 187·3	5 837·5
Notes held by:					
Banks	413·1	451·1	500·9	578·1	677·4
Public	3 257·1	3 656·3	4 085·2	4 609·2	5 160·1

Minting of the 50 cent coin in its original form of 80 per cent silver and 20 per cent copper, ceased in April 1968. A twelve-sided version of the 50 cent coin, in cupro-nickel, was issued in September 1969. Special 50 cent coins were issued in 1970 to commemorate the two-hundredth anniversary of Captain James Cook's discovery of the east coast of Australia, in 1977 to commemorate the twenty-fifth anniversary of Queen Elizabeth's accession to the throne, in 1981 to commemorate the marriage of Prince Charles to the Lady Diana Spencer, and in 1982 to record the Commonwealth Games in Brisbane.

More complete details of Australian currency, including historical references, were included on pages 552-6 of the *South Australian Year Book* 1968.

12.2 INSURANCE

LIFE INSURANCE

The activities of life insurance companies operating in South Australia have been regulated by Commonwealth legislation since 1945. Under the *Life Insurance Act 1945*, every company transacting life insurance business must be registered and must lodge a deposit of up to \$100 000, as security for policy holders, with the Commonwealth Treasurer. The Act is administered by the Insurance Commissioner who has wide powers of inquiry into the activities of any registered company.

Each company must establish at least one statutory fund and all moneys received in respect of life insurance business must be paid to, and form part of, the assets of these funds. An actuarial investigation must be conducted at least once every five years, with the distribution of shareholders dividends and policy holders bonuses subject to sufficient surplus being revealed by such investigation. All premiums must be actuarially approved and the Commissioner has powers to suppress policies or proposals which he deems misleading.

Companies are required to furnish to the Commissioner certain accounting reports and statistical returns and it is from these returns that the statistical details in this section are obtained.

In accordance with the *Life Insurance Act 1945*, businesses are required to maintain separate registers for Ordinary, Industrial and Superannuation classes of insurance business. With the consent of the Life Insurance Commissioner, however, transfers between registers can occur. As the significance of industrial insurance has been declining, and as more businesses have been transferring it to the ordinary registers only a few businesses now maintain registers of industrial insurance. In order to preserve the confidentiality of these businesses' operations it has become necessary to combine the details of ordinary and industrial business in this publication.

During 1980, thirty-eight companies conducted ordinary and industrial life insurance business in South Australia and thirty-nine also undertook superannuation business, i.e. the issuing of policies to the trustees of funds established for the provision of superannuation or retirement benefits.

With the passing of the State Government Insurance Commission Act Amendment Act, 1977, the Commission, which from 1972 has been undertaking general insurance business, was empowered to enter the life insurance field and it began accepting life insurance business on 1 March 1978.

Policies Existing

The following table shows details of life insurance policies existing for the five year period 1976 to 1980.

Life Insurance: Policies Existing, South Australia

Year	Ordinary			Industrial (a)			Superannuation		
	Policies	Sum Insured	Annual Premiums	Policies	Sum Insured	Annual Premiums	Policies	Sum Insured	Annual Premiums
	No.	\$'000	\$'000	No.	\$'000	\$'000	No.	\$'000	\$'000
1976	666 013	4 130 495	78 574	194 363	165 528	6 043	56 861	1 370 498	40 537
1977	657 077	4 582 356	80 947	180 003	165 752	6 003	61 450	1 622 228	46 679
1978	804 790	5 211 273	87 895	(b)	(b)	(b)	51 097	1 838 464	51 124
1979	758 159	5 523 634	87 804	(b)	(b)	(b)	51 662	2 074 557	58 564
1980	730 672	6 009 131	88 932	(b)	(b)	(b)	53 735	2 470 537	67 155

(a) Includes industrial business for the Northern Territory. (b) Industrial included with ordinary.

In the following table, the distinction between endowment insurance and an endowment policy is that endowment insurance provides for the payment of the sum insured upon the insured person reaching a specified age or upon his prior death, whereas the sum insured under an endowment policy is paid only upon the insured person reaching the specified age.

Life Insurance: Policies Existing, South Australia, 1980

Type of Policy	Ordinary and Industrial (a)		Superannuation	
	Sum Insured	Annual Premiums	Sum Insured	Annual Premiums
		\$'000		
Whole life insurances	2 720 842	47 016	246 924	5 782
Endowment insurances	638 543	24 819	299 084	11 413
Other insurances	2 635 123	16 236	1 904 702	49 113
Endowment	14 622	861	19 826	847
Total	6 009 131	88 932	2 470 537	67 155

(a) Includes industrial business for the Northern Territory.

New Policies

The number and value of new policies issued during the five years to 1980 are shown in the next table.

Life Insurance: New Policies Issued, South Australia

Class of Business	1976	1977	1978	1979	1980
			NUMBER		
Ordinary and industrial (a)	58 291	52 691	50 512	48 432	46 528
Superannuation	9 904	9 565	6 229	5 644	7 585
Total	68 195	62 256	56 741	54 076	54 113
			SUM INSURED (\$'000)		
Ordinary and industrial (a)	810 604	857 215	938 998	1 003 094	1 067 362
Superannuation	390 160	416 690	389 575	475 535	664 090
Total	1 200 765	1 273 906	1 328 572	1 478 629	1 731 452

(a) Includes industrial business for the Northern Territory.

Annual premiums on new policies issued in 1980 amounted to \$27 278 191 and of this amount \$3 438 479 was for endowment insurances and \$4 760 415 for whole of life insurances. Details of sum insured and premiums payable for the various types of policy issued in 1980 are shown in the following table.

Life Insurance: New Policies Issued, South Australia, 1980

Type of Policy	Ordinary and Industrial (a)		Superannuation	
	Sum Insured	Annual Premiums	Sum Insured	Annual Premiums
		\$'000		
Whole life insurances	237 290	4 082	31 144	678
Endowment insurances	62 069	1 816	43 518	1 622
Other insurances	765 968	5 774	583 145	13 004
Endowment	2 035	85	6 283	217
Total	1 067 362	11 757	664 090	15 522

(a) Includes industrial business for the Northern Territory.

Annuity Business

Life insurance companies also issue annuity policies but this form of business is at present a relatively minor aspect of life insurance activity. In 1980 there were 116 policies in existence with total annuities per annum of \$52 282.

Policies Discontinued

The following table gives details of policies discontinued according to reason for discontinuance. Policies discontinued or reduced includes policies matured, surrendered or forfeited. In addition, this item includes transfers to and from registers within and between States and Territories and between Australia and overseas and revaluations of sums insured under existing policies. These transfers and revaluations may result in either negative or positive changes to values in the 'policies discontinued' item.

Life Insurance: Policies Discontinued or Reduced, South Australia, 1980

Cause	Ordinary and Industrial (a)		Superannuation	
	Policies	Sum Insured	Policies	Sum Insured
	No.	\$'000	No.	\$'000
Death	2 664	6 982	200	3 754
Maturity	17 764	15 710	843	13 406
Surrender	42 707	339 228	2 549	175 612
Forfeiture	10 584	172 232	499	16 087
Transfer	1 406	14 547	315	8 848
Other	1 110	33 166	1 106	50 405
Total	76 235	581 865	5 512	268 111

(a) Includes industrial business for the Northern Territory.

Premiums and Claims

Details of premium income and of cash payments made in respect of policies are shown in the following table. This table does not show investment income or management and commission expenses and accordingly is not a revenue and expenditure table.

Life Insurance: Premiums and Policy Payments, South Australia

Year	Premiums and Considerations for Annuities	Payments				
		Death or Disability (a)	Maturity	Surrenders	Annuities	Cash Bonuses
				\$'000		
1976	124 781	14 358	26 602	31 448	85	369
1977	135 553	16 368	31 627	34 992	66	539
1978	143 205	17 874	35 175	42 245	59	581
1979	151 651	18 693	38 188	44 853	69	732
1980	168 594	19 745	43 546	54 141	53	775
						Total
						72 862
						83 592
						95 935
						102 535
						118 260

(a) Includes 'Other'.

Loans Outstanding

In the following table details are given of mortgages on South Australian real estate, loans on policies registered in, and 'other' loans to persons resident in this State. Only those loans which form assets of the statutory funds are included.

Life Insurance: Loans Outstanding, South Australia

Loans	1976	1977	1978	1979	1980
			\$'000		
Loans on:					
Mortgage of real estate	85 926	87 581	84 771	76 076	69 901
Policies;					
Advance of premiums	5 579	5 413	4 701	n.a.	n.a.
Other	22 738	23 979	25 496	27 132	25 785
Other	2 231	2 125	3 552	3 192	2 918
Total	116 474	119 098	118 519	(a)106 400	(a)98 604

(a) Excludes advance of premiums.

GENERAL INSURANCE

General insurance in South Australia is conducted by private organisations and the State Government Insurance Commission which commenced business in January 1972. Some Government insurance, in particular workers compensation, is carried by the Government Insurance Fund which is administered by the Government Insurance Office. In addition, the State Bank of South Australia insures certain properties on which it has provided mortgage finance.

Companies, persons or firms of persons carrying on general insurance business are required under the Stamp Duties Act, 1923-1982 to take out an annual licence, such licence being the authority to carry on insurance business in the State. The licence fee varies with premium income. Under the Fire Brigades Act, 1936-1981 insurance companies contribute approximately 75 per cent of the cost of maintaining the services of the Fire Brigades Board.

Insurance for workers compensation and motor vehicle third party risks is compulsory under State legislation. Employers, unless specifically exempted, are required under the Workers Compensation Act, 1971-1982 to effect an insurance cover providing compensation for workers suffering injuries in the course of their employment. Details of workers compensation provisions are given in Part 7.4.

Under the Motor Vehicles Act, 1959-1983 all vehicles other than those belonging to the

Crown must be covered by a third party policy protecting the owner against any liability for death or injury to others resulting from use of the vehicle. Particulars are given in Part 10.4.

Legislation affecting all insurance companies operating in Australia is embodied in the *Insurance Act 1973* which seeks to ensure the continued financial stability of these companies. This Act is concerned only with the solvency of all companies engaged in insurance business and not with contractual arrangements between policy holders and insurers or with the rate of premiums charged. It also provides for the continuation of the provisions of the State Acts referred to above.

The statistics in this section are compiled from returns covering transactions of the State Government Insurance Commission, the Government Insurance Fund, State Bank and companies and company groups licensed to conduct general insurance business. Each return gives details of the organisation's activities during a twelve-month period ending within the year shown. Some re-insurance transactions are excluded from the returns to avoid duplication.

The following tables show details of claims and premiums relating to general insurance undertaken by authorised insurers and government instrumentalities for the years 1979-80 to 1981-82. The first table shows details of claims which comprise payments made during the year, plus the estimated amount of outstanding claims at the end of the year, less the estimated amount of outstanding claims at the beginning of the year.

General Insurance: Claims, South Australia

Class of Business	1979-80	1980-81	1981-82
		\$'000	
Fire (including sprinkler leakage)	13 653	15 486	13 432
Loss of profits	950	310	627
Crop (including hailstone)	11 461	678	1 149
Houseowners and householders	23 639	22 832	20 096
Contractors risks	666	685	740
Marine hull:			
Private pleasure craft	520	661	853
Other	1 210	1 788	2 477
Marine cargo	3 818	4 484	4 650
Aviation hull/cargo	40	5	(a)
Motor vehicle (including motor cycles)	47 109	49 124	53 620
Compulsory third party (motor vehicles)	94 029	108 742	115 456
Employers liability	46 673	59 671	87 272
Public liability	3 744	5 320	6 767
Product liability	70	301	564
Professional indemnity	256	357	913
Loan, mortgage and lease	359	416	(a)
Burglary	2 203	2 412	2 393
Travel (including baggage)	2 343	(b) 1 894	(b) 1 503
Boiler/engineering/machinery breakdown	1 877	1 791	2 271
Plate glass	973	868	911
Guarantee	59	46	72
Livestock	420	345	432
Personal accident	3 790	4 347	4 766
Other	3 319	(b) 5 050	(b) 5 122
Total (c)	263 181	287 613	326 086

(a), (b), (c) See footnotes under 'Premiums' table.

The next table shows premiums earned by the insurers. Premiums represent the full amount receivable in respect of policies issued and renewed in the year less returns, rebates, and bonuses, paid or credited to policy holders in the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts shown differ from 'earned premium income' for the year.

General Insurance: Premiums, South Australia

Class of Business	1979-80	1980-81	1981-82
		\$'000	
Fire (including sprinkler leakage)	16 120	19 749	20 200
Loss of profits	2 122	2 091	2 569
Crop (including hailstone)	2 668	2 852	2 619
Houseowners and householders	26 056	31 805	36 822
Contractors risks	639	1 068	1 973
Marine hull:			
Private pleasure craft	927	1 086	1 271
Other	1 234	1 399	1 679
Marine cargo	5 032	6 607	7 011
Aviation hull/cargo	49	46	(a)
Motor vehicle (including motor cycles)	63 401	65 548	70 316
Compulsory third party (motor vehicles)	72 802	74 806	89 170
Employers liability	59 125	64 046	78 955
Public liability	5 457	6 871	8 285
Product liability	279	433	459
Professional indemnity	449	821	892
Loan, mortgage and lease	531	428	(a)
Burglary	2 496	2 547	2 895
Travel (including baggage)	3 084	(b) 2 529	(b) 3 056
Boiler/engineering/machinery breakdown	2 928	3 516	3 939
Plate glass	1 107	1 013	1 197
Guarantee	197	324	327
Livestock	525	630	585
Personal accident	6 696	7 219	7 784
Other	8 344	(b) 10 019	(b) 12 428
Total (c)	282 268	307 453	354 432

(a) Included in 'other'.

(b) 'Travel (including baggage)', called 'All risks/baggage' before 1980-81, is not directly comparable because risks other than associated with travel previously included in 'other'.

(c) The data series on premiums and claims exclude details for brokers. However, premiums, classified by class of business are presented at the Australian level for brokers (refer *General Insurance—Australia* (Catalogue No. 5620.0)).

Further References

Additional information may be found in the following publications:

5620.0 *General Insurance—Australia*

5622.0 *Life Insurance—Australia*

12.3 OTHER PRIVATE FINANCE

STOCK EXCHANGE OF ADELAIDE LIMITED

The Stock Exchange of Adelaide was formed in 1887 by the amalgamation of the Adelaide Stock Exchange and the Stock Exchange of South Australia.

The Exchange operates under a set of rules which govern both the behaviour of companies, through the various listing requirements, and the conduct of members. Management is by a chairman, a vice-chairman and a committee of four, elected by the members.

Lists of quotations are issued by the Exchange twice daily and lists of dividends and new issues are produced weekly. Transfer marking and noting services are available to members of the Exchange and to the public through solicitors and accountants. A visitors gallery overlooking the trading floor enables the proceedings to be observed.

On 2 January 1972, the Member Exchanges of the Australian Associated Stock Exchanges (which includes Adelaide) adopted the policy of 'national listing'. This common listing meant that, at 30 June 1982, the Stock Exchange of Adelaide Limited had 986 companies on its Official List with a total equity market capitalisation (*i.e.* total market value of ordinary shares) of \$38 083 million. The face value of other listed securities at 30 June 1982 was Commonwealth Government loans \$18 000 million, public corporation loans \$5 200 million, debentures \$2 575 million and unsecured notes \$991 million.

Stock Exchange of Adelaide, Recorded Turnover of Securities

Particulars	Year Ended 30 June				
	1978	1979	1980	1981	1982
TRANSACTIONS ('000)					
Shares, Commonwealth Government loans, public corporation loans, debentures and unsecured notes	41	50	87	87	58
NUMBER OF SHARES ('000)					
Shares:					
Industrial	27 217	30 265	40 677	63 774	37 823
Mining and oil	22 874	33 242	66 675	69 156	36 523
Total shares	50 091	63 507	107 352	132 930	74 346
MARKET VALUE (\$'000)					
Shares:					
Industrial	30 334	38 807	63 502	113 727	70 648
Mining and oil	10 569	18 291	61 440	63 405	34 736
Total shares	40 903	57 098	124 942	177 132	105 384
\$'000					
Commonwealth Government loans, public corporation loans, debentures and unsecured notes:					
Face value	2 377	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
Market value	2 184	3 127	3 646	2 390	3 929

The figures in the table above have been supplied by the Stock Exchange.

It should be noted that several companies with diverse activities, including extensive oil and/or mining interests, are classified by stock exchanges as 'industrial' and are shown in that category in the table.

BUILDING SOCIETIES

The operations of building societies in South Australia are regulated by the Building Societies Act, 1975-1981 which is administered by the Registrar of Building Societies with whom all building societies must be registered. The societies fall into two categories—permanent societies and terminating (Starr-Bowkett) societies.

Permanent societies are organisations which have rules or regulations that do not specify that they are to terminate on a specific date or when a specific object is achieved. They operate on a co-operative basis by borrowing predominantly from their members and providing finance to their members and other persons principally in the form of housing loans. Advances for the purpose of building or acquiring homes are made to members and other persons by way of mortgage. Two permanent building societies are approved organisations in which the trustee of an estate may legally invest funds. Detailed statistics on the operations generally of permanent building societies are available in the monthly bulletin *Permanent Building Societies: Housing Finance for Owner Occupation* (Catalogue No. 5610.0) and the annual bulletin *Permanent Building Societies: Assets, Liabilities, Income and Expenditure* (Catalogue No. 5632.0).

The statistics below summarise information collected from the nine permanent building societies balancing within the 1980-81 and 1981-82 financial years.

Permanent Building Societies: Liabilities and Assets, South Australia ^(a)

Liabilities	1980-81	1981-82	Assets	1980-81	1981-82
	\$'000			\$'000	
Share capital and reserves:			Amount owing on loans	524 946	545 529
Withdrawable shares	613 004	640 949	Cash on hand	2 379	2 884
Reserves:			Deposits with:		
Statutory	—	3 393	Banks	22 225	30 199
Other (b)	9 029	9 584	Other	13 058	27 280
Deposits	34 816	103 554	Bills, bonds and other securities	92 937	141 802
Loans	20 465	20 140	Accounts receivable	3 764	6 011
Accounts payable	4 351	8 303	Other financial assets	3 479	2 350
Other liabilities	2 831	3 493	Physical assets	21 708	33 361
Total liabilities	684 496	789 416	Total assets	684 496	789 416

(a) At the balance dates of societies within the financial year shown.

(b) Includes accumulated surplus, general, capital and other reserves.

Permanent Building Societies: Income and Expenditure, South Australia

Expenditure	1980-81	1981-82	Income	1980-81	1981-82
	\$'000			\$'000	
Interest on:			Interest from:		
Shares	55 605	70 850	Loans	56 966	71 450
Deposits	1 839	5 355	Deposits	4 176	8 292
Loans	965	873	Income from holdings of securities	9 608	15 091
Wages and salaries	6 136	7 665	Other income	3 263	3 000
Administrative expenses (a)	3 930	5 192			
Other expenditure	3 511	4 306			
Total expenditure	71 986	94 241	Total income	74 013	97 833

(a) Includes Permanent Building Society Association costs, advertising, bank charges and other administrative expenses.

Terminating (Starr-Bowkett) societies have a limited life and derive their funds from regular subscription from members. These funds are used to make interest-free advances to members, with priority being determined by ballot. There were ten terminating building societies operating in South Australia in 1980-81 and 1981-82. The statistics which follow summarise information collected from these societies. More detailed description and dissection of these statistics may be found in the bulletin *Terminating Building Societies: Assets, Liabilities, Income and Expenditure* (Catalogue No. 5633.0).

Terminating Building Societies: Liabilities and Assets, South Australia ^(a)

Liabilities	1980-81	1981-82	Assets	1980-81	1981-82
	\$'000			\$'000	
Share capital (b)	1 002	946	Amount owing on loans (b)	1 020	934
Accumulated funds (c)	98	89	Cash on hand and current		
Other liabilities	7	12	accounts at banks	49	77
			Deposits with:		
			Banks	1	1
			Other	35	32
			Physical assets	1	1
			Other assets	2	2
Total liabilities	1 107	1 047	Total assets	1 107	1 047

(a) At the balance dates of societies within the financial year shown.

(b) Borrowing members' subscriptions have been offset against 'Amount owing on loans'.

(c) Includes accumulated surpluses and deficits.

Terminating Building Societies: Income and Expenditure, South Australia

Expenditure	1980-81	1981-82	Income	1980-81	1981-82
	\$'000			\$'000	
Interest paid on borrowing			Interest on:		
members' subscriptions	—	—	Loans to members	—	—
Interest on loans from:			Other	—	—
Banks	—	—	Management fees	10	7
Other	—	—	Other income	14	19
Salaries and secretarial fees	14	14			
Other expenditure	15	25			
Total expenditure	29	39	Total income	23	26

CO-OPERATIVE CREDIT SOCIETIES

Co-operative credit societies are registered under the Credit Unions Act, 1976-1980 which is administered by the Registrar of Credit Unions. Before 28 April 1977, when the Credit Unions Act, 1976-1980 was proclaimed, these societies were registered under the Industrial and Provident Societies Act, 1923-1974.

The societies included in this collection, which began in 1970-71, are mainly credit unions or savings and loan societies. A credit union is defined as an organisation that:

(a) is registered under the Credit Unions Act, 1976-1980; and

(b) operates on a co-operative basis by predominantly borrowing from and providing finance to its own members.

Details of assets and liabilities of these societies, given in the following table, are compiled from individual returns with a variety of balance dates. The figures are aggregates of returns submitted by societies for their relevant accounting periods closing on various dates during the financial years shown.

More detailed description and dissection of these statistics may be found in the annual bulletin *Credit Unions: Assets, Liabilities, Income and Expenditure* (Catalogue No. 5618.0).

Co-operative Credit Societies, South Australia

Particulars	1979-80	1980-81	1981-82
		Number	
Societies	30	31	31
Members	103 003	118 678	129 525
		\$'000	
Income:			
Interest on loans to members	17 418	23 215	29 218
Other	2 230	2 943	4 463
Total	19 644	26 158	33 681
Expenditure:			
Interest on deposits	12 459	16 298	21 339
Other (a)	6 108	8 709	11 083
Total	18 569	25 007	32 422
Assets:			
Loans to members	146 099	175 566	188 530
Cash in hand and at bank	1 709	2 166	2 158
Deposits with credit union associations and leagues	14 870	14 414	19 782
Investments	3 352	4 299	8 650
Other	6 194	7 280	9 307
Total	172 225	203 724	228 429
Liabilities:			
Share capital	848	930	1 009
Reserves and accumulated profits	3 372	4 895	5 884
Deposits	159 568	189 527	213 466
Current accounts	724	844	938
Loans (b)	6 637	6 236	5 642
Other	1 075	1 292	1 489
Total	172 225	203 724	228 429

(a) Includes interest on loans, salaries and wages, administrative expenses, bad debts and provision for doubtful debts. (b) Includes loans from credit union leagues or associations.

INSTALMENT CREDIT FOR RETAIL SALES

Instalment credit for retail sales is defined as covering all schemes under which repayment is made by regular predetermined instalments, such as time payment, budget accounts and certain personal loans. Credit schemes which do not involve repayment by regular predetermined instalments, lay-bys and all credit transactions related mainly to the financing of 'producer' type goods such as plant, machinery and motor vehicles normally used for commercial purposes are excluded from the following statistics. Also excluded are the financing of sales of land and buildings, property improvements, services such as repair work and travel facilities, and rental and leasing schemes.

Legislation controlling instalment credit schemes in South Australia is embodied in the Consumer Transactions Act, 1972-1983 and the Consumer Credit Act, 1972-1980, both effective from 1 November 1973. Since that date, it has not been possible to enter into a hire-purchase agreement in South Australia.

The Consumer Transactions Act repealed the Hire-Purchase Agreements Act, 1960-1971 and originated 'consumer contracts', 'consumer credit contracts' and 'consumer mortgages'. Generally consumer contracts and consumer credit contracts refer to the purchase by an individual of goods or services, where their price and the principal amount of credit extended does not exceed \$10 000. Under a consumer mortgage the consumer becomes the owner of the goods when they are delivered to him and the credit provider holds a mortgage over the goods as security for the amount payable. Hence goods may still be repossessed if the consumer breaches certain conditions of the agreement. However, subject to the conditions stipulated in the Act, the consumer may return the goods and rescind the consumer mortgage at any time.

The Consumer Credit Act repealed the Money-lenders Act and established a Credit Tribunal to which, in certain circumstances, consumers may apply for relief from the terms of a contract. The Tribunal also acts as licensing authority for those persons and corporations deemed to be credit providers under the Act and controls the conditions of operation of 'revolving charge accounts'. Information to be included in a credit contract, including the credit charge, is specified in detail by the Act.

Details of instalment credit provided by businesses (other than banks, credit unions and insurance companies) during the years 1979-80 to 1981-82 are given in the following tables. In each of these tables the motor vehicle group includes new and used motor cars, motor cycles, caravans, motor parts and accessories. Included in household and personal goods are furniture and furnishings, domestic refrigerators, electrical goods, musical instruments, bicycles, and other household and personal goods.

Instalment Credit for Retail Sales, South Australia ^(a)

Year	Amount Financed (b)						Balances Outstanding at End of Period (d) (e)	
	Motor Vehicles, etc. (c)		Household and Personal Goods		Total			
	Finance Companies	Other Businesses	Finance Companies	Other Businesses	Finance Companies	Other Businesses	Finance Companies	Other Businesses
	\$ million							
1979-80	99.4	0.2	17.9	46.4	117.3	46.6	247.4	33.5
1980-81	102.6	0.3	19.3	51.1	121.9	51.4	257.8	36.4
1981-82	108.9	0.3	17.4	56.1	126.3	56.4	288.7	39.9

(a) The statistics of finance companies relate only to finance companies which individually or as a group of related finance companies have balances outstanding on an Australia wide basis of \$5 million or more in the prescribed types of financial agreements.

(b) Excludes hiring charges, interest and insurance.

(c) Excludes motor vehicles normally used for commercial purposes.

(d) Includes hiring charges, interest and insurance.

(e) Includes Northern Territory.

Instalment Credit for Retail Sales, Motor Vehicles etc., South Australia ^(a)

Year	Cars and Station Wagons				Other Amount Financed (b)
	Number Financed		Amount Financed (b)		
	New	Used	New	Used	
	'000		\$ million		
1979-80	5.2	21.1	27.4	63.1	9.2
1980-81	5.3	19.0	31.9	60.6	10.3
1981-82	5.2	16.9	36.7	60.9	11.6

(a) Refer footnote (a) of previous table. (b) Excludes hiring charges, interest and insurance.

FINANCE COMPANIES

In the following tables a finance company is defined as an incorporated company mainly engaged in providing to the general public (businesses as well as persons in their private capacity) credit facilities of the following types: instalment credit for retail sales, personal loans, wholesale finance, factoring, other consumer and commercial loans, financial leasing of business plant and equipment and bills of exchange. A company is mainly engaged in providing these credit facilities if 50 per cent or more of its assets consist of balances outstanding with respect to these types of financing, or if 50 per cent or more of its income is derived from such types of financing. Special classes of financial institutions such as unincorporated businesses, banks, life and general insurance companies, authorised dealers in the short-term money market, money market corporations (merchant banks), pastoral finance companies, investment companies, unit trusts, land trusts, mutual funds and management companies for such trusts and funds, pension and superannuation funds, building societies and friendly societies and credit unions are excluded.

Comprehensive information on the transactions of finance companies is available in the monthly bulletin *Finance Companies, Australia* (Catalogue No. 5614.0).

Finance Companies: Summary, South Australia ^(a)

Particulars	1979-80	1980-81	1981-82
		\$ million	
Amount financed	766.0	786.8	850.4
Collections and other liquidations ^(b)	1 027.2	1 040.7	1 097.4
Balances outstanding at end of period ^(b)	918.8	917.3	1 015.4
Leasing of business plant and equipment:			
Value of goods newly leased during period	184.6	211.2	198.7
Value of all leasing agreements at end of period ^(b) ^(c)	483.8	575.6	632.7

(a) The statistics relate only to finance companies which individually or as a group of related finance companies have balances outstanding on an Australia-wide basis of \$5 million or more in the prescribed types of financial agreements.

(b) Includes Northern Territory.

(c) Basis of valuation is 'gross receivables'.

Finance agreements may be classified according to the purpose of the loan. The comments below are offered to clarify the content of various items in the table which follows:

- (a) instalment credit for retail sales is defined in the same way as in the previous section (see page 595);
- (b) personal loans include all loans to persons in their private capacity, other than loans classified as instalment credit or finance for housing and includes loans to persons for alterations or additions, estimated to cost less than \$10 000 to existing dwelling units;
- (c) wholesale finance relates mainly to the financing of motor vehicle dealers stocks held under bailment or floor-plan schemes but includes also financing of other trading stock and the factoring of trade debts;
- (d) finance for housing includes finance for houses, flats, home units and other dwelling units (excluding hotels, hostels, etc.), loans to persons for alterations or additions, estimated to cost \$10 000 or more to existing dwelling units, and finance for the purchase of residential blocks of land;
- (e) other commercial loans include loans for the purpose of developing a tract of land into residential blocks, construction other than housing and financing of sales of 'producer' type goods.

The following table shows the amount financed and balances outstanding classified according to the purpose of the loan for the years 1979-80 to 1981-82.

Finance Companies: Amount Financed and Balances Outstanding Classified by Type of Finance Agreement, South Australia ^(a)

Particulars	1979-80	1980-81	1981-82
	\$ million		
Amount financed during year:			
Instalment credit for retail sales and personal loans (b)	173.1	188.9	190.4
Finance for housing	58.0	58.0	62.1
Wholesale finance (c) (d)	472.4	429.9	491.7
Other commercial loans	102.9	110.0	106.2
Leasing of business plant and equipment	184.6	211.2	198.7
Total amount financed (e)	950.6	998.1	1 049.1
Balances outstanding at 30 June (c):			
Instalment credit for retail sales and personal loans	338.6	376.3	418.1
Finance for housing	245.4	215.2	224.1
Wholesale finance	112.8	92.8	103.9
Other commercial loans	213.9	234.4	269.3
Leasing of business plant and equipment (f)	483.8	575.6	632.7
Total balances outstanding	1 394.6	1 494.3	1 648.0

(a) Refer footnote (a) of previous table.

(b) Personal loans include Northern Territory to June 1980.

(c) Includes Northern Territory to June 1980.

(d) Includes factoring of trade debts.

(e) Excludes amount financed for wholesale finance and personal loans in Northern Territory.

(f) Basis of valuation is 'gross receivables'.

FINANCIAL CORPORATIONS ACT

The *Financial Corporations Act 1974* enables the Reserve Bank to examine and regulate the business activities of non-bank financial intermediaries (finance companies, building societies, credit unions, etc.) and large retailers which finance their sales by instalment credit schemes.

In order to perform its monitoring and control function, the Reserve Bank is empowered by the Act to collect monthly information from each of the larger financial corporations (assets in excess of \$5 million) and from the larger retailers (balances outstanding in excess of \$5 million on instalment credit for retail sales agreements). Other financial corporations with total assets in excess of \$1 million are also required to submit information at less frequent intervals.

HOUSING FINANCE FOR OWNER OCCUPATION

A monthly statistical series was introduced in October 1975 to provide information on finance (secured by mortgage or other security, including secured personal loans and contracts of sale) approved by significant lenders to individuals for the construction or purchase of dwellings for owner occupation. Also included is housing finance provided to employees by lenders covered in the collection.

The types of lenders included in these statistics are trading and savings banks, permanent and terminating (Starr-Bowkett) building societies, finance companies,

government housing authorities and other government departments, insurance companies and credit unions. A lender is significant if over a financial year it approves loans to individuals for housing finance for owner occupation in excess of \$250 000 or if at the end of a financial year it has balances outstanding on such loans exceeding \$2 million.

Purchase of newly erected dwellings represents the purchase of dwellings which have been completed or will be completed within a period of twelve months preceding the date of purchase and where the purchaser is, or will be, the first occupant.

Purchase of established dwellings represents the purchase of dwellings which have been completed for a period of greater than twelve months preceding the date of purchase or, if completed within twelve months, where the purchaser is not the original occupant.

The term *dwelling* includes houses and other dwellings where the latter is defined as a self-contained dwelling unit other than a house. (Examples of other dwellings are flats, home units, semi-detached cottages, villa units and town houses).

The term *number of dwelling units* refers to the number of houses and other dwellings for which loans secured by contract of sale or first mortgage only have been approved.

Comprehensive statistics on housing finance for owner occupation are available in the monthly bulletin *Housing Finance for Owner Occupation* (Catalogue No. 5609.0).

Housing Finance for Owner Occupation: Number of Dwelling Units for which Loans were Approved to Individuals by Type of Lender, South Australia

Period	Banks		Permanent Building Societies(a)	Finance Companies	Government n.e.i.	Other	Total
	Savings	Trading					
CONSTRUCTION OF DWELLINGS							
1979-80	1 754	1 110	342	242	34	233	3 715
1980-81	1 345	1 018	329	153	63	159	3 067
1981-82	1 270	734	274	118	116	91	2 603
PURCHASE OF NEWLY ERECTED DWELLINGS							
1979-80	768	986	233	111	153	282	2 533
1980-81	596	610	186	32	96	184	1 704
1981-82	523	459	98	11	93	186	1 370
PURCHASE OF ESTABLISHED DWELLINGS							
1979-80	7 828	2 697	4 397	328	438	1 097	16 785
1980-81	7 215	3 582	4 377	224	514	1 268	17 180
1981-82	7 860	3 346	2 864	194	497	1 277	16 038
TOTAL							
1979-80	10 350	4 793	4 972	681	625	1 612	23 033
1980-81	9 156	5 210	4 892	409	673	1 611	21 951
1981-82	9 653	4 539	3 236	323	706	1 554	20 011

(a) Includes terminating (Starr-Bowkett) societies.

Housing Finance for Owner Occupation, South Australia

Period	Loans Approved for		Cancellations of Loans Previously Approved	Loans Advanced (a)	Loans Approved but not Advanced (a)
	Construction or Purchase of Dwellings	Alterations and Additions			
			\$'000		
1979-80	555 991	31 182	18 382	442 446	80 318
1980-81	576 978	34 171	20 902	454 844	72 245
1981-82	533 265	31 201	19 300	417 735	64 799

(a) Excludes trading banks.

Housing Finance for Owner Occupation: Value of Loans Approved to Individuals by Type of Lender, South Australia

Period	Banks		Permanent Building Societies(a)	Finance Companies	Government n.e.i.	Other	Total
	Savings	Trading					
CONSTRUCTION OF DWELLINGS							
\$'000							
1979-80	44 833	27 743	10 945	9 435	569	5 519	99 044
1980-81	36 655	27 992	11 424	6 451	1 574	4 488	88 584
1981-82	34 939	21 225	10 377	5 015	2 836	2 252	76 644
PURCHASE OF NEWLY ERECTED DWELLINGS							
\$'000							
1979-80	19 383	24 771	6 642	3 691	2 813	7 268	64 568
1980-81	15 345	15 399	6 215	1 899	1 805	5 561	46 224
1981-82	13 815	13 076	3 488	1 129	2 021	5 293	38 822
PURCHASE OF ESTABLISHED DWELLINGS							
\$'000							
1979-80	176 295	56 152	118 410	11 158	10 310	20 054	392 379
1980-81	173 099	84 932	130 931	9 610	10 095	33 503	442 170
1981-82	192 615	83 312	89 888	9 408	10 828	31 748	417 799
TOTAL							
\$'000							
1979-80	240 511	108 666	135 997	24 284	13 692	32 841	555 991
1980-81	225 099	128 323	148 570	17 960	13 474	43 552	576 978
1981-82	241 369	117 613	103 753	15 552	15 685	39 293	533 265

(a) Includes terminating (Starr-Bowkett) societies.

Further References

Additional information may be found in the following publications:

5609.0 *Housing Finance for Owner Occupation—Australia*

5614.0 *Finance Companies—Australia*

5618.0 *Credit Unions: Assets, Liabilities, Income and Expenditure—Australia*

5631.0 *Instalment Credit for Retail Sales—Australia*

5632.0 *Permanent Building Societies: Assets, Liabilities, Income and Expenditure—Australia*

REGIONAL STUDIES

NORTHERN

The region covered in this study is the Northern Statistical Division, which comprises the Corporations of the Cities of Port Augusta, Port Pirie and Whyalla and the Municipalities of Jamestown and Peterborough: the District Councils of Carrieton, Crystal Brook, Georgetown, Gladstone, Hallett, Hawker, Jamestown, Kanyaka-Quorn, Laura, Mount Remarkable, Orroroo, Peterborough and Pirie; and that part of the State outside of the dog-proof fence and pastoral block boundaries to the borders of Western Australia, Northern Territory, Queensland and New South Wales.

The Division has an area of 807 869 square kilometres which is eighty-two per cent of the State. The economically important 'Iron Triangle' lies within the Division and sixty-three per cent of the Division's population is resident in the cities of Port Augusta, Port Pirie and Whyalla.

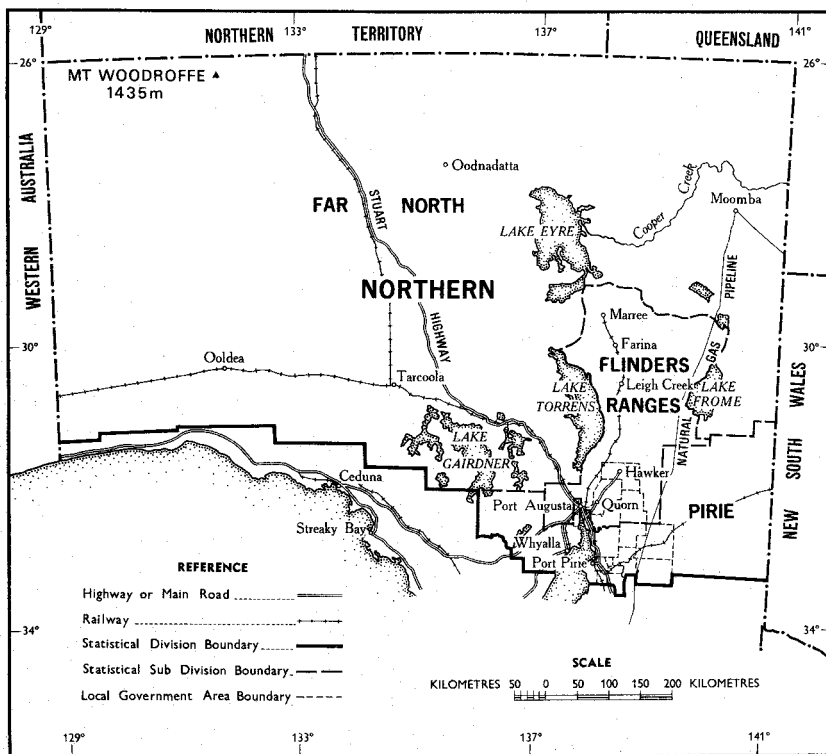
National highways to the north and west of the continent traverse parts of the area. The location and boundaries of the Division are shown on the map on the next page.

The estimated resident population of the Northern Statistical Division on 30 June 1982 was 94 760 persons, or 7.1 per cent of the State total.

Physical Features

The western half of the Division is largely occupied by a series of low hills, including the Warburton, Stuart, Denison, Peake and Everard Ranges, stretching from the Flinders Ranges in the central north of South Australia to the somewhat higher Musgrave Ranges in the far north-west. Mount Woodroffe (1 435 metres) the highest point in the

NORTHERN STATISTICAL DIVISION AND SUBDIVISIONS



State, is located here. Surrounding the northern Flinders Ranges are a number of vast lakes which are filled with water only after particularly heavy rainfall and normally appear as shallow depressions with a salt or clay encrusted surface.

Lake Eyre, the largest of these, is twenty metres below sea level and is fed by a series of intermittently flowing rivers including the Finke and Diamantina Rivers and Strzelecki and Cooper Creeks. To the south of Lake Eyre are Lakes Gairdner, Frome and Torrens, the last named being 250 kilometres in length. To the east of Lake Eyre are Lakes Gregory, Blanche and Callabonna.

Northern Division contains two large areas of extremely low rainfall, the Great Victoria Desert and Sturt's Stony Desert. The southern portion of the Simpson Desert lies astride the Northern Territory—South Australia border.

Climate and Meteorology

The Northern Division is the largest of the statistical divisions of South Australia, comprising more than three-quarters of the State. Most of the Division has an arid climate with hot summers, cool winters and low, unreliable rainfall. However, higher rainfalls are recorded over the Flinders Ranges where the climate can be described as semi-arid with hot summers and cool winters. A small area in the southern Flinders Ranges has a more temperate climate than most of the Division with warm to hot summers and cool, wet winters.

Rainfall

Average annual rainfall varies from above 600 mm along the summit of the Flinders Ranges between Bundaleer and Wirrabara to less than 150 mm over the Lake Eyre basin. Most of the Division receives less than 250 mm per year. However, the Flinders Ranges have the effect of extending a strip of higher rainfall well to the north. The Musgrave Ranges in the north-west of the Division also have the effect of increasing the rainfall in that area. Monthly and annual average rainfall totals for selected stations are listed in the table below, together with data on the average number of days of rain.

Average Rainfall and Days of Rain: Selected Stations, Northern

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
AVERAGE RAINFALL (MILLIMETRES)													
Cooper Pedy	18	25	11	7	15	14	7	10	9	16	12	13	157
Cook	10	13	16	16	14	18	12	15	12	17	15	14	172
Ernabella	41	35	25	20	20	17	13	15	11	24	22	29	272
Erudina	22	24	19	13	17	13	12	10	11	16	16	16	189
Hawker	20	20	15	20	32	41	33	33	27	23	23	19	306
Innaminka	30	22	23	12	13	13	9	7	7	11	11	16	174
Jamestown	21	21	19	32	47	54	55	56	52	46	34	27	464
Leigh Creek	28	24	15	17	21	14	16	15	16	18	14	17	215
Oodnadatta	23	31	14	12	16	13	10	10	10	13	11	13	176
Port Augusta	15	17	17	19	26	27	20	23	22	23	18	16	243
Port Pirie	18	19	17	29	40	41	33	35	35	34	23	22	346
Tarcoola	11	21	10	10	17	17	12	16	14	17	15	13	173
Whyalla	19	25	16	19	28	25	22	25	26	27	23	20	275
Wirrabara	21	22	21	35	51	59	58	59	52	46	32	24	480
Yongala	21	21	16	26	37	41	39	44	39	34	28	24	370
Yunta	20	22	15	16	22	22	16	19	18	22	20	19	231
AVERAGE NUMBER OF DAYS OF RAIN													
Cooper Pedy	2	2	2	2	3	3	2	3	2	3	3	2	29
Cook	2	3	3	3	5	6	5	5	4	4	4	3	47
Ernabella	3	3	3	3	3	3	2	3	2	4	4	4	37
Erudina	2	2	2	2	2	3	3	2	2	3	2	2	27
Hawker	2	2	2	3	5	7	7	6	5	5	3	3	50
Innaminka	1	1	1	1	1	1	1	1	1	1	1	1	12
Jamestown	3	3	3	6	9	12	12	12	10	8	6	4	88
Leigh Creek	3	3	2	3	4	5	5	4	5	4	4	3	45
Oodnadatta	3	3	2	2	3	3	2	3	3	3	3	3	33
Port Augusta	2	2	3	4	6	8	8	8	6	6	4	3	60
Port Pirie	3	2	3	5	8	10	10	10	8	7	5	4	75
Tarcoola	2	2	2	2	4	5	4	4	3	4	3	2	37
Whyalla	3	3	3	4	7	7	8	8	6	6	4	4	63
Yongala	4	3	4	6	10	12	13	13	10	8	6	5	94
Yunta	3	2	2	3	4	5	5	5	4	4	3	3	43

Although the southern districts of South Australia have a winter rainfall maximum, within the Northern Division this winter maximum is confined to the Flinders Ranges. The distribution of average monthly rainfall is nearly uniform over other parts of the Division.

Rainfall over most parts of the Division is too low to support agriculture. However, over the southern Flinders Ranges rainfall is effective for up to five months of the year between May and September. The average agricultural growing season decreases to less than three months north of Quorn and Orroroo.

Temperature

Average maximum and minimum temperatures recorded at Coober Pedy, Cook, Oodnadatta, Port Augusta, Port Pirie, Whyalla, Yongala and Yunta are shown in the following table.

Average Temperature at Selected Stations, Northern

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
AVERAGE MAXIMUM TEMPERATURE (°CELSIUS)												
Coober Pedy	36.2	35.3	32.7	27.7	21.8	18.7	18.7	20.7	24.2	28.8	32.0	34.7
Cook	32.9	32.0	30.0	25.8	21.7	18.7	18.1	20.0	23.5	26.4	29.6	31.6
Oodnadatta	37.5	36.3	33.7	28.3	22.9	19.8	19.5	21.7	26.1	30.2	33.6	36.2
Port Augusta	32.1	31.6	28.9	25.2	20.2	17.5	17.1	18.2	21.5	25.0	28.1	30.0
Port Pirie	31.8	31.5	29.4	24.7	20.2	17.1	16.4	17.9	21.3	24.4	27.5	30.0
Whyalla	28.7	28.4	26.5	24.0	20.1	17.7	16.9	18.2	20.6	23.3	25.6	26.9
Yongala	30.5	29.7	27.1	21.7	16.9	13.5	12.7	14.2	17.8	21.6	25.5	28.5
Yunta	32.7	31.9	29.0	24.0	18.7	15.7	15.3	17.1	20.6	24.1	28.1	31.1
AVERAGE MINIMUM TEMPERATURE (°CELSIUS)												
Coober Pedy	20.5	20.5	17.9	14.2	9.7	7.0	6.3	7.2	9.7	13.3	16.2	18.9
Cook	15.1	15.2	13.8	10.9	7.7	5.4	4.4	5.1	7.1	9.5	11.9	13.7
Oodnadatta	22.6	22.0	19.1	14.2	9.7	6.7	5.8	7.2	11.0	15.0	18.2	20.9
Port Augusta	19.7	19.8	17.4	14.2	10.6	8.2	7.3	8.1	10.4	13.2	15.8	17.8
Port Pirie	17.2	17.5	15.8	12.9	10.4	8.3	7.6	8.0	9.5	11.7	14.0	16.0
Whyalla	18.7	19.0	17.2	14.2	10.7	8.5	7.4	8.1	10.0	12.6	14.9	16.7
Yongala	13.2	13.1	10.7	7.2	4.5	2.8	2.2	2.5	4.0	6.1	8.9	11.3
Yunta	15.2	15.2	12.6	9.2	5.8	4.1	3.1	3.7	6.1	8.7	10.8	13.5

Average maximum temperatures range from 29°C to 32°C in the summer months near the coast to more than 36°C inland. Spencer Gulf has a moderating influence on temperatures along its western coast where prevailing south-easterly winds blow onshore, thus average summer maximum temperatures at Whyalla are about 3°C lower than those recorded at Port Augusta and Port Pirie. An extreme maximum temperature of 50.7°C has been recorded at Oodnadatta in January. During winter average maximum temperatures range from 13°C in the highlands of the southern Flinders Ranges to 20°C inland.

Average minimum temperatures range from 13°C to 20°C in summer and from 2°C to 8°C in winter. Extreme minimum temperatures of less than 0°C are often recorded especially in some inland and highland areas. An extreme value of -8.2°C has been recorded at Yongala.

Frosts

Light frosts are often experienced between May and October but can occur as early as March and as late as December in some susceptible areas, particularly around Yongala and Yunta.

Heavy frosts are generally confined to the period between May and September.

Winds

In summer the prevailing wind direction at 9 am is from the southeast, while at 3 pm it tends more southerly. In winter the prevailing wind direction over southern parts of the division is north-westerly. However, winds over northern parts are variable.

Evaporation

Average annual evaporation as recorded by a Class 'A' pan fitted with a birdguard ranges from above 3 800 mm in the Lake Eyre Basin to about 2 400 mm in the south.

Thunder, Hail and Snow

Thunderstorms can be experienced at any time of the year. However, they are infrequent and mainly restricted to the warmer months between October and March. They are also more common in elevated areas.

Hail is a comparatively rare phenomenon, mainly restricted to winter and spring, but it has been reported in other seasons.

Snow falls are rare. They are usually confined to the elevated parts especially around Yongala and Orroroo during some winters.

Dust storms

Dust storms are most frequent following very dry periods and droughts which restrict plant growth. They usually occur in spring or summer.

Fogs

Fogs are mainly restricted to the cooler months of April to October and are more common in the elevated areas of the division.

Soils

The soils of the Northern Statistical Division are not as well known as are the soils of the rest of the State, but there is an extension of country similar to that found in the Lower North Division (*see South Australian Year Book* 1981, page 591) to Jamestown and beyond. This extension, of sub-parallel hilly ridges of hard rocks alternating with broad valleys of softer rocks and thus deeper soils, merges northwards into the Flinders Ranges. The soils of both these hilly ridges and the Flinders Ranges are mostly shallow (less than twenty five to thirty centimetres deep) and loamy, and are underlain by weatherine rock that may outcrop extensively. The broader valleys are the site of the main agricultural activities in the Division which everywhere else is essentially pastoral country. The soils of these valleys are mainly hard red duplex soils with loamy sand to sandy loam and loam surface soils over red-brown clay subsoils. Associated are areas of grey and brown cracking clays. The red duplex soils include some similar to the Urrbrae loam of the Waite Agricultural Research Institute, the original red-brown earth, while others are similar to the Belalie loam of the Jamestown area. The properties of this last soil are controlled by its high content of sodium, whereas the Urrbrae is not. As in the Lower North, calcareous earths (Mallee soils) are associated and also form a soil link with the soils of the Murray Lands Division. These calcareous earths also occur extensively in the country between this Division and that of Eyre. Northwards the calcareous earths cover extensive areas in the vicinity of the salt lakes (playas) such as Lakes Gairdner and Torrens, and extend as far north as Lake Eyre. Some are fairly shallow soils but there are also tracts of dunes with deep calcareous brownish sands.

Another type of country occurring in the vicinity of the salt lakes may be described as stony rolling downs. The soils are rather salty, with sodium chloride (common salt) in some surface soils, notably the duplex forms, and also with calcium sulphate (gypsum) and/or calcium carbonate in the subsoils at a shallow depth. Two soils form an intimate soil micro-association on the downs. The more extensive is a red duplex soil similar to the hard red duplex soils already mentioned, but with much thinner surface soils, often only five to seven centimetres thick, and thinly crusted on the immediate surface but soft underneath due to their high salt content. They may be termed crusty red duplex soils.

The associated soil is a red cracking clay that occupies very shallow depressions (claypans) dotted over the surface of the downs. These soils grow most of the vegetation following adequate rain, and are relatively stone free, whereas most of the surface of the duplex soils is covered by a stone pavement. Correctly managed, these make useful pastoral areas.

The broad sweep of the stony downs strikes north-west from the top of Spencer Gulf and the adjacent Flinders Ranges. To the north-east and also to the west of the stony downs are the extensive sand deserts of great longitudinal dunes of red siliceous sands. In the north-east, the renowned Simpson Desert occupies part of the Great Artesian Basin. As well as the deep red sands of its dunes, there are grey cracking clays in the corridors between the dunes. They are an extension of the channel country so prominent in south-western Queensland, and are associated with the festooned courses of Coopers Creek, the Warburton-Diamantina River, and Strzelecki Creek. To the west, the Great Victoria Desert occupies part of the Officer Basin. There are calcareous earths and calcareous loams in the corridors between the dunes of deep red sands, notably in its southern portion where dry salt lakes, such as Lake Maurice, are found. Southwards a belt of calcareous earths dominates the dune and swale landscape. This suddenly gives way to the shallow powdery calcareous loams of the Nullarbor Plain. These calcareous loams overlie the calcreted surface of the Miocene limestones that are often cavernous below the ground surface.

North of the Great Victoria Desert, in the north-west of the State, broad, gently sloping plains flank the majestic Musgrave Ranges. The soils here are mainly massive red earths developed by deep weathering in warm humid climates well before the Recent arid conditions set in. These soils have very low reserves of nutrients and are quite unlike any other soils in the State. However, they are extensive across the whole of central and northern Australia. On the Musgrave Ranges themselves only shallow loamy soils occur among extensive rock outcrop.

Reference

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Vegetation

The Northern Division of South Australia forms part of the great central arid zone of Australia. The Great Victoria, Simpson and Sturt's Stony Deserts comprise a large proportion of the region, while the Lake Eyre Basin and Nullarbor Plain make up most of the remainder. Because of the size, diversity and remoteness of the region, much is still to be learned about the vegetation.

The type of vegetation to be found in an area depends on a number of factors such as soil type, availability of water and nutrients and climatic conditions. As these attributes vary, so does the vegetation, and it is common to refer to these different plant communities in terms of the dominant species. In the Northern Division the major plant communities can be referred to as: 'spinifex' or porcupine grass; saltbush and bluebush; mulga; myall; mallee; coolibah; and samphire.

Porcupine grass is associated with the deserts of the region. In the Great Victoria Desert the porcupine grass (*Triodia basedowii*) carries scattered stands of desert gums (*Eucalyptus gongylocarpa*, *E. pachyphylla*, *E. pyriformis*), and occasional stands of desert oak (*Casuarina decasneana*).

Porcupine grass also dominates parts of the Lake Eyre Basin with mulga (*Acacia aneura*) and bladder saltbush (*Atriplex vesicaria*).

In the Simpson and Sturt's Stony Deserts, sandhill cane grass (*Zygochloa paradoxa*) grows on the sandy dune ridges, while porcupine grass is confined to the more stable interdune and plains areas. The interdune area may contain scattered shrubs of various species of *Acacia*, *Eremophila*, *Grevillea* and *Hakea*.

The Nullarbor Plain is a huge, treeless expanse dominated by bladder saltbush (*Atriplex vesicaria*) and bluebush (*Kochia sedifolia*). Silver saltbush (*A. rhagodioides*) dominates large areas of the Lake Eyre Basin south to the top of the Flinders Ranges, as do communities of bladder saltbush (*A. vesicaria*) with *Ixiolaena leptolepis*, *Bassia* species, or low bluebush (*Kochia astrotricha*).

Mulga (*Acacia aneura*) forms the dominant community with umbrella mulga (*A. brachystachya*) to the north-east and south-east of the Great Victoria Desert, and extends south to Tarcoola.

Myall (*A. sowdenii*) is more common south of the Great Victoria Desert where it is found with some mulga and black oak (*Casuarina cristata*). Mulga, interspersed with other wattles (*A. linophylla*, *A. ramulosa*) fringes the eastern edge of Lake Torrens.

Red mallee (*Eucalyptus socialis*) and yorrell (*E. gracilis*) become dominant at the top of Eyre Peninsula.

The complex of drainage channels in the Lake Eyre Basin, including the Diamantina and Warburton Rivers and Coopers Creek to the east, and the Macumba and Neales Rivers to the west, are fringed by woodlands, mainly of coolibah (*E. microtheca*) with gidya wattle (*Acacia cambagei*) and river red gums (*E. camaldulensis*) with an understorey of old-man saltbush (*Atriplex nummularia*).

On the edges of the salt lakes and in other saline habitats, the samphires (*Arthrocnemum* spp.) form a low carpet, but no vegetation survives on the salt crusts of the lakes.

The climate of the Northern Division is such that seasons have little meaning; drought may persist for years, and what rain there is may be sparse and erratic. However, after heavy rains, which may occur at any time of the year, a wealth of ephemeral herbs complete their rapid life-cycles before the next period of drought. After such rains, bare ground becomes carpeted with grasses, flowers of *Helichrysum*, *Brachyscome*, *Calcephalus*, *Calotis* and other composites, the seeds of which have lain inert, perhaps for years, since the last substantial rainfall.

Wildlife

Because most of the vast area of the Northern Division is inhospitable and remote, it is difficult to assess accurately the status of many species occurring in the area. A number of species thought to be extinct have been recently rediscovered. Many species, particularly of reptiles, have no common names and even trained observers may have difficulty with identification. In arid regions some species may be common, but infrequently seen because of nocturnal or burrowing habits, a limited and remote range rarely visited by humans, or may only be active in response to erratic climatic conditions like heavy rainfall. Consequently, knowledge of wildlife in the region is much less certain than in other Divisions of the State.

Amphibians

Despite the aridity of the Northern Division, several species of frog are found here. Two species of tree frog, the desert tree frog (*Litoria rubella*) and green tree frog (*Litoria caerulea*) are found; the former along watercourses, and the latter along watercourses but also common in association with man-made tanks, dams and in bathrooms. To escape dry conditions burrowing frogs (*Neobatrachus centralis*, *Cyclorana platycephalus*) bury themselves beneath the ground, emerging to breed rapidly in temporary water after

rains. Similarly, in wetter areas, the spotted grass frog (*Limnodynastes tasmaniensis*) shelters under rocks and logs, emerging to breed after rain in temporary or permanent water. One species of frog (*Crinia riparia*) is known only from the Flinders Ranges.

Reptiles

A number of species of gecko live in the region. These small nocturnal lizards have cat-like pupils which adjust to available light. Geckoes often have fat, knobbly tails which act as food storage organs. Most geckoes are beautifully marked with cryptic patterns.

A few species of *Pygopodidae* exist in the region. These lizards are legless, superficially resembling snakes. They are not often seen: probably the most often encountered is Burton's snake-lizard (*Lialis burtonis*).

The dragon lizards (*Agamidae*) are diurnally active lizards, and include the mallee dragon (*Amphibolurus fordii*); the red-barred dragon (*A. vadanappa*) found only in the Flinders and Willouran Ranges; and the dwarf bearded dragon (*A. minor*). One species, the Lake Eyre dragon (*A. maculeosus*) is known only from the harsh environment on the fringes of Lake Eyre.

The thorny devil (*Moloch horridus*) is a distinctive lizard of the region, and belies its scientific name by being a harmless, slow-moving ant-eater.

The goanna lizards have their largest species in the perentie (*Varanus giganteus*), which can reach a length of 2.5 metres, and lives in rocky areas in deep crevices. Another goanna of the region is Gould's goanna (*V. gouldii*).

Many species of skink can be found in a wide variety of habitats in the region. The best known are the larger species, such as the western blue-tongue (*Tiliqua occipitalis*) and the stumpy-tail (*Trachydosaurus rugosus*).

Non-venomous snakes of the region include two members of the python family: the children's python (*Liasis childreni*) and the carpet snake (*Morelia spilotes*), both of which kill prey by constriction. The yellow-faced whip snake (*Demansia psammophis*) and bandy bandy (*Vermicella annulata*) are two attractively marked species of the region, and are mildly venomous. There occur a number of venomous species, of which the desert death adder (*Acanthophis pyrrhus*) is potentially the most dangerous, in that it relies on camouflage rather than flight to escape its enemies, making it liable to be trodden on unwittingly. However, the highly venomous gwardar (*Pseudonaja nuchalis*) and king brown snake (*Pseudechis australis*) avoid humans.

Birds

The emu (*Dromaius novaehollandiae*) is the largest bird native to the region, although the introduced ostrich (*Struthio camelus*), found near Port Augusta is larger. Ostriches were once farmed for plumes for hats and farm birds were the source of the feral population.

Waterbirds such as ducks, swans, cormorants, ibis, herons, gulls and pelicans are common in the region when prolonged heavy rains fill the normally dry salt lakes.

The following birds of prey are examples of species found in the region: black kite (*Milvus migrans*), whistling kite (*Haliastur sphenurus*), brown goshawk (*Accipiter fasciatus*) and nankeen kestrel (*Falco cenchroides*). The most spectacular raptor of the area is the wedge-tailed eagle (*Aquila audax*).

The mallee fowl (*Leipoa ocellata*), which builds large nest mounds and incubates its eggs in the heat of decaying vegetable matter, is found in suitable habitats. The Australian bustard (*Eupodotis australis*), little quail (*Turnix velox*) and black-tailed native hen (*Tribonyx ventralis*) are ground dwellers typical of arid lands.

The common bronzewing (*Phaps chalcoptera*) and diamond dove (*Geopelia cuneata*) are members of the pigeon family occurring in the region, and like all seed-eating birds, require water regularly.

The parrot family is well-represented in the inland of the State, the most commonly seen species being the galah (*Cacatua roseicapillus*), little corella (*Cacatua sanguinea*), mulga parrot (*Psephotus varius*) and budgerigar (*Melopsittacus undulatus*), which is green in the wild state. The Major Mitchell, or pink cockatoo (*Cacatua leadbeaterii*) is one of Australia's most beautiful birds, and although rare, can be seen in some numbers in the region. The night parrot (*Geopsittacus occidentalis*) was thought to be extinct, but in 1979 a reliable sighting of three specimens between Lake Gregory and Gidgealpa was recorded.

Passerine birds are also well represented in the area, and the range of familiar urban birds such as the magpie lark (*Grallina cyanoleuca*), willy wagtail (*Rhipidura leucophrys*), magpie (*Gymnorhina tibicen*) and white-plumed honeyeater (*Meliphaga penicillata*) extends to the far north of the State.

The region also contains species of fairy wrens, grass wrens, robins, chats, finches, honeyeaters, swallows and martins, cuckoo shrikes, thornbills, pardalotes, butcher birds and corvids.

The Eyrean grass-wren (*Amytornis goyderi*) is confined to northern South Australia and was rediscovered in 1961; the last sighting before that was in 1874.

Mammals

One member of the monotremes, the echidna (*Tachyglossus aculeata*) inhabits the region.

A number of small, carnivorous marsupials exist in the area: the kowari (*Dasyuroides byrnei*), mulgara (*Dasyercus cristicaudata*) and fat-tailed dunnart (*Sminthopsis crassicaudata*).

The most conspicuous mammals of the Division are the kangaroos: the red kangaroo (*Megaleia rufa*), western grey kangaroo (*Macropus fuliginosus*) and euro (*Macropus robustus*), all of which are common. The yellow-footed rock wallaby (*Petrogale xanthopus*) is rare in Australia: its numbers are concentrated in the Flinders and Gammon Ranges.

Another rarity, the hairy-nosed wombat (*Lasiorhinus latifrons*) exists in some numbers on the Nullarbor Plain.

The Northern Division includes habitats of the rarely seen marsupial mole (*Notoryctes typhlops*).

Native placental mammals are represented by bats, the dingo (*Canis familiaris dingo*) and hopping mice such as Mitchell's hopping mouse (*Notomys mitchelli*) and spinifex hopping mouse (*Notomys alexis*).

Introduced mammals of the region include the rabbit (*Oryctolagus cuniculus*), fox (*Vulpes vulpes*), feral cat (*Felis cattus*), brumby, or feral horse (*Equus caballus*), feral donkey (*Equus asinus*), feral camel (*Camelus dromedarius*) and feral goat (*Capra hircus*).

History and Exploration

It is estimated that the Aboriginal population of the Northern Division at the time of white settlement was about 3 000 (of a total State population of 12 000). The groups were nomadic and widely scattered. The major tribes and their approximate locations were: Wongkanguru in the central far north; Nukunu in the area between Port Augusta, Quorn and Crystal Brook; Pilatapa between Wootana and Lakes Blanche and Callabona; Ngadjuri near the site of Carrieton; Pangkala, which ranged from present-day Cowell to

Hawker; Jadlaura and Kujani in the southern Flinders Ranges; Pitjantjatjara in the Musgrave Ranges, and Wirangu and Kukata on the Nullarbor Plain.

Matthew Flinders and the crew of *Investigator* were the first Europeans to record a journey into what is now the Northern Statistical Division. In March 1802 Flinders landed his cutter in the upper reaches of Spencer Gulf and walked into the interior a few miles north of the present site of Port Augusta. He had named, on the way, Hummocky Hill, where Whyalla now stands, and Point Lowly; he also gave names to Mount Arden and Mount Brown in the 'ridge of high rocky and barren mountains' which were later called the Flinders Ranges in his honour.

Edward John Eyre made several journeys into South Australia's far north. On the first, in the autumn of 1839 he travelled along the western side of the Flinders Ranges and camped at Depot Creek, where there was permanent spring water, twenty-five kilometres from the head of the Gulf and a little south of Mount Arden. In August of the same year he took a further expedition as far as Lake Torrens. Charles Sturt (with John McDouall Stuart in his party) journeyed along the Murray and Darling Rivers and skirted Lake Blanche as he crossed the north-east portion of the State. Before entering the Northern Territory on his unsuccessful attempt to reach the centre of the continent, he discovered a desert which was subsequently named Sturt's Stony Desert.

In 1846 J.A. Horrocks of Penwortham penetrated the country to the west of Beda Hill at the lower end of Lake Torrens.

B.H. Babbage left Adelaide in February 1857 to explore the country at the head of Spencer Gulf, searching primarily for gold on behalf of the South Australian Government. He travelled north-west and west of Lake Torrens, and north of the Gawler Ranges, but his progress was slow and Major P.E. Warburton was sent to take over his task.

John McDouall Stuart made several expeditions into the region commencing in 1858, notably from Chambers Creek to the centre of Australia and culminating in his successful trip to the Indian Ocean in 1862. A.C. Gregory, searching for Ludwig Leichhardt, visited Cooper and Strzelecki Creeks in 1858.

Ernest Giles crossed the north-western sector of South Australia on his western traverses of 1875-76.

Economic Development

The Chambers brothers, who were sponsors of several of E.J. Eyre's explorations, settled Oratunga station (now Moolooloo) in the 1850s. They had already selected Pekina run, with headquarters near present-day Ororoo, about 1846. W.J. and J.H. Brown established Booboowowie station in 1843 and soon afterwards Canowie further north. Andrew Tennant's Mount Arden station commenced operating in 1845.

At that time a person wishing to take up any unoccupied Crown land for pastoral purposes was required to hold a licence from the Surveyor-General. The first lease west of Spencer Gulf was secured by Charles Swinden over the country now known as Lincoln Gap, in 1857. James Chambers settled Point Lowly station in the same year. It was in this area in 1860 that Edward Stirling liberated a few pairs of rabbits 'for sporting purposes'.

Severe droughts occurred in South Australia in the years 1864-67. In the spring of 1865 G.W. Goyder, the State's Surveyor-General, was sent to examine the pastoral country to determine 'the line of demarcation between that portion of the country where the rainfall has extended and that where the drought prevails'. He mapped the southern limits of the drought, reporting that north of this line (Goyder's Line of Rainfall) the soils were capable of producing cereal crops but the rainfall was unreliable.

By 1867 Goyder was prepared to tell a parliamentary enquiry that 'as far as we know of growing cereals at present, outside the line is only fit for pastoral purposes'.

But the farmers, now that the easily developed Adelaide Plains had been taken up, found themselves restricted by uncleared land and the sheep leases. Encouraged by rising grain yields and prices, they pressed for new land laws which would operate in their interests. In 1869 the Waste Lands Amendment Act, popularly known as the 'Strangways Act', was passed, making easier the selection of small farming blocks from land normally leased for grazing. In new 'Agricultural Areas' land could be purchased on a small deposit but the selector had to improve the holding and reside there until he had paid for it.

The State's population increased rapidly in the late 1860s, and with it expanded the land available for credit selection. Eight new counties were proclaimed in the Northern Division between 1869 and 1877. The framework of farm lands north of Goyder's Line was by then nearly twice as great as the entire frontier south of the Line settled since 1869.

Townships grew up quickly to serve the new grain areas. Georgetown was surveyed in 1869; Jamestown, named for the State's Governor, Sir James Fergusson, was proclaimed in 1870, Gladstone in 1871, Laura and Appila came into existence in 1872 and Crystal Brook and Wirrabara in 1874. The town and port of Port Pirie was surveyed in 1871. The railway from Quorn to Farina was completed in 1882.

The drought returned in 1880-81. The following season was also poor. In 1883-84 forfeits and surrenders of selections totalled nearly 250 000 hectares. In 1884 selectors were allowed to convert their holdings from credit purchases to long-term leases. The year marked the end of the agricultural advance, and the beginning of the re-adjustment of the frontier into a broad agricultural-pastoral zone, following approximately Goyders Line of Rainfall.

On the western side of Lake Torrens in the north-west sector of the State lack of adequate rainfall ensured that progress was slow. The further-most occupied country in 1870 was Yudnapinna station, less than 200 kilometres from Port Augusta. This area has never seen competition between squatters and grain-farmers for the available land, and the predominant rural activity has remained pastoral.

The Transcontinental rail link was completed in 1917. Port Augusta, a wool port since the 1860s, became an important railway junction. Whyalla, the largest city in the region, was established as a port for iron ore from the Middleback Ranges, and has become a steel-making centre. Maralinga, near Ooldea, was the site of atomic tests in the 1950s and Woomera, once an establishment of the European Launcher Development Organisation, has a joint USA/Australia Defence Space Communications Station.

Port Pirie is the site of the world's largest zinc smelter, which treats lead, silver and zinc ores from Broken Hill, in New South Wales.

Minerals

Copper was mined at Blinman from 1862 until the early 1900s and is still produced by open-cut methods at Mount Gunson, 145 kilometres north-west of Port Augusta. It is used in the production of copper sulphide concentrates for export. Uranium was discovered at Radium Hill in 1906, but the mine was exhausted by 1962. A uranium deposit at Mount Painter, found in 1910, was worked until 1934.

At Olympic Dam, on Roxby Downs, \$60 million is being spent in evaluating an ore body containing copper, uranium, gold and rare earths. There are also uranium deposits at Honeymoon, and on the Lake Frome plains at Beverley.

In the Cooper Basin exploration drilling is expected to extend the long-term supply of gas and liquids from Moomba and Gidgealpa. Natural gas from the basin has been used in Adelaide since 1969, and a pipeline to transport crude oil condensate has been constructed at Stony Point near Whyalla. It is estimated there are reserves totalling 90 million barrels of crude oil and a further 90 million barrels of liquid petroleum gas in the Cooper Basin. Oil shows are also being explored in the Officer Basin, in the State's north-west.

Iron ore has been mined at Iron Knob and Iron Baron in the Middleback Ranges of upper Eyre Peninsula, from 1900 for use as flux in the Port Pirie smelters, and from 1915 for iron and steel manufacture at Newcastle in New South Wales. It has since been used for that purpose at Port Kembla, New South Wales and at Whyalla.

There is an occurrence of kaolin at Woocalla.

Precious opal was discovered in 1915 at Coober Pedy, and at Andamooka and Mintabie in the early 1930s. Annual production from South Australian fields is estimated at more than \$30 million. Talc is mined at Mount Fitton in the Flinders Ranges. Barite is produced from finds in the same area at Oraparinna, and other deposits have been found in the Olary district and at Pernatty Lagoon. Limestone has been proved on the Nullarbor Plain, but not yet exploited. Salt is produced near Port Augusta and Whyalla.

Hard black steaming grade coal has been discovered at Lake Phillipson in the Arkaringa Basin 450 kilometres north-west of Port Augusta. The Leigh Creek Coalfield has operated since 1944. Two million tonnes of coal are taken annually from the mine, and reserves of nearly 100 million tonnes have been outlined in the Telford Basin, in which the coalfield is located.

Population

The estimated number of persons resident in Northern Division at 30 June 1982 was 94 760, representing 7.1 per cent of the State total. Slightly more than eighty per cent of the population of the division is in towns where 200 or more persons live.

The following table shows the estimated resident population since 1976 in Northern Division and South Australia, using June 1982 boundaries.

Estimated Resident Population, Northern and South Australia

Area	At 30 June		
	1976	1981 (a)	1982 (a)
Carrieton (DC)	240	220	200
Crystal Brook (DC)	1 780	1 690	1 710
Georgetown (DC)	820	730	710
Gladstone (DC)	1 110	950	950
Hallett (DC)	860	770	760
Hawker (DC)	640	550	590
Jamestown (DC)	1 050	1 020	990
Jamestown (M)	1 270	1 360	1 360
Kanyaka-Quorn (DC)	1 370	1 370	1 410
Laura (DC)	710	740	740
Mount Remarkable (DC)	3 110	3 210	3 290
Orroroo (DC)	1 090	1 080	1 050
Peterborough (DC)	370	350	350
Peterborough (M)	2 790	2 700	2 770
Pirie (DC)	1 410	1 420	1 330
Port Augusta (C)	14 530	15 870	16 190

Estimated Resident Population, Northern and South Australia *continued*

Area	At 30 June		
	1976	1981(a)	1982(a)
Port Pirie (C)	15 830	16 140	16 260
Whyalla (C)	34 010	31 130	31 020
Unincorporated	12 770	12 840	13 080
Total Northern	95 750	94 120	94 760
South Australia	1 274 100	1 319 300	1 331 400

(a) Preliminary.

(C) City (DC) District Council (M) Municipality

The major urban centres in Northern are in the 'Iron Triangle'. Whyalla had a Census Count of 29 962 persons at 30 June 1981, Port Augusta 15 254 persons, and Port Pirie 14 695 persons. The next largest centre is Peterborough with 2 575 persons counted at Census Date.

Age Distribution: Persons in Northern and South Australia, 30 June 1981 ^(a)

Age Group (Years)	Northern		South Australia	
	Persons	Per Cent	Persons	Per Cent
0-9	16 198	17.6	193 975	15.1
10-19	17 806	19.3	226 548	17.6
20-29	16 456	17.9	214 091	16.7
30-39	13 521	14.7	186 889	14.5
40-49	9 821	10.7	133 684	10.4
50-59	8 864	9.6	138 627	10.8
60-69	5 620	6.1	105 965	8.3
70 and over	3 737	4.1	85 254	6.6
Total	92 023	100.0	1 285 033	100.0

(a) Census counts not adjusted for underenumeration.

Northern has a slightly lower proportion of overseas born persons than the State.

Birthplace: Persons in Northern and South Australia, 30 June 1981 ^(a)

Country of Birth	Northern		South Australia	
	Persons	Per Cent	Persons	Per Cent
Australia	73 443	79.8	979 675	76.2
Overseas born:				
New Zealand	448	0.5	6 618	0.5
UK and Ireland	10 306	11.2	152 087	11.8
Germany	997	1.1	14 755	1.1
Greece	663	0.7	14 206	1.1
Italy	857	0.9	31 323	2.4
Lebanon	4	—	1 192	0.1
Malta	84	0.1	2 184	0.2

Birthplace: Persons in Northern and South Australia, 30 June 1981 ^(a) (continued)

Country of Birth	Northern		South Australia	
	Persons	Per Cent	Persons	Per Cent
Overseas born (continued):				
Netherlands	669	0.7	10 646	0.8
Poland	210	0.2	6 786	0.5
Yugoslavia	745	0.8	9 066	0.7
Europe n.e.i.	1 050	1.1	18 647	1.5
Asia n.e.i.	861	0.9	16 840	1.3
America	642	0.7	4 832	0.4
Africa	182	0.2	3 939	0.3
Oceania n.e.i.	66	0.1	1 359	0.1
At sea, and not stated	796	0.9	10 878	0.8
Total overseas born	18 580	20.2	305 358	23.8
Total	92 023	100.0	1 285 033	100.0

(a) Census counts not adjusted for underenumeration.**Births and Deaths**

The following two tables compare the number of births, birth rate, number of deaths and death rate for the Northern Statistical Division and South Australia.

**Live Births: Number Registered and Rate
Northern and South Australia**

Year	Northern		South Australia	
	No.	Rate (a)	No.	Rate (b)
1977	1 640	17.20	19 260	14.97
1978	1 515	16.11	18 558	14.30
1979	1 481	15.85	18 478	14.19
1980	1 521	16.25	18 499	14.14
1981	1 631	17.33	19 351	14.67

(a) Rate per 1 000 resident population at 30 June.*(b)* Rate per 1 000 mean population.

**Deaths: Number Registered and Rate
Northern and South Australia**

Year	Northern		South Australia	
	No.	Rate (a)	No.	Rate (b)
1977	639	6.70	9 784	7.66
1978	585	6.22	9 763	7.58
1979	587	6.28	9 661	7.46
1980	561	5.99	9 580	7.38
1981	530	5.63	9 706	7.36

(a) Rate per 1 000 resident population at 30 June.*(b)* Rate per 1 000 mean resident population.

Education

Schools

At 1 July 1982 the Education Department was responsible for fifty-four primary schools, eleven secondary schools, nine combined primary-secondary schools, ten Aboriginal schools, two special schools and the Port Augusta School of the Air in the Northern Statistical Division.

In addition to the Government schools there were seven primary, one secondary and two combined primary-secondary non-Government schools in the region.

Students at Government and Non-government Schools in Northern at 1 July 1982 ^(a)

Level of Study	Number of Students		
	Males	Females	Total
Primary	6 594	6 258	12 852
Secondary	3 491	3 438	6 929
Total	10 085	9 696	19 781

(a) Excludes Port Augusta School of the Air.

Further Education

The Department of Technical and Further Education (TAFE) provides courses for adults in the Northern Statistical Division through TAFE colleges at Peterborough, Port Augusta, Port Pirie and Whyalla and branches at Coober Pedy, Jamestown and Woomera. Other localities in the region are serviced by visiting specialists from these and other centres or by correspondence courses conducted by the Open College of TAFE.

Libraries

Public libraries have operated at Port Augusta, Port Pirie, Whyalla and Woomera since the 1960s. More recently joint-use school/community libraries have been established in the unincorporated areas of Andamooka, Coober Pedy and Leigh Creek, and in the District Councils of Ororoo, Jamestown (including the municipality) and Kanyaka-Quorn. The District Councils of Mount Remarkable, Gladstone, Redhill, Laura and Georgetown are co-operating in a mobile library serving their districts. At Peterborough the municipality is providing a public library service in association with the College of Further Education.

These libraries have combined book resources approximating 115 000 volumes, in addition to periodicals, cassettes, records and paperback books. They are part of a State-wide network of public libraries linked to the Public Libraries Division of the SA Department of Local Government, which provides back-up assistance in resources and dispenses State subsidies to local authorities maintaining public library services.

Museums and Historic Sites

There are more than a dozen museums in the Division. The majority are run by voluntary committees, although three are operated as private concerns. Collectively they hold many items of historical significance and are likely to become, in time, valuable educational resources and tourist attractions.

The National Trust is active in the Northern Division, with branches at Crystal Brook, Hawker, Iron Knob, Jamestown, Melrose, Port Augusta, Port Pirie, Terowie and Whyalla.

The Crystal Brook branch administers the Old Bakehouse in that town. This museum is primarily concerned with local history, farming and mechanised transport and farming aids. The original baking ovens are being restored to working order, to be used on special occasions.

In Port Pirie the Ellen Street Railway Station (1902) and the Old Customs House (1875) are owned by the Trust, and are used as museums.

There is a folk museum housed in the Melrose Police Station and Court House, which was constructed in 1862. The building replaced the original station, completed in 1848, which was for several years the most northerly police post in the State.

The North Star at Melrose, first licensed (when it was a log hut) in 1854, is the oldest hotel in the Flinders Ranges.

Gladstone Gaol, which closed in 1975 after operating for 100 years, is now being converted to a museum which will depict aspects of prison life during the gaol's history. It is a National Trust property.

Kanyaka station homestead near Quorn has been partly restored by the Northern Naturalists Society.

There is a museum in the original railway station at Jamestown which collects, restores and exhibits articles relating to local history, in particular pioneer farmers and businesses. It has recently developed displays on flour milling following the closure of a local flour mill which operated continuously for more than 100 years.

At Whyalla the National Trust exercises control over the old Police Cells, an early BHP workers cottage, and the Graves Reserve at Muninni Beach.

The Booleroo Steam and Tractor Preservation Society seeks to foster the restoration of antique steam engines, vehicles, farm tractors and implements. It has an extensive collection of exhibits, all of which are restored to operating condition and displayed at Booleroo Centre during the Society's annual rally.

The Fashion Gallery of Yesteryear at Orroroo has as its theme the history of costume throughout the ages, with particular emphasis on high fashion.

Solly's Hut at Orroroo, one of the earliest pioneer houses in the district is being converted into a museum depicting pioneer life.

At Peterborough the Railway Preservation Society has preserved a portion of the narrow gauge railway system between Peterborough and Quorn as an operating museum. To this end it acquires, restores, displays and operates narrow gauge locomotives, rolling stock and other items of railway equipment.

'Carn Brae' the original home of the Moyle family at Port Pirie, was built in the 1880s and serves as a museum.

Homestead Park at Port Augusta preserves part of the districts early pastoral and railway history. Of particular interest is the Yudnapinna homestead, the original native pine station home from Yudnapinna station seventy kilometres north-east of Port Augusta which was dismantled and re-erected at the Park in 1975.

The Pichi Richi Railway Preservation Society at Quorn preserves as an operating museum the initial section of the Port Augusta—Government Gums railway through Pichi Richi Pass and Quorn. It runs as a working steam age railway complete with main station and workshops, and commemorates special historical anniversaries by staging events involving the railway.

Cultural facilities

Department for the Arts is involved in many cultural facilities and activities in the Northern Statistical Division. The regional arts policy of the Department is carried out

by a number of agencies and, although the policies and achievements of these organisations are separate, each are inter-related and are component parts of an integrated regional policy.' The organisations which are involved in cultural activities in this Division are the Eyre Peninsula and Northern Regional Cultural Centre Trusts which are based in Whyalla and Port Pirie respectively; the Arts Council of SA which has branches in Port Pirie, Whyalla, Port Augusta, Peterborough, Booleroo Centre, Burra, Gladstone and districts, and Leigh Creek; the Crafts Council of SA, which has professional groups and individual membership from within the Division; through the Department for the Arts, the Regional Arts Facilities Committee which funds on a dollar for dollar basis the upgrading of facilities throughout the Division; through the History Trust of SA, the Regional and Specialist Museums Accreditation and Grant Committee which is involved in assisting local, regional and specialist museums and galleries with curation, cataloguing, conservation and display.

The most significant cultural/arts facility in the Northern Statistical Division is the Keith Michell Theatre at Port Pirie which forms part of the Northern Festival Centre. The Centre was opened in October, 1982. It comprises a 500-seat theatre with stage facilities which will enable direct transfer of productions from the Opera Theatre and Playhouse in Adelaide; a flat-floored area which can be used for cabarets, concerts and exhibitions; and a number of meeting rooms. This complex was built by the Northern Regional Cultural Centre Trust from State Government funding and a contribution from the Corporation of the City of Port Pirie. The Cultural Trust, in conjunction with the District Council of Kadina, the Libraries Board and the Regional Arts Facilities Committee, has contributed funding towards the upgrading of the Ascot Theatre, Kadina. The standard of existing country halls and arts facilities has been upgraded through the Regional Arts Facilities Committee. Venues which have received assistance from this committee are Jamestown Memorial Hall, Peterborough Town Hall, Hawker Institute, Quorn Town Hall, Crystal Brook Institute, Laura Memorial Civic Centre, and the Gladstone District Hall. To complement this upgrading, the Northern Cultural Trust has portable sound and lighting equipment which may be used by smaller venues within its region. In addition there are smaller teaching theatres at the Port Augusta and Whyalla Community Colleges.

Media

Five local newspapers serve the area. The Port Pirie Recorder and the Whyalla News are published thrice weekly. The Transcontinental (Port Augusta), Flinders News (Port Pirie) and Gibber Gabber (Woomera) are all distributed weekly.

There are three national and two commercial medium frequency radio stations in the Division.

There are also two national television stations, ABNS-1 (at Port Pirie) and ABLCS-9 (at Leigh Creek) and one commercial station, GTS-4, at Port Pirie.

A television translator station at Leigh Creek South enables some national programs to be viewed in the central Flinders Ranges, and Andamooka, Coober Pedy and Marree all receive programs from Brisbane national stations *via* satellite.

Aboriginal Heritage, Prohibited Areas and Historic Reserves

Aboriginal occupation of the northern area of South Australia was closely linked with the natural features of the land, especially the location of waterholes and mound springs. The topography and flora and fauna provided the main focus for patterns of Aboriginal movement and feature prominently in traditional myths, legends, art and rock engravings. Many of the myths tell how the land, animals and plants were formed. Other

evidence of Aboriginal culture can be found at ceremonial grounds, ochre mines, quarries and campsites.

Some evidence of Aboriginal occupation has been located and recorded and is protected by the Aboriginal Historic Relics Preservation Act of 1965. A total of five Prohibited Areas and twenty-three Historic Reserves are dedicated in the Northern Statistical Division and two of these are discussed below.

Mount Chambers

In the Flinders Ranges, most of the surviving art is in the form of rock engravings, ranging from individual carvings to the huge galleries found at Mount Chambers. The majority of these engravings were produced by pecking at the rock so that the small marks form a line of recognisable shape. Those at Mount Chambers range from simple parallel lines and circles to animals such as kangaroos and lizards.

The sites at Mount Chambers also have mythological significance. One myth refers to the creation of Mount Chambers (wadna-yalda) and explains how Yuri Yuralu the purple-backed wren threw a boomerang (wadna) at the northern end of the mountain creating a fracture. Not satisfied with the result, the mythical wren person threw the boomerang again making a more complete fracture through the mountain. The boomerang cut right through the mountain and circled back spinning to form the knob at the top of the mountain.

Source: South Australian Department of Environment and Planning, *The Flinders Ranges An Aboriginal View*. Adelaide (1982)

Yourambulla Caves

A few painting sites still exist in areas where caves or rock overhangs provide some protection from the weather. The term 'painting' usually refers to surfaces decorated in ochre, charcoal or other suitable materials, although where dry materials are applied, they are known as 'drawings'. Those at Yourambulla appear to have been mainly drawn. The largest of the caves contain an array of charcoal drawings with a few in white and red ochre. The motifs in the cave range from abstract drawings and linear designs to kangaroo and emu tracks. The purpose and meaning of the paintings are thought to be related to initiation ceremonies which were once held in the area.

The Yourambulla caves form part of the range of hills called the Yappala Hills. Yourambulla is a word derived from the term 'yura bila' which means 'two men' in the language of the Adjamanthana people who lived in the Flinders Ranges. Yura-bila relates to the two prominent hills which represent two mythical companions who camped in the area while travelling northward during the dreamtime, or time of creation, in aboriginal mythology.

Prohibited Areas and Historic Reserves in Northern Statistical Division

Prohibited Areas

Makiri	Rockhole on a hill; living mythological significance.
Mount John Stone	Cairn on a prominent hill; living mythological significance.
Cairn	
Lake Hart Engravings	Engravings in a creek; unusual motifs.
Moolowatana Station	Engravings and surface campsites.
Cave Hill Paintings	Painting site with living mythological significance.

Historic Reserves

Observatory Hill	Stone arrangement on claypan.
Ketchowla Engravings	Engravings in a creek, mainly animal tracks and 'U' shaped motifs.
Arkaroola Station	Mythological, painting sites and waterholes.
Bookartoo Ochre	Small mine from which Aboriginals obtained ochre which was traded extensively; mythological site.
Wilpena Pound	Mythological site.
Eucolo Creek	Extensive engravings along creek.
Pekina	Engravings in creek.
Lincoln Park	Paintings located on the walls of a cave; mythological significance.
Mount Chambers	Engravings in a narrow gorge; mythological significance to people of the area.
Mount Harvey	Stone arrangement; living mythological site.
Yourambulla Caves	Ten painting sites in rock shelters; two-peaked hill has mythological significance.
Old Peake	Aboriginal campsites associated with permanent water supply; prominent in Aboriginal mythology; buildings related to the construction of the Overland Telegraph Line.
Ilbunga	Stone arrangement of mythological significance to living Aboriginals.
Strangways	Aboriginal campsites associated with the springs; prominent in Aboriginal mythology; buildings related to the construction of the Overland Telegraph Line.
Sacred Canyon	Engravings and a weathered painting in a narrow gorge; unique occurrence of two site types in one locality.
Red Gorge	Extensive engraving site in a gorge.
Innamincka	Campsites and engravings along the Cooper Creek; associated with European exploration of the area.
Wepowie Creek	Engravings along creek.
Plumbago Station	Engravings, stone arrangements, paintings and campsites; used extensively by Aboriginal people during drought.
Twelve Springs	Stone material associated with mound spring.
Nalara Rock	Ceremonial significance, campsite.
Carrieton-Belton Road	Engravings in a creek.
Beltana	Prehistoric Aboriginal settlement; buildings and Afghan camel driver campsites.

National and Conservation Parks

Comprising almost two thirds of the total area of South Australia the Northern Statistical Division contains some of the remotest regions of the State. Much of the vegetation has been altered by continuous sheep and cattle grazing and extensive areas have been cleared.

There are eleven Conservation Parks and three National Parks in the Division and some of these are discussed below.

The Flinders Ranges National Park

The Flinders Ranges National Park covers more than 78 000 hectares and is one of the most ancient landscapes on earth. Relative accessibility, rugged mountain scenery, peaceful tree-lined gorges and abundant wildlife and seasonal wildflowers combine to make this park a popular place for visitors.

The Flinders Ranges are a unique environment with a number of rare species located in the Park. The wattle, *Acacia barattensis* once thought to be extinct has recently been rediscovered, as well as *Crinum luteolum* and *Crinum flaccidum*. There are numerous sclerophyll forest species such as the mallee box (*Eucalyptus porosa*), Christmas bush (*Bursaria spinosa*), golden wattle (*Acacia pycnantha*) and a native cherry (*Exocarpus aphyllus*).

A well known animal found on the flat open plains is the large red kangaroo (*Megaleia rufa*) which can be distinguished from other kangaroos by its blue-grey head and distinctive white cheek stripe.

The Gammon Ranges National Park

The Gammon Ranges National Park lies in the Northern Flinders Ranges approximately five hundred kilometres north of Adelaide. In April 1982 the major part of the former Balcanoola station was added to the existing park, creating a great wilderness of some 100 000 hectares. It is an area of rare natural beauty, and is the habitat of many rare species of flora and fauna.

The Park is dominated by a high plateau of quartzite, the largest single outcrop of the 'Pound' quartzite in the Flinders Ranges. Areas of limestone and siltstone, well-worn sedimentary rocks, produce the lower undulating hills and sandy country on the northern, southern and eastern edges of the Park.

The vegetation formations of the Park are closely related to its geology. The plateau of the Park supports a scrubland formation, the gullies, slopes and creeks a woodland formation, and the edges of the Park support scattered grasslands. The mosaics of plant species within these general habitats are one of the significant conservation values of the Park.

There are a number of interesting species in the Park. The rare and graceful Balcanoola wattle (*Acacia araneosa*) is known only from an eight kilometre square area in and around the north-eastern section of the Park. The curly mallee (*Eucalyptus gilli*) is also commonly found only in an area surrounding Mount Warren Hastings.

Relatively little is known of the Park's fauna, although it is the home of the yellow-footed rock wallaby (*Petrogale xanthopus*) an endangered species, which is found in the gorges of the Park.

Mount Remarkable National Park

Located approximately forty-five kilometres north of Port Pirie, Mount Remarkable National Park has a total area of 648 hectares and lies across the Southern Flinders Ranges from the flat lowlands to the high undulating wheat country of the inland. The Park is the most northerly forest refuge in the State and is the only location within the natural distribution of sugar gum (*Eucalyptus cladocalyx*) where this species grows as trees to thirty metres tall. Alligator Gorge and its surrounding area is noted for its abundance of wildflowers and deep spectacular gorges. Mambray Creek is well known for its canopy of red gums. Animals commonly seen in the Park include emus, red kangaroos, euros, kookaburras, Adelaide rosellas and little corellas.

Dangalli Conservation Park

This park covers more than 253 000 hectares and is located approximately 100 kilometres north of Renmark in low dune country with semi-arid vegetation. Mallee scrub predominates, *Eucalyptus oleosa* being the most common species. The park also features low open forest areas. The main birdlife includes the scarlet-chested parrot, mallee fowl, pink cockatoo and ground cuckoo-shrike.

Parks in Northern

Park	Area (hectares)
<i>Conservation Parks</i>	
Unnamed	2 132 600
Simpson Desert	692 680
Dangalli	253 230
Elliot Price	64 570
Lake Gilles	45 113
Telowie Gorge	1 945
Pandappa	1 057
Whyalla	1 011
Mundoora	795
Black Rock	173
Yalpara	42
<i>National Parks</i>	
Gammon Ranges	99 438
Flinders Ranges	78 426
Mount Remarkable	8 648

Employment

The following table shows the industry of the employed population in Northern and South Australia at the 1981 Census. Manufacturing industries predominate in Northern Division. Of the employed persons in Northern, manufacturing accounted for 30·7 per cent of males and 7·2 per cent of females; proportions for the State were 23·9 per cent and 11·1 per cent respectively.

Industry of Employed Persons: Northern and South Australia, 30 June 1981

Industry	Northern		South Australia	
	Number	Per Cent	Number	Per Cent
MALES				
Agriculture, forestry, fishing etc.	2 904	10·8	30 114	8·9
Mining	1 466	5·4	3 633	1·1
Manufacturing	8 257	30·7	80 842	23·9
Electricity, gas and water	1 157	4·3	9 565	2·8
Construction	1 925	7·2	26 470	7·8
Wholesale and retail trade	2 473	9·2	57 314	16·9
Transport and storage	2 877	10·7	21 163	6·2
Communication	376	1·4	7 759	2·3
Finance, business services etc.	784	2·9	21 042	6·2
Public administration, defence	828	3·1	19 263	5·7
Community services	1 956	7·3	33 706	9·9
Entertainment, recreation	555	2·1	11 432	3·4
Other and not stated	1 329	4·9	16 459	4·9
Total employed males	26 887	100·0	338 762	100·0

Industry of Employed Persons: Northern and South Australia, 30 June 1981 (continued)

Industry	Northern		South Australia	
	Number	Per Cent	Number	Per Cent
FEMALES				
Agriculture, forestry, fishing etc.	950	7.7	11 998	5.7
Mining	164	1.3	518	0.2
Manufacturing	894	7.2	23 202	11.1
Electricity, gas and water	49	0.4	597	0.3
Construction	173	1.4	3 447	1.6
Wholesale and retail trade	2 420	19.6	42 632	20.3
Transport and storage	322	2.6	3 427	1.6
Communication	191	1.6	2 598	1.2
Finance, business services etc.	635	5.2	17 389	8.3
Public administration, defence	350	2.8	7 314	3.5
Community services	3 695	30.0	61 957	29.6
Entertainment, recreation	1 176	9.5	16 262	7.8
Other and not stated	1 316	10.7	17 807	8.5
Total employed females	12 335	100.0	209 148	100.0

Income

In Northern, in 1981, 61.4 per cent of persons aged fifteen and over had an annual personal income of less than \$10 001 (compared to 65.0 per cent in South Australia) and 13.0 per cent had an annual personal income of more than \$15 000 (compared to 11.2 per cent for South Australia).

Annual Personal Income: Northern and South Australia, 30 June 1981

Annual Personal Income	Northern		South Australia	
	Persons	Per Cent	Persons	Per Cent
Nil	8 595	12.9	114 947	11.7
Less than \$1 000	3 076	4.6	40 964	4.2
\$1 000-\$2 000	1 886	2.8	27 427	2.8
\$2 001-\$3 000	5 612	8.4	96 288	9.8
\$3 001-\$4 000	5 869	8.8	103 787	10.6
\$4 001-\$6 000	6 071	9.1	95 252	9.7
\$6 001-\$8 000	4 887	7.3	77 464	7.9
\$8 001-\$10 000	4 968	7.5	80 943	8.3
\$10 001-\$12 000	6 535	9.8	102 404	10.5
\$12 001-\$15 000	6 901	10.4	87 475	8.9
\$15 001-\$18 000	4 408	6.6	51 165	5.2
\$18 001-\$22 000	2 413	3.6	29 949	3.1
\$22 001-\$26 000	944	1.4	12 307	1.3
Over \$26 000	937	1.4	15 484	1.6
Not stated	3 522	5.3	42 600	4.4
Total aged fifteen years and over ...	66 624	100.0	978 456	100.0

Health Facilities

In the Northern Statistical Division public hospitals are located at Andamooka, Booleroo Centre, Coober Pedy, Cook, Crystal Brook, Hawker, Jamestown, Laura, Leigh Creek, Marree, Oodnadatta, Ororoo, Peterborough, Port Augusta, Port Pirie, Quorn, Tarcoola and Whyalla. There is also a Commonwealth hospital at Woomera.

There are fifteen branches and eight medical-loans depots of the Australian Red Cross Society and sixteen St John Ambulance centres throughout the region. The Royal Flying Doctor Service operates from Port Augusta and Alice Springs.

Other organisations providing health related services in the area are the Aboriginal Health Organization of South Australia at nine centres, the Child, Adolescent and Family Health Service through thirty-five centres and the Royal District Nursing Society at four branches.

Welfare Facilities

The Department for Community Welfare provides welfare services to the region through district offices at Coober Pedy, Leigh Creek, Peterborough, Port Augusta, Port Pirie and Whyalla.

Aboriginal Affairs and Community Activities

The Commonwealth Department of Aboriginal Affairs works with Aboriginal communities in the Northern Statistical Division through offices located in Alice Springs and Port Augusta. The Department's responsibilities include advising the Government on the formulation of policies and co-ordinating the delivery of services to Aboriginal communities and organisations. Services provided by State Departments using Commonwealth grant funds are co-ordinated through the Adelaide regional office of the Department.

Communities in the Northern Statistical Division have generally been long established, although some have undergone major social changes in recent times. Following the re-routing of the railway line to Alice Springs, many non-Aboriginals left Oodnadatta and Aboriginals now make up a majority of residents. The Aboriginal community owns many old railway buildings, including the Oodnadatta station.

Land rights to 102 000 square kilometres of freehold land in the north-west of the State was vested in the traditional owners by the State Government through the Pitjantjatjara Land Rights Act in October 1981. In March 1983, the State Government announced it would introduce legislation in the following session to return an area known as the Maralinga lands in the far west of the State to the traditional owners—the southern Pitjantjatjara people. Aboriginal communities in the Northern Statistical Division have elected two members to the National Aboriginal Conference (NAC). Liaison has continued between the Department of Aboriginal Affairs and the NAC members.

Department of Aboriginal Affairs funds for Aboriginal assistance program in South Australia were set in 1982-83 at \$12.95 million. This figure does not include direct grants totalling \$3.9 million allocated to communities in the far north-west of the State.

Funding support to communities in the area, primarily through the Department of Aboriginal Affairs, continues as follows.

Employment

Community Development Employment Projects (CDEP) as an alternative to unemployment benefits, at Fregon, Ernabella and Pipalyatjara.

Community Management and Services

The provision of municipal services which in turn generate employment opportunities in the communities. The allocation in 1982-83 also includes the first full-year support of assistance to the communities in the North Flinders area. In South Australia, work continued in 1982-83 on projects such as upgrading water, effluent and electrical services to nine communities in the Northern Statistical Division.

Health

This program supports projects concerned with general health and alcohol rehabilitation, and includes the continued funding of the Pitjantjatjara Homelands Health Service based at Kalka, which provides primary health care to surrounding communities and outstations across State borders. A \$50 million, five-year Aboriginal Public Health Improvement Program is designed to improve at least the worst of the physical conditions in which Aboriginal people live throughout Australia.

Legal Aid

Provides support for continuing legal aid services such as the Pitjantjatjara Legal Service in Alice Springs, and funded to legally represent Pitjantjatjara people. The Aboriginal Legal Rights Movement, based in Adelaide, continued to operate offices at Ceduna and Port Augusta. A special grant of \$20 000 was made in 1982-83 to the Yalata community for legal assistance on land and mining issues.

Training

The Ernabella community received support for reforestation and nursery training projects, while the Pitjantjatjara Council provided training resource services to communities in the North-West. A major building training program at Oodnadatta began in November 1982, for eight members of the Aboriginal community. Four Government Departments and Agencies are co-operating closely over the project. In March 1983, four Aboriginal trainee rangers began a twelve month period of service with the South Australian National Parks and Wildlife Service. Funded under the National Employment Strategy for Aborigines Program, the trainees will work in the Gammon Ranges National Park, sixty kilometres east of Copley. The National Wildlife Service has undertaken this project with a view to offering continued employment at the end of the training period.

Education

The South Australian Department of Technical and Further Education has agreed to provide a full-time lecturer, from May 1983, to work with Coober Pedy, Oodnadatta and Nepabunna communities on permaculture—a method of recycling waste water from homes for growing plants and vegetables. The Ernabella pre-school and women's craft centre continued to receive funding support during the year.

Water Supply

Rainfall in the northern areas of South Australia is extremely variable. Excluding the arid far north, it ranges from 250 millimetres at Whyalla to 400 millimetres or more farther south; but these averages, too, are subject to wide variation.

The topography is also variable, though generally unsuitable for large dam construction. This, and a lack of any permanently flowing streams, has limited the number and

capacity of reservoirs in the area and necessitated construction of a complex water distribution system with most towns and cities supplied wholly or partly by pipelines from the River Murray.

Early Supplies

Early in South Australia's recorded history much of the movement of people and goods depended on vessels plying along the coast. Port Augusta and Port Pirie at the head of Spencer Gulf were the most important points of access to northern farming and mining areas. These towns quickly outgrew their first water supply methods which consisted of rainwater tanks and carting from local streams.

In 1865 the State Government provided a piped water supply to Port Augusta from a spring twenty kilometres away. The water was initially stored in tanks but reticulation mains were later laid. In 1899 Nectar Brook Reservoir (capacity 705 megalitres) was constructed to enhance supplies. A similar scheme was developed at Port Pirie, while bores, springs and small dams fed local water supply schemes in northern inland areas, including Crystal Brook, Wilmington, Hawker, and Quorn.

While some of these early schemes are still operating, they soon proved inadequate to meet the increasing needs of the population, and in the early 1880s the Government began to develop quite large reservoirs to supply extensive rural areas and associated communities through networks of pipelines.

The first such scheme in the northern area was based on Beetaloo Reservoir, (capacity 3 700 megalitres) constructed between 1885 and 1890 on Beetaloo Springs, about twenty kilometres north of Crystal Brook. Water was piped to Port Pirie and towns and farmlands to the south.

In 1902 Bundaleer Reservoir (capacity 6 370 megalitres) was completed; additional supplies were provided for the northern area when Baroota Reservoir (capacity 6 140 megalitres) was completed in 1920. The three reservoirs comprised the main source of supply for the large northern distribution system until the Morgan-Whyalla Pipeline was completed during the 1939-45 War. At that time, the system contained more than 3 000 kilometres of water mains.

Morgan-Whyalla Pipelines

Whyalla, originally called Hummocky Hill, was established by the Broken Hill Proprietary Company Ltd. early this century as a base for iron ore mining at Iron Monarch and Iron Knob. Early water supplies were derived from two small earth dams, distillation plants and carting in barges and on ships, but by 1937 it was evident that the town's continued growth depended entirely on provision of an adequate and assured water supply. Lack of water was also hampering development in other areas. Investigations showed little hope of further exploiting existing supplies and in 1940 the Government approved construction of the Morgan-Whyalla Pipeline. The Engineering and Water Supply Department began construction the same year with priority given to the section between Baroota Reservoir and Whyalla. This section was completed in 1941, and the entire scheme by 1944. The pipeline, which has a capacity of 9 550 megalitres per year is connected to the Baroota, Bundaleer and Beetaloo reservoirs, and a number of extensions have subsequently been made from it, including a pipeline to Woomera, and branches serving Iron Knob, Jamestown, Peterborough and many other country towns and farming areas.

Rapid population development in the north soon after the 1939-45 War indicated that future water requirements would exceed the capacity of the pipeline and in 1962 laying of a duplicate pipeline commenced. Running parallel to the No. 1 pipeline as far as

Baroota Reservoir, it veers across Spencer Gulf to Whyalla, saving seventy-one kilometres in length. The laying of the fourteen kilometre submarine section was complex but cost saving, and was completed in eight days working round the clock, in July 1966. The combined effective capacity of the pipelines is 66 000 megalitres.

The Far North

Although sparsely populated, water is required for small townships, homesteads and stock in the far north. Much of the region overlies the Great Artesian Basin and this source supplies a large area including the townships of Marree and Oodnadatta.

The opal mining town of Coober Pedy relies on desalination of underground water for its supplies. A solar still was constructed in 1966 but severe operational problems were encountered, so in 1969 a reverse osmosis plant was installed. This was extended in 1974 and in 1980 replaced by a new plant of considerably greater capacity, now 156 kilolitres per day.

Drainage schemes

Common effluent drainage schemes in townships have eliminated septic tank effluent and sullage waste disposal problems, protected local water supplies and improved environmental conditions. In the Northern Division Crystal Brook, Hawker, Jamestown, Marla, Port Augusta, Quorn (part) and the Aboriginal settlements of Amata, Davenport, Ernabella and Nepabunna have already established schemes.

The South Australian Health Commission has received applications for assistance to establish further schemes at Laura, Peterborough (commercial area) and the balance of the township of Quorn.

Electricity Supply

The Northern Statistical Division contains two important components of the State's electricity supply—the Leigh Creek coalfield and the power stations at Port Augusta.

Coal was discovered at Leigh Creek in 1888 when carbonaceous shale was uncovered during the excavation of a railway dam. A few mining companies raised coal between 1893 and 1908 and a railway siding was built at Telford. However, activity was spasmodic and eventually the mining lease expired.

In 1941 the South Australian Department of Mines commenced a drilling program at Leigh Creek in the hope of identifying sufficient deposits to eliminate the State's dependence on imported coal. Suitable deposits were found and the Engineering and Water Supply Department undertook the excavation, the first coal being produced in February 1944.

Development of this fuel resource for electricity generation was one of the aims of the Electricity Trust of South Australia (ETSA) which had been formed on 1 September 1946. Control of the coalfield passed to ETSA in 1948. A new power station was planned for Port Augusta and a power house was built at the coalfield to supply both the growing township and large new electrical excavating equipment such as walking draglines.

The first section of the Port Augusta power station was officially opened in July 1954. It comprises three 30 megawatt turbo-generators and is connected to Adelaide by two 132 000 volt transmission lines which also supply major country substations on the way.

About this time, work began on a new standard gauge railway line which reached Leigh Creek in June 1956 and shortly afterwards coal production exceeded 500 000 tonnes a year.

As work progressed at Leigh Creek, ETSA discovered sufficient coal for a second and much larger power station at Port Augusta. Consisting of four sixty megawatt turbo-generators, it was officially opened by the then Premier, Sir Thomas Playford, on 20 July 1960. The whole installation was then renamed the Thomas Playford Power Station in

honour of the man who had done so much to develop the State's electricity supply. Two 275 000 volt lines transmit power direct to the metropolitan area. Coal production at this time was almost one million tonnes a year and Playford was producing about 60 per cent of the State's power requirements.

Now another program of coalfield development and power station construction is underway in the Northern Division. Modern excavation methods and the high cost of alternative fuels have made deeper coal deposits an economic proposition. However, the township of Leigh Creek had been built over the coal and therefore had to be removed. A new township, Leigh Creek South, has been built to house a workforce which will more than double to lift coal production to over two million tonnes a year.

The new Northern Power Station is being built alongside Playford and the first of its two 250 megawatta turbo-generators is expected to be operating by 1984.

In September 1924 the Port Augusta Municipal Council began purchasing current in bulk from the Commonwealth Railways and was supplying 200 consumers over one kilometre of distribution line by the following year. The Railways workshops had had its own electricity supply since 1913 and private individuals probably had their own installations long before that. Indeed, a Port Augusta resident may have had the first domestic electricity supply in the State: J. W. Hullett, superintendent of the town waterworks, lit his home with electric light in October 1885. He later took charge of the two lamp plant imported by the Council in 1887 to light the town hall.

Jamestown inaugurated its municipal electricity supply in 1913; Laura in 1915 (purchasing bulk current from the Laura Milling Company); and Quorn, Orroroo, and Crystal Brook in 1923 (the latter purchasing bulk current from H. C. Gadd, a local motor engineer). The Border Electric Supply Company began supplying Port Broughton in 1926 and about the same time Port Pirie began purchasing bulk current at 6 900 volts from the Broken Hill Associated Smelters.

In 1922 the Adelaide Electric Supply Company (AESCO) was empowered by the South Australian Parliament to extend its mains beyond the metropolitan area. A 33 000 volt transmission line was extended north through Gawler, Balaklava, and Brinkworth and by 1927 AESCO was supplying Georgetown, Gladstone (where it established a depot), Caltowie, and Jamestown from its Osborne power station, a route length of about 220 kilometres. By 1946 this line had been extended through Wirrabara to Booleroo Centre; a spur had been built some years before to supply the radio transmitters at Crystal Brook.

When ETSA took over the responsibility for generation and distribution there were still local AC plants at Booboorowie, Port Pirie, Terowie (established by the South Australian Railways), Whyalla, and Yongala (established in 1936); and local DC plants at Cockburn (also established by the Railways), Davenport, Hallett, Port Augusta, Quorn, and Wilmington.

The important railway centre of Peterborough began building its own power house in 1913 and its wood-gas engines were supplying power the following February to local consumers and the SA Railways. Crude oil engines were installed in 1931 and from about 1949 diesel-driven generators were introduced. In 1972 the first of three gas engine sets fuelled by natural gas from the Cooper Basin pipeline went into service. A second natural gas unit was installed in 1978 and a third in 1982.

The Peterborough Municipal Electric Supply is one of several independent electricity undertakings in the Northern Statistical Division. A new power station was built at the opal-mining township of Coober Pedy, replacing an earlier station built in 1971. Operated by the Cowell Electric Supply Company, it contains six diesel-powered generators. Local diesel generators have also been installed at Andamooka, Glendambo, Kingoonya,

Marla, Marree, Oodnadatta, and Yunta. Australian National also operates a number of smaller generating sets at towns such as Mannahill and Olary.

The present transmission system comprises two 132 000 volt and two 275 000 volt lines between Port Augusta and Adelaide and a 132 000 volt line passing through Whyalla to Port Lincoln. Major substations along the route supply local needs.

Whyalla's electricity needs were met for some years by BHP which began building a blast furnace and shipyards in 1939 and generated electricity using blast furnace gas as fuel. The Company also built 33 000 volt supply lines to Iron Knob and Iron Baron. When BHP's steel-making began to expand ETSA extended two 132 000 volt transmission lines to a substation at Whyalla and the Company added additional plant to its power station. In 1964 ETSA took over all electricity distribution outside BHP's own area and established a local office.

On the eastern side of the Gulf, a major substation at Bungama services Port Pirie and surrounding district. Port Pirie had its own electric lighting plant in 1910 but when the Broken Hill Associated Smelters built a power station in 1918 the Council purchased its current in bulk from the Company. In 1952 it arranged to purchase bulk supply from ETSA which eventually took over supply and distribution in 1969. The original AESCO 33 000 volt system is now connected at Bungama and has been extended through Murraytown to Wilmington and Orreroo, and from Jamestown to Terowie.

Two other 132 000 volt transmission lines extend northwards, one to Woomera (this line being the responsibility of the Commonwealth Government) and the other to Leigh Creek. The latter was completed in 1961 and replaced the coalfield power station, the construction of which commenced in 1948 with a turbo-generator purchased from the Commonwealth grain distillery at Wallaroo. Additional plant was installed between 1951 and 1956 and at its peak the coalfield station was capable of generating 4.4 megawatts.

The Leigh Creek line also supplies the area around Hawker with the District Council taking supply in bulk at 33 000 volts and distributing electricity by way of high voltage single wire earth return (SWER) system or low voltage lines.

Minor substations have been built at Whyalla, Port Pirie, Baroota, Gladstone, Murraytown, Port Augusta, and Port Bonython. Interconnected by 33 000 volt transmission lines, they supply local distribution systems. More remote consumers are supplied by the low cost SWER system.

A major substation being constructed at Davenport and an additional 275 000 volt transmission line will transmit power from the new Northern Power Station to Adelaide.

ETSA has a regional headquarters and depot at Port Augusta and district depots at Gladstone, Port Pirie, and Whyalla. The region is responsible for the operation of the power stations and the construction and maintenance of the supply network. Altogether about 31 000 consumers are supplied.

Housing

In Northern Division, total building approvals during 1982-83 were valued at \$43.5 million compared with \$44.6 million in the previous year. Approvals for 213 new dwellings with a value of \$8.4 million were granted in the year to June 1983.

The number of occupied dwellings in the Division as a proportion of the State total has fallen from 7.1 per cent in 1971 to 6.5 per cent in 1981.

Occupied Dwellings, Northern and South Australia

Area (a)	Census 30 June		
	1971	1976	1981
Carrieton (DC)	58	63	66
Crystal Brook (DC)	467	507	505
Georgetown (DC)	261	258	240
Gladstone (DC)	320	313	298
Hallett (DC)	245	257	248
Hawker (DC)	157	158	156
Jamestown (DC)	306	304	297
Jamestown (M)	378	391	422
Kanyaka-Quorn (DC)	362	401	428
Laura (DC)	222	226	244
Mount Remarkable (DC)	844	899	1 021
Orroroo (DC)	344	319	334
Peterborough (DC)	114	109	104
Peterborough (M)	841	818	849
Pirie (DC)	983	1 219	1 368
Port Augusta (C)	3 464	4 047	4 613
Port Pirie (C)	3 948	3 945	4 062
Whyalla (C)	7 818	8 986	9 375
Unincorporated	3 348	3 323	3 587
Total Northern	24 480	26 543	28 217
South Australia	344 112	392 761	433 839

(a) According to boundaries existing on 30 June 1981.

(C) City (DC) District Council (M) Municipality

Rural Industries

Northern Statistical Division covers some 834 000 square kilometres of which about forty-eight million hectares (58 per cent) are used for agricultural pursuits. It includes agricultural land around Port Pirie, Port Augusta and Burra as well as the large pastoral area from Quorn northwards.

The southern portion is broadly defined as the Upper North Agricultural District and covers about 1.2 million hectares bounded by Crystal Brook and Burra to the south and Port Augusta and Carrieton in the north. The area is noted for producing merino sheep and much of it is admirably suited to cropping. On the other hand, north of Quorn in the Northern Pastoral Zone the annual average rainfall is generally less than 250 mm and the only agricultural activity of significance is running of sheep and cattle on large pastoral properties.

Upper North Agricultural District

The land in the Upper North Agricultural District rises from the coastal plain along Spencer Gulf on the western side, and a large portion of the district is between 300 and 460 metres above sea level. Most rain falls in winter, heaviest falls are between April and October and approximately 40 per cent of the region receives more than 375 mm annually. Because of the undulating terrain and reasonable rainfall, the area is largely used for production of cereals and sheep growing. Wheat production for 1981-2 was 221 000 tonnes worth approximately \$35 million, and barley production of 109 000 tonnes was valued at about \$15 million. In addition to the main cereal crops, large areas are

sown to oats and to field peas, and approximately 15 per cent of the lucerne seed produced in South Australia is grown in the district.

The area now farmed was originally open grassland. Natural grasses have been replaced by introduced annuals including barley grass and brome grass. Pastures have been improved by the introduction of medics, clovers and lucerne and in 1981-82 more than 110 000 hectares of improved pasture was reported, in addition to 236 000 hectares of land used for cereals for grain. Many of the studs which produce the South Australian type of Merino breed of sheep are located in the area. In 1980, the most recent time that breeds of sheep were collected in the Agricultural Census, there were 16 million sheep in South Australia of which 13.6 million (84.7 per cent) were Merinos. Of the 2 997 000 sheep in Northern Division, 2 962 000 or 98.8 per cent, were Merino breed.

The wool clip for the 1981-82 season was 18.9 million kilograms (valued at more than \$50 million), an average of 5.4 kilograms per head of sheep and lambs compared with the State average of 5.07 kilograms.

The foothills area around Port Pirie is used for producing vegetable crops, main crops being peas (forty-three hectares out of ninety-nine hectares grown in South Australia during the 1980-81 season) and tomatoes (17 hectares out of 387 hectares for the 1981-82 season). Small amounts of fruit are grown as well.

Dairying forms only a small part of the agricultural activities in the area and is often carried out in conjunction with a pig unit; only three herds had more than 100 head of milk cattle.

Northern Pastoral Zone

The Northern Pastoral Zone is broadly defined as the area lying outside the 250 mm annual rainfall area, and a large part of the area has annual precipitation less than 150 mm.

The area can be divided into four provinces, Eastern and Western Pastoral, Flinders Ranges and Northern Arid province. Most of the pastoral areas are now held under pastoral leases, administered by the Pastoral Board, which are granted for forty-two years (or twenty-one years in the case of previously occupied land). One of the conditions of the leases is that the lessee must improve the land as recommended by the Board and maintain suitable stocking rates. Southern fringes of the zone are held under perpetual lease (ninety-nine years).

The Western Pastoral province has a desert climate with short cool to cold winters and low and unreliable rainfall with no distinct pattern. Open mulga and myall woodlands, open mallee and saltbush or bluebush comprise the major vegetation although ephemeral grasses and other ground cover provide grazing for short periods following rains and floods. Extensive grazing is the major activity in this province and leases are concentrated in the eastern half with a few properties on the southern edge of the Nullarbor. Some 50 per cent of the region has no economic production of significance.

The Eastern Pastoral province has a similar climate to the Western province except for a small area flanking the Flinders Ranges where rainfall is higher. Vegetation in the area is largely native and varies from low open woodlands to sandplains near Lake Frome salt lake in the north. The area is extensively grazed; there are about ninety holdings in the area running approximately 420 000 sheep and 11 200 cattle.

Rainfall in the Flinders Ranges province is affected by the altitude of the ranges, being between 250 mm and 350 mm in the uplands but decreasing to less than 150 mm away from the ranges. Agriculture in the area is primarily pastoral, although almost 5 000 hectares of land were devoted to production of cereals in county Newcastle (Quorn district) in 1981-82. Stocking rates vary markedly from less than five sheep equivalent

units per square kilometre in the north east to sixty units/square kilometre in the south, 85 per cent of the livestock being sheep. Livestock equivalent units are based on the relative amount of fodder consumed by various animals. (The Division of National Mapping has used the ratios of one meat beast to eight sheep units, and one milk beast to twelve sheep units. Those equivalents are used in this article).

Two national parks, Flinders Ranges and Gammon Ranges, totalling about 70 000 hectares are located in the area.

The Northern Arid province has a hot, dry desert climate with extremely low average rainfall (less than 150 mm for the major part) exhibiting no distinct seasonal pattern. In the west, the region consists of the vast sand plains and dune-fields of the Great Victoria Desert. The central part is occupied by the gibber plains draining into the Lake Eyre Basin and the east is occupied by the Simpson, Sturt and Strzelecki Deserts. The total area of the province is about 540 800 square kilometres of which 314 000 is used for extensive grazing. About 114 000 square kilometres have no defined use, 72 000 square kilometres is occupied by the Amata Aboriginal Reserve, and the balance by nature reserves and salt lakes. There are approximately sixty holdings in the region running 281 000 sheep and 122 000 cattle in 1981-82, most of the sheep being located south of the dog-fence in the area north and north-west of Lake Frome. Stocking rates are low throughout the province ranging from five sheep-equivalent units per square kilometre to less than two units in the east and north-east. Much of the country is not suitable for even the most extensive form of grazing, and livestock are concentrated along the water courses and the interdune regions where bore-water is available. Drought is a major hazard in the region, and stock numbers vary considerably from year to year.

Wheat

Northern Division contributed about 13 per cent of State production and 10.7 per cent of area sown for wheat for grain in 1982. However, 62 per cent of 1 042 holdings in the Northern Division reported wheat for grain. The average yield per hectare (1.44 tonnes) was well above the State average (1.18 tonnes). The largest wheat growing districts in 1982 were the district councils of Mount Remarkable, Orroroo and Jamestown, which accounted for 55 per cent of the area sown to wheat in the Northern Division.

Wheat for Grain, Northern

Particulars	Unit	1977-78	1978-79	1979-80	1980-81	1981-82
Establishments	No.	1 010	1 070	1 080	1 071	1 042
Area sown	hectares	119 576	142 084	154 748	159 677	153 394
Production	tonnes	80 335	269 341	314 479	237 859	221 909
Average yield per hectare	tonnes	0.67	1.89	2.03	1.49	1.44
Production as percentage of State	per cent	15.73	12.91	13.39	14.41	13.09

Barley

Only about 9 per cent of the South Australian barley crop originates in this Division, grown on 866 holdings. Average yields are normally above those of the State. The major barley growing areas are Mount Remarkable, Jamestown and Georgetown district councils which account for 53 per cent of area sown for barley in the Division.

Barley for Grain, Northern

Particulars	Unit	1977-78	1978-79	1979-80	1980-81	1981-82
Establishments	No.	953	955	864	855	866
Area sown	hectares	77 909	75 772	60 836	63 749	74 023
Production	tonnes	46 058	119 240	102 922	97 352	109 403
Average yield per hectare	tonnes	0.59	1.57	1.69	1.53	1.48
Production as percentage of State	per cent	7.78	8.38	6.74	8.41	8.92

Farm Size

The average size of holdings has not changed much over the last six years, but there are large variations between individual local government areas because of the differences in climate and topography in the area.

Average Size of Agricultural Establishments, Northern

Local Government Area	1977	1978	1979	1980	1981	1982
			HECTARES			
Carrieton (DC)	5 360	5 742	5 098	5 616	5 123	5 336
Crystal Brook (DC)	551	557	507	578	590	602
Georgetown (DC)	555	554	587	593	610	677
Gladstone (DC)	506	510	525	560	544	544
Hallett (DC)	2 422	2 480	2 353	2 378	2 341	2 567
Hawker (DC)	6 862	6 911	6 646	6 398	6 355	6 157
Jamestown (DC)	567	557	554	543	575	585
Jamestown (M)	29	29	6	6	6	6
Kanyaka-Quorn (DC)	3 480	2 136	2 164	2 044	2 113	2 156
Laura (DC)	310	318	332	330	313	342
Mount Remarkable (DC) ..	—	—	—	—	(a) 773	788
Orroroo (DC)	1 150	1 166	1 179	1 142	1 218	1 193
Peterborough (DC)	3 311	3 182	3 320	3 247	3 168	3 293
Peterborough (M)	60	59	60	74	76	95
Pirie (DC)	450	435	458	408	434	474
Port Augusta (C)	44	382	380	380	(b) 4 880	6 309
Port Germein (DC)	580	590	585	585	(a)	—
Port Pirie (C)	12	8	4	4	4	32
Wilmington (DC)	1 898	1 829	1 774	1 538	(a)	—
Unincorporated	207 990	208 860	210 443	213 062	213 484	215 034
Average Northern	28 169	28 321	28 265	27 560	27 944	28 730

(a) In 1981 the balance of Port Germein (DC) and Wilmington (DC) were merged to form Mount Remarkable (DC). (b) In 1981 Pt Augusta (C) expanded into Whyalla and Pirie Statistical Subdivisions.

Sheep

The sheep flock of 3.1 millions represents 18.4 per cent of the total sheep numbers of the State at 31 March 1982. The proportion has been close to this level for the last ten years. The predominant breed is Merino.

Sheep numbers are highest in the unincorporated areas of the Far North (545 778), the Flinders Ranges (442 351) and Pirie (420 532). In the incorporated areas most sheep are

found in the District Councils of Mount Remarkable (247 680), Jamestown (201 496) and Hallett (167 170).

Lambing percentages recorded in this Division are below State averages. Lambs marked in 1981-82 comprised 16 per cent of the State total, but they have been as low as 14.6 per cent.

Lambing, Northern

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
Ewes mated	1 403 039	1 297 486	1 247 193	1 343 141	1 349 220	1 365 382
Lambs marked	846 564	702 348	783 879	1 079 935	1 055 590	971 755
Lambing percentage(a)	60.3	54.1	62.9	80.4	78.2	71.2
State lambing percentages(a)	68.2	68.7	73.2	83.2	81.7	77.6

(a) Percentage of lambs marked to ewes mated.

Sheep Numbers, Northern, at 31 March

Particulars	1977	1978	1979	1980	1981	1982
Rams	49 218	45 799	48 336	49 189	50 271	50 340
Ewes: Breeding	1 570 330	1 404 855	1 444 078	1 438 011	1 525 257	1 522 282
Other	145 840	118 598	104 767	119 033	121 420	125 759
Wethers	700 614	550 157	534 769	542 300	612 813	596 257
Lambs	641 667	471 796	635 436	848 171	859 358	774 003
Total	3 107 669	2 591 205	2 767 386	2 996 704	3 169 119	3 068 641
Total sheep and lambs as a percentage of State total	20.5	18.4	18.5	18.7	18.6	18.4

Wool

The wool clip as a proportion of the State wool production is around 20 per cent, slightly higher than the share of the sheep population. One reason for this is the high incidence of larger framed Merino and Merino cross sheep in this Division.

Sheep and Lambs Shorn: Wool Clip and Average Weight per Fleece, Northern

Particulars	Unit	1977	1978	1979	1980	1981	1982
Sheep and lambs shorn	'000	3 484	3 074	2 835	3 147	3 429	3 488
Wool clip	'000 kg	19 464	15 507	15 298	17 836	19 186	18 974
Average per fleece	kg	5.58	5.04	5.39	5.67	5.59	5.44
Wool clip share of State total	per cent	21.08	18.71	18.40	19.56	19.29	19.28

Dairy Cattle

Only 205 of the 1 692 holdings in the Northern Division reported dairy cattle in 1981-82, and of these ninety-six have commercial herds, the rest having house cows only. Only three holdings had more than 100 head of cattle, while fifty-seven had herds of nine or less head.

Cattle for Milk Production, Northern

Particulars	1977	1978	1979	1980	1981	1982
Bulls	129	86	65	64	83	68
Cows	1 638	1 345	1 158	1 113	1 152	1 097
Heifers (one year and over)	468	394	355	253	267	304
Calves	427	299	261	267	308	259
Total (a)	3 238	2 667	2 278	2 082	2 169	2 002
Dairy cattle as a percentage of State total	1.8	1.6	1.4	1.3	1.4	1.3

(a) Includes house cows.

Beef Cattle

Cattle herds generally have been declining over the last six years, but meat cattle numbers alone fell by 38.5 per cent to 188 068 in 1981-82. This figure is about 22 per cent of the State beef cattle population. Herds of meat cattle were reported on 613 holdings in 1981-82 with thirty-seven herds with 1 000 head or more, and 293 with herds in the one to twenty-nine head size category.

Cattle for Meat Production, Northern

Particulars	1977	1978	1979	1980	1981	1982
Bulls	5 489	5 105	5 195	5 264	4 738	4 678
Cows	156 078	140 181	126 628	122 303	105 885	96 985
Calves	94 194	63 701	74 506	61 656	53 513	50 435
Total (a)	305 712	267 472	261 033	230 190	204 861	188 068
Meat cattle as percentage of State total	21.5	24.9	28.2	25.3	22.0	22.0

(a) Includes other cattle for meat production.

Livestock (Sheep and Cattle) in Sheep-equivalent Units, Northern, 1980 to 1982

Area	Sheep	Milk Cattle (a)	Meat Cattle (a)	Total	Sheep as a percentage of total	Grassed land (b) ('000 ha)	Average stocking rate in Sheep Equivalent Units
Carrieton (DC)	84 196	144	32 624	116 964	72.0	212	0.55
Crystal Brook (DC)	41 103	648	6 048	47 799	86.0	20	2.40
Georgetown (DC)	95 043	504	8 896	104 443	91.0	48	2.19
Gladstone (DC)	48 263	1 176	1 592	51 031	94.6	17	2.95
Hallett (DC)	167 170	228	22 752	190 150	88.0	227	0.84
Hawker (DC)	63 712	60	11 864	75 636	84.2	178	0.43
Jamestown (DC)	201 496	852	13 256	215 604	93.5	73	2.95
Kanyaka-Quorn (DC)	73 800	504	17 168	91 472	80.7	154	0.59
Laura (DC)	31 087	3 528	3 272	37 887	82.1	12	3.28
Mount Remarkable (DC) ..	337 839	12 060	40 776	390 675	86.5	227	1.72
Orroroo (DC)	117 723	1 224	17 496	136 443	86.3	116	1.17
Peterborough (DC)	146 910	504	13 472	160 886	91.3	285	0.56
Peterborough (M)	27	36	464	527	5.1	—	1.62
Pirie (DC)	81 496	2 280	9 808	93 584	87.1	51	1.83
Port Augusta (C)	34 465	—	3 400	37 865	91.0	106	0.36
Unincorporated	1 544 311	276	1 301 656	2 846 243	54.3	46 661	0.06
Total Northern	3 068 641	24 024	1 504 544	4 597 209	66.8	48 388	0.10

Livestock (Sheep and Cattle) in Sheep-equivalent Units, Northern, 1980 to 1982 (continued)

Area	Sheep	Milk Cattle (a)	Meat Cattle (a)	Total	Sheep as a percentage of total	Grassed land (b) ('000 ha)	Average stocking rate in Sheep Equi- valent Units
Northern Statistical Division	1980 2 996 704	24 984	1 841 520	4 863 208	61.6	48 575	0.10
	1981 3 169 119	26 028	1 638 888	4 834 035	65.6	48 269	0.10
	1982 3 068 641	24 024	1 504 544	4 597 209	66.8	48 388	0.95

(a) 1 milk beast = 12 sheep units; 1 meat beast = 8 sheep units.

(b) Equals the total area of agricultural establishments less the area used for cropping. This figure is an approximation for the area available for grazing, because at times land used for cropping may also be grazed.

Selected Agricultural Statistics, Northern and South Australia, 1982

Particulars	Unit	Northern	South Australia	Per cent
Persons residing permanently on establishments (1981)				
Males	number	3 381	37 394	9.0
Females	number	2 767	32 732	8.5
Rural establishments	number	1 692	21 009	8.1
Area of establishments	hectares	48 640 415	62 896 582	77.3
Sown pastures	hectares	113 328	3 642 981	3.1
Wheat, total area	hectares	154 762	1 438 713	10.8
Barley, total area	hectares	75 194	1 045 986	7.2
Oats, total area	hectares	14 572	202 465	7.2
Field peas, total area	hectares	6 985	49 064	14.2
Hay sold	tonnes	4 202	75 157	5.6
Lucerne seed	hectares	1 430	9 359	15.3
Other pasture and grass seed	hectares	992	10 388	9.5
Sheep	number	3 068 641	16 708 863	18.4
Wool shorn	tonnes	18 974	98 440	19.3
Cattle	number	190 070	1 012 534	18.8
Pigs	number	20 074	374 378	5.4
Horses	number	7 221	25 976	27.8

Mining

This Division contains numerous mineral and ore deposits which currently play a most important role in the economy of the State. One of the major developments is the recovery of natural gas from the Cooper Basin at Moomba in the north east of the State and its reticulation to both Adelaide and Sydney through specially constructed pipelines.

Another is the continued investigation and development of the huge mineral resource at Olympic Dam on Roxby Downs Station which has the potential to become a major world supplier of copper, uranium, gold, silver and rare-earth metals.

Other important mining activities include the winning of coal at Leigh Creek by ETSA for power generation at Port Augusta, the mining of iron-ore in the Middleback Ranges to provide feedstock to the BHP steel-works at Whyalla, and the production of copper sulphide concentrates by CSR Ltd at Mount Gunson for shipment to Japan. Zinc silicate from a deposit near Beltana is exported as contracts demand.

The Northern Division also encompasses the source of most of the world's precious opal, mined from the three main centres of Coober Pedy, Mintabie and Andamooka.

Other minerals being exploited include industrial non-metallics such as barite from Oraparinna and Mount Mulga, talc from Mount Fitton, magnesite from Myrtle Springs and salt from Whyalla.

Many other mineral deposits occur in the area. Some of them have been worked in the past including gold at Tarcoola, Glenloth, Nillinghoo and Teetulpa and some production from the efforts of prospectors in these areas still occurs today. Other deposits such as those of uranium ores at Radium Hill, Crocker Well and Mount Painter have provided the incentive for more recent exploration and the subsequent discovery of the uranium deposits at both Honeymoon and Beverley.

The potential throughout the area is high for the discovery of further major resource deposits and most of the area is covered by exploration licences on behalf of numerous companies who are continuing the exploration search for minerals and petroleum products.

Petroleum

South Australia was the first State to drill for petroleum in Australia. As early as 1892 a well was drilled in the Coorong area of the south-east of the State. It proved unsuccessful and commercial quantities of hydrocarbons were not discovered in South Australia until 1963. In the intervening period exploration continued in many parts of the State, particularly Yorke Peninsula and the South East.

Some of the best early indications of hydrocarbons in South Australia were gained during the drilling of water bores in the north-east of the State. The Patchawarra Bore, drilled in 1914, and a number of other early bores to the east of Lake Frome reported inflammable gases but it was not until the 1950s that oil exploration began in the Cooper Basin and surrounding areas. In 1963 Delhi Petroleum Limited and Santos Limited discovered the Gidgealpa gas field in the far north-east of the State. This find led to an increase in interest in the petroleum potential of this area and other parts of the State.

The Cooper Basin

The Cooper Basin is a sedimentary basin lying in the north-east of South Australia and the south-western corner of Queensland.

The natural gas is produced from Permian rocks which are between 225 and 280 million years old. The gas reservoirs occur in sandstones beneath shales, which act as cap rocks. The rocks were originally deposited as sands and muds in a freshwater, onshore environment and contain coal seams up to twenty metres thick. The coals appear to have acted as a generating source for the gas and the small amount of oil present. It is thus unlikely that large quantities of oil will be found in the Cooper Basin as marine organisms capable of generating such quantities were not present.

Since 1963, more than 100 wells have been drilled in the South Australian part of the Cooper Basin. During the last twelve years a number of farmout agreements have been made between Delhi-Santos and other companies wanting to participate in Cooper Basin exploration, resulting in the discovery of several new fields. A total of ten companies, now known as the Cooper Basin Producers, have interests in the Cooper Basin gas and oil resources.

During the exploration for natural gas, small amounts of oil (600 barrels per day) were discovered in the Tirrawarra No. 1 well and also in later wells in that field. These quantities as well as those in the nearby Fly Lake and Moorari Fields are not considered commercial in their own right, and there are no plans for producing from them at this

stage. A few of the gas fields contain 'wet' gas which means that liquid hydrocarbons, called condensates, will be produced during the processing of the gas.

A gathering system of pipes delivers the gas from the developed fields to the processing plant which is situated on the Moomba Field. More development wells will be drilled during the coming years and the gathering system will be extended to tap the thirteen other fields already discovered in the Basin.

The processing plant, which was completed in 1969, incorporates the latest advances in gas processing. The plant removes the condensates (liquid hydrocarbons), most of the carbon dioxide and water vapour, thus reducing corrosion to the pipelines. The resulting gas is a nearly pure hydrocarbon gas. Approximately two per cent of the produced gas is used to run the plant and the remainder is sold to consumers. The condensates which are removed during processing are used to run the boilers at the plant.

The Moomba-Adelaide pipeline is owned and operated by the Pipeline Authority of South Australia, which is a State Government authority. The pipeline is sixty centimetres in diameter and 790 kilometres long with a short branch to Angaston, just north of Adelaide.

The Moomba-Sydney pipeline is owned and operated by the Federal Government's Pipeline Authority.

During 1982 the 659 kilometre liquids pipeline from Moomba to Port Bonython (Stony Point) was completed and associated facilities at both Moomba and Port Bonython commenced construction.

Recent exploration activities have led to a number of discoveries of both oil and gas in the Cooper and Eromanga Basins. The most notable was the multi-zone Mesozoic oil and gas accumulation found in the Merrimelia Field in the Cooper Basin, highlighted by the lower Jurassic oil flow of 2 738 barrels per day from the Merrimelia No. 6 well.

The gas so far discovered in the Cooper Basin has been contracted to supply Adelaide until 1987 and Sydney until the year 2005.

Olympic Dam Project—Roxby Downs Station

The Olympic Dam copper-uranium prospect discovered by Western Mining Corporation is located approximately twenty-five kilometres west of Andamooka and 240 kilometres from Port Augusta. The area was selected for exploration after a detailed study of the Stuart Shelf. Exploration Licence 190 was granted by the South Australian Government in May 1975.

Coal

The earliest discovery of lignite in South Australia was at Pidinga in 1885 and of black coal at Leigh Creek in 1888. Other widespread occurrences were subsequently found, generally during the course of boring operations for water supplies.

Early but unsuccessful attempts were made to mine coal at Leigh Creek (1892 and 1906), Montefiore Hill (1894), Bower (1902), Noarlunga (1905), Moorlands (1910), Hope Valley (1911) and Clinton (1924).

Since 1944, South Australian requirements of coal for generation of electricity have been derived from Leigh Creek. Almost two million tonnes of coal are mined annually by open-cast methods for use at the Port Augusta Power Station, 225 kilometres to the south, to generate about twenty-three per cent of the State's present electricity requirements. The source and type of fuel for an additional generating plant which will need to be commissioned by about 1987 (based on present load forecasts) has yet to be determined. Salient features of the principal South Australian deposits which are being evaluated at the present time are described below.

Lake Phillipson

Hard, black, steaming-grade coals have been located 450 kilometres north west of Port Augusta adjacent to the Tarcoola-Alice Springs Railway.

Exploration undertaken by Utah Development Co. has delineated eleven seams, under cover ranging from 50 to 100 metres in two shallow elongated sub-basins, one sixty kilometres in length and the other thirty-five kilometres.

The coals are charged with saline groundwaters, resulting in high alkali content and deleterious ash fusion properties.

Iron Ore

High-grade iron ores have been mined since 1915 in the Middleback Ranges, which extend over a distance of some sixty-five kilometres southerly from Iron Knob on upper Eyre Peninsula.

The major ore bodies are at Iron Knob, Iron Monarch, Iron Prince, Iron Baron and Iron Duke. The Iron Monarch ore body provided the bulk of the iron ore for the Australian steel industry prior to the development of deposits in Western Australia in 1970. Production from Iron Monarch, Iron Prince and Iron Baron in 1981 amounted to 2.5 million tonnes.

The bulk of this material is used as feedstock by the BHP Whyalla steel works but some is converted to iron-ore pellets for export.

Reserves of high-grade iron ore containing sixty-two per cent iron in the Middleback Ranges are estimated at over 200 million tonnes.

Copper

Copper has brought considerable wealth to South Australia, particularly in the late 1800s, when a significant proportion of the world's supply came from this State.

Mount Gunson

Copper was discovered adjacent to the western shore of Pernatty Lagoon in 1875. Between 1898 and 1937, 3 330 tonnes of handpicked ore containing eight to sixteen per cent copper was produced. From 1941 to 1943, 33 000 tonnes of copper ore averaging 5.5 per cent copper were recovered. CSR Ltd acquired a 100 per cent interest in 1972 and commenced detailed exploration directed at finding new areas of mineralisation. A program of more than 200 diamond drill and percussion holes subsequently located a new ore body, three kilometres west of the old mine.

Production from this ore body commenced in August 1974, and up to the end of 1982, 89 133 tonnes of copper had been produced.

Zinc

Zinc silicate was discovered at Puttapa, twenty kilometres east of Beltana in 1966. Ore is extracted by open cutting and crushed and screened on site. Mineral is produced only as contracts demand and most is exported. Mining last occurred in early 1976.

Indicated reserves exceed one million tonnes of ore, containing about 38 per cent zinc. Recorded production since 1974 totals 120 000 tonnes.

Opal

Eighty per cent of the world's precious opal is produced from three major deposits in South Australia; Coober Pedy, Andamooka and Mintabie.

Coober Pedy

Coober Pedy is the largest opal producing centre in Australia. The field, discovered in 1915, is situated in the Stuart Range. The early opal workings lay at the foot of a scarp and opal was won from depths of only one to two metres. Most workings now lie in the plateau country on the western side of the scarp where the opal level lies at depths between five to thirty metres. Coober Pedy is 970 kilometres from Adelaide and 284 kilometres north of Kingoonya on the Stuart Highway.

The opal field extends thirty-two kilometres north-west of the town to workings at Shellpatch and about eighteen kilometres south-east to Jasper Gully, and supports a population of 4 000 persons.

Andamooka

The Andamooka opal field was discovered in 1930 and lies to the west of Lake Torrens, 135 kilometres by road north of Pimba and about 611 kilometres from Adelaide. Mining is concentrated around the edge of the town on the broad flat spurs formed by Opal Creek and its tributaries, and extends five kilometres to the Lunatic Hill workings north of the town.

Barite

The largest and most important source of high-grade barite is the Oraparinna Mine, seventy-seven kilometres north-east of Hawker. This deposit was first worked in 1940, but little progress was made until 1946, when the principal lodes were developed and a treatment plant built at Quorn capable of producing up to 30 000 tonnes per year.

Workings are on four levels, and there are several open cuts. The lodes range up to five metres in width and have been worked over a length of 400 metres.

In 1981, work commenced on a declined adit, designed to gain access to reserves below the fourth level.

Indicated geological reserves exceed 100 000 tonnes.

From Quorn, the finely-ground barite is transported to Port Pirie for shipment to other parts of Australia and overseas. Total production to 1981 was 251 000 tonnes.

Talc

The Mount Fitton deposits, discovered in 1944, 130 kilometres east of Lyndhurst, are the largest and highest grade in the State. The talc bodies occur in fault zones in a large lens of massive dolomitic marble in the Balcanoona Formation of the Umberatana Group.

Over forty individual deposits have been worked since production began in 1947. Total production to 1981 was over 220 000 tonnes.

Highest grade material is used in cosmetics and lesser grades are used as fillers in paint, rubber and plastics, in ceramics, roofing compounds and absorbents, and as insecticide carriers.

The talc is railed from Lyndhurst to Adelaide for milling.

Magnesite

Magnesite was first mined at Tumby Bay in 1915. Deposits were subsequently worked at Mundallio, fifty kilometres north-east of Port Augusta; at Copley; and at Myrtle Springs, 220 kilometres north-west of Leigh Creek. Large reserves have also been located at Witchelina, thirty kilometres west of Farina; and in Port Germein Gorge. Additional reserves have been found at Balcanoona, 100 kilometres east of Copley, and at Mount Fitton.

Magnesite is used as a refractory for lining steel furnaces, for manufacture of

magnesium chemicals and in leather tanning, welding electrodes, insulation, stock fodder and fertilisers.

Total recorded South Australian production is 28 000 tonnes.

Salt

Salt has been produced since 1951 by solar evaporation from an area north-east of the Whyalla steelworks. Feed water gravitates from the steelworks cooling system through a channel to the first of four storage ponds in which it is evaporated to increase its specific gravity. The brine is then gravitated or pumped into pans in which the salt is crystallised. After harvesting, the raw salt is washed and stockpiled and then processed on site for Australia-wide distribution. Principal uses are in foundries, tanneries, butchering and paper manufacturing, as salt-licks for stock and as table salt. Occasional consignments of raw salt are exported.

Manufacturing

At 30 June 1981 there were sixty-eight manufacturing establishments in the Northern Statistical Division employing 8 723 persons, with a turnover of \$788.3 million during 1980-81.

Manufacturing Establishments: Summary of Operations
Northern Statistical Division and South Australia, 1980-81 ^(a)

Particulars	Unit	Northern	South Australia	Proportion Per Cent
Number of establishments	number	68	2 131	3.19
Employment (b):				
Males	number	7 926	81 449	9.73
Females	number	797	23 306	3.42
Persons	number	8 723	104 755	8.33
Wages and salaries (c)	\$000	129 094	1 282 968	10.06
Turnover	\$000	788 265	6 067 292	12.99
Stocks:				
Opening	\$000	209 896	1 090 656	19.24
Closing	\$000	174 062	1 103 880	15.77
Purchases, transfers in	\$000	531 452	3 693 156	14.39
Value added	\$000	220 979	2 387 358	9.26
Fixed capital expenditure less disposals	\$000	87 029	257 829	33.75

(a) Excludes single establishment enterprises employing fewer than four persons.

(b) Includes working proprietors.

(c) Excludes drawings of working proprietors.

Manufacturing in the Northern Statistical Division is dominated by two large firms, namely Broken Hill Proprietary Company Limited located at Whyalla, engaged in basic iron and steel making, and Broken Hill Associated Smelters Pty Limited located at Port Pirie, engaged in silver, lead, and zinc smelting. There is also a large railway repair facility operated by Australian National at Port Augusta. Other manufacturing activities taking place in this region include abattoir operation, bakery operation, processing of seafoods, soft drink manufacture, printing and publishing, ready-mixed concrete and concrete products manufacture and fabricated metal product manufacture.

The Electricity Trust of South Australia operates a coal fired electricity generation plant at Port Augusta which supplies about twenty per cent of the State's electricity needs. Details for this plant are not included in the above table of manufacturing activities. To meet future demands, a power station comprising two 250 megawatt turbo-generators and boiler units is being constructed on a site immediately south of the existing power station at Port Augusta.

A fractionation plant and associated storage facilities are under construction at Port Bonython. A mixture of crude oil, condensate and LPG transmitted by pipeline from the Cooper Basin will be split into propane, butane and mixed crude/condensate. Shipping facilities consisting of a 2.59 kilometre single berth jetty fitted with special marine loading arms are under construction. The feasibility of building a small petroleum refinery nearby is being considered.

Distribution of LPG from Port Bonython to the South Australian market will be undertaken by the SA Gas Company.

Transport and Communication

Roads

Northern Division is traversed by three major highways. In the north-western section are 1 274 kilometres of the sealed Eyre Highway stretching from Port Augusta at the head of Spencer Gulf to the Western Australian border; in the north-eastern section are 330 kilometres of the sealed Barrier Highway to Broken Hill (NSW) and in the north from Port Augusta to the Northern Territory border are 1 034 kilometres of the Stuart Highway. This is partially bitumenised and complete sealing is anticipated by 1988. That portion of the Stuart Highway from the Northern Territory border to Alice Springs in Central Australia is already sealed.

In addition to the major highways there are also a number of sealed main roads in the Northern Division. They include the northern end of the Main North Road; the Marree road from Port Augusta through Quorn and Hawker to beyond Parachilna; Hawker to Wilpena Pound road and the Clare to Port Augusta road (through Jamestown, Orroroo and Wilmington). Most of the other roads in the area are unsealed and are generally gravel roads, earth formed roads and tracks.

Railways

The highway system outlined above is complemented by a similar rail system, which is operated by the Australian National Railways Commission. In the west the Trans-Continental line runs 1 782 kilometres from Port Pirie to Kalgoorlie (WA). Of that distance, 1 054 kilometres to the Western Australian border at Deakin are in the Northern Division. The old narrow gauge railway from Broken Hill (NSW) to Port Pirie, built in the late nineteenth century for the transport of silver-lead ores to the smelter at Port Pirie, was replaced by a standard gauge line in the 1960s. Since March 1970 the Indian-Pacific passenger train from Sydney to Perth has run on these railway systems. To the north from Port Augusta to Alice Springs, *via* Tarcoola, is the new standard gauge 'Ghan' railway, which replaced the old narrow gauge railway *via* Quorn and Marree. This line (1 243 kilometres) became fully operational in December 1980.

Adelaide is presently being connected to this standard gauge system by the conversion of the broad gauge line from Adelaide to Crystal Brook. Trains began operating on this section in December 1982 but the project is not expected to be completed until 1984.

It can be seen that the centre of a vast railway network lies in the Northern Division. This network at present stretches across the continent from east to west and from Adelaide to Alice Springs in Central Australia.

Sea

The Northern Division contains the two 'Iron Triangle' ports of Whyalla and Port Pirie on Spencer Gulf.

Whyalla's imports in 1981-82 approximated 1 200 000 tonnes of which over 1 000 000

tonnes (of coal and refined petroleum) came from interstate (approximately 100 000 tonnes of dolomite was imported from Ardrossan in South Australia). Exports totalled approximately 1 340 000 tonnes of which some 1 000 000 tonnes of iron ore (and iron and steel) were exported interstate, and 250 000 tonnes overseas.

A new port (and jetty) is under construction at Port Bonython (Stony Point) to the north of Whyalla to service the Cooper Basin oil and gas project of Santos Ltd. The jetty will be the longest South Australia has known (2.59 km) and will exceed the present longest jetty at Port Germein (1.64 km) by almost one kilometre.

The Cooper Basin project is the largest active on-shore resources development in Australia. A liquids pipeline from Moomba to Stony Point (660 kilometres) was completed in October 1982. Huge tanks store the condensates and crude oil prior to shipment.

The new port came into interim use early in 1983 when, on 4 February, the Shell tanker *Cellana* loaded from a temporary terminal, the first cargo of 20 000 tonnes (160 000 barrels) of Cooper Basin liquid hydro-carbons (condensates) for transport to Shell's refinery at Geelong, Victoria where it was used to produce petrol.

In mid-March the *BP Enterprise* loaded the first cargo of 150 000 barrels of Cooper Basin crude oil for transport to BP's refinery at Kwinana, Western Australia where it was used to produce a wide range of petroleum products.

By the end of 1983 almost two million barrels of condensates and six million barrels of crude oil are expected to be shipped from the port.

Motor Bus Services

Regular motor bus services emanating from Adelaide and interstate pass through the Northern Division *en route* for destinations in Western Australia and the Northern Territory.

Motor Vehicles

At 30 September 1979 there were 45 352 registered motor vehicles in the Northern Division consisting of 26 151 motor cars, 4 738 station wagons, 9 567 commercial vehicles and 4 896 motor cycles.

Air Services

Because of the isolated nature of much of Northern Division, it is extensively serviced by air. There are Government aerodromes at Oodnadatta and Whyalla and licensed aerodromes at Amata, Coober Pedy, Cordillo Downs, Ernabella, Fregon, Granite Downs, Indulkana, Innamincka, Leigh Creek South, Marree, Moomba, Mount Dare, Port Pirie and Teyon. Cordillo Downs, Granite Downs and Indulkana have irregular services, but the remainder have daily, weekly or several flights per week on a regular basis. One company at Alice Springs has a weekly charter service (mail and passengers) to Amata, Ernabella, Fregon, Mount Dare and Teyon. Another charter company at Whyalla has a weekly service to Innamincka. Leigh Creek South has a six days per week air schedule; Moomba has a closed charter service, (*i.e.* not public); and Whyalla, Port Pirie, Marree, Oodnadatta and Coober Pedy have regular services.

In addition to the civil aerodromes, there is a major aerodrome at Woomera controlled by the Department of Defence.

The Royal Flying Doctor Service (SA Division, Adelaide and NSW Division, Broken Hill) covers the Northern Statistical Division and beyond in case of need; and the St John Ambulance Brigade at Whyalla provides a similar service to Upper Eyre Peninsula areas.

Postal and Telecommunications

The Northern Division is divided into some forty postcode areas for postal purposes, and a number of towns and townships share a common postcode by line of mail.

There are approximately seventy post offices; the majority have continuous telephone exchanges and a number have non-continuous services. Similarly, direct Subscriber Trunk Dialling (STD) facilities are available to most towns in the Division, while others have manual STD facilities.

The Northern Division is well served by radio and television services, both National and commercial. Improvement in reception has occurred significantly in recent years by the introduction of translator stations, and satellite-fed stations provide programs originating in the Brisbane studios of the Australian Broadcasting Corporation. The Overland Telegraph line which passes through the Northern Division was the first telegraphic link to span Australia from coast to coast, from Port Adelaide in South Australia to Port Darwin in the Northern Territory, a distance of approximately 3 200 kilometres. The Port Darwin end was linked by a submarine cable to Java, and in June 1872 telegraphic communication with Asian and European networks was established.

Retail Trade

At 30 June 1980 there were 919 retail establishments and 261 selected service establishments operating in Northern. The number of retail and selected service establishments represented 7.3 per cent of the State total and 6.2 per cent of total turnover.

Retail ^(a) and Selected Service Establishments
Summary of Operations by Industry Group, Northern, 1979-80

Industry Group	Establishments at 30 June	Turnover(a)
		\$'000
Department and general stores	20	15 675
Clothing, fabrics and furniture stores	112	18 285
Household appliance and hardware stores	76	13 638
Motor vehicle dealers; petrol and tyre retailers	247	85 708
Food stores	315	81 425
Other retailers	149	16 927
Total retail establishments	919	231 658
Motion picture theatres	10	1 138
Restaurants, hotels and accommodation	146	33 043
Licensed clubs	30	4 095
Laundries and dry cleaners	16	677
Hairdressers, beauty salons	59	1 360
Total selected service establishments	261	40 312
Total retail and selected service establishments	1 180	271 970

(a) Excludes all bread and milk vendors.

Tourism

Tourist activity in the region is centred on the Flinders Ranges. Wilpena Pound attracts visitors from all other States and from overseas. Accommodated and camping tours, generally commencing in Adelaide, are conducted both in coaches and in four-

wheel drive vehicles. Day and half-day sightseeing trips are available from Coober Pedy and Andamooka (where it is possible to watch underground opal mining in progress) and from Innamincka.

Railway preservation societies in Peterborough (Steamtown) and Quorn (the Pichi Richi Steam Railway) provide train journeys on lines in their respective districts, the engines being driven and the rolling-stock maintained by volunteers. Australian National's passenger train from Sydney to Perth (the *Indian Pacific*) passes through Peterborough, Port Augusta and Tarcoola on the way to Western Australia. The 'Ghan', another Australian National train leaves Adelaide on Thursdays and Sundays, calling at Port Pirie, Port Augusta and Kingoonya *en route* to Alice Springs.

The Stuart Highway (Adelaide to Darwin) is not yet completely sealed. Even so it has become a valuable tourist road, particularly for those visitors from other countries who wish to see something of the Australian Outback.

Tourist Accommodation

At 30 June 1982 there were thirty-two motels and hotel/motels in the Northern Statistical Division providing 827 rooms with (predominantly) private facilities.

At the same date there were eighteen caravan parks providing 810 powered sites, 674 unpowered sites, eighty-five on-site caravans and thirty-eight cabins. In addition, there were in the Division over 100 holiday flats and houses available for rental.

Sport and Recreation

Competitive sports which are popular in the area include Australian football, baseball, basketball, cricket, gliding, golf, motocrosse, pistol and rifle shooting, soccer, softball, squash, swimming and tennis. There are eight thoroughbred racing and three trotting clubs, and greyhound tracks at Port Augusta, Port Pirie and Whyalla. Several communities support amateur dramatic societies. Camping and backpacking are popular in the Flinders Ranges.

APPENDIX A

STATISTICAL SUMMARY

In the next twenty pages, a historical summary of some of the more important statistics relating to South Australia is shown. This is intended to present a general picture of the development of the State, with details being given (wherever they are available) for every fifth year for the period 1836-1961, and for each single year thereafter. Naturally the range of statistics available for the early years of the colony is very limited, and in addition it is not always possible to achieve perfect comparability in presenting details covering a period in excess of 140 years. Generally, all series on each page relate to either financial or calendar years but some financial year series have been included on pages which contain information shown in calendar years.

The first year shown on each page is the earliest for which any series on that page is available. Blanks at the top of some columns indicate that information relating to these particular series either was not collected or is not available for these early years, or is not available on a basis comparable to more recent statistics.

All major breaks in series are covered by footnotes, but minor changes are not so recorded, and the statistics should be interpreted with this in mind. An example can be quoted from the table on deaths from principal causes (page 648) where comparability is affected somewhat by changes in classification, particularly in 1950, but no footnote to this effect has been included.

The following standard symbols have been used throughout the summary:

<i>n.a.</i>	not collected, not available for publication
—	nil
<i>p</i>	preliminary information subject to revision
<i>n.y.a.</i>	not yet available
———	break in continuity of figures
..	not applicable

POPULATION ^(a)

Year	Population Estimate at 31 Dec.			Annual Population Growth			
	Males	Females	Persons	Recorded Natural Increase ^(b)	Rate of Natural Increase ^(c)	Total Increase	Rate of Population Growth ^(d)
							Per cent
1836	309	237	546			546	
1841	8 755	6 730	15 485			855	5.84
1846	14 711	11 182	25 893	577	22.29	3 433	15.29
1851	37 321	29 217	66 538	1 786	26.85	2 838	4.46
1856	56 264	51 622	107 886	3 341	30.97	10 499	10.78
1861	67 409	63 403	130 812	3 589	28.00	5 230	4.17
1866	88 024	80 883	168 907	4 029	24.39	7 430	4.60
1871	97 019	91 625	188 644	4 704	25.21	4 098	2.22
1876	116 894	107 666	224 560	4 674	21.51	14 484	6.89
1881	152 453	133 518	285 971	6 696	23.81	9 578	3.47
1886	160 814	145 896	306 710	6 943	22.54	-2 603	-0.84
1891	168 826	155 895	324 721	6 526	20.23	5 774	1.81
1896	179 024	173 043	352 067	5 974	16.95	99	0.03
1901	(d)180 440	(d)178 890	(d)359 330	(d)5 105	14.29	(d)2 080	0.58
1906	184 803	181 710	366 513	5 049	13.90	3 892	1.07
1911	214 061	205 331	419 392	7 019	17.05	12 530	3.08
1916(e)	212 585	229 253	441 838	6 780	15.35	-4 147	-0.93
1921	251 170	250 572	501 742	6 992	14.07	10 736	2.19
1926	285 013	275 912	560 925	6 606	11.92	13 877	2.54
1931	289 397	287 682	577 079	4 191	7.28	2 612	0.45
1936	294 835	294 935	589 770	3 447	5.86	3 008	0.51
1941	301 645	304 721	606 366	4 677	7.78	7 310	1.22
1946(e)	317 238	323 180	640 418	9 352	14.72	9 536	1.51
1951	375 188	368 597	743 785	10 279	14.03	20 942	2.90
1956	436 807	425 145	861 952	11 371	13.40	27 291	3.27
1961	494 600	484 800	979 400	14 584	15.03	22 400	2.68
1962	503 200	495 000	998 200	13 149	13.31	18 800	1.93
1963	514 700	507 700	1 022 400	13 185	13.05	24 200	2.42
1964	529 100	522 900	1 052 000	12 002	11.57	29 600	2.89
1965	544 300	538 700	1 083 000	12 146	11.38	31 000	2.95
1966	554 000	549 800	1 103 700	11 017	10.07	20 700	1.92
1967	559 300	556 700	1 115 900	11 315	10.19	12 200	1.10
1968	566 700	565 400	1 132 100	11 291	10.06	16 200	1.45
1969	574 700	574 700	1 149 400	12 640	11.09	17 200	1.52
1970	584 400	585 900	1 170 200	12 479	10.77	20 900	1.81
1971	602 000	606 700	1 208 700				
1972	608 800	613 400	1 222 200	12 020	9.90	13 436	1.11
1973	615 700	619 900	1 235 600	10 474	8.52	13 434	1.10
1974	627 700	632 000	1 259 700	9 906	7.97	24 176	1.95
1975	633 200	637 500	1 270 700	9 958	7.87	10 896	0.86
1976	637 900	642 500	1 280 400	8 902	6.98	9 747	0.76
1977	643 600	649 700	1 293 300	9 406	7.31	12 884	1.00
1978	645 800	653 900	1 299 700	8 781	6.77	6 443	0.49
1979	648 300	656 800	1 305 100	8 753	6.73	5 375	0.41
1980	651 900	660 900	1 312 800	8 861	6.82	7 693	0.59
1981	657 700	668 200	1 325 900	9 550	7.24	13 044	0.99

(a) Figures before January 1962 exclude full-blood Aborigines. Figures from 1971 are compiled on the basis of estimated resident population. An information paper entitled *Population Estimates: an outline of the new conceptual basis of ABS population estimates* (3216.0) provides details of the conceptual changes. (b) Births and deaths of full-blood Aborigines, where identified in registration, have been excluded from natural increase figures before 1 January 1962. (c) Excess of births over deaths per 1 000 of mean population. (d) Northern Territory included before 1901, but subsequently excluded. (e) During the 1914-18 War, defence personnel leaving the State were treated as departures, but during the 1939-45 War they were retained in the population, and troops of other States and countries were excluded. (f) Effect of Cyclone Tracy.

DEMOGRAPHY

Year	Live Births		Infant Deaths (a)		Deaths		Rates from Principal Causes (b)		
	Number	Rate (b)	Number	Rate (c)	Number	Rate (b)			
							Diseases of the Heart	Cancer	Tuberculosis
1846	937	36.19			360	14.02			
1851	2 759	41.47	539	195.36	973	14.62			
1856	4 488	41.60	610	135.92	1 147	10.63		0.05	0.98
1861	5 551	43.30	1 064	191.68	1 962	15.30		0.08	1.25
1866	6 782	41.06	1 385	204.22	2 753	16.67		0.16	1.25
1871	7 082	37.95	851	120.16	2 378	12.74		0.18	1.05
1876	8 224	37.84	1 228	149.32	3 550	16.34		0.35	1.22
1881	10 708	38.08	1 364	127.38	4 012	14.27		0.32	1.16
1886	11 177	36.29	1 409	126.06	4 234	13.75		0.34	1.34
1891	10 737	33.36	976	90.77	4 211	13.08		0.49	1.31
1896	10 012	28.44	1 015	101.02	4 038	11.47		0.53	1.17
1901	9 079	25.41	909	100.12	3 974	11.12		0.60	1.06
1906	8 921	24.57	675	75.66	3 872	10.66		0.77	1.08
1911	11 057	28.86	670	60.60	4 038	9.81	1.04	0.74	0.85
1916	11 857	26.85	868	73.21	5 077	11.50	1.29	0.81	0.93
1921	11 974	24.09	784	65.48	4 982	10.02	1.13	0.92	0.80
1926	11 483	20.73	509	44.33	4 877	8.81	1.00	0.96	0.71
1931	9 079	15.77	330	36.35	4 888	8.49	1.39	1.20	0.58
1936	8 911	15.16	277	31.09	5 464	9.29	1.87	1.26	0.40
1942	11 278	18.51	448	39.72	6 712	11.02	2.73	1.25	0.41
1943	13 145	21.43	482	36.67	6 482	10.57	2.82	1.31	0.35
1944	13 311	21.49	387	29.07	5 984	9.66	2.64	1.27	0.30
1945	14 033	22.38	394	28.08	6 049	9.65	2.87	1.23	0.32
1946	15 813	24.90	428	27.07	6 461	10.17	3.03	1.29	0.29
1947	16 317	25.23	396	24.27	6 215	9.61	2.86	1.28	0.30
1948	15 870	24.00	472	29.74	6 748	10.20	3.08	1.42	0.28
1949	16 042	23.58	444	27.68	6 373	9.37	2.90	1.23	0.21
1950	17 306	24.39	416	24.04	6 740	9.50	3.05	1.24	0.19
1951	17 463	23.84	428	24.51	7 184	9.81	3.24	1.24	0.15
1952	17 884	23.69	413	23.09	7 050	9.34	3.10	1.29	0.12
1953	18 156	23.39	375	20.65	6 962	8.97	3.00	1.27	0.06
1954	18 227	22.89	388	21.29	7 179	9.01	3.11	1.22	0.08
1955	18 494	22.55	431	23.30	7 536	9.19	3.12	1.28	0.06
1956	18 964	22.35	377	19.88	7 593	8.95	3.24	1.16	0.05
1957	19 536	22.35	403	20.63	7 576	8.67	2.91	1.29	0.05
1958	20 047	22.35	449	22.40	7 743	8.63	2.93	1.26	0.07
1959	20 372	22.12	422	20.71	7 943	8.62	2.89	1.22	0.05
1960	20 966	22.19	397	18.94	7 804	8.26	3.06	1.21	0.04
1961	22 399	23.09	448	20.00	7 815	8.06	2.92	1.26	0.06
1962	21 361	21.67	409	19.15	8 232	8.35	3.06	1.37	0.03
1963	21 367	21.20	399	18.67	8 201	8.14	2.99	1.27	0.04
1964	20 866	20.16	397	19.03	8 906	8.61	3.24	1.32	0.01
1965	20 891	19.63	385	18.43	8 788	8.26	3.11	1.30	0.03
1966(d)	20 362	18.61	364	17.88	9 345	8.54	3.22	1.32	0.02
1967	20 386	18.37	346	16.97	9 071	8.17	3.09	1.35	0.02
1968	21 207	18.89	345	16.27	9 916	8.83	3.29	1.41	0.02
1969	21 977	19.28	347	15.79	9 337	8.19	2.96	1.47	0.02
1970	22 617	19.52	367	16.23	10 138	8.75	3.20	1.43	0.01
1971	22 996	19.39	366	15.92	9 686	8.17	2.89	1.40	0.02
1972	21 844	18.17	367	16.80	9 764	8.12	2.94	1.46	0.01
1973	20 407	16.75	276	13.52	9 835	8.07	2.95	1.47	0.01
1974	20 181	16.33	312	15.46	10 236	8.29	2.96	1.49	0.01
1975	19 986	15.95	222	11.11	9 947	7.94	2.85	1.52	0.01
1976	18 947	15.02	276	14.57	9 999	7.92	2.91	1.45	0.00
1977	19 260	15.08	221	11.47	9 784	7.66	2.80	1.50	0.00
1978	18 558	14.41	227	12.23	9 763	7.58	2.80	1.54	0.00
1979	18 478	14.28	166	8.98	9 661	7.46	2.76	1.50	0.00
1980	18 499	14.24	187	10.11	9 580	7.38	2.58	1.62	0.00
1981	19 351	14.67	157	8.11	9 706	7.35	2.63	1.66	0.00
1982	19 294	14.49	221	11.45	10 457	7.85	2.72	1.70	0.00

(a) Under one year of age from 1871, under two years of age in previous years.

(b) Rate per 1 000 of mean population. (c) Rate per 1 000 live births registered.

(d) Vital events of full-blood Aboriginals, where identified in registrations, were excluded before 1966.

SOCIAL DEVELOPMENT

Marriages and Divorces; Law and Order

Year	Marriages		Divorces (b)	Bank- ruptcies	Court Convictions		Police	
	Total	Rate(a)			Higher Courts(c)	Courts of Summary Juris- diction(d)	Active Strength	Net Expen- diture
								\$'000
1841				36	37			
1846	220	8.50		16	40			
1851	189	2.84		106	103		127	
1856	1 171	10.85		88	85	2 919	174	
1861	1 158	9.03		115	62	3 025	151	
1866	1 299	7.86		252	107	4 341	208	90
1871	1 250	6.70		247	91	4 864	187	74
1876	1 852	8.52		200	129	7 905	257	108
1881	2 308	8.21		696	213	13 231	371	164
1886	1 976	6.42	10	535	121	6 808	401	178
1891	2 315	7.21	5	142	85	6 918	388	172
1896	2 183	6.20	6	240	110	5 149	347	150
1901	2 304	6.45	6	165	98	4 968	359	152
1906	2 679	7.38	3	172	92	5 249	373	153
1911	4 036	9.80	20	190	74	7 303	423	183
1916	3 602	8.16	14	324	52	7 145	541	262
1921	4 383	8.82	88	155	97	8 968	566	391
1926	4 503	8.13	71	439	174	21 417	633	499
1931	3 069	5.33	138	996	274	14 760	763	641
1936	5 182	8.81	213	551	171	14 920	701	570
1941	6 855	11.40	273	284	177	21 990	707	689
1946	6 700	10.55	654	23	231	(e) 20 585	(e) 830	(e) 819
1947	6 668	10.31	695	32	246	24 491	833	888
1948	6 704	10.14	630	32	185	24 164	869	1 052
1949	6 247	9.18	590	52	205	22 834	928	1 208
1950	6 585	9.28	661	44	207	25 496	942	1 398
1951	6 646	9.07	637	53	307	28 675	913	1 647
1952	6 241	8.27	581	76	328	27 432	952	2 073
1953	6 149	7.92	628	91	330	30 229	982	2 429
1954	6 190	7.77	594	89	312	25 482	986	2 617
1955	6 226	7.59	624	106	340	29 264	969	2 517
1956	6 277	7.40	567	150	362	28 221	1 018	3 060
1957	6 581	7.53	529	244	459	30 658	1 143	3 303
1958	6 505	7.25	483	278	457	32 621	1 183	3 677
1959	6 614	7.18	503	366	499	34 203	1 243	4 084
1960	6 607	6.99	610	368	580	42 531	1 301	4 499
1961	6 804	7.01	718	561	606	52 155	1 376	5 043
1962	7 021	7.12	685	620	718	53 531	1 466	5 651
1963	7 302	7.24	765	584	745	57 189	1 441	5 825
1964	7 765	7.50	887	675	629	55 408	1 496	6 245
1965	8 680	8.16	852	582	713	62 238	1 558	6 912
1966	9 051	8.27	1 069	648	738	71 694	1 595	7 319
1967	9 434	8.50	929	660	707	87 110	1 660	8 417
1968	9 652	8.60	915	759	692	105 027	1 777	9 137
1969	10 599	9.30	963	659	712	105 966	1 845	9 568
1970	10 864	9.38	939	611	694	114 499	1 881	10 621
1971	10 833	9.21	1 264	(f) 626	(f) 931	110 543	1 971	12 181
1972	10 829	9.10	1 235	643	964	123 063	2 063	12 961
1973	10 806	9.01	1 582	554	982	(g) 94 068	2 167	15 107
1974	10 769	8.84	1 561	373	906	93 037	2 264	19 334
1975	9 843	7.95	1 812	437	989	104 402	2 461	28 035
1976	10 902	8.64	(h) 6 142	351	1 080	95 758	2 548	37 488
1977	10 126	7.93	4 419	456	1 075	105 224	2 718	44 669
1978	9 800	7.61	3 805	673	1 258	105 413	2 879	53 456
1979	9 778	7.55	3 794	847	1 281	88 404	3 093	58 868
1980	10 064	7.75	4 203	1 016	n.y.a.	n.y.a.	3 210	67 020
1981	10 252	7.77	4 132	1 012	n.y.a.	n.y.a.	3 427	78 876
1982	10 935	8.23	4 526	860	n.y.a.	n.y.a.	3 400	85 086

(a) Rate per 1 000 of mean population. (b) Dissolutions made absolute. (c) Distinct persons only. (d) Each type of offence counted separately when there are multiple charges against an individual. (e) Year ended 30 June from 1943. (f) Year ended 30 June from 1971. (g) Excludes juvenile offenders from 1973. (h) The Family Law Act 1975 repealing State legislation, came into operation throughout Australia in 1976.

SOCIAL DEVELOPMENT

Education								
Year	Primary and Secondary					Tertiary		Further
	Government Schools (a)		Non-government Schools			Uni- versities	Colleges of Advanced Education	Course Enrol- ments
	No.	Students	No.	Students		Students (b)	Students	
		Primary		Secondary	Primary				Secondary
1851	115	3 031						
1856	147	6 516						
1861	219	10 711	236					
1866	292	14 690	n.a.					
1871	307	15 791	n.a.					
1876	281	25 889	326			58		
1881	405	36 888	363			74		
1886	504	44 405	n.a.			197		
1891	552	47 094	285			246		
1896	639	59 944	232			320		
1901	706	63 183	230			591		
1906	708	57 270	215	(c) 9 753		626		
1911	743	53 494	1 800	(c) 11 121		641		
1916	857	63 935	3 047 (d) 218	(d) 12 785		491		
1921	973	77 111	3 067	13 951		1 338		
1926	1 019	79 204	6 527	188	16 139	1 575		
1931	1 075	81 218	10 503	186	14 310	2 092		
1936	1 100	75 411	9 280	174	13 993	2 025		
1941	1 006	63 303	10 761	167	13 915	2 211		
1946	811	61 242	11 870	145	16 310	3 723		
1951	728	81 642	14 106	146	20 677	3 720		
1952	716	89 630	15 121	146	22 393	3 612		
1953	723	97 262	16 933	148	23 631	3 565		
1954	716	105 022	17 972	157	24 949	3 555		
1955	701	111 909	19 485	157	26 840	3 617		
1956	699	118 365	22 134	163	29 050	3 828		
1957	694	123 132	24 734	163	30 504	4 424		
1958	674	125 678	28 189	161	32 425	4 816		
1959	668	129 850	33 042	162	33 896	5 300		
1960	681	132 372	37 901	163	35 370	5 723		
1961	688	135 274	41 889	165	35 652	6 250		
1962	682	136 924	46 499	164	(e) 24 962	(e) 11 440	6 824	
1963	682	140 520	49 637	166	24 677	12 354	7 416	
1964	685	145 042	54 026	170	24 761	12 890	8 203	
1965	700	150 809	57 811	172	24 605	13 007	8 658	
1966	700	154 253	60 834	172	24 188	12 999	9 364	
1967	674	157 424	65 630	173	23 533	13 469	9 658	
1968	683	157 997	68 814	171	22 814	13 599	9 803	
1969	676	159 682	71 599	171	22 257	14 203	10 128	3 420
1970	681	156 922	71 866	170	22 464	14 642	10 176	3 443
1971	662	156 458	74 982	169	22 669	15 018	10 682	4 242
1972	(f) 615	154 886	77 926	163	22 232	15 233	11 124	(g) 4 291
1973	614	152 698	79 088	163	21 929	15 806	11 497	78 540
1974	613	152 901	79 578	157	22 399	16 494	12 264	78 214
1975	619	151 975	82 737	151	22 479	16 818	12 876	12 163
1976	625	151 499	82 115	147	22 177	17 122	13 493	13 773
1977	626	152 079	81 131	145	22 361	17 085	13 590	14 560
1978	628	149 964	80 491	151	22 353	17 088	12 904	15 168
1979	632	146 793	77 732	155	22 591	17 381	12 840	15 996
1980	638	142 290	76 392	159	23 347	17 769	12 677	16 042
							16 976	149 437
1981	638	137 860	75 173	163	24 729	18 583	12 811	17 558
1982	716	131 250	75 266	169	25 805	19 952	n.y.a.	17 031
							n.y.a.	n.y.a.

(a) Net enrolment to 1969, thereafter at census date (at or about 1 August, until 1980 when it became 1 July). Includes Northern Territory before 1958. (b) Excludes students at Conservatorium of Music not also enrolled for degree or diploma subject. (c) On last school day. (d) Non-government schools compulsorily registered, previous years incomplete. From 1916 to 1961 net enrolment including Northern Territory. (e) From 1962 at census date. Excludes Northern Territory. (f) From 1972 includes only primary and secondary, before 1972 included technical institutions. (g) In approved courses at colleges of advanced education.

SOCIAL DEVELOPMENT

Health

Year	Recognised Hospitals				Mental Hospitals(a)		Medical Practitioners Registered	General Nurses Registered
	Number of Hospitals	Patients Treated	Revenue		Admissions During Year	Patients at end of Year		
			State Govt Aid	Total				
				\$'000				
1846	1				10	6	22	
1851	1	413			9	11	68	
1856	1	559			69	73	101	
1861	1	795			68	167	111	
1866	1	1 257			88	224	85	
1871	1	1 433			111	324	77	
1876	1	2 282			149	427	94	
1881	1	2 258			199	606	113	
1886	1	2 022			207	744	152	
1891	1	2 301			224	815	177	
1896	1	2 633			195	934	279	
1901	1	3 554			214	988	341	
1906	9	4 476			231	994	242	
1911	21	8 547	96	132	273	1 084	299	
1916	27	12 453	130	186	302	1 158	326	
1921	31	15 642	254	397	272	1 190	360	
1926	45	22 438	467	730	249	1 282	445	1 271
1931	51	26 505	356	574	250	1 395	457	1 601
1936	52	34 014	383	730	272	1 627	477	1 886
1941	55	40 593	607	1 063	247	1 905	814	2 562
1946	(b) 58	(b) 46 696	(b) 836	(b) 1 697	(b) 302	(b) 2 024	947	3 314
1947	59	52 388	1 135	2 133	332	2 107	983	3 380
1948	59	50 480	1 382	2 476	330	2 165	1 012	3 589
1949	60	53 558	1 671	3 065	398	2 213	1 053	3 808
1950	59	54 334	2 109	3 719	379	2 310	1 111	4 018
1951	60	57 401	2 694	4 503	452	2 411	1 172	4 199
1952	61	59 374	3 739	6 110	426	2 425	1 244	4 461
1953	62	61 681	4 673	7 442	498	2 534	1 202	4 585
1954	62	62 138	4 340	7 386	548	2 644	1 265	4 724
1955	63	64 310	5 524	8 819	516	2 612	1 348	4 884
1956	65	69 295	8 214	11 702	553	2 658	1 395	5 026
1957	65	73 249	11 370	15 449	543	2 594	1 469	5 122
1958	64	75 282	10 425	15 372	659	2 667	1 507	5 475
1959	65	79 426	10 260	15 638	712	2 643	1 601	5 583
1960	65	82 948	10 474	16 829	1 637	2 810	1 681	5 817
1961	66	87 386	10 155	17 414	1 846	2 833	1 739	6 123
1962	65	89 409	10 366	18 350	1 925	2 914	1 821	6 523
1963	65	94 144	10 007	19 307	2 604	2 799	1 883	6 879
1964	65	99 491	12 094	21 166	3 132	2 838	2 002	7 255
1965	65	105 098	14 171	24 084	3 061	2 752	2 080	7 699
1966	67	111 313	19 681	30 386	2 810	2 646	2 175	8 065
1967	65	117 693	22 138	34 532	2 866	2 497	2 282	8 467
1968	65	122 835	16 626	31 039	2 733	2 465	2 372	8 832
1969	65	132 864	21 364	37 064	2 964	2 283	2 474	9 275
1970	66	135 433	23 198	41 500	3 378	2 269	2 568	9 855
1971	67	135 927	32 971	53 942	3 527	2 193	2 707	10 506
1972	68	147 058	29 671	53 750	3 602	2 159	3 054	11 201
1973	69	158 261	37 951	64 633	3 225	2 208	3 154	11 923
1974	70	164 797	53 893	85 255	3 309	2 123	3 348	12 717
1975	71	168 832	82 194	124 930	3 410	2 074	3 767	13 863
1976	73	179 733	73 910	164 292	3 665	1 769	4 531	14 976
1977	81	190 806	87 294	206 060	3 489	1 766	4 574	16 384
1978	81	202 802	102 371	250 131	3 648	1 670	4 783	17 653
1979	81	216 315	107 401	263 490	3 971	1 691	4 800	18 938
1980	81	220 138	108 433	269 662	4 470	1 711	5 100	20 052
1981	81	228 593	128 148	307 720	6 279	1 679	5 500	21 111
1982	81	222 319	134 132	344 203	6 790	1 574	4 778	22 097

(a) From 1959-60 covers all in-patients (certified and voluntary) in institutions. Before this covered only certified patients in two 'long-term' institutions. (b) Year ended 30 June from 1946.

SOCIAL DEVELOPMENT

Social Welfare

Year	Pensions and Benefits Paid in South Australia by Commonwealth Government					Pensioners	
	Age and Invalid Pensions	Disability and Service Pensions (a)	Family Allowance (b)	National Health Services	Total (Includes Other)	Age and Invalid	Disability and Service (a)
			\$'000				Number
1915-16	544	20				10 993	794
1920-21	910	1 028			2 060	12 320	14 663
1925-26	1 404	978			2 496	14 098	16 144
1930-31	1 982	994			3 074	20 602	16 653
1932-33	1 826	844			2 726	21 461	15 517
1933-34	1 896	854			2 804	22 805	15 352
1934-35	2 068	892			3 016	24 517	15 248
1935-36	2 298	942			3 298	26 134	15 997
1936-37	2 522	1 036			3 622	27 308	16 340
1937-38	2 868	1 076			4 010	28 039	16 865
1938-39	2 836	1 098			4 008	28 857	16 680
1939-40	2 908	1 104			4 086	29 521	16 145
1940-41	3 032	1 088			4 192	29 642	15 424
1941-42	3 274	1 108	1 720		6 162	28 422	15 296
1942-43	3 628	1 274	1 810		7 076	27 423	16 333
1943-44	3 688	1 654	1 908		8 076	27 530	18 472
1944-45	3 624	1 838	1 870		8 276	27 507	22 071
1945-46	4 670	2 272	2 854	244	11 262	29 512	30 687
1946-47	5 102	2 692	3 196	856	13 212	32 387	35 117
1947-48	6 284	3 046	3 212	770	14 708	34 229	38 505
1948-49	7 170	3 718	4 024	1 054	17 442	35 470	42 931
1949-50	7 888	4 178	4 938	1 220	19 966	36 524	47 303
1950-51	8 600	5 214	7 564	2 122	25 216	36 582	51 589
1951-52	10 360	6 442	8 298	3 554	30 532	37 363	54 758
1952-53	12 616	7 130	9 540	4 154	35 378	39 700	58 591
1953-54	14 150	7 686	9 154	4 880	38 202	42 216	61 039
1954-55	15 310	8 778	9 428	5 824	41 560	45 147	63 767
1955-56	17 718	9 074	10 998	6 140	46 322	47 754	66 535
1956-57	19 244	9 575	10 500	6 710	48 926	50 209	68 291
1957-58	21 432	10 664	10 860	7 704	54 256	52 699	69 852
1958-59	23 150	10 860	12 618	9 868	60 460	55 181	71 331
1959-60	26 366	12 697	11 794	11 977	66 157	57 336	72 013
1960-61	28 537	13 722	14 092	12 811	73 594	60 483	72 695
1961-62	32 844	14 241	12 671	14 567	80 283	64 374	74 454
1962-63	33 951	14 867	12 861	16 066	83 393	64 156	73 239
1963-64	36 120	16 224	15 916	17 080	91 514	65 573	72 518
1964-65	38 509	16 006	16 563	18 948	96 362	66 798	70 678
1965-66	39 691	17 692	16 988	21 254	102 661	67 999	68 439
1966-67	43 720	16 776	19 063	23 100	111 394	70 521	66 624
1967-68	46 711	17 252	17 835	25 448	116 625	74 016	65 078
1968-69	50 828	19 065	18 162	28 411	128 940	76 616	62 986
1969-70	58 720	19 435	20 287	33 476	145 857	85 076	61 928
1970-71	64 714	20 405	18 284	41 773	161 687	88 936	60 406
1971-72	76 545	22 493	19 766	50 587	189 255	92 771	58 682
1972-73	101 625	25 917	22 780	57 851	236 747	104 350	59 707
1973-74	131 771	31 350	20 098	66 005	291 823	116 117	59 522
1974-75	184 218	41 774	20 237	82 399	400 590	123 627	59 130
1975-76	234 266	49 377	22 896	223 151	632 412	130 229	59 536
1976-77	273 814	59 709	87 491	177 894	722 242	136 473	60 492
1977-78	333 579	72 018	90 483	204 412	871 650	141 941	61 642
1978-79	374 344	78 219	84 100	230 840	973 385	146 860	62 505
1979-80	418 769	89 073	97 481	253 694	1 062 830	150 599	65 109
1980-81	472 416	112 090	88 861	262 041	1 241 724	153 210	67 696
1981-82	544 874	126 728	96 856	290 967	n.y.a.	155 924	69 924

(a) From 1974-75, war pensions known as disability pensions.

(b) Family allowance known as child endowment before 1975-76.

EMPLOYMENT AND UNEMPLOYMENT

Year	Civilian Labour Force (a)		Civilian Employment (a)		Factory Employment (b)		Unemployed (a)		
	Males	Females	Males	Females	Males	Females	Number		Rate (c)
							Males	Females	Persons
									Per cent
1911					22.6	5.3			
1925-26					33.1	6.9			
1930-31					19.3	4.6			
1935-36					31.4	7.1			
1936-37					33.4	7.3			
1937-38					36.3	7.8			
1938-39					35.4	8.0			
1939-40					36.3	8.7			
1940-41					40.1	10.8			
1941-42					49.9	15.3			
1942-43					52.8	20.0			
1943-44					50.7	18.9			
1944-45					49.1	16.4			
1945-46					49.5	13.7			
1946-47					56.7	14.0			
1947-48					59.1	14.3			
1948-49					60.9	14.9			
1949-50					63.1	15.3			
1950-51					66.8	16.2			
1951-52					68.0	15.9			
1952-53					67.1	13.4			
1953-54					70.7	14.8			
1954-55					73.7	15.9			
1955-56					76.1	16.4			
1956-57					75.5	16.4			
1957-58					75.9	16.6			
1958-59					77.4	16.7			
1959-60					81.3	17.7			
1960-61					81.9	18.1			
1961-62					81.8	17.3			
1962-63					86.7	18.6			
1963-64					90.9	19.9			
1964-65					94.7	21.5			
1965-66					96.2	22.1			
1966-67	321.9	143.5	316.6	136.5	96.1	22.1	5.3	7.0	2.6
1967-68	319.8	144.5	315.0	138.1	98.9	22.5	4.9	6.4	2.4
1968-69	328.7	152.1	323.9	146.0	(d) 91.0	(d) 22.1	4.9	6.2	2.3
1969-70	332.7	161.2	329.3	155.8	94.6	23.8	3.4	5.4	1.8
1970-71	335.4	168.1	331.4	163.1	n.a.	n.a.	4.0	5.0	1.8
1971-72	343.2	170.1	338.0	162.1	96.2	25.4	5.1	7.9	2.5
1972-73	348.9	182.2	341.5	172.6	95.6	25.8	7.5	9.6	3.2
1973-74	358.3	196.5	352.9	188.0	98.7	29.4	5.3	8.4	2.5
1974-75	364.3	200.9	358.5	190.9	(e) 94.3	(e) 27.0	5.8	10.0	2.8
1975-76	366.5	211.3	355.0	194.3	90.3	25.8	11.5	17.0	4.9
1976-77	372.0	217.0	361.0	203.2	89.9	25.5	11.0	13.7	4.2
1977-78	380.0	222.4	355.6	205.8	86.0	24.0	24.3	16.6	6.8
1978-79	376.0	222.3	352.0	201.7	82.6	23.7	23.9	20.6	7.5
1979-80	376.9	221.8	350.5	200.1	83.5	23.5	26.4	21.7	8.0
1980-81	377.0	226.9	351.9	207.7	81.4	23.3	25.1	19.2	7.3
1981-82	376.4	225.9	350.8	205.5	n.y.a.	n.y.a.	25.6	20.5	7.7

(a) From Labour Force Surveys for June from 1978; for August in earlier years. (b) Average employment including working proprietors during the year. (c) Unemployment rate is the number unemployed as a proportion of the number in the labour force. (d) Direct comparisons with figures for previous years are not possible because of changes in the scope of the census and in the census units. (e) From 1974-75 excludes single establishment enterprises employing fewer than four persons.

WAGES

Year	State Living Wage (a)		Federal Basic and Minimum Wage Rates (a) (d)		Minimum Weekly Wage Rates (b)	
	Males	Females	Males	Females	Males	Females
Dollars						
1911			5.10			
1921	7.95	3.50	7.95		8.94	4.52
1926	8.55	3.95	8.55		9.57	5.00
1931	6.30	3.15	5.81		7.50	4.39
1936	6.60	3.30	6.90		7.95	4.33
1938	7.40	3.65	7.60		8.71	4.78
1939	7.80	3.80	7.70		9.41	4.96
1940	8.40	4.10	8.00		9.85	5.21
1941	8.70	4.35	8.40		10.58	5.54
1942	9.40	4.62	9.30		11.50	6.02
1943	9.40	4.62	9.40		11.61	6.12
1944	9.40	4.62	9.30		11.58	6.53
1945	9.40	4.62	9.30		11.60	6.72
1946	9.85	5.50	10.20		12.41	7.60
1947	10.60	5.90	10.60		13.78	8.80
1948	11.70	6.65	11.60		15.22	9.51
1949	12.50	6.85	12.60		16.44	10.10
1950	15.80	11.85	15.80	11.85	19.79	14.21
1951	19.50	14.60	19.50	14.60	23.60	17.02
1952	22.90	17.15	22.90	17.15	27.08	19.68
1953	23.10	17.30	23.10	17.30	27.35	19.91
1954	23.10	17.30	23.10	17.30	28.16	19.99
1955	23.10	17.30	23.10	17.30	28.50	20.18
1956	24.10	18.05	24.10	18.05	29.63	20.92
1957	25.10	18.80	25.10	18.80	30.69	21.95
1958	25.60	19.20	25.60	19.20	31.24	22.38
1959	27.10	20.30	27.10	20.30	33.99	23.92
1960	27.10	20.30	27.10	20.30	34.22	24.29
1961	28.30	21.20	28.30	21.20	35.46	25.20
1962	28.30	21.20	28.30	21.20	35.65	25.23
1963	28.30	21.20	28.30	21.20	36.40	25.52
1964	30.30	22.70	30.30	22.70	38.69	27.29
1965	30.30	22.70	30.30	22.70	39.48	27.75
1966	32.30	24.20	32.30	24.20	41.75	29.42
1967	33.30	25.20 (c)	37.05		43.79	31.32
1968	34.65	26.55	38.40		48.23	33.60
1969	(d) 34.65	(d) 26.55	41.90		50.76	35.94
1970	(d) 34.65	(d) 26.55	41.90		52.12	37.51
1971	37.85	29.00	45.90		59.38	44.16
1972	39.85	31.00	50.60		65.82	50.50
1973	43.15	34.10	59.60		75.20	62.11
1974	46.50	37.30	67.60	(e) 60.80	103.32	91.47
1975	(f)	(f)	82.40		115.13	103.34
1976	(f)	(f)	100.20		132.20	125.62
1977	(f)	(f)	111.80		145.69	139.06
1978	(f)	(f)	119.60		158.53	149.15
1979	(f)	(f)	123.40		167.12	154.58
1980	(f)	(f)	134.40		184.39	172.56
1981	(f)	(f)	144.40		215.25	192.63
1982	(f)	(f)	144.40	(g) 229.10	(g) 209.52	

(a) At end of year. (b) Adult rates, at end of year, for all industries excluding rural. (c) Provisions for minimum wages (for adult males only) were inserted in Commonwealth Awards in July 1966 and basic wages were replaced by the total wage concept in July 1967. (d) An economic loading of 3 per cent of the sum of the living wage plus margin was added to all award rates of pay from December 1969 to January 1971. (e) Between May 1974 and June 1975 the minimum wage for adult males was extended to adult females in three steps. (f) Increased to \$48.20 and \$38.60 for males and females respectively from May 1975 and abolished in September 1975, award rates thereafter being specified as total wages. (g) At August 1982, after which a new series was introduced. See Part 7.3 for details.

PRICES

Year	Retail Price Indexes: Adelaide						Agricultural Produce at Principal Markets		
	'C' Series (a)			Consumer (b)			Wheat (per tonne) (c)	Barley (per tonne)	Wool (per kg)
	Food and Groceries	Rent	All Groups	Food	Housing	All Groups			
							\$		Cents
1901	575								
1911	570						12·71	16·53	15·59
1916	835	573	798				17·45	14·33	19·78
1921	941	819	989				29·39	19·49	24·74
1926	1 045	927	1 026				22·82	17·64	27·45
1931	789	755	837				8·41	9·92	12·52
1936	798	795	839				14·07	9·83	21·89
1938	861	868	888				13·08	15·52	20·72
1939	897	888	906				8·34	11·95	16·71
1940	900	892	936				14·92	15·61	21·94
1941	905	893	988				16·42	21·43	21·76
1942	1 046	893	1 075				16·76	14·64	21·58
1943	1 003	893	1 102				19·51	19·84	25·07
1944	993	892	1 098				22·71	19·05	24·96
1945	1 002	892	1 102				20·69	24·07	24·71
1946	1 006	894	1 120				29·47	27·91	24·78
1947	1 067	897	1 165				36·49	39·33	40·50
1948	1 230	903	1 277				56·70	74·30	65·92
1949	1 351	912	1 393	38·6	38·4	45·0	45·64	36·95	81·09
1950	1 494	929	1 521	41·7	40·0	48·4	52·98	49·69	106·13
1951	1 931	949	1 833	48·2	42·5	54·6	53·76	51·54	237·28
1952	2 380	1 055	2 159	62·5	47·6	66·8	60·63	71·74	118·54
1953	2 444	1 155	2 246	68·7	55·9	73·1	61·77	71·12	137·74
1954	2 525	1 174	2 277	71·2	61·5	74·7	53·35	44·84	138·18
1955	2 657	1 247	2 354	72·9	63·2	75·6	49·05	59·97	120·66
1956	2 871	1 358	2 466	76·2	67·6	78·1	49·60	46·74	103·57
1957	2 710	1 468	2 463	78·9	72·3	81·2	53·28	48·50	135·63
1958	2 768	1 592	2 536	76·9	74·9	81·8	53·50	52·38	103·09
1959	2 998	1 674	2 647	80·7	76·7	83·6	51·51	49·43	83·84
1960				84·6	78·3	86·2	53·83	44·53	98·88
1961				90·9	83·2	89·8	55·37	40·39	88·49
1962				87·7	85·9	89·5	55·70	49·43	91·69
1963				86·6	86·7	89·1	53·94	48·94	98·92
1964				88·8	88·7	90·2	52·65	49·12	119·53
1965				93·9	92·1	93·9	51·88	50·84	97·31
1966				97·1	95·7	97·0	55·15	51·85	102·98
1967				100·0	100·0	100·0	54·67	52·56	99·69
1968				104·7	102·1	102·9	58·86	52·47	82·87
1969				106·4	104·7	105·3	50·01	41·09	91·76
1970	Not calculated			107·1	109·3	108·2	51·88	36·82	75·02
1971				109·5	115·9	112·5	52·98	49·21	59·74
1972				113·6	124·4	119·2	55·26	40·96	72·21
1973				123·1	133·3	126·5	56·09	59·30	178·07
1974				148·3	150·6	143·9	103·20	87·59	176·54
1975				163·7	185·3	169·7	111·21	106·11	120·12
1976				180·6	222·1	190·5	104·46	98·14	134·46
1977				(d)65·6	(d)75·6	(d)70·5	90·36	106·52	173·39
1978				73·1	81·9	77·5	102·20	88·37	179·03
1979				80·6	86·0	83·2	127·83	83·95	193·65
1980				90·9	92·1	91·6	153·24	126·84	224·56
1981				100·0	100·0	100·0	154·92	144·99	245·55
1982				108·8	110·1	110·5	159·61	139·47	262·85

(a) Base: Average all groups six capital cities 1923 to 1927 = 1 000.

(b) Base of each group 1966-67 = 100·0. Index numbers are average for year ended 30 June in the year stated.

(c) Bulk wheat from 1962, previously bagged.

(d) Base of each group 1980-81 = 100·0.

METEOROLOGY, ADELAIDE

Year	Rainfall		Evapora- tion	Sunshine	Temperature		
	Days of Rain	Total	Total	Total	Extreme Maximum	Extreme Minimum	Mean
	Days	mm	mm	Hours		°C	
1841	93	456					
1846	114	683					
1851	128	786					
1856	118	633					
1861	147	611			42.8	1.7	17.4
1866	116	511			43.1	2.9	17.7
1871	137	591	1 345		44.1	3.0	17.8
1876	110	341	1 548		45.7	0.3	16.9
1881	135	458	1 422		41.0	1.8	16.7
1886	141	366	1 421	2 588	44.7	2.0	17.1
1891	113	356	1 322	2 753	39.3	2.3	16.8
1896	121	385	1 337	2 644	44.0	1.3	17.4
1901	124	457	1 494	2 523	43.3	1.8	17.5
1906	127	674	1 400	2 366	45.1	2.3	17.6
1911	127	407	1 233	2 415	39.3	1.6	17.2
1916	142	715	1 411	2 512	41.9	3.5	16.7
1921	100	575	1 478	2 658	43.1	2.8	18.2
1926	116	564	1 473	2 689	40.1	3.0	17.3
1931	145	565	1 517	2 534	45.9	3.1	16.8
1936	123	491	1 525	2 431	39.8	2.8	17.1
1941	126	573	1 604	2 472	43.3	3.3	16.9
1946	135	574	1 385	2 301	41.3	2.0	16.3
1948	122	544	1 622	2 402	43.4	2.9	16.3
1949	119	463	1 492	2 318	38.0	2.6	15.8
1950	91	408	1 657	2 678	40.0	3.6	17.0
1951	135	646	1 645	2 339	40.5	2.6	16.9
1952	128	508	1 523	2 459	40.8	1.6	15.8
1953	121	508	1 712	2 585	41.3	3.9	16.6
1954	109	425	1 680	2 503	39.4	3.4	16.7
1955	134	624	1 677	2 396	42.8	3.6	16.7
1956	154	692	1 638	2 379	38.3	4.1	16.4
1958	121	446	1 672	2 455	39.0	1.2	16.4
1959	88	288	1 750	2 592	43.3	3.1	17.3
1960	129	586	1 606	2 356	41.8	2.4	16.3
1961	122	379	n.a.	2 586	40.8	2.9	17.8
1962	125	456	n.a.	2 559	42.7	4.2	17.2
1963	118	621	1 620	2 369	39.9	3.3	17.0
1964	135	556	1 507	2 200	40.3	2.3	16.3
1965	111	339	1 648	2 439	38.8	2.6	17.3
1966	123	495	1 612	2 432	40.7	3.3	16.9
1967	89	257	1 939	2 841	39.0	3.9	17.3
1968	141	653	1 870	2 410	43.1	2.2	17.0
1969	112	525	1 783	2 665	41.1	3.9	16.7
1970	149	483	1 866	2 658	40.5	2.9	16.6
1971	147	672	1 813	2 624	39.6	4.2	17.1
1972	106	446	1 947	2 967	39.6	2.3	17.3
1973	129	675	1 740	2 686	40.5	3.7	17.7
1974	136	639	1 561	2 584	36.9	3.6	17.2
1975	142	522	1 635	2 596	41.2	3.8	17.4
1976	110	366	1 636	2 831	40.5	3.3	16.7
1977	117	400	1 665	2 876	40.3	3.6	17.2
1978 (a)	127	588	1 533	2 723	39.3	2.2	16.4
1979	137	661	1 557	2 702	42.0	3.0	17.2
1980	119	527	1 616	2 897	43.3	3.3	17.5
1981	119	672	1 542	2 739	43.4	2.4	17.4
1982	105	357	1 567	2 878	44.2	-0.4	17.4

(a) Recorded at Bureau of Meteorology, Kent Town from 1978.

RURAL PRODUCTION

Land Cultivation

Year	Rural Establish- ments	Area of Rural Establish- ments	Area under Crop		Area of Pastures Top- dressed	Area Under Irrigation
			Fertilised	Total		
	No.			'000 hectares		
1846-47				14		
1856-57				82		
1861-62				162		
1866-67				245		
1871-72				339		
1876-77				497		
1881-82				873		
1886-87				925		
1891-92				780		
1896-97				830		
1901-02			335	905		
1906-07			629	873		
1911-12	27 120	47 012	1 010	1 200		
1916-17	29 278	52 475	1 156	1 468		
1921-22	29 693	54 311	1 197	1 367		9.1
1926-27	29 654	54 867	1 430	1 572	66	14.3
1931-32	30 648	52 354	1 705	2 112	56	17.3
1936-37	31 321	55 433	1 619	1 853	366	17.1
1941-42	30 565	58 936	1 409	1 609	427	18.5
1946-47	28 040	59 154	1 366	1 572	450	18.7
1947-48	27 597	57 624	1 367	1 559	563	17.2
1948-49	28 110	59 377	1 327	1 521	705	19.5
1949-50	27 900	59 312	1 263	1 464	725	19.9
1950-51	28 248	61 403	1 316	1 488	753	32.0
1951-52	28 698	61 425	1 284	1 496	870	23.6
1952-53	28 860	61 791	1 270	1 449	940	23.1
1953-54	29 220	60 830	1 350	1 529	1 144	25.1
1954-55	28 092	60 452	1 404	1 576	1 272	28.1
1955-56	28 585	60 689	1 378	1 607	1 416	28.7
1956-57	27 936	60 675	1 376	1 610	1 488	26.7
1957-58	27 971	61 530	1 401	1 581	1 621	32.9
1958-59	28 105	61 639	1 494	1 679	1 504	34.4
1959-60	28 527	62 903	1 489	1 643	1 405	40.8
1960-61	28 711	63 316	1 751	2 010	1 335	41.3
1961-62	28 886	63 494	1 644	1 825	1 450	43.9
1962-63	28 922	63 413	1 787	1 996	1 518	45.6
1963-64	28 711	64 307	1 938	2 177	1 616	47.7
1964-65	28 754	63 517	1 932	2 141	1 908	49.8
1965-66	28 759	64 505	1 971	2 142	2 061	52.1
1966-67	28 957	65 361	2 073	2 322	2 119	56.2
1967-68	29 058	65 059	2 037	2 270	2 076	70.1
1968-69	29 137	65 603	2 431	2 783	1 728	70.4
1969-70	29 035	65 839	2 138	2 407	2 008	75.3
1970-71	29 087	65 795	1 884	2 141	1 938	77.3
1971-72	29 095	65 146	2 113	2 478	1 822	76.1
1972-73	29 001	65 372	1 864	2 084	2 033	83.1
1973-74	28 738	64 843	2 146	2 451	2 425	80.2
1974-75	28 185	63 825	1 986	2 237	2 138	78.9
1975-76	(a) 25 143	63 577	1 821	2 116	1 133	77.9
1976-77	(a) 21 597	63 052	1 785	2 036	1 408	n.a.
1977-78	21 909	62 494	2 309	2 565	1 607	n.a.
1978-79	22 022	62 655	2 596	2 827	1 614	78.4
1979-80	23 155	62 786	n.a.	2 772	1 811	n.a.
1980-81	22 249	62 437	n.a.	2 773	1 894	79.5
1981-82	21 402	62 897	2 677	2 865	1 782	n.a.

(a) Changes in scope of the Agricultural Census. See Part 9.1.

RURAL PRODUCTION

Crop Areas and Yields

Year	Cereals for Grain						Hay (a)	Orchards (b) (c)	Vineyards (b)
	Wheat		Barley		Oats				
	Area	Yield per Hectare	Area	Yield per Hectare	Area	Yield per Hectare			
	'000 hectares	Tonnes	'000 hectares	Tonnes	'000 hectares	Tonnes			
1841-42	2	1.40	—	1.12	—	1.12	—	—	—
1851-52	22	0.85	2	0.92	1	0.98	—	—	0.1
1856-57	66	1.68	3	1.19	1	0.90	9	0.4	0.3
1861-62	126	0.74	4	0.89	1	0.91	25	0.7	1.6
1866-67	186	0.96	5	1.13	2	1.00	45	0.9	2.6
1871-72	280	0.39	7	0.53	2	0.49	40	1.1	2.2
1876-77	439	0.36	4	0.60	1	0.48	37	1.3	1.8
1881-82	716	0.31	5	0.64	1	0.48	135	1.8	1.7
1886-87(d)	797	0.37	7	0.73	3	0.56	128	n.a.	2.1
1891-92	628	0.28	5	0.52	5	0.29	123	3.6	5.0
1896-97	685	0.11	6	0.42	16	0.21	137	4.8	7.4
1901-02	706	0.31	6	0.88	14	0.61	150	6.6	8.4
1906-07	683	0.70	11	0.98	23	0.70	121	7.4	9.1
1911-12	887	0.62	17	0.97	44	0.56	211	9.4	9.7
1916-17	1 124	1.11	42	0.94	61	0.54	196	11.7	11.8
1921-22	965	0.70	69	1.08	51	0.46	226	13.1	16.8
1926-27	1 120	0.86	104	1.01	62	0.50	201	12.8	20.3
1931-32	1 648	0.79	98	1.06	84	0.50	218	11.8	21.2
1936-37	1 238	0.63	123	0.78	168	0.26	218	12.0	22.7
1941-42	941	0.88	194	1.37	118	0.58	226	12.0	23.5
1946-47	1 019	0.75	203	0.94	102	0.49	133	11.4	23.6
1951-52	653	1.14	337	1.13	157	0.63	104	11.9	24.8
1952-53	648	1.48	379	1.55	150	0.81	87	11.6	24.5
1953-54	619	1.34	454	1.42	113	0.69	106	12.0	25.1
1954-55	687	1.25	413	1.01	138	0.60	104	12.3	24.5
1955-56	651	1.21	422	1.32	172	0.77	132	13.4	24.2
1956-57	582	1.47	494	1.56	173	0.87	121	13.8	23.2
1957-58	539	0.75	490	0.81	173	0.36	118	14.3	23.2
1958-59	570	1.53	539	1.58	195	1.12	170	15.1	23.0
1959-60	627	0.52	522	0.52	205	0.22	99	15.1	23.0
1960-61	797	1.58	630	1.52	207	1.00	159	15.3	23.0
1961-62	902	1.02	514	0.94	131	0.61	84	15.6	23.4
1962-63	1 050	0.99	426	0.96	168	0.62	116	16.4	23.6
1963-64	1 134	1.30	455	1.21	203	0.82	145	16.9	23.7
1964-65	1 104	1.30	443	1.38	180	0.91	127	17.4	23.8
1965-66	1 111	0.98	444	0.94	184	0.55	121	17.8	23.8
1966-67	1 198	1.22	448	1.20	206	0.91	195	17.9	23.1
1967-68	1 159	0.63	468	0.60	212	0.28	174	18.3	23.5
1968-69	1 517	1.49	572	1.17	209	1.03	249	18.0	24.5
1969-70	1 299	1.24	560	1.23	150	0.80	155	18.1	26.2
1970-71	802	0.98	693	1.07	195	0.78	196	18.3	27.7
1971-72	1 069	1.32	784	1.34	169	0.98	245	17.2	28.8
1972-73	986	0.83	692	0.74	142	0.52	210	16.7	29.5
1973-74	1 432	1.25	627	1.26	152	0.93	268	16.9	29.6
1974-75	1 220	1.22	701	1.62	135	0.83	190	16.6	30.4
1975-76	958	1.19	832	1.32	119	0.90	159	16.5	31.2
1976-77	839	0.99	855	1.04	117	0.77	164	15.8	31.2
1977-78	1 090	0.47	1 073	0.55	130	0.43	138	15.7	31.5
1978-79	1 295	1.61	1 091	1.30	171	1.04	219	15.7	31.3
1979-80	1 424	1.65	984	1.55	129	1.12	160	15.7	30.7
1980-81	1 445	1.14	989	1.17	105	0.91	161	15.8	30.4
1981-82	1 427	1.18	1 032	1.19	127	0.76	194	16.0	30.3

(a) Wheat only to 1906-07, thence all kinds.

(b) Bearing and non-bearing.

(c) From 1951-52, private orchards and those no longer worked have been omitted.

(d) Statistics not collected and particulars estimated.

RURAL PRODUCTION Livestock and Associated Produce

Year	Livestock Numbers			Slaughterings			Wool Production	Milk Production	
	Sheep	Cattle		Pigs	Sheep and Lambs	Cattle and Calves			Pigs
		Total	Dairy Cows						
				'000				'000 kg	'000 L
1846-47	681	57							
1851-52	1 250	100							
1856-57	1 962	273		28					
1861-62	3 038	265		69				5 791	
1866-67	3 912	124		60				8 954	
1871-72	4 412	143		96				11 752	
1876-77	6 133	219		102				19 253	
1881-82	6 804	294		120				22 118	
1886-87	6 542	285		140				22 934	
1891-92	7 646	399	80	82				26 133	
1896-97	6 324	337	84	59				23 558	
1901-02	5 012	225	75	89				20 209	
1906-07	6 625	326	98	111				22 193	
1911-12	6 172	394	122	93	1 276	87	88	27 372	127 077
1921-22	6 257	419	166	88	1 208	95	103	26 202	188 199
1926-27	7 284	340	127	79	1 091	143	122	32 824	183 817
1931-32	6 609	265	128	110	1 379	81	136	30 400	227 309
1936-37	7 905	328	170	85	1 697	166	177	34 747	289 581
1941-42	10 246	399	179	114	2 070	154	289	47 683	358 687
1942-43	10 371	424	185	156	2 272	171	186	49 277	357 323
1943-44	10 360	415	188	186	2 480	189	192	52 374	355 504
1944-45	8 474	391	187	161	3 065	175	238	48 402	328 228
1945-46	6 787	374	176	120	2 017	148	206	33 386	360 732
1946-47	7 959	424	187	134	1 662	146	159	42 193	426 878
1947-48	9 055	445	197	100	1 665	148	176	52 821	420 513
1948-49	9 366	461	203	71	2 011	189	150	52 120	415 058
1949-50	9 477	464	203	70	2 317	201	115	54 997	406 420
1950-51	10 167	433	184	68	2 022	218	111	56 873	379 826
1951-52	11 470	437	176	63	1 547	216	114	61 454	393 237
1952-53	12 037	483	183	59	2 353	187	111	71 966	382 781
1953-54	11 838	491	192	61	2 637	220	104	66 002	386 418
1954-55	12 817	524	199	85	2 799	233	136	70 652	412 330
1955-56	13 585	566	195	73	2 358	227	132	78 788	410 739
1956-57	14 984	622	195	92	2 329	252	124	85 642	408 694
1957-58	15 237	597	191	108	3 278	283	175	84 297	366 415
1958-59	15 634	576	188	98	3 145	287	179	84 750	373 234
1959-60	14 025	500	170	109	3 899	238	171	89 942	357 323
1960-61	14 952	561	170	144	2 784	174	183	80 473	395 510
1961-62	16 415	659	183	170	3 140	201	232	93 886	434 152
1962-63	15 737	679	190	145	3 467	254	235	94 050	433 697
1963-64	16 402	694	185	153	2 996	279	214	95 481	433 244
1964-65	17 289	697	182	196	3 100	275	241	97 856	465 065
1965-66	17 993	690	176	224	3 474	277	298	104 160	447 625
1966-67	17 864	687	170	222	3 358	265	316	107 725	448 399
1967-68	16 405	695	157	242	4 019	245	310	101 000	403 693
1968-69	18 392	865	163	288	2 977	220	317	105 714	467 377
1969-70	19 747	1 026	149	351	4 232	249	386	124 529	482 959
1970-71	19 166	1 196	145	389	5 101	264	435	117 258	469 773
1971-72	17 970	1 495	151	479	5 144	290	436	117 922	457 732
1972-73	15 651	1 583	148	499	4 549	393	527	106 006	424 265
1973-74	16 431	1 692	138	385	2 595	359	448	100 131	434 107
1974-75	17 621	1 869	142	349	2 984	465	344	107 452	426 371
1975-76	17 279	1 891	142	326	3 561	549	342	101 912	397 500
1976-77	15 132	1 608	126	317	3 426	656	344	98 442	354 912
1977-78	14 073	1 242	117	311	3 240	744	376	87 092	316 681
1978-79	14 940	1 086	110	330	2 523	659	402	87 355	321 199
1979-80	16 046	1 067	107	398	3 451	502	472	95 459	331 345
1980-81	17 056	1 091	104	394	3 549	539	519	105 052	319 438
1981-82	16 709	1 013	102	374	3 339	580	528	103 617	305 648

MINING AND MANUFACTURING PRODUCTION

Year	Mining			Manufacturing (a)	
	Principal Minerals Produced			Number of Establishments	Value Added
	Copper Ore and Concentrate	Coal	Iron Ore		
	Tonnes	'000 tonnes	'000 tonnes		\$'000
1846	6 565				285
1856	11 980				825
1861	11 440				920
1866	23 661				1 657
1871	26 948				1 347
1876	28 597				1 205
1881	25 871				842
1886	18 713				554
1891	16 894		7		551
1896	5 030		—		496
1901	8 743		—		1 079
1906	8 340		76		1 652
1911	6 017		43	1 314	9 148
1916	7 396		191	1 266	9 748
1921	1 557		515	1 438	14 556
1926	235		593	1 791	25 348
1931	22		293	1 644	15 510
1936	458		1 918	1 895	23 339
1941	615		2 276	2 230	33 832
1946	—	138	1 847	2 395	51 203
1951	2	395	2 439	3 141	135 618
1952	5	424	2 727	3 245	166 493
1953	2	456	2 633	3 339	178 378
1954	3	503	2 913	3 577	200 443
1955	—	463	3 093	3 750	222 055
1956	12	489	3 645	3 908	241 872
1957	40	619	3 444	4 063	253 532
1958	53	767	3 406	4 168	266 570
1959	67	701	3 478	4 235	279 620
1960	30	899	3 492	4 684	325 947
1961	8	1 133	4 055	5 042	340 123
1962	4	1 414	3 567	5 519	347 828
1963	16	1 536	4 310	5 766	379 142
1964	55	1 764	4 437	5 826	427 356
1965	116	2 048	4 463	5 887	498 588
1966	143	2 053	4 876	6 065	527 477
1967	1 470	2 077	4 645	6 222	563 764
1968	518	2 112	5 566	6 255	631 104
1969	3 666	2 246	7 042	(d) 2 994	(d) 643 079
1970(e)	(f) 249	2 155	7 425	2 977	714 579
1971	2 287	1 626	7 400	n.a.	n.a.
1972	2 819	1 536	6 301	2 979	802 975
1973	9 662	1 571	6 874	2 914	896 691
1974	8 830	1 494	6 065	2 984	1 109 748
1975	10 037	1 798	5 448	(g) 2 131	(g) 1 335 276
1976	18 433	1 819	4 479	2 287	1 485 686
1977	16 390	1 920	3 450	2 242	1 597 007
1978	11 975	1 757	2 189	2 170	1 672 200
1979	14 784	1 514	2 705	2 119	1 851 438
1980	14 183	1 723	2 701	2 143	2 233 043
1981	16 310	1 425	2 241	2 131	2 387 358

(a) Year ended 30 June. (b) Value at site of production. Quarries included from 1916. (c) Comparability affected by revaluation of iron ore. (d) For a description of the changes in definitions see page 465. (e) Year ended 30 June from 1970. (f) Metallic content from 1969-70. (g) From 1974-75 excludes single establishment enterprises employing fewer than four persons.

GROSS VALUE OF RURAL PRODUCTION

Year	Agricultural				Pastoral		Dairying	Total Rural Production
	Wheat	Barley	Vine and Orchard Fruit	Total Crops	Wool (a)	Total		
					\$'000			
1916-17	21 729	599	1 653	27 677	4 274	11 200	2 759	42 909
1926-27	19 052	1 685	4 082	30 181	8 937	12 140	3 895	48 357
1930-31	8 091	893	3 241	15 708	3 608	5 801	3 121	26 335
1931-32	17 163	1 363	3 442	25 291	3 843	5 452	3 140	35 444
1932-33	13 097	1 371	3 463	20 921	4 619	5 834	3 654	32 030
1933-34	10 933	1 280	3 618	19 533	9 013	10 608	3 108	34 776
1934-35	10 318	1 553	3 882	19 965	5 309	7 706	3 091	32 489
1935-36	13 135	1 457	3 953	22 863	8 116	10 885	3 797	39 126
1936-37	14 955	1 766	4 191	26 044	8 720	12 315	4 310	44 366
1937-38	15 665	3 040	4 964	29 453	8 141	11 443	5 291	48 241
1938-39	8 580	2 046	4 056	20 008	7 802	12 327	5 171	39 613
1939-40	16 692	3 524	4 637	30 132	10 470	14 792	5 585	52 487
1940-41	8 379	2 321	4 873	20 167	10 532	14 757	6 079	43 134
1941-42	13 913	4 490	4 725	30 142	10 294	13 875	6 735	53 016
1942-43	19 399	2 709	6 481	35 423	12 359	16 917	7 917	63 091
1943-44	12 765	2 188	9 159	32 088	13 067	18 277	8 807	63 003
1944-45	6 065	1 931	6 283	23 548	11 963	17 928	8 880	54 810
1945-46	17 490	4 956	7 729	40 434	8 275	14 535	9 959	69 399
1946-47	27 685	7 598	8 283	51 209	17 092	22 602	10 950	90 106
1947-48	50 154	26 228	9 677	99 477	32 606	37 487	12 525	155 615
1948-49	32 450	10 242	10 087	64 138	40 268	47 636	13 440	131 527
1949-50	40 834	14 524	10 616	81 707	56 268	63 058	16 148	167 594
1950-51	45 587	19 803	13 720	97 871	132 494	139 895	15 500	259 627
1951-52	45 288	27 706	20 382	120 507	72 394	86 034	21 145	234 587
1952-53	57 302	42 128	19 161	139 160	97 158	109 154	23 527	279 982
1953-54	43 939	28 804	20 788	115 744	88 866	105 950	24 238	254 337
1954-55	41 591	23 243	17 426	104 914	83 204	101 059	25 037	239 022
1955-56	38 514	25 227	20 335	110 570	79 822	100 882	30 826	250 685
1956-57	44 846	34 022	23 265	129 994	114 578	138 118	29 003	305 365
1957-58	20 970	19 573	24 435	90 089	84 708	111 027	26 384	235 337
1958-59	43 791	39 889	23 984	140 858	67 595	99 135	32 103	280 007
1959-60	16 495	10 999	21 394	71 092	85 382	123 351	29 454	231 751
1960-61	68 001	37 977	24 525	161 437	70 484	94 451	30 306	294 087
1961-62	51 515	22 952	27 051	124 022	85 801	111 850	29 848	273 451
1962-63	56 285	19 152	25 857	128 417	92 514	127 386	31 968	295 043
1963-64	77 660	26 399	29 567	165 634	113 409	150 466	34 267	358 802
1964-65	74 550	30 135	36 200	178 132	94 328	135 916	37 533	360 507
1965-66	59 559	20 234	31 411	144 017	103 635	152 224	39 293	345 015
1966-67	79 612	26 912	36 779	184 090	104 588	169 226	40 303	404 864
1967-68	42 183	12 818	32 423	127 288	79 925	129 504	37 163	306 222
1968-69	112 551	25 657	37 815	221 097	95 054	136 070	39 016	408 842
1969-70	82 332	23 724	43 330	184 284	91 224	148 939	40 834	386 041
1970-71	40 562	34 902	45 991	164 895	65 525	123 858	43 918	347 038
1971-72	76 381	40 295	49 753	213 206	85 701	153 068	47 262	430 704
1972-73	44 588	27 506	54 415	177 768	164 577	261 753	47 808	503 315
1973-74	196 444	68 276	52 347	392 747	173 180	n.a.	n.a.	772 523
1974-75	163 922	119 305	77 719	432 455	122 442	n.a.	n.a.	705 446
1975-76	118 063	105 865	77 401	373 062	131 865	n.a.	n.a.	676 873
1976-77	73 726	93 807	90 318	330 398	153 550	n.a.	n.a.	709 603
1977-78	50 349	50 553	99 747	287 931	145 277	n.a.	n.a.	696 739
1978-79	265 159	118 303	110 481	607 348	161 985	n.a.	n.a.	1 080 204
1979-80	357 058	192 758	120 174	785 848	215 423	n.a.	n.a.	1 341 567
1980-81	253 599	165 418	130 166	693 592	246 646	n.a.	n.a.	1 322 360
1981-82p	265 983	168 757	142 308	738 169	260 548	n.a.	n.a.	1 424 537

(a) Shares of profits from sale of wool under war-time disposal schemes excluded.

TRADE

Overseas Exports

Year	Value of Exports				Proportion of Total Exports: Selected Countries of Destination				
	Total	Wheat and Flour	Barley	Wool	Japan	New Zealand	UK	USA	Other Coun- tries
				\$'000			Per cent		
1861	1 837	76		1 302		3.42	89.46		7.12
1871	3 630	578		1 948		4.00	89.62	n.a.	6.38
1876	5 928	2 146		2 884		1.96	89.58	0.07	8.39
1881	6 311	1 846		3 496		0.71	82.03	—	17.26
1886	5 877	420		3 508		0.69	86.90	0.04	12.37
1891	11 197	2 728		3 776	0.01	0.29	80.82	0.90	17.98
1896	8 111	222		3 038	1.38	0.48	56.39	0.28	41.47
1901	8 866	2 232		2 208	0.07	0.65	51.62	0.10	47.56
1906	13 742	4 780		3 360	—	0.26	51.68	0.24	47.82
1911	20 350	7 671	2	4 007	0.04	0.17	45.96	0.13	53.70
1920-21	35 339	28 675	1 175	6 035	—	1.11	59.40	1.16	38.33
1930-31	20 123	6 078	685	3 006	2.38	0.81	54.11	0.79	41.91
1935-36	30 762	9 020	707	7 561	6.66	2.05	67.44	1.11	22.74
1940-41	26 393	8 617	226	6 656	5.29	3.46	50.46	15.48	25.31
1941-42	29 624	3 863	338	11 596	1.01	3.39	32.02	34.14	29.44
1942-43	18 847	4 085	122	6 843	—	10.61	45.27	15.12	29.00
1943-44	31 170	10 504	410	8 509	—	9.18	40.36	8.61	41.85
1944-45	38 334	13 175	115	8 376	—	6.30	42.34	13.18	38.18
1945-46	40 307	7 407	718	14 917	—	4.95	25.45	26.43	43.17
1946-47	65 023	12 304	2 998	16 095	0.01	5.37	39.47	8.86	46.29
1947-48	105 805	24 507	16 030	25 608	—	4.44	39.01	8.51	48.04
1948-49	138 866	38 990	11 952	40 619	0.07	2.31	44.37	8.03	45.21
1949-50	127 864	23 227	10 564	49 621	2.95	6.38	42.42	7.64	40.62
1950-51	215 348	36 852	14 662	109 900	5.90	2.39	39.58	14.41	37.72
1951-52	194 501	42 155	18 035	65 806	4.60	7.26	39.36	14.65	34.13
1952-53	245 897	36 062	30 975	87 135	8.17	3.32	45.12	12.93	30.46
1953-54	220 498	30 518	24 465	78 817	6.35	5.80	41.66	10.57	35.62
1954-55	190 158	24 075	15 794	69 195	5.05	6.59	40.78	11.57	36.01
1955-56	195 332	26 266	14 069	70 063	6.71	7.47	38.70	10.71	36.41
1956-57	245 848	32 558	18 535	98 924	13.62	7.40	31.73	13.09	34.16
1957-58	199 764	24 868	17 183	73 082	11.23	7.85	31.50	9.32	40.10
1958-59	181 831	23 656	20 404	63 208	13.25	7.86	34.81	8.50	35.58
1959-60	181 632	19 028	12 251	74 830	12.91	4.30	32.08	7.91	42.80
1960-61	198 557	36 598	19 219	64 328	18.11	5.60	27.55	4.71	44.03
1961-62	243 975	47 819	23 422	83 107	14.80	4.14	25.83	8.56	46.67
1962-63	212 945	32 603	6 968	83 400	16.45	4.57	25.87	8.69	44.42
1963-64	322 159	76 337	13 828	107 398	17.59	4.83	26.63	5.99	44.96
1964-65	302 242	53 256	15 247	92 535	17.22	5.06	25.82	7.49	44.41
1965-66	296 276	45 864	7 050	94 486	18.38	5.89	22.81	10.37	42.55
1966-67	325 170	55 675	13 056	98 013	20.43	4.69	15.46	8.85	50.57
1967-68	282 767	31 432	2 321	77 008	21.81	5.05	18.20	11.03	43.91
1968-69	300 934	27 421	11 683	84 747	25.52	4.55	16.46	9.78	43.69
1969-70	417 030	59 457	16 133	81 797	19.02	5.58	17.03	9.41	48.96
1970-71	393 737	83 629	23 670	62 828	18.07	5.66	13.70	6.39	56.18
1971-72	394 064	64 599	35 652	68 189	18.64	7.21	13.83	5.84	54.48
1972-73	521 720	48 684	17 250	149 956	23.89	6.41	8.84	7.47	53.39
1973-74	662 881	103 168	40 790	153 202	19.47	9.18	7.44	4.23	59.68
1974-75	764 410	174 405	99 517	93 273	16.35	6.73	5.71	2.61	68.60
1975-76	685 029	109 526	90 290	115 560	19.69	5.41	5.65	3.55	65.70
1976-77	789 872	84 884	88 072	172 538	21.31	5.33	5.99	4.17	63.20
1977-78	661 887	51 915	39 512	114 517	16.21	6.50	4.10	6.25	66.94
1978-79(a)	922 754	101 750	71 470	147 010	15.18	5.74	3.45	9.16	66.47
1979-80	1 599 199	376 726	191 806	183 745	11.00	4.42	2.01	6.45	76.12
1980-81	1 400 028	307 803	153 118	225 336	12.25	5.53	2.27	5.40	74.55
1981-82	1 275 938	212 636	105 280	213 237	11.00	5.87	2.11	7.26	73.76

(a) From 1978-79 export statistics are by 'State of Origin'. Details for previous years are by 'State of Lodgment of Documents'.

TRADE

Overseas Imports; Retail Sales

Year	Value of Imports		Proportion of Total Imports: Selected Countries of Origin				Value of Retail Sales of Goods	
	Total	Metals, Metal Manu- factures, and Machinery (a)	Japan	UK	USA	Other	Total Excluding Motor Vehicles Etc.	Motor Vehicles Etc.
	\$'000			Per cent			\$ million	
1861	2 756	310		80·14	0·32	19·54		
1871	2 891	342		81·85	1·45	16·70		
1876	6 428	1 084		81·30	1·44	17·26		
1881	7 133	1 022		79·06	3·80	17·14		
1886	5 003	770	0·01	78·90	6·82	14·27		
1891	8 063	1 644	0·02	71·36	7·91	20·71		
1896	6 475	1 198	0·18	68·59	7·82	23·41		
1901	7 854	1 432	0·38	56·91	14·17	28·54		
1906	7 965	2 104	0·64	63·10	10·17	26·09		
1911	12 492	4 132	1·31	58·60	12·81	27·28		
1915-16	10 304	2 816	3·12	47·68	19·81	29·39		
1920-21	24 764	6 558	1·55	42·07	21·25	35·13		
1925-26	28 160	10 602	1·13	43·30	27·84	27·73		
1930-31	7 833	1 802	1·14	36·96	16·66	45·24		
1935-36	10 839	3 616	2·24	38·65	21·16	37·95		
1940-41	10 924	3 158	1·56	38·09	12·01	48·34		
1945-46	17 556	3 622	—	62·28	10·13	27·59		
1950-51	112 002	50 446	1·98	48·31	8·42	41·29		
1952-53	86 549	41 456	1·14	43·53	11·71	43·62	271·7	84·3
1953-54	102 945	47 142	0·46	50·63	8·93	39·98	294·4	97·6
1954-55	129 607	63 144	1·28	49·18	13·28	36·26	324·4	113·4
1955-56	125 504	64 656	3·18	49·17	11·70	35·95	347·8	123·6
1956-57	90 813	40 536	1·39	44·01	12·26	42·34	362·3	124·7
1957-58	94 205	40 792	1·85	46·37	11·91	39·87	367·2	125·4
1958-59	90 693	40 534	2·56	42·08	11·50	43·86	387·2	138·0
1959-60	119 493	57 962	2·69	43·89	12·15	41·27	436·6	160·2
1960-61	142 764	72 570	5·37	32·66	17·61	44·36	448·9	156·1
1961-62	103 386	46 774	3·28	31·95	21·87	42·90	451·6	143·1
1962-63	139 826	71 820	4·08	31·83	22·92	41·17	479·9	180·5
1963-64	179 651	94 302	4·72	24·75	30·63	39·90	525·3	212·5
1964-65	204 856	108 243	8·01	23·72	29·11	39·16	574·5	238·0
1965-66	198 156	103 032	6·84	23·32	27·25	42·59	602·0	220·4
1966-67	196 771	97 861	7·69	21·64	27·72	42·95	627·1	214·7
1967-68	215 619	113 215	7·16	17·29	32·71	42·84	663·6	242·0
1968-69	231 956	134 222	11·19	19·82	27·35	41·64	706·9	261·1
1969-70	201 223	98 204	10·77	21·49	21·50	46·23	762·3	285·7
1970-71	198 358	98 358	14·44	25·10	17·32	43·14	818·8	297·6
1971-72	189 748	83 083	15·08	22·83	14·48	47·61	890·9	322·5
1972-73	199 978	88 271	20·48	17·49	15·08	46·95	1 037·1	n.a.
1973-74	313 915	142 187	22·57	12·03	16·91	48·49	1 237·3	457·9
1974-75	482 077	216 355	19·17	14·20	13·10	53·53	1 503·3	n.a.
1975-76	501 476	203 407	18·57	11·14	14·84	55·45	1 781·1	n.a.
1976-77	629 309	259 695	22·23	8·52	13·38	55·87	2 025·4	n.a.
1977-78	628 568	248 236	21·79	8·85	12·47	56·89	2 162·7	n.a.
1978-79	865 554	437 704	18·97	6·74	26·75	47·54	2 344·7	n.a.
1979-80	882 457	300 393	17·25	7·18	13·09	62·48	2 528·3	n.a.
1980-81	1 072 425	363 735	20·00	5·07	12·55	62·38	2 852·1	n.a.
1981-82	1 337 301	465 522	21·24	3·69	13·38	61·69	3 181·7	n.a.

(a) Includes motor vehicles and other transport equipment.

TRANSPORT AND COMMUNICATION

Year	Motor Vehicles on Register			Drivers and Riders Licences in Force	Telephone Services in Operation (a)
	Cars and Station Wagons	Utilities, Vans, Trucks, Buses	Total (incl. Cycles, Scooters)		
					Number
1901					1 831
1906					2 510
1911					6 086
1916					10 184
1921	13.2		21.4		15 984
1931	(b) 45.1	(b) 12.1	(b) 67.3	106 053	39 552
1936	53.7	19.4	84.3	92 227	39 911
1941	54.5	24.4	86.2	122 280	47 962
1946	64.4	31.4	107.2	137 979	53 126
1948	75.7	36.4	127.5	159 814	60 249
1949	84.3	40.7	143.5	172 063	64 008
1950	97.5	46.0	163.9	192 469	69 907
1951	108.9	51.2	183.6	215 157	74 457
1952	120.5	55.9	200.4	232 119	80 919
1953	129.7	61.2	214.3	252 216	86 977
1954	139.7	64.6	226.9	265 727	93 104
1955	150.5	70.2	244.4	281 091	100 171
1956	161.4	73.2	257.5	299 158	107 649
1957	171.9	75.7	269.3	315 044	114 390
1958	184.3	77.8	283.0	328 833	122 311
1959	200.3	81.0	301.5	340 973	131 060
1960	214.9	84.1	318.3	369 584	138 019
1961	224.5	82.5	325.2	393 869	144 502
1962	238.9	82.5	338.1	397 803	152 785
1963	258.8	83.9	358.2	414 656	162 012
1964	280.1	86.3	380.5	427 717	173 314
1965	298.1	86.4	397.4	447 985	182 249
1966	314.0	87.3	413.5	464 778	192 922
1967	327.7	87.1	427.6	481 496	203 191
1968	342.9	87.6	443.9	491 765	212 842
1969	364.7	89.6	468.2	513 687	224 174
1970	384.0	90.7	490.1	535 184	239 452
1971	400.8	91.5	510.3	550 745	251 330
1972	420.4	92.8	536.0	570 562	261 608
1973	445.4	97.9	572.4	592 481	278 687
1974	468.6	100.6	601.3	612 693	298 300
1975	491.5	104.0	628.9	637 248	311 804
1976	513.0	112.7	657.9	658 671	334 948
1977	528.8	116.9	677.5	690 663	361 334
1978	536.5	118.7	685.6	716 991	390 852
1979	(c) 542.0	(c) 117.7	(c) 689.3	737 410	420 871
1980	(d) 554.9	(d) 120.0	(d) 708.6	751 458	449 724
1981	564.9	123.8	725.4	762 372	480 873
1982	579.2	129.0	744.7	779 110	507 234

(a) At 30 June from 1916; at 31 December in earlier years. (b) Vehicles in actual use on roads from 1930. (c) At Census 30 September 1979. (d) At 30 June from 1980.

PUBLIC FINANCE

Year	State Government					Local Government Revenue			
	Total Revenue	Expenditure		Public Debt		State Taxation (a)	From Rates	Government Grants	Total
		From Revenue	From Loan (Net)	Total	Per Head				
	\$'000	\$'000	\$'000	\$'000	\$	\$'000	\$'000	\$'000	\$'000
1840-41	51	180							
1850-51	445	367				202			
1855-56	960	1 160		590	5-50	326		54	114
1860-61	1 117	966		1 733	13-30	282	46	40	114
1865-66	1 900	2 130		1 551	9-20	478	60	60	162
1870-71	1 556	1 519		4 335	23-00	498	80	74	194
1875-76	2 640	2 647		7 674	34-20	920	118	80	286
1880-81	4 344	4 108		22 394	78-30	1 168	188	136	488
1885-86	4 558	4 767	2 800	36 680	118-60	1 603	208	108	502
1890-91	5 464	5 207	968	43 315	135-80	1 655	276	254	702
1895-96	5 043	5 019	886	48 433	137-60	1 600	264	194	652
1900-01	5 648	5 693	845	52 129	146-40	1 203	302	222	738
1905-06	5 612	5 437	900	60 165	165-80	735	348	198	740
1910-11	8 363	7 929	3 752 (b)	56 065	136-50	1 092	481	336	1 004
1915-16	8 714	9 483	4 371	79 049	179-40	1 403	652	302	1 150
1920-21	14 303	15 087	9 351	104 725	210-70	3 244	986	580	1 936
1925-26	20 948	20 922	12 860	160 521	290-10	5 428	1 640	942	3 441
1930-31	21 452	25 079	6 581	199 055	345-70	6 800	1 672	397	2 612
1935-36	22 819	22 521	2 502	211 397	359-70	6 409	1 665	509	2 824
1940-41	25 849	26 015	2 548	219 599	365-30	8 683	1 851	577	3 170
1945-46	32 687	32 687	3 419	221 498	348-80 (c)	4 036	2 040	451	3 474
1950-51	67 344	66 885	33 871	296 776	405-20	8 104	3 830	1 963	7 579
1955-56	118 805	121 665	42 666	512 179	603-60	16 150	8 162	4 381	16 310
1956-57	131 522	131 619	43 793	552 880	663-20	18 620	9 563	4 733	18 436
1957-58	141 285	142 083	37 153	593 628	662-00	19 541	10 333	4 848	19 721
1958-59	145 360	147 414	41 442	635 404	690-00	20 435	11 060	4 948	21 080
1959-60	160 555	161 177	43 432	678 210	717-50	22 297	11 971	5 478	22 535
1960-61	172 559	170 182	44 739	722 038	743-20	23 425	13 076 (d)	5 524	25 034
1961-62	186 405	185 392	43 773	763 399	773-10	25 150	14 887	2 984	27 969
1962-63	195 168	194 589	42 047	807 044	798-50	26 940	15 943	3 215	29 094
1963-64	211 006	207 755	44 218	853 553	822-30	29 825	16 968	4 317	33 725
1964-65	222 181	224 803	53 100	902 823	845-70	34 901	18 625	3 804	33 952
1965-66	236 816	243 650	55 089	955 128	872-30	37 636	20 412	4 106	38 020
1966-67	258 823	258 717	57 016	1 013 060	913-00	44 708	22 875	4 244	42 319
1967-68	274 544	277 404	55 382	1 074 959	958-30	48 255	24 369	4 493	42 813
1968-69	298 355	297 895	61 390	1 143 954	1 004-10	53 351	26 276	4 505	45 263
1969-70	338 498	335 578	67 469	1 210 489	1 045-30	59 840	27 596	4 988	48 556
1970-71	386 859	386 838	71 491	1 256 337	1 070-40	62 745	29 118	4 758	49 589
1971-72	455 245	456 312	111 740	1 333 720	1 124-10	97 476	32 224	7 653	54 886
1972-73	520 866	524 777	117 411	1 415 129	1 161-94	120 474	35 874	15 025	65 917
1973-74	641 967	645 368	107 566	1 481 337	1 198-30	156 903	42 202	10 508	67 682
1974-75	828 985	820 601	123 854	1 425 333	1 138-35	219 190	53 804	19 118	96 000
1975-76	1 036 985	1 034 698	160 602	1 394 702	1 105-50	272 760	65 670	33 551	123 287
1976-77	1 174 025	1 183 180	175 552	1 495 737	1 171-47	314 280	76 385	34 881	137 364
1977-78	1 167 196	1 192 063	171 329	1 605 834	1 237-35	323 502	85 680	38 052	156 074
1978-79	1 264 705	1 258 252	161 087	1 702 221	1 307-59	342 307	95 525	34 774	168 771
1979-80	1 384 589	1 384 589	149 584	1 781 600	1 361-35	369 490	104 891	38 501	186 574
1980-81	1 548 299	1 554 885	149 363	1 872 699	1 419-46	387 453	118 745	45 233	213 774
1981-82	1 705 499	1 766 772	84 913	1 962 590	1 474-08	439 848	132 691	52 097	239 950

(a) Excludes all taxation paid to Special Funds. From 1966-67 the coverage of this item does not completely coincide with SA Treasury classifications. (b) Debt of Northern Territory and Port Augusta-Oodnadatta railway transferred to Commonwealth Government. (c) Uniform taxation in force from 1941-42.

(d) Excludes reimbursement for work done on behalf of Highways Department from 1961.

PRIVATE FINANCE

Year	Banking			Life Insurance		General Insurance Revenue (b)	Friendly Societies
	Trading Banks		Savings Bank Deposits at 30 June	New Policies Issued Sum Assured	Policies in Existence Sum Assured		
	Advances	Deposits					
				\$'000			Members
1846		183					
1856		1 419	106				
1861	2 864	1 480	243				
1866	6 240	2 803	499				
1871	5 715	3 043	982				
1876	9 449	6 632	1 703				
1881							
1886	13 483	9 885	2 499				
1886	19 226	9 924	3 306				
1891	16 297	15 550	4 316				
1896	9 470	15 343	5 673				
1901	8 546	13 437	7 591				
1906							
1911	10 612	15 598	9 534				
1911	16 970	22 257	14 872				
1916	20 325	27 264	20 070				65 540
1921	27 296	44 199	32 635	6 000	40 272	1 305	70 155
1926	31 672	51 574	43 558	9 341	60 244	2 045	77 791
1931							
1931	44 119	44 956	42 844	6 266	65 016	1 627	(c)
1936	43 760	52 399	50 617	10 791	75 984	1 859	71 658
1941	39 547	64 182	55 019	11 416	101 825	2 643	76 357
1946	31 560	93 397	131 729	22 805	147 230	2 705	80 419
1951	62 109	206 743	195 698	44 899	261 931	9 298	71 591
1952							
1952	89 163	214 630	207 452	48 475	298 494	12 370	67 563
1953	79 574	247 260	227 750	51 671	335 457	14 593	63 922
1954	95 968	250 802	245 898	59 540	377 093	16 165	61 345
1955	106 740	250 795	263 384	70 458	426 881	18 321	59 149
1956	108 515	241 044	271 512	75 301	477 554	20 590	57 216
1957							
1957	105 618	266 897	284 802	89 470	539 120	23 835	55 499
1958	125 971	262 700	297 716	94 137	599 723	24 656	54 181
1959	124 924	272 599	314 304	111 440	676 406	26 223	53 114
1960	149 172	265 498	331 996	131 951	756 581	27 975	52 239
1961	147 348	269 848	333 485	143 628	841 363	32 363	51 551
1962							
1962	(a) 164 936	(a) 276 750	361 980	157 636	955 426	33 740	51 198
1963	182 370	285 318	416 155	165 183	1 056 390	37 499	50 765
1964	202 360	323 858	475 803	197 790	1 161 986	41 695	50 946
1965	243 866	347 780	519 268	215 946	1 294 450	45 433	51 258
1966	273 916	365 466	558 857	239 250	1 439 083	50 121	51 109
1967							
1967	298 981	368 851	605 167	279 996	1 618 112	56 114	51 001
1968	345 315	388 772	643 690	301 602	1 807 040	59 981	51 070
1969	362 967	408 903	691 778	347 048	2 031 479	65 354	50 880
1970	390 932	423 410	733 100	437 699	2 313 244	70 640	50 796
1971	411 180	436 297	787 901	525 879	2 667 651	76 020	50 488
1972							
1972	448 164	474 192	874 138	586 663	3 053 169	89 173	50 077
1973	516 424	619 958	1 060 425	727 998	3 565 754	98 678	50 664
1974	671 782	815 622	1 174 813	908 775	4 175 174	127 473	50 779
1975	748 609	973 499	1 394 585	1 095 897	4 927 762	(d) 187 316	49 888
1976	914 300	1 214 488	1 617 336	1 200 765	5 666 521	231 649	48 057
1977							
1977	1 146 860	1 300 883	1 780 841	1 273 906	6 370 336	267 640	45 815
1978	1 419 266	1 301 516	1 945 344	1 327 734	7 049 737	(e) 266 594	43 051
1979	1 727 818	1 436 959	2 138 263	1 478 929	7 598 190	263 903	41 575
1980	1 938 230	1 651 965	2 276 896	n.y.a.	n.y.a.	282 268	n.a.
1981	2 148 545	1 813 443	2 457 099	n.y.a.	n.y.a.	307 453	n.a.
1982							
1982	2 390 441	1 900 670	2 595 750	n.y.a.	n.y.a.	354 432	n.a.

(a) Until 1961, average of balances at close of business on Wednesdays during the June quarter of the year stated. From 1962, average of weekly figures for the month of June of the year stated. (b) Year ended 30 June. (c) Membership at 30 June from 1932; previously 31 December. (d) From 1974-75 premium income only; details of interest, dividends and rent no longer available. (e) Details of brokers are excluded from 1977-78.

APPENDIX B

PRINCIPAL EVENTS

CHRONOLOGICAL LIST OF IMPORTANT EVENTS IN SOUTH AUSTRALIA SINCE 1836

- 1836**—First migrants landed at Kangaroo Island on 20 July. First South Australian newspaper published in London. Colony's first school opened on Kangaroo Island. The Surveyor-General, Col. Light arrived in November and commenced survey of Adelaide. Governor Hindmarsh arrived in HMS *Buffalo* and proclaimed South Australia a Province on 28 December.
- 1837**—Col. Light completed survey of Adelaide and designed the city's present layout. First Adelaide land allotments made. First newspaper published in South Australia. South Australian Supreme Court established. First hospital opened in North Terrace, Adelaide.
- 1838**—First overland cattle and sheep drives from New South Wales. First export from South Australia, a small clip of wool, dispatched. First German settlers under the leadership of Pastor Kavel arrived in South Australia. Formation of first police force.
- 1839**—Col. Light died at Thebarton and buried in Light Square. First road in South Australia built between Adelaide and Port Adelaide. Adelaide Chamber of

- 1840—Eyre started overland journey to Western Australia. The Municipality of Adelaide incorporated, the first in Australia. McLaren Wharf, Port Adelaide, opened by Governor Gawler.
- 1841—First South Australian mine (silver-lead) opened near Glen Osmond. Assisted migration suspended because of depression. Following financial crisis Governor Gawler recalled and succeeded by Governor Grey. Eyre arrived at Albany in Western Australia.
- 1842—Registration of births, deaths and marriages commenced. Portions of South Australia divided for first time into counties. Copper discovered at Kapunda. Legislative Council constituted. The South Australian Board of Colonisation Commissioners abolished by the British Government.
- 1843—Agricultural stripper invented by Ridley. A flour mill built at Hindmarsh.
- 1844—First Colonial Census held, and showed a population of 17 366.
- 1845—Copper discovered at Burra. Sturt explored the north-eastern part of the State. Gold found in South Australia, near Montacute. Assisted migration resumed.
- 1846—First pastoral leases granted.
- 1847—First winery in the Barossa Valley commenced operation. St Peters College established.
- 1848—Opening of The Savings Bank of South Australia. First ferry across the River Murray commenced operations at Wellington.
- 1849—The Central Board of Main Roads established.
- 1850—An Act granting representative government to South Australia passed by the British Parliament.
- 1851—The Central Board of Education established.
- 1852—First overland gold escort arrived in Adelaide.
- 1853—W. R. Randell's *Mary Ann* and Francis Cadell's *Lady Augusta* initiated the navigation of the River Murray.
- 1854—State's first railway (horse-drawn) built from Goolwa to Port Elliot.
- 1855—First South Australian postage stamps issued.
- 1856—First telegraph line opened from Adelaide to Port Adelaide. The new Constitution Act embodying the principle of responsible government proclaimed; it provided for Parliament to consist of two Houses; a Legislative Council and a House of Assembly. First steam railway from Adelaide to Port Adelaide constructed. Population of the State passed 100 000.
- 1857—Railway to Smithfield and Gawler opened.
- 1858—The Real Property Act, which embodied the principles of conveyancing formulated by Torrens, came into operation. First telegraph line to Melbourne opened.
- 1859—A jetty over 350 metres in length constructed at Glenelg. Copper discovered at Wallaroo.

- 1860—Water supplied to the City of Adelaide by means of a main connected with the reservoir at Thorndon Park.
- 1861—Copper discovered at Moonta. Water laid on to houses in Adelaide. John McDouall Stuart set out to cross the continent from south to north. The South Australian boundary shifted west to coincide with the boundary of Western Australia.
- 1862—Stuart reached Chambers Bay on the coast of the Northern Territory.
- 1863—Administration of the Northern Territory taken over by South Australia. Shops of Adelaide lit for the first time with gas.
- 1865—Annual leases of pastoral lands sold by auction for first time. The Bank of Adelaide founded.
- 1866—Camels introduced by Sir Thomas Elder for the purpose of exploration. The Adelaide Town Hall opened.
- 1867—Visit of H.R.H. Prince Alfred, Duke of Edinburgh, who laid the foundation stone of the General Post Office.
- 1869—Foundation stone of St Peters Cathedral laid. Prince Alfred College opened. Adelaide Chamber of Manufacturers founded.
- 1870—Construction of the transcontinental telegraph from Port Darwin commenced. John Forrest and party made first of two journeys of exploration from Perth.
- 1872—Transcontinental telegraph from Port Darwin completed and first direct telegram from London received.
- 1873—Eight-hour working day adopted. First Health Act, establishing a Central Board of Health, passed.
- 1874—The University of Adelaide founded.
- 1875—The State Education Act passed. First Forestry Board established.
- 1876—Telegraph communication with New Zealand established. The Smith brothers invented the 'stump jump' plough. South Australia became first State to give legal recognition to trade unions.
- 1877—Overland telegraph line from Port Augusta to Eucla completed and first telegram from Perth transmitted. The Adelaide Bridge completed.
- 1878—Provisions of the Education Act relating to compulsory school attendance brought into force in the Adelaide school district. First tramway (horse-drawn) in any Australian city commenced carrying passengers to Kensington and North Adelaide. The State's population passed 250 000.
- 1879—Foundation stone of the Adelaide University laid. First bridge across River Murray in South Australia opened at Murray Bridge.
- 1881—First reclamation of swamp areas of River Murray. Art Gallery opened by H.R.H. Prince Albert Victor. Construction of the weir which created the Torrens Lake completed.
- 1882—Fire Brigades Board established.

- 1883—The Telephone Exchange commenced operations. Roseworthy Agricultural College opened to students.
- 1884—Largs Bay Fort opened. Adelaide Trades and Labor Council, the first delegates society, inaugurated.
- 1885—Broken Hill silver mines opened. Column erected on Mount Lofty summit as a prominent landmark for mariners.
- 1887—Act authorising payment to members of Parliament passed. Renmark Irrigation Colony established. First express trains ran between Adelaide and Melbourne. The Jubilee Exhibition opened. Stock Exchange of Adelaide formed by amalgamation of Adelaide Stock Exchange and Stock Exchange of South Australia.
- 1888—Totalisator legally authorised by an Act of Parliament.
- 1889—The School of Mines and Industries opened. Smelting of silver-lead ore from Broken Hill commenced at Port Pirie.
- 1890—First South Australian built locomotive completed.
- 1892—Education made free to the compulsory age.
- 1894—Act granting the franchise to women passed. Inauguration of industrial arbitration by the establishment of Boards of Conciliation.
- 1896—State Bank of South Australia opened. Women voted for the first time at the general election. Happy Valley Reservoir opened. One of Adelaide's most severe droughts commenced, and continued for several years.
- 1899—Second referendum concerning the establishment of Federation held. In South Australia, 65 990 electors voted for Federation and 17 053 against. First military contingent left South Australia for the Boer War.
- 1900—Adelaide lit for the first time with electric light. The Commonwealth of Australia Constitution Act received Royal Assent and a Proclamation was issued uniting the States as the Commonwealth of Australia as from 1 January 1901. Conservatorium of Music opened. First Workmen's Compensation Act passed.
- 1901—Early closing of shops introduced. First Commonwealth Parliament elected. The Duke and Duchess of York arrived in the *Ophir*. The Customs Act came into force. The Electric Light Works was opened. Iron Knob connected to Whyalla by railway.
- 1902—Flinders column, at Mount Lofty, dedicated to the public by the Governor, Lord Tennyson.
- 1905—First kindergarten in South Australia opened.
- 1906—Military cadet system inaugurated.
- 1907—High schools were established in a number of country centres. Municipal Tramways Trust incorporated. First Federal basic wage judgment—the 'Harvester' award—made.
- 1908—Penny savings bank accounts for children established. The Outer Harbor opened. Adelaide High School established.

- 1909—Adelaide electric tramways commenced operations. Payment of age pensions by the Commonwealth Government commenced.
- 1910—Payment of invalid pensions by the Commonwealth Government commenced. First recorded monoplane flight in Australia made by F. C. Custance at Bolivar.
- 1911—'Penny Postage' to all parts of the British Empire introduced. The Federal Defence Act came into operation. Administration of the Northern Territory transferred to the Commonwealth Government.
- 1913—Medical inspection of school children introduced. Commonwealth Bank formally opened. Metropolitan Abattoirs established.
- 1914—First South Australian military expeditionary force embarked at Outer Harbor. South Australia experienced its most severe drought.
- 1915—Prices of commodities fixed by a commission. A referendum approved the closing of liquor bars at 6 p.m. Women appointed as justices of the peace for the first time. First shipment of iron ore made from Whyalla to steelworks in Newcastle. First women police appointed. Opal discovered at Coober Pedy.
- 1916—Referendum proposing compulsory military service abroad defeated. First Public Service Commissioner appointed. First State living wage with general application declared.
- 1917—German private schools in South Australia were closed. East-West transcontinental railway completed and the first train ran to Perth. Mr R. G. Carey, in a Bleriot 60, made the State's first airmail flight from Enfield to Gawler.
- 1919—Captain Butler flew from Adelaide across Gulf St Vincent carrying air mail to Minlaton. Soldier Settlement Bill passed by the South Australian Parliament. First Lord Mayor of Adelaide elected.
- 1920—Sir Ross Smith and party arrived at Adelaide by non-stop flight from Melbourne. Peace Exhibition held at the Jubilee Exhibition buildings. H.R.H. Edward, Prince of Wales visited South Australia.
- 1921—The State's population passed 500 000.
- 1922—First lock on the River Murray completed and opened at Blanchetown.
- 1923—The Government approved an extensive re-organisation of the railway system.
- 1924—Public Debt Commissioners were appointed. Air mail between Adelaide and Sydney inaugurated. Waite Agricultural Research Institute established. First radio stations commenced broadcasting.
- 1925—Showgrounds at Wayville opened. The first Federal election at which voting was compulsory took place. Foundation stone of Adelaide Teachers Training College laid.
- 1926—The South Australian barley exhibit won all prizes at the Brewers Exhibition in London. The State Bank opened for general banking business. Construction of a narrow gauge railway from Oodnadatta to Alice Springs approved. State petrol tax declared invalid following a Commonwealth Government writ against the State.

- 1927**—Extension of the North-South railway commenced. The first train arrived at Renmark following the opening of the Paringa Bridge. The Duke and Duchess of York arrived in South Australia.
- 1929**—The first air mail left Adelaide for Perth. The first train to Alice Springs left Adelaide. Compulsory military training abolished and replaced by a voluntary system. Electric tram service to Glenelg commenced.
- 1930**—All officers of the South Australian Public Service over the age of sixty-five years were compulsorily retired. The South Australian basic wage was reduced by 18c to \$1.25 a day. Transport Control Board, State Finance Committee and Unemployed Relief Council established.
- 1931**—City Bridge opened. Financial Plan formulated at the Premiers' Conference adopted and Financial Emergency Act passed. Federal basic wage reduced by 10 per cent for twelve months but was to be adjusted in accordance with a retail price index. State basic wage reduced from \$1.25 to \$1.05 a day. Basic wage for females reduced, first from \$3.95 to \$3.50 and later to \$3.15 a week.
- 1932**—Boundaries and names of a number of local government areas changed and others abolished following the report of a commission.
- 1933**—The Farmers Assistance Board, the Betting Control Board and the Metropolitan and Export Abattoirs Board established.
- 1934**—Water restrictions in force from May until the following January.
- 1935**—The Nomenclature Act of 1935 restored the former German names to a number of towns, the names of which had been changed in 1917.
- 1936**—Centenary year of the State's foundation celebrated. Contract signed for the completion of Parliament House and the foundation stone laid by the Governor, Sir Winston Dugan.
- 1937**—South Australian Housing Trust established. New Federal basic wage of \$7.40 per week, which incorporated a 'prosperity' loading, declared. First trolley bus service inaugurated. Mount Bold Reservoir with a capacity of 30 000 megalitres filled, almost doubling Adelaide's water storage. Schools closed and other precautions taken as a result of an epidemic of poliomyelitis.
- 1938**—First South Australian Housing Trust dwelling completed.
- 1939**—State's worst heat wave and disastrous bush fires experienced during the first two months of the year. Record high temperature of 47.6°C recorded in Adelaide. New Parliament House opened by His Excellency the Governor-General, Lord Gowrie.
- 1940**—Goolwa Barrage completed at a cost of \$1 400 000. Birkenhead Bridge opened. A rapid development of secondary industry took place as munition annexes were added to existing factories and new factories were opened.
- 1941**—Scriptural instruction in State schools commenced. First naval vessel built in South Australia launched. First blast furnace to be built at Whyalla went into operation. Child endowment payments inaugurated. Payroll tax commenced.

- 1942**—Daylight saving of one hour introduced for almost three months. Wages and prices pegged and profits and interest rates restricted. Racing and bookmaking prohibited. Rationing of tea and clothing commenced. Widows pension instituted. The uniform Income Tax Act came into force. First coal obtained from Leigh Creek.
- 1943**—Price Stabilisation legislation came into force. Butter rationing commenced. Wage and price subsidies were introduced and the prices of tea, potatoes and other commodities were reduced in order to bring price indexes and wages to a lower level. Racing resumed but betting shops remained closed.
- 1944**—Rationing of meat began. Morgan-Whyalla pipeline officially opened. The first State election with compulsory voting took place. Severe water restrictions imposed. First output of Leigh Creek coal for electricity generation.
- 1945**—Unemployment and sickness benefits came into operation. Restrictions imposed on the use of gas and electricity for domestic and industrial purposes.
- 1946**—Commonwealth Government munition factories leased to various private firms. Payment of government subsidies to hospitals commenced. Restrictions on the use of gas and electricity again imposed. The Electricity Trust of South Australia took over the property and functions of the Adelaide Electric Supply Co.
- 1947**—Fruit fly detected in metropolitan orchards and efforts made to eliminate it by stripping gardens and orchards. Sugar rationing abolished. Conciliation commissioners appointed following an amendment to the Federal Conciliation and Arbitration Act. Severe restrictions imposed on imports from North America.
- 1948**—Restrictions on the use of gas and electricity imposed on a number of occasions during the year because of the shortage of coal. Preparation of the Woomera rocket range commenced. Forty-hour working week introduced by Arbitration Court award. Serious bush fires occurred in January. Severe storms during April resulted in widespread damage including the destruction of the Glenelg jetty. The free medicine scheme came into operation. Clothing and meat rationing abolished. Full scale production of the 'Holden' car commenced.
- 1949**—Petrol rationing by the Commonwealth Government declared illegal but resumed later in the year under a State Act. An extended national coal strike occurred. Water pipeline to the Woomera rocket range completed. The Commonwealth and South Australian Governments ratified an agreement for the standardisation of railway gauges.
- 1950**—Petrol, butter and tea rationing discontinued. Federal free drugs scheme came into operation. Water restrictions imposed in December and remained in force until June 1951.
- 1951**—Serious bush fires occurred in January. Wool prices reached a record high level. Distribution of free milk to school children introduced.
- 1952**—The hospital benefits scheme came into operation. Price control on clothing removed in South Australia. Severe import restrictions gazetted. Installations for the bulk handling of grain opened at Ardrossan. Compulsory chest X-rays introduced.

- 1953—Remaining controls on building removed. Port Pirie became the first country town to be proclaimed a city. The medical benefits scheme came into operation. Automatic quarterly cost-of-living adjustments to the basic wage discontinued. Size of the State Cabinet increased from six to eight Ministers.
- 1954—A severe earthquake occurred in Adelaide on 1 March. Her Majesty Queen Elizabeth II visited South Australia. First unit of Port Augusta power station opened. Construction of dwellings in Elizabeth commenced. Water from the River Murray pumped into metropolitan reservoirs through the Mannun pipeline.
- 1955—Adelaide Airport at West Beach opened. The new satellite town at Elizabeth officially opened.
- 1956—River Murray flooded for several months and caused considerable damage in irrigation and reclaimed areas. Town Planning Committee established. Atomic device exploded at Maralinga. Salk Poliomyelitis vaccination program commenced.
- 1957—Centenary of responsible government in South Australia celebrated. Long service leave legislation passed by the South Australian Parliament.
- 1958—Visit of Queen Elizabeth, the Queen Mother, to South Australia. Introduction of parking meters to Adelaide. South Para Reservoir opened and connected to Adelaide water supply. Final run by a street tram in Adelaide, following conversion to diesel bus transport.
- 1959—South Australia ceased to be a claimant State for special grants from Grants Commission. Full-scale television transmission commenced. Sir Thomas Playford created record term as Premier in a British country (26 years 125 days). Aborigines became eligible for age, invalid and widows pensions.
- 1960—First Adelaide Festival of Arts held (March 12-26). Completion of second unit and formal opening of Thomas Playford power station at Port Augusta.
- 1961—First United Kingdom Trade Commissioner appointed to South Australia. Compulsory driving tests introduced. The trailer ship *Troubridge* made its first run from Port Adelaide to Kingscote and Port Lincoln. Sturt's Desert Pea declared State's official floral emblem.
- 1962—Myponga Reservoir completed and linked to Happy Valley Reservoir. Duplication of Morgan-Whyalla pipeline commenced.
- 1963—Population of the State passed 1 000 000 mark. Port Stanvac oil refinery 'on stream'. School leaving age increased to fifteen years. Three weeks annual leave for employees governed by State awards and determinations introduced. First direct dialling for an overseas telephone call from South Australia. Major gas flow from Gidgealpa No. 2 well. Royal visit by Her Majesty, Queen Elizabeth II.
- 1964—Work commenced on conversion of Port Pirie-Broken Hill railway to standard gauge. First gas from Port Stanvac refinery piped for use in Adelaide's gas supply. Record wind gust (148 km/h) registered at Adelaide on 12 July. New world land speed record set by Donald Campbell on Lake Eyre.

- 1965**—Election of first Labor State Government since 1933. First country television station opened at Port Pirie. Steel works including a basic oxygen steel making plant opened at Whyalla. First woman judge in Australia appointed to Supreme Court of South Australia. Size of the State Cabinet increased from eight to nine Ministers.
- 1966**—Women sworn in for jury service for the first time. The Flinders University of South Australia at Bedford Park officially opened by Her Majesty Queen Elizabeth, the Queen Mother. New outlet tunnel 2 700 metres long from Happy Valley Reservoir completed. ELDO rocket Europa-1 launched at Woomera.
- 1967**—Totalizator Agency Board operated off-course in South Australia for the first time. First South Australian lottery drawn. Federal Basic Wage superseded by Total Wage concept. Liquor trading hours extended to 10 p.m. WRESAT-1, first Australian orbital satellite launched from Woomera. New record low annual rainfall for Adelaide (257 mm). Torrens Island power station commenced operations. First off-shore drilling rig—*Ocean Digger*—constructed and launched at Whyalla.
- 1968**—State Elections held. Labor Government returned but subsequently defeated on the floor of the House at the first meeting of the new Parliament. New Liberal Premier, R. S. Hall sworn in. Four weeks leave for State Government employees introduced. Sealed highway from Broken Hill to Adelaide opened. Sir James Harrison first Australian-born Governor of South Australia sworn in.
- 1969**—Work begun on second major pipeline to bring River Murray water to Adelaide. Electricity Trust signed \$120 million contract for supply of natural gas. Natural gas flowed through completed 832 kilometre pipeline from Moomba-Gidgealpa to Adelaide.
- 1970**—Abortion law reformed in South Australia. First direct telecast from England to Australia via satellite. Hairy-nosed wombat adopted as State's faunal emblem.
- 1971**—Fluoridation of Adelaide water supply commenced. Age of majority reduced from twenty-one to eighteen. Commonwealth Government transferred power to levy payroll tax to the States. Daylight saving introduced in South Australia for the first time since the 1939-45 War. Death of SA Governor Sir James Harrison in office. Sir Mark Oliphant, the first SA born Governor, sworn in. Wearing of seat belts in motor vehicles made compulsory.
- 1972**—New Stirling to Verdun freeway opened. New laws regulating door-to-door selling and used car dealing introduced. University of Adelaide's educational radio station VL5UV commenced broadcasting. Weather temperature reports changed to degrees Celsius. Daylight saving re-introduced for 1972-73 and subsequent summers. South Australian Film Corporation commenced operation. South Australia's first Ombudsman appointed.
- 1973**—New long service leave provision for three months leave after ten years service came into force. New \$11 million hospital opened at Modbury. Dunstan ALP Government returned at State election to become the first ALP Government to retain office after a general election in South Australia since 1910. Cross Lotto game introduced by State Lotteries Commission. \$6.6 million Adelaide Festival Theatre opened by the Prime Minister. Legislation enacted for adult

franchise and proportional representation for the Legislative Council. Compulsory blood tests for road accident victims introduced. \$50 note issued for the first time.

1974—World Gliding Championships held at Waikerie. H.R.H. Prince Philip, the Duke of Edinburgh, visited South Australia. First match held at the new South Australian National Football League headquarters at West Lakes. Conversion of road signs to metric measurements undertaken. Judgment handed down making four weeks annual leave standard for workers under State awards. State primary schools began a new program of continuous admission of children on their fifth birthday. Playhouse, Space and Amphitheatre at the Adelaide Festival Centre opened. Legislation allowing hotel trading to 12 midnight on Fridays and Saturdays came into force.

1975—Phase I of \$54 million Flinders Medical Centre opened. Transmission of television in colour commenced. International Equestrian Exposition 1975 held in Adelaide and attended by H.R.H., Princess Anne. State Election held on 12 July, after the Legislative Council failed to pass the Railways (Transfer Agreement) Bill; the Dunstan ALP Government was returned with a reduced majority and the Bill was subsequently passed. Medibank commenced operations in South Australia. Legislation for the redistribution of House of Assembly electoral boundaries passed by the Legislative Council.

1976—A new commercial radio station (5AA) went to air, Adelaide's first for forty-six years. A new political party, the New Liberal Movement formed. Sir Douglas Nicholls appointed as Governor of South Australia from 1 December 1976. Sections on the new coastal route of the Eyre Highway opened. Smoking banned on buses operated by the Bus and Tram Division of the State Transport Authority. Plans announced for on-the-spot fines of \$20 for littering. Price control on petrol removed for a six-month trial period. Thirty-three metropolitan and fourteen country seats formed in the redistribution of House of Assembly electorates by the Electoral Boundaries Commission. Date stamping regulations for all short-life perishable foods approved by Executive Council. Rundle Mall commissioned by the Premier on 1 September. A total eclipse of the sun occurred in parts of South Australia on 23 October. Large deposits of copper ore discovered at Roxby Downs near Andamooka. Legislation passed making rape within marriage a criminal offence. Capital punishment abolished in South Australia.

1977—Her Majesty, Queen Elizabeth II and the Duke of Edinburgh visited South Australia. \$5.8 million Southern Plaza at the Adelaide Festival Centre officially opened by Her Majesty, Queen Elizabeth II. South Australia's first million dollar lottery, the Celebration Lottery, drawn by the Lotteries Commission. A major deposit of sub-bituminous coal discovered near Lock. The State's new beverage container deposit legislation came into operation. The South Australian Health Commission came into operation. Keith Seaman sworn in as the new Governor of South Australia. Adelaide's first water filtration plant at Hope Valley commenced operations. Legislation passed for the control of domestic and industrial noise. Late night shopping in city and suburbs commenced.

- 1978**—A Royal Commission held into the dismissal of Police Commissioner Salisbury. The last ship to be built at Whyalla shipyards, the *Denis O'Malley*, was launched. Adelaide tramways held centenary celebrations. Lotteries Commission introduced Instant Money Game with prizes of up to \$10 000. South Australian Heritage Committee was formed.
- 1979**—A new public transport zone-fare system introduced. D. A. Dunstan, the State's second longest serving Premier resigned for health reasons. Adelaide's unemployment levels highest in Australia in March—8·9 per cent of the workforce. Santos legislation passed, limiting maximum permissible single shareholdings to 15 per cent. State elections held; D. O. Tonkin, new Liberal Premier, sworn in. Merger of Bank of Adelaide with ANZ Banking Group approved. Charles Moore retail group ceased operating in South Australia.
- 1980**—Norwood by-election, ordered by Court of Disputed Returns, won by ALP candidate G. Crafter. Bushfire destroyed thirty-five houses in Adelaide Hills, causing \$6 million damage. First of State Transport Authority's new series 2000 railcars began service. Mitsubishi Motor Corp. purchased control of Chrysler Australia Ltd. New slogan 'The Festival State' for South Australian motor vehicle number-plates. Constitutional Museum opened. H.R.H. Princess Alexandra and her husband, Mr Angus Ogilvy, visited South Australia. The Tarcoola-Alice Springs rail link opened.
- 1981**—By-election for Federal seat of Boothby, made vacant by the appointment of Mr J. McLeay as Consul-General in Los Angeles, won by Mr R. Steele Hall (Liberal). On February 15, Adelaide had its hottest day since 1948. Temperature reached 43·4°C. H.R.H. Prince Charles visited South Australia. On June 1, Adelaide recorded its lowest barometric pressure ever (979 millibars).
- 1982**—Commencement of Moomba-Stony Point liquids pipeline. An Australian register of ships established. In February the Federal Court took over the operations of the South Australian Court of Insolvency. Lt-Gen. Sir Donald Dunstan, KBE, CB, sworn in as the State's new Governor, in April. Mr Mario Feleppa, AM, endorsed to fill a casual vacancy in the Legislative Council, became the first Italian-born migrant to enter the South Australian Parliament. On June 8, Adelaide experienced its coldest minimum temperature since the Bureau of Meteorology began taking records in 1857; -0·4°C. Following amendments to the Licensing Act, some hotels 'in tourist areas' began trading on Sundays, for one or two two-hour periods. State elections held; J. C. Bannon, new Labor Premier, sworn in. A referendum approved the continuation of daylight saving. Children's zoo, on 0·7 hectares near Botanic Park, overlooking the River Torrens, opened to the public.
- 1983**—First twins born in South Australia under Queen Elizabeth Hospital's *in vitro* fertilisation program. Large bushfires on 9 February claimed 26 lives in South Australia. Insurance damage estimated at \$48 million. Fires at nine separate locations, including Clare, Adelaide Hills, and South-East. Adelaide recorded its lowest maximum March daytime temperature 14·9°C (on March 22) for 104 years. The State was visited by H.R.H. Charles Prince of Wales, and Princess Diana.

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8203.4	Manufacturing Establishments: Small Area Statistics a	1980-81	Sept. 1982
8204.4	Manufacturing Establishments: Selected Items of Data Classified by Industry and Employment Size a	1980-81	Sept. 1982
8207.4	Domestic Appliance and Energy Usage irr	Apr. 1979	Sept. 1979
8208.4	Domestic Appliance and Energy Usage—A Technical Analysis irr	Apr. 1979	Dec. 1980

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8502.4	Interstate Trade irr	1981-82	June 1983
8603.4	Tourist Accommodation q	Mar. Qtr 1983	July 1983
8622.4	Census of Retail Establishments and Selected Service Establishments: Details of Operations by Industry Class irr	1979-80	Jan. 1982
8623.4	Census of Retail Establishments and Selected Service Establishments: Industry and Commodity Details by Statistical Retail Area and Local Government Area irr	1979-80	Apr. 1982
8624.4	Census of Retail Establishments and Selected Service Establishments: Hotels and Accommodation irr	1979-80	May 1982
8625.4	Census of Retail Establishments and Selected Service Establishments: Commodity Sales and Service Takings irr	1979-80	June 1982
8626.4	Census of Retail Establishments and Selected Service Establishments: Industry and Commodity Details by Size of Establishment irr	1979-80	July 1982
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hy	half-yearly		