

*Tasmanian Year Book*



1968



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# TASMANIAN YEAR BOOK

No. 2 — 1968

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and

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Commonwealth Bureau of Census and Statistics

Tasmanian Office, Hobart

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## PREFACE

This is the second issue of the *Tasmanian Year Book*, the first appearing last year (1967). An earlier publication, the *Tasmanian Official Record* broadly similar in content and style to the present Year Book, appeared for the years 1890, 1891 and 1892. For most of Tasmania's recorded history, however, there has been no Official Year Book.

The Year Book is designed to present a comprehensive statistical and descriptive account of the physical environment and of the social, demographic, economic etc. structure of the State, with particular emphasis on change and development in more recent years. In the first issue a considerable amount of historical material was included because of the long interval since the last issue of the *Tasmanian Official Record*. Because the demand for the first issue was very much heavier than expected and many people were unable to obtain a copy, rather more of this historical material has been retained in the second issue than will be the case in subsequent issues.

It has been possible on this occasion to advance many of the annual statistics included in this issue by two years thus making the volume very much more up to date than was the case for the first one. Data from the 1966 Census were, unfortunately, not available at the time that most of the type for this volume was set by the Printer, but selected details from the information which became available subsequently have been included in Appendix C.

Also included in an Appendix (Appendix B) is an account of the disastrous bushfires which swept Southern Tasmania on 7 February 1967. "Fire and the Tasmanian Flora" in Chapter 2 is a special article contributed by Professor W. D. Jackson to cover more general aspects of bushfires.

More detailed statistics relating to matters treated generally in the Year Book are available in the various Bulletins and other publications issued by the Bureau. Attention is directed to Appendix A where the various publications of the Bureau are described.

I gratefully acknowledge the valuable assistance given by officers of the various Commonwealth and State Departments and by others who have contributed information, often at considerable trouble. Especially would I like to thank Mr W. E. Kallend B.A., of my own staff, who has been responsible for editing all contributed material and preparing much of the subject matter. The help of the Surveyor-General in providing maps has been greatly appreciated and thanks are due also to those supplying photographs. Finally I should express my appreciation to the Government Printer and his staff for their enthusiasm and co-operation in printing this volume.

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Commonwealth Bureau of Census and Statistics,  
HOBART January 1968.



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## AUSTRALIAN DECIMAL CURRENCY

### DOLLAR (\$) / CENT (c) SYSTEM

On 14 February 1966, under the *Federal Currency Act 1965*, a dollar-cent decimal currency system, with one dollar equal to 100 cents, was introduced in Australia. The relationship between the present and the former currency is:

2 dollars	= 1 pound
1 dollar	= 10 shillings
10 cents	= 1 shilling
1 cent	= 1.2 pence

In this volume, monetary amounts relating to pre-1966 transactions have been converted to dollar currency using the above relationships and no account has been taken of changes in the rate of exchange. Where an amount in this volume appears in dollar currency relating to a pre-1930 transaction, the relationship with sterling can be taken as \$A = £ Stg 0.5. From 1930, the relationship is \$A = £ Stg 0.4; this relationship has continued despite the 1949 devaluation of sterling by 30.5 per cent, since Australia's currency was devalued by the same amount at the same time. In a few historical references, the former currency has been retained.

### ROUNDING OF FIGURES

Where figures in this volume have been rounded, any discrepancies between the totals shown and the sums of the component items are due to rounding.

### STATISTICAL DIVISIONS

The maps in this volume show the Statistical Divisions for the Census of 30 June 1966. Data in most other contexts have had to be given in terms of pre-1966 Statistical Divisions. The *South Central Division* of the earlier classification comprised the cities of Hobart and Glenorchy; in the new classification, this area has been enlarged by combination with parts of the *SE. and Southern Divisions* to form the *Hobart Statistical Division*. The details of this development are given in Chapter 5, "Demography".



# Chapter 1

## HISTORY AND CHRONOLOGY

### DISCOVERY

#### The Period of Dutch Exploration

In the authors of antiquity, references are found to a land called "Terra Australis" but it is the Dutch who are credited with the discovery of both Australia and Tasmania. The Dutch, with their trading posts in Java, represented the closest extension of European sea power near the north of the unknown continent and its discovery, either by accident or design, became inevitable.

In 1606, Captain William Jansz in the *Duyfken* was sent from Java to explore the islands of New Guinea and, crossing Torres Straits unawares, coasted along the west of Cape York Peninsula; this was the first of a series of voyages by Dutch captains who, in the next thirty years, acquired some knowledge of the western shores of the unknown land. Not all voyages were undertaken with the aim of exploration—Dirk Hartog's long journey along the western shore of Australia in 1616 resulted from his sailing too far east on the route from the Cape of Good Hope to Java. Some later captains on the same route even regarded the western Australian coast as a suitable landfall before turning north for Java—a commentary on the difficulty of navigation when longitude had to be established by dead reckoning.

In 1642, the Dutch East India Company despatched from Java an expedition of two vessels, the *Heemskirk* and *Zeehan*, under Captain Abel Tasman, with instructions to investigate the extent of the unknown land thought to exist between New Guinea and the coast of western Australia. One immediate aim of the Governor General, Anthony Van Diemen, was to find a southern route from Java to Chile so that ships of the company could either trade or plunder along the Pacific coast of South America; a question to be resolved was whether any land mass extending far south blocked such a route.

The original plan was to sail west to Mauritius, to run down to 52° or 54° South latitude and then to proceed east; assuming no land was discovered, it was then intended to turn north in either the longitude of eastern New Guinea or possibly of the Solomons. If Tasman had followed this plan in every detail, he might have discovered the east coast of Australia, anticipating Cook's work by more than a century. As it turned out, the extreme southern latitudes were too hostile and accordingly Tasman was sailing east in latitude 42° South when he sighted the mountainous west coast of Tasmania on 24 November 1642.

The Dutch navigator skirted the south coast and made a landing on the east coast for water in Blackman Bay (from an anchorage south of Marion Bay). He then sailed north to St Patrick's Head, crossed the Tasman sea and discovered New Zealand, returning to Java by a route to the north of New Guinea. Tasman had thus performed the feat of circumnavigating Australia in a single voyage without once sighting the Australian continent.

In honour of the Governor General of the Indies, he named the first discovery Van Diemen's Land, imagining it to be the most southern extension of the Australian continent, an illusion that was only completely dispelled by Bass and Flinders when they circumnavigated the island in 1798. The Dutch did not follow up the discoveries of Tasman or their other explorers because they were interested in establishing trading posts only among peoples with a higher degree of civilisation than the natives of Tasmania or Australia appeared to possess. (Tasman's crew saw no natives in Tasmania but inferred their existence from sounds, cuts in trees and the smoke of fires.)

### The Period of British and French Exploration

One hundred and thirty years passed before Tasmania was visited again, this time by the French navigator Marion du Fresne in 1772; he virtually repeated Tasman's original landfall, skirted the south coast and came to anchor in the bay that bears his name (Marion). His visit is memorable for the first contact between Europeans and Tasmanians and for the slaying of the first native by gunfire. Du Fresne himself was killed by Maoris in New Zealand on the same voyage.

A year later, Captain Tobias Furneaux in the *Adventure* became separated from Captain Cook in the *Resolution* on the route to New Zealand, and made for Tasmania to obtain water. He eventually anchored off Bruny Island in Adventure Bay but mistakenly believed himself to be in the area of Tasman's original landing which was at least forty five miles to the north-east. From this original error sprang a confusion in nomenclature which persists to this day (e.g. Frederick Henry Bay, first named in Tasman's record, appears on maps in an area that Tasman did not even see). Furneaux then sought to investigate the possibility of a strait separating Tasmania from the continent recently explored by Cook but shoals in the islands bearing his name (Furneaux Group) caused him to desist and make for New Zealand.

In 1777, Cook, on his third voyage, used the Adventure Bay anchorage without detecting Furneaux's navigational errors.

The settlement at Port Jackson in N.S.W. in 1788 put Tasmania on a major sailing route, the first fleet passing south of the island on its way. To have sailed north of the island would have invited shipwreck on the Australian "mainland" of which Tasmania was then believed to be part. In the same year, Captain William Bligh put in to Adventure Bay with the *Bounty* on his way to Tahiti and to the famous mutiny; he had been on Bruny Island before as Cook's sailing master.

Captain Cox of the *Mercury* anchored in the bay known as Cox Bight in 1789, charted some of the south coast and explored the strait between Maria Island and the east coast.

The next visitor (1792) was Admiral Bruny D'Entrecasteaux commanding *Recherche* and *Esperance* and searching for La Perouse who had not been heard of since 1788 when he sailed from Botany Bay. The Admiral made up from the south, hoping to anchor in Adventure Bay, but a navigational error put his ships too far west with the happy result that he discovered the magnificent channel separating Bruny Island from the Tasmanian mainland, and was the first to sail up the Derwent River. Leaving Tasmania, the expedition sailed as far west as Cape Leeuwin in western Australia when it became imperative to take on water. It is an indication of the lack of knowledge then available that D'Entrecasteaux had to return to Adventure Bay to fill his casks. In the same year, Bligh put in to Adventure Bay on his way to obtain breadfruit trees in the Pacific for transplanting in the West Indies.

The year 1794 was notable for the visit of Commodore John Hayes who had sailed from India with the *Duke of Clarence* and *Duchess*; he explored the Derwent as far as Mt Direction and named Risdon, later to be the site of the first settlement.

### Tasmania an Island

Two voyages now followed which established that Tasmania was an island. Surgeon George Bass in a whaleboat left Port Jackson in 1797, rounded Wilson's Promontory and discovered Western Port. The nature of tides and swells encountered told Bass that here was no bay but rather a strait of considerable magnitude. Lieutenant Flinders held a contrary opinion, however, thinking that a land-bridge was necessary to explain the presence of natives in Tasmania. In 1798, Bass and Flinders were given the sloop *Norfolk* to decide the question for all time and they circumnavigated the island, commencing on a westerly course along the north coast where they discovered the Tamar estuary.

### Fear of the French

In the original annexation of Australian territory by Cook in 1770, Tasmania was excluded since the southern limit was proclaimed as 38° South latitude. Formal possession of Tasmania had been taken by Governor Phillip on 26 January 1788, when he read his commission to the people of the First Fleet at Sydney Cove. Now that it was established that Tasmania was an island, the authorities both in London and Sydney felt that some steps should be taken to block the French from making any claims to possession. The urgency of doing this was underlined by the arrival in D'Entrecasteaux channel of Admiral Baudin with the *Geographe* and *Naturaliste* in 1802. The expedition's navigator, Freycinet, charted Tasman and Forestier peninsulas and correctly identified the Frederick Henry Bay of the Dutch era. The expedition then called at Port Jackson before sailing south into Bass Strait where it was intercepted at King Island by Lieutenant Robbins in the *Cumberland*. Announcing his intention boldly to the French Admiral, the Lieutenant then disembarked his small company and formally annexed the island in the name of King George III. Governor King at Port Jackson who gave Robbins his instructions was not satisfied that merely formal acts of annexation would block the French indefinitely and decided that permanent settlements were required if British sovereignty were to be retained. To this decision can be attributed the settlement at Risdon (1803) and the Hobart and Port Dalrymple settlements of 1804.

### Geography of the Original Landing

The State map published by the Tasmanian Lands and Surveys Department (1:250,000) makes easy the recognition of Tasman's landings on the east coast. His anchorage was near Visscher Island while the first landing was made by longboats which passed through the narrows into Blackman Bay. The second landing occurred in the south-east of North Bay where a lagoon proved to be too brackish for filling water casks.

The last landing was made near Tasman Bay where the navigator had hoped to plant the flag of his Prince and take formal possession of the new land. The surf being too rough to get the longboat ashore, the carpenter swam through the waves, planted the flag and then fought his way back to the longboat.



## SETTLEMENT

### The First Settlement at Risdon (1803)

It will be observed that the original explorers of the island (including the French) had very largely concentrated their attention on the south-east and, in particular, on the sea approaches to the Derwent. Faced with the necessity for establishing a settlement to assert British sovereignty, Governor King had a number of possible sites to consider, including King Island, Port Phillip and Port Dalrymple (the Tamar Estuary). His eventual choice was the area of the Derwent and he reported his intention to the Admiralty as follows:

"My reasons for making this settlement are the necessity there appears of preventing the French gaining a footing on the east side of these islands; to divide the convicts; to secure another place for obtaining timber with any other natural productions that may be discovered and found useful; the advantages that may be expected by raising grain; and to promote the seal fishery."

Commissioned to make the Derwent settlement, Lieutenant John Bowen sailed from Sydney with the *Albion* and *Lady Nelson*; the two vessels became separated in a gale but both were at anchor at Risdon by 11 September 1803 when Bowen went ashore. The slenderness of Governor King's resources is apparent from the fact that the settlers—free, convict and military—only numbered 49 and that the *Albion* was a British whaler under temporary charter (she caught three sperm whales on the voyage while becalmed).

The responsibility for the choice of the Risdon site attaches ultimately to Bass who had made detailed investigations of the Derwent in 1798 from the *Norfolk*. He had reported as follows: "The land at the head of Risdon Creek, on the east side, seems preferable to any other on the banks of the Derwent". It was not surprising, therefore, that Bowen's commission from Governor King directed him to locate the new settlement in the Risdon area. In actual fact, the site ultimately proved unsuitable due to the inadequate stream and the poor landing place; these handicaps were aggravated by the wretchedness of the human material at Bowen's disposal, a characteristic not altered when the camp was increased to nearly 100 persons.

If the settlement has any claim to fame, it derives from an encounter with natives who descended on the camp on a hunting expedition and who were fired on by the soldiers in a state of panic. Whether the future barbarities of inter-racial war could have been avoided is an open question but this encounter was the first phase of a struggle that ended in the extinction of a race.

The final act of the Risdon settlement was played on 9 August 1804, when the *Ocean* sailed for Port Jackson with Lieutenant Bowen and most of his people; Lieutenant-Governor Collins at the new settlement at Hobart had decided to close down the Risdon camp and held such a low opinion of these early colonists that he retained only thirteen convicts and one free settler.

### The Settlement At Hobart (1804)

If Lieutenant-Colonel Collins had carried out his original instructions, then Hobart today might have been the name of the capital of Victoria situated on Port Phillip Bay. The British Cabinet, impressed by Governor King's warnings on possible French penetration, decided to carry out the occupation of Port Phillip direct from Britain and, to this end, commissioned Lieutenant-Colonel Collins (Royal Marines) to command an expedition in the *Calcutta* with the *Ocean* as tender. The settlers eventually arrived, via Rio De Janeiro and the Cape of Good Hope, and formed a temporary camp

near the site of the modern Sorrento township. For a variety of reasons, Collins was unhappy about the locality; he considered navigation hazardous, the soil poor and water scanty. Promising land at the head of the bay he was unwilling to develop due to the show of strength by large bands of natives. Accordingly he wrote for advice to Governor King in Sydney and was left free to decide between the River Derwent and the River Tamar (Port Dalrymple) as possible sites for transfer of his command. He was probably swayed in his eventual choice of the River Derwent by its reputation as a safe harbour and the fact that Risdon had already been settled.

On 15 February 1804, Lieutenant-Governor Collins, with the first detachment from Port Phillip in the *Lady Nelson* and *Ocean*, anchored off the new settlement at Risdon. A quick inspection satisfied Collins that the site was quite unsuitable and he made his own reconnaissance, eventually selecting the area on the western bank known as Sullivan's Cove and ordering that the expedition should be disembarked with all its stores in the vicinity of Hunter's Island. In the same month, Collins reported to King that his two ships were "lying within half a cable-length of the shore in nine fathoms of water"; the Lieutenant Governor had selected gentle slopes for his settlement, located a fine stream running from Mt Wellington and found near the mouth of the stream depths of water which would accept the draught of any vessel of his day (or of the modern era).

The following table shows the early composition of the settlement at Sullivan's Cove (but excludes details of the Risdon camp):

Number Victualled at Sullivan's Cove, 26 February 1804

Quality	Men	Women	Children
Military Establishment .. ..	26	1	..
Civil Establishment .. ..	6	..	..
Settlers .. .. .	13	5	13
Convicts .. .. .	178	9	8
Supernumeraries .. .. .	(a) 3	..	..
Total .. .. .	226	15	21

(a) Including one aboriginal from Port Jackson.

The strength of the colony was increased to 433 persons in June 1804 when the *Ocean* returned from Port Phillip, where it had taken aboard the balance of the original expedition. From the camp on Sullivan's Cove has sprung the present city and port of Hobart.

David Collins was no amateur in the field of colonisation—he had sailed with Governor Phillip as Judge Advocate in the first fleet in 1788 and had acted as Secretary to the Governor till 1796 when he returned to Britain with excellent recommendations. His memory is honoured in Hobart's Collins St, in the Anglican Cathedral (St David's) and by the memorial above his grave in St David's Park.

### The Settlement on the Tamar (1804)

While the Lieutenant Governor was still in Port Phillip Bay, wondering where best to settle, he sent his namesake, William Collins, on a voyage of exploration to the Tamar estuary. William Collins followed the river up as far

as the Cataract Gorge and returned to Port Phillip with a good account of the possibilities of the Tamar for settlement; in his absence, however, the Lieutenant Governor had made up his mind and was already preparing for the expedition to the Derwent.

Later Governor King received a despatch from Lord Hobart (Secretary of State for the Colonies) who, by a grotesque error, recommended the establishment of a settlement at Port Dalrymple "upon the southern coast of Van Diemen's Land and near the eastern entrance of Bass' Straits". If Lord Hobart really meant "south", then Collins' move to the Derwent had anticipated his wishes. However, since Collins had, in fact, left Port Phillip, was not it necessary to re-occupy Port Phillip or possibly to watch the Strait from Port Dalrymple? King knew that Hobart's despatch was written in ignorance of Collins' move and accordingly decided to use his own initiative without raising questions of geography with the Secretary for Colonies.

In Hobart's despatch, Lieutenant-Colonel William Paterson (New South Wales Corps) was nominated as Lieutenant Governor of the new colony. Paterson set sail with 57 soldiers and convicts in the *Integrity* and the *Contest*, but after a month of adverse winds both ships were forced back to Port Jackson. A second attempt was made using *Buffalo*, *Lady Nelson*, *Francis* and *Integrity* and increasing the party to 181. This time the Tamar was successfully entered but *H.M.S. Buffalo* went aground and was, with some difficulty, brought to anchor in Outer Cove (George Town) on 4 November 1804. Lieutenant-Colonel Paterson decided that *Buffalo* must be immediately unloaded and accepted the Outer Cove site as a suitable camp while he undertook a more detailed reconnaissance of the Tamar.

Although he penetrated as far as the fertile site of Launceston, Paterson made the extraordinary decision to set up his headquarters at the head of West Arm and founded York Town, while still maintaining small establishments at Outer Cove, Low Head and Green Island. In commenting on York Town, one can only imagine that Paterson was guided purely by the strategic necessity of being near the entrance to the Tamar and that he gave little thought to the problem of soil fertility and cultivation.

In March 1806, Paterson was willing to admit that York Town was a most unsuitable site and he accordingly moved his headquarters to the present site of Launceston. Today York Town and Risdon have one thing in common—the almost complete absence of any indication that settlements had ever existed. The Lieutenant Governor's name is commemorated today in Launceston's Paterson Street and Paterson Barracks.

Paterson, before setting out on this expedition, had been involved in an argument as to his status but Governor King had resolved the matter by dividing Tasmania at the 42° parallel and making Collins and Paterson sovereign in their respective halves, but subordinate to him as Governor. In naming the Tamar and Launceston, Paterson was honouring King who came from Launceston in Cornwall.

## THE ABORIGINES

### Robinson's Journals

In the first volume of the *Year Book* (1967) appeared an article under the heading, "The Aborigines". For readers with an interest in this subject, a new publication is now available entitled *Friendly Mission*, containing the edited journals of George Augustus Robinson.



Sent out in 1830 to bring in the last remnants of the dispersed tribes, Robinson penetrated much unknown country and, by the very nature of his mission, was given a unique opportunity to see the natives in their natural environment over a period of four or five years. Many of his diary entries were made in the field when encamped after a long day's walk, and the men and women about whom he wrote sometimes shared the same fire and the same food. First through friendly interpreters, and later by reason of his own acquaintance with the native tongue, he conversed with various groups and then recorded what he had heard.

Robinson was no anthropologist but he did have compassion and a deep interest in the aborigines. When most settlers avoided the bush unless well-armed, Robinson thought he knew the natives well enough to penetrate their remote hide-outs without a weapon; his confidence was not misplaced and most encounters ended in success, the aborigines accepting his friendly assurances and accompanying him back to one of the settlements, as the first stage of their journey to exile in the islands of Bass Strait.

Some of the expeditions were recorded on a daily basis and, in *Friendly Mission*, the editor has inserted excellent maps to show Robinson's day-by-day progress. His treks along the south and west coasts are of particular interest, since much of the country he penetrated is still known only by a very small minority of present-day Tasmanians. Much has been written about the aborigines but, in *Friendly Mission*, the reader has the opportunity to learn their story from the man who probably knew them best.

## THE ADMINISTRATION OF COLONEL GEORGE ARTHUR

### Introduction

Originally Van Diemen's Land was proclaimed a part of N.S.W. and the first three lieutenant governors (Colonels Collins, Davey and Sorell) were subject, in varying degree, to the control of the governor in Sydney; the name "Macquarie" so frequently found in Tasmanian topography is testimony to one governor of N.S.W. who seriously and personally concerned himself with progress in the southern territory. The administration of the fourth colonel (1824-1836) is notable for the separation of Van Diemen's Land from control by N.S.W. and its establishment as a colony in its own right. Colonel George Arthur was the first man trusted to rule the island and be responsible only to the Imperial Government in London.

### Arthur's Career

Ruling Van Diemen's Land virtually as an autocrat, Arthur became the target of much abuse and slander but his career is evidence of the esteem in which he was held by the Imperial Government. Appointed ensign in the 91st Foot in 1804, he fought in Egyptian and European battles of the war against Napoleon, and was wounded at Rosetta and Flushing; his final rank was Lieutenant General attained in 1854. His career as a colonial administrator began in 1814 when he was appointed Superintendent of Honduras; then Lieutenant Governor of Van Diemen's Land, 1824; Lieutenant Governor of Upper Canada, 1838; and Governor of Bombay, 1842. His thirty two years of colonial service came to an end in 1846 when ill-health forced him to resign. Holding office in Van Diemen's Land was no sinecure (the difficulties overwhelmed some of Arthur's successors), but he was made of sterner stuff and emerged unscathed, with strong claims for further employment in the service of his country.

**Arthur's Status as Lieutenant Governor**

When Lieutenant-Governor Arthur arrived in Van Diemen's Land in 1824, the colony was still under the control of Governor Brisbane in N.S.W., a cause of serious frustration in all administration, and of delay in land grants and judicial business. The Imperial Government took immediate steps to increase Arthur's power of independent action but these were only a prelude to the formal separation from N.S.W. proclaimed on 3 December 1825, by Darling.

Lieutenant-General Darling arrived in Hobart, en route to N.S.W., with two commissions, one as Governor of Van Diemen's Land and the other as Governor of N.S.W. He proclaimed "Van Diemen's Land and certain Islands, Territories and Places adjacent . . . a separate Colony, Independent of the Government of New South Wales" but "reigned" for three days only before setting sail to replace Governor Brisbane at Sydney. Since Darling's authority was valid only when he was in the island, Arthur assumed the Governor's powers and exercised them throughout his term as Lieutenant Governor; neither Darling, nor his successor, Bourke, visited the southern colony after the act of separation.

Darling was, of course, fully aware of the intentions of the Imperial Government but later Lord Goderich thought it worth instructing Governor Bourke as follows: "Notwithstanding you hold his Majesty's commission as Governor of Van Diemen's Land, it is by no means intended that you should exercise any control over or interfere with the Civil affairs of that Government which is considered to be wholly distinct and independent of your own command, excepting as may relate to Military affairs". (The Governor in Sydney was Captain General of all armed forces, the island detachments included, although the Lieutenant Governor enjoyed the title of Colonel-in-Chief and exercised local control.)

**Arthur's Councils**

Arthur's machinery of government included the five-man Executive Council, made up of leading officials (Chief Justice, Colonial Secretary, Colonial Treasurer, etc.) and the Legislative Council which, in 1829, was increased to 15 members; the original body first met in 1826 with seven. All members were appointees of the Lieutenant Governor. Up till 1828, Arthur alone could initiate bills which became law with the support of at least one member of the Legislative Council or, in times of "apprehended or actual rebellion", purely on his own responsibility; after that date, a majority vote was necessary from members, Arthur having a casting vote.

The Legislative Council of 1829 was made up of seven officials (Lieutenant Governor, Chief Justice, Colonial Secretary, Attorney General, Colonial Treasurer, Senior Chaplain and Collector of Customs) and eight settlers. Since all deliberations were secret, the vigour of debate is uncertain but Arthur, in 1836, wrote: "Although questions admitting the greatest diversity of opinion have often been brought under discussion, I have never been defeated in any measure which I have anxiously desired to carry forward". A cynic may find this hardly surprising considering the system of appointment but some settlers at least had a voice in the Council, even if more critical and outspoken men failed to secure membership. This limited system suited Arthur and he advised the Imperial Government on more than one occasion to ignore the colonists' agitation for representative government, the colony, in his opinion, being ill-prepared for such innovations; the urgent problems

of colonisation and a penal settlement required, for their solution, a strong administration which he could supply without the aid, or the frustration, of democratic institutions.

### **Arthur's Officials**

Separation of Van Diemen's Land from N.S.W. control threw on Arthur the responsibility for organising an independent public service, at a time when patronage and the influence of powerful friends were the accepted machinery for the filling of office. The Lieutenant Governor had not invented the system but he saw nothing wrong in it; the appointment as officials of Henry Arthur, Charles Arthur, John Montagu and Matthew Forster, all his relatives, is sufficient proof that nepotism did not trouble Arthur's conscience. The question to ask is whether the system produced good officials, and the case of John Montagu is a partial answer.

John Montagu, married to Arthur's niece, was first Private Secretary, then Clerk of Councils, Colonial Treasurer and finally Colonial Secretary; the last two offices had fallen vacant through dismissals made by Arthur. Yet there is nothing to suggest that these removals from office were made deliberately to advance Montagu's career. The dismissed Colonial Treasurer, Jocelyn Thomas, appointed because of his aristocratic connections, was discovered to have embezzled £ (sterling) 10,627 of Crown money in the period 1825-1832; he was fortunate in being allowed to sell his assets and make repayment, without standing criminal trial. The previous Colonial Secretary, John Burnett, was detected making an illegal land transaction and allowed to take leave of absence in 1834 with a view to employment in some other colony.

A contemporary journalist had this to say of Montagu: "His office worked with the celerity of clockwork, and courtesy was everywhere". Even Lieutenant-Governor Franklin, who was later to bitterly clash with Montagu, had to admit that he showed great administrative talent and possessed a profound knowledge of local conditions. Melville, a settler imprisoned in Arthur's time, made this comment: "It is a striking feature of the present administration, with respect to public servants, that no excuse, no evasion of the strict prescribed line of duty was ever tolerated". Contemporary observers accused Arthur of working sixteen hours a day (or praised him, according to their philosophy) and reported that he expected a similar degree of dedication from his subordinates.

### **Arthur and the Convict System**

As long as the ruins of the Port Arthur penitentiary stand, the name of Arthur will be perpetuated in Tasmania and Australia. Nevertheless, this association is not entirely fair to the memory of the Lieutenant Governor who envisaged Port Arthur as an ultimate punishment for convicts unwilling or unable to make a contribution to the development of the colony. Contrary to popular legend, most of the convicts of Arthur's day were not herded behind the grim walls of the Tasman Peninsula prison, but deployed on the farms of the settlers, employed on the construction of roads, bridges and buildings, and used extensively in various government and administrative services.

Arthur was a realist—his Van Diemen's Land was primarily a penal colony and he knew it; he also knew that men without hope were capable of any conceivable crime. From these two basic facts, he evolved an elaborate system of prisoner classification, the most favoured group being "ticket of leave" men working virtually as free men, and the most wretched being those incarcerated in chains at Port Arthur. As far as Arthur could arrange it,

movement from bottom to top (or vice-versa) was a matter for the individual convict and any man, by good conduct, could hope to graduate to virtual freedom. In the meanwhile, there were lands to be cleared, crops to be gathered and bridges to be built—let the convict apply himself suitably to this work and his diligence would ultimately be rewarded.

To summarise, Arthur believed in punishment, and very few of his contemporaries would have differed, but he also believed in redemption; around these two concepts, he built a system of practical emancipation.

### **Arthur and the Aborigines**

When Arthur's term of office expired in 1836, the problem of the aborigine had been solved; the two hundred unfortunate survivors had been persuaded to surrender and to accept voluntary exile on Flinders Island. In this tragic prelude to the Tasmanians' extinction, the role of the Lieutenant Governor deserves examination.

From the day the British flag was hoisted in Van Diemen's Land, the effect of settlement was to make the aborigine a foreigner in his own land, a trespasser on territory owned, to the last square foot, by King George III. Arthur in 1824 did not create the deadly hostility between settlers and natives—sufficient atrocities to enrage and transform the island's natural owners had been perpetrated under the regimes of his predecessors. Collins, Davey, Sorell, each had made pious proclamations, each had deplored the settlers' acts of violence, but none had taken sustained or effective action.

### *Equality in Law*

In theory, of course, the aborigine was entitled to the same protection under the law as any settler, a point of view which Arthur tried to propagate by ingenious picture-boards nailed to trees in the bush. Certainly, in Arthur's regime, when the natives Mosquito and Tom were tried for murder, all due ceremony and forms appropriate to the courts of the day were employed, including counsel for the defence and, after judgment, a chaplain for spiritual guidance. There seem to be few records, however, of settlers' standing trial for crimes against the natives, or of those who had murdered aborigines being sent to the gallows (as occurred in N.S.W. under Governor Bourke). This does not necessarily mean that Arthur's protestations of impartiality were mere hypocrisy. The victims of white atrocities were in a poor position to understand and utilise the colony's judicial processes for the trial and punishment of their oppressors. Further, in a situation where settlers were often the victims of native attacks, there was considerable technical difficulty in distinguishing between murder, manslaughter and justifiable homicide, a difficulty appreciated by an administration which was constantly urging the colonists to take more responsibility for their own defence; because of the language barrier, it was almost impossible, on the fringe of isolated settlements, to draw a distinction between friendly and hostile natives.

### *Clash of Interests*

The basic cause of the antagonism was cultural and economic, and beyond the power of Arthur or any other administrator to control. The aborigines were nomadic hunters but white settlement decimated their food supply and drove them from their traditional hunting grounds; Collins' shooting parties sent out for kangaroo in the colony's early famine period started the process but extensive pastoral development in the 1820s and 1830s accelerated it. The settlers, in turn, were faced with the problem of preserving their livestock which the natives regarded as a substitute for their vanished game, and which



they were prone to slaughter in revenge. Arthur came to the colony when the clash of interests was becoming more bitter and when it was obvious that the two economies could not co-exist.

### *The Capture-Parties*

Arthur, at an early stage, attempted to preach conciliation by an extraordinary combination of cruelty and kindness; the essence of the scheme was the capture of natives who were sent to Bruny Island and placed in the care of George Augustus Robinson (known later as the "Conciliator of the Blacks"). Robinson treated them well, passed on gifts and a message of peace, and then had them liberated to rejoin their tribes. This technique of communication might have had some chance of success if the roving capture-parties had acted with more restraint. Generally, however, the parties spread terror and took captives only after acts of indiscriminate murder; even John Batman, a capture-party leader with some sympathy for the aborigines' plight, was thought by Arthur to have much slaughter to his discredit. The parties had originally been military, but were later made up of civilians who were more successful in the taking of prisoners.

### *The Black Line*

By 1830, the official policy of conciliation had simply intensified hostilities between the two races, and settlers in the remoter areas clamoured increasingly for protection. Against this background, Arthur conceived the idea of the Black Line, an operation in which soldiers and settlers were first to form a continuous line from St Patrick's Head to the Western Tiers, then to slowly converge on Forestier Peninsula, driving before them every native into this natural trap. The operation was launched at tremendous expense, but Arthur's mobile "net" was riddled with holes through which the aborigines passed without detection; when the hunters arrived at the Peninsula, the total result was the capture of a man and a boy.

### *Robinson's Mission*

The utter failure of the Black Line operation was a source of hilarity among Arthur's critics, but, nevertheless, the mass deployment of soldiers and armed settlers did have a tremendous impact on the natives, many of whom came to realise the futility of further resistance. Arthur's next step was to call for volunteers to go peacefully into the interior and attempt to persuade the natives to voluntarily surrender. (To his credit, he rejected a suggestion for bringing in Maori cannibals "to hunt down, enslave, or otherwise get rid of the Vandiemanslanders whom they despised".) Only one effective volunteer, George Augustus Robinson, came forward; the obscure Wesleyan builder, with a few friendly natives to assist, took his life in his hands and slowly made contact with the scattered remnants of the hostile aborigines. Eventually, through Robinson's efforts, nearly two hundred survivors of the race were assembled on Flinders Island, which was set aside as a reservation.

Clearly Arthur cannot be accused of gross inhumanity, but it is also apparent that neither he nor the Government he represented had formed any clear or consistent policy on what was to be the eventual fate of the aborigines; he certainly did not plan or hope for their extinction. The best he could have done would have been to work for their segregation from the settlers at an earlier date, yet the sad infertility of the exiles on Flinders Island suggests that even this measure might not have been effective in preserving a dying race.

**Arthur's Public Works**

Although Arthur's term in Van Diemen's Land ended the year before the reign of Queen Victoria commenced, works undertaken under his administration are still very much in use today.

The original settlement by Bowen on the Derwent River had been on the eastern shore before Collins had chosen the western site, which offered a better water supply and use of a natural harbour. In Arthur's day, it was beginning to look as though Bowen's choice might have been right—the Derwent had become a serious obstacle to communication with the settlements north of the river, where the bulk of farming and pastoral development was now taking place. There were, of course, ferries plying between the two shores at various points, but these imposed delay and added to costs.

Towards the end of Arthur's stay, the Bridgewater scheme was commenced; this involved building a causeway over deep mud flats from the western shore and thereby narrowing the crossing from nearly a mile to a few hundred feet. The final main channel gap was then to be crossed, first by a punt and later by a bridge. Even with a limitless supply of convict labour, the causeway took over three years to build, the stone filling seeming to sink almost without end into a bottomless quagmire. The causeway, 12 miles north of Hobart, is still today part of the main road linking the capital with Launceston. Seventy miles north along the same road is the graceful Ross Bridge, built in stone under Arthur's administration. (The equally graceful Richmond Bridge bears the date 1823 and is therefore "pre-Arthurian".)

In Arthur's day, the shoreline of the Hobart waterfront began to bear some faint resemblance to that of the present port. The main work undertaken was the filling of the swamps adjacent to Sullivan's Cove; the reclaimed land was then raised in level and became the site for warehouses, with abundant room for future development. The present spacious Princes Wharf area and the warehouses in Salamanca Place can be traced back to work or planning undertaken under Arthur's administration. It is perhaps ironic that Arthur, the autocrat, should have ordered the construction of the building which today houses the Tasmanian Parliament, but this was no concession to democratic principles—he had it built as a Customs House.

One familiar reminder of Arthur's time is Hobart's Theatre Royal, still used for live theatre today. The foundation stone was laid in 1834 but the Lieutenant Governor was not present to see the first performance in 1837. (The original project was launched in the name "Theatre Royal"; the completed building was called "The Victoria" and, in the 1860s, the original title was restored.) In New Norfolk, at least two buildings still in use date from the early days of Arthur's regime; these are St Matthews' Church and the Bush Inn, said to be the oldest licensed hotel in Australia.

**The Settlement of Victoria**

Arthur's regime was associated with large-scale grants of land to settlers; in the period 1824-1831, over 1,300,000 acres of Crown land were alienated in this way. The Imperial Government then changed its policy and made purchase the accepted method of acquiring land. This development, coupled with the hunger for pastoral land, had the effect of turning some settlers' eyes northward to Victoria, at that time still without white inhabitants. It is not generally realised that Arthur was very much in favour of occupying the south of the continent and strongly supported a request by James Henty for the right to acquire land across the straits; in a letter to the Secretary for Colonies, the Lieutenant Governor offered to take a small military party and personally

supervise the establishment of the new settlement. The Imperial Government refused Henty's request but, in 1834, he sailed from Launceston to the Portland Bay area and took up land without official sanction.

A year later, John Batman headed an equally unauthorised expedition from Launceston to Port Phillip bay and acquired 500,000 acres by a treaty with "the brothers Jagajaga" and other chiefs of the Dutigalla, the price including blankets, tomahawks, knives, scissors, looking-glasses and handkerchiefs. One of the investors in the company that backed the expedition was Henry Arthur, a nephew of the Lieutenant Governor; there is nothing to suggest that he was acting for his uncle who recommended, after Batman's occupation, "that the land should not be located to a company of absentee proprietors." At the same time, however, he advised the Imperial Government that "the occupation of the land in question would be much beneficial to his Island".

The Imperial Government had previously frowned on suggestions for opening up Victoria to occupation, because its aim was concentration; settlers thinly spread throughout a vast continent meant added anxiety and administrative responsibility. The adventurers from Van Diemen's Land forced the issue and no authority was audacious enough to try to stop the flood of pioneers who followed in Batman's steps. Whatever Victoria may be now, in Arthur's day it was undoubtedly an illegal Tasmanian colony.

### Achievements Under Arthur

Arthur was not a popular ruler, his basic stand being that settlers in Van Diemen's Land could not expect the same degree of freedom as they would enjoy in Britain. With convicts averaging between 30 to 40 per cent of the total population during his term of office, the Lieutenant Governor's attitude was not unreasonable and the charges of tyranny made by his critics ignore the necessity for strong administration imposed by this circumstance. When, for example, he was driven to curb the liberty of the press, he did so with the knowledge that not all readers of the attacks on his administration were free men. The principal achievements of this period are summarised briefly as follows:

*Growth:* From 1824 to 1836, the free population increased by 30,000 persons and a chain of settlements was established linking north and south.

*Law and Order:* The convict population, in Arthur's period, increased by 10,000 and the control of these persons, spread widely throughout the island, required a high order of organisation and discipline; the Lieutenant Governor supplied the necessary drive and close supervision. When Arthur arrived, life and property in the remoter settlements were threatened by both bushrangers and natives; when he left, the former had been largely eliminated, the latter completely segregated.

*Exploration:* The area of unexplored country was appreciably diminished; Government surveyors explored the country of the Upper Derwent, a bridle track was pushed through to the Huon Valley, and Van Diemen's Land Company officials made their way through much of the unknown north-west, e.g. Jorgensen's trek from the Shannon to Circular Head in 1826, and Fossey's journey to Cradle Mountain in the same year.

*Land Tenure:* One task that fell to Arthur was rectifying survey errors perpetrated by officers who had been both inefficient and corrupt, the result being endless land disputes due to conflicting titles. He appointed new surveyors and finally established a Caveat Board; gradually the confusion abated.

*Communications:* Roads and bridges were constructed in an energetic programme and postal services were placed on a firm basis. Construction in the port at Hobart increased its handling capacity in a marked degree.

*Government:* The foundations of a public service were laid, whilst the Legislative Council gave settlers a voice in the administration of the island. The passage to self-rule was through three stages: (i) all representatives appointed, as in Arthur's day; (ii) some representatives elected and some appointed (1851); and (iii) all representatives elected (1856).

### Conclusion

Arthur had the onerous task of administering a colony which was a vast prison and, at the same time, of creating conditions under which free men could settle, prosper and enjoy a high standard of protection and security. These obligations, though necessarily contradictory on occasion, he fulfilled with considerable success and, in so doing, established a firm base for future development.

(Further reading : *Governor George Arthur, A Colonial Benevolent Despot*, by M. C. I. Levy)

## CHRONOLOGY

### Preface

The following chronology was compiled in two sections, the period 1642 to 1929 from a document specially prepared by officers of the State Archives, and the period beginning 1930 from a search of contemporary newspapers by Bureau officers.

In the record of more recent years, it was found impossible to describe purely Tasmanian events in isolation since certain national events necessarily form a part of the history of a State within a federal system; particularly is this true with regard to some Commonwealth Government decisions, the state of the economy and industrial arbitration. On the other hand, there is the difficulty of deciding which events of a purely local character are sufficiently important to warrant inclusion. Obviously Tasmania's first Parliament in 1856 is an item appearing more worthy of permanent record than Hobart's adoption of parking meters in 1955. This difficulty of selection is partly avoided by giving the record of recent years in considerably more detail but inevitably such a policy results in matters of major and minor importance being mingled without distinction. It follows also that the second part of the chronology is limited largely to what the newspapers of the day considered important and that some events of greater significance may have escaped notice.

To round off the picture of any given year, there is a constant temptation to introduce events of world importance; as far as possible, this has been avoided except where such events had considerable local impact, for example, the sighting of a space satellite overhead, a war involving Australians or even the death of a president. In no way should the record which follows be interpreted as an "official" chronology of the State; in actual fact, the record derives from two levels of subjective evaluation, firstly, the selection of items of importance carried out by contemporary journalists, and secondly, the further selection from this narrowed field of items that appeared important to the compilers of the chronology. Some items have been introduced not because they are important but because they have a strong local flavour, for example, the suspected sighting of a Tasmanian tiger, the winning yacht in the Sydney-Hobart race or an isolated football victory over a V.F.L. side.

## Chronology of Events from First Discovery of Tasmania

- 1642 Abel Janszoon Tasman, commanding *Heemskirk* and *Zeehan*, sighted west coast and named his discovery "Anthony Van Diemenslandt". Landings on Forestier Peninsula and near Blackman Bay on east coast.
- 1772 Landing of a party from Du Fresne's expedition at Marion Bay and affray with aborigines.
- 1773 Tobias Furneaux, in the *Adventure*, became separated from James Cook in *Resolution* and landed party at Adventure Bay.
- 1777 James Cook anchored *Resolution* in Adventure Bay on third expedition.
- 1788 William Bligh anchored *Bounty* in Adventure Bay on first breadfruit expedition.
- 1789 John Henry Cox sailed *Mercury* from Cox Bight to Maria Island.
- 1792 William Bligh, on second breadfruit voyage, anchored *Providence* in Adventure Bay. Bruny D'Entrecasteaux, commanding *La Recherche* and *L'Esperance*, discovered D'Entrecasteaux Channel and charted south-east coast.
- 1793 D'Entrecasteaux returned for further exploration of south-east coast. John Hayes, commanding *Duke of Clarence* expedition, explored Derwent River.
- 1798 Matthew Flinders and George Bass circumnavigated Tasmania.
- 1802 Nicholas Baudin, commanding *Geographe* and *Naturaliste*, explored south-east coast.
- 1803 John Bowen's party of 49 made first settlement at Risdon Cove.
- 1804 David Collins' settlement party landed at Sullivan's Cove (Hobart). Aborigines killed in an affray at Risdon. Risdon settlement closed down. William Paterson's settlement party landed at Port Dalrymple (Tamar estuary).
- 1805 Collins forced by famine to cut rations by one third.
- 1806 Settlers moved from York Town to Launceston area (Tamar estuary).
- 1807 Thomas Laycock's party crossed island overland from Port Dalrymple to Hobart. First Norfolk Island settlers shipped to Hobart in *Lady Nelson*.
- 1809 Governor William Bligh aboard *Porpoise* anchored in Derwent after N.S.W. mutiny and embarrassed Collins with problem of jurisdiction.
- 1810 Lieutenant-Governor Collins' death. Issue of the newspaper *Derwent Star*.
- 1811 Governor Macquarie's first visit to Tasmania.
- 1812 Lieutenant-Governor Thomas Davey arrived. Northern settlement at Port Dalrymple made subordinate to Hobart. *Indefatigable* brought first shipload of convicts direct from England.
- 1815 Hobart and Port Dalrymple declared free ports for import of goods. Davey proclaimed martial law against bushrangers. James Kelly circumnavigated island in a whaleboat.
- 1816 First issue of *Hobart Town Gazette*.
- 1817 Succession of William Sorell as Lieutenant Governor.
- 1818 Death of Michael Howe, notorious bushranger.
- 1820 Visit by John Thomas Bigge to conduct his enquiry into colonial administration.
- 1821 Second tour by Governor Macquarie.



- 1822 Penal settlement established at Macquarie Harbour.
- 1823 Passage of British Act "for the better administration of justice in N.S.W. and Van Diemen's Land".
- 1824 Inauguration of Supreme Court. Arrival of Lieutenant-Governor Arthur.
- 1825 First Launceston newspaper, the *Tasmanian and Port Dalrymple Advertiser*, established. Tasmania constituted a colony independent of N.S.W. Establishment of appointed Executive and Legislative Councils. Departure of Governor Darling from Tasmania left Arthur with the authority of Governor (but not the title).
- 1826 Van Diemen's Land Co. sent first party. Appointment of Commissioners of Survey and Valuation.
- 1827 Colonial Act passed for the regulation of the colonial press—disallowed. Lieutenant Governor received petition for trial by jury and some representation in Legislative Council.
- 1828 Passage of British Act 9 Geo. IV, cap. 83 which increased membership of Legislative Council. Martial law proclaimed against aborigines.
- 1830 George Augustus Robinson began his mission to conciliate the aborigines. First use of juries in civil cases. Beginning of the "Black Line", the military campaign to round up the aborigines. First volume of *Quintus Servinton*, first novel to be published in Australia. Port Arthur established as penal settlement.
- 1831 Approval of British Government's new land regulations discontinuing free grants of land, and replacing them with land sales.
- 1832 First shipment of aborigines to Straits Islands. Establishment of the Caveat Board to settle land disputes and to confirm titles. Maria Island closed down as a penal settlement.
- 1833 Macquarie Harbour penal settlement closed down.
- 1834 Henty brothers from Launceston became first settlers in Victoria, occupying land in Portland Bay area.
- 1835 John Batman sailed from Launceston to Port Phillip as agent for the Port Phillip Association. Tasmania divided into counties and parishes. Opening of Ross Bridge. Population estimated as 40,172 persons.
- 1837 Arrival of Sir John Franklin and assumption of office as Lieutenant Governor.
- 1838 Sessions of Legislative Council opened to the public.
- 1840 Cessation of transportation to N.S.W., and consequent increase in numbers transported to Tasmania. Population estimated as 45,999 persons.
- 1841 Assignment System of convict discipline replaced by the Probation System. Rossbank Observatory for magnetic and meteorological observations established.
- 1842 Tasmania created a separate Anglican diocese. Hobart made a city. Peak year for convict arrivals (5,329).
- 1843 Recall of Sir John Franklin and succession of Sir John Eardley-Wilmot.
- 1844 Transfer of Norfolk Island penal settlement from N.S.W. to Tasmanian control.
- 1845 Resignation of the "Patriotic Six" members of the Legislative Council, opposing the heavy expenditure of colonial revenue for imperial police charges.

- 1846 Recall and death of Wilmot. Foundation of the Launceston Church Grammar and the Hutchins Schools.
- 1847 Succession of Sir William Denison. The Lieutenant Governor re-appointed the "Patriotic Six", dispensing with those who had replaced them as Legislative Councillors.
- 1848 Tasmania now the only place of transportation in the British Empire.
- 1850 Foundation of the Anti-Transportation League. Population estimated as 68,870 persons.
- 1851 British Act "for the better governing of the Australian colonies" reached Tasmania; provided for limited representative government. First elections for 16 non-appointed members of Legislative Council.
- 1852 First payable gold found near Fingal. Elections held for first municipal councils in Hobart and Launceston.
- 1853 Arrival of last convicts to be transported.
- 1854 Bad floods throughout colony. Passage of Bill establishing responsible government.
- 1855 Succession of Sir Henry Fox Young; title now Governor. British Government approved Constitution Bill.
- 1856 Name of Van Diemen's Land changed to Tasmania. Opening of new bi-cameral Parliament with W.T.N. Champ leading first government in the House of Assembly. Reorganisation of Police Department.
- 1858 Council of Education set up. Rural Municipalities Act passed.
- 1859 Charles Gould appointed to make geological survey of western Tasmania. Telegraph established as link with Victoria.
- 1860 Population estimated as 89,821 persons.
- 1861 Succession of Colonel Thomas Gore Browne. Telegraph cable to Victoria failed.
- 1862 Promotion of scheme for a railway between Launceston and Deloraine.
- 1864 Arrival of first successfully transported salmon ova.
- 1868 Visit by Alfred, Duke of Edinburgh. Bill passed making primary education compulsory.
- 1869 Succession of Charles Du Cane. Death of William Lanne, thought to be last male full-blood aborigine. Death of Sir Richard Dry. New cable laid to Victoria.
- 1870 Withdrawal of remaining Imperial troops. Population 99,328 persons (Census).
- 1871 Opening of Launceston-Deloraine railway.
- 1872 Contract concluded for building Main Line Railway.
- 1873 Main Line Railway construction begun. Tin discovered at Mt Bischoff. Start of economic recovery.
- 1874 Riots in Launceston in protest at rates levied for Launceston-Deloraine railway.
- 1875 Succession of Sir Frederick Weld.
- 1876 Race meetings established at Elwick. Gold nugget worth \$12,200 found at Nine Mile Spring. Death of Truganini, thought to be last female full-blood aborigine. Main Line Railway opened for traffic.
- 1877 Port Arthur closed down as a penal settlement.
- 1878 Increased activity in exploration of West Coast.

- 1879 Settlement of constitutional issue known as the "Hunt Case". Rich lode of tin discovered at Mt Heemskirk.
- 1880 First telephone in Tasmania with line from Hobart to Mount Nelson Signal Station.
- 1881 Purchase of three diamond drills by government for hire to private prospectors. Succession of Sir George Strahan. Population 115,705 persons (Census).
- 1882 Increased prospecting on West Coast.
- 1883 Discovery of the "Iron Blow" at Mt Lyell.
- 1885 Russian war scare followed by activity in improvement of defences. Formation of Mt Lyell Prospecting Association.
- 1886 Adye Douglas, Tasmanian Premier and President of the Federal Council, spoke in favour of Australian republicanism.
- 1887 Succession of Sir Robert Hamilton.
- 1890 Establishment of University of Tasmania.
- 1891 Collapse of Van Diemen's Land Bank; deep economic depression. Population 146,667 persons (Census).
- 1892 Mt Lyell Mining Co. established.
- 1893 Succession of Viscount Gormanston.
- 1896 Establishment of Tattersalls Lottery by George Adams.
- 1897 Record shade temperature of 105.5° at Hobart on 30 December.
- 1898 Serious bush fires. Polling 4 to 1 by Tasmanians in favour of Federation.
- 1899 Departure from Hobart of *Southern Cross* (Borchgrevinck) expedition to Antarctic.
- 1900 Departure of Tasmanian contingents to fight in the Boer War.
- 1901 Proclamation of the Commonwealth read. Polling for first elections to Federal Senate and House of Representatives. Visit of the Duke and Duchess of Cornwall and York. Succession of Sir Arthur Havelock. Population, 172,475 persons (Census).
- 1903 Celebration of 100 years' settlement cancelled because of smallpox epidemic in Launceston. Suffrage extended to women.
- 1904 Succession of Sir Gerald Strickland at reduced salary.
- 1905 Experiments in wireless telegraphy between Tasmania and the continent and between Tasman Island and Hobart.
- 1906 Visit by Ramsay MacDonald (later British Prime Minister).
- 1907 New Public Library opened; built with gift from Andrew Carnegie.
- 1909 Succession of Sir Harry Barron. Potato crop wiped out by Irish blight. State's first Labor government under J. Earle.
- 1911 Population 191,211 persons (Census).
- 1912 Disastrous fire at North Lyell Mine, Queenstown.
- 1913 Succession of Sir William Ellison-Macartney.
- 1914 First aeroplane flight in Tasmania. Departure of first Tasmanian contingent to fight in Great War. Second State Labor government formed under John Earle. Formation of Hydro-Electric Department.
- 1915 Serious bushfires.
- 1917 Establishment of electrolytic zinc works at Risdon and of Snug carbide works. Succession of Sir Francis Newdegate.
- 1918 End of Great War.

- 1919 First export of frozen meat.
- 1920 Visit by Edward, Prince of Wales. Establishment of Cadbury's chocolate factory at Claremont. Succession of Sir William Allardyce.
- 1921 Population 213,780 persons (Census).
- 1922 Completion of Waddamana power station.
- 1924 Succession of Sir James O'Grady. First superphosphate manufactured by Electrolytic Zinc Co. at Risdon.
- 1925 Discovery of osmiridium fields at Adamsfield.
- 1927 Enquiry into proposed bridge over Derwent. Visit by Duke and Duchess of York.
- 1929 Serious floods throughout island. Establishment of automatic telephone system in Hobart. Beginning of economic depression.
- 1930 Export prices fell to half 1928 level. Australian pound devalued so that £ Sterling equalled £A 1.25 (\$A 2.50).
- 1931 Depression continued—10 per cent cut in Federal basic wage. Initiation of austere Premiers' Plan. Conversion loan to reduce rate on internal Federal debt by 22½ per cent. Census of population deferred due to economic crisis.
- 1933 Census of population—Tasmania, 227,599 persons. Succession of Sir Ernest Clark. Commonwealth Grants Commission appointed to enquire into affairs of claimant States.
- 1934 Labour ministry of A.G. Ogilvie first in many years of continuous Labour governments. Second phase of hydro-electric development commenced at Tarraleah and Butlers Gorge.
- 1936 Tasmania linked with Victoria by submarine telephone cable.
- 1937 Epidemic of poliomyelitis. Economic recovery evidenced by \$0.50 "prosperity" loading added to Commonwealth basic wage.
- 1938 Paper mill using native hardwoods established at Burnie. First turbines began operating at Tarraleah power station.
- 1939 Outbreak of World War II.
- 1940 Tasmanians sailed for Middle East with Australian 6th Division.
- 1941 Newsprint production began at Boyer on the Derwent. Tasmanians sailed for Malaya with Australian 8th Division.
- 1942 Daylight saving introduced as war-time measure. Uniform Federal income tax commenced.
- 1943 The floating-arch Hobart Bridge opened for traffic.
- 1944 Pay-as-you-earn income taxation introduced from 1 July.
- 1945 End of World War II. Succession of Sir Hugh Binney.
- 1946 Cessation of man-power controls. Rejection by Legislative Council of bill to grant Federal Government price control powers for three years. Referendum gave Commonwealth power in regard to social services but refused power over marketing and employment. Crash of DC3 airliner at Seven Mile Beach with 25 deaths.
- 1947 Census of population—Tasmania, 257,078 persons. Federal arbitration decision favouring 40-hour week. Court action to stop bank nationalisation by Federal Government. Demobilisation of forces completed. "Displaced persons" commenced arriving from Europe.

- 1948** Forty-hour week awarded to most workers from 1 January. Tasmanians voted "No" almost 2 to 1 in referendum denying Federal Government power over prices and rents. State price and rent controls introduced. State Premier resigned but soon re-instated in office. Hobart's Ocean Pier gutted by fire. Hydro-electric capacity exceeded one-quarter million horsepower. Legislative Council's denial of supply forced dissolution of House of Assembly—Cosgrove ministry returned to power. High Court ruled against bank nationalisation. Abolition of toll on Hobart Bridge.
- 1949** Visits by Mr Anthony Eden, M.P. and Lord Rowallan (Chief Scout). Compulsory X-ray introduced in fight against tuberculosis. Saturday morning closing of banks. Clark Dam at Butlers Gorge completed. Theatre Royal purchased by Government. Repco Bearing Co. officially opened at Launceston. Construction begun on Bell Bay aluminium plant. Port of Hobart held up by 29-day strike; coal supplies cut off by major strike on N.S.W. coalfields and at Tasmanian mines. Sterling devalued by 30.5 per cent and Australian pound similarly devalued. Outbreak of poliomyelitis caused cancellation of Hobart Show. Federal Labour government defeated at elections and Liberal government installed.
- 1950** End of Federal petrol rationing. Dissolution of House of Assembly granted by Governor and Cosgrove ministry returned to power. Federal child endowment extended to cover first child. Invasion of South Korea and recruiting of volunteers for Australian contingent. Federal basic wage increase of \$2.00 followed by State Wages Boards. Communist Party Dissolution Bill passed by Federal Parliament. Control of State meat prices abandoned.
- 1951** Serious bushfires in January and February. Succession of Sir Ronald Cross. Electric power rationing introduced due to prolonged drought. Communist Party Dissolution Act declared invalid by High Court. Double dissolution of Federal Parliament. Part of Macquarie Harbour frozen over on 2 July. Hobart Federal basic wage increased from \$16.50 (February) to \$19.90 (November). First intake of National Service trainees entered Brighton camp. Statewide snow-falls with Hobart blanketed to sea level on 9 August. Referendum to give Commonwealth powers in regard to communism—"No" vote prevailed although Tasmanians expressed slight preference for "Yes". Announcement of drastic Federal anti-inflation budget—economic effects of record wool prices and the Korean war becoming apparent.
- 1952** Inflation continued—Hobart Federal basic wage rose from \$20.80 (February) to \$23.00 (November). Death of King George VI—reign of Queen Elizabeth II. Balance of payments in jeopardy, Federal import licensing introduced. Single licensing authority established for hotels, clubs, etc. Formal end to occupation of Germany and Japan. First woman elected to Hobart City Council. Two women elected to Legislative Council. Bad floods in Derwent Valley. Artificial lake, King William, filled to capacity. State free hospital scheme ceased on acceptance of Commonwealth insurance scheme. State Racing Commission established. Rejection by Legislative Council of bill to give State aid to private schools. Butlers Gorge power station began operating.
- 1953** Inflation continued—Hobart Federal basic wage rose from \$23.20 (February) to \$24.20 (August). In September, Court abandoned system of quarterly adjustment of Federal basic wage. Special Premiers' conference discussed return of income tax powers to States but no

action followed. Tungatinah power station began operating. Break-away left wing labour group contested Senate election in Tasmania without success. Armistice in Korea. Announcement of transfer to Victoria by Tattersalls Lottery. Price control of meat re-introduced. Bad storm temporarily closed Hobart Bridge. State Wages Boards decided to follow Federal Court in suspension of quarterly basic wage adjustments. Licence granted to new lottery to operate in place of Tattersalls.

- 1954 Hobart Bridge closed temporarily due to pontoon flooding. Royal visit by Queen in liner *Gothic*. Petrov case began with defection of Russian diplomat. Completion of Trevallyn tunnel for hydro-electric power. Menzies government re-elected. Bad flood in South with much damage in Hobart Rivulet area. Rationing of electric power ended. Centenary of Hobart newspaper, the *Mercury*, celebrated. Bill to increase House of Assembly to 35 members defeated in Legislative Council. Hobart City Council decided to install parking meters. Census of population—Tasmania, 308,752 persons. Direct appeal by Professor Orr to Premier for Royal Commission on Tasmanian University. State prices control organisation disbanded. Federal Arbitration Court awarded margins based on two and a half times their 1937 level. Bill passed to resolve deadlocks in House of Assembly. Foundation of Metropolitan Transport Trust.
- 1955 Nubeena suffered damage from tidal wave. Uranium ore discovered at Mt Balfour and Royal George. Bell Bay aluminium plant officially opened. Royal Commission on Tasmanian University appointed. Cosgrove ministry returned to power without effective majority. First women (two) elected to House of Assembly. Australia's first capital city parking meters installed in Hobart. Trevallyn turbines started operating. Tungatinah scheme officially opened. Strike of 16 days at Rosebery mines. Anti-Communist Labour Party (later the D.L.P.) formed in State. Hadleys Hotel (or \$280,000) offered as prize by Tasmanian Lotteries. Drastic cut in imports enforced under Federal licensing provisions. State visited by Earl of Home (later British Prime Minister). Tasmanian Lotteries announced \$500,000 prize for sweep. Rent control past 31 December refused by Legislative Council. Tasmania's first woman mayor (Launceston). Menzies government re-elected. Three hundred whales stranded near Dunalley.
- 1956 State Wages Boards' restoration of "cost-of-living" adjustments effective from 1 February. Watersiders strike at Tasmanian ports for 22 days. Mile-long Wayatinah tunnel bored through for hydro-electricity. Professor Orr dismissed by University Council. Tasmanian Lotteries announced \$1,000,000 prize for sweep. Passage by Legislative Council of long-service leave bill. Bad floods State-wide in May. Federal Court increased basic wage \$1.00. State granted \$2.60 increase to own employees. State Wages Boards again suspended cost-of-living adjustments. Deadlocked Premiers' Conference failed to agree on uniform wages policy as counter to inflation. Minister for Housing joined Liberal Party, depriving State Government of its majority. Sir Ronald Cross flew from Colombo and granted dissolution of House of Assembly. Labour returned to power in State. Court action by Professor Orr against University Council. Official opening of E.Z. Co's sulphate of ammonia plant. First Tasmanian woman competed in Olympic Games held in Melbourne. Centenary of self-government celebrated. Trevallyn power scheme officially opened.

- 1957 Helicopter pilot claimed to see Tasmanian tiger in remote south-west. Extensive bushfires in January. High level bridge design approved for Derwent. Parking meters introduced in Launceston. 88-year-old Mt Nicholas coal mine closed down in Fingal Valley. Legislative Council rejected bill giving aid to private schools. Serious recession in timber industry. Substantial relaxation of Federal import curbs. First fall for three years in "C" series index (March quarter). Federal court increased basic wage \$1.00. Union levies for political purposes challenged by Hurseys. Professor Orr's appeal to High Court of Australia failed. National service intake lowered and selection determined, in part, by ballot system. Clarence rate payers voted to replace elected Council with appointed Municipal Commission. High Court upheld principle of uniform income tax (challenged by Victoria and N.S.W.). Severe flooding in Hobart. "Comprehensive High School" policy announced. First space satellites—Sputniks I and II—seen over State. Keel laid of *Princess of Tasmania*. Commonwealth announced greater financial aid to Universities, following Murray Report. Centenary of Hobart's incorporation celebrated.
- 1958 Water restrictions in Glenorchy and Launceston. Visit by Mr Macmillan, British Prime Minister. Hurseys blocked by dockers from working on wharves—court action initiated. Visit by Queen Mother. Water restrictions in Hobart. Federal Ministry accepted second defeat of banking legislation in Senate without calling for double dissolution. Unsuccessful agitation by churches and other bodies for re-opening of Orr case. Federal court increased basic wage by \$0.50. Bad floods in Derwent Valley. Chair of Philosophy boycotted. Police guarded Hurseys working on docks following Court order. In football carnival, Tasmania defeated W.A. and S.A. Establishment of Rivers and Water Supply Commission. Viscount prop-jets introduced on Bass Strait routes. Four-mile-long Liapootah tunnel bored through for hydro-electricity. Mr Cosgrove succeeded by Mr Recce as Premier. Number of Supreme Court judges increased to five. Commercial licence granted to Tasmanian Television Ltd. Completion of Hobart's Olympic Pool. Supreme Court awarded Hurseys substantial damages. Menzies government re-elected. Public Service Tribunal established as industrial authority. *Princess of Tasmania* launched.
- 1959 Hobart temperature 105° on 20 January. Extensive bushfires. New licensing Act further restricted Sunday drinking. Official opening Queenstown aerodrome. New system of increased Commonwealth grants for State roads. Administrator's revocation of appointment of Treasurer who had refused to resign from cabinet. Dissolution of House of Assembly. State visited by discoverer's descendant—Herman Abel Tasman. First election to fill 35 seats in House of Assembly; Labour re-elected. Succession of Lord Rowallan. Federal Court awarded \$1.50 increase in basic wage. New Commonwealth system of grants reduced claimant States to two—Tasmania and W.A. High Court verdict in Hursey case upheld right of unions to strike levies for political purposes. *Princess of Tasmania* commenced roll-on roll-off ferry service Melbourne to Devonport. Heavy snowfalls in late September. One-way street traffic plan introduced in Hobart. Visit by Earl Attlee (ex-Prime Minister of Britain). Brooker Highway open for traffic between Elwick Road and Cleary's Gates. Water restrictions in Glenorchy and Kingborough. Suspension of National Service training. Federal Court granted 28 per cent increase in margins. Tender accepted for new bridge across Derwent to be finished in three years. Severe hail damage to Huon Valley orchards.



- 1960** Sustained heatwave in January. Liapootah turbines started operating. Kingborough Council replaced by Municipal Commission. Poatina road gave new access to Great Lake. Zeehan-Strahan railway closed. Dr Evatt retired as Federal Labour leader. Federal import controls virtually abolished. Tasmanian Industrial Mission visited U.K. and Europe. First meeting of new body, Inland Fisheries Commission. Drought conditions general in south. TV stations ABT2 and TVT6 started programmes from Mt Wellington transmitters. Federal court refused basic wage increase. Severe floods in central Hobart and Derwent Valley; flood relief fund opened for victims. In football, Tasmania defeated V.F.L. Macquarie No. 1 wharf officially opened on site of gutted Ocean Pier. Construction started on Tasman Bridge. Tasmanian Military Command Headquarters reduced in status. Construction begun of board mills at Wesley Vale. Tasmanian Lotteries surrendered licence and Tattersalls arranged ticket sales within State through agents. Negotiations begun for sale of Commonwealth interest in Bell Bay aluminium plant. State Parliament ignored committee's report recommending increased members' salaries. Royal Flying Doctor Service commenced in State. Australian "give way to right" rule introduced. Last Hobart trams ceased running. Inflationary situation developing; drastic Federal counter-measures. *Bass Trader*, a trailer-container vessel, launched. Hobart Gaol vacated, the new prison being at Risdon.
- 1961** High temperatures and widespread bushfires; water restrictions in many areas. Government initiated plan for bulk water supplies to west bank of Derwent. *Bass Trader* commenced service to Melbourne from northern ports. First manned satellite, Gagarin's, circled earth. Concern at growing unemployment followed by easing of Federal credit restrictions in June. Census of population—Tasmania, 350,340 persons. Carpet factory opened at Devonport. Rosebery-Tullah road officially opened. Federal court increased basic wage \$1.20. *William Holyman*, cargo container vessel, entered Bass Strait trade. State visited by Lord Mayor of London. Matriculation college policy announced. Construction started for Hobart-Sydney ferry terminal. Visit by Lord Chief Justice of England. Consumer price index (September quarter, six capitals) showed first drop for four years. Establishment of Metropolitan Water Board. First headmistress of a State secondary school appointed. Tests of Savage River iron ore samples in U.S. furnaces. Legislative Council rejected equal pay legislation. Menzies government returned to power with majority of two seats; a Tasmanian independent won seat in Senate.
- 1962** "Sputnik" dredges banned from Channel scallop beds. Power boat licensing introduced for south and east coasts. Board of enquiry reported adversely on prospects of thermal power generation in Fingal Valley. Sweeping Federal measures in February to stimulate economy; special grants for State works programmes. Compulsory third party insurance expanded to give passenger cover. Federal Court refused basic wage increase. Expansion programme begun at Bell Bay aluminium plant. First Professor of Agriculture appointed. Butter oil production commenced at Deloraine. Legislative Council took initiative in increasing salaries of parliamentarians. Official opening of ferro-manganese plant at Bell Bay. Catagunya turbines began producing electricity. Official opening of TNT9 (northern commercial TV). State Wages Boards granted three weeks' annual leave. Federal Treasurer announced Tasmania to receive employment stimulation grant of \$2,336,000. Governor, as Visitor to University,

dismissed petition for review of Mr Orr's dismissal. Roster system introduced for "out of hours" petrol sales. State visit by King Bhumibol and Queen Sirikit of Thailand. Keel laid of *Empress of Australia*. State subsidies announced for municipal fluoridation schemes. Closure of Mt Lyell Railway, Queenstown to Strahan. Wood pulp production commenced at Geeveston. State branch of Country Party formed. Water pumped direct from Derwent at Bryn Estyn to Berriedale (West Derwent Water Scheme). End of metropolitan water shortages in sight.

- 1963 Electra flew Hobart to Melbourne in 55 minutes. Speed limit in built-up areas increased from 30 to 35 mph. Collapse of negotiations for Britain's entry into Common Market. Visit by Queen to Royal Hobart Regatta. Abolition of State entertainments tax. Succession of Sir Charles Gairdner. Official State trade mission left for South East Asia. Official opening of St Helens aerodrome. Federal court increased margins 10 per cent and granted three weeks' annual leave. New consolidated Local Government Act effective from 1 July. National TV (ABNT3) started operating in north. Trans-Derwent ferries ceased operating. Uniform marriage laws operative from 1 September. Tasmanian fishermen began exploitation of Port Phillip Bay scallops. Universities Commission recommended medical school for Tasmanian University. Federal Government granted \$5,000,000 for road to Gordon River. Federal Government rejected request for aid for thermal power station in Fingal Valley. Hydro-Electric Commission imposed power cuts on industrial consumers due to prolonged drought. Floating bridge in danger from break-away barge in storm. *Seaway Queen*, trailer and container ship, launched. Death of President Kennedy. Piling difficulties slowed construction of the Tasman Bridge. Menzies government returned with substantial majority. Opening of Murchison Highway linking west and north-west coasts. Offer by University Council of \$32,000 to Mr Orr; resignation of Chancellor and some other Council members.

- 1964 Launching of *Seaway King*, roll-on roll-off vessel. T.A.A. commenced intra-State air services. Launching of *Empress of Australia*. Tasmanians lost in sinking of destroyer *Voyager*. Poatina turbines commenced electricity generation; industrial power cuts ended. Alginate plant began operations on east coast. Strahan airport completed and first used by Japanese examining Savage River iron ore. Country Party nominated candidates for State election. Russian whaling ships took on fuel at sea in Storm Bay. Labour re-elected at State elections with effective majority. Federal court reduced long service leave qualifying period from 20 to 15 years. *Seaway Queen* began Melbourne-Hobart operations. Federal court increased basic wage \$2.00, rejecting employers' total wage concept. Mr Orr announced rejection of University's settlement terms. Shannon power station closed down. Severe flooding in Launceston area. Federal grants to private home builders made available. B.H.P. granted licence to explore minerals in remote south-west. Tasman Bridge opened for traffic and Hobart Bridge towed away. *Seaway King* began Sydney-Hobart operations. Forestry works extended in Fingal Valley as counter to coalminers' unemployment. Fifty whales stranded on Flinders Island. Increase in State parliamentary salaries determined by Parliamentary Salaries Tribunal. Abolition of "junior minister" status in State Cabinet. State subsidies for electric power in remote localities abolished. H.E.C. "mole" used to widen railway tunnel at Rhyndaston. Hobart's water supply fluoridated. Tasmanian representative carried Australian

flag at Tokyo Olympic Games. One-way street scheme introduced in Launceston. Tasmania re-established as separate Army Command. Glenorchy raised to city status. Compulsory National Service on selective basis introduced. Recommendations for metropolitan expressways announced as part of official transportation study. Pickands Mather and Co. International (U.S.A.) and Mitsubishi Shoji Kaisha Ltd agreed to joint investigation of Savage River iron ore deposits.

- 1965** *Empress of Australia* sailed from Sydney on first voyage to Hobart. System of provisional driving licences introduced. Geeveston wood pulp expansion programme announced. Death of Winston Churchill in London. Savage River iron ore sent to U.S.A. for grinding tests. Contract let to raise Great Lake level by new Miena Dam. Tasmanian Churchill Scholarship appeal raised \$232,000. Dental nurse scheme for schools announced. Fokker Friendship crash-landed at Launceston Airport without loss of life—23 persons aboard. Abalone fishing stepped-up. *Slava Sevastopolu*, Russian whaler, refused to buy supplies in Hobart. Visit by Archbishop of Canterbury (Dr Ramsey). Discovery of off-shore natural gas near Gippsland coast of Victoria. Battalion of Australian troops sent to South Vietnam. Report by State Royal Commission on prices and restrictive trade practices. Sorrell and Midway Point connected to metropolitan water supply. Expansion programme announced for Boyer newsprint mills, capacity to increase by 70,000 tons. D'Entrecasteaux scallop beds closed for 1965 season. First Tasmanians called up under new National Service scheme. Speaker's chair stolen from House of Assembly by students. New Shops Act extended Saturday morning closing to Hobart's eastern suburbs as from 1966. Full report on Hobart transportation study released. Very severe drought in most continental States. Commonwealth Conciliation and Arbitration Commission increased total award wage 1.5 per cent, the rise being credited to the margin, not the basic wage. Waddamana "A" power station closed down. West Coast viewers received TV from translator stations on Mt Owen and Mt Read. Bass Strait oil drilling commenced. Expansion of ferro-manganese plant at George Town announced. Thirty-eighth Congress of A.N.Z.A.A.S. (scientific body) held in Hobart. State budget increased driving licences, land tax, stamp duties and racing taxes. Geeveston wood pulp capacity raised to 48,000 tons with 75,000 tons as target. Announcement of projected plant at Wesley Vale to produce paper on same scale as present plant at Burnie. Gust of 93 mph set Hobart record in September. Licence given for phosphate search in far north-west. Increase in air fares. Report of Municipal Commission recommended reduction of local government authorities from 49 to 20. Four Tasmanians received Churchill Scholarships. Three-year expansion programme commenced at Boyer newsprint mills—production to lift from 93,000 tons to 165,000 tons. Expansion programme announced for George Town aluminium plant—annual capacity to be lifted from 54,000 tons to 71,000 tons. Australian woolgrowers voted "No" in referendum on Reserve Price Scheme; Tasmanians voted marginally "Yes".

- 1966** *Freya* won Sydney-Hobart race in record actual time (4 days, 6 hours, 23 minutes). Another vessel like *Princess of Tasmania* to be built for Bass Strait ferry service. Offshore natural gas discovered at new site in Victorian waters. Tasmanian scored first century for 41 years against visiting M.C.C. Sir Robert Menzies retired and Mr Holt

became Prime Minister. Japanese fishing south of Hobart commenced frequent visits to port. Flinders Is. electricity plant destroyed by fire. Dental nursing school opened. Decimal currency introduced on 14 February 1966. Railton cement works announced \$4m expansion programme. Hobart airport to be developed for pure jet travel. Savage River workers declared eligible for taxation zone allowance. Bad fires in Derwent, Huon and Arve Valleys. Acrylic yarn plant to be built at George Town. Advanced College of Education announced for Hobart (to cost \$2m). First Tasmanian wounded in Vietnam. Report of Road Safety Committee released. Tamar River made navigable for large ships at night. Burnie-Launceston co-axial cable completed. Tallow exported in liquid form (new shipping method). New Queenstown airport opened officially. Renison Bell to process tin with Capper Pass fuming method. Hail insurance paid to apple growers approached \$1m. Maria Is. planned as a wild life reserve. Hobart gas works used oil after 112 years' production based on coal. Asthma Foundation of Tasmania formed. Contract let for construction of Port Latta. University paid \$32,000 to Mr Orr. Secondary examination system to be changed. Savage River agreements involving \$62m signed. Contract let for \$3m State Government offices. West Coast viewers received national telecasts via translator stations. Equal pay for certain females in Public Service contained in State Act. Breathalyser tests approved for use by police. Census of population—Tasmania, 371,217 persons. Tin production at Mt Cleveland to expand, following State Government guarantee of \$1m development loan. Workers' compensation extended to cover travel to and from work. Commonwealth Conciliation and Arbitration Commission increased basic wage by \$2. Surveyor 1, American capsule, landed on moon and sent data back to earth. Sunday observance dispute; Victorian Q.C. appointed as board of enquiry. Limit on co-operative building society loans raised to \$8,000. Shipping rates to Britain increased 6.4 per cent. Visit of new H.M.A.S. *Hobart*; given freedom of city. Air fares rose 3 per cent. Huge copper reserves discovered in Mt Lyell area. State budget lifted commercial vehicle taxation as much as 50 per cent; private vehicle taxation about 15 per cent. H.E.C. programmes accelerated and some other public works deferred. Companies Act amended to increase protection for investors. Mr Lyons M.H.A. resigned from Liberal Party; later formed Australian Centre Party with Country Party backing. Huge floating crane towed from U.S.A. to Port Latta. Visit of President Johnson to eastern States. Federal Government refused to include a projected ship-building industry at North West Bay in subsidy agreement. Launceston airport's new passenger terminal officially opened. Holt Liberal Government returned to power with record majority; Tasmanian representation remained 3 A.L.P., 2 Liberal. Direct dialling to Melbourne provided for inner Launceston subscribers. Commonwealth Public Service removed marriage as bar to permanent employment of women. Lake Meadowbank filled; artificial lake created by Hydro-Electric Commission. Extensive fire in Frenchmans Cap National Park. Commonwealth Conciliation and Arbitration Commission, in interim margins case, gave increases based on total wage (ranging from 1 per cent to 2.5 per cent).

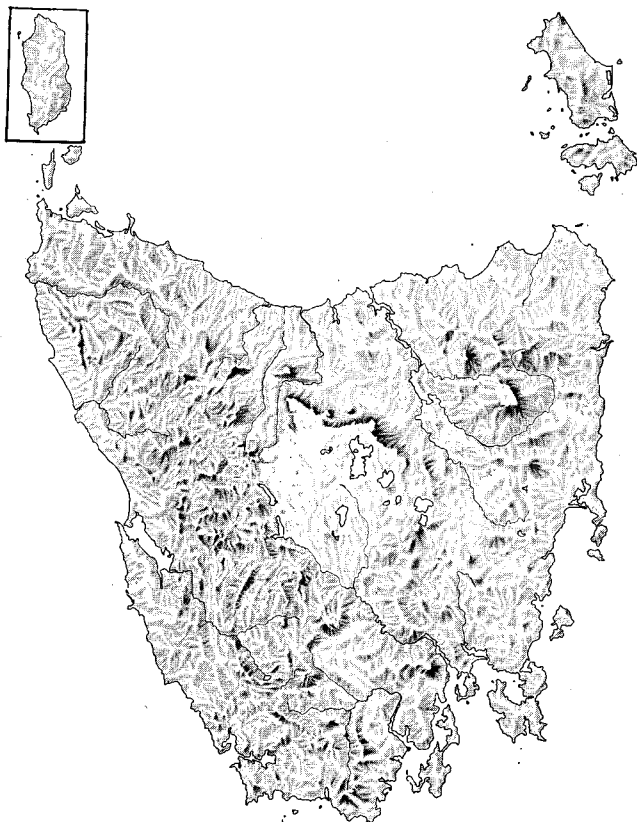
## Chapter 2

### PHYSICAL ENVIRONMENT

#### GENERAL DESCRIPTION

##### Location and Area

The State of Tasmania is a group of islands lying south of the south-east corner of the Australian continent; the major island is called Tasmania and the more important of the lesser islands include King, Flinders and Bruny. The major island, roughly heartshaped with the greatest breadth in the north, extends from  $40^{\circ} 38'$  to  $43^{\circ} 39'$  South latitude and from  $144^{\circ} 36'$  to  $148^{\circ} 23'$  East longitude. All the coastline lies in the Southern Ocean except in the north where Bass Strait separates the island from the Australian continent by approximately 150 miles.



Relief Map

The area of the whole State, including the lesser islands, is 26,383 square miles or about 0.9 per cent of the area of the Australian Commonwealth (2,967,909 sq. miles); it is just under one third the size of Victoria, the smallest continental State.

Australia, extending as it does well north of the Tropic of Capricorn and with much of its area in the zone of the sub-tropical anti-cyclones, is basically a warm, dry continent. By way of contrast, Tasmania is in the temperate zone and practically the whole island is well watered with no marked seasonal concentration; there are no deserts or drought areas as found extensively on the adjacent continent. Because Tasmania is the most southern State of the Commonwealth, there is a tendency to think of it as being close to the Antarctic but its latitude is matched, in the northern hemisphere, by that of Marseilles (France), and Boston (U.S.A.). In addition, the fact that Tasmania is an island shelters it from the extremes of heat and cold experienced in these two centres. The effect of its insular position is illustrated by the variation between summer and winter mean temperatures in coastal towns—this rarely exceeds 15°F. Comparing Hobart (Tasmania) with Melbourne (Victoria), mean maxima are some 6° warmer and mean minima 3° warmer in the Victorian capital although Hobart enjoys slightly more sunlight as it is subject to less fog.

Apart from the Great Dividing Range in the east, Australia is predominantly a land of low plateau and plains with little relief. By way of contrast, Tasmania could legitimately be called the island of mountains, since it has the largest proportion of high country in its total area when compared with the other States. The distinctive feature of the island is not so much the size of the mountains—few exceed 5,000 feet—but rather the frequency with which they occur. The British Admiralty Pilot Book describes Tasmania as “probably the most thoroughly mountainous island on the globe.”

### Population Distribution

With a population exceeding 376,000, Tasmania is still thinly populated although its density of 14 persons per square mile is exceeded only by Victoria among the Australian States. Asian comparisons are Japan, 690 persons per square mile; China, 210; Indonesia, 150.

A marked characteristic of the continental States of the Commonwealth is the very high concentration of population in their respective metropolitan areas, Brisbane providing the only example where this concentration falls below 50 per cent of the State's total population. By way of contrast, the Tasmanian population is concentrated in two main areas: (i) Hobart Metropolitan Area with about 32 per cent, and (ii) Urban Launceston with about 16 per cent. This deviation from an Australian pattern is partly explained by the relative proximity of Launceston to the principal mainland markets, a factor also operating in favour of the north-western towns of Burnie-Somerset and Devonport which together now contain a further 9 per cent of the State's population. As might be expected with an island, the main centres of population have grown up around ports.

### Economic Development

In the nineteenth century, the basic economic activities were farming, mining, forestry and fishing (with whaling of prime importance in the first half of the century). In the twentieth century, evolution of secondary industry was at first inhibited by two major factors—the smallness of the local island market and the relative advantage enjoyed by competitors located closer to the principal markets. There were, however, two geographical features of the island

which could be utilised to offset these disadvantages, namely a mountainous terrain and an assured rainfall. Taken together, these two factors mean cheap electric power (if the necessary investment is made in dams and generating stations), for it has been estimated that Tasmania has at least 50 per cent of the total Australian hydro-electric potential. In the last three decades, the State Hydro-Electric Commission has developed a generating system such that the turbines now in use are rated at 1.2 million horsepower, and work is still proceeding on harnessing fresh sources. Some indication of the tremendous potential still to be tapped is found in the fact that, apart from Lake Margaret, no use has yet been made of the water resources of the West Coast where the island experiences maximum rainfall. The abundance of cheap electric power has led to the establishment of a number of major industrial plants and has transformed the island's economy, which was once heavily dependent on primary industry. Evidence of this change is given by the Census of 30 June 1961 when 13.1 per cent of the Tasmanian work force was shown as engaged in "Primary Production" but 22.6 per cent in "Manufacturing". Compared purely on the basis of these two percentages, Tasmania is, relatively speaking, a more industrialised State than Queensland or Western Australia.

An island, by definition, can suffer from isolation and there is little doubt that Tasmania has been handicapped by transport difficulties. Two developments are now operating to minimise the effects of isolation—regular and frequent air services and roll-on roll-off ferries. The pure-jet air service puts a Tasmanian traveller down in Melbourne in one hour's flying time from Hobart, while cargoes are air-freighted daily. Roll-on roll-off ferries are playing the part of a bridge and are carrying tourist cars and loaded road freighters across Bass Strait; the main terminal is Melbourne but a similar direct Sydney link now operates.

### Origin of Population

Apart from natural increase, the main influence in building up the State's population has been migration from the British Isles and, to a lesser extent, from other Australian States. The Commonwealth Government's post-war policy of encouraging settlers from other European countries has had some effect on the composition of the population but, at the Census of 30 June 1966, 95 per cent of people in the State claimed to have been born in Australia or in the British Isles. The other main countries of birth were Holland, Germany and Poland, in that order.

## PHYSIOGRAPHY

### Introduction

Tasmania is an island of mountains and is unique among Australian States in being predominantly influenced by polar maritime air masses. From the point of view of settlement and development, these two factors have combined to create assets against which must be weighed certain liabilities. The island, a mere 180 miles from north to south and 190 miles from east to west, concentrates in small compass an amazing variety of mountain, plateau and plain, of river, lake and tarn, of forest, moorland and grassland, of town, farm and uninhabited, even virtually unexplored country. The temperate maritime climate partly explains Tasmania being called the most English of all States but other factors operate to heighten the comparison—the pattern of agricultural settlement with orchards, hedges and hopfields; the Lake country; the early freestone architecture still common in the east; the roads and villages dotted with oaks,



elms and poplars. Here, then, is something new for the visitor to see and all the natural assets for a flourishing tourist industry have been amply provided. Assured rainfall and mountain storages have also given birth to massive development of hydro-electric power and, indirectly, to industry. The growth of forests, too, is promoted by suitable factors of rainfall and temperature, and this forms the basis for industries such as timber-milling and newsprint and other paper production.

The mountainous nature of the island is confirmed by survey which shows six features exceeding 5,000 feet, 28 exceeding 4,000 feet and a further 28 exceeding 3,000 feet. The highest mountain is Mt Ossa (5,305 feet) some ten miles north-west of Lake St Clair, and north-west again from this peak lie Mt Pelion West (5,100 feet), Barn Bluff (5,114 feet) and Cradle Mountain (5,069 feet); the furthest distance, 15 miles, is from Mt Ossa to Cradle Mountain. In the Ben Lomond area, the principal features are Legges Tor (5,160 feet) and about six miles south, Stacks Bluff (5,010 feet). Each of these mountainous regions and a number of others have been set aside as National Parks and Ben Lomond is renowned for its winter sport.

### **Water Resources and Rainfall**

Fresh water navigation has played very little part in the island's development, the rivers being too fast-running, too shallow or too short. Of the four major ports, three are located on tidal estuaries—Hobart on the Derwent; Launceston on the Tamar; Devonport on the Mersey (Burnie has built a port on the open sea protected by breakwaters). Rivers, however, are significant in the Tasmanian scene for three reasons: (i) use of headwaters for electricity generation, (ii) domestic and industrial water supply, (iii) irrigation, although there are no major schemes, either private or government, in operation. Hobart, for example, draws much of its water supply direct from the upper Derwent River without use of a dam and the flow is adequate to serve a population at least ten times greater than that at present. The development of hydro-electric power has been based on full utilisation of the sources and tributaries of the Derwent, with a chain of power houses stretching from Poatina on the Great Lake to Meadowbanks only 32 miles from Hobart. At Launceston, too, the waters of the South Esk have been harnessed at Trevallyn. This does not exhaust the possibility of future development since the following river systems are still to be exploited: Mersey-Forth-Wilmot (north-west), Arthur (north-west), Pieman (west), Gordon-Franklin-King (west), Huon (south). Work is now proceeding on developing the Mersey catchment and a Gordon scheme will follow.

The exceptional drought experienced in some areas in 1967 does not invalidate the general truth of previous statements about assured rainfall.

As a liability must be entered the fact that large areas of the State cannot be cultivated because there is too much rainfall (in contrast with the mainland of Australia where often the reverse situation applies). Further, the mountainous terrain and accompanying highland climate have restricted farming to relatively small areas of suitable country, mainly river valleys, coastal plains and the lower plateaus. In 1965-66, farm statistics showed that 39 per cent of the State's area was occupied by rural holdings. Only 3.7 per cent of the area of rural holdings was under crop and a further 26 per cent under clover and grasses (other than native). The remaining 70 per cent of rural holdings included bush runs, uncleared scrub or possibly land unsuitable for any rural purpose at all. A high proportion of the State's area not included in rural holdings is composed of forests, national parks and lakes.

### Population Centres

The distribution of the State's population is largely influenced by factors of terrain and climate. A convenient way to summarise the present pattern of settlement is to imagine three circles of 25 mile radius centred on Hobart (representing the south-east), Launceston (the north) and Ulverstone (the north-west): (i) with Hobart as centre, 42 per cent of the Tasmanian population is located within the 25 mile circle, (ii) with Launceston as centre, 22 per cent, (iii) with Ulverstone, 17 per cent. Since all circles are exclusive of each other, these three defined areas will together contain more than 81 per cent of the State's population and this fact justifies the generalisation that the main settlement is in the south-east, the north and the north-west. Residual population not included in the three defined areas is mainly located in the more distant north-west and more distant north-east, in the midlands between Hobart and Launceston, on King and Flinders Islands and along the east coast. Even a 50-mile circle with Queenstown as centre includes only four per cent of the State's population and here the activity is mining, not farming, since this is predominantly an area of high mountains and heavy rainfall. The south-west is completely uninhabited and the central plateau where the main activities are summer grazing and hydro-electric power generation, is very thinly populated.

### Physiographic Regions

To explain this particular pattern of settlement, it is necessary to isolate the various physiographic regions of the State as follows:

*Central Plateau:* The main feature is a relatively undissected, dolerite-capped plateau sloping generally south-eastward from an average level of 3,500 feet in the north to 2,000 feet in the south, and drained almost wholly by the Derwent system (although recent hydro-electric development has involved diversion of some waters to the north at Poatina). The northern and eastern boundary of the Plateau is the Great Western Tiers (paradoxically named since they lie in the central north of the island). This is known as the Lake country of the island and is the chief source of the State's hydro-electric power.

*High Dissected Plateau:* West of Lake St Clair, the dolerite caps steeply tilted sediments and the plateau is much dissected; it is formed of a series of peaks and broken ridges. The coastlands in the extreme south of the region are rugged but in the D'Entrecasteaux Channel and Huon River areas, narrow coastal belts have been devoted to specialised agriculture.

*Western Ranges:* The high dissected plateau is bounded by a mountainous series of ranges running parallel to the west coast and in this region are located the principal mines of the State. The south of the region is completely uninhabited.

*Western Coastal Platforms:* Throughout almost the entire length of the west coast, an uplifted and much dissected peneplain slopes down westward from about 900 feet to end abruptly in cliffs more than 100 feet high. In the south of this region, superhumid button grass plains predominate, and the area is uninhabited. On the coastal plain south of the Arthur River, however, dairy cattle are wintered on agistment runs while north of the river dairying begins to appear and swamps formed by recent emergence have been cleared for farming.

*North-West Plateau:* North of the Western Ranges lies a plateau averaging nearly 2,000 feet and important mainly for forestry; the coastlands derive mainly from basalt, giving rise to intensive mixed farming based on dairying, potatoes and crops for canning, such as peas and beans.

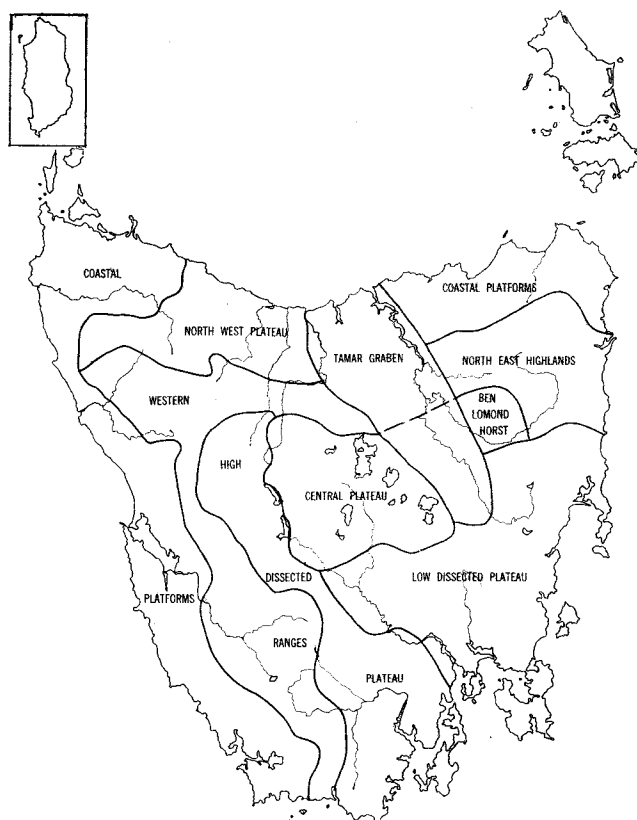
*Tamar Graben:* This graben (rift valley) is the largest plain and the leading agricultural and pastoral district in the State; it ends in the drowned inlets of the Tamar and Mersey estuaries and Port Sorell in the north.

*North-East Coastal Platforms:* This region consists of undulating lowland but the soils are acid and the land is used only for grazing.

*North-East Highlands and Ben Lomond Horst:* This region comprises mostly uplifted remnants of old fold mountains dominated by the 5,000 foot dolerite-capped plateau horst of Ben Lomond, an outlier of the Central Plateau. Here agriculture is largely confined to small basalt-derived basins, and some minerals are worked.

*Low Dissected Plateau:* In the south-east lies a low dissected dolerite plateau averaging perhaps 1,200 feet and used mainly for grazing. The northern coastlands of this region are narrow and also devoted to sheep but the southern coastland is important for its specialised agriculture. At the extreme south of the region is the drowned estuary of the Derwent, and the Tasman and Forestier Peninsulas.

(The above regions derive from a classification by J. L. Davies, M.A., Ph.D., University of Tasmania.)



Physiographic Regions (after J.L.Davies)

## DESCRIPTION OF STATISTICAL DIVISIONS

## Introduction

Earlier the State of Tasmania was briefly described by analysing its terrain into nine physiographic regions. For statistical purposes, the State is analysed in divisions but these do not necessarily coincide with physiographic regions and have been evolved empirically, mainly on the basis of affinity of type of rural production or identity of economic interest. For obvious reasons of convenience and simplicity, statistical divisions are built generally from *whole* municipalities and this fact alone will largely explain the divergence of the statistical divisions from the physiographic regions. Two examples will suffice: (i) Esperance Municipality is included in the Southern Division; only the eastern coastlands of the municipality are settled, the balance lying in the uninhabited south and southwest of the island; thus, due to the relatively large area of Esperance Municipality, the Southern Division not only includes the hop and fruit growing areas of the Derwent, Huon and Channel districts but also Port Davey and Lake Pedder in the remote west; (ii) Deloraine Municipality extends into at least three physiographic regions: the Tamar Graben, the Western Ranges and the Central Plateau. For statistical purposes, it is grouped with other municipalities in the North Western Division.

## Statistical Divisions (Revised)

In subsequent chapters, data for the State will be given in terms of statistical divisions and the following briefly describes each (with population recorded at the Census of 30 June 1966):

1. *Hobart Division*: On the Derwent Estuary, the cities of Hobart and Glenorchy, the Clarence Municipality and *portions* of the municipalities of Kingborough, New Norfolk, Brighton and Sorell form this aggregate. It is contained in the approximate quadrilateral New Norfolk—Pontville—Carlton River mouth—Snug, the boundaries having been drawn to encompass all future urban extensions of the main inner area over a period of 20 or 30 years. The division contains the State capital and a number of large industrial undertakings, with a major port located at Hobart. (Population, 141,238.)

"The Hobart Metropolitan Area" lies at the centre of the Hobart Division, of which it forms part; it comprises the *densely settled contiguous parts* of the cities of Hobart and Glenorchy, and of the municipalities of Clarence and Kingborough. (Population, 119,415.) The boundaries of the Metropolitan Area and the Hobart Division do not conform with borders defining local government areas. (The details of these boundaries are given in Chapter 5, "Demography", under "Population Centred on Hobart".)

2. *North Central Division*: The City of Launceston on the Tamar Estuary is ringed by five municipalities, which, in addition to suburban elements, have large tracts of rural land; accordingly the City of Launceston is treated as a division in its own right. (Population, 37,210.)

"Urban Launceston" is an auxiliary statistical grouping and composed as follows: the North Central Division and the *suburban* portions of the bordering municipalities of Beaconsfield, St Leonards, Lilydale, Westbury and Evandale. (Population, 60,453.)

3. *North Western Division*: The constituent municipalities are King Island, Circular Head, Wynyard, Burnie, Penguin, Ulverstone, Kentish, Devonport, Latrobe and Deloraine. In general, the division extends north from the Pieman River mouth in the west, then along Bass Strait to the east of

Port Sorell. Rainfall in the division is generous—from forty to fifty inches near the shore-line to sixty or seventy inches on the higher country inland. The area is cut into sections by rivers discharging into Bass Strait, the chief being the Mersey, Forth, Leven, Blythe, Cam, Inglis, Black, Duck and Montagu.

It has large tracts of fertile soil which, together with good rainfall and a mild climate, account for relatively dense settlement and an ascendancy in dairying, beef-cattle farming, potato growing and production of crops for canning and quick-freezing (e.g. green peas and french beans). The division is making extensive use of its timber resources, not only for sawmilling but for large undertakings producing fine writing and printing paper, parchment and other special papers, and hardboard.

The two main ports of the division are Burnie and Devonport, the latter being the main terminal for a roll-on roll-off ferry service to Melbourne; urban development has not been confined to these two centres, however, and the coast road along Bass Strait runs through a number of townships serving the rural hinterland.

Until 1963, the north-west coast was isolated from the central west coast, the only direct link being the Emu Bay Railway; the Murchison Highway now connects the two areas and makes the coastal road along Bass Strait part of the "round the State" route. (Population, 85,669.)

4. *North Eastern Division:* The constituent municipalities are Beaconsfield, George Town, Lilydale, Scottsdale, Ringarooma, Portland, Fingal and Flinders. In general, the division extends from east of Port Sorell along Bass Strait, then south along the Tasman Sea as far as the Denison River.

In terms of terrain, the division exhibits wide variety, including as it does the Tamar Estuary, the north-east coastal plains and the north-east highlands. In the Tamar Valley from Trevallyn to the sea, the average rainfall is about 30 inches; elsewhere it varies from 30 inches on the coastal plains to 60 inches on some of the highlands. The rivers in the division, apart from the Tamar and South Esk, are mostly small; the Piper, Brid, Big Forester, Little Forester and Ringarooma flow into Bass Strait while the Mussel Roe, Anson, George and Scamander flow into the Tasman Sea.

Along the Tamar Estuary, the main rural activity is orcharding; elsewhere farming, dairying and grazing play an important role alongside tin and coal-mining, sawmilling, and metallurgical refining.

The main ports for the division are those on the Tamar Estuary, including Launceston, Beauty Point and Bell Bay, the last being the outlet for metallurgical refinery products, including aluminium, from plants at George Town. In considering the population of the division (35,803) it should be taken into account that approximately 27 per cent is located in *suburban* portions of Beaconsfield and Lilydale municipalities adjacent to Launceston.

5. *North Midland Division:* The constituent municipalities are St Leonards, Evandale, Longford and Westbury. Lying between the Western Tiers and Ben Lomond, the heart of the division contains the largest area of level land in the island and is thought to have its origin in two vast freshwater lakes of an earlier era. The ancient lake-bed soils were easily worked by the early settlers and the area became the island's main centre for cereal crops; cereal crop growing is still practised extensively but the rich grazing potential of the land is also being exploited. Rainfall varies from forty inches in the west to twenty five inches in the south; the chief rivers are the North and South Esk, the Meander and the Macquarie.

In considering the population of this division (25,534), it should be taken into account that nearly 54 per cent is located in *suburban* portions of St Leonards, Westbury and Evandale municipalities adjacent to Launceston.

6. *Midland Division*: The constituent municipalities are Bothwell, Hamilton, Campbell Town, Ross and Oatlands. In the west are the Central Plateau and Lake Country, generally at an elevation that allows only limited summer grazing. To the east is a lower dissected plateau where graze more sheep than in any other division. Rainfall varies from 80 inches in the extreme west to almost as low as 20 inches in the east and south. The principal rivers in the sheep belt are the Macquarie, Elizabeth and Clyde; the division also contains the western source and upper waters of the Derwent. (Population, 10,203.)

7. *South Eastern Division*: The constituent municipalities are Glamorgan, Spring Bay, Sorell (*part*), Richmond, Brighton (*part*) and Green Ponds. The division includes the east coast from the Denison River south to Forestier Peninsula and extends inland north of the Derwent opposite New Norfolk (but totally excludes Clarence Municipality). Its partitioned municipalities—Sorell and Brighton—have small areas included in the Hobart Division. In the west of the division, rainfall is as light as twenty inches with slightly more in the east. There is good farmland in the area north of the Derwent but, taken as a whole, the division is mainly devoted to grazing. (Population, 7,101.)

8. *Southern Division*: The constituent municipalities are Esperance, Port Cygnet, Huon, Kingborough (*part*), New Norfolk (*part*), Bruny and Tasman. Its partitioned municipalities—Kingborough and New Norfolk—have areas included in the Hobart Division. The division includes the Derwent Valley, the Huon Valley and the D'Entrecasteaux Channel district as well as Bruny Island and Tasman Peninsula; the western half is uninhabited. Rainfall in the west approaches 60 inches or more, in the Huon and Channel districts 35 inches and in the lower Derwent Valley 25 inches or less. The main rural industries are concentrated on hops, orchards and small-fruit while exploitation of timber is important, not only for sawmilling, but also for the mills at Boyer and Geeveston where native hardwoods are converted to paper pulp. The main port used by the division is located at Hobart with Port Huon used seasonally in the export of fruit. (Population, 18,220.)

9. *Western Division*: The constituent municipalities are Waratah, Zeehan, Gormanston, Queenstown and Strahan. The division reaches south from the mouth of the Pieman River to Port Davey and extends east almost to Lake St Clair. Agriculture plays virtually no part in this area of heavy rainfall and rugged mountains. In a division where rain is measured in feet rather than inches, it is difficult to generalise but 30-year averages for individual stations are as follows: Gormanston, 120 inches; Lake Margaret, 143 inches; Queenstown, 99 inches; Waratah, 89 inches; Zeehan, 97 inches. Considering the mountainous terrain and abundant rainfall, it is not surprising that the island's largest river, the Gordon, should flow in this division, discharging into Macquarie Harbour; the Pieman River to the north is almost as big. The only port—Strahan on Macquarie Harbour—is approached through a narrow rocky entrance called Hells Gates; strong currents and a sand bar are additional navigational hazards.

Settlement in the division is mainly related to mining since this is the island's richest mineral-bearing tract, the chief minerals being copper, zinc, silver-lead and tin. A pipeline from the Savage River to Port Latta near Stanley was finished in 1967, the object being the pumping of processed iron ore for shipment to Japan.

Until 1963, the west coast was isolated from the north-west coast, the only link being the Emu Bay Railway. The completion of the Murchison Highway has put the main western towns on a "round the State" route.

The population (9,572) is mainly concentrated in and around Queenstown, Rosebery and Zeehan.

#### *Former Statistical Divisions*

The Statistical Divisions just described are those employed to classify data from the 1966 Census of population. Prior to the Census the cities of Hobart and Glenorchy were combined and called the South Central Division. The revised classification does away with this grouping and substitutes the Hobart Statistical Division, an area much larger than the South Central Division.

Some tables in this volume are compiled using the older classification, i.e. quoting the South Central Division; in these cases, data were not available in terms of the new classification.

## AREA OF STATE

### Major and Minor Islands

Until recently, the official area of the State of Tasmania was stated to be 26,215 sq. miles (16,778,000 acres), this measurement dating from the previous century; a re-calculation from existing maps in 1907 confirmed that figure. In 1963, a further calculation was carried out using a new series of maps which incorporated fresh survey data and the new official area was announced as 26,383 sq. miles (16,885,000 acres).

The State is composed of 49 local government areas (cities and municipalities) and three of these are either islands or groups of islands.

Details of the "island municipalities" are as follows:

Island Municipalities—						Area (Sq. Miles)	
Bruny	..	..	..	..	..	139.81	
King Island	..	..	..	..	..	424.40	
Flinders	..	..	..	..	..	768.93	
Total						1,333.14	
Remaining Municipalities and Cities						25,049.86	
Grand Total						26,383.00	

While the "island municipalities" include the bulk of the lesser islands forming part of the State, some islands are still included in the area of coastal municipalities, e.g. Maria Island in Spring Bay Municipality. Macquarie Island, site of an Antarctic Research Station and situated in 54° South latitude, is a Tasmanian dependency and included in the Esperance Municipality; the island is 21 miles long with an average width of two miles.

### Area of Municipalities and Cities

In the table that follows, the measured area of the State (16,884,971 acres or 26,382.76 sq. miles) has been rounded, in total, to the nearest 1,000 acres and to the nearest sq. mile. The corrections necessary to reconcile to the round-

ed totals have been made by adjusting the area of Esperance, the largest municipality. It should be noted that the area given for any coastal municipality does not necessarily represent the area within its proclaimed boundaries; where such boundaries lie in the sea, these have been disregarded so that the stated area relates to a physical boundary (i.e. the coastline) and not to a legal boundary (which may lie in a seaway or estuary).

Area of Statistical Divisions and Local Government Areas

Local Govt Area and Statistical Division	Area		Local Govt Area and Statistical Division	Area	
	Acres	Sq. Miles		Acres	Sq. Miles
Hobart (H) (a) ..	19,728	30.83	Beaconsfield ..	157,628	246.29
Glenorchy (H) (a) ..	29,593	46.24	Fingal ..	674,953	1,054.61
Clarence (H) ..	62,075	96.99	Flinders ..	492,115	768.93
Brighton (SE) (H) ..	108,905	170.16	George Town ..	161,614	252.52
Glamorgan (SE) ..	379,325	592.70	Lilydale ..	168,987	264.04
Green Ponds (SE) ..	102,827	160.67	Portland ..	390,783	610.60
Richmond (SE) ..	140,391	219.36	Ringarooma ..	403,238	630.06
Sorell (SE) (H) ..	193,199	301.87	Scottsdale ..	319,143	498.66
Spring Bay (SE) ..	277,195	433.12			
Bruny (S) ..	89,476	139.81	Total NE. Div.	2,768,461	4,325.71
Esperance (S) (b) ..	1,528,586	2,388.59			
Huon (S) ..	191,306	298.92	Evandale ..	244,513	382.05
Kingborough (S) (H) ..	87,682	137.00	Longford ..	246,506	385.17
New Norfolk (S) (H) ..	325,121	508.00	St Leonards ..	220,202	344.06
Port Cygnet (S) ..	59,385	92.79	Westbury ..	223,390	349.05
Tasman (S) ..	118,570	185.27			
			Total N. Midland Div. ..	934,611	1,460.33
Total—Hobart Div.	224,036	350.06			
SE. Div. ..	1,163,442	1,817.88	Bothwell ..	644,463	1,006.97
S. Div. ..	2,325,886	3,634.38	Campbell Town ..	354,714	554.24
Launceston (a) ..	6,974	10.90	Hamilton ..	1,445,459	2,258.53
			Oatlands ..	380,520	594.56
Total N. Central.. Division ..	6,974	10.90	Ross ..	306,488	478.89
Burnie ..	152,647	238.51	Total Midland Div. ..	3,131,644	4,893.19
Circular Head ..	1,215,094	1,898.58			
Deloraine ..	720,687	1,126.07	Gormanston ..	709,627	1,108.80
Devonport ..	28,696	44.84	Queenstown ..	34,973	54.65
Kentish ..	293,436	458.49	Strahan ..	922,355	1,441.17
King Island ..	271,615	424.40	Waratah ..	669,373	1,045.90
Latrobe ..	135,608	211.89	Zeehan ..	742,009	1,159.39
Penguin ..	106,712	166.74			
Ulverstone ..	126,342	197.41	Total W. Div. ..	3,078,337	4,809.91
Wynyard ..	200,772	313.71			
Total NW. Div. ..	3,251,609	5,080.64	Total Tasmania (c)	16,885,000	26,383.00

(a) Cities.

(b) Measured area is 2,388.42 sq. miles (1,528,557 acres).

(c) Measured area is 26,382.76 sq. miles (16,884,971 acres).

### Area of Tasmania and Other Australian States

The following table compares the area and length of coastline of Tasmania with those of other Australian States and Territories:



## Australia: Areas and Coastline of States and Territories

State or Territory	Area	Proportion of Total Area	Coastline	Area per Mile of Coastline
	sq. miles	per cent	miles	sq. miles
Tasmania .. ..	26,383	0.89	(a) 900	29
New South Wales ..	309,433	10.43	(b) 700	443
Victoria .. ..	87,884	2.96	680	129
Queensland .. ..	667,000	22.47	3,000	222
South Australia ..	380,070	12.81	1,540	247
Western Australia ..	975,920	32.88	4,350	224
Northern Territory ..	520,280	17.53	1,040	500
A.C.T. .. ..	939	0.03	..	..
Mainland .. ..	2,941,526	99.11	11,310	260
Australia .. ..	2,967,909	100.00	12,210	243

(a) Excludes coastline of islands totalling at least a further 500 miles.

(b) Includes coastline of Jervis Bay which is part of Australian Capital Territory.

## Jurisdiction in Bass Strait

There are in Bass Strait numerous islands, the chief being the Furneaux group (Flinders, Cape Barren and Clarke), King Island and the Hogan, Curtis and Kent groups. These all form part of the State since the boundary line between Tasmanian and Victorian sovereignty is defined as 39° 12' South latitude; this parallel lies 5 miles south of Wilsons Promontory, so some Tasmanian territory is located only 8 to 10 miles from the Victorian coast (Rodondo and West Moncoeur islands).

The proclamation of 39° 12' South latitude as the northern boundary of Tasmanian sovereignty dates from 1825 when Van Diemen's Land became a colony distinct from New South Wales. Subsequent State mining legislation has followed the limits of the 1825 proclamation and Tasmania claims mining jurisdiction over Bass Strait as far north as 39° 12' South latitude. Australia is a signatory to the Convention on the Continental Shelf signed at Geneva on 29 April 1958 and the Commonwealth and States have agreed to legislate jointly to formalise exploration and exploitation of oil, whereby the State of Tasmania will be the appropriate authority to issue permits and licences. An agreement between Tasmania and Victoria has fixed the State boundary on the continental shelf at 39° 12' South latitude. To date, two drill holes have been bored in Tasmanian waters without success, but further holes are planned. Victoria is constructing pipelines to convey natural gas found in its territorial waters.

## CLIMATE OF TASMANIA

## Introduction

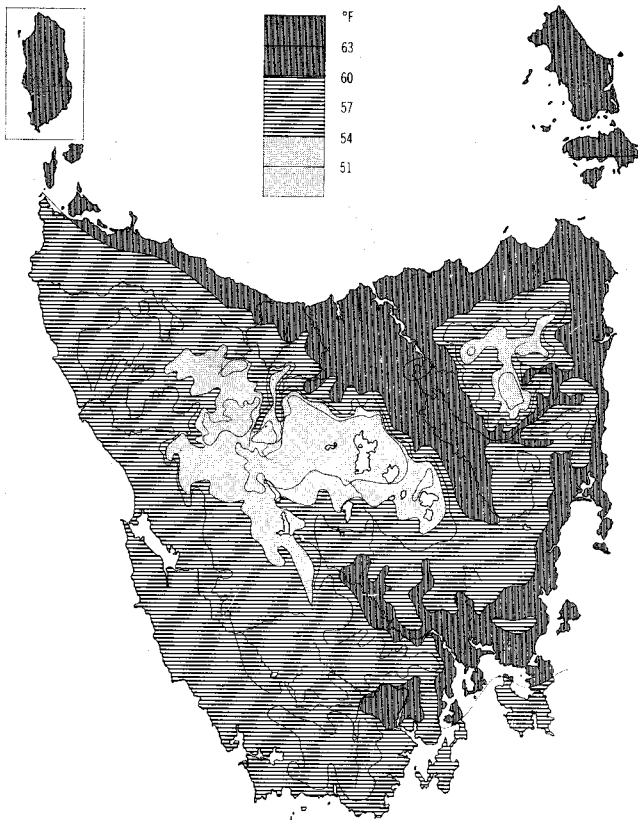
Since the island lies between 40° and 43½° south of the Equator, and no point is more than 70 miles from the sea, the climate is classified as temperate maritime. There is a small daily temperature range approximating 10°F at the coast and double this inland, thus indicating a slight "continental" effect.

The mountainous topography, especially in the western half, causes an east-west variation which, with the general westerly wind system common to these latitudes, is the predominant feature influencing the climate of the island.

The maximum elevation of the sun is  $70^{\circ}$ - $73^{\circ}$  in midsummer and  $23^{\circ}$ - $26^{\circ}$  in midwinter. The difference between the longest and shortest days is  $5\frac{3}{4}$  hours at the northern and  $6\frac{1}{2}$  hours at the southern end of the island, while the period of daylight is never less than nine hours. Heat absorption and storage by the sea produce remarkably mild winters and cool summers in coastal areas.

### Temperature

Temperatures at sea level are reduced by  $5.4^{\circ}\text{F}$  for each 1,000 feet of altitude, which partly explains the lower temperatures in the west of the State. Increased cloud cover leads to decreased insolation which further decreases temperatures. Thus, at 2,000 feet, temperatures are everywhere too cold to permit growth of agricultural crops in Tasmania.



Mean Temperature - January

Frosts are affected to a marked degree by topography. Valleys act as natural channels for the drainage of cold, dense air at night, and frost pockets occur on valley floors. Inland centres are only frost-free in summer while the north coast, east and southeast are free after early October. Above 1,000 feet there is no frost-free month.

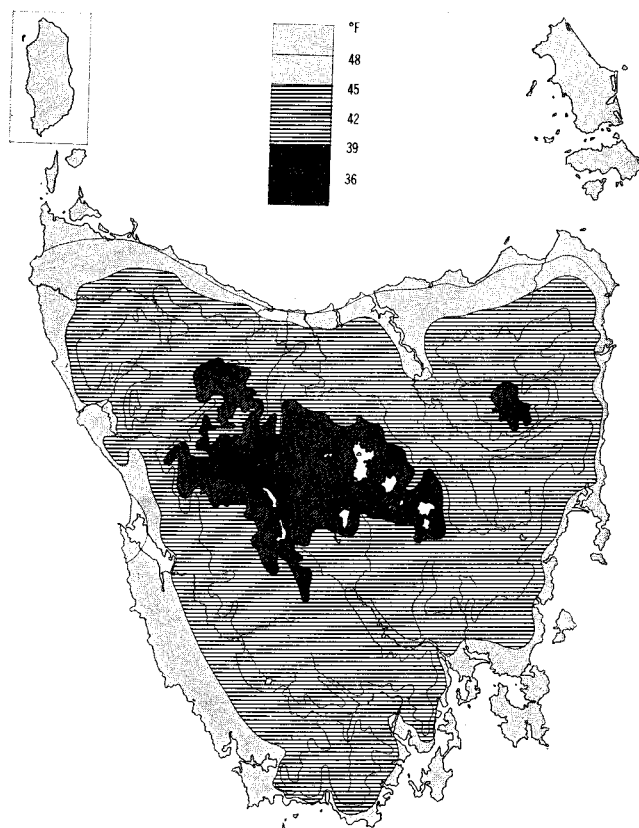
A further cause of higher mean temperatures in the east is the föhn effect developed. Moist air from the west is cooled as it is forced to ascend over the

western and central highlands; moisture is precipitated ("orographic" rain), and the descending air mass is drier and therefore more susceptible to warming. The result is a net warming of the airstream in the eastern lowlands.

In the descriptions of temperature that follow, three averages are used, the basis of all being continuous observation over a 24-hour period yielding two extreme readings; namely a maximum and a minimum. In summarising temperature recordings for a longer period (e.g. a week, a month, etc.), it is usual to employ these averages:

- (i) Mean maxima: the average of the daily maxima for the period;
- (ii) Mean minima: the average of the daily minima for the period;
- (iii) Mean: from formula  $\frac{1}{2}$  (maxima + minima) for the period.

To avoid any possible confusion, the following terms have been used, corresponding to the above averages, namely (i) mean maximum temperature, (ii) mean minimum temperature, (iii) mean temperature.



Mean Temperature - July

The recorded extremes of temperature for Hobart are 105°F (on three occasions), and 27.7°F in July 1895. Such readings are extremely rare, the mean maximum temperature being 69°F in summer and 53°F in winter, and the matching minimum 52°F in summer and 40°F in winter. Thus Hobart can be said to have a cool to mild, even climate, with uncomfortable extremes being the rare exception.

### **Rainfall**

The overall pattern for Tasmania is one of precipitation from a general westerly circulation modified by topography. As the island is located on the northern boundary of the westerly rainfall regime, much of the rain falls in winter, but nevertheless the balance falling outside this period is substantial.

In the dominant west coast mountains, average annual rainfall ranges from 50 to 60 inches on the coast to 146 inches at Lake Margaret; in the north-east, from 30 inches on the coast to 50 inches on the highlands; and the north-west's rainfall ranges from 35 inches near the coast to 70 inches in the higher inland areas.

Extreme three to five-day rainfalls occur in late June on the west coast brought by strong westerlies, but the north coast and the country extending inland to the Western Tiers receive extreme rainfall in mid to late-autumn, when the wind flow is sustained (up to two days) from the north-east.

There is a distinct rainshadow area on the eastern side of the Central Plateau and parts of the Midlands receive 20 inches, and even less in some years. Totals in the east and south-east, and on the Tasman Peninsula, are higher (to 40 inches on the slopes, or even more on rain-attracting peaks), while 70 inches is probable in the uninhabited south. The shadowing effect of mountains reduces amounts in the D'Entrecasteaux area to 30 to 40 inches.

Of note is the sharp gradient in isohyets along the northern and western boundaries of the Central Plateau. This is closely linked with topography.

Rainfall is least reliable in the east, south-east, Midlands and Derwent Valley during late summer and late winter. It is wettest in late autumn and spring. In general, rainfall is least in these parts when the westerlies are strongest (late winter) or relatively absent (summer). The autumn and spring maxima are due to small cyclonic centres of pressure affecting the eastern half of the State.

Effective rainfall, which takes evaporation into account, is that amount required to start germination and maintain plant growth above the wilting point. This obtains from May to October everywhere, but in midsummer there is only one chance in two of effective rainfall being received in the coastal north and lowland areas, and one in three for the drier part of the Derwent Valley and the Midlands.

### **Floods**

The basin of the South Esk is most likely to be flooded as the catchment area includes most of the north-east highlands, where rainfall exceeds 50 inches. As most of the river flows through flat country, flooding can be widespread.

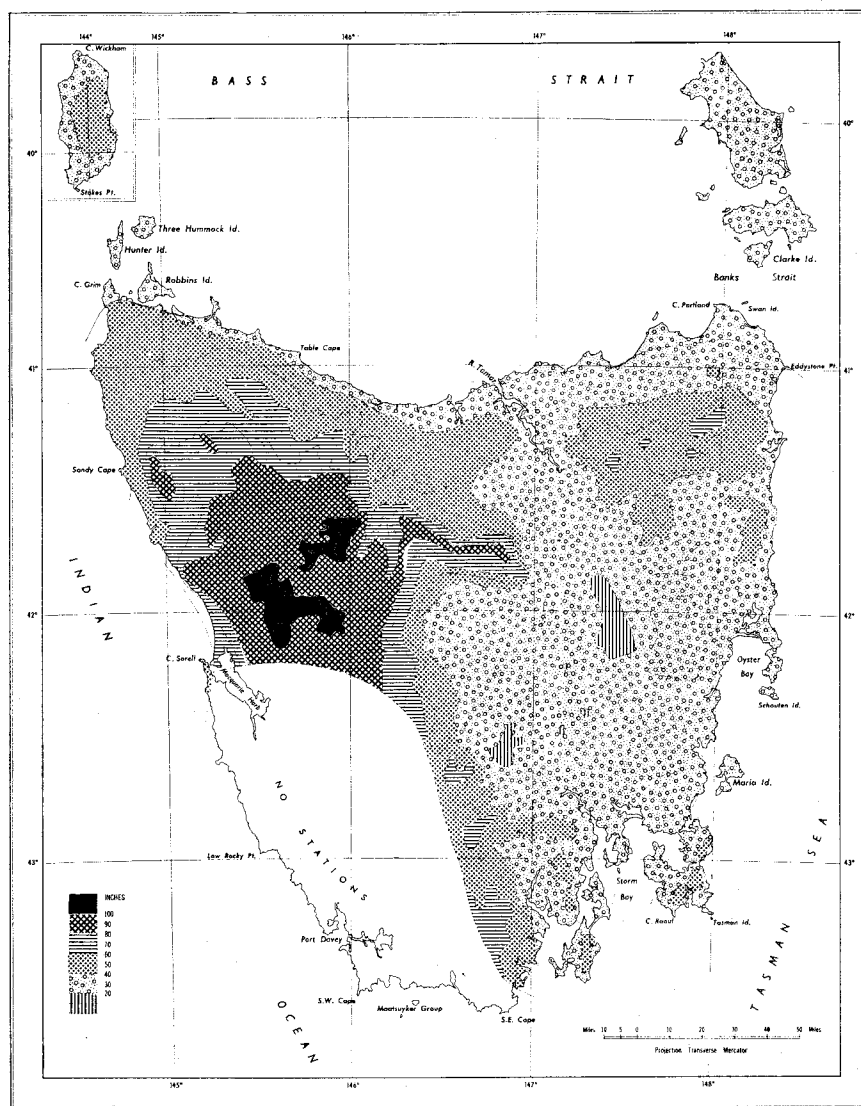
Flooding of the Derwent can be extensive but is less frequent, while streams in the north-west, because of their smaller catchments, have localised flooding. This also applies to most southern streams, but little is known about flooding in the sparsely populated western mountains.

The most severe floods in the South Esk Basin occurred in April 1929 and May 1956, and in the Derwent Valley in April 1960.

### **Droughts**

These are not so pronounced as in the continental States and are usually confined to a particular region. 1908-1910 was a time of record drought in almost all agricultural areas, resulting in severe crop and stock losses in the

east and south-east, and 1914 was even drier. 1945-46 saw severe drought conditions and, in 1951-1954, hydro-electric power had to be rationed; similar measures had to be taken for a short period during 1963-64. The first half of 1967 was associated with drought conditions in the southern half of the State, and with disastrous bush fires on 7 February. Industrial electricity supplies again had to be restricted from October 1967, when daylight saving was introduced as a measure to conserve water in the storages.



Mean Annual Rainfall

### **Winds**

Tasmania is influenced by windflow veering from north-west to south-west in all seasons of the year, with greatest strength during late winter. The wind circulation in the westerly belt is not regular, and marked variations are imposed on the average seasonal changes.

The first variation in speed is approximately weekly and is connected with the eastward passage of cells of high and low pressure. This cycle disappears when the mean speed of the westerlies decreases, a phenomenon following a broader cycle of several weeks. When the westerlies are weakest, prevailing winds are from the north-east to south-east.

Windspeeds do not become as high as in tropical storms, but gusts to 90 mph occur with the passage of cold fronts or with the formation of small, intense storms. The highest average windspeeds are associated with extensive deep depressions over ocean areas south of Tasmania.

### **Snow and Hail**

(a) *Snow*: Extensive snow to low levels (below 500 feet) occurs with outbreaks of air from Antarctica less than once every two years. It is common on all highlands during July and August. There is no permanent snowline, although patches of snow can remain on the highest peaks of the Central Plateau until December.

(b) *Hail*: This is possible in any month, but is most likely in spring, causing damage to fruit crops, especially in the Huon Valley and Tasman Peninsula. Hail storms occur about four times per year in Hobart, and occasionally in the north and north-west. Orchardists insure against possible losses under a hail insurance scheme.

### **Thunderstorms**

These are most common in the north and north-west, and are associated with the lifting of warm, moist air by a cold front. Heating of low-level air during summer also produces storms. Thunderstorms are rare during winter, occurring mainly between December and February.

### **Humidity**

Due to its maritime location, the average 9 am relative humidity at all stations is greater than 50 per cent for all months of the year. In fog, the relative humidity is close to 100 per cent. This condition occurs mainly during winter. In summer, periods of high humidity in combination with high temperatures are rare.

### **Evaporation**

Tasmania's climate precludes extremes of evaporation, and no station exceeds six inches as its highest monthly average (this obtains in the lowlands in January, when the highlands have less than four inches). In July, only a small section of the east coast has evaporation of over one inch.

Over the whole year, most agricultural areas have an average evaporation between 25 inches and 30 inches, which is in many places less than the average rainfall. This has had a podsolization effect on many soils, with consequent reduction of fertility in some areas.

### **The Climate of Hobart**

Since 1882, the Weather Bureau has been situated near Anglesea Barracks. (New premises at an adjacent site in Ellerslie Road were occupied in 1966.)

*Temperature*: Mean maximum temperature exceeds 70°F in January and February, and is lower than 60°F from May to September. There are only

two or three days with maxima greater than 90°F yearly, and no two successive days have exceeded 100°F. The maximum reading in 1966 was 97°F on 23 November, and 103°F on 7 February 1967.

Mean minimum temperatures exceed 40°F in all months and readings lower than 30°F are rare on any day. The minimum reading in 1966 was 29.6°F on 6 June.

*Frost:* The average annual frequency of days of frost is 31, mostly between June and August. None has been recorded in January. Cold air drainage is found in the hilly suburbs, and frosts are common on the valley floors.

*Rainfall:* Mount Wellington induces a strong relief variation in rainfall. At the pinnacle, annual rainfall is 65 inches, and the Springs and Ferntree have 55 inches and 53 inches respectively. The Hobart Weather Bureau receives 25 inches, but some eastern shore suburbs have only 22 inches.

Monthly totals are fairly evenly distributed but with small peaks in April, October and December. The probability of rain on any day is highest during the afternoon in the spring months.

The wettest 12 months on record yielded 43.4 inches to December 1916, and the driest, 13.0 inches to November 1943.

*Relative Humidity:* Highest humidity is at the time of lowest temperature, in the early mornings during winter. As temperatures rise to 3 pm, humidity decreases by 15-20 per cent. The seasonal variation is not great, although the average humidity during the winter months is 70 to 75 per cent and during the summer months 58 per cent. Periods of high humidity combined with high temperatures are rare.

Fogs occur about eight times per year, but are usually confined to low areas flanking the Derwent during the cooler months. In fact, Hobart experiences more hours of sunshine than Melbourne due to its relative freedom from fog.

*Sunshine and Cloud:* No marked seasonal variation of cloud amount occurs, but a strong dependence on time of day is evident. The average coverage is five-eighths to six-eighths. During April to September, cloud cover is greater in the afternoon, and from October to March in the morning.

A clear-cut seasonal variation in monthly average hours of sunshine also occurs, with amounts varying from 229 hours in January to 110 hours in June.

*Wind:* The main wind direction is west to north-west, induced by the shape of the Derwent Valley; the other is the south-east sea breeze experienced during the summer months.

Strong winds are comparatively frequent from passing storms, especially during winter and spring. The strongest gust recorded was 93 mph, in September 1965. Strong winds from the south-east may also occur during storms.

*Thunderstorms:* These occur five or six times per year mainly between December and February.

*Snow and Hail:* Snow below 1,000 feet occurs less than once per year, but falls lying at sea level have been recorded, the latest being August 1951. Snow is likely on Mt Wellington during any winter month, but rarely between October and March. The two television transmitters located on the pinnacle (4,166 feet) are equipped to withstand breaks in road communication caused by snow.

Hailstorms occur four times per year, on average, mainly between September and November.

### **The Climate of Launceston**

Launceston is located on the Tamar Estuary at the confluence of the North Esk and South Esk Rivers. Being 40 miles from the coast, Launceston exhibits a continental effect in its climate, i.e. more extreme seasonal and daily variations in temperature, and lower total rainfall than at the coast. Weather observations have been taken from the pumping station in Forster Street since 1889; and from Watchorn Street since December 1965.

*Temperature:* The average maximum temperature exceeds 70°F from December to March, and only during June and July does it fall below 55°F. In January and February the average maximum exceeds 75°F.

The average minimum temperature is 50°-52°F during the summer months, below 45°F from May to October, and below 40°F during the winter months. Temperatures lower than 32°F are common during winter, the lowest recorded being 21°F.

*Frost:* Up to 50 days of frost can be expected in any year and these are most likely from May to August. Ten consecutive days of frost have been recorded and there have been light frosts during summer.

*Rainfall:* Monthly totals show a strong seasonal variation with July (3.4 inches) having double that of January, the annual total being 29 inches.

Rainfall is least reliable during summer, and is most likely to be less than one inch in February. Heavy rain is mainly confined to the colder half of the year, the wettest recorded month being August 1936, with 10.01 inches.

In 1916 and 1946, annual falls of over 40 inches were recorded, and in 1908, 1914 and 1919 less than 20 inches. Highest intensity of rainfall occurs during thunderstorms.

*Relative Humidity:* Seasonal and daily variations are similar to those for Hobart, but the daily readings are five per cent to 10 per cent higher.

Occasions of high humidity, associated with moist north-easterly air-streams, are frequent at Launceston, and fogs may occur 30 or more times annually, mostly between May and August.

*Sunshine and Cloud:* Only a small seasonal variation in cloud amount occurs, and average coverage varies from six-eighths to seven-eighths in winter to five-eighths to six-eighths in summer. There is a tendency for slightly reduced cloud cover during the afternoons, especially in winter.

The monthly average number of hours of sunshine varies from 300 in January to 120 in June, and there is no interruption to the strong seasonal variation.

*Wind:* A marked effect on Launceston's wind regime is induced by the Tamar Valley. It is orientated northwest-southeast, and most winds conform to these directions. Speeds are roughly similar to those at Hobart, but an increase of 10 to 15 mph in the north-westerly wind occurs on summer afternoons, due to the sea breeze effect.

Strong winds are most common during the colder half of the year, but can occur at any time in association with thunderstorms.

*Snow:* Settling of snow does not occur in the city area, but falls on the foothills are not uncommon.



## General Summary

Perhaps the most striking feature of the Tasmanian climate is the strong variation from west to east, induced by massive distortions in the physiographic scene. Aspect, altitude and slope determine effectiveness of insolation, frequency of frosts and exposure to winds, which, in turn, affect local temperatures and rainfall. These are closely related to changes in vegetative types and in all land use patterns with the exception of mining.

## Mean Monthly Temperatures and Rainfall at Selected Stations

The tables that follow give temperature and rainfall data on a monthly basis for six selected stations: Hobart, Burnie and Swansea, all situated on the coast, Oatlands and Launceston, situated inland, and Zeehan, situated in the west.

## Mean Monthly Temperatures (Degrees Fahrenheit) and Rainfall (Inches) at Selected Stations

(For definition of mean temperature, see earlier section under "Temperature")

## Hobart (Altitude 177 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1964	1965	1966	Av. (a)	1964	1965	1966	Av. (a)
January .. ..	60.7	58.9	61.9	61.7	0.50	2.47	0.48	1.67
February .. ..	58.7	61.6	61.1	61.3	6.72	0.31	1.32	1.85
March .. ..	57.5	59.2	60.8	59.1	2.15	1.48	3.29	2.03
April .. ..	56.0	52.5	54.9	54.7	1.12	4.62	3.20	2.46
May .. ..	51.1	50.9	51.3	51.1	1.94	2.71	1.65	2.02
June .. ..	47.1	48.4	45.8	47.1	2.24	0.53	0.38	2.58
July .. ..	45.3	46.1	45.9	46.4	2.46	0.33	3.66	1.85
August .. ..	48.5	49.0	47.6	47.9	1.94	1.78	2.30	2.10
September .. ..	52.1	52.5	51.5	51.1	2.19	1.47	5.23	2.10
October .. ..	53.9	54.9	54.3	53.6	1.21	1.04	4.23	2.82
November .. ..	56.2	55.5	58.5	56.6	1.83	2.69	1.12	2.27
December .. ..	56.1	60.8	58.7	59.5	3.76	1.55	0.66	2.53
Year .. ..	53.6	54.2	54.4	54.2	28.06	20.98	27.52	26.28

## Launceston (Altitude 350 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1964	1965	1966	Av. (a)	1964	1965	1966	Av. (a)
January .. ..	62.2	61.9	63.1	63.5	0.46	0.95	0.25	1.63
February .. ..	62.2	63.6	63.5	63.4	5.88	0.09	1.19	1.95
March .. ..	58.1	58.9	n.r.	61.0	2.91	1.23	2.22	1.59
April .. ..	57.2	52.6	n.r.	55.2	1.05	3.55	1.61	2.45
May .. ..	50.3	51.3	49.9	50.8	2.39	4.18	2.32	2.86
June .. ..	46.0	46.3	43.1	46.3	4.93	1.99	0.91	2.78
July .. ..	43.0	43.3	44.0	45.3	3.18	1.64	5.60	3.39
August .. ..	47.8	48.2	46.3	47.4	2.60	1.59	1.74	3.14
September .. ..	50.7	52.1	50.8	50.7	3.50	2.51	2.79	2.54
October .. ..	53.3	n.r.	52.9	54.5	2.12	0.76	1.56	2.67
November .. ..	56.7	55.1	56.4	58.3	1.46	1.76	0.91	2.19
December .. ..	56.9	n.r.	58.9	61.7	1.66	1.55	1.61	1.96
Year .. ..	53.7	..	..	54.9	32.14	21.80	22.71	29.15

(a) Averages are based on the 30-year period 1931-1960 (except Zeehan rainfall based on 29-year period).

## Zeehan (Altitude 579 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1964	1965	1966	Av. (a)	1964	1965	1966	Av. (a)
January .. ..	52.9	55.9	58.3	57.6	9.18	7.56	3.45	5.20
February .. ..	53.8	58.0	58.9	57.8	8.48	3.11	2.56	4.95
March .. ..	53.5	55.4	56.5	56.2	6.13	8.55	7.46	6.00
April .. ..	53.9	49.3	52.1	51.9	4.55	8.55	11.45	8.42
May .. ..	47.5	49.5	49.5	48.9	12.16	18.60	10.77	9.74
June .. ..	45.5	47.1	44.7	45.2	8.04	13.66	6.51	9.93
July .. ..	44.2	43.1	43.5	44.6	16.05	8.57	11.64	10.57
August .. ..	45.9	44.7	45.3	45.7	20.48	4.76	6.41	11.04
September .. ..	48.5	n.r.	48.8	48.2	11.20	8.23	5.34	8.67
October .. ..	49.3	48.6	50.0	50.4	7.17	4.28	5.94	8.73
November .. ..	51.7	51.0	54.1	53.0	5.60	7.15	6.36	7.29
December .. ..	52.6	n.r.	n.r.	56.2	11.42	4.90	3.98	6.22
Year .. ..	49.9	..	..	51.3	120.46	97.92	81.87	96.76

## Oatlands (Altitude 1,418 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1964	1965	1966	Av. (a)	1964	1965	1966	Av. (a)
January .. ..	57.7	55.5	60.1	58.2	0.43	3.56	0.26	1.37
February .. ..	54.8	59.6	58.7	58.2	6.08	0.73	1.79	1.86
March .. ..	52.5	54.6	57.9	55.5	1.37	1.00	4.35	1.55
April .. ..	51.6	47.7	50.9	49.9	1.23	4.49	1.58	2.25
May .. ..	46.8	46.2	46.5	46.0	1.19	1.80	0.95	1.96
June .. ..	42.6	43.1	40.4	42.4	3.40	0.45	0.53	1.99
July .. ..	40.8	40.7	41.2	41.5	2.21	0.67	3.07	1.73
August .. ..	44.5	43.5	42.3	42.8	1.51	1.46	1.20	1.86
September .. ..	46.6	47.4	46.7	46.2	2.03	0.98	4.36	1.58
October .. ..	49.2	49.5	49.8	49.0	1.58	0.60	3.19	2.42
November .. ..	51.9	51.2	52.9	52.7	1.16	2.18	0.40	2.18
December .. ..	51.5	58.5	54.5	56.0	3.22	1.94	1.15	2.51
Year .. ..	49.2	49.8	50.2	49.9	25.41	19.86	22.83	23.26

## Burnie (Altitude 24 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1964	1965	1966	Av. (a)	1964	1965	1966	Av. (a)
January .. ..	59.2	58.1	n.r.	60.4	1.04	0.21	0.36	1.57
February .. ..	60.7	60.9	62.1	60.9	5.59	0.28	1.17	2.00
March .. ..	57.5	57.1	60.9	59.2	3.46	1.65	3.03	2.17
April .. ..	57.7	52.2	52.7	55.2	2.65	3.87	1.82	3.15
May .. ..	51.7	51.7	51.9	51.9	4.40	5.96	2.31	3.75
June .. ..	48.4	48.7	47.7	49.4	6.93	4.60	2.98	4.55
July .. ..	47.0	46.3	46.7	47.9	7.12	3.57	7.94	5.14
August .. ..	48.8	48.6	47.7	48.3	4.52	1.95	2.72	4.64
September .. ..	49.9	50.9	51.3	49.8	6.62	3.59	4.05	3.26
October .. ..	52.1	52.7	52.5	52.5	3.06	0.76	3.15	3.71
November .. ..	55.6	54.3	56.6	55.1	2.26	1.53	2.38	2.91
December .. ..	54.3	n.r.	n.r.	58.1	1.72	3.37	2.09	2.44
Year .. ..	53.6	..	..	54.1	49.37	31.34	34.00	39.29

(a) Averages are based on the 30-year period 1931-1960 (except Zeehan rainfall based on 29-year period).

## Swansea (Altitude 25 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1964	1965	1966	Av. (a)	1964	1965	1966	Av. (a)
January .. ..	60.4	58.2	59.9	61.5	0.41	2.11	0.51	1.65
February .. ..	58.1	60.6	61.0	61.8	7.33	0.14	3.33	2.15
March .. ..	55.5	57.9	60.5	59.7	2.04	0.82	2.17	2.25
April .. ..	54.8	52.9	55.3	55.3	1.68	3.78	3.22	2.28
May .. ..	49.6	51.6	50.7	51.5	0.97	1.25	0.89	2.06
June .. ..	48.2	48.7	46.5	47.9	2.71	0.10	0.94	2.36
July .. ..	46.2	45.6	46.1	46.9	1.00	0.64	1.28	1.71
August .. ..	49.2	48.8	46.7	48.3	1.05	1.74	1.87	1.70
September .. ..	51.4	51.9	50.7	50.7	1.33	1.81	4.96	1.64
October .. ..	51.5	54.8	54.1	53.6	2.23	0.25	2.12	2.33
November .. ..	53.4	56.6	56.5	56.7	1.09	2.04	1.02	2.20
December .. ..	55.6	60.5	59.1	59.3	4.11	1.71	2.43	2.58
Year .. ..	52.8	54.0	53.9	54.4	25.95	16.39	24.74	24.91

(a) Averages are based on the 30-year period 1931-1960 (except Zeehan rainfall based on 29-year period).

It is realised that mean temperatures alone can give a misleading picture. The following table shows the mean maximum and mean minimum temperatures for four months in 1966, and indicates the actual departure from the normal, in Hobart, Launceston, Zeehan, Devonport, Oatlands and St Helens. (Devonport is located on the north-west coast, St Helens on the east coast.)

## Temperatures at Selected Stations, 1966

(°F)

Station	Maximum Temperatures		Minimum Temperatures		Mean Temperatures	
	Mean for Month (a)	Departure from Normal	Mean for Month (b)	Departure from Normal	Mean for Month	Departure from Normal

## JANUARY

Hobart .. ..	70.6	+0.1	53.1	+0.3	61.9	+0.2
Launceston .. ..	73.0	-2.5	53.2	+1.7	63.1	-0.4
Zeehan .. ..	71.1	+3.9	45.6	-2.3	58.3	+0.8
Devonport .. ..	69.8	-0.5	54.7	+3.2	62.3	+1.3
Oatlands .. ..	73.5	+3.6	46.6	+0.1	60.1	+1.9
St Helens .. ..	72.2	+0.1	48.4	-3.1	60.3	-1.5

## APRIL

Hobart .. ..	62.3	+0.3	47.6	+0.2	54.9	+0.3
Launceston .. ..	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.
Zeehan .. ..	59.4	-0.2	44.7	+0.5	52.1	+0.2
Devonport .. ..	60.1	-3.4	46.6	-0.4	53.3	-1.9
Oatlands .. ..	58.7	-0.2	43.2	+2.3	50.9	+1.0
St Helens .. ..	65.2	+0.9	43.3	-2.1	54.3	-0.6

**Temperatures at Selected Stations, 1966—continued**  
(°F)

Station	Maximum Temperatures		Minimum Temperatures		Mean Temperatures	
	Mean for Month (a)	Departure from Normal	Mean for Month (b)	Departure from Normal	Mean for Month	Departure from Normal
JULY						
Hobart .. ..	52.0	-0.7	39.8	-0.3	45.9	-0.5
Launceston ..	51.5	-2.1	37.5	+0.5	44.5	-0.8
Zeehan .. ..	51.7	+0.6	35.4	-2.6	43.5	-1.0
Devonport ..	53.1	-1.0	38.3	-0.3	45.7	-0.7
Oatlands .. ..	47.6	-0.9	34.9	+0.5	41.2	-0.2
St Helens ..	54.5	-1.0	36.7	+0.4	45.6	-0.3

**OCTOBER**

Hobart .. ..	62.3	+0.7	46.2	+0.6	54.3	+0.7
Launceston ..	62.0	-2.6	43.8	-0.5	52.9	-1.5
Zeehan .. ..	61.4	+3.1	38.6	-3.9	50.0	-0.4
Devonport ..	60.5	+0.2	44.9	+0.7	52.7	+0.4
Oatlands .. ..	59.5	+1.2	40.1	+0.5	49.8	+0.8
St Helens ..	63.3	+0.4	46.3	+2.5	54.8	+1.4

(a) Average of maximum daily temperatures for month.

(b) Average of minimum daily temperatures for month.

Meteorologically, Tasmania is divided into nine districts, with fairly well defined land use patterns appropriate to each. The following table shows rainfall totals for the past 10 years, and 30 year averages, for each of these districts.

**Rainfall of Tasmania in Districts**  
(inches)

Period	Agriculture, Dairying and Mixed Farming		Grazing (Mainly Sheep)		Fruit Growing, Grazing, Forestry		Dairy Farming	Mining	Grazing
	Northern	King Island	Central Plateau	Midlands	Derwent Valley	South East	East Coast	West Coast	Flinders Island
1957 .. ..	33.67	37.94	40.49	20.81	24.87	30.60	26.89	96.08	18.14
1958 .. ..	43.28	40.55	55.66	27.32	41.18	42.30	37.88	108.31	33.97
1959 .. ..	29.51	27.53	38.27	17.46	20.69	22.85	30.41	80.51	26.29
1960 .. ..	41.50	46.37	55.15	26.00	27.55	32.05	37.90	91.79	30.23
1961 .. ..	29.91	34.55	33.83	15.38	18.61	21.67	28.17	76.69	30.46
1962 .. ..	37.60	35.48	47.17	20.07	29.93	30.12	29.96	105.99	37.07
1963 .. ..	33.65	30.79	30.74	14.94	17.94	19.69	24.40	73.26	26.99
1964 .. ..	50.44	45.49	57.47	26.56	30.98	32.05	36.65	115.97	37.45
1965 .. ..	31.06	35.89	35.86	18.25	21.92	27.66	25.89	93.60	25.45
1966 .. ..	31.63	38.41	34.47	21.40	25.15	31.03	28.72	78.02	26.04
District									
Average (a)	37.71	36.98	40.10	22.65	27.71	32.86	33.20	98.02	29.12
(r)									

(a) Annual averages based on period 1931-1960.

(r) Revised

(The section on Climate was written from data made available by the Bureau of Meteorology.)

### Meteorological Conditions, 1966

Most of the State had rainfall again below normal during the year, the most affected district being the West Coast (79 per cent of normal); the west coast mountain region and the north-east highlands recorded rainfall about 80 per cent of normal. The only sections with figures above normal were southern King Island, the extreme north-west near Cape Grim and a large area from Tasman Peninsula extending north-west to the Central Plateau.

In absolute terms, the West Coast district was still the wettest with annual totals ranging from 55 inches at the coast to more than 110 inches inland. The driest areas during the year were in the upper Derwent Valley district and round Ross in the Midlands district.

Mean temperatures during the first five months approximated to normal, although parts of the east and south-east coast were below normal during February, while inland areas and parts of the central north were below during April. A below normal pattern was established in June which continued until the second week of September. A period of mild weather then commenced and continued until the end of November. This mild period, together with good general rainfall during September, was a contributing factor to the excellent spring growth. However, during December, temperatures were generally below normal for the whole State.

Gale force west to south-west winds up to 82 mph on 28 June in the south and a tornadic squall in the Tamar Valley on 21 August caused relatively light damage to crops and property.

Falls of snow were heavy and widespread on 4 and 5 September, mainly in the southern half; surprisingly, snow fell even in shoreline areas of the east coast.

### FIRE AND THE TASMANIAN FLORA

*The disaster of 7 February 1967 was not an isolated occurrence—fire had played a part in shaping the Tasmanian environment long before the first settlers arrived. Doctor W. D. Jackson, Professor of Botany at the University of Tasmania, has contributed the following article to describe the effect of fire on our environment.*

#### Fires Past and Present

##### *Introduction*

The fire of 7 February 1967 may seem an unprecedented phenomenon to many Tasmanians. Certainly in the scale of its destruction of dwellings, the loss of life and its general economic impact, it has no precedent here. However, fires of similar magnitude have occurred in Tasmania at sporadic intervals in the past 50 to 70 years; they invariably accompany particular weather conditions over the State, with temperatures about 100°F, humidities about 7-12 per cent and strong winds from 30-35 mph. Such conditions, accompanied by devastating fires, occurred in 1898, 1914, 1927, 1934 and 1967. Thus it would be most unwise to assume that they will not occur just as frequently in the future and neither is the scale of damage likely to decrease, but rather the opposite, as population increases and development becomes more intensified. This pattern is typical of developing regions throughout the world in similar latitudes.

##### *The Climatic Factors*

Forest, scrub and grass fires are constant features of latitudes 35°-40° due to the Mediterranean climate with its associated sclerophyll vegetation. In these climatic belts of light winter rains and long hot summers, fires are

frequent and so there is little long term accumulation of fuel. Regions in these belts have carried civilised man for long periods of time; his repeated firing and grazing have often depleted the vegetation so that fires tend to be frequent but light. More disastrous fires seem to be typical of regions of slightly lower or higher latitudes where the climate is wetter and fuel accumulation correspondingly greater. Tasmania is one such region where fuel accumulation is rapid and where severe weather conditions arise periodically. It is also certain that in regions where fires are more frequent than they are here, there is a greater awareness of the dangers. A fire danger consciousness is not an in-built public awareness. Many Tasmanians still retain the attitude of their ancestors who struggled to clear the land; the bush is regarded as something to burn when it is at all possible, so that fires are lit even in the most dangerous conditions.

#### *Man or Nature?*

Lightning strikes are a very rare cause of fires in Tasmania, although in Victoria they account for about 30 per cent of outbreaks. Even when electrical storms occur in Tasmania, the rain which follows usually quenches any lightning-caused fire. Thus the vast majority of uncontrolled fires result from the escape of fires lit deliberately to burn vegetation for the purpose of clearing land; promoting grass on grazing property; or clearing related to communication, transport and power transmission. Many fires are also lit by hunters and snarers to induce flush regrowth for game. Although the firing of the vegetation has probably increased steadily with the growth in population, it has long been a feature of the environment.

#### *Fire and the Aboriginal*

Forest fires were an important factor affecting the vegetation before the white settlers came. All the early navigators sighting the coast of Van Diemen's Land remarked on the number of extensive fires, and most inferred from this that the land was densely populated (later authorities have put the Aboriginal population as low as 2,000). The Tasmanian native was a nomadic hunter without an easy means of making fire and so he transported it from one campsite to another by carrying a bunch of smouldering faggots. Early reports by settlers indicate that he used fire in hunting and as an offensive weapon. It is almost certain that he fired the vegetation, like modern hunters and snarers, to promote regrowth and so induce heavy game populations for future seasons. In any case, by carrying fire from place to place, he would have constantly caused accidental fires. The pattern of burning by Aborigines is still clearly evident and we can assume that this pattern extended back at least 10,000 years. Much of the present distribution of plants has resulted from this firing which must be accepted as one of the major ecological variables (e.g. practically all the open grassland and sedgeland vegetation in Tasmania is the product of repeated firing by Aborigines). The four integral variables in this context are the effect of fire, precipitation, evaporation and soil fertility—*integral* because they interact.

### **Fire and the Sclerophyll Communities**

#### *Sclerophyll Distribution*

The Australian sclerophyll communities dominated by the eucalypts are highly developed and adapted vegetation units. In Tasmania, they dominate the eastern half of the State where precipitation is lower than in the west and where evaporation rates are high. These communities are replaced by sub-antarctic rain-forest communities where the annual precipitation exceeds about 50 inches, or more correctly where the summer rainfall exceeds two inches a

month. The eucalypt communities may be divided into two broad categories, dry sclerophyll and wet sclerophyll, on the basis of the density and height of the understoreys of shrubs.

#### *Dry Sclerophyll Forests*

The dry eucalypt forests found in annual rainfall regions of less than 30 inches are relatively open tree communities with a sparse layer of lesser trees and a ground cover of medium or low shrubs. In these communities, fires are frequent and all the plants are highly adapted to them, as well as possessing qualities which allow them to survive in dry conditions. The eucalypts of this region possess excellent powers of recovery after fire. The dominant species, *E. obliqua*, *E. delegatensis* and *E. amygdalina* (cut as stringybark, white-topped stringybark and black peppermint) have fire-resistant fibrous bark. Practically all species have lignotubers at or under ground level and these survive fires severe enough to kill the bark on the trunk; from them vegetative shoots quickly sprout to form new growth. Eucalypts possess, beneath the bark, dormant buds which will sprout if the crown of the tree is defoliated, provided that the bark is not killed. Quite apart from these superlative powers of vegetative recovery, eucalypts, like many other Australian plants, regenerate from seed with amazing facility after firing. The trees carry several years of seed on their twigs in capsules which open on drying; the seed is shed onto the burnt ground and germinates quickly. In the cleared open conditions following a fire, the seedlings grow quickly at rates unusually fast for hardwoods, so that any gaps in the forests are soon filled with young regrowth.

These characteristics point to a long adaptive evolution with fire as a constant part of the environment; they account for the ability of Australia's natural vegetation to resist the constant firing which, applied to other vegetation types, would quickly lead to deterioration in the forest cover. New Zealand, by way of contrast, has had its forests destroyed almost beyond recovery, their place being taken by unproductive scrubs over much of the land.

#### *Wet Sclerophyll Forests*

In annual rainfalls greater than 30-35 inches, the understoreys of the sclerophyll communities become very tall and dense, and the medium and low shrub storeys are replaced almost entirely by broadleaved shrubs which are less drought and fire-resistant. The dominant eucalypts are taller and may lack lignotubers and other fire-resistant characteristics of dry sclerophyll species; hence vegetative reproduction after fire damage is not as efficient.

The wet sclerophyll species, nevertheless, retain their dependence on fire for regeneration by seedlings. In these regions, the understoreys are so dense that, without fire, the seedlings do not survive in the low light intensities; yet after a destructive fire, the seedling regeneration is so prolific that counts of 100,000 seedlings per acre are common. The dense crowded stocking and the adequate rainfall result in continuous natural selection, the "fittest" being those with the fastest growth rates. As the dominant trees succeed, the inefficient become suppressed and die so that, after about 120 years, the mature trees per acre average 30-40. Valuable timber stands result with tree heights in *E. regnans* (stringy gum or swamp gum) up to 300 feet.

### **Fire and the Rainforest Communities**

#### *The 50 Inch Isohyet*

Where annual rainfall exceeds 50 inches, and where fire has not been at work, the wet sclerophyll might be expected to give way to the rainforest communities. The rainforest species are capable of seedling development in

low light intensities which prohibit the growth of eucalypt seedlings. Thus, in the absence of fire, a sharp demarcation between the two communities should occur at about the 50 inch isohyet where the rainforest species would exclude the eucalypts. This sharp demarcation does not generally occur because of fires which, in destroying the forest, provide the ideal conditions for survival of eucalypt seedlings in a climate which would otherwise favour rainforest.

#### *Mixed Forest*

Extensive areas of heavily forested land in the State's high rainfall regions are burnt in occasional wild fires. In these areas, any eucalypt stands regenerate in the open conditions following the fire along with rainforest species such as myrtle beech (*Nothofagus cunninghamii*) and sassafras (*Atherosperma moschatum*). The eucalypt seedlings grow much faster than the rainforest species which eventually form a continuous stand under the tall eucalypts, the result being a mixed forest of the two communities. A great deal of vegetation in high rainfall regions consists of such mixed forest with valuable eucalypt stands towering over a rainforest understorey. For useful regeneration, such forests require complete felling and clearing after the logging of all eucalypts, except spaced selections left to supply seed. Clearing of this kind is most easily and satisfactorily done by firing the area, provided extreme care is taken to prevent the fire from escaping.

Many of the mixed forests in the west of Tasmania carry a thin stocking of overmature eucalypts; some areas of pure rainforest with no standing eucalypts at all must have carried them in the not distant past because old eucalypt logs can be found on the floor of the forest. These facts indicate that the climate in the past few thousand years must have undergone change, creating wetter regions in the west and favouring the spread of rainforest species because of the lower frequency of fires.

#### *Spread of the Rainforest*

Evidence based on the former widespread eucalypt distribution in today's high rainfall regions indicates that before about 2000 B.C., the western climate was drier, creating conditions favourable for the growth of this species. While burning by Aborigines in the later wet period no doubt delayed the spread of rainforest, and helped maintain the eucalypts, the fires were not frequent enough to prevent the consequences of the climatic change. Since the coming of the white man, the rainforest has spread over what were once open areas on good soil types, and it is only where soil fertility is low that open communities of fire-prone vegetation such as button grass have remained.

### **Fire and the Mountain Vegetation**

The *austral montane* vegetation is prone to extensive damage by fire. The environment, because of exposure, is subject to rapid drying and the low, resinous vegetation burns freely. Given the extremely slow growth rates of many of the plants, and the action of frost and grazing animals in preventing seedling establishment, it is inevitable that fires are followed by serious erosion and that these watersheds suffer loss of vegetation. In Tasmania, it is important that fires and grazing should be rigorously restricted in upland regions; after all, much of our capital is invested in hydro-electric schemes drawing water from the highlands and the State's mountain country is one of its major tourist attractions.

Mt Wellington, which gives Hobart a unique and beautiful background, is an obvious example of an environment subject to severe fire damage.



## Fire Intensity

### *Fire as a Tool*

In a developing country like Australia with large areas, small populations and high-cost labour, it is necessary to use fire *as a tool* to clear land for re-forestation, grazing and protection. However, it is abundantly clear that many users of this tool are oblivious of its dangers, both as regards the limitations to fire control in particular conditions and the long-term effects on vegetation, erosion and watershed control.

### *Intensity Measures*

The intensity of a fire varies considerably according to weather conditions, fuel quantity and fuel dryness. Even low amounts of fuel, as on grasslands, are potentially dangerous under certain conditions of dryness and wind. The variables determining intensity have been exhaustively studied for Australian conditions by the Forest Protection Section of the Forest Research Institute under the direction of A. G. McArthur.

*Units Defined:* The intensity is most conveniently measured as energy consumption rate (*B.T.U. per foot of fire face per second*); for convenience, this measure will be called *e.c.u.* An *e.c.u.* is best visualised by thinking of a common one foot 1,000 watt radiator; this puts out approximately one B.T.U. per second (actually 3412 B.T.U. per hour). Another measure is rate of spread (*area unit per time unit*).

*Range of Intensity:* Under normal weather conditions (temperature 65°F, relative humidity 40 per cent, wind speed under 3 mph), the rate of spread in acres burnt increases as the square of the time and is dependent on the quantity of fuel. With fuel quantities of less than 5 tons per acre, the rate of energy dissipation is below 800 *e.c.u.* With higher fuel quantities, the fire assumes a third dimension by creating its own convectional wind and the rate increases so that energy dissipations as high as 20,000 to 30,000 *e.c.u.* are observed (the upper figure is equivalent to 43,000 hp per foot of fire face). In the range above 800 *e.c.u.*, the fire is uncontrollable and the energy released, in certain weather conditions, is comparable with that released by a medium atomic bomb.

## Fuel Control

The Forest Protection Section of the Forest Research Institute has experimented with controlled or prescribed burning as a method of controlling fuel quantity. By lighting a very large number of fires, spaced on a grid pattern, under conditions which do not allow the fires to reach high rates of energy dissipation, the combustible fuel on the floors of forests may be burnt without damage to the standing trees. This procedure repeated at correct intervals will maintain forests in a high state of safety.

### *Fuel in Dry Sclerophyll Communities*

The exact treatment varies considerably with the environment which determines the rate of fuel accumulation. In dry sclerophyll, the amount of fuel accumulating from twigs, leaves, dropped branches, etc. varies from about 3 to 26 cwt per acre per year. As rainfall increases, litter fall increases but so does micro-organism activity; this has the effect of removing part of the increased fall. In rainfalls of about 30 inches per year, the fuel accumulates until decay and increment balance and from then on the fuel quantity remains constant at about 30 tons per acre.



(Page 56)

*Sugar glider and friend*

(Don Stephens)



*(Dept of Film Production)*

*Federation Peak, far south in the Western Ranges  
(Page 33)*



*Part of Mt Wellington Road, February 1967  
(Don Stephens)*  
(page 53)

*Fuel in the Wetter Communities*

In wet sclerophyll forests, the productivity is greater and therefore the fuel accumulation is faster. In rainfalls of about 55 inches per annum, fuel quantities of up to 500 tons per acre are obtained at equilibrium with decay. Since the dangerous level of energy dissipation by fires of 800 e.c.u. is reached under normal weather conditions with fuel at about 20-30 tons per acre, it is necessary to reduce the fuel quantity by prescribed burning so that it never exceeds 8-10 tons per acre. The frequency of controlled burning necessary to achieve this will vary with the environment.

**Spot Fires**

One of the very real dangers with uncontrollable fires in eucalypt forest is the volatile nature of the aromatic oils characteristic of the species. Oil contents of about two per cent of wet weight are common, the oil flash point being about 140°-150°F, so that fierce crown fires can develop if the heat from the ground fire becomes excessive. In addition, eucalypts are one of the worst fire hazards because of their ability to throw "spot" fires. Pieces of burning bark, twigs and leaves are carried up by the convection wind and produce other fire centres in advance of the main fire front. In dry conditions, the number of spot fires can be very large, most occurring within one mile of the main fire front, but some being attributed to longer leaps, with 18 miles recorded as an extreme case. The tendency for eucalypts to produce spot fires produces a big hazard in urban outskirts and renders any control difficult and dangerous, since fighting such fires, even with elaborate equipment, is virtually impossible in extreme conditions. Most of the severely damaged regions in the fires of 7 February 1967 were ones situated between the confluent boundaries of the main fire and spot fires. Such regions were the Snug-Margate-Ferntree-Longley areas. The dual fire fronts in such situations raise the temperature enough to cause crown fires and render escape from the region difficult.

**Conclusion**

Much could be done to alleviate risks in the future by planned control burning and by reducing hazards close to housing. In addition, minor amendments to architectural regulations, such as the compulsory screening of ventilator openings and eaves of houses, would greatly reduce the hazards to life and property.

*(A description of the fire disaster of 7 February 1967 appears in Appendix B at end of book.)*

**THE FAUNA OF TASMANIA**

*The following article has been contributed by E. R. Guiler, B.Sc., Ph.D., F.Z.S., M.I. Biol., University of Tasmania.*

**Mammal Introductions—General**

In the 1967 *Year Book*, an article appeared describing the indigenous fauna of the State. The next section is concerned with exotic mammals (some introduced species in the "newer" countries become so familiar to their inhabitants that their exotic origin is often forgotten, good examples being the horse in America and the rabbit in Australia).

The introduction of exotic species may occur accidentally or by deliberate intention. All introductions are not necessarily dangerous but great care must be taken to select species which will not upset the native fauna; the subject for initial study must be the ecology of the specific species and how that species



will fit into the local ecological picture. The often unfortunate record of acclimatization societies throughout the world contains many examples of introductions made with no regard to the possible ecological danger, the result being irreparable damage; misguided but well-meaning individuals have played a significant role in the same process. Wodzicki (1950) shows admirably the trouble and financial loss caused by exotic fauna in N.Z. As far as Australia is concerned, the Fauna Authorities Conference has recommended that no further introductions be carried out.

Tasmanian, in comparison with some other Australian States, has suffered relatively little from the effect of introductions. The rabbit, deer, cat and rat are exotic species with the most actual or potential impact on the economy of the island or on the ecology of native species (wild cattle are not included in this survey since few have reverted to a truly wild state). Most interesting of all introductions is possibly the sugar glider, the State's only *exotic marsupial*.

### The Sugar Glider

#### Origin

The sugar glider (*Petaurus breviceps* Waterhouse) is not recorded as occurring in Tasmania by Iredale and Troughton (1934) or Troughton (1946) but the species is so well known that many think of it as an indigenous Tasmanian marsupial and call it the flying possum.

Gunn (1845) reported that sugar gliders had been caught in Launceston suburbs, and fixed their date of introduction in the period 1834-1837 when Tasmanians in the north were engaged in creating the Melbourne settlement; the gliders were brought back to Launceston from Victoria as pets but some escaped to make homes in trees around the town. Apparently the locality suited the species because, in 1846, a specimen was killed at O'Connor's Sugar Loaf, 30 miles to the south. So, within 11 years of its introduction the build-up in numbers was sufficient for the species to have colonised a place 30 miles distant, and this despite the fact that only two young are born each year.

The spread of the species cannot be charted with great accuracy, but the next paragraph, compiled from Museum acquisition records, gives a partial indication.

#### Spread of the Species

The following combinations of place and year show the date by which the sugar glider was certainly in a locality (but not necessarily the earliest date of its appearance): Launceston, 1834 and 1846; Meander River, 1850; Macquarie River, 1874; River Shannon, 1876; Oatlands, 1878 and 1881; Mt Seymour, 1882; Broadmarsh, 1883; Magnet, 1904; Strickland, 1913; Ellendale, 1914; Southport and Bagdad, 1920; Bellerive, 1935; St Marys, 1938.

*Southern Movement:* Study of these and other data show that initially the species remained close to Launceston but had commenced to spread prior to 1846 when a specimen was captured 30 miles to the south; this southern movement was verified by the capture of specimens at the Macquarie River in 1874 and, four years later, at Oatlands. The evidence up to the finding of the Shannon specimen (1876) suggests that the major spread took place down the more lightly forested slopes of the Western Tiers and not through the more dense sclerophyll forests; this was confirmed by specimens at Mt Seymour (near Stonor) in 1882 and at Broadmarsh in 1883. The earliest record south of the Derwent is 1913 at Strickland (Mt Wellington foothills) but the discovery of a specimen at Ramsgate (near Catamaran) in 1914 suggests that the Derwent was crossed much earlier than 1913. The Ellendale specimen of 1914 points to a glider population in the upper Derwent which would not, in these reaches,

be much of an obstacle to a climbing and gliding species. However, the earlier Shannon specimen indicates that the glider had reached the headwaters of the Derwent by 1876 and its southward spread could well have taken place down both banks simultaneously.

*Other Movement:* The western and eastern spread is not well documented, the first western specimen being found at Magnet (near Zeehan) at 1,400 feet in 1904 and the first eastern specimens at St Marys in 1938; by this time, however, the species must have been widespread throughout the island.

### Feral Cat

Undoubtedly one of the first pets to arrive in Tasmania was a cat (*Felius cattus* L.) and others have been arriving ever since. Some have strayed or been dumped in the bush by their owners and have there established themselves as a successfully breeding part of our fauna. Feral cats are now found throughout most of the island and have spread to areas remote from past or present human habitation; they have even been seen on button grass plains as well as in the rainforest.

Feral cats eat some rabbits and may be a minor source of biological control (Myers, 1958). Their effect on the native fauna has never been investigated although it is believed to be very great; they eat birds, lizards, bandicoots and other small mammals, and are held to be more of a menace than a help in the bush. No serious attempt has been made to control their numbers which may nevertheless be reduced by their eating rabbits poisoned in control campaigns (domestic cats sometimes suffer the same fate).

### Dog

The dog (*Canis familiaris*) does not go wild with the readiness of cats but wild or semi-wild dogs are known to exist in Tasmania. The dogs are nearly always large specimens of sheep, cattle or hunting breeds and live by preying on the larger marsupials. Being rare, wild dogs are not a serious menace to the indigenous fauna, and those which kill domestic animals are shot whenever possible.

### Ferret

The ferret (*Mustela putorius* L.), which belongs to a semi-domesticated race of the polecat, has been used in Tasmania in rabbiting for many years, but, prior to 1871, their importation was forbidden. Some have escaped and are from time to time encountered in the bush, particularly where rabbits are plentiful. They appear to be few in number and not a significant threat to native species at the present time.

### Rats

Rats are represented by the black rat (*Rattus rattus* L.), the Norway (brown) rat (*Rattus norvegicus* [Erxleben]) and the house mouse (*Mus musculus* L.). Undoubtedly rats have existed in Tasmania since the arrival of the earliest ships; the black rat, most usually associated with towns and human dwellings, happens to be the well known ships' rat.

The brown rat is found in more open areas and lives in most country districts, usually near human habitation, either past or present. The house mouse is widespread in Tasmania and infests houses and buildings during

autumn and winter. No plagues such as those reported from Central Australia have occurred here. Rats may be a health menace to humans but their effect on the native fauna has not been investigated.

### European Hare

The hare (*Lepus europaeus* Pallas) appears to date, in Australia, from 1859 when four of them, together with wild rabbits, were deliberately spread in the south-east (Hesterman and Kogon, 1963). The Tasmanian introduction was earlier, dating from 1854 when R. Dallas of Stanley brought in hares, which by 1856 had spread to Rocky Cape. This may have been the only introduction, as hares are far more common in the north of Tasmania than in the south.

The species is not very numerous but local concentrations are not uncommon. Nowhere is it as abundant as the rabbit nor is it considered a pest.

### The Rabbit

The European rabbit (*Oryctolagus cuniculus* L.) is the most abundant and destructive mammal introduced to Tasmania.

Despite the serious economic implications of rabbit infestation, the history of the introduction and spread of the species is not fully documented. There is no doubt, however, that rabbits were brought to Australia with the First Fleet in 1788 (Fenner and Ratcliffe, 1965) but these were domestic stock and may not have escaped. Many more domestic rabbits were probably brought out, especially in view of the food shortages experienced by the early colony.

There is good reason to doubt whether Dr E. L. Crowther was the first to introduce rabbits to Tasmania, even though he has traditionally received the credit, or rather the blame. Documents show he applied for land for breeding rabbits in February 1827 and claimed to have imported his stock in 1824, although, in actual fact, he did not land until January 1825 from the *Cumberland*. Later in that year (1825), J. King leased Betsy Island to house an importation of silver haired rabbits.

Newspapers of that period suggest that Crowther and King were not the original importers. For example, the *Hobart Town Gazette* of 24 June 1825 said "rabbits are being bred in various parts of the country"; the *Colonial Times* of 11 May 1827 stated "thousands (of rabbits) were on various parts of the island". Shaw (1951) implied that rabbits were introduced on the "Cambria" property on the east coast by G. Meredith in 1821, although the manifest of the *Emerald*, chartered for the voyage to "Cambria", shows no record of rabbits.

If the *Colonial Times* statement of 1827 is accepted as correct, then a few rabbits introduced in 1825 would scarcely have numbered thousands and been widely distributed two years later—even allowing for the animal's notorious fecundity. The truth of the matter is probably that earlier unrecorded introductions had escaped and established themselves in a wild state.

### Spread of the Rabbit

Although the early introductions were in the southern and eastern districts, little time elapsed before rabbits were being distributed for breeding throughout the colony (*Hobart Town Gazette* of 7 October 1826). Today the species is found in most parts of the island, except in rainforest and in the west and south-west where rainforest has isolated many areas. Button grass plains are free from the rabbit, being too wet and offering little food.

Hilder (1928) describes rabbits on Stack Island in 1830, the introduction being made by the manager of the Van Diemen's Land Company; this colony ate all available food and died out but the implication is that rabbits may have been established elsewhere on the company's extensive north-west holdings. The spread of rabbits along the north-west coast depended, in part, on man modifying the environment. Colonies at the Blythe River were reported in 1874 and at the Forth River in 1876 but it was not till 1914 that the first rabbits were found at Stowport; Barber (1954) refers to the late establishment of the species at Parrawe in the period 1915-1925 and it was only in 1922 that rabbits reached Sisters Hills, and sometime after 1938, Circular Head. In the Sisters Hills case, a railway had been built through the hills in 1921. In the Parrawe case, clearing of forest had gone forward in the period 1915-1925; rainforest has always been a barrier to the spread of the species.

### Control Measures

By 1868, agitation commenced in the Midlands for some control measures and by 1871, the rabbit population had assumed pest proportions in some districts. In 1877, Rabbit Districts were established with trustees to control eradication campaigns but their eventual lack of success can be inferred from the export of 408,000 lb of skins in 1909. The rabbit continued to flourish even in the period after World War II, as the following export figures show:

Export of Rabbit Skins—Overseas and Interstate Combined  
(\*000 lb)

Year	Exports	Year	Exports	Year	Exports	Year	Exports
1942-43 ..	86	1948-49 ..	189	1954-55 ..	309	1960-61 ..	65
1943-44 ..	150	1949-50 ..	324	1955-56 ..	209	1961-62 ..	41
1944-45 ..	304	1950-51 ..	704	1956-57 ..	94	1962-63 ..	54
1945-46 ..	633	1951-52 ..	306	1957-58 ..	89	1963-64 ..	115
1946-47 ..	469	1952-53 ..	506	1958-59 ..	95	1964-65 ..	71
1947-48 ..	533	1953-54 ..	317	1959-60 ..	61	1965-66 ..	38

Despite vigorous poisoning, shooting and myxomatosis campaigns, the rabbit is still very much part of the Tasmanian fauna.

### Axis Deer (Indian Spotted Deer)

The axis deer (*Cervus axis* Erxleben) was introduced into the Kempton district by Captains Kemp and Dumaresq in 1829; five years later, importations were made into the Bothwell district. The species became partly established and spread into neighbouring areas, including Deloraine.

Some shooters believe that the axis deer has interbred with the fallow deer, quoting fallow deer heads which show no palmation and resemble those of the axis deer. This is unlikely as no authentic hybridization has been reported for this particular cross (although one hog deer-fallow deer hybrid was reported from Bloemfontein zoo by Gray in 1954). The axis deer has not been seen for some time in Tasmania and has probably died out.

### Fallow Deer

The fallow deer (*Dama dama*) was also introduced to the lower Midlands by Captains Kemp and Dumaresq in 1829; this importation became established and is the stock from which many of the deer in the Bothwell district are descended. A later importation provided the ancestors of fallow deer in the Campbell Town-Lake Leake-Avoca area.



The Van Diemen's Land Company, on their Circular Head property, introduced seven deer, including one stag, in 1836 and records are available to follow the progress of the herd up to 1847 when it numbered 64. The further history of the herd is obscure due to the destruction of the relevant records, but it appears to have ultimately been dispersed or liberated, deer being infrequently, if ever, seen in the north-west.

Fallow deer are very common in the Lake Leake-Central Tiers-Ross-Fingal areas as well as at Bothwell, Interlaken, Nile and many other parts of central Tasmania. The population is relatively static and sightings of deer in new areas have not been reported for many years. In this, the species is following the pattern seen in N.Z. where thriving populations do not spread to other areas (Wodzicki, 1950). However, later observation shows that some deer populations in N.Z. have expanded to a point where they present a serious danger to agriculture, in one case up to 6,000 being killed from an area of 20,000 acres (Wodzicki, 1961).

### Wild Goat

Goats (*Capra hircus* L.) were imported as early domestic stock and the present wild populations are descended from these. Goats never became abundant or even common in Tasmania, which is sharply in contrast with the situation in N.Z.

Feral goats are shot wherever possible since they are potential spreaders of footrot and may infect sheep-grazing properties; very few are now left. Some years back there was a group of 13 or so at Flat Topped Bluff (far north-west) and a few pairs near Slopem Main (on Tasman Peninsula). The disastrous fires of February 1967 revealed three wild goats on Mt Wellington.

### Wild Pig

Pigs (*Sus scrofa* L.) are only found in a feral state on the islands of the Furneaux group where they are abundant, especially on Flinders Is. Their origin is unknown but they may have been brought by the early sealers. The pigs have reverted to the feral state and show the bristles, mane and stiffly carried tail of the wild pig; they cause damage to crops but are hunted as game.

### Exotic Fauna on Macquarie Island

Macquarie Island, though many miles distant, is nevertheless politically part of the State and it too has received its share of introduced species. Feral cats and rats abound there, thriving upon the large bird population; rabbits also live there very successfully amongst the tussocks, reaching an abnormally large size.

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## Chapter 3

### GOVERNMENT AND ADMINISTRATION

#### GOVERNMENT IN TASMANIA

##### Historical Summary

In its short history, Tasmania has experienced diverse modes of government; beginning with autocratic rule, it graduated to responsible self-government as a British colony and finally surrendered some sovereign powers to take its place as an original State of the Australian Commonwealth.

The evolution of the system of bi-cameral responsible government within a Federal system falls into five distinct phases:

**1803-1825:** The island was part of the colony of New South Wales and its lieutenant governors and commandants were subordinate to the Governor in Sydney.

**1825-1851:** On 14 July 1825, Van Diemen's Land was created a separate colony with a Lieutenant Governor directly responsible to the Secretary of State in London. A nominated Legislative Council was established.

**1851-1856:** The passage of the *Australian Constitution Act* 1850 by the Parliament in London was followed by the establishment of a new Legislative Council in which sixteen members were elected and eight were nominees of the Lieutenant Governor; the newly constituted Council first sat on 1 January 1852.

**1856-1901:** By the *Constitution Act* 1854, two houses of parliament, the House of Assembly and the Legislative Council were established, both houses being elected. The first Parliament sat on 2 December 1856 (the first year in which the island was officially called Tasmania) and subsequent representatives of the Crown carried the title of Governor.

**1901:** The Tasmanian Constitution was limited by the establishment of the Commonwealth Constitution. (The *Commonwealth of Australia Constitution Act* 1900 granted legislative and executive powers upon certain specified matters to the Commonwealth Parliament and Government, some of them exclusively, and provision was made that, in the case of inconsistency of valid laws, the Commonwealth law should prevail.) In effect, the Parliament of Tasmania may make laws operative within the State upon all matters not within the exclusive power of the Commonwealth Parliament but, upon some of these matters, the Tasmanian law may be superseded by the passing of a Commonwealth Act. The Commonwealth Government was established in 1901.

##### Introduction

Government in Tasmania is exercised at three levels:

1. The Commonwealth, with authority based on a written constitution, and centred in Canberra.

2. The State, with residual powers and centred in Hobart.
3. The Cities and Municipalities, with authority derived from a State Act, and operating in forty nine sub-divisions of the State.

This chapter deals primarily with the State Government and with Tasmanian representation in the Commonwealth Parliament. The administration of the cities and municipalities is described in Chapter 4, "Local Government."

### **Tasmanian Representation in Commonwealth Parliament**

The Parliament of the Commonwealth of Australia consists of the Queen, a Senate and a House of Representatives. The Queen is represented in Australia by the Governor General.

#### *The Senate*

The founders of the Australian Constitution had in mind that the Senate should give expression to the interests of the States as partners in the federation; in other words, the Senate should be a States' house. Accordingly the proportional representation suggested by the varying populations of the States was disregarded, and it was provided that each State should be represented by six senators; the first Senate in the first Parliament comprised thirty-six members of whom six represented Tasmania. The numbers remained unchanged till the *Commonwealth Representation Act* 1948 when each State became eligible to elect ten senators.

The founders also envisaged the Senate as a house of review and accordingly provided for continuity of membership by requiring only one-half of the Senate to retire every three years, and for each senator's term to be six years. If the normal pattern of three-yearly rotational retirement is broken by a double dissolution of both Houses, provision exists to elect a complete Senate with members divided into two equal classes: senators of the first class with a three-year term and senators of the second class with a six-year term. (The basis for this classification is the order in which the senators are declared elected.) After a normal rotational election, senators' terms commence from the following first day of July; in the case of an election for the whole Senate, terms commence from the first day of July preceding the election.

#### *The House of Representatives*

In designing the House of Representatives, the founders envisaged a legislative body representing the national interest and provided that the numbers of members chosen in the several States must be in proportion to population, but that no original State should have less than five members. The first House of Representatives in 1901 had 75 members of whom five were elected in Tasmania. The term of office was set as three years.

The *Representation Act* 1948 increased the Senate to 60 members and increased the House of Representatives to 122, although only 121 were elected from the States, the Northern Territory having had a representative since 1922. At 1 January 1967, the House of Representatives stood at 124 members, 122 from the States and two representing the Northern Territory and the Australian Capital Territory respectively. Throughout the whole period since Federation, Tasmanian representation has remained constant at five members.

Representation of the other States is: N.S.W., 46; Victoria, 33; Queensland, 18; South Australia, 11; Western Australia, nine.

#### *Referendum of 1967*

Section 24 of the Commonwealth Constitution reads: "The House of Representatives shall be composed of members directly chosen by the people of the Commonwealth, and the number of such members shall be, as nearly as

practicable, twice the number of senators." In May 1967, a referendum was held, one issue being a proposal to terminate this requirement so that representation in the lower house could be increased without affecting the size of the Senate. This particular proposal was rejected by the Australian voters; Tasmanian voters said "No" (142,660) and "Yes" (42,764). A further 3,821 voted informally.

#### *Qualifications of Voters for Commonwealth Elections*

An elector on a Federal roll is entitled and required by law to vote both in elections for the House of Representatives and for the Senate. An elector is any person, male or female, aged at least twenty-one years who is a British subject, who has lived in Australia for six months continuously and whose name appears on the roll. Residence in an electoral sub-division for at least one month is necessary to enable a qualified person to enrol. Enrolment is compulsory. All servicemen overseas irrespective of age can vote.

#### *Qualifications of Candidates—Either Federal House*

Qualifications necessary for membership of either House of the Commonwealth Parliament are possessed by any British subject, twenty-one years of age or over, who has resided in the Commonwealth for at least three years and who is, or who is qualified to become, an elector of the Commonwealth.

The term of office for a member of the House of Representatives is three years unless the House is dissolved earlier by the Governor General.

#### *Disqualification as Elector or Member*

Grounds for disqualification as an elector include being of unsound mind, or being convicted and under sentence for offences punishable by imprisonment for a year or longer. Grounds for disqualification as a member of either House include these prohibitions and also the following: membership of the other House, 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 25 persons.

#### *Senate (Tasmanian Members)*

The following lists the senators for Tasmania and shows, in parenthesis, the years of retirement:

*Liberal* senators: Henty, The Hon. N. H. D. (1968); Lillico, A. E. D. (1971); Marriott, J. E. (1971); Wright, R. C. (1968); *Labor* senators: Devitt, D. M. (1971); Lacey, R. H. (1971); McKenna, the Hon. N. E. (1968); O'Byrne, J. H. (1971); Poke, A. G. (1968); *Independent*: Turnbull, R. J. D. (1968).

#### *House of Representatives (Tasmanian Members)*

The following lists the Tasmanian members of the House of Representatives, and shows, in parenthesis, the division each represents:

Barnard, L. H. (Bass); Davies, R. (Braddon); Gibson, A. (Denison); Pearsall, T. G. (Franklin); Duthie, G. W. A. (Wilmot). The last election was held in November 1966, Denison and Franklin electing Liberal candidates, the other three seats being won by Labor candidates.

#### *Elections for the Senate*

In Senate elections, there are only six electorates, each State being an electorate. Electors are required to cast a vote for every candidate standing within the State in order of their preference, and election of members is carried

out in accordance with the principles of proportional representation by the single transferable vote (see "Elections for House of Assembly" for a description of similar electoral principles). If a vacancy occurs in the Senate, the appropriate State Government nominates a replacement who sits until the next Commonwealth general election (either for the House of Representatives or for the Senate), when an election is held to fill the vacancy.

If a senator fills a vacancy through an election held at the same time as an election for the House of Representatives, his term will be the same as if the vacating member's term were to run its full course. If the vacant seat is contested at an ordinary Senate election, then six, instead of five candidates, will be elected in the State affected and the senator last elected will fill the vacancy for a term shorter than the full six years.

#### *Elections for the House of Representatives*

The Commonwealth is divided into 124 single-member electorates and electors are required to cast a vote for every candidate standing within the electorate in order of their preference. Election of members is carried out in accordance with the principles of the absolute majority through use of the alternative vote (see "Elections for Legislative Council" for a description of similar electoral principles). If a vacancy occurs in the House of Representatives, it is filled by holding a by-election in the electorate concerned. The five Tasmanian electoral divisions are: Denison, Franklin, Wilmot, Bass and Braddon. These divisions are also used in elections for the State House of Assembly.

### Division of Powers

Under the *Commonwealth of Australia Act* 1900, the State of Tasmania surrendered part of its sovereignty and it was possible, at that point in time, to classify the totality of powers to be vested in the Commonwealth and the State as follows:

1. Exclusive powers to be exercised by the Commonwealth alone.
2. Concurrent powers to be exercised both by the Commonwealth and the State (subject to the supremacy of Commonwealth law in cases of inconsistency of laws).
3. Residual powers to be exercised by the State.

Since the establishment of the Commonwealth of Australia, there have been considerable changes in functions actually performed by the two Governments due to constitutional amendments and to inter-governmental agreements affecting function. It will suffice, therefore, to list the main fields of activity of the Commonwealth Government today:

External affairs and diplomatic representation; maintenance of the armed forces; customs and excise; posts and telegraphs; control of broadcasting and television; control of civil aviation; repatriation of ex-servicemen; immigration; industrial arbitration for national industries; control of coinage and currency; overseas trade promotion; employment service; age, invalid and widows' pensions; national health benefits; federal territories and overseas dependencies; census and statistics; meteorological service; Commonwealth courts and police; control of banking; collection of sales and income taxes; housing assistance and war service homes; scientific and industrial research; management of State and National debt; lighthouses and navigation. (For a fuller treatment of this subject, the *Constitution* in the *Commonwealth Year Book* is recommended.)

The fields of activity of the Tasmanian Government are described in a later section of this chapter headed "Administration."

## **Governor**

### *Introduction*

Democratic forms of government exhibit great variety but, with regard to the selection and role of the head of State, two clearly conflicting concepts can be discerned. In the American tradition, the head of State is elected and must necessarily play an active role in party politics. In the British tradition, the head of State is the holder of hereditary office and is expected to be above and beyond party politics.

Tasmania follows the British tradition and accepts as its Queen, Elizabeth the Second. Her Majesty appoints the Governor who acts as head of State, generally for a five-year term. The relationship existing between the Queen and the British Parliament is broadly the same as that existing between the Governor and the Tasmanian Parliament.

### *Authority*

The Governor's authority is derived from Letters Patent (issued in 1900) under the Great Seal of the United Kingdom, from the Commissions of Appointment and from the Governor's Instructions issued under the Royal Sign Manual and Signet.

### *Powers and Duties*

The Governor summons and prorogues Parliament; in special circumstances he may dissolve it after considering the advice of his Premier. Bills which have passed all stages in Parliament are submitted to the Governor for his assent although there are some subjects which are specifically reserved for the Royal Assent (e.g. a Bill granting land or money to the Governor). He opens each session of Parliament by outlining the legislative programme of the Government which, irrespective of its party affiliation, he refers to as "My Government", but takes no other part in the sittings of either House.

His executive powers include the appointment of Ministers of the Crown, judges and other important State officers but not those whose appointments may be made by certain statutory corporations. By appointing Ministers of the Crown, the Governor creates the Executive Council of the day and he is required by his instructions to be guided by the advice of this body. Should he feel it necessary to act against the advice of the Executive Council, he may do so but the reasons for such action must be immediately reported to the Queen. The Governor's relations with the Executive Council and with Cabinet are more fully discussed in the section headed "The Cabinet and Executive Government".

The Governor has the power to pardon, reprieve and remit sentences and fines. In capital cases, he is required to seek the advice of the Executive Council and, in other cases, the advice of at least one Minister. He also has the power to appoint a deputy to act in his stead during his temporary absence from the seat of Government, whether within or outside the State. (In Tasmania, it is usual for the Chief Justice to act as Administrator of the Government in the absence of the Governor.) Further reference to the Governor's discretionary powers will be found under the section headed "Dissolution of Parliament". On all official State occasions, he performs the ceremonial functions as the representative of the Crown, and so becomes the focal point and the unifying symbol of the community.

*Present Governor*

All Tasmanian Governors since the first settlement have come from the United Kingdom, although Australians, in some other States and the Commonwealth, either hold or have held the vice-regal office.

The present Governor is Lieutenant-General Sir Charles Henry Gairdner, K.C.M.G., K.C.V.O., K.B.E., C.B., a former Governor of Western Australia. A list of previous Governors follows shortly.

*The Administrator*

In the Letters Patent of 1900 (as amended in 1934), provision was made for a Lieutenant Governor to administer the Government in the event of the Governor's death, incapacity, removal or departure from the State. Should there be no Lieutenant Governor then appointed or should he be unable to act, the duties of the Governor were to be discharged by the Administrator. Attached to the Letters Patent was a Dormant Commission authorising the Chief Justice to act as Administrator "in the event of the death, incapacity or absence of the Governor and the Lieutenant Governor if any".

Lieutenant Governors have often acted in lieu of the Governor but since 1943, it has been customary for the Chief Justice to act as Administrator in accordance with the provisions of the Dormant Commission which further nominates the next Senior Judge to act in the absence of the Chief Justice. (The last Lieutenant Governor appointed was Sir John Evans, 1937-1943.)

The present Chief Justice is Sir Stanley Burbury, K.B.E., who has already acted as Administrator in the intervals between governorships, and on other occasions.

**Succession of Governors, Acting Governors, and Their Predecessors from 1803**

Name	Designation	Period
(i) 1803-1825		
Lieut John Bowen .. ..	Commandant	11. 9.03 - 16. 2.04
Colonel David Collins, R.M. .. ..	Lieutenant Governor	16. 2.04 - 24. 3.10
Lieut Edward Lord, R.M. .. ..	Commandant	24. 3.10 - 8. 7.10
Captain J. Murray, 73rd Regt .. ..	Commandant	8. 7.10 - 20. 2.12
Major A. Geils, 73rd Regt (a) .. ..	Commandant	20. 2.12 - 4. 2.13
Colonel Thomas Davey, R.M. .. ..	Lieutenant Governor	4. 2.13 - 9. 4.17
Colonel William Sorell .. ..	Lieutenant Governor	9. 4.17 - 14. 5.24
Colonel George Arthur (b) .. ..	Lieutenant Governor	14. 5.24 - 3.12.25
(ii) 1825-1855		
Colonel George Arthur (b) .. ..	Lieutenant Governor	6.12.25 - 29.10.36
Lieut K. Snodgrass .. ..	Administrator	1.11.36 - 5. 1.37
Sir J. Franklin, KCH, R.N. .. ..	Lieutenant Governor	6. 1.37 - 21. 8.43
Sir J. E. E. Wilmot, Bart .. ..	Lieutenant Governor	21. 8.43 - 13.10.46
C. J. La Trobe, Esq. .. ..	Administrator	13.10.46 - 25. 1.47
Sir W. T. Denison .. ..	Lieutenant Governor	26. 1.47 - 8. 1.55

Succession of Governors, Acting Governors and Their Predecessors—*continued*

Name	Designation	Period
(iii) 1855-1900		
Sir H. E. Fox Young (c) .. ..	Governor	8. 1.55 - 10.12.61
Colonel Thomas Gore Browne, CB ..	Governor	11.12.61 - 30.12.68
Lt-Col W. C. Trevor, CB .. ..	Administrator	30.12.68 - 15. 1.69
Charles Du Cane, Esq. .. ..	Governor	15. 1.69 - 28.11.74
Hon. Sir Francis Smith, CJ .. ..	Administrator	30.11.74 - 13. 1.75
F. A. Weld, Esq. .. ..	Governor	13. 1.75 - 5. 4.80
Hon. Sir Francis Smith, CJ .. ..	Administrator	6. 4.80 - 21.10.80
Lt-General Sir J. H. Lefroy, KCMG, CB	Administrator	21.10.80 - 7.12.81
Sir G. C. Strahan, RA, KCMG .. ..	Governor	7.12.81 - 28.10.86
Hon. W. R. Giblin, Esq. SJ .. ..	Administrator	29.10.86 - 18.11.86
Hon. Sir W. L. Dobson, CJ .. ..	Administrator	18.11.86 - 11. 3.87
Sir R. G. C. Hamilton, KCB .. ..	Governor	11. 3.87 - 30.11.92
Sir W. L. Dobson .. ..	Administrator	1.12.92 - 8. 8.93
Rt Hon. J. W. Joseph, Viscount Gormanston, KCMG .. ..	Governor	8. 8.93 - 14. 8.00
(iv) 1900-		
Sir John Dodds, KCMG (d) .. ..	Administrator	14. 8.00 - 8.11.01
Sir A. E. Havelock, GCSI, GCME, GCIE .. ..	Governor	8.11.01 - 16. 4.04
Sir John Dodds, KCMG .. ..	Lieutenant Governor	16. 4.04 - 28.10.04
Sir G. Strickland, KCMG .. ..	Governor	28.10.04 - 20. 5.09
Sir John Dodds, KCMG .. ..	Lieutenant Governor	21. 5.09 - 29. 9.09
Sir Harry Barron, KCMG, CVO .. ..	Governor	29. 9.09 - 8. 3.13
Sir John Dodds, KCMG .. ..	Lieutenant Governor	10. 3.13 - 4. 6.13
Sir William Ellison-Macartney, KCMG	Governor	4. 6.13 - 31. 3.17
Sir Herbert Nicholls .. ..	Administrator	1. 4.17 - 6. 7.17
Sir F. A. Newdigate Newdegate, KCMG	Governor	6. 7.17 - 9. 2.20
Sir Herbert Nicholls .. ..	Administrator	9. 2.20 - 16. 4.20
Sir W. L. Allardyce, KCMG .. ..	Governor	16. 4.20 - 26. 1.22
Sir Herbert Nicholls .. ..	Administrator	26. 1.22 - 30.11.23
Hon. N. K. Ewing, Esq. .. ..	Administrator	30.11.23 - 13. 6.24
Sir Herbert Nicholls .. ..	Administrator	13. 6.24 - 23.12.24
Sir James O'Grady, KCMG .. ..	Governor	23.12.24 - 23.12.30
Sir Herbert Nicholls, KCMG .. ..	Lieutenant Governor	23.12.30 - 4. 8.33
Sir Ernest Clark, GCMG, KCB, CBE ..	Governor	4. 8.33 - 4. 8.45
Sir John Morris .. ..	Administrator	4. 8.45 - 24.12.45
Admiral Sir Hugh Binney, KCB, KCMG, DSO .. ..	Governor	24.12.45 - 8. 5.51
Sir John Morris, KCMG .. ..	Administrator	9. 5.51 - 22. 8.51
Rt Hon. Sir Ronald Cross, Bart KCMG, KCVO .. ..	Governor	23. 8.51 - 4. 6.58
Hon. Sir Stanley Burbury, KBE .. ..	Administrator	5. 6.58 - 21.10.59
Rt Hon. the Lord Rowallan, KBE, MC	Governor	21.10.59 - 25. 3.63
Hon. Sir Stanley Burbury, KBE .. ..	Administrator	25. 3.63 - 24. 9.63
Lt-General Sir Charles Gairdner, KCMG, KCVO, KBE, CB .. ..	Governor	24. 9.63 -

(a) Until 1 July 1812, the island was divided at the 42nd parallel and the Launceston settlement had its own officials appointed from N.S.W. The first was Lieut-Colonel W. Paterson (Lieutenant Governor) followed, as Commandants, by Captain J. Brabyn (N.S.W. Corps) and Major G. A. Gordon (73rd Regiment). The next Commandant, Captain J. Ritchie (73rd Regt) assumed office on 1 July 1812, and was subordinate to Major A. Geills.

(b) On 3 December 1825, Lt-General Sir Ralph Darling displayed in Hobart two commissions, one as Governor of N.S.W. and one as Governor of Van Diemen's Land. This was the constitutional device for separating Van Diemen's Land from N.S.W. Colonel George Arthur was sworn in again as Lieutenant Governor on 6 December 1825.

(c) First Governor in the era of self-government.

(d) On 1 January 1901, the Colony of Tasmania became a State of the Commonwealth of Australia.



## **The Cabinet and Executive Government**

### *General*

In Tasmania, as in the other States and the Commonwealth, executive government is based on the system which was evolved in Britain in the 18th century, and which is generally known as "Cabinet" or "responsible" government. Its essence is that the head of the State (in Tasmania, the Governor representing Her Majesty the Queen) should perform governmental acts on the advice of his Ministers; that he should choose his 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 country; 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 the government at all. In law, still, the executive power of the State is exercised by the Governor who is advised by the Executive Council which he himself has appointed and which meets for formal purposes, to be later explained. The whole policy of a Ministry is, in practice, determined by the Ministers of the Crown, meeting without the Governor under the chairmanship of the Premier, and this body is known as the Cabinet.

### *The Cabinet*

This body does not form part of the legal mechanism of government and 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. As Ministers are the leaders of the party commanding a majority in the House of Assembly, the Cabinet substantially controls not only the general legislative programme 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. Even in summoning, proroguing or dissolving Parliament, the Governor is usually guided by the advice tendered him by the Cabinet, through the Premier, though legally the discretion is vested in the Governor.

In Tasmania, the present Cabinet consists of the nine Ministers of the Crown.

### *The Executive Council*

This body is usually presided over by the Governor, the members thereof holding office during his pleasure. All Ministers of the Crown must be members of the Executive Council. Ministers actually remain members of the Executive Council on leaving office, but are not summoned to its meetings, for it is an essential feature of the Cabinet system that attendance should be limited to the Ministers of the day. The Chief Justice and Judges of the Supreme Court are also members of the Executive Council, but they too are not summoned to its meetings for the same reason. The meetings of the Executive Council are formal and official in character, and a record of proceedings is kept by the Clerk (who is the permanent head of the Premier's and Chief Secretary's Department). At Executive Council meetings, the decisions of Cabinet are (where necessary) given legal form, appointments made, resignations accepted, proclamations issued, and regulations and the like approved. The quorum required is three, comprising the Governor and at least two Ministers.

*The Appointment of Ministers*

Legally, Ministers hold office during the pleasure of the Governor. In practice, however, the discretion of the head of State in the choice of Ministers is limited by the conventions on which the Cabinet system rests. When a Ministry resigns, the Governor's custom is to send for the leader of the party which commands a majority in the lower House, and to commission him, as Premier, to "form a Ministry"—that is, to nominate other persons to be appointed as Ministers of the Crown and to serve as his colleagues in the Cabinet.

The *Constitution Act* 1854 defined the Parliament of Tasmania as "the Governor and the Legislative Council and House of Assembly together". Although no legal requirements enforce it, the selection of all Ministers of the Crown from Parliament seems to stem, not only from the British tradition, but also from the logic of a situation in which Parliament's approval is required for the passage of all legislation.

The Governor's power to revoke the appointment of a Minister of the Crown was exercised in 1959, the circumstances being that a Minister had refused to resign from Cabinet; in the absence of the Governor, and on the advice of the Premier, the Administrator terminated the Minister's appointment.

**Comparison of American and Australian Systems of Government**

In both the American and Australian systems of government, a triple division of functions is recognised and specified as (i) legislative; (ii) executive; (iii) judicial. The United States, in its constitution, provides for a separation of these functions and the election of the President (i.e. the executive) is an event clearly separated from the election of the Congress (i.e. the legislative); individual States of the Union follow similar principles, electing Governors to exercise executive functions.

In the Australian system, the Governor General (or, in the case of the States, the Governor) is theoretically vested with all executive power but, in accordance with the British practice of constitutional monarchy, he exercises such power strictly in accordance with the advice of his Ministers; again, in conformity with British tradition, such Ministers must be members of the elected legislature and drawn from the party (or coalition of parties) which commands a majority in the lower house of the legislature. So, in actual practice, there is no rigid division of executive and legislative functions and the Australian elector, in choosing his legislators, is also ultimately choosing his executive.

Given that the Prime Minister (or, in the case of the States, the Premier) is the *de facto* principal executive officer, the Australian elector does not directly vote to choose him. Leaders of parties are chosen by party machinery and the Australian elector knows, in advance, that a majority for a given party will result in its leader becoming Prime Minister (or, in the case of the States, Premier); in the matter of election to Parliament, party leaders have no special privilege and must submit themselves to the electors in precisely the same manner as any "rank and file" candidate for the legislature (i.e. they are required to stand for an electorate). It is not unprecedented for the leader of an Australian party to be rejected by the voters in his own electorate and to lose his seat in the Federal Parliament—this happened in 1929 and in 1964.

It will also be observed that Australian Cabinets, both State and Federal, are appointed from members of the legislature. Thus, the executive—the Cabinet—is part of the legislature and its members are readily available at sittings of the Parliament to accept responsibility for executive actions; the

chain of responsibility can be seen at two levels, namely Cabinet responsible to Parliament and Parliament responsible to the electors. By way of contrast, the President of the U.S.A. selects a cabinet whose members do not form part of the legislature and who may quite possibly never have been members of any legislature, State or Federal.

These differences between the two concepts of government give the Australian system one advantage—it is impossible to have a sustained clash between those exercising executive and legislative functions; if the Cabinet loses the confidence of the Parliament, then the government collapses. In the American situation, such a sustained clash is possible since the ordinary Congressional elections, held half-way through a President's four-year term of office, may create a situation in which the executive is of one party while the legislature is dominated by the opposing party. When such a situation arises, there is no provision for changing the executive to accord with the weight of majority opinion in the legislature.

### Present Ministry

After the elections held on 2 May 1964, the Labor Ministry led by the Hon. E. E. Reece, was announced as follows:

#### Ministry (at May 1964)

Name	House	Responsibility (a)
The Hon. E. E. Reece ..	Assembly	Premier, Treasurer and Mines
The Hon. R. F. Fagan ..	Assembly	Attorney General and Deputy Premier
The Hon. W. A. Neilson ..	Assembly	Education
The Hon. D. A. Cashion ..	Assembly	Lands and Works
The Hon. A. C. Atkins ..	Assembly	Agriculture, Tourists and Immigration
The Hon. B. K. Miller ..	Legislative Council	Chief Secretary
The Hon. S. V. Ward ..	Assembly	Housing and Forests
The Hon. H. J. McLoughlin ..	Assembly	Transport and Police
The Hon. M. G. Everett, Q.C.	Assembly	Health

(a) See section "Administration" later in chapter for fuller statement of responsibility.

### Relations of Two Houses

#### *Status of Legislative Council*

A vexed question for many years was the exact status of the Legislative Council in relation to the House of Assembly from which the Ministry of the day was predominantly chosen. The 1854 Constitution Act had defined Parliament as "the Governor and the Legislative Council and House of Assembly together" and obviously the approval of all three was necessary for laws to become valid; on the other hand, there was no adequate provision for resolving situations in which the Legislative Council rejected bills or amended bills in ways unacceptable to the House of Assembly. The lower house was elected on a wider franchise, and could legitimately claim to be the more accurate instrument of public opinion to the extent that it was not a perpetual body like the Legislative Council, as its members were all elected at the one time. The power of the Legislative Council to reject and amend was most resented in relation to money bills, since these vitally affected the administration of public affairs by the Ministry of the day.

### *Money Bills*

A period of conflict was followed by the passage of the *Constitutional Amendment Act* 1926 defining the relations of the two houses in the passing of money bills. The following current principles are found in the Act; the Legislative Council retains the right to reject any bill, including a money bill. The Council is specifically prevented from amending bills to raise revenue for the ordinary annual services of the Government and bills imposing land and income tax; it can still suggest to the House of Assembly that amendments be made but the adoption or rejection of such amendments is at the discretion of the Assembly; the operation of such bills is restricted to a period of one year. Apart from the above specific exceptions, the Council retains the right to amend money bills, e.g. those dealing with loan funds or probate. The House of Assembly is given the sole right to initiate bills for the raising of revenue and the imposition of taxes. Finally, the powers of the two houses are declared equal in all matters except for these specific exceptions.

### *Deadlocks and Dissolutions*

It should be observed that there is no provision for a double dissolution as in the Commonwealth Constitution and that the Legislative Council, by rejection of a supply bill, can force the House of Assembly to seek a dissolution without itself needing to face the electorate. This last occurred in 1948.

The Legislative Council has the tradition of being a non-party house and, in actual fact, the majority of its members are elected as independents without the official endorsement of any party. Members who have received party endorsement (from the Labor Party) are in a minority, and the leader of the Government in the Legislative Council cannot rely upon a vote taken on party lines to ensure the passage of any government bill. It is the ability to command a majority in the House of Assembly which gives a party the right to form the government of the day and which ensures the passage of government legislation through the lower house; no such certainty exists in the passage of bills through the upper house and accordingly the Legislative Council is in a position to exercise considerable influence on the form in which bills are finally passed through both houses.

As from July 1964, the Liberal Party reversed its policy of non-endorsement of candidates for the Legislative Council and decided to endorse candidates in certain circumstances. This decision has so far not changed the predominantly non-party character of the house.

### *Consultation Machinery*

When a position is reached in which one house refuses to accept the amendments or legislation of the other, provision exists under the Standing Orders for joint consultation by the calling of a "Free Conference" at which each house is represented by "managers". (It is usual for each house to be represented by four managers.) The free conference endeavours to find a compromise acceptable to both houses.

Another form of consultation between the two houses is the appointment of a joint select committee which is set terms of reference and which is primarily concerned with fact-finding. The passage of a bill may be temporarily delayed while a joint select committee makes a specific investigation; this machinery provides members with the information necessary to cast an informed vote.

## Premiers

The following is a list of the Premiers of Tasmania from 1856 (the year in which the first elected Parliament sat):

## Premiers from 1856

Name of Premier	Date of Assumption of Office	Date of Retirement from Office	Duration of Office (Months)
1856-1900			
W. T. N. Champ .. .. .	1.11.56	26. 2.57	4
T. G. Gregson .. .. .	26. 2.57	25. 4.57	2
W. P. Weston .. .. .	25. 4.57	12. 5.57	1
F. Smith .. .. .	12. 5.57	1.11.60	42
W. P. Weston .. .. .	1.11.60	2. 8.61	9
T. D. Chapman .. .. .	2. 8.61	20. 1.63	18
J. Whyte .. .. .	20. 1.63	24.11.66	46
Sir Richard Dry .. .. .	24.11.66	4. 8.69	32
J. M. Wilson .. .. .	4. 8.69	4.11.72	39
F. M. Innes .. .. .	4.11.72	4. 8.73	9
A. Kennerley .. .. .	4. 8.73	20. 7.76	36
T. Reibey .. .. .	20. 7.76	9. 8.77	13
P. O. Fysh .. .. .	9. 8.77	5. 3.78	7
W. R. Giblin .. .. .	5. 3.78	20.12.78	9
W. L. Crowther .. .. .	20.12.78	30.10.79	10
W. R. Giblin .. .. .	30.10.79	15. 8.84	58
Adey Douglas .. .. .	15. 8.84	8. 3.86	19
J. W. Agnew .. .. .	8. 3.86	29. 3.87	13
P. O. Fysh .. .. .	29. 3.87	17. 8.92	65
H. Dobson .. .. .	17. 8.92	14. 4.94	20
Sir Edward Braddon .. .. .	14. 4.94	12.10.99	66
1900-			
Sir N. E. Lewis .. .. .	12.10.99	9. 4.03	42
W. B. Propsting .. .. .	9. 4.03	11. 7.04	15
J. W. Evans .. .. .	11. 7.04	19. 6.09	59
Sir N. E. Lewis .. .. .	19. 6.09	20.10.09	4
J. Earle .. .. .	20.10.09	27.10.09	—
Sir N. E. Lewis .. .. .	27.10.09	14. 6.12	32
A. E. Solomon .. .. .	14. 6.12	6. 4.14	22
J. Earle .. .. .	6. 4.14	15. 4.16	24
Sir Walter Lee .. .. .	15. 4.16	12. 8.22	76
J. B. Hayes .. .. .	12. 8.22	14. 8.23	12
Sir Walter Lee .. .. .	14. 8.23	25.10.23	2
J. A. Lyons .. .. .	25.10.23	15. 6.28	56
J. C. McPhee .. .. .	15. 6.28	15. 3.34	69
Sir Walter Lee .. .. .	15. 3.34	22. 6.34	3
A. G. Ogilvie (a) .. .. .	22. 6.34	10. 6.39	60
E. Dwyer Gray .. .. .	11. 6.39	18.12.39	6
R. Cosgrove .. .. .	18.12.39	18.12.47	96
E. Brooker .. .. .	18.12.47	25. 2.48	2
R. Cosgrove .. .. .	25. 2.48	26. 8.58	126
E. E. Reece .. .. .	26. 8.58	Still in office	

(a) Tasmania has had an unbroken succession of Labor Premiers, starting with the Ogilvie Ministry (1934); earlier Labor Ministries were led by J. Earle (first in 1909) and by J. A. Lyons.

### Dissolution of Parliament

The Governor may dissolve the House of Assembly whenever he considers it desirable but he has no power to dissolve the Legislative Council. In effect then, the Legislative Council is a perpetual body except that approximately one-sixth of its seats fall vacant annually. (See "Elections for Legislative Council.")

In practice, the Governor considers dissolving the House of Assembly only when requested to do so by his Ministers. Two recent dissolutions are recorded below:

**1950:** The Governor, Admiral Sir Hugh Binney, received a request for dissolution from the Premier, the main grounds being the difficulty of passing legislation in a House where the Government was dependent on the support of an independent member for its majority. Having first interviewed the Leader of the Opposition and ascertained that no alternative Government could be formed, the Governor granted the dissolution.

**1956:** The Governor, Sir Ronald Cross, received a request for dissolution from the Premier, the grounds being that a Minister of the Crown had resigned and joined the opposition, thus depriving the Government of its majority on the floor of the House. In this case, the Governor could have requested the Leader of the Opposition to form a Government since the opposition now had the majority. In granting a dissolution, the Governor thought it "proper in all the circumstances that the electorate should have an opportunity of expressing its will" and maintained that this decision was a legitimate exercise of his discretionary powers. Refusing a dissolution and inviting the formation of an alternative Government would have meant giving power to a party which had received a minority of votes at the previous general election; the alternative was to test the popular will and this was the Governor's choice.

### *Sessions of Parliament*

Parliament is required to sit every year and, having risen, must sit again before twelve months have elapsed. When the House of Assembly is dissolved and a general election held, the Governor is required to call Parliament together within ninety days of the dissolution, subject to a discretionary extension of a further thirty days.

### Elections for the House of Assembly

Elections for the House of Assembly are conducted under a system which can be classified as proportional representation by the single transferable vote and which is popularly but incorrectly called "Hare-Clark".

### *Hare's Proposals*

The principle of proportional representation by the single transferable vote was first suggested by Thomas Wright Hill in 1821 and later elaborated by Thomas Hare in his treatise of 1859, *The Election of Representatives, Parliamentary and Municipal*. Hare was primarily concerned with elections to the House of Commons and the essence of his proposal was that each voter was to be allowed to support any candidates, anywhere in Britain, and that his votes could be transferred to other candidates in the order of his preference. A candidate was to be declared elected on attaining the quota found by dividing the total votes

in the country by the number of seats in the House of Commons; the votes cast for a candidate in his own locality were to be counted for him first and those from more distant places only if required to make up a quota.

### *The Droop Quota*

The concept of the quota was developed in a more sophisticated manner by H. R. Droop as follows:

**The Droop Quota**

Number of Members to be Elected from Constituency	Minimum Votes Necessary to Ensure Election of Any Member (i.e. Quota)
1	$\frac{1}{2}$ of total votes + 1 vote
2	$\frac{2}{3}$ of total votes + 1 vote
3	$\frac{3}{4}$ of total votes + 1 vote
	1
n	$\frac{1}{n+1}$ of total votes + 1 vote

### *Contribution of Clark*

In 1896, the Tasmanian Attorney General, A. I. Clark, secured the use of proportional representation for electing the Hobart and Launceston town councils and for choosing Hobart and Launceston representatives for the House of Assembly. (The country seats were still single member constituencies.) To Clark also is attributed the credit for working out the modern method for dealing with surpluses and transfers.

### *Tasmanian System*

The essential features of the system are as follows:

1. For an elector to cast a valid vote, he must express at least three preferences.
2. Names on the voting papers are arranged in distinct groups to facilitate recognition of allegiance to parties (but names of parties are not specified).
3. To secure election, candidates must secure a quota in accordance with the Droop formula (i.e. the total first-preference votes in the constituency divided by eight, plus one vote).
4. Should a candidate secure an exact quota on first preferences, his voting papers are set aside as finally dealt with.
5. If the first successful candidate secures a surplus above the quota, then all his voting papers are re-examined to determine which candidates should secure the second preferences.
6. The second preferences are first adjusted by multiplying them by a fraction called the transfer value. The transfer value is calculated by dividing the successful candidate's surplus first-preference votes by his total first preferences. The second-preference votes, adjusted in this way, are now transferred to other candidates.
7. When repetition of the above process results in a position where no further candidates can reach a quota, the candidate who is lowest on the poll is excluded and the preferences shown on his voting papers transferred to the remaining candidates.

The above processes are repeated until seven candidates have been elected. As might be expected, the counting of votes, calculation of transfer values and the transferring of votes are time-consuming and a week may elapse before the declaration of the poll.

*Tasmanian Adoption*

In 1907, an Electoral Act provided that all members of the House of Assembly were to be elected by proportional representation, the State being divided into five constituencies each of which was to be represented by six members. The first election in accordance with this Act was held in 1909.

The fourth schedule to the 1907 Act dealing with quotas, transfer of votes, exclusion of candidates, etc. is still the blue-print for counting votes today; however, as from the 1959 elections, the number of members for each constituency was increased from six to seven for reasons that will be later specified.

*Advantages of System*

The major advantage claimed for the system is that the composition of the House of Assembly tends to faithfully reflect the wishes of the electors viewed on a State basis, and that a party with a minority of first preferences is most unlikely to obtain a majority of seats, as sometimes occurs in systems with single-member constituencies. (The election of 1928 is cited as the only example of an Assembly party with a minority of votes securing a majority of seats.) It is also thought that adequate representation is given to minorities and the frequent election of independent members, a feature of Tasmanian parliaments since the depression years, gives some support to this claim.

Leaving aside the matter of independents and minority parties, and assuming that only candidates from the two major parties are elected, then the present pattern is for each constituency to elect four candidates from one of the major parties and three from the other. It follows, therefore, that the opposition is always adequately represented in the House of Assembly and supporters of the opposition party always have representatives for their constituency.

**Resolution of Assembly Deadlocks***House of 30 Members*

One of the virtues claimed for the Hare-Clark system is the adequate representation given to minorities. In a small House of 30 members, this virtue tended to be too evident and led to situations where the government of the day did not have the necessary majority to carry all its legislation with confidence.

The first remedy employed was the *Constitution Amendment Act* 1954 which provided that, in the event of a 15-all draw between the two major parties in an election, an Electoral Commission would be established. This body's function would be to decide, on the basis of primary votes cast for each party, which were the majority and minority parties. On the meeting of Parliament, the minority party would then have the right to nominate one of its members to the office of Speaker. If the minority party refused to exercise this right, then the majority party might proceed to appoint one of its own members and it would receive an additional member in replacement, elected from the Speaker's constituency.

The election of 1955 created an equal distribution of seats and an Electoral Commission was accordingly appointed to decide the question of which was the majority party. The minority party nominated a member for Speaker and the Assembly elected him to the Chair.

The 1954 Act provided machinery for overcoming deadlocks but still did not have much impact on the major problem—that of providing the government of the day with an effective working majority.

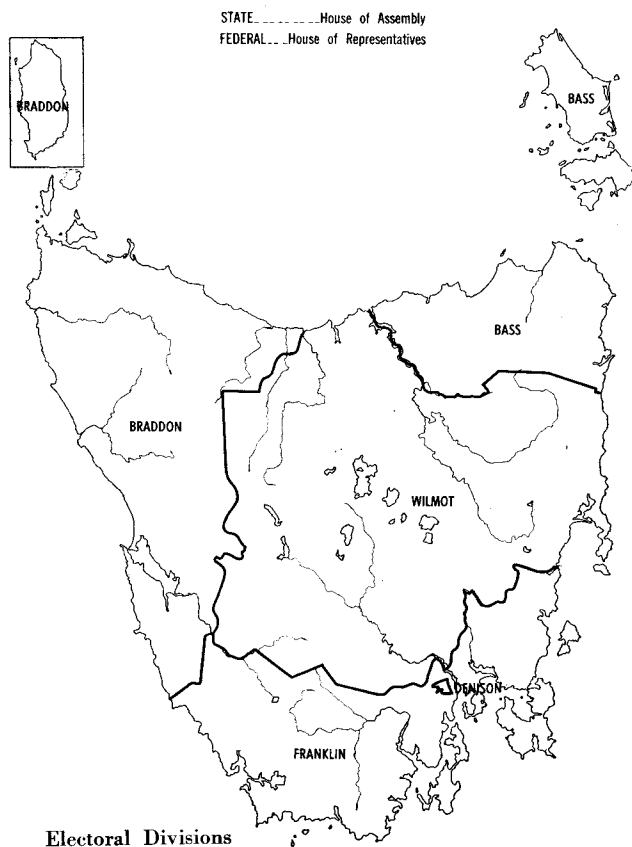


### House of 35 Members

In 1958, a further constitutional amendment was made in which the number of members to be elected for each constituency was increased from six to seven, thus enlarging the House of Assembly from 30 to 35 members. At the first elections held under the provisions of this amendment (May 1959), the major parties secured 17 and 16 seats respectively, the remaining seats being won by independents. At the May elections of 1964, the major parties secured 19 and 16 seats respectively, with independents and minority parties winning no representation.

### Life of House of Assembly

After the *Constitution Act 1936*, the House was elected for five-year terms. The 1954 Act provided that the term should be reduced to three years if the special deadlock provisions were invoked to appoint a Speaker, but passage of the 1958 Act restored the status-quo, i.e. five-year terms irrespective of the outcome of the election.



### Constituencies of House of Assembly

The five constituencies for the House of Assembly are identical with the five electoral divisions electing members to the Federal House of Representatives. The alteration of electoral boundaries to accord with changes in population is carried out under a joint Commonwealth-State agreement in accordance with a simple formula.

The 'normal' number of electors for a division is determined by dividing the State's total electors by five. If the number of electors in any electoral division departs from 'normal' by twenty per cent, then a boundary adjustment is automatically made, again by Commonwealth-State consultation.

The existence of common electoral divisions, both for the House of Assembly and the House of Representatives, allows a joint electoral roll to be maintained and to be used both in State and Federal elections. The number of electors in each division appears later in this chapter under the heading "Parliamentary Elections".

### **Proportional Representation by the Single Transferable Vote**

Many regard the system of election for the House of Assembly as being a phenomenon peculiar to Tasmania. This is by no means so, since the following countries either use or have used a similar system of election: Republic of Ireland (both Houses), South Africa (Senate), Malta (both Houses), Gibraltar (Legislative Council), Canada (for some provincial electorates in Alberta and Manitoba) and Australia itself, in the election of the Federal Senate. If the State has any claim to being unique in the field of electoral reform, it must be based on the fact that Tasmania was the first country in the world to introduce proportional representation by the single transferable vote.

### **Elections for the Legislative Council**

#### *Annual Fractional Elections*

For the purpose of electing members of the Legislative Council, the State is divided into nineteen single-member constituencies. Each member, when elected, holds office for six years and Council elections are held every year to elect three members; however, in every sixth year counting from 1965, it is necessary to elect four members.

Should the seat of a member become vacant otherwise than by effluxion of time, the person elected to fill the vacancy holds office only till the expiration of the period for which the vacating member was elected.

#### *Preferential Voting*

Candidates appear on the voting paper in alphabetical order and are not grouped to show party allegiance as in voting papers for the House of Assembly. If there are two candidates, the voter need only vote for one. If there are three or more candidates, the voter must indicate at least three preferences to record a valid vote.

If any candidate secures first-preference votes exceeding half the total first preferences, he is declared elected. If no candidate satisfies this condition, then the candidate with the fewest votes is excluded and the second preferences shown on his voting papers are transferred to other candidates, the transfer value of each such second preference being equal to one.

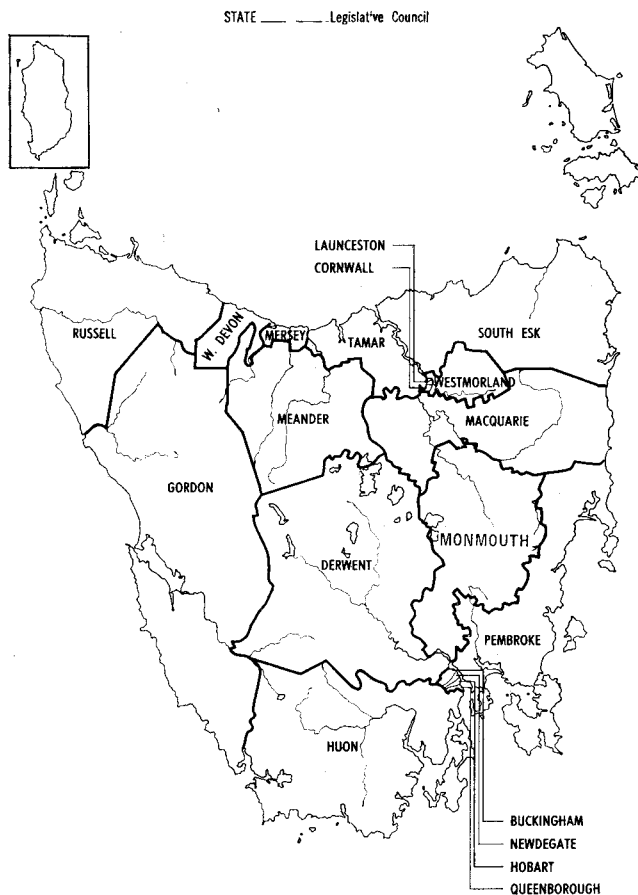
If no candidate now has the required majority, the process of exclusion is repeated until such time as one candidate secures the majority.

The method of counting is identical with that used in elections for the Federal House of Representatives and is termed preferential. The full description is election by absolute majority through use of the alternative vote.

## Qualifications of Electors and Members

### *Qualifications of an Elector for the House of Assembly*

An elector for the House of Assembly is any person, aged at least twenty-one years, male or female, who has lived in the State six months continuously, who is a natural-born or naturalised subject of the Queen and whose name is on the electoral roll for any Assembly division. Voting has been compulsory since the *Electoral Act 1928*.



Electoral Divisions

### *Qualifications of Members of House of Assembly*

To be eligible for election as a member of the House of Assembly, a candidate must comply with the following conditions:

He must either be an elector or be qualified to be an elector for the House of Assembly, and resident in Tasmania for five years at any one time or resident for two years immediately preceding the election.

*Qualification of Electors for the Legislative Council*

An elector for the Legislative Council is any person, aged at least twenty one years, male or female, who is a natural-born or naturalised subject of Her Majesty, who has been resident in the State for a period of six months and whose name is on the electoral roll for any Council division.

To obtain enrolment, the elector, in addition to meeting the basic requirements set out above, must establish that he belongs to one of the following categories of persons:

1. The owner of a freehold estate in possession, whether legal or equitable.
2. The occupier of any property, e.g. the tenant of a dwelling-house.
3. The spouse of an owner or occupier as defined in (1) and (2).
4. A graduate of any University in the British Dominions.
5. A legal practitioner on the roll of the Supreme Court.
6. A legally qualified medical practitioner.
7. An officiating minister of religion.
8. An officer or retired officer of Her Majesty's forces.
9. An honourably discharged member of Her Majesty's forces who fulfills certain conditions of service (e.g. in the case of troops raised in Tasmania for World War II, full-time service outside Tasmania is stipulated). Where a discharged member of the forces is a minor but still complies with the requirements of paragraph (9), such member is eligible to be enrolled and to vote.

Voting has been compulsory since the *Electoral Act* 1928.

*Qualifications of Members of Legislative Council*

A candidate for the Legislative Council must be an elector or have the qualifications of an elector for the Council; in addition to meeting the residential and nationality restrictions imposed on candidates for the House of Assembly, he must be at least twenty-five years of age.

Persons of unsound mind or in prison under any conviction are barred from voting at elections for either House or from being elected to either House. No person shall be capable of being a Member of both Houses at the one time.

**By-Elections***House of Assembly*

In the case of a vacancy occurring in the House of Assembly, there is provision for the Chief Electoral Officer to publicly invite nominations from candidates who were unsuccessful at the last general election in the constituency which elected the vacating member. If one nomination only is received, then the Chief Electoral Officer declares the consenting candidate elected and notifies the Governor to this effect.

If more than one such nomination is received, the Chief Electoral Officer is required to examine the voting papers counted for the vacating member at the last general election. In the simple case—where the vacating member obtained a surplus above the quota—this can be confined to voting papers expressing first choices. In the more difficult case—where the vacating member did not obtain a quota on first choices—it is necessary to take into account not only original first-choice papers but also all voting papers representing votes transferred to the vacating member.

The vacating member's voting papers, as defined above, are examined and all his votes are transferred to the consenting candidates according to the preferences expressed thereon. Second preferences derived from first choice votes of the vacating member have a transfer value of one, but from votes he obtained by transfer, only the value at which he obtained them. For the purpose of the count, first-choice votes received by the consenting candidates at the general election are not relevant—the selection is based on preferences as revealed by the voting papers of the vacating member.

When the number of votes in favour of each consenting candidate has been ascertained, the final selection is by the method of the absolute majority through the alternative vote (see "Elections for Legislative Council" for a description of this method).

If no nominations are received from candidates unsuccessful at the last general election, then a writ is issued directing that an election be held to fill the vacancy.

### *Legislative Council*

In the case of a vacancy occurring in the Legislative Council, a writ is issued directing that an election be held to fill the vacancy. There is no provision for a re-count of voting papers of the vacating member as in by-elections for the House of Assembly.

### **Members of Legislative Council**

The following shows members of the Legislative Council and the year in which each will retire:

Electoral District	Name	Year for Retirement
Buckingham ..	Connolly, The Hon. James Bell (a)	1968
Cornwall .. ..	Foot, The Hon. Geoffrey James	1972
Derwent .. ..	Dixon, The Hon. Joseph Henry	1973
Gordon .. ..	Dalton, The Hon. Thomas George deLargie (a)	1970
Hobart .. ..	Benjamin, The Hon. Phyllis Jean, M.B.E. (a)	1970
Huon .. ..	Hodgman, The Hon. William Michael	1972
Launceston ..	Orchard, The Hon. John Raymond	1970
Macquarie ..	Check, The Hon. Thomas Lefroy	1968
Meander .. ..	Best, The Hon. Charles Robinson	1971
Mersey .. ..	McFie, The Hon. Hector	1972
Monmouth ..	Bisdee, The Hon. Louis Fenn	1969
Newdegate ..	Miller, The Hon. Brian Kirkwall (a)	1969
Pembroke ..	McKay, The Hon. Eric Charles	1971
Queenborough ..	Baker, The Hon. Sir Henry Seymour K.C.M.G., D.S.O.	1971
Russell .. ..	Fenton, The Hon. Charles Balfour Marcus	1969
South Esk ..	Carins, The Hon. Lloyd Horton	1968
Tamar .. ..	Hitchcock, The Hon. Daniel	1973
West Devon ..	Davis, The Hon. Walter John Torley	1971
Westmorland ..	Gregory, The Hon. Oliver Harold	1973

(a) Endorsed by Australian Labor Party; balance of members independents.

## Members of House of Assembly

The following shows members of the House of Assembly elected on 2 May 1964 (with their party allegiance shown in brackets):

Name	Electoral Division
Abbott, Nigel Drury, Esquire (Lib.) .. .. .	Denison
Anderson, William, Esquire (A.L.P.) .. .. .	Wilmot
Atkins, The Hon. Alexander Charles (A.L.P.) .. .. .	Bass
Austin, Kenneth Ernest, Esquire (A.L.P.) .. .. .	Denison
Barker, Wilfred George, Esquire (Lib.) .. .. .	Braddon
Barnard, Eric Walter, Esquire (A.L.P.) .. .. .	Franklin
Beattie, Eric William, Esquire (Lib.) .. .. .	Bass
Bessell, Leonard Hubert, Esquire (Lib.) .. .. .	Wilmot
Bethune, The Hon. Walter Angus (Lib.) (a) .. .. .	Wilmot
Breheney, John Gerald, Esquire (Lib.) .. .. .	Braddon
Bushby, Maxwell Holmes, Esquire (Lib.) .. .. .	Bass
Cashion, The Hon. Douglas Alfred (A.L.P.) .. .. .	Wilmot
Chisholm, Geoffrey Donald, Esquire (A.L.P.) .. .. .	Braddon
Clark, Douglas Frank, Esquire (Lib.) .. .. .	Franklin
Costello, Lloyd Edwin Albert, Esquire (A.L.P.) .. .. .	Braddon
Everett, The Hon. Mervyn George, Q.C. (A.L.P.) .. .. .	Denison
Fagan, The Hon. Roy Frederick (A.L.P.) .. .. .	Wilmot
Fraser, Wallace Harcourt, Esquire (A.L.P.) .. .. .	Bass
Frost, Stewart Charles Hilton, Esquire (A.L.P.) .. .. .	Franklin
Ingamells, Christopher Robert, Esquire (Lib.) .. .. .	Wilmot
Le Fevre, Vernon MacKenzie, Esquire (A.L.P.) .. .. .	Bass
Lyons, Kevin Orchard, Esquire (b) .. .. .	Braddon
McDonald, Thomas Raymond, Esquire (A.L.P.) .. .. .	Wilmot
McLoughlin, The Hon. Henry Joseph (A.L.P.) .. .. .	Denison
Madden, The Hon. John Lewis (A.L.P.) .. .. .	Bass
Martin, Terence Norman, Esquire (A.L.P.) .. .. .	Franklin
Mather, Robert, Esquire (Lib.) .. .. .	Denison
Neilson, The Hon. William Arthur (A.L.P.) .. .. .	Franklin
Pearsall, Thomas Gordon, Esquire (Lib.) (c) .. .. .	Franklin
Reece, The Hon. Eric Elliott (A.L.P.) .. .. .	Braddon
Steer, John Leslie, Esquire (Lib.) .. .. .	Bass
Strutt, Horace William, Esquire, D.S.O., E.D. (Lib.) .. .. .	Denison
Townley, Reginald Colin, Esquire (Lib.) (d) .. .. .	Denison
Ward, The Hon. Sidney Victor (A.L.P.) .. .. .	Braddon
Young, Aretas William Overton, Esquire (Lib.) .. .. .	Franklin

(a) Leader of the Opposition.

(b) Resigned from Liberal Party and formed Australian Centre Party, October 1966.

(c) Resigned and replaced by Iles, Eric Clifton, Esq. (Lib.), on 27 October 1966.

(d) Resigned and replaced by Brown, George Deas, Esq. (Lib.), on 12 July 1965.

## Parliamentary Elections

*Legislative Council*

There are no general elections for the Legislative Council, three members retiring each year except in the years 1953, 1959, 1965, etc., when four members retire. At 30 April 1967, there were 158,435 electors enrolled; of these, 68,135 were qualified as owners of property, 31,811 as occupiers of property and 58,489 qualified on other grounds; 77,608 were males and 80,827 females. In the last six years, votes cast at the annual elections have varied from 71.5 to 91.8 per cent of enrolled electors in individual electorates. At 31 December 1966, the electorate with the greatest enrolment was Pembroke (16,492) and with the smallest, Launceston (2,957).

*House of Assembly*

The last general election for the House of Assembly was held on 2 May 1964. The following table shows the voting in general elections held for the House of Assembly since 1931:

Assembly Elections Since 1931

Year of Election	Electors on Roll	Votes Recorded		Informal Votes	
		Number	As Percentage of Enrolled Electors	Number	Percentage of Total Votes
1931 .. ..	118,730	112,779	95.0	3,885	3.45
1934 .. ..	127,681	120,622	94.5	3,855	3.19
1937 .. ..	132,001	124,460	94.3	2,997	2.41
1941 .. ..	139,234	127,034	91.2	6,344	4.99
1946 .. ..	157,756	143,674	91.1	14,484	10.08
1948 .. ..	161,088	148,588	92.2	5,866	3.95
1950 .. ..	161,650	152,785	94.5	6,841	4.48
1955 .. ..	173,165	162,637	93.9	6,158	3.79
1956 .. ..	174,632	166,293	95.2	6,968	4.19
1959 .. ..	180,344	170,559	94.6	9,816	5.76
1964 .. ..	193,364	184,571	95.5	7,980	4.32

Electors on the joint rolls (for State House of Assembly, Federal House of Representatives and Senate elections) at 30 June 1966 numbered 196,122 distributed thus: Bass, 39,381; Braddon, 39,083; Denison, 34,925; Franklin, 46,648; Wilmot, 36,085. In the May 1967 Federal referendum, 189,245 Tasmanians voted.

The percentage of informal votes in the previous table is not particularly high, even though the voting papers for six or seven-member electorates are necessarily more complicated than those for single-member electorates. In Senate elections held in Tasmania, informal votes are seldom less than 10 per cent of votes cast and, in the 1934 election, exceeded 16 per cent. The Senate voting papers are comparable in complexity with those used for House of Assembly elections and the distinguishing factor seems to be the number of preferences needed for a valid vote. In Assembly elections, only three preferences are compulsory whereas in Senate elections, the voter must indicate as many preferences as there are candidates.

**Effectiveness of Hare-Clark System**

Since voting for the House of Assembly requires a voter to make at least three choices in order of preference, any complete investigation of the effectiveness of the system requires a study of all preference votes. However, an approximate measure of effectiveness can be obtained by treating the State as a single electorate and finding the total first-preference votes obtained by each party; from these totals it is possible to calculate, by simple proportion, the theoretical share of seats to which each party is entitled. In the table that follows, this measure of effectiveness has been calculated for all House of Assembly elections in the period 1931-1964 inclusive. It will be seen that the relationship between seats actually won and the calculated proportionate share is fairly close in most years for the major parties. In 1955 and 1956, however, the allocation of preferences from non-elected candidates outside the two main parties must be taken into account. Similarly, in 1959 and 1964, the increase in the size of the House brought about by seven-member electorates appears to give the two major parties a slight surplus of seats over and above the

calculated proportionate share, the major influence again being the allocation of preferences from candidates outside the two major parties. (At the 1964 elections, the contending parties were Communist Party, Country Party, Democratic Labor Party, Labor Party and Liberal Party, whilst a number of candidates stood as independents.)

Representation of Parties for the Whole State, 1931-1964  
House of Assembly

Election Year	Labor		Liberal or Nationalist (b)		Other (c)	
	Proportionate Share (a)	Seats Won	Proportionate Share (a)	Seats Won	Proportionate Share (a)	Seats Won
1931 .. ..	10.47	10	16.92	19	2.61	1
1934 .. ..	13.74	14	14.01	13	2.25	3
1937 .. ..	17.61	18	11.64	12	0.75	..
1941 .. ..	18.78	20	10.98	10	0.24	..
1946 .. ..	15.29	16	10.27	12	4.44	2
1948 .. ..	14.82	15	11.35	12	3.83	3
1950 .. ..	14.59	15	14.27	14	1.14	1
1955 .. ..	15.79	15	13.60	15	0.61	..
1956 .. ..	15.08	15	13.08	15	1.84	..
1959 (d) ..	15.58	17	14.37	16	5.05	2
1964 (d) ..	17.97	19	13.47	16	3.56	..

(a) State treated as single electorate and proportionate share of seats calculated on basis of first preference votes cast for parties.

(b) Liberal as from 1948 election.

(c) Independents and minority parties.

(d) 35 members elected.

### Allocation of Preferences—Hare-Clark and Senate Systems Compared

The Senate elections of 1964 called attention to a major difference in the method of distributing preference votes, the Senate and Hare-Clark methods diverging at this point, although both making initial use of the Droop quota.

In the comparison that follows, it is assumed that only one candidate, on the first count, has secured a surplus above the quota (a comparison can be made without using this assumption but it necessarily becomes more complicated).

#### Second Preferences

Under Hare-Clark, the successful candidate's voting papers are examined to determine which continuing candidates have secured the second preferences. These second preferences are then adjusted by multiplying them by a fraction called the transfer value, i.e.  $\frac{\text{(Surplus above Quota)}}{\text{(Total First Preferences)}}$ ; the second preferences, adjusted for value in this way, are now credited to the preferred candidates.

Under the Senate system, the successful candidate's voting papers are also examined to determine which candidates have secured the second preferences; the number of second preferences to be credited to preferred candidates will be the same as the number of first preference votes in the successful candidate's surplus. At this point, the successful candidate's total papers are *physically* reduced to accord with this number.



*Example*

For the purpose of illustration and simplicity, assume that Candidate A with 50,000 first preference votes is the only candidate to exceed the quota of 30,000 on the first count.

Then, under Hare-Clark, these 50,000 papers are divided among the continuing candidates according to the second preferences shown; however, the 50,000 second preferences are attributed to candidates at fractional value  $\left(\frac{20,000}{50,000} \text{ or } \frac{2}{5}\right)$ .

In effect, the continuing candidates receive, in total, a further 20,000 votes. At this stage, all 50,000 papers are still available for examination of third or subsequent preferences.

Under the Senate system, the 50,000 papers are also divided among the continuing candidates according to second preferences shown; however, only 20,000 of the second preferences are actually to be taken into account, so each candidate's bundle of preferences is *physically* reduced by the ratio 2:5, the papers to be retained being chosen by random selection and the discarded papers being set aside as finally dealt with. At this stage, then, only 20,000 of the papers are available for examination of third or subsequent preferences.

*Third Preferences*

Physical reduction of the successful Senate candidate's total papers means that a proportion has to be discarded and the question naturally arises, which papers to retain and which papers to discard. The Senate method of physical reduction involves random selection of the papers to be retained. Even at this point, the Hare-Clark and Senate systems have not really diverged since the effect of the distribution of second preferences is the same (Hare-Clark second preferences are subject to a *mathematical* value reduction, the Senate second preferences to a *physical* reduction). Past this point, the divergence between the two systems becomes apparent for, in regard to the Senate method, the following questions arise: Are the third and subsequent preferences on the retained papers an accurate sample of those in the total papers (i.e. retained and discarded combined)? Alternatively, if a second random selection were made, would the third and subsequent preferences in the second selection accord closely with those in the original?

Court actions initiated by Tasmanian and Victorian candidates following the 1964 Senate elections revolved round these questions. A complete re-count in Victoria, involving new random selections, did not alter the result announced after the original count. The Commonwealth Government, in 1965, made available a research grant to the University of Tasmania for an investigation of the Senate voting system, and reports on this and other aspects of Federal elections have been submitted to the appropriate Minister.

**Salaries of Members of Parliament***Committees of Enquiry*

In determining the level of parliamentary salaries in State and Commonwealth legislatures, it has been fairly general practice in the last decade to establish committees of enquiry, the members of which are drawn from outside parliament. The committees of enquiry are required to make recommendations but their findings are treated by the parliaments as being merely a guide, and the legislation fixing new salaries and allowances has not necessarily followed the committees' recommendations in detail.

*Parliamentary Salaries Tribunal*

In 1962, the Tasmanian Parliament established a new principle by passing an Act for the setting up of a parliamentary salaries tribunal; this was to be a committee with members drawn from outside the Parliament but its findings, instead of being recommendations, were to be determinations binding on the Crown. Under Section 7 of the 1962 Act, "a determination is binding upon the Crown" and "where no date is specified in a determination as the date on which the determination is to come into force, the determination comes into force on the date on which it is made". In effect, the Tasmanian Parliament has adopted the principle of wage and salary fixation by independent tribunal and placed its members in the same position as the great majority of workers whose remuneration is fixed by determinations of industrial courts.

The Parliamentary Salaries Tribunal heard evidence after the elections on 2 May 1964, and made a determination to come into effect as from 1 October 1964. It made its second determination in 1967.

**Determinations of the Parliamentary Salaries Tribunal, 1964 and 1967**

Particulars	Rate Per Annum from 19.4.1962 (\$)	Rate Per Annum from 1.10.1964 (\$)	Rate Per Annum from 1.10.1967 (\$)
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**BASIC SALARY OF MEMBERS**

Member, Legislative Council ..	3,700	4,600	6,000
Member, House of Assembly ..	3,700	4,600	6,000

**SPECIAL RATES (GROSS) (a)**

Cabinet—			
Premier .. .. .	(b) 8,100	(b) 10,000	(b) 13,300
Deputy-Premier .. .. .	6,500	8,200	11,300
"Senior" Ministers .. .. .	6,100	7,600	} 10,200
"Junior" Ministers .. .. .	5,300	7,600	
Legislative Council—			
President .. .. .	5,000	6,200	8,060
Chairman of Committees .. .. .	4,400	5,400	7,300
Government Leader .. .. .	5,900	7,000	9,100
Deputy Leader .. .. .	4,350	5,250	6,800
House of Assembly—			
Speaker .. .. .	5,000	6,200	8,060
Leader of Opposition .. .. .	(c) 5,900	(c) 7,400	(c) 9,950
Deputy Leader .. .. .	4,400	5,400	7,020
Chairman of Committees .. .. .	4,400	5,400	7,300

(a) All rates include the basic salary received by the office-holder as a member.

(b) Excludes entertainment allowance of \$700 (1962 and 1964) and \$900 (1967).

(c) Excludes travelling allowance of \$400 (1962); \$500 (1964); and \$650 (1967).

One effect of the 1964 determination was to remove the salary distinction between "senior" Ministers and "junior" Ministers; the tribunal found that the distinction rested solely on historical grounds. In 1967, provision was made to pay Ministers \$18 a week residential allowance if unable to return home each day.

The Tribunal also reviewed electorate allowances and arranged Legislative Council electorates into five groups, members from each group receiving the same allowance. It changed these relativities in 1967.

**Electorate Allowances: Parliamentary Salaries Tribunal, 1964 and 1967**

Electorate	Rate Per Annum from 19.4.1962	Rate Per Annum from 1.10.1964	Rate Per Annum from 1.10.1967(a)
	\$	\$	\$
Legislative Council—			
(i) Buckingham .. ..	570	600	700
Hobart .. ..	550		600
Newdegate .. ..	550		600
Queenborough .. ..	500		600
(ii) Cornwall .. ..	770	750	600
Launceston .. ..	770		600
Westmorland .. ..	770		800
(iii) Derwent .. ..	920	900	1,100
Huon .. ..	880		1,000
Mersey .. ..	880		900
Tamar .. ..	1000		1,000
West Devon .. ..	770		900
(iv) Gordon .. ..	1000	1000	1,000
Macquarie .. ..	1000		1,100
Monmouth .. ..	1050		1,000
Pembroke .. ..	920		1,400
(v) Meander .. ..	1150	1100	1,200
Russell .. ..	1100		1,400
South Esk .. ..	1100		1,400
House of Assembly—			
Denison .. ..	1100	1100	1,100
Franklin .. ..	1450	1450	1,650
Bass .. ..	1500	1500	1,700
Braddon .. ..	1700	1700	1,900
Wilmot .. ..	1750	1850	2,100

(a) Ministers and Leader of Opposition to receive 75 per cent only.

The previous salaries and allowances (dated from 19.4.62) were as suggested by a Board of Enquiry which reported in 1960.

The Tribunal in 1964 specified \$7.50 per day "when Parliament sits payable to a Member (other than a Minister) who incurs expense in securing overnight accommodation away from his ordinary place of residence". This was increased to \$10 in 1967. Also in 1967, home telephone rentals were to be paid for members.

## ACTS OF STATE PARLIAMENT

### Summary of Recent Acts

In the list that follows, the notation used is:

(A 1952)—An Act to amend an Act of the same title passed in 1952.

(R 1952)—An Act to repeal an Act of the same title passed in 1952.

(P 1952)—An Act to be incorporated and to be read as one with the Principal Act passed in 1952.

(RS 1952)—An Act to repeal an Act of the same title passed in 1952 and to substitute new legislation.



(Page 100)

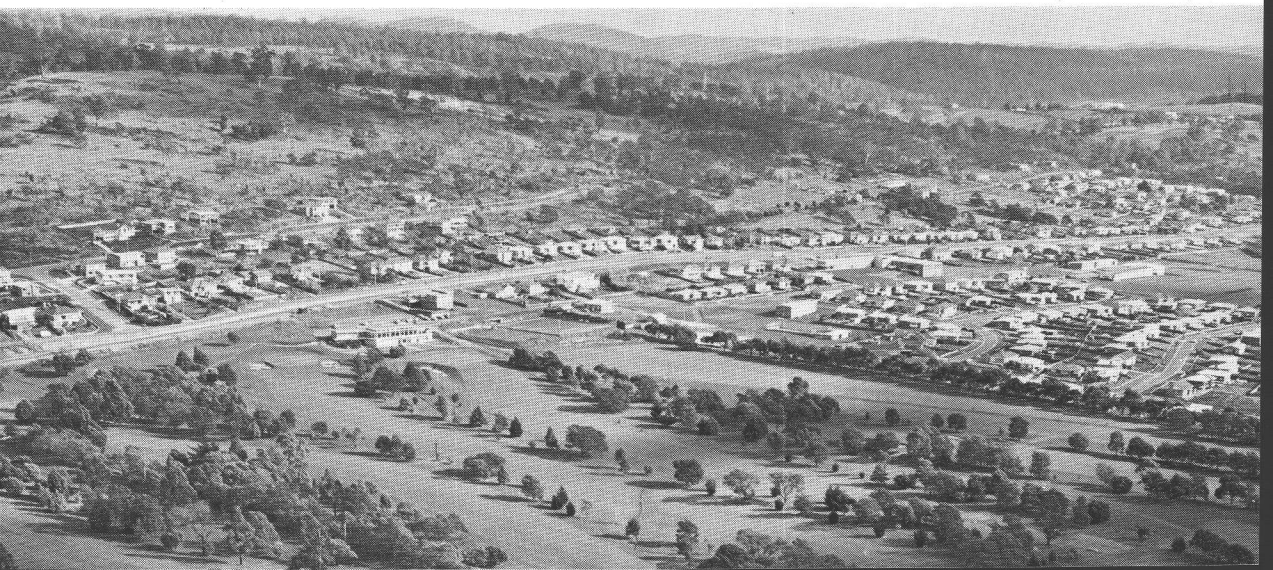
*The City of Launceston from across the Tamar*

(Dept of Film Production)

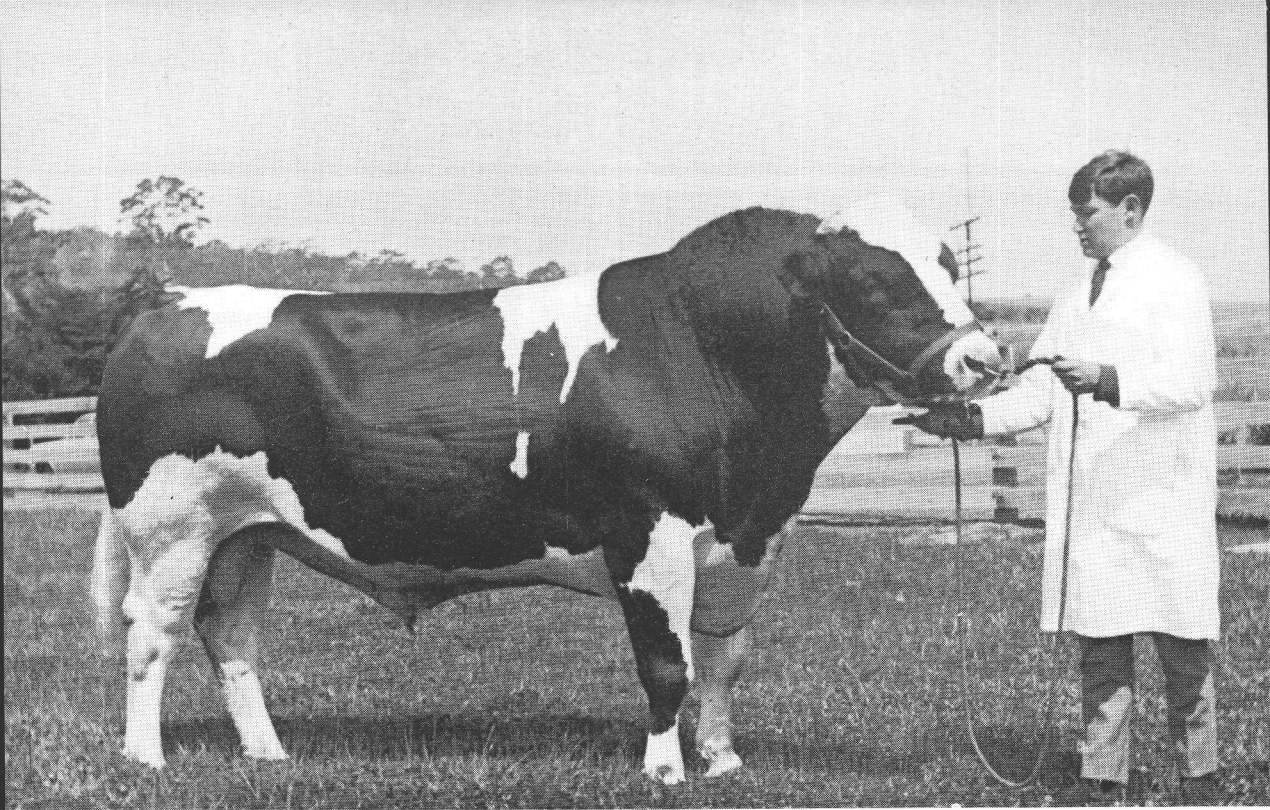
(Page 33)

*Riverside, a Launceston suburb in Beaconsfield Municipality*

(The Examiner)







(Page 207)

*Calthorpe Vronka Domino, a Friesian stud bull*

(The Artificial Breeding Board)

(Page 185)

*Feeding green peas into viners*

(The Examiner)

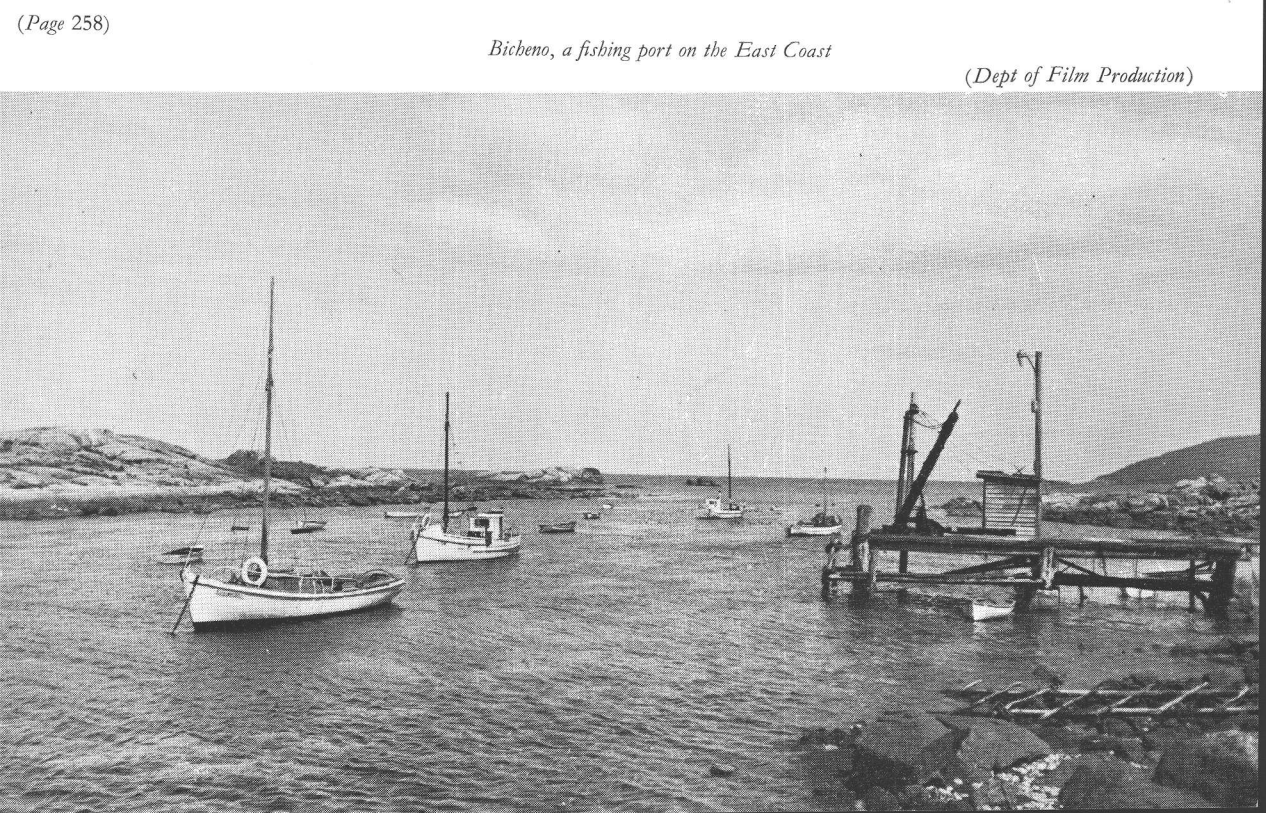




(Page 254)

*Shucking abalone—this must now be done ashore*

(Fisheries Division)

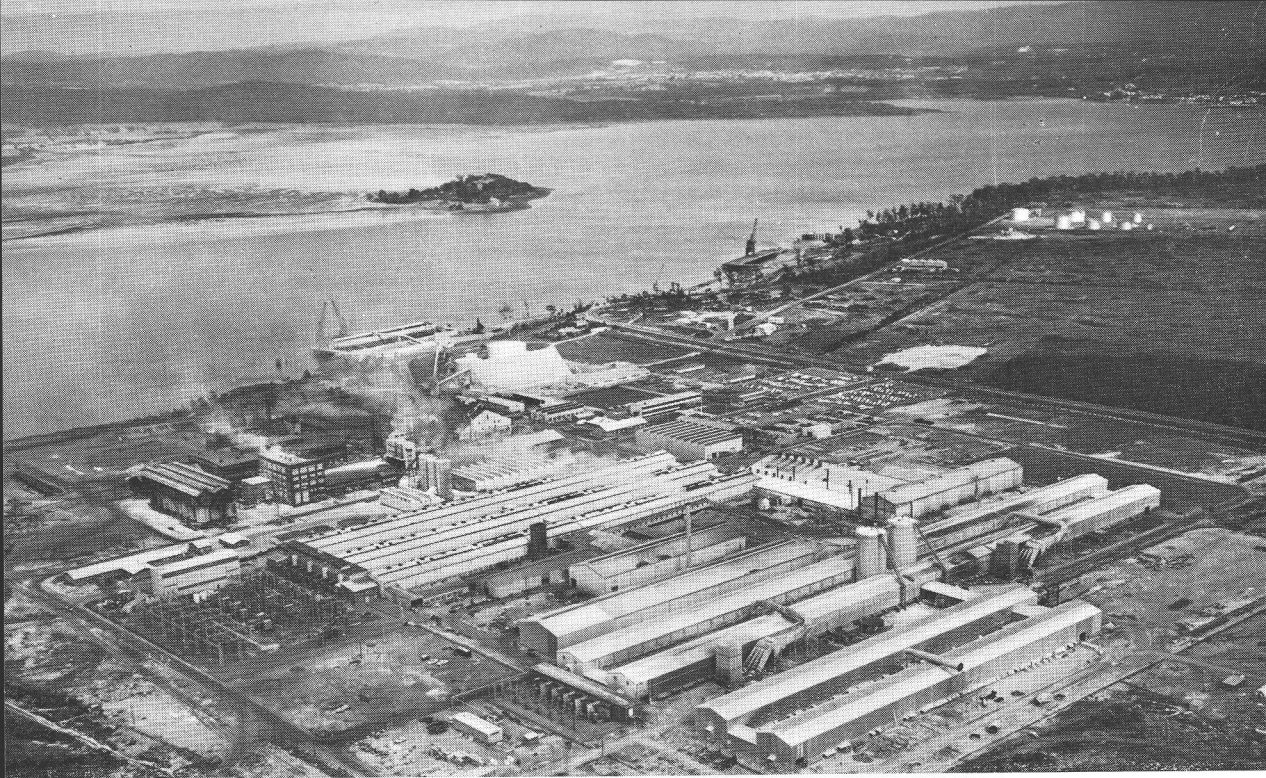


(Page 258)

*Bicheno, a fishing port on the East Coast*

(Dept of Film Production)





(Page 264)

*Comalco Aluminium Ltd at Bell Bay*

*(The Examiner)*

(Page 311)

*Patons and Baldwins (Aust.) Ltd's woollen mills at Launceston*

*(Dept of Film Production)*



The Acts are listed in chronological order; the full short title can be deduced from the summary, e.g. "1965, 4 Inflammable Liquids (A 1929)" becomes "*Inflammable Liquids Act*, No. 4 of 1965" and indicates that the *Inflammable Liquids Act* 1929 is the Principal Act. Where possible, a short indication is given of the main subject matter but the phrase "miscellaneous provisions" is used where condensation is not practicable.

## State Acts, 1965

Number	Short Title and Summary
1	Supply 1965-66—Consolidated Revenue.
2	State Employees (Long Service Leave) (A 1950)—miscellaneous provisions.
3	Long Service Leave (A 1956)—payment in lieu and how and when taken.
4	Inflammable Liquids (A 1929)—interpretation and licensing of premises.
5	Tasmanian Auxiliary Nursing Service (A 1949)—qualifications for registration.
6	Registration of Deeds (A 1935)—fees.
7	Trustee (A 1898)—authorised investments.
8	Metropolitan Water (A 1961)—miscellaneous provisions.
9	Evidence (A 1910)—power to send for witnesses and documents; admissibility; judicial proceedings.
10	Hospitals (A 1918)—hospital boards.
11	Racing and Gaming (A 1952)—totalisator licences.
12	Community Centre Loans (A 1959)—borrowing powers of municipalities and application of borrowed moneys.
13	Abandoned Lands—reversion and revesting of these lands.
14	Factories, Shops and Offices (R 1958)—consolidation.
15	Stamp Duties (A 1931)—duty on H.P. agreements and offences.
16	Workers' (Occupational Diseases) Relief Fund (A 1954)—miscellaneous provisions.
17	Emu Bay Railway (Private)—relief of obligation to keep railway open.
18	Petroleum Products Subsidy—subsidisation of distribution in country areas.
19	Justices (A 1959)—clerks of petty sessions; summary trial; fees; rules of committal and procedure.
20	Local Government (A 1962)—miscellaneous provisions.
21	Launceston Corporation (A 1963)—miscellaneous provisions.
22	Milk (A 1947)—Milk Board elections.
23	Sunday Observance (A 1908)—exemption of some shops, works of mercy or charity.
24	Racing and Gaming (No. 2) (A 1952)—stamp duty on betting tickets.
25	Housing Agreement (A 1961)—powers of Treasurer in carrying out agreement.
26	Judges' Salaries (A 1920)—increased salaries.
27	Traffic (A 1925)—miscellaneous provisions.
28	Appropriation 1965-66—Consolidated Revenue.
29	Loan Fund Appropriation 1965-66—authorisation.
30	Land Tax (P 1910)—rates 1965-66.
31	Supplementary Appropriation 1964-65—Consolidated Revenue.
32	School Dental Nursing Service—establishment.
33	Criminal Code (A 1924)—aircraft crimes.
34	Legal Practitioners (A 1959)—articles and admission qualifications.
35	Local Courts (A 1896)—miscellaneous provisions.
36	Supreme Court Civil Procedure (A 1932)—costs and transfer of actions.
37	Conveyancing and Law of Property (A 1884)—miscellaneous provisions.
38	Highways (A 1951)—power to dispose of surplus land.
39	Sewers and Drains (A 1954)—interpretation, offences and regulations.
40	Superannuation (A 1938)—contributions and pensions.
41	Fisheries (A 1959)—regulations and prohibitions.
42	Licensing (Fees) (A 1932)—fees paid for licences and incidental provisions.
43	Public Service (A 1923)—miscellaneous provisions.
44	Supreme Court (A 1959)—functions of registrar.
45	Fire Brigades (A 1945)—regulations.
46	Crown Lands (Miscellaneous Provisions) (A 1935)—vesting and disposal of lands.
47	Archives (RS 1943)—consolidation.
48	Dairy Produce (A 1932)—miscellaneous provisions.
49	Emmerton Bequest—accommodation of aged persons at Smithton.



**State Acts, 1965—continued**

Number	Short Title and Summary
50	Stamp Duties (No. 2) (A 1931)—duty on life policies, or transfer of securities, and other.
51	Limitation of Actions (A 1836 and 1875)—limitation of time for claims in personal injuries.
52	Fatal Accidents (A 1934)—action to be commenced within a year.
53	Police Offences (A 1935)—resistance and obstruction of public officers.
54	Public Officers Protection (Repeal) (R 1934, 1963).
55	Decimal Currency—transition provisions.
56	Iron Ore (Savage River) Agreement—establishment of industry.
57	Crown Lands (A 1935)—surrenders to the Crown.
58	Stamp Duties (No. 3) (A 1931)—special provisions.
59	Plumbers' Registration (A 1951)—registration provisions.
60	State Advances (A 1935)—miscellaneous provisions.
61	Married Women's Property (A 1935)—equity of husband and wife.
62	Police Offences (No. 2) (A 1935)—miscellaneous provisions.
63	West Coast Pioneers' Memorial Museum (P Tasmanian Museum Act 1950)—establishing of museum.
64	Local Government (No. 2) (A 1962)—miscellaneous provisions.
65	Railway Management (A 1935)—responsibility outside railway limits.
66	Pharmacy (A 1908)—miscellaneous provisions.
67	Industrial Development (A 1954)—departmental provisions.
68	Deceased Persons' Estates Duties (A 1931)—relation to gift duty.
69	Land Valuation (A 1950)—new valuations and basis of taxes.

**State Acts, 1966**

Number	Short Title and Summary
1	Libraries (A 1943)—constitution of the Board.
2	Tasmanian Orchestra (A 1951)—State contributions.
3	Nurses' Registration (A 1952)—the Registration Board.
4	Dentists (A 1919)—qualifications for registration.
5	Waterworks Clauses (A 1952 and 1963)—water for ships, mains for fire-fighting.
6	Supply 1966-67—Consolidated Revenue.
7	Long Service Leave (Casual Wharf Clerks)—provision for wharf clerks.
8	Plant Diseases (A 1930)—miscellaneous provisions.
9	Workers' Compensation (A 1927)—miscellaneous provisions.
10	Education (A 1932)—the Schools Board, the Schools Board Certificate.
11	Long Service Leave (A 1956)—entitlement provisions.
12	Notification of Births (R 1910)—obligation to notify.
13	St Vincent's Hospital Loan Guarantee—Treasurer's guarantee of repayment of loans.
14	Circular Head Marine Board Loan (A 1950)—power to borrow.
15	Radioactive Substances (A 1954)—licences and permits.
16	Wages Boards (A 1920)—powers, functions, determinations.
17	Factories, Shops, and Offices (A 1965)—news-vendors, butchers' shops, small shops, miscellaneous provisions.
18	Florentine Valley Paper Industry (A 1935)—miscellaneous provisions.
19	Artificial Breeding (A 1964)—working capital.
20	Hydro-Electric Commission (A 1944)—audit of accounts, way-leave contracts and easements.
21	Cleveland Tin Loan Guarantee—Treasurer's guarantee of repayment of loans.
22	Crown Lands (Miscellaneous Provisions) (P Crown Lands Act 1935)—dealings of Crown with a named company and individuals.
23	Fire Brigades (A 1945)—variation of fire district boundaries.
24	Criminal Code (A the Criminal Code)—disqualification of convicted motor drivers.
25	Evidence (A 1910)—evidence of breath tests in certain cases.
26	Traffic (A 1925)—amendments associated with Acts 24 and 25, miscellaneous provisions.
27	Housing Agreement (A 1935)—the 1956-66 Agreement with the Commonwealth, miscellaneous provisions.
28	Companies (A 1962)—extensive amendment.

*State Acts, 1966—continued*

Number	Short Title and Summary
29	Associations Incorporation (A 1964)—accounts, audit.
30	Education (No. 2) (A 1932)—miscellaneous provisions.
31	Loan Fund Appropriation 1966-67.
32	Appropriation Act 1966-67—Consolidated Revenue.
33	Supplementary Appropriation 1965-1966—Consolidated Revenue.
34	Land Tax (P 1910)—rates of land tax for 1966-1967.
35	Public Health (A 1962)—extensive miscellaneous provisions.
36	Medical (A 1959)—registration of medical practitioners.
37	Fruit Board (A 1934)—miscellaneous provisions.
38	Justices (A 1959)—disqualification of convicted motor drivers.
39	Friendly Societies (A 1888)—rules.
40	Long Service Leave (No. 2) (A 1963)—effect of Section 3 of the Act.
41	Allport Library and Museum of Fine Arts Agreement—power to implement.
42	Public Service (A 1923)—appointment of Commissioner.
43	Audit (A 1918)—salary of Auditor General.
44	Superannuation (A 1938)—State contributions, amount of pension.
45	Education (No. 3) (A 1932)—powers of the Minister, regulations.
46	Registration of Births and Deaths (A 1895)—certificate of perinatal death, miscellaneous provisions.
47	Conveyancing Law and Property (A 1884)—miscellaneous provisions.
48	Local Government (Registered Titles) (A 1962)—miscellaneous provisions.
49	Inspection of Machinery (A 1960)—miscellaneous provisions.
50	Jury (A 1899 and Local Courts Act 1896)—jury service.
51	Motor Vehicles Tax (A 1917)—schedule.
52	Housing Loans (Powers of Trustees)—powers in relation to housing loans.
53	Traffic (No. 2) (A 1925)—appeals.
54	Grain Reserve (A 1950)—conditions relating to staff.
55	Mining (A 1929)—miscellaneous provisions, application of Principal Act to lands at Boobyalla.
56	Long Service Leave (Casual Wharf Clerks) (No. 2) (A 1966)—meaning of "ordinary pay", payment in lieu of long service leave on death.
57	Crown Lands (Miscellaneous Provisions) (No. 2)—dealing of Crown with certain individuals and bodies.
58	Agent General (A 1911)—salary of Agent General.
59	Underground Water—the protection of underground water.
60	Public Service (Equal Pay)—equal pay for male and female employees in defined circumstances.
61	Real Property (A 1862 and 1886)—miscellaneous provisions.
62	Commonwealth Powers (Trade Practices)—reference of certain matters to the Parliament of the Commonwealth.
63	Elderly Citizens' Clubs and Youth Centres—financial assistance.
64	King Island Community Hotel—power to establish and carry on a hotel.
65	Beltana Recreation Reserve—extinguishment of user rights to allow erection of library.
66	Marine (No. 2) (A 1921)—miscellaneous provisions.
67	Marine (A 1921)—miscellaneous provisions.
68	Local Government (Municipal Commission) (A 1962)—miscellaneous provisions.
69	Workers' Compensation (No. 2) (A 1966)—minor amendment.
70	Cecilia Button Medical Centre Agreement—power to implement.
71	Hydro-Electric Commission (Lower Derwent Power Development and Miena Dam) (A Loan [H.E.C.] Act 1961 and H.E.C. [Miena Dam] Act 1964)—lower Derwent power schemes.
72	Crown Lands (Miscellaneous Provisions) (No. 3)—land sale at Coningham to club.

## ADMINISTRATION

### State Departments and Authorities

The system of responsible government requires that the executive power of the State shall be exercised by the Cabinet; in exercising this power, the Ministers of the Cabinet are held responsible for the actions and administration of government departments and other governmental bodies which have been

created for three basic purposes: (i) to put into practice the laws made by Parliament; (ii) to give effect to decisions of the Ministry; and, (iii) to advise the Ministry on matters of policy.

A distinction is sometimes drawn between government departments and semi-government authorities, the chief criteria being: (i) whether the staff is recruited under the *Public Service Act*; (ii) the degree of Ministerial control (iii) whether the authority functions as a business enterprise; (iv) whether the authority has been established as a statutory corporation; (v) the degree to which the authority is dependent on the Treasury for funds. Applying these criteria to the Tasmanian situation, it is easy to immediately identify examples of "pure" departments and "pure" semi-government authorities but there are a number of doubtful cases where the authority does not completely fit into either category. In this chapter, therefore, no attempt will be made to classify the principal government authorities as departments or otherwise but, in descriptions that follow, mention will be made of these criteria where relevant. Departments and authorities are arranged to show the Minister accepting responsibility following the elections held on 2 May 1964; the allocation of responsibility, however, is subject to change and the Cabinet has the power to vary it at any time.

### **Premier, Treasurer and Minister for Mines**

#### *Premier's and Chief Secretary's Department*

The functions of this department are combined under the control of one permanent head—the Under Secretary. The activities of the department are difficult to classify, covering as they do a very wide range, but the principal matters of concern are: constitutional matters; cabinet secretariat; inter-departmental co-ordination of Government activities; Executive Council; tables of precedence; honours; premiers' conferences; civil defence; royal commissions; Government ceremony and hospitality; overseas publicity; maintenance of Government house and staffing; security of public buildings; messenger service; ministerial transport; matters related to interstate shipping; film censorship; cinema registration; fire brigades; public cemeteries; bank holidays; museum and botanical gardens; miners' pensions; coal-mining, and long-service leave.

In addition, the department serves as ministerial office for other departments administered by the Premier and the Chief Secretary and as a channel of communication with the Commonwealth Relations Office (through the Governor), with the Prime Minister of the Commonwealth, with Premiers of other Australian States and with the Tasmanian Agent General in London.

#### *The Hydro-Electric Commission*

The Commission is responsible for the generation and distribution of electric power throughout the island; it is also continuously engaged in construction work aimed at increasing the capacity of the system. The work of the Commission is extensively described in Chapter 8, "Secondary Industry—Manufacturing".

#### *Treasury Department*

The Treasury, as the central financial authority of the State, is responsible for maintaining the control of Parliament over the public expenditure and for promoting financial order throughout the Public Service.

In the accounting sphere, it acts as the accounting centre for Government departments and authorities, paying accounts due by the Government, or providing funds for departments for this purpose, and receiving either direc

from the public or from departments, all moneys due to the Government. It finally records all financial transactions although detailed accounts are kept by each department. It also advises on the accounting procedures to be adopted by departments and controls the Government's bank accounts.

It is responsible for advising the Government on financial matters generally and, in particular, on matters relating to Commonwealth/State financial relations, including the operations of the Commonwealth Grants Commission, and the Australian Loan Council. Through the State Finance Committee, which consists of treasury officers, it also prepares the case for presentation to the Commonwealth Grants Commission for a special grant in accordance with Section 96 of the Commonwealth Constitution.

Other important functions of the Treasury are to prepare or examine legislation affecting the finances or financial procedures of the Government; to advise the Government on the sources of funds required to enable its financial policy to be carried out; to prepare financial estimates, budgets and statements for the information of the Government and Parliament and to carry out economic and financial investigations; to control the borrowings of all local and semi-government authorities throughout the State.

Through its various branches, the Treasury collects all State taxes; controls the State Superannuation Fund; values all properties throughout the State for taxation and local authority rating purposes and values specific properties for other Government purposes.

#### *Supply and Tender Department*

This department is a purchasing organisation obtaining supplies, equipment and medical requirements for Government departments and organisations associated in some way or other with Government expenditure.

#### *Government Printing Office*

The main function of the department is to ensure adequate supplies of stationery, books, etc. to the various Government departments and authorities; to print and publish Parliamentary Papers, Bills, Acts, etc. and to supply technical publications, stationery and forms to branches of Commonwealth departments throughout Australia. In some respects, the department is analogous in function to a printing and publishing business in the private sector of the economy since its revenue is largely derived from charges for the work it does.

#### *Department of Mines*

The functions of the department are summarised under its four constituent sections: (i) Geological Survey—main activities include regional mapping, examination of mines, investigation of underground water supplies, testing of foundations and the preparation of geological maps and technical publications. (ii) Mines and Explosives—main activities are inspectorial with regard to the *Mines and Works Act* (safety and health of mining, quarrying and metallurgical workers), the *Explosives Act* (importation, storage and transport of explosives) and the *Inflammable Liquids Act*. The section's mining engineers also operate diamond drilling and boring plants. (iii) Chemical and Metallurgical—main activities are analyses of mineral samples, water and other inorganic materials, research into maximising recovery from metallic and non-metallic minerals and investigation of possibilities of commercial exploitation through new treatment processes. (iv) Administration—main activities are administration of legislation dealing with the holding of land for mining and the granting of financial assistance to the mining industry.

### Attorney General

#### *Attorney General's Department*

Much of the work of the department stems from the responsibilities attached to the Attorney General as Minister responsible for justice. The department has a variety of functions which include: the administration of the courts; the appointment of justices of the peace and coroners; the operation of an extensive probation system and the rehabilitation of ex-prisoners; forming and reviewing proposals for legislation; action as required under various Acts of Parliament, including the *Justices Act*, *Coroners Act*, *Local Courts Act*, the *Rules Publication Act*, the *Maintenance Act*, the *Jury Act*, the *Auctioneers and Estate Agents Act* and the *Objectionable Publications Act*. In so far as the Attorney General is responsible for a number of other departments, this department exercises oversight in a general sense, particularly where policy is concerned.

The Directorate of Industrial Development and Trade is attached to the Attorney General's Department and assists in administering the *Industrial Development Act* 1954.

#### *Solicitor-General's Department*

The Solicitor General advises the Governor, Ministers and Government departments and authorities on all legal matters affecting them. He initiates criminal prosecutions in the Supreme Court and various other summary prosecutions in Courts of Petty Sessions; in civil litigation, the department's counsel represent the Crown. Other work of the department is concerned with giving legal advice, preparing legal documents and transferring land.

#### *Supreme Court and Sheriff's Department*

The department is under the control of the Master and Registrar of the Supreme Court and acts as the registry for all processes in the Supreme Court, whether civil, criminal or matrimonial and for appeals to the Full Court or the Court of Criminal Appeal. The Registrar is also District Registrar of the High Court of Australia. The function of the Sheriff is to enforce judgments.

The Registrar is also the authority for the registration of companies, bills of sale, firms and co-operative societies, applications for probate or letters of administration, friendly societies, trade unions and savings banks.

#### *Magistracy Department and Court of Requests*

This department is responsible for the administration of three separate courts of jurisdiction, namely: (i) Courts of Petty Sessions dealing with criminal offences, simple offences, breaches of duty and applications for certain types of licence; (ii) Courts of Requests dealing with civil proceedings when the amount involved does not exceed: (a) \$1,500 in respect of a claim for a debt or liquidated sum; (b) \$1,000 in any other case; (iii) the Licensing Court which issues licences for the retail and wholesale distribution of liquor.

#### *Lands Titles and Registry of Deeds Department*

Under the *Real Property Acts* and the *Registration of Deeds Act*, this department is responsible for registering and recording all kinds of dealings in land, including all privately-owned land in the State.

#### *Parliamentary Draftsman's Department*

The department concerns itself with the drafting of bills for submission to Parliament and the drafting of regulations under the authority of existing statutes.

*Public Trust Office*

Under the *Public Trust Office Act*, the Public Trustee is empowered to administer the estates of deceased persons, whether testate or intestate and to replace on request executors named in wills. The Public Trustee may also act under power of attorney and as custodian trustee or be appointed by Court order to manage the affairs of specific persons. All payments under the *Workers' Compensation Act* are made through the Public Trust Office. In some respects, the Public Trust Office is analogous in function to a private solicitor's office.

*Registrar General's Department*

The main function of the department is the central registration of births and deaths originally registered in 52 districts approximating to the 49 local government areas. (Council clerks usually serve as local registrars.) The department authorises and registers all celebrants of marriages and also acts as a central registry for marriages; a further function is the administration of the *Legitimation Act* and the recording of all adoptions.

*Prisons Department*

This department is charged with the administration of penal institutions, the principal two being the Risdon Gaol and the Kilderry Farm Gaol at Hayes.

**Minister for Education***Education Department*

This department is responsible for the administration and staffing of the State system of primary, secondary and technical education. This and other functions of the department are dealt with extensively in Chapter 9, "Social Conditions".

**Minister for Lands and Works***Department of Public Works*

The department is responsible for carrying out a large works programme which includes the construction and maintenance of an extensive highway system, the planning, design and construction of schools, hospitals and public buildings generally and other public works required by the Government.

*Department of Lands and Surveys*

This department is responsible for all Crown Lands which may be reduced by alienation; augmented by acquisition; leased or let under licence. The department's mapping section is responsible for production of State maps, the main source of data now being aerial photos. A sub-section maintains all mineral charts and prepares survey instructions for mineral surveys. The Scenery Preservation Board is attached to the department for administrative purposes.

*Rivers and Water Supply Commission*

This authority is responsible for regional water schemes (North Esk, West Tamar and Prosser River). These schemes are described in the last section of Chapter 4, "Local Government". It also acts as a channel for Government assistance for municipal water and sewerage schemes. The authority licenses the taking of water from rivers and lakes, is responsible for anti-pollution regulations and carries out river improvement work to reduce flooding and erosion.

*Metropolitan Water Board*

This authority is responsible for bulk supply of water to southern municipalities. Its schemes are described in the last section of Chapter 4, "Local Government."

*Department of Film Production*

This department produces films and material used for tourist promotion, teaching, public relations and newsreels.

**Chief Secretary***Audit Department*

The functions of the Audit Department are to ensure that expenditure is limited to the objects for which Parliament has appropriated funds, that statutory law affecting public finance has been observed, that public revenues have been collected and that departmental and other public accounting is accurate. The Auditor General is directly responsible to Parliament for audits of accounts of Government departments and authorities, city and municipal councils, marine boards, the Tasmanian University and a host of smaller accounts. He reports annually to both Houses of Parliament on the position of the accounts.

*Public Service Commissioner's Department*

Under the *Public Service Act*, the Commissioner is required to recruit and appoint staff, to arrange training and to be responsible for disciplinary supervision of all officers of the Public Service. The department is concerned with the efficiency of the Public Service as a whole and with the principles of management and staff economy in individual departments.

*Electoral Department*

This department is responsible for the enrolment of qualified electors for the Legislative Council and maintaining the rolls for the 19 Council divisions; it collaborates with the Commonwealth Electoral Department in the preparation of the rolls used for House of Assembly, Senate and House of Representatives elections. In addition to administering elections for the House of Assembly and the Legislative Council, the department conducts other elections, e.g. for members of wages boards and hospital boards and representatives of employees on the Public Service Tribunal.

*Department of Labour and Industry*

This department is responsible for the implementation and supervision of industrial legislation and for helping employers and employees solve problems of industrial relations, i.e. by arbitration and conciliation where workers under State awards are involved. The activities of the department are more extensively described in Chapter 10, "Labour, Prices and Wages".

*Public Service Tribunal Department*

The tribunal has the power to make principal awards determining the scales of salaries and working conditions of all employees in the Public Service, teaching service, police force, public hospitals, statutory authorities, and other State instrumentalities defined by the *Public Service Tribunal Act*. Further information is contained in Chapter 10, "Labour, Prices and Wages".

*Tasmanian Grain Elevators Board*

This authority operates bulk storages at Hobart, Launceston and Devonport to maintain adequate supplies of wheat for local needs.

*Social Welfare Department*

This department has two main concerns, namely child welfare and aid to persons in indigent circumstances—the main social services burden falls on the Commonwealth in the payment of pensions but the State, through this department, makes grants or supplementary allowances. The activities of the department are more extensively described in Chapter 9, "Social Conditions".

*The State Library*

This authority is concerned with making books, films and gramophone records available to people throughout the State. The State Library is situated in Hobart but it assists municipalities operate their own libraries by providing them with books and technical assistance; a mobile library service is maintained in the municipalities around Hobart. An important function is the keeping of the State Archives.

**Minister for Agriculture, Tourists and Immigration***Department of Agriculture*

The functions of this department are: (i) to provide advisory services to farmers and dairymen; (ii) to conduct research into plant diseases, pest control and stock diseases; (iii) to carry out inspections and testing in a number of fields related to primary production. A section, the Sea Fisheries Division, is concerned with regulating the State's sea fisheries by licensing and inspection.

The Department's functions are detailed in Chapter 6, "Primary Industry—Rural", and the Fisheries Division is dealt with in Chapter 7, "Primary Industry—Non-Rural".

*Agricultural Bank of Tasmania*

The Agricultural Bank is not a bank if the criterion is acceptance of deposits from the public (as with savings and trading banks); basically, the authority resembles a mortgage bank. The main sources of its finance are State loan funds and funds for special purposes made available by the Commonwealth Government.

The chief functions are: (i) To make advances to primary producers engaged in prescribed rural industries for the purchase of properties; the discharge of mortgages; the purchase of stock, plant and equipment; structural improvements; land development and other things necessary for the carrying on of the industries. Loans may also be made to persons engaged in the fishing industry and for other purposes such as the erection and equipment of timber mills and the processing and marketing of meat, milk and milk products. (ii) To make loans to home builders under the *Commonwealth-State Housing Agreement*. Loans may be made to eligible persons of up to 90 per cent of the valuation of the land and dwelling with a present maximum loan of \$8,000. The Bank also administers Commonwealth funds advanced to co-operative housing societies. (iii) To act as the Commonwealth's agent in the administration of war service settlements. The bank is responsible for the purchase and development of land suitable for settlement and for making advances to settlers under the scheme. (iv) To administer any relief legislation enacted by Parliament where primary producers have suffered loss due to abnormal circumstances such as floods, drought or fire.

*Tourist and Immigration Department*

The functions of this department are to publicise the tourist attractions of the State and to promote and facilitate tourist traffic. Offices are maintained



in other Australian States, and loans are arranged to improve and increase tourist facilities. The department assists selected British migrants to settle in the State.

### **Minister for Housing and Forests**

#### *Housing Department*

The functions of this department include the purchase of land, its development for housing purposes and the erection of houses, flats and estate shopping centres. The assets so created are then either sold to the public (principally by purchase contract involving repayment of equated instalments) or let at rental. Further information on State housing is contained in Chapter 9, "Social Conditions".

#### *Forestry Department*

The Forestry Department, administered by the Forestry Commission, has exclusive control and management of all State forests and timber reserves, and, with the concurrence of the Secretary for Lands, of all forest products on other Crown land. Its functions include the granting of forest permits and licences for the sale of timber, the granting of leases for the occupation of State forests, the collection of revenue, and the development and protection of native forests and of plantations of exotic softwoods.

Major activities at present being undertaken are the preparation of inventories of the State's timber resources and of estimates of future yields of sawlogs and pulpwood; the construction of major access roads for logging and of minor roads for protection; research into practical methods of regenerating eucalypt forests; the establishment, pruning and thinning of softwood plantations, and the preparation of forest-type maps based on aerial photo-interpretation. Further information on the department's activities is contained in Chapter 7, "Primary Industry—Non-Rural".

### **Minister for Transport and Police**

#### *The Transport Commission*

This authority operates as a business organisation administering State railway, road and ferry services; it is also the licensing and registration authority for motor drivers and motor vehicles. In addition, it is concerned with road safety and the promulgation of traffic rules.

#### *Metropolitan Transport Trust*

The function of this authority is the running of bus and trolley-bus services in Hobart and Launceston, and bus services in Burnie.

The operations of this authority and also of the Transport Commission are more extensively described in Chapter 12, "Trade, Transport and Communications".

#### *Police Department*

This department is responsible for the administration of the State police force which is more extensively described in Chapter 9, "Social Conditions".

### **Minister for Health**

#### *Department of Health Services*

The main divisions of the department are Public Health, Psychiatric Services and Tuberculosis. The State Health Laboratory, the Government Analyst and Chemist Laboratory are also part of the department. State health services are more extensively described in Chapter 9 "Social Conditions".

## Chapter 4

### LOCAL GOVERNMENT

#### GENERAL DESCRIPTION

##### Historical

The development of local government in Tasmania falls into three distinct phases:

##### *Hobart and Launceston*

Hobart Town was granted elected Commissioners in 1846; under an Act of 1852, both Hobart and Launceston were given elected Municipal Councils. In 1857 the City of Hobart was incorporated, followed by the Town of Launceston a year later; Launceston was proclaimed a city in 1888.

##### *Rest of State before 1906*

Prior to the passing of the *Local Government Act* 1906, there was a great variety of elected Boards, Trusts, etc. in Tasmania, each in control of a district for certain specified objects, but they were all abolished by that Act. The various Boards were as follows:

*Road Districts:* Under the *Roads Act* 1840, the control of the main Hobart-Launceston road was retained by the Government while that of other roads was placed under the management of District Commissioners elected by the inhabitants of the District. In 1847, these latter roads were placed under the control of the Court of Quarter Sessions, but in the following years several roads were exempted by special Acts and handed over to Trustees elected by householders. Under the *Cross and Bye Roads Act* 1851, the Governor could proclaim Road Districts under the control of Trustees elected by the landowners and householders of the District. In 1865 provision was made that where any roads were under the control of a Rural Municipality, such Municipality was deemed to be a Road District. Under the *Main Roads Act* 1880, certain scheduled roads were withdrawn from the control of Road Districts and handed over to the Government, other main roads being grouped into Main Road Districts under Boards; but where such main roads were within a Rural Municipality or Road District, these latter became the Main Road Districts. The cost of the main roads was defrayed by the Government. In 1907, the last year in which the Road Trusts operated, there were 105 in existence.

*Rural Municipalities:* Under the *Rural Municipalities Act* 1858, any Town or Electoral, Police or Road District could be proclaimed a Rural Municipality with a Council elected by the rate payers. In 1865, the whole of Tasmania (excluding Hobart, Launceston and Tasman Peninsula, then a gaol) was divided into 30 Municipal Districts; of these, 18 had already been constituted under the Act of 1858, and others could be proclaimed on petition. The Act of 1858 can be seen as an early attempt to obtain uniformity of local government organisation throughout the State but this purpose was not achieved, as the following figures show: accumulated number of Rural Municipalities

constituted in year in brackets—1 (1860); 5 (1861); 10 (1862); 14 (1863); 17 (1864); 18 (1865); 19 (1866). It is sufficient to record that in 1907, the last year of operation of Rural Municipalities, there were still only 19 in existence.

*Town Boards:* Under the *Town Boards Act* 1884, the Governor could constitute a Town, provided that it was not situated within the boundaries of a Rural Municipality. Trustees elected by the ratepayers exercised the provisions of the *Police Act* with regard to the health and improvement of Towns, and in 1885 every Town was declared to be a Road District. In 1907, the last year of operation of Town Boards, there were 23 in existence.

*Fruit Boards:* These could be constituted under the *Codlin Moth Act* 1887 by the Governor, with a Board elected by fruitgrowers; finance came from an acreage tax upon orchards.

*Rabbit Trusts:* The *Rabbit Destruction Act* 1871 authorised the Governor to proclaim Rabbit Districts, with Boards elected by landowners. These Trusts were abolished in 1882, and again constituted in 1887. In 1889 every Municipal District was declared to be a Rabbit District.

*Boards of Health:* Under the *Health Act* 1885, a Central Board of Health was constituted, and the Councils of Rural Municipalities and Town Boards became Local Boards of Health. Other Local Boards could be proclaimed where no Rural Municipality or Town Board existed.

*Boards of Works:* These were appointed by the Governor as Advisory Boards regarding the expenditure of the moneys set apart for the construction of roads and bridges under the *Waste Lands Act* 1863. In 1870 these moneys were handed over to the Trustees of Road Districts.

*Recreation Ground Trusts:* Under the *Public Recreation Grounds Act* 1888, such grounds were placed in the hands of Trustees elected by electors for the House of Assembly residing in a proclaimed Recreation Ground District.

*School Boards:* These were appointed by the Governor.

#### *Rest of State after 1906*

At present, local government functions throughout the State, the relevant bodies being the Hobart, Launceston and Glenorchy City Corporations and 46 municipalities. The genesis of this framework is found in the *Local Government Act* 1906 under which a commission was appointed to divide the State into not more than 60 districts and to subdivide each district into not less than three nor more than five wards, each ward including as nearly as practicable an equal ratable area. The Commissioners were empowered to adjust the boundaries of adjoining municipalities, provided that in so dividing the State any Town might be deemed to be included or excluded from such boundaries. The cities (at that time, Hobart and Launceston) were not to be included, and were exempt from the provisions of the Act.

The Commissioners, in terms of the Act, divided the State into 49 districts but the later absorption of the Municipalities of Queenborough and New Town into the City of Hobart reduced the number to 47; the granting of city status to Glenorchy in 1964 resulted in the present total of 46.

Prior to the passing of the Act in 1906, the State had been split up into districts of different kinds, each controlled for a specific purpose by a Board, Trust or Council. The effect of the Act was to abolish all the separate districts as well as the Rural Municipalities and Town Boards and to set up new authorities, uniformly constituted and exercising similar functions.

Since the Act of 1906, there has come into effect a large body of legislation affecting local government and there has been some widening of function. Accordingly a new consolidating Act, the *Local Government Act* 1962, was passed and is now in operation.

### City of Hobart

#### *Description*

The City of Hobart (42°54'S; 147°21'E) is the seat of the State Government and Capital of the State of Tasmania. Founded in 1804, Hobart is the second oldest capital city in Australia.

The population of the City of Hobart was 53,226 and of the Hobart Metropolitan Area 119,415 at the Census of 30 June 1966. Further detailed information on the population centred on Hobart is contained in Chapter 5, "Demography".

Hobart City, covering 19,728 acres, is built on the plains and foothills below Mt Wellington (4,166 feet) on the west, and with the River Derwent on the east. The city has a first rate deep sea port where, during World War II, ships of up to 50,600 tons berthed without assistance. The eight mile road to the summit of Mt Wellington passes through an enormous natural park which is the source of part of the city's water supply. Hobart has a mild climate, and its attractions include its mountain, picturesque harbour, broad four-lane-bridged river, early colonial architecture, the Queen's Domain and nearby beaches.

#### *Hobart City Council*

The present council consists of 12 aldermen, including the Lord Mayor and Deputy; elections are held every two years when six aldermen retire. The Lord Mayor and Deputy Lord Mayor are elected by the ratepayers at each biennial election. Candidates do not stand for wards, and all ratepayers can vote for the filling of vacancies. Elections were held in June 1962, 1964, 1966, etc.

#### *Historical Development*

Under the *Hobart Town Commissioner Act* 1846, the town was divided into five wards, each represented by three commissioners elected for two years. This first representative organisation was primarily concerned with lighting, draining and paving.

In 1852 a Municipal Council was formed with wider powers including waterworks, markets, public works and public transport. In 1857, the Hobart Town Council was vested with the control of its own police force, financed from fines and a special rate. This was the year of its incorporation as the City of Hobart Town.

The present Town Hall (completed in 1866) was built in the grounds of the first Government House which was replaced with the existing building on the Domain in 1858.

Hobart (called Hobart Town until 1881) lost control of its police force in 1899 when all police were placed under State administration.

Between 1907 and 1920 the Council absorbed the districts of Glebe Town, Mt Stuart, Wellington, Queenborough and New Town. There have been no changes in the number of aldermen since 1934, the year in which, by Royal Command, the status of Mayor was raised to Lord Mayor.

## City of Launceston

### *Description*

The 10.9 square mile city surrounds the source of the Tamar River where it is formed by the confluence of the North Esk and South Esk Rivers. The Tamar is navigable along its 42 miles to Bass Strait. There are interstate berths in the city but the deepwater berths are downstream at Bell Bay, Beauty Point and Inspection Head, all within seven miles of the entrance to the Tamar.

The population of the City of Launceston at the time of the Census of 30 June 1966 was 37,210. For statistical purposes Launceston is grouped with suburban portions of neighbouring municipalities to form "Urban Launceston", population 60,453. An extensive explanation of "Urban Launceston" and the statistical concept involved will be found in Chapter 5, "Demography".

The city is well endowed with parks and gardens. One of the best known is the First Basin Reserve through which the South Esk River flows in Cataract Gorge, providing a spectacle in flood-time. In common with Hobart, Launceston has many well preserved examples of colonial architecture.

Because of its position, Launceston is the focal point for the State's transport and communication networks. Launceston has been described as the "capital of the North", and has numerous retail, cultural, governmental and judicial associations with northern and north-eastern Tasmania.

### *Launceston City Council*

The council consists of nine aldermen including the mayor. The mayor is chosen each November by the aldermen. Elections are held each year when the three aldermen who have been in office for three years retire; they may stand for re-election if nominated. All property owners and occupiers, their spouses, and ex-servicemen residents are entitled to vote.

### *Historical Development*

First settled by Lieutenant-Colonel Paterson in 1806, the little settlement made slow progress in the first two decades.

The *Police Act* 1838 required the Surveyor General to set out the limits of the "Town, Port and Harbour", and make footpaths.

Provision was made in the *Hobart and Launceston Municipal Councils Act* 1852 for the formation of the first council consisting of seven aldermen. Elected in 1853, when the population was approximately 7,300, the aldermen were to remain in office for two years, and they were to elect a mayor from themselves. Aldermen, to be elected, had to own real estate worth at least \$1,000, or property having an annual ratable value of \$100. Ministers of religion, Customs officers, and persons with a financial interest in a contract with the council were not eligible. Once assessment rolls were prepared, only adult males, occupying a house with an annual value of at least \$20, who had paid their rates could vote. The council was to be responsible for streets, paving, lighting, waterworks, markets and local public transport licences. The council was to fix rates not exceeding five cents in the dollar, and could borrow an amount up to the average revenue from rates for two years.

Under the *Launceston Incorporation Act* 1858, the Town of Launceston was incorporated under the title of "the Mayor, Aldermen, and Burgesses of the Town of Launceston", and the boundaries were defined. Provision was made for an annual assessment of ratable value of property. The Act gave the council power to borrow money at mortgage rates, but until the mortgage was paid off, rates could not be reduced.

Launceston was proclaimed a City in 1888 when the population was 17,000. In 1907, the towns of Invermay and Trevallyn were included within its boundaries.

The council was authorised by the *Launceston Water and Light Act* 1895 to divert the waters of the St Patricks and South Esk Rivers for the purpose of supplying water and electricity. The same year, the council completed its hydro-electric power station and electric street lighting replaced the gas system which had been in operation since 1860. The council owned and operated the generating station until 1944 when it was acquired by the Hydro-Electric Commission.

The *Launceston Tramway Act* (No. 3) 1908, allowed the council to construct and maintain electric tramways and to levy a rate to meet operating deficiencies. The first trams ran in 1911; the last in 1952, trolley-buses and omnibuses taking over their function. A newly-formed State semi-government authority, the Metropolitan Transport Trust, assumed responsibility for Launceston's public transport system in 1955.

### Local Government—Present Organisation

#### *Authority and Functions*

The authority for and the forms of local government are prescribed entirely by State legislation and such legislation has largely been consolidated in the *Local Government Act* 1962.

The functions of the municipalities are set out in broad general terms in Section 176 of the *Local Government Act* as:

“A Municipality—

- (a) may for the welfare and good government of its district and the inhabitants thereof—
  - (i) make by-laws;
  - (ii) undertake, make and maintain works, buildings and services; and
  - (iii) order and dispose the common affairs of its members; and
- (b) shall cause the Queen's peace to be kept and maintained within its districts.”

Particular authority is given by Section 180 for a council clerk to be a Deputy Clerk of the Peace, Registrar of the Court of General Sessions and Clerk of Petty Sessions in his municipality.

#### *Administration of Justice*

This responsibility of the municipality to administer the lower courts of justice is confined to Tasmania and it would appear to be a carryover from the very early days of local government when the municipality was required to provide the police force as well. In all other States, the administration is in the hands of a State department. The practice here would now appear to be continued by reasons of expediency. (It should be noted that the process of removing this function from the municipalities has already commenced in that the lower courts in the Cities of Hobart and Glenorchy and the Municipalities of Clarence and Kingborough are administered by the State. It should also be noted that where municipalities administer the courts, they receive all fines into their revenue, and in some instances the Council Clerks receive additional salary for this court work.) In addition, by certain Acts, the municipalities are given specific responsibilities, e.g. *Health Act*, *Local Courts Act*, etc.

*Electors*

The electors are natural born or naturalised British subjects who either:

- (a) own land within the municipality;
- (b) occupy land within the municipality;
- (c) being neither owner nor occupier, are spouses of such owners or occupiers, and are enrolled as voters for an Assembly division;
- (d) being neither owner nor occupier, are discharged servicemen.

Generally speaking, but with unexpectedly complicated modifications where land is shared, etc., owner-electors and occupier-electors have each from one to four votes depending upon the annual value of the land. Each spouse-elector and ex-service elector has one vote.

A municipality may be divided into three, four or five wards or be undivided. If the former, the electors elect representatives for their own ward; if the latter, the election is for the whole council.

*Councillors*

A councillor must be an elector of and either reside in, or carry on business in, the municipality and he is subject to disqualification for certain breaches of conduct. He is elected for three years and one-third of the council retires each year. Councils may comprise 6, 9, 12 or 15 councillors. Councils annually elect their Warden, Deputy Warden and Treasurer. (The electors of the City of Hobart elect the Lord Mayor.) The office of Warden is comparable with that of the Mayor of a town or the President of a shire in other States.

*Cities, Municipalities and Towns*

In Tasmania there are two categories only—a municipality or a city. The Act provides for the establishment of towns and indicates requirements before such towns are proclaimed, but these are not municipal administrative units. It would seem that the only reason for the proclamation of an area as a town is to bring into action certain provisions relating to rating and to building requirements. Before a municipality can petition for a town to become a city, the town must have had, for five years before the petition, a population of not less than 20,000.

Other than this population requirement for a city, there are no provisions such as exist in some of the other States and in Canada for enlarging or diminishing the status of municipalities to accord with increasing or decreasing population.

*Sources of Revenue*

There are four main sources of revenue, namely rates, Government grants, business undertakings and services. The rates are levied at so much in the dollar on the assessed annual value without any fixed maximum. The amount of rates paid is, generally speaking, unequal to the cost of supplying the services which have, in the last thirty years, increased considerably in both range and expense. The Government grants are a recognised means of increasing the revenue of municipalities.

The municipalities are unable to collect any rates for land owned by the Crown but where services are provided, the Crown does pay for such services. Grants and subsidies are made, generally speaking, to assist the municipalities to meet the overall costs of municipal government and sometimes the grant is made to assist in a particular project. Grants are sometimes made to induce the councils to undertake the provision of certain services or to develop

those services. Grants may also be made in order to assist in paying the costs of particular services which are shared by two or more adjoining municipalities. Earnings from business undertakings include charges for the supply of water and for the use of abattoirs. Some of these businesses show a small profit but, in most cases, the fees demanded are usually only just sufficient to cover the cost of providing the services.

### *Municipal Commission*

Provision was also made in the *Local Government Act* 1962 for the appointment of a commission, to be called the Municipal Commission, to hold office for a period of five years. The prime function of the Commission was to inquire into and report to the Governor not later than December 1965:

- (i) whether any existing municipality had insufficient financial resources for the proper performance of its functions and, if so, what re-arrangements were best for strengthening or disposing of it;
- (ii) whether any town had boundaries substantially different from those of the actual town and, if so, what ought the boundaries to be;
- (iii) on the division of the State into counties and how that division might best be brought into conformity with the Act or subparagraph (iiia) and, if so, what special powers it should have in what municipalities and whether any of those municipalities should be reduced in status;
- (iiia) on the division of the State into municipalities and whether any and, if so, what changes should be made by the enlargement and contraction of municipal boundaries and the creation and abolition of municipalities, by reason of changes in population, industry (primary and secondary), means of communication and transport, and urban development, and
- (iv) whether the establishment of the county council was a reasonable alternative to a recommendation under subparagraph (i).

On completion of its report, the Commission is required from time to time as directed by the Governor to inquire into and report on any question of municipal and town boundaries and of the abolition, creation, amalgamation, or severance of municipalities, or any other question directed by the Act to be referred to it.

## REPORT OF MUNICIPAL COMMISSION

### Main Recommendations

On 22 October 1965, the Municipal Commission issued, in the one publication, seven reports containing, as its principal recommendations, proposals for a reduction in the number of local government authorities from 49 to 20. Since the recommendations involve the partition of some existing areas, this terminology is used in the following summary table:

- (U) the urban portion of a local government area adjacent to Hobart or Launceston;
- (C) the non-urban portion of a local government area adjacent to Hobart or Launceston;
- (P) a fraction of any local government area other than those adjacent to Hobart and Launceston.



## Changes Recommended by Municipal Commission

Local Government Bodies Recommended	Description of Constituent Parts (In Terms of Present Cities and Municipalities)
Greater Hobart (City) ..	Hobart; Glenorchy (U); Clarence (U); Kingborough (U)
Municipality—"A" ..	Kingborough (C); Esperance; Huon; Port Cygnet; Bruny.
"B" ..	Clarence (C); Spring Bay (P); Richmond; Sorell; Oatlands (P); Tasman.
"C" ..	New Norfolk; Hamilton; Glenorchy (C).
Greater Launceston (City) ..	Launceston; Beaconsfield (U); Westbury (U); St Leonards (U); Lilydale (U); Evandale (U).
Municipality—"D" ..	Beaconsfield (C); Lilydale (C); George Town.
"E" ..	Westbury (C); Deloraine.
"F" ..	Evandale (C); St Leonards (C); Longford.
King Island ..	King Island (No change).
Flinders ..	Flinders (No change).
Circular Head ..	Circular Head (P).
Burnie ..	Burnie (No change).
"G" ..	Circular Head (P); Wynyard; Waratah; Zeehan (P).
"H" ..	Kentish (P); Ulverstone (P); Penguin.
"I" ..	Kentish (P); Ulverstone (P); Devonport; Latrobe.
"J" ..	Scottsdale, Ringarooma; Portland (P).
"K" ..	Portland (P); Fingal; Glamorgan.
"L" ..	Queenstown, Gormanston, Strahan, Zeehan (P).
"M" ..	Bothwell (P); Campbell Town; Ross (P).
"N" ..	Green Ponds; Bothwell (P); Brighton; Spring Bay (P); Ross (P); Oatlands (P).

*Effect of Recommendations*

As indicated in the previous table, formation of the 20 recommended new administrative authorities involves the partition of some existing municipalities and cities; the number so affected is 17. In some cases, e.g. Spring Bay, Oatlands and Ross, the areas to be excised are extremely small and merely correspond with properties which are illogically partitioned by existing boundaries. In the case of Portland, the recommended change will have the effect of bringing under one authority a township at present partitioned between two authorities by a river boundary (Scamander River). The greatest changes, from the aspect of area, are proposed in relation to Bothwell (severance of the Great Lake Ward), Circular Head (severance of area east from the Detention River) and Kentish (severance of Wilmot ward).

The other major change affects Hobart and Launceston where it is envisaged that the urban areas of "fringe" municipalities should be joined with the inner cities to form a Greater Hobart and a Greater Launceston.

The following table gives details of the recommended partitions:

## Partitions Recommended by Municipal Commission

Present Local Government Authority	Partition of Existing Areas	For Incorporation As Part Of:
Glenorchy ..	(i) Urban development along Derwent (ii) Balance of City of Glenorchy	Greater Hobart Municipality "C"
Clarence ..	(i) Urban development, from Risdon Vale to Tranmere inclusive (ii) Balance of Municipality	Greater Hobart Municipality "B"

Partitions Recommended by Municipal Commission—continued

Present Local Government Authority	Partition of Existing Areas	For Incorporation As Part Of:
Kingborough ..	(i) Urban development known as Tarooma, Kingston and Blackmans Bay (ii) Balance of Municipality	Greater Hobart Municipality "A"
Spring Bay ..	(i) Small area on Little Swanport River on Oatlands municipal boundary (ii) Balance of Municipality	Municipality "N" Municipality "B"
Oatlands .. ..	(i) Small area near Woodsdale on Spring Bay municipal boundary (ii) Balance of Municipality	Municipality "B" Municipality "N"
Beaconsfield ..	(i) Urban development known as Riverside and Riverside North (ii) Balance of Municipality	Greater Launceston Municipality "D"
Westbury ..	(i) Urban development known as Prospect Vale (ii) Balance of Municipality	Greater Launceston Municipality "E"
St Leonards ..	(i) Urban development known as Kings Meadows, Youngtown, Prospect, Waverley, Ravenswood and the town of St Leonards (ii) Balance of Municipality	Greater Launceston Municipality "F"
Lilydale .. ..	(i) Urban development known as Newnham, Alanvale, Mayfield and Rocherlea (ii) Balance of Municipality	Greater Launceston Municipality "D"
Evandale .. ..	(i) Small triangle, southern end of Franklin Village (ii) Balance of Municipality	Greater Launceston Municipality "F"
Circular Head ..	(i) Large area west of Wynyard boundary back to Detention River (ii) Balance of Municipality	Municipality "G" Circular Head
Zeehan .. ..	(i) Town of Corinna (ii) Balance of Municipality	Municipality "G" Municipality "L"
Kentish .. ..	(i) Wilmot Ward (ii) Balance of Municipality	Municipality "H" Municipality "I"
Ulverstone ..	(i) Small portion of Town of Forth (ii) Balance of Municipality	Municipality "I" Municipality "H"
Portland .. ..	(i) Scamander area north of Scamander River (ii) Balance of Municipality	Municipality "K" Municipality "J"
Bothwell ..	(i) Large area being the whole Great Lake Ward (ii) Balance of Municipality	Municipality "M" Municipality "N"
Ross .. ..	(i) Small area on Lake Crescent on Oatlands municipal boundary (ii) Balance of Municipality	Municipality "N" Municipality "M"

*Further Recommendations*

The Commission also recommended in its reports that:

- (i) the proclamation of 117 localities as towns be rescinded, the boundaries of 52 other towns be amended and those of four other towns be confirmed as at present;
- (ii) Tasmania be divided into five counties made up as follows:
  - County (1)*—City of Greater Hobart, Municipalities "A", "B" and "N";
  - County (2)*—City of Greater Launceston, Municipalities "D", "E" and "F";
  - County (3)*—Municipalities of King Island, Circular Head, Burnie, "G", "H" and "I";
  - County (4)*—Municipalities of Flinders, "J", "K" and "M".
  - County (5)*—Municipalities of "C" and "L";
- (iii) the question of appropriate names for the newly proposed municipalities (referred to as "A", "B", "C", etc., above) and for the proposed counties be referred to the Nomenclature Board.

*Implementation of Recommendations*

The Governor may give effect to the recommendations without further legislation (with one exception) once certain rights of appeal have been exercised by "persons aggrieved", a term defined in the Act to include any municipality whose existence or boundaries are recommended to be ended or altered. The exception relates to the merging of Glenorchy into Greater Hobart; to effect this, new legislation would be required.

Thirty-nine municipalities have petitioned against the recommendations while three have counter-petitioned in favour; in addition, six opposing petitions have been lodged by other parties. The Act provides that the Commission shall hear evidence in support of the petitions and then recommend to the Governor either (i) the original plan as amended, or (ii) the original plan without amendment.

The hearing of petitions commenced in September 1966, was interrupted by legal objections and finally commenced again in late March 1967. Nearly 20 petitions had been heard *with regard to fact* by July 1967, when the Commission itself suspended hearings to obtain legal rulings from the Supreme Court.

## PLANNING AUTHORITIES

### Southern Metropolitan Master Planning Authority

*Introduction*

For statistical purposes, the Hobart Metropolitan Area is a densely settled region defined in Chapter 5, "Demography". For the purposes of the planning authority, metropolitan Hobart extends far beyond this area. The area for which the Authority is planning is best defined broadly as a triangle based on Pontville (Brighton Municipality), Snug (Kingborough Municipality) and Seven Mile Beach (Clarence Municipality). Such a triangle includes the Cities of Hobart and Glenorchy and also those parts of Brighton, Kingborough and Clarence municipalities which are likely, in the future, to experience urban expansion because of their proximity to Hobart.

For the purposes of this section, the triangular area just defined will be referred to as the "S.M. area".

*Establishment of Authority*

For purposes of local government administration, the urban area centred on Hobart is at present divided between four authorities: the municipalities and cities of Clarence, Kingborough, Hobart and Glenorchy; on the northern fringe of the area lies the Municipality of Brighton sharing the Derwent River as a boundary with Glenorchy. In 1954, a "Hobart Metropolitan Planning Committee" adopted resolutions to the effect that a planning authority should be set up, that a "Master Plan" should be prepared and that the plan should provide for an eventual population of 250,000 persons in the "S.M. area". (The Census population of Hobart and Suburbs in that year was 95,206 persons.) The five participating municipalities and cities previously named indicated that they were prepared to support the establishment of such an authority by striking a special townplanning rate of up to  $\frac{1}{2}$ d. in the pound (0.208 cents in \$).

The necessary legislation was passed in 1957, staff was recruited and the first meeting of the Southern Metropolitan Master Planning Authority and its officers was held on 3 November 1958.

*Representation and Finance*

The *Local Government Act* 1962 prescribes that each city shall have the right to appoint three representatives and each municipality two; though aldermen or councillors are not specifically prescribed, this type of representation is preferred by most councils. The Authority is also empowered to make contracts, accept trusts of properties for townplanning purposes and make by-laws for domestic purposes. By demand under its common seal, the Authority obtains from each constituent member council a contribution based on the annual value of all ratable property. The demand, however, is not to exceed  $\frac{1}{2}$ d. in the pound (0.208 cents in \$), unless the Authority has the consent of all its constituent municipalities and cities.

*Functions of the Authority*

The main function of the Authority is the technical and legal preparation of a master plan for the prescribed area (the detailed planning nevertheless remaining the responsibility of each constituent municipality or city). The *Local Government Act* 1962 (Section 744-2) defines the purpose of a master plan as follows:

"A master plan shall be made with regard for the present and probable future requirements of the area and may provide for:

- (a) communications;
- (b) areas the use of which is to be restricted in respect of purpose, or which are to remain unbuilt on;
- (c) public buildings, facilities and amenities; and
- (d) areas and sites for things and processes that would constitute nuisances if done among houses or offices".

A master plan therefore involves the zoning of land and restricting its use for specific purposes such as housing, retail trade, factories or parks and reserves; it is also concerned with the problem of the highways and outlets that will become essential in the future.

A factor influencing the preparation of a master plan is the present and future execution of major works by instrumentalities other than those which constitute the Authority, examples being the Public Works Department, the Housing Department, the Health Department, the Transport Department and the Metropolitan Water Board. In working on a master plan, the Authority has to obtain and enlarge the co-operation between these various organisations by serving as a medium of mutual contact.

The preparation of a master plan requires extensive surveys and studies, the results of which are sometimes of general interest quite apart from their prime relevance to the master plan. Two examples will suffice: (i) a population forecast for the "S.M. area"; (ii) mapmaking. Before the Authority's formation in 1958, there were no fully detailed maps available of any part of the "S.M. area". As the availability of maps for townplanning is very important, their production was started immediately. Practically the whole area now is covered with precise, up-to-date and contoured maps on a scale of 1,000 feet to the inch. A similar set is also in preparation on a scale of 400 feet to the inch. Although designed primarily for townplanning, the maps are sold for a variety of other purposes.

#### *Legal Procedure With Master Plan*

After preparation of the draft master plan, the Town and Country Planning Commissioner gives provisional approval, thus allowing it to be put on statutory exhibition for three months while objections are recorded; objections may be lodged not only by ratepayers but also by the member-councils of the Authority. Having heard the objections, the Town and Country Planning Commissioner may order modifications and then approve the amended plan; final approval rests with the Minister for Local Government.

When finally approved and sealed, the plan comes into effect on a specified date and, from then onwards, all detailed planning within the prescribed area must conform to this master plan. It should be noted that all modifications to the master plan have to be treated as if they were a new plan, again requiring public exhibition and the recording of objections.

#### *The Master Plan*

The Master Plan 1962 was put up for statutory exhibition and objections were considered; the most powerful objection held that the provisions of the system of communications were not sufficiently specific, a point not disputed by the Authority which maintained that the transportation study essential to proper planning was beyond the financial resources of local government.

In 1963, the Authority withdrew its Master Plan 1962 and the State Government decided to carry most of the cost of a full transportation study, the results of which became available late in 1964. In the meantime, the Authority issued a "Townplanning Policies Map 1964" which, although not having the legal standing of a master plan, was of value to member councils in their detailed planning and to other authorities concerned with development in the "S.M. area".

With the vital information relating to transport now available, the Authority set about revising the Master Plan and this is now well advanced.

The effect of implementing the transportation study proposals for a fully integrated system of freeways and expressways will be to facilitate movement around the central commercial area of Hobart, thus removing from this area much of the traffic which is causing congestion. The increased speed of movement in the "S.M. area" will undoubtedly have a centrifugal effect on development and involve councils in high service costs; therefore firm town planning control must be exercised.

#### *Pattern of Growth in "S.M. Area"*

The "S.M. area" is, in effect, a valley hemmed in between rows of steep sloping mountains and hills and with the wide River Derwent in the bed of the valley. This topographical limitation set the stage for the ribbon develop-

ment adopted by the first settlers in 1804 and by their successors. The flat banks along the foreshore of the Derwent saw the first development which spread north through New Town, Moonah, Glenorchy and Claremont. Late last century, a ferry started a Derwent service and from its landing jetties in Bellerive and Lindisfarne, housing began to spread along the eastern foreshore. This growth was accelerated by the bridging of the lower Derwent (with a floating bridge in 1943, replaced by a pier-based structure in 1964).

Residential development to the south of Hobart was almost halted after Sandy Bay had been built, the steep seaward slopes of Mt Nelson barring easy communications. After 1945, however, the increased use of cars altered this position and southern areas such as Tarooma and Kingston Beach began to grow.

By comparison with the pre-war population in the Hobart area, some of these developments were quite large. The Clarence Municipality on the eastern shore advanced its population from 5,000 in 1946 to 16,000 in 1956 and 30,000 in 1966. The Municipality of Glenorchy, north of Hobart, grew from 14,000 in 1946 to 27,000 in 1956 and 39,000 in 1966. South of Hobart the Kingborough Municipality had a lesser rate of growth due to its more difficult links with the city. During the period 1946-1966, its population has grown from 5,600 to 10,300, most of the increase occurring in the suburban areas of Tarooma and Kingston Beach.

By way of contrast, the City of Hobart is barely managing to hold its population. The very difficult and steep terrain on the fringe of the city (but still within its boundaries) makes subdivision of land a costly proposition while housing conditions in the older streets no longer meet the requirements of today's generation. With more easily developed land available in Glenorchy and Clarence, home builders have tended to look beyond the city limits. While Hobart proper has failed to record an increase as a residential centre in recent years, its inner area has grown as the main centre of general and commercial employment, although the industrial areas of Moonah and Glenorchy nearly match it. The transportation problems of the "S.M. area" arise from the concentration of the principal places of employment in a relatively small area and the spread of residential areas not associated with any local centre of employment. (For example, most of the work-force resident in Clarence needs to cross the Derwent daily.)

### *The Highway System*

The present programme of freeway construction makes use of the Queen's Domain as an oversize roundabout (or traffic circle). From this circle, three outlet roads will carry traffic on 4-lane freeways; the northern and eastern outlets have already been built, the southern is now under construction. A limitation of the northern outlet is that its main catchment area is on its western side, but foothills and existing buildings prevented a location further to the west. The eastern outlet, after passing over the Tasman Bridge, is met by various contributory road links giving quick access to popular suburbs such as Lindisfarne and Howrah.

The construction of the third freeway, the Southern Outlet Road, was started in the winter of 1964. This road, to be blasted out of solid dolerite for a considerable distance, will open up a new area for development in the Kingston district.

The Hobart Area Transportation Study which examined these matters in greater detail, brought to public scrutiny the need for greatly increased expenditure in meeting traffic problems. The findings of the study are that

metropolitan traffic will increase nearly 100 per cent during the next 20 years and that a number of major new roads will be required. The proposals resulting from the study are estimated as likely to cost \$50m spread over 20 years. The State Government has offered to meet most of the costs of the freeways and expressways while the councils will finance the balance.

### *Industrial Areas in the "S.M. Area"*

One of the most difficult town planning problems in the "S.M. area" is that associated with industrial zoning. The mere designation in the master plan of certain land for industrial use is no guarantee that new industries will automatically come forward to take advantage of the land. Few, generally speaking, have adjusted their thinking to appreciate the latest trends in factory siting, industrial estates, site preparation and site development. However, the member-councils and the Authority have started a campaign to publicise the advantages of properly organised industrial sites. This objective can be viewed as supplementary to the efforts of the State Industrial Development Directorate which is endeavouring to attract more industry to the State.

The siting of industrial zones requires, in the main, reasonably flat ground with good foundations. In the "S.M. area", this becomes a very real topographic problem as the flat land so necessary for general industry is slowly but steadily being used up for residential subdivisions. Local government authorities were unable to prevent this erosion and lacked the financial resources to undertake the major ventures into real estate necessary to ensure the availability of industrial sites. So completely has residential settlement used up suitable land near the heart of the city that the major proposed industrial zones have had to be located in Bridgewater, Margate, Rokeby and Cambridge (all some miles distant from central Hobart). However, the system of freeways proposed by the transportation study will render these more readily accessible.

## FINANCE

### Introduction

For many years, local government in Tasmania operated in 49 areas, comprising 47 municipalities and the cities of Hobart and Launceston. As from 24 October 1964, a third city—Glenorchy—came into being and the number of municipalities fell to 46. There are no unincorporated areas.

Local government finance statistics in Tasmania are compiled by the Bureau of Census and Statistics from the following sources:

1. *The 46 municipalities*: each municipality is required to submit annually to the Auditor General a "Statement of Accounts" in pursuance of section 329 of the *Local Government Act* 1962; copies of these statements are made available to the Bureau. The "Statements of Accounts" are compiled by the municipalities on a *receipts and payments* basis and two basic types of accounts are distinguished, namely revenue and loan accounts.

2. *The cities*: the cities of Hobart and Launceston submit annually to the Auditor General statements of accounts compiled on an *income and expenditure* basis; Glenorchy, however, still submits a municipal-type statement.

The term "local government" is employed only in relation to the municipalities and city corporations. Details of *semi-government* authorities concerned with water supply appear in the last section of this chapter.

### Revenue from Rates

The principal source of revenue for local government authorities in Tasmania is the charging of rates on the annual value of property. For any property, the annual value is the gross annual rental estimated by the valuer on the basis of similar actual rentals at the time of the valuation, irrespective of whether the property is rented or owner-occupied.

Under the *Local Government Act* 1962, rates may be based on annual value, unimproved value (i.e. value of land only), the capital value (i.e. value of land plus improvements) or finally upon a composite value incorporating the unimproved value plus some arbitrary proportion of the value of improvements. In Tasmania, it has been usual for rates to be based on annual values despite isolated and unsuccessful campaigns in favour of taxing on unimproved value only. In estimating annual value, the valuer is taking into account not only the land but also the improvements (e.g. buildings) so there is, in actual fact, a close relation between total capital value of any property and its assessed annual value. The *Land Valuation Act* 1950 fixes a minimum relationship between annual value and capital value (4 per cent) but sets no maximum.

The following table shows the total value of all ratable properties in the State and gives individual details for local government authorities with total capital value exceeding \$20,000,000:

**Value of Ratable Properties: Tasmania and Selected Municipalities and Cities**  
(£ million)

Municipality or City	Year Revalued (a)	1963-64		1964-65		1965-66	
		Total Capital Value	Ratable Annual Value	Total Capital Value	Ratable Annual Value	Total Capital Value	Ratable Annual Value
Hobart (City) ..	1963	273.53	17.00	277.80	17.21	281.29	17.07
Launceston (City) ..	1965	115.95	7.28	117.85	7.29	140.67	11.13
Glenorchy (City) ..	1962	102.42	6.06	106.42	6.30	112.39	6.69
Clarence ..	1964	54.20	2.01	80.49	3.83	83.19	4.26
Burnie ..	1965	51.94	2.93	52.42	2.96	61.44	3.96
Devonport ..	1962	46.17	2.67	48.29	2.81	51.02	3.00
St Leonards ..	1959	27.96	1.27	29.33	1.34	30.67	1.39
Ulverstone ..	1964	20.66	1.01	26.63	1.43	28.16	1.49
Kingborough ..	1961	25.71	1.21	26.64	1.30	27.16	1.28
Beaconsfield ..	1964	19.31	0.97	25.74	1.49	26.70	1.68
Wynyard ..	1961	22.17	1.06	22.51	1.11	23.53	1.15
Circular Head ..	1963	21.46	0.97	21.99	0.99	22.36	1.01
Longford ..	1963	20.82	1.00	20.90	1.01	21.02	1.01
New Norfolk ..	1957	20.52	0.86	21.75	0.86	22.01	0.87
Remaining Municipalities ..	..	252.27	11.21	261.63	11.61	279.49	12.41
Total Tasmania ..	..	1075.09	57.51	1140.40	61.54	1211.10	68.40

(a) The year shown is the year of the latest complete revaluation.

### System of Valuation

The valuation of property is carried out by a State Government authority, the Land Valuation Branch; its valuations form the basis for two distinct taxes: (i) land tax collected by the State on the basis of unimproved land values; (ii) rates collected by local government authorities on the basis of assessed annual values. Since it is impossible to value all the properties within the State in the course of a single year, valuation is carried out on a rotational basis, e.g. Glenorchy valued in 1955 and again in 1962; Devonport valued in 1956 and again in 1962.



The table that follows shows total value of property over the last ten years:

**Total Property Valuation in Cities and Municipalities (a)**  
(\$ million)

Year	Unimproved Value	Value of Improvements	Capital Value	Year	Unimproved Value	Value of Improvements	Capital Value
1956 ..	130.2	365.2	495.4	1961-62 ..	193.6	676.5	870.1
1957-58 ..	140.6	413.4	554.0	1962-63 ..	216.1	726.8	942.9
1958-59 ..	164.6	488.8	653.4	1963-64 ..	271.6	803.5	1075.1
1959-60 ..	179.0	560.4	739.4	1964-65 ..	290.5	849.9	1140.4
1960-61 ..	186.0	622.2	808.2	1965-66 ..	317.7	893.4	1211.1

(a) As valued by State Valuation Branch.

It should not be assumed that increases in assessed annual value automatically increase the capacity of municipalities to raise revenue from rates. Thus, in the years 1955-56 to 1965-66, total annual values increased by 268 per cent; in the same period, total rates collected increased by only 160 per cent. When any municipality is revalued, the council normally reduces the "rate in the dollar" rather than exploit to the full the possibility of charging "old" rates on "new" annual values.

### Total Receipts and Expenditure

The next table shows the total receipts and expenditure of Tasmanian municipalities and cities, the annual surplus or deficit and the balance of funds at the commencement of each year:

**Local Government Authorities**  
**Total Receipts and Expenditure—All Funds**  
(\$'000)

Year	Opening Balance (a)	Receipts				Expenditure			Surplus (+) or Deficit (-)
		Loan Accounts (b)	Revenue Accounts	Special Accounts (c)	Total	Loan Accounts	Revenue Accounts	Total	
1955-56	1,950	2,422	6,386	+ 6	8,814	2,730	6,596	9,326	- 512
1956-57	1,438	2,352	7,418	-281	9,489	2,682	7,260	9,942	- 453
1957-58	985	4,110	7,998	-143	11,965	3,238	7,902	11,140	+ 825
1958-59	1,810	3,622	8,836	+ 99	12,557	3,542	8,836	12,378	+ 179
1959-60	1,989	5,308	9,782	+ 3	15,093	4,670	9,762	14,432	+ 661
1960-61	2,650	5,420	10,868	-155	16,133	5,260	10,924	16,184	- 51
1961-62	2,599	6,447	12,098	+ 39	18,584	5,658	11,778	17,436	+ 1,148
1962-63	3,747	6,873	13,764	+690	21,327	7,212	13,256	20,468	+ 859
1963-64	4,606	7,268	14,792	+242	22,302	7,431	14,654	22,085	+ 217
1964-65	4,823	7,273	16,250	(d)	23,522	6,354	16,176	22,530	+ 993
1965-66	5,816	7,579	17,395	(d)	24,974	8,342	17,085	25,426	- 452

(a) Bank balances (less unrepresented cheques), securities and cash on hand.

(b) Includes loan raisings, sales, capital grants received, etc.

(c) Net movement in special accounts.

(d) Special accounts analysed and included under loan or revenue accounts.

## Rate Collections

There is considerable diversity in the types of rate imposed by individual local government authorities. In Hobart, virtually all properties are subject to the one consolidated rate and a similar position exists in Launceston; in most municipalities, however, the property holder, after being charged the basic general, road, light and health rates, is subject also to additional rates assessed according to the location of the property and the nature of the services provided (e.g. a fire brigade rate for properties which are close enough to enjoy fire protection, a water rate where the service is available). Property holders in a particular district may be called upon to pay a special rate for an improvement peculiar to the district (e.g. a reserves and recreation rate to finance a sports ground or a garbage rate to finance a disposal service).

The following table shows details of the rates collected in Tasmania during a three-year period:

Rates Collected by Local Government Authorities  
(\$'000)

Particulars	1963-64	1964-65	1965-66
Ordinary Rates (a)—			
General .. .. .	(b)	1,005	975
Light .. .. .	(b)	205	201
Road .. .. .	(b)	4,010	4,492
Health .. .. .	(b)	339	388
Sanitary .. .. .	(b)	75	84
Garbage .. .. .	(b)	131	117
Reserves and Recreation .. .. .	(b)	808	944
Halls .. .. .	(b)	116	154
Library .. .. .	(b)	99	105
Fire Brigade .. .. .	(b)	114	140
Other .. .. .	(b)	138	148
Total .. .. .	6,464	7,040	7,748
Business Undertaking Rates—			
Water .. .. .	1,993	2,235	2,405
Sewerage .. .. .	954	1,105	1,352
Total .. .. .	2,947	3,340	3,757
Grand Total.. .. .	9,411	10,380	11,505

(a) As from 1964-65, the single consolidated rate charged by Hobart and Launceston Corporations has been fully analysed according to purpose.

(b) Not available on comparable basis.

## Business Undertakings

In the preceding table a distinction is drawn between "ordinary" rates and "business undertaking" rates; a similar distinction will be found in the subsequent analysis of revenue and expenditure.

The classification "business undertaking" is used in Australian local government finance statistics to include municipal tram and bus services, municipal electricity supply (generation or distribution), municipal water and sewerage schemes and municipal abattoirs, etc. In Tasmanian local government finance statistics, electricity supply ceased to appear as from 1948-49 (the Hydro-Electric Commission is now the sole supplier). Municipal tram and bus services ceased to appear as an item in 1955-56, the Metropolitan Transport Trust having acquired the city transport services operating in Hobart

and Launceston. Consequently, the only activities under the heading of municipal "business undertakings" in current Tasmanian statistics relate to water supply, sewerage and abattoirs.

### Revenue of Local Government Authorities

After rates, the most important sources of revenue are: (i) Government grants and refunds; (ii) charges for public works and services. Among sources of revenue are listed "council properties"; these include parks, recreation grounds, markets, halls, cemeteries, libraries, mechanical plant, etc. The next table shows, for a three-year period, the total annual revenue of all municipalities and cities:

**Local Government Authorities**  
**Revenue, Ordinary Services and Business Undertakings, Classified According to Source**  
**(\$'000)**

Source of Revenue	1963-64	1964-65	1965-66
<b>Ordinary Services—</b>			
Rates .. .. .	6,464	7,040	7,748
Licences .. .. .	77	87	100
<b>Total .. .. .</b>	<b>6,541</b>	<b>7,127</b>	<b>7,848</b>
<b>Public Works and Services—</b>			
Health, Sanitary and Garbage Services ..	50	89	87
Council Properties .. .. .	722	980	1,159
Private Street Construction .. .. .	12	58	77
Private Works .. .. .	444	384	383
Other .. .. .	118	168	126
<b>Total .. .. .</b>	<b>1,346</b>	<b>1,679</b>	<b>1,832</b>
<b>Government Grants and Refunds—</b>			
Roads .. .. .	1,267	1,320	1,390
Other .. .. .	825	315	204
<b>Total .. .. .</b>	<b>2,092</b>	<b>1,635</b>	<b>1,594</b>
<b>Other Revenue (a) .. .. .</b>	<b>499</b>	<b>(b) 489</b>	<b>(b) 544</b>
<b>Total Ordinary Services .. .. .</b>	<b>10,478</b>	<b>10,930</b>	<b>11,818</b>
<b>Business Undertakings—</b>			
<b>Water Supply and Sewerage—</b>			
Rates .. .. .	2,947	3,340	3,757
Charges and Sales .. .. .	364	398	415
Grants (Government) (c) .. .. .	351	827	714
Other .. .. .	78	205	192
<b>Total .. .. .</b>	<b>3,740</b>	<b>4,770</b>	<b>5,078</b>
<b>Abattoirs—</b>			
Charges for Service .. .. .	309	260	264
Other (including Sale of Products) ..	265	290	235
<b>Total .. .. .</b>	<b>574</b>	<b>550</b>	<b>499</b>
<b>Total Business Undertakings ..</b>	<b>4,314</b>	<b>5,320</b>	<b>5,577</b>
<b>Grand Total—Revenue .. .. .</b>	<b>14,792</b>	<b>16,250</b>	<b>17,395</b>

(a) Includes net receipts of Deposit and Superannuation Accounts.

(b) Includes contributions to sinking funds and interest earned by such funds. Previously these contributions, being internal inter-fund transfers, were eliminated from the analysis as contra items.

(c) These figures understate actual receipts since some municipalities offset their grants against payments made to State regional water schemes.

*Revenue, Summary*

In the preceding table, the dissection between ordinary services and business undertakings prevents totals emerging for rates and for government grants; details for these items, in total, are shown in the summary which follows:

**Revenue, Ordinary Services and Business Undertakings**  
(£'000)

Year	Total Rates	Licences	Total Govt Grants and Refunds	Business Undertakings (a)	Ordinary Municipal Services (b)	Other Revenue	Total Revenue
1955-56 ..	4,418	30	646	428	624	240	6,386
1956-57 ..	5,188	30	722	492	756	230	7,418
1957-58 ..	5,434	30	852	582	816	284	7,998
1958-59 ..	5,962	30	788	714	1,014	328	8,836
1959-60 ..	6,622	58	950	870	918	364	9,782
1960-61 ..	7,286	60	1,240	842	1,068	372	10,868
1961-62 ..	8,084	66	1,690	924	1,064	270	12,098
1962-63 ..	8,710	68	2,410	926	1,338	312	13,764
1963-64 ..	9,411	77	2,443	1,016	1,346	499	14,792
1964-65 ..	10,380	87	2,462	1,153	1,679	489	16,250
1965-66 ..	11,505	100	2,308	1,106	1,832	544	17,395

(a) Excludes rates and grants which are shown separately.

(b) Includes receipts from council properties, e.g. sports grounds, halls, etc.

**Expenditure of Local Government Authorities**

The following table shows, for a three-year period, annual expenditure by local government authorities from ordinary revenue and from the revenue of business undertakings:

**Local Government Authorities**  
**Expenditure, Ordinary Services and Business Undertakings, Classified According to Service**  
(£'000)

Expenditure On	1963-64	1964-65	1965-66
Ordinary Services—			
General Administration .. .. .	1,183	1,379	1,603
Debt Services—Interest .. .. .	856	919	1,034
Redemption .. .. .	847	1,065	1,101
Paid to Sinking Funds (a) ..	..	146	133
Total .. .. .	1,703	2,130	2,267
Public Works and Services—			
Roads, Streets, Bridges .. ..	4,160	4,027	4,375
Health .. .. .	212	219	213
Sanitary and Garbage Services ..	296	407	426
Street Lighting .. .. .	264	299	319
Parks, Recreation Grounds, etc. ..	896	805	768
Other Council Properties .. ..	837	933	907
Other Services .. .. .	42	32	44
Total .. .. .	6,707	6,722	7,052
Grants .. .. .	366	355	352
Other Expenditure (b) .. .. .	323	690	310
Total Ordinary Services .. .. .	10,282	11,278	11,585

**Expenditure, Ordinary Services and Business Undertakings, Classified According to Service—continued**  
(\$'000)

Expenditure On	1963-64	1964-65	1965-66
<b>Business Undertakings—</b>			
Water Supply and Sewerage—			
Working Expenses (c) .. ..	1,924	2,147	2,547
Interest .. .. .	1,183	1,260	1,382
Redemption .. .. .	784	832	914
Paid to Sinking Funds .. ..	..	(a) 117	(a) 128
Other .. .. .	53	148	124
<b>Total .. .. .</b>	<b>3,944</b>	<b>4,503</b>	<b>5,096</b>
<b>Abattoirs—</b>			
Working Expenses .. .. .	377	338	348
Interest .. .. .	30	33	37
Redemption .. .. .	21	23	19
<b>Total .. .. .</b>	<b>428</b>	<b>394</b>	<b>404</b>
<b>Total Business Undertakings ..</b>	<b>4,372</b>	<b>4,898</b>	<b>5,500</b>
<b>Grand Total—Expenditure ..</b>	<b>14,654</b>	<b>16,176</b>	<b>17,085</b>

(a) Up to 1963-64, contributions to sinking funds, being internal inter-fund transfers, were eliminated from the analysis as contra items.

(b) Excludes expenditure from Deposit and Superannuation Accounts, which are offset against receipts.

(c) These figures understate actual payments since some municipalities offset their payments to State regional water schemes against grants received from the State.

“Council properties” in the table includes, in the main, halls, markets, cemeteries and libraries. “Roads, streets and bridges” includes roads construction and maintenance, drainage, cleaning and watering streets, private street construction, private works, plant purchase and net plant maintenance costs. The item “grants” includes payments to fire brigades and other semi-government bodies. The item “redemption” includes redemptions made from sinking funds.

*Expenditure, Summary*

Details of total interest and redemption payments appear below:

**Expenditure, Ordinary Services and Business Undertakings**  
(\$'000)

Year	Adminis- tration	Loan Charges		Ordinary Services (a)		Business Undertak- ings (a)	Total
		Interest	Redemp- tion	Roads, Streets, Bridges	Other		
1955-56 ..	542	554	618	2,128	1,770	984	6,596
1956-57 ..	596	652	704	2,320	1,944	1,046	7,262
1957-58 ..	706	722	816	2,434	1,906	1,320	7,904
1958-59 ..	782	922	888	2,658	2,154	1,432	8,836
1959-60 ..	884	1,096	1,000	2,914	2,168	1,700	9,762
1960-61 ..	880	1,294	1,158	3,350	2,396	1,846	10,924
1961-62 ..	910	1,526	1,276	3,620	2,404	2,042	11,778
1962-63 ..	988	1,900	1,442	3,990	2,948	1,988	13,256
1963-64 ..	1,183	2,069	1,652	4,160	3,236	2,354	14,654
1964-65 ..	1,379	2,211	1,920	4,027	3,741	2,633	(b) 16,176
1965-66 ..	1,603	2,453	2,034	4,375	3,339	3,019	(b) 17,085

(a) Excluding interest and redemption shown separately.

(b) Includes contributions to sinking fund not specified in the table: 1964-65, \$263,000; 1965-66, \$261,000. In earlier years similar contributions were eliminated from the analysis as contra items.

### Loan Receipts

At 30 June 1966, the aggregate debt of all local government authorities was \$52,844,032 of which only \$977,082 (i.e. 1.9 per cent) was in respect of loans received from the State Government. The principal Tasmanian sources of loans for local government authorities are banks, superannuation and other trust funds, insurance companies and, in the case of the cities, public issues. The amount that any local government authority can raise in a particular year is governed not only by the difficulty in finding willing lenders, but also by the fact that the approval of the State Treasury is required. Finally, under the *Local Government Act* 1962, total indebtedness must not exceed 10 times average annual income computed for the preceding three-year period.

The following table shows, for a three-year period, the receipts taken into the loan accounts of all local government authorities:

**Local Government Authorities: Receipts Taken into Loan Account**  
(\$'000)

Particulars	1963-64	1964-65	1965-66
Loan Raisings—			
For Ordinary Services .. .. .	3,259	3,535	3,727
For Water and Sewerage .. .. .	2,537	2,682	2,780
For Abattoirs .. .. .	50	20	5
Total Raisings .. .. .	5,846	6,237	6,512
Government Capital Grants .. .. .	1,280	817	867
Offsets to Loan Expenditure (a) .. .. .	142	219	200
Total Receipts .. .. .	7,268	7,273	7,579

(a) e.g. sales of surplus materials, refunds on containers, etc.

### Loan Expenditure and Loan Debt

The next table shows, for a three-year period, details of expenditure from the loan accounts of all local government authorities; also the loan debt at the end of the period:

**Local Government Authorities: Annual Loan Expenditure and**  
**Loan Debt Classified According to Purpose**  
(\$'000)

Purpose	Annual Loan Expenditure			Loan Debt at 30 June 1966
	1963-64	1964-65	1965-66	
Water .. .. .	1,415	1,095	1,968	14,243
Sewerage .. .. .	1,665	1,719	2,627	13,252
Drainage .. .. .	183	182	171	1,137
Roads, Bridges, Streets, Footpaths .. .. .	1,697	1,572	1,684	10,644
Plant, Machinery, etc. .. .. .	180	215	200	} 7,593
Council Property, including Halls .. .. .	876	502	883	
Recreation, including Parks and Gardens .. .. .	694	678	611	
Other .. .. .	721	390	198	(a) 1,845
Total .. .. .	7,431	6,354	8,342	52,844

(a) Includes \$1,425,344, debt of Hobart Corporation in respect of Town Planning.

## Loan Summary

The following table shows, in summary form, loan raisings, loan debt and sinking funds:

Local Government Authorities: Loan Raisings, Loan Debt and Sinking Funds  
(\$'000)

Year	Loan Raisings During Financial Year			Loan Debt at 30 June			Total of Sinking Funds at 30 June (c)
	From State Government (a)	From Other Sources (b)	Total	To State Government	To Other Creditors	Total	
1955-56 ..	..	2,367	2,367	144	15,245	15,389	343
1956-57 ..	..	2,310	2,310	129	16,838	16,967	336
1957-58 ..	..	4,024	4,024	114	20,078	20,192	351
1958-59 ..	43	3,642	3,685	144	22,835	22,979	388
1959-60 ..	138	5,094	5,232	268	26,876	27,144	422
1960-61 ..	269	5,010	5,279	524	30,763	31,287	473
1961-62 ..	301	5,863	6,164	808	35,380	36,188	561
1962-63 ..	116	5,209	5,325	853	38,989	39,842	662
1963-64 ..	165	5,681	5,846	990	43,073	44,063	817
1964-65 ..	9	6,228	6,237	932	47,436	48,368	849
1965-66 ..	82	6,430	6,512	977	51,867	52,844	991

(a) These advances were from the State Treasury direct, and exclude those from authorities such as the Housing Department and the Metropolitan Transport Trust.

(b) Includes advances from the Housing Department and the Metropolitan Transport Trust.

(c) Sinking funds maintained by municipalities and cities for debt redemption purposes.

#### Source of Loan Funds

It can be seen from the preceding table that the local government loan debt includes only a small liability in respect of advances made by the State Treasury. The proportion of total debt now owed to State authorities (but not directly to the Treasury) has increased somewhat, principally due to co-operation between individual municipalities and the State Housing Department. In planning the establishment of large housing estates, the Housing Department has been concerned with the provision of certain essential services (e.g. water and sewerage); where such services have required capital expenditure by a municipality, the Department has made some loan funds available.

#### Instalment Debentures

Much of the debt of the municipalities is in the form of instalment debentures which involve equal periodic payments (usually yearly or half-yearly); such payments are credited to redemption and interest in changing proportions, the accounting being the same as used to record home instalment purchase transactions.

#### Financial Statistics of Individual Local Government Authorities

In this chapter, local government finance statistics have been presented in total only; similar details for individual authorities are shown annually in the Tasmanian Office's bulletin, *Finance*. The following table shows, for each municipality and city: (i) rates collected; (ii) expenditure from loan and revenue accounts; (iii) balance of funds; (iv) loan debt.







(Dept of Film Production)

(Page 221)

*Logs for Australian Newsprint Mills at Boyer*

(Page 240)

*Overburden at the Savage River being stripped preparatory to iron-ore mining*

(The Examiner)



**Individual Municipalities and Cities: Financial Summary, 1965-66**  
**(\$'000)**

Municipality or City and Statistical Divisions	Total Rates Collected	Expenditure		Funds at 30-6-66 (a)	Loan Debt at 30-6-66
		Loan Accounts	Revenue Accounts		
South Central Division—					
Hobart (City) .. ..	2,514.0	1,514.0	3,416.8	1,731.4	12,256.4
Glenorchy (City) .. ..	1,167.1	1,001.5	1,680.8	98.3	6,420.2
North Central Division—					
Launceston (City) .. ..	1,828.3	968.7	2,825.5	1,789.1	7,017.7
North Western Division—					
Burnie .. ..	678.2	611.4	733.2	311.1	2,643.5
Circular Head .. ..	169.7	14.4	237.7	117.4	244.7
Deloraine .. ..	88.1	13.7	173.6	39.7	226.4
Devonport .. ..	513.3	477.0	815.8	(—) 1.3	3,141.8
Kentish .. ..	81.4	3.6	138.2	8.0	146.9
King Island .. ..	66.7	66.1	135.6	75.5	321.7
Latrobe .. ..	124.5	18.9	197.6	24.8	568.7
Penguin .. ..	92.9	33.8	139.4	30.2	443.3
Ulverstone .. ..	254.5	388.3	399.0	75.5	1,969.5
Wynyard .. ..	229.0	203.4	304.2	79.8	892.0
North Eastern Division—					
Beaconsfield .. ..	244.6	102.6	377.9	54.0	1,298.6
Fingal .. ..	63.9	15.9	117.1	10.4	184.3
Flinders .. ..	37.3	1.3	110.6	9.9	52.9
George Town .. ..	189.6	89.8	234.1	60.7	858.9
Lilydale .. ..	144.4	128.6	237.1	138.3	745.2
Portland .. ..	31.0	19.8	81.1	9.8	66.7
Ringarooma .. ..	59.1	10.8	112.1	17.8	115.9
Scottsdale .. ..	83.7	85.5	165.6	13.2	347.2
North Midland Division—					
Evandale .. ..	40.9	..	60.8	14.1	45.6
Longford .. ..	125.3	55.0	186.1	48.1	510.9
St Leonards .. ..	356.4	472.5	552.5	10.1	2,368.0
Westbury .. ..	100.2	38.4	150.8	27.6	297.7
Midland Division—					
Bothwell .. ..	29.9	0.3	67.1	14.0	36.9
Campbell Town .. ..	51.2	76.4	100.8	60.5	206.8
Hamilton .. ..	37.2	56.5	103.9	9.7	99.8
Oatlands .. ..	65.1	12.0	123.4	28.6	143.7
Ross .. ..	22.9	..	50.4	20.2	15.8
South Eastern Division—					
Brighton .. ..	43.7	43.3	87.5	27.7	112.4
Clarence .. ..	863.9	1,041.6	1,223.8	(—) 0.7	4,932.7
Glamorgan .. ..	36.9	73.3	64.9	4.4	156.9
Green Ponds .. ..	20.8	0.1	32.4	17.0	44.0
Richmond .. ..	39.2	17.8	71.8	7.9	134.3
Sorell .. ..	86.7	75.8	198.3	12.7	278.6
Spring Bay .. ..	32.3	15.1	53.5	18.3	100.2
Southern Division—					
Bruny .. ..	11.2	..	47.0	6.3	14.0
Esperance .. ..	67.5	116.9	128.1	58.1	357.8
Huon .. ..	105.5	27.5	159.8	30.9	353.8
Kingborough .. ..	261.4	300.2	344.4	152.5	1,481.0
New Norfolk .. ..	190.3	15.2	229.4	60.9	631.8
Port Cygnet .. ..	47.2	22.1	78.2	7.3	233.9
Tasman .. ..	17.1	..	49.5	3.3	3.3

**Individual Municipalities and Cities: Financial Summary, 1965-66—continued**  
(\$'000)

Municipality or City and Statistical Divisions	Total Rates Collected	Expenditure		Funds at 30-6-66 (a)	Loan Debt at 30-6-66
		Loan Accounts	Revenue Accounts		
Western Division—					
Gormanston .. ..	11.6	..	15.4	2.0	6.0
Queenstown .. ..	100.5	40.4	107.7	22.3	113.1
Strahan .. ..	10.2	..	36.4	1.4	6.5
Waratah .. ..	6.0	..	20.2	2.1	..
Zeehan .. ..	62.5	72.2	107.5	7.7	195.9
Total .. ..	11,504.8	8,341.8	17,084.7	5,368.4	52,844.0

(a) Value of bank balances (less unrepresented cheques), securities and cash on hand. A minus sign (—) indicates a debit balance.

### Employees of Local Government Authorities

The following table shows employees of local government authorities at 30 June 1966; the eleven authorities specified in descending order are those employing 40 or more. The number of employees is not a complete guide to the level of activity since much work is carried out by private contractors in some areas.

**Local Government Authorities: Persons Employed by Main Authorities  
and in Total at 30 June 1966 (a)**

Local Government Authority	General Administration		All Other Services		Total		
	Males	Females	Males	Females	Males	Females	Persons
Launceston (City) ..	88	32	360	21	448	53	501
Hobart (City) .. ..	108	31	299	8	407	39	446
Clarence .. ..	37	16	118	..	155	16	171
Glenorchy (City) ..	40	15	113	..	153	15	168
Devonport .. ..	26	7	111	4	137	11	148
Burnie .. ..	16	7	123	..	139	7	146
St Leonards .. ..	12	6	55	..	67	6	73
Kingborough .. ..	10	6	41	..	51	6	57
Ulverstone .. ..	9	4	32	..	41	4	45
New Norfolk .. ..	5	2	36	1	41	3	44
Wynyard .. ..	5	3	34	..	39	3	42
Other Municipalities ..	95	48	427	11	522	59	581
Total .. ..	451	177	1,749	45	2,200	222	2,422

(a) Includes permanent and temporary employees but excludes part-time employees.

The next table shows total employees of local government authorities over a five-year period:

## Local Government Authorities: Persons Employed (a) at 30 June

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
General Administration—					
Males .. ..	342	363	383	386	451
Females .. ..	126	148	166	169	177
Persons .. ..	468	511	549	555	628
All Other Services—					
Males .. ..	1,601	1,733	1,727	1,691	1,749
Females .. ..	53	56	60	60	45
Persons .. ..	1,654	1,789	1,787	1,751	1,794
Total—					
Males .. ..	1,943	2,096	2,110	2,077	2,200
Females .. ..	179	204	226	229	222
Persons .. ..	2,122	2,300	2,336	2,306	2,422

(a) Includes permanent and temporary employees but excludes part-time employees.

## WATER SUPPLY AND SEWERAGE

## Introduction

Water supply and sewerage were once exclusively the responsibility of the cities and municipalities; two semi-government authorities now operate bulk supply schemes, piping water for distribution by the local government authorities in the Hobart and Launceston areas, and directly to certain industrial consumers. Details of these authorities follow.

## Metropolitan Water Board

The overall control of water supply in Hobart, Clarence, Glenorchy and Kingborough is vested in the Metropolitan Water Board, but the four local government authorities retain primary responsibility for reticulation and sale to consumers. The Board has constructed a large pumping station at Bryn Estyn on the Derwent, pipeline capacity being 20m gallons per day. Before the Board came into operation in 1962, the four metropolitan local government authorities had their own supply schemes (e.g. Hobart supplied from Lake Fenton and Mount Wellington); these schemes still operate but the Board's pumping works based on the Derwent now give an assured supply. The eventual limiting factor will not be a shortage of water but simply the need to duplicate pumping and pipeline capacity.

The Board also controls the Southern Regional Water Supply Scheme drawing water from the Derwent, and originally constructed to supply Hobart's eastern shore suburbs (reticulation is still the responsibility of the local government authorities). On the eastern shore, the Board has now extended its service to the towns of Cambridge, Midway Point, Sorell and Seven Mile Beach, whilst western shore extensions are planned to include Margate, Snug and Howden. At Risdon Brook, an 800m gallon storage is being constructed at a cost of \$2.5m, the work to finish in 1967-68.

Under the *Metropolitan Water Board Act* 1961, the four metropolitan local government authorities no longer borrow money for water works, the Board now providing them with the necessary capital in the form of grants;

the local authorities in turn are required to make revenue contributions to the Board. At 30 June 1966, the loan debt of the Board to the State Treasury was \$10.25m and, to other lenders, \$2.18m.

### **Rivers and Water Supply Commission**

The Commission operates two regional schemes: (i) the North Esk Regional Water Supply, serving portion of the municipalities of Evandale, George Town, Lilydale, St Leonards and Westbury, and industrial users at Bell Bay; (ii) the West Tamar Water Supply, serving the west shore of the Tamar located in Beaconsfield Municipality. The local government authorities retain primary responsibility for reticulation and sale to consumers, except to certain industrial users. At 30 June 1966, the loan debt of the Commission to the State Treasury in respect of these two schemes was \$4.02m and, to other lenders, \$0.75m.

A smaller Commission scheme is now operating on the Prosser River, supplying water to the sodium alginate industry at Louisville near Orford and also the town of Orford in Spring Bay Municipality; loan debt to the State Treasury in respect of this scheme was \$0.41m at 30 June 1966.

In addition, the Commission recommends to the Minister the payment of subsidies if construction of water and sewerage schemes is beyond the financial capacity of local government authorities, or if they require assistance to pay for water supplied from regional schemes. In 1965-66, Government subsidies in respect of local government water and sewerage schemes were \$340,358 (excluding a subsidy of \$78,000 to the West Tamar scheme).

### **Municipal Waterworks**

At 30 June 1966, there were 96 municipally operated waterworks, the total reservoir capacity approximating 2,500m gallons (some major schemes operate by pumping directly from rivers and therefore have very limited need for storage capacity). The estimated population served was 306,000, or over 80 per cent of all Tasmanians, and the number of properties served exceeded 98,000. In 1965-66, the receipts of all local government authorities for water supply totalled \$3.48m, their loan debt for construction purposes at 30 June 1966 standing at \$14.24m. (See previous section, "Metropolitan Water Board", for new arrangement reducing debt of metropolitan local government authorities.)

### **Municipal Sewerage**

At 30 June 1966, there were 22 municipal schemes, serving an estimated population of 204,000 or 55 per cent of all Tasmanians; the number of tenements served exceeded 55,300. In 1965-66, the receipts of all local government authorities for sewerage services were \$1.60m, their loan debt for construction standing at \$13.25m at 30 June 1966.

## Chapter 5

### DEMOGRAPHY

#### POPULATION

(See Appendix C for later 1966 Census data.)

##### Historical

In 1803, Lieutenant John Bowen's expedition of 49 persons made the first white settlement at Risdon Cove; at the Census of 30 June 1966, Tasmania's population was 371,217 persons. This section describes, in broad outline, the pattern of population growth from the days of the first settlement.

*The Statistical Tables, Tasmania 1804 to 1823* show the first population record in 1816 when the white inhabitants numbered 1,461, analysed as 1,032 free, 409 convicts and 20 children of convicts. In 1819, a "Muster Roll" was taken by Commissary Hull, his count being 4,411 persons. From the year 1816, there exists a continuous annual record of Tasmania's population.

##### *Source of Population Figures*

There are two principal methods by which population figures can be obtained: (i) by census enumeration; (ii) by application of vital and migration statistics to census data. The second method involves taking account of natural increase (excess of births over deaths), and net migration (excess of arrivals over departures) and applying these net figures to information obtained from an earlier census, the result being termed an intercensal estimate. (*Net migration* may be ascertained by two methods: taking account of *all* arrivals and departures, or only of arrivals and departures related to permanent change of place of residence. The former method was used for all estimates up to 30 June 1961, the latter method for later series. In relation to this change, see later section headed "New Method of Estimating Population".)

In the early days of settlement, frequent "musters" of the population were carried out but the first census, in the modern sense, was held in 1841. Subsequent censuses were conducted by the State in 1847, 1851, 1857, 1861, 1870, 1881, 1891 and 1901; the Commonwealth Statistician became responsible for censuses with the establishment of the Commonwealth Bureau of Census and Statistics and conducted them in 1911, 1921, 1933, 1947, 1954, 1961 and 1966.

##### *Population from 1820*

The table that follows is based on the traditional historical series and has been compiled to show the population at the end of each decade from 1820, and also to show the average annual growth in each decade on two bases, firstly gross and secondly, attributable to natural increase. There is a minor break in the comparability of the traditional historical series, the British military establishment being included up to 1842 but excluded in subsequent years. The effect of this break can be gauged when the strength of the establishment is taken as approximately 1,000 both in 1840 and 1850.

## Historical Summary of Population in Decades

Year	Estimated Population (a)			Average Annual Increase For Decade (b) —	
	Males	Females	Persons	In Total Population	From Natural Increase (c)
1820 .. ..	4,057	1,343	5,400	..	..
1830 .. ..	18,108	6,171	24,279	1,888	..
1840 .. ..	32,040	13,959	45,999	2,172	106
1850 .. ..	44,229	24,641	68,870	2,287	656
1860 .. ..	49,653	40,168	89,821	2,095	1,214
1870 .. ..	53,517	47,369	100,886	1,107	1,622
1880 .. ..	60,568	54,222	114,790	1,390	1,542
1890 .. ..	76,453	68,334	144,787	2,998	2,496
1900 .. ..	89,763	83,137	172,900	2,811	2,776
1910 .. ..	97,026	92,781	189,807	1,691	3,322
1920 .. ..	106,236	103,189	209,425	1,962	3,649
1930 .. ..	111,148	108,835	219,983	1,056	3,127
1940 .. ..	121,911	118,280	240,191	2,021	2,438
1950 .. ..	140,339	135,563	275,902	3,571	3,768
1960 .. ..	174,379	169,531	343,910	6,801	5,523
1966 (d) ..	187,267	183,950	371,217	4,551	5,290
1967 .. ..	189,786	186,426	376,212	..	..

a) Up to 1900, at 31 December; from 1910, at 30 June.

(b) Decade ending in year shown.

(c) Excess of births over deaths in calendar years.

d) Incomplete decade; averages based on six-year period only; 1966 a Census year.

*Pattern of Net Migration*

By comparing the last two columns in the previous table, it is possible to make an assumption as to whether net migration (excess of arrivals over departures) tended to be positive or negative in any decade. Thus, in the six decades ended 1860, growth of population was largely attributable to positive net migration with natural increase playing only a minor role; growth in this period was temporarily set back by something of an exodus to the Victorian goldfields in the 1850s.

In the next two decades ended 1880, natural increase was becoming a more significant factor but the growth of population was checked by negative net migration. Important mining discoveries (e.g. Mt Bischoff, Zeehan and Mt Lyell) brought prosperity to the State, and the two decades ended 1900 were characterised by positive net migration despite an Australia-wide depression in the early 1890s.

The main characteristic of the five decades ended 1950 was persistent loss of population due to negative net migration, the decade most affected ending in 1930; the decade 1921-1930 was one of general prosperity for Australia apart from the final two years and the implication of the population loss is that Tasmania was "depressed" even before the general depression. This trend in net migration loss persisted till the end of World War II (1945). The Commonwealth Government's post-war immigration policy and the increasing industrialisation of the State combined to reverse the adverse trend of the previous half-century, and the last decade, ending 1960, was characterised by positive net migration. In the present incomplete decade, some loss of population by negative net migration is suggested by the figures.

## Census Populations from 1841

The following table records the population and masculinity at each Census since 1841 and compares the rate of inter-censal growth.

Population and Masculinity at each Census from 1841

Census Date	Population			Average Annual Percentage Rate of Increase (a)	Masculinity (b)
	Males	Females	Persons		
31 Dec. 1841 ..	34,493	17,006	51,499	..	202.83
31 Dec. 1847 ..	47,828	22,336	70,164	5.29	214.13
1 Mar. 1851 ..	44,648	25,482	70,130	- 0.01	175.21
31 Mar. 1857 ..	46,606	34,886	81,492	2.53	133.60
7 Apr. 1861 ..	49,593	40,384	89,977	2.51	122.80
7 Feb. 1870 ..	52,853	46,475	99,328	1.11	113.72
3 Apr. 1881 ..	61,162	54,543	115,705	1.40	112.14
5 Apr. 1891 ..	77,560	69,107	146,667	2.40	112.23
31 Mar. 1901 ..	89,624	82,851	172,475	1.64	108.18
3 Apr. 1911 ..	97,591	93,620	191,211	1.04	104.24
4 Apr. 1921 ..	107,743	106,037	213,780	1.12	101.61
30 June 1933 ..	115,097	112,502	227,599	0.52	102.31
30 June 1947 ..	129,244	127,834	257,078	0.87	101.10
30 June 1954 ..	157,129	151,623	308,752	2.65	103.63
30 June 1961 ..	177,628	172,712	350,340	1.82	102.85
30 June 1966 ..	187,267	183,950	371,217	1.16	101.80

(a) Intercensal increase in total population as compound rate of growth per cent.

(b) Number of males per 100 females.

It should be noted that the previous Census figures up to 1870 include the British military establishment; the last Imperial troops were withdrawn later in 1870. (The traditional annual series previously quoted excludes the establishment after 1842.)

## Comparison with other States

The following table compares the Tasmanian population at Censuses from 1901 with that of other States and Territories:

Australia: Census Populations of States and Territories (a)  
(\*000 Persons)

State or Territory	1901	1921	1933	1947	1954	1961	1966
N.S.W. .. ..	1,355	2,100	2,601	2,985	3,424	3,917	4,231
Victoria .. ..	1,201	1,531	1,820	2,055	2,452	2,930	3,218
Queensland .. ..	498	756	947	1,106	1,318	1,519	1,661
S.A. .. ..	359	495	581	646	797	969	1,091
W.A. .. ..	184	333	439	502	640	737	836
<b>Tasmania</b> .. ..	<b>172</b>	<b>214</b>	<b>228</b>	<b>257</b>	<b>309</b>	<b>350</b>	<b>371</b>
N.T. .. ..	5	4	5	11	17	27	37
A.C.T. (b) .. ..	..	3	9	17	30	59	96
Australia .. ..	3,774	5,436	6,630	7,579	8,987	10,508	11,541

(a) Census of 1911 not shown.

(b) Part of N.S.W. prior to 1911.



The next table shows the average annual rate of increase of population in each State and Territory during intercensal periods:

**Australia: Average Annual Percentage Rate of Increase of Population During Intercensal Periods**

State or Territory	1911-21	1921-33	1933-47	1947-54	1954-61	1961-66
N.S.W. .. .. .	2.46	1.76	0.99	1.98	1.94	1.56
Victoria .. .. .	1.53	1.42	0.87	2.56	2.58	1.89
Queensland .. .. .	2.24	1.86	1.11	2.53	2.04	1.81
S.A... .. .	1.94	1.31	0.76	3.05	2.83	2.39
W.A. .. .. .	1.66	2.29	0.97	3.51	2.03	2.55
Tasmania .. .. .	1.12	0.52	0.87	2.65	1.82	1.16
N.T. .. .. .	1.57	1.87	5.93	6.12	7.40	6.53
A.C.T. .. .. .	4.14	10.71	4.65	8.70	9.93	10.27
Australia .. .. .	2.01	1.63	0.96	2.46	2.26	1.89

It will be observed that only in the period 1947-54 did the Tasmanian rate of growth exceed that for Australia as a whole and that 1921-33 was the period of minimum Tasmanian growth.

### Intercensal Adjustment

Earlier, mention was made of the method for calculating intercensal estimates of population by taking account of recorded natural increase and recorded net migration. The following two tables show these factors in successive intercensal periods from 1911; "arrivals" and "departures" in the first table refer to both short-term and long-term movements.

**Analysis of Intercensal Increase in Population**  
(i) Recorded Natural Increase and Recorded Net Migration

Intercensal Period	Births	Deaths	Natural Increase	Arrivals	Departures	Net Migration
3.4.1911 to 4.4.1921 (a) ..	56,459	20,011	36,448	386,377	396,642	- 10,265
4.4.1921 to 30.6.1933 (b) ..	61,955	25,174	36,781	507,209	535,780	- 28,571
30.6.1933 to 30.6.1947 ..	73,130	34,767	38,363	482,577	493,305	- 10,728
30.6.1947 to 30.6.1954 ..	51,615	17,557	34,058	870,768	845,009	+ 25,759
30.6.1954 to 30.6.1961 ..	59,282	18,631	40,651	1,070,297	1,065,254	+ 5,043
30.6.1961 to 30.6.1966 ..	41,276	14,786	26,490	1,071,892	1,077,942	- 6,050

(a) Numbers recorded between the March quarters of 1911 and 1921, i.e. the quarter nearest to the census date.

(b) Numbers recorded from the March quarter of 1921.

**(ii) Census Population, Intercensal Records and Intercensal Adjustment**

Census Date	Population	Numbers Recorded Since Previous Census		Intercensal Adjustment (a)
		Natural Increase	Net Migration	
4.4.1921 ..	213,780	36,448	- 10,265	- 3,614
30.6.1933 ..	227,599	36,781	- 28,571	+ 5,609
30.6.1947 ..	257,078	38,363	- 10,728	+ 1,844
30.6.1954 ..	308,752	34,058	+ 25,759	- 8,143
30.6.1961 ..	350,340	40,651	+ 5,043	- 4,106
30.6.1966 ..	371,217	26,490	- 6,050	+ 437

(a) For definition, see following section; adjustment is to reconcile increase deduced from first column with net increase recorded in second and third columns.

In general, two population estimates are made for any specific date: (i) *Original* estimates for dates subsequent to a census and made before another census is taken. (ii) *Revised* estimates for each newly completed intercensal period to adjust for the difference between the new census result and the comparable estimate. Thus, all original estimates of population for the intercensal periods from 1911 to 1966 have been revised to reconcile with the results of successive censuses from 1921 to 1966 and can be regarded as final. Estimates of population for dates after 30 June 1966 must be regarded as subject to revision, and will in fact be revised when the results of the 1971 census become available. In the preceding table, it will be seen that the intercensal adjustment for the latest period (1961 to 1966) was *plus* 437, equivalent to an average accumulating adjustment of approximately *plus* 87 per annum for revision of the original intercensal estimates.

### Population Estimates from 1951

The following are estimates of State population:

#### Estimated Population, 30 June and 31 December

Year	At 30 June			At 31 December		
	Males	Females	Persons	Males	Females	Persons
1951 .. ..	145,279	140,914	286,193	153,721	148,066	301,787
1952 .. ..	151,100	145,199	296,299	157,702	151,856	309,558
1953 .. ..	155,161	148,919	304,080	161,305	155,160	316,465
1954 (a) ..	157,129	151,623	308,752	162,393	156,825	319,218
1955 .. ..	159,861	154,231	314,092	165,356	159,563	324,919
1956 .. ..	162,196	156,274	318,470	168,695	162,645	331,340
1957 .. ..	165,940	160,190	326,130	172,186	166,621	338,807
1958 .. ..	169,123	163,943	333,066	174,465	169,433	343,898
1959 .. ..	172,097	167,279	339,376	178,109	173,240	351,349
1960 .. ..	174,379	169,531	343,910	180,511	175,458	355,969
1961 (a) ..	177,628	172,712	350,340	178,851	174,385	353,236
1962 .. ..	179,941	175,684	355,625	181,046	176,973	358,019
1963 .. ..	182,388	178,249	360,637	183,266	179,424	362,690
1964 .. ..	183,998	180,181	364,179	184,962	181,392	366,354
1965 .. ..	185,687	182,040	367,727	186,370	183,040	369,410
1966 (a) ..	187,267	183,950	371,217	188,411	185,273	373,684

(a) Figures at 30 June as recorded at Census; figures from December 1961 to December 1965 are the *revised* estimates for the intercensal period 1961-1966.

#### "De Facto" and "De Jure"

In the preceding table, it will be observed that the State's estimated population in December, prior to 1961, invariably exceeded the figure for the following June. This originated in the fact that Australian censuses credit persons to the State where they happen to be at census date (*de facto* basis) and not to the State where they normally reside (*de jure* basis); also, in the fact that net migration, as defined and measured prior to 1961, was also on a *de facto* basis. Thus the December estimates were consistently higher than those for the preceding June by anything from 10,000 to 15,000 persons, due to the seasonal tourist influx. Subsequent to 1961, the new method of estimating population relies on a *de jure* concept of net interstate migration and consequently the December figures do not reflect the effect of the tourist influx.

#### New Method of Estimating Population

Until the Census of 1966, the quarterly intercensal population of each State had been estimated using three components: (i) the previous census population; (ii) accumulated natural increase; (iii) accumulated net migration. In this calculation, net migration was the algebraic sum of all arrivals, *less* all

departures, recorded for shipping and aircraft (Tasmania) and for shipping, aircraft, rail and omnibus movements (other States); it therefore included overseas and interstate travel irrespective of purpose. The interstate component of net migration was obviously a composite figure, affected by persons who had permanently changed their State of residence, but even more by persons who had merely visited another State on business or holiday.

The new method of estimation, introduced after the 1966 Census, still relies on the same three components but defines and measures net migration in a different way, so that holiday, business or other similar short-term movements between States are eliminated. *Intercensal estimates for the period 1961-1966 have been revised in accordance with the new method, and incorporate the changed concept of net migration.*

In the new method, the State population is estimated by adding to the previous census population the natural increase and the allocation of the net gain to Australia by overseas migration for that State; gains or losses that result from movements between States are also taken into account, in so far as they are recorded as transfers of residence under child endowment procedures or Commonwealth Electoral procedures, supplemented by the results of any special sample surveys. It follows, therefore, that revised estimates subsequent to the 1961 Census omit the effect of holiday, business or other similar short-term movements between the States.

### Mean Population

Mean populations are calculated for twelve-month periods to provide a satisfactory average basis for calculations requiring allowance for the continuous change in population figures during such periods. From 1901 onwards, the mean population for any year has been calculated by the formula:

$$\text{Mean Population} = \frac{a + 4b + 2c + 4d + e}{12}$$

where  $a$  is the population at the end of the quarter immediately preceding the year and  $b$ ,  $c$ ,  $d$  and  $e$  are the populations at the end of the quarters making up the year under consideration, (e.g. in the case of a mean population for the calendar year 1960, the populations in the formula represented by  $a$ ,  $b$ ,  $c$ ,  $d$  and  $e$  are those at the following dates: 31.12.1959, 31.3.1960, 30.6.1960, 30.9.1960 and 31.12.1960).

The following table shows the State's mean population on two bases: (i) for financial years; (ii) for calendar years.

Mean Population, Financial and Calendar Years

Year	Estimated Mean Population		Year	Estimated Mean Population	
	Year Ended 30 June	Year Ended 31 December		Year Ended 30 June	Year Ended 31 December
1951 ..	283,526	288,294	1959 ..	338,628	341,423
1952 ..	293,340	298,361	1960 ..	344,111	346,913
1953 ..	302,529	306,318	1961 ..	350,077	(a) 353,623
1954 ..	309,416	311,055	1962 (a) ..	353,152	355,638
1955 ..	312,694	315,565	1963 (a) ..	358,112	360,501
1956 ..	318,309	321,039	1964 (a) ..	362,648	364,420
1957 ..	324,666	328,435	1965 (a) ..	366,210	367,793
1958 ..	332,046	335,382	1966 ..	369,401	371,417

(a) Revised.

### Arrivals and Departures

Earlier in this chapter, reference was made to net migration as one factor determining the growth of the State's population. Net migration, on a *de facto* basis for any period, is the difference between arrivals and departures, such movements being reported by the shipping companies and airlines. "Arrivals" in the following table applies to all persons arriving in Tasmania from overseas or from other Australian States; it includes Tasmanians returning home. Similarly, "departures" applies to all persons leaving Tasmania for overseas or for other Australian States; it includes visitors returning home. The table below shows annual arrivals and departures and also quarterly arrivals and departures for recent years, but the intercensal adjustments referred to in an earlier section have not been applied to the figures:

**Recorded Arrivals In and Departures From Tasmania, Interstate and Overseas (a)**

Period	Arrivals	Departures	Period	Arrivals	Departures
1955 ..	137,834	137,144	1964—March Qr ..	67,122	74,092
1956 ..	143,104	141,686	June Qr ..	47,372	52,018
1957 ..	143,601	141,310	September Qr ..	42,015	43,161
1958 ..	141,814	141,995	December Qr ..	63,421	54,109
1959 ..	162,761	160,569	1965—March Qr ..	74,849	81,929
1960 ..	182,537	183,513	June Qr ..	54,616	59,058
1961 ..	186,423	184,165	September Qr ..	50,274	50,163
1962 ..	185,268	186,023	December Qr ..	69,225	58,469
1963 ..	198,443	199,918	1966—March Qr ..	73,627	79,962
1964 ..	219,930	223,380	June Qr ..	58,358	62,520
1965 ..	248,964	249,619	September Qr ..	50,601	50,201
1966 ..	257,463	256,068	December Qr ..	74,877	63,385

(a) Arrivals and departures on a *de facto* basis.

If annual arrivals and departures are added, the result may conveniently be termed "annual movements" and a comparison of "annual movements" over the years gives some indication of the degree to which travel and tourism have affected the State. Thus, in 1901, the year of Federation, annual arrivals and departures together totalled 51,000; in 1913, 91,800; in 1931, 58,500; in 1939, 120,200 and in 1966, 514,000. The marked increase in "annual movements" since World War II is largely attributable to the growing use of air travel and roll-on roll-off ferries. Another factor has been industrial legislation providing for paid holidays (two weeks' leave was increased to three weeks by the Federal Arbitration Commission in 1963); this has not only increased the tourist inflow but also has resulted in more Tasmanians taking holidays in the continental States.

The quarterly figures show a marked seasonal pattern with arrivals at their maximum in the spring and summer quarters (those ending December and March). Net migration figures on a *de facto* basis also show a seasonal pattern with substantial deviations from the quarterly average, approximating *plus* 11,000 persons in the December quarter; they also reflect the tourist outflow in the March quarter.

### Population in Local Government Areas

The next table shows the population in cities, municipalities and statistical divisions at the Censuses of 1954, 1961 and 1966, and estimated for 1967. A new development following from the 1966 Census was the creation of the Hobart Statistical Division, made up from three complete and four *partitioned* local government areas. The following symbols are used in the table to indicate the

Division (or Divisions) to which a local government area belongs: (H)—Hobart Statistical Division; (SE)—South Eastern Statistical Division; (S)—Southern Statistical Division.

The creation of the Hobart Statistical Division has had the effect of reducing the area of the Southern and South Eastern Statistical Divisions. (For fuller details, see subsequent section headed "Population Centred on Hobart".)

**Population in Local Government Areas and Statistical Divisions At 30 June**

Local Government Area and Statistical Division				Census 1954	Census 1961	Census 1966	Estimated 1967
Hobart	(H)	..	..	54,887	54,021	53,226	53,093
Glenorchy	(H)	..	..	25,810	35,682	39,034	39,887
Clarence	(H)	..	..	12,604	23,140	30,233	30,808
Brighton	(H) (SE)	..	..	2,570	2,115	2,180	2,226
Glamorgan	(SE)	..	..	1,099	1,128	1,126	1,128
Green Ponds	(SE)	..	..	949	969	867	843
Richmond	(SE)	..	..	1,679	1,673	1,658	1,650
Sorell	(H) (SE)	..	..	2,391	2,878	3,306	3,386
Spring Bay	(SE)	..	..	1,048	1,155	1,205	1,217
Bruny	(S)	..	..	591	504	398	410
Esperance	(S)	..	..	3,200	3,436	3,740	3,804
Huon	(S)	..	..	5,615	5,460	5,255	5,205
Kingborough	(H) (S)	..	..	8,335	10,025	10,318	10,306
New Norfolk	(H) (S)	..	..	9,429	10,217	10,319	10,878
Port Cygnet	(S)	..	..	2,861	2,754	2,551	2,508
Tasman	(S)	..	..	1,079	1,108	1,143	1,152
Total Hobart Div. (a)	..	..	..	134,147	130,236	141,238	143,203
Total SE. Div.	..	..	..		7,116	7,101	7,110
Total S. Div.	..	..	..		18,913	18,220	18,188
Launceston	..	..	..	37,627	38,118	37,210	37,071
Total N. Central Div.	..	..	..	37,627	38,118	37,210	37,071
Burnie	..	..	..	13,785	16,745	18,599	18,816
Circular Head	..	..	..	7,568	7,733	7,866	7,872
Deloraine	..	..	..	5,477	5,574	5,190	5,137
Devonport	..	..	..	11,827	14,276	16,725	17,059
Kentish	..	..	..	4,510	4,167	5,619	5,894
King Island	..	..	..	2,554	2,784	2,461	2,379
Latrobe	..	..	..	4,145	4,367	4,810	4,856
Penguin	..	..	..	3,889	4,673	4,677	4,754
Ulverstone	..	..	..	8,091	9,365	10,160	10,334
Wynyard	..	..	..	7,394	8,835	9,562	9,918
Total NW. Div.	..	..	..	69,240	78,519	85,669	87,019
Beaconsfield	..	..	..	7,573	8,550	9,972	10,242
Fingal	..	..	..	4,418	4,475	3,786	3,690
Flinders	..	..	..	1,027	1,407	1,220	1,207
George Town	..	..	..	2,516	3,677	5,097	5,364
Lilydale	..	..	..	4,583	6,744	7,841	8,041
Portland	..	..	..	1,412	1,274	1,388	1,405
Ringarooma	..	..	..	3,440	3,056	2,870	2,830
Scottsdale	..	..	..	3,189	3,417	3,629	3,712
Total NE. Div.	..	..	..	28,158	32,600	35,803	36,491
Evandale	..	..	..	1,676	1,608	1,552	1,544
Longford	..	..	..	4,345	6,762	5,355	5,249
St Leonards	..	..	..	7,095	11,032	13,663	14,144
Westbury	..	..	..	3,974	4,581	4,964	5,034
Total N. Midland Div.	..	..	..	17,090	23,983	25,534	25,971

Population in Local Government Areas and Statistical Divisions At 30 June—*continued*

Local Government Area and Statistical Division	Census 1954	Census 1961	Census 1966	Estimated 1967
Bothwell .. .. .	1,260	1,288	1,005	994
Campbell Town .. .. .	1,919	1,893	1,753	1,723
Hamilton .. .. .	6,143	4,178	4,328	4,348
Oatlands .. .. .	2,914	2,691	2,500	2,460
Ross .. .. .	680	672	617	615
Total Midland Div. ..	12,916	10,722	10,203	10,140
Gormanston .. .. .	523	507	50	546
Queenstown .. .. .	4,497	4,624	4,386	4,450
Strahan .. .. .	574	565	466	462
Waratah .. .. .	514	367	695	1,376
Zeehan .. .. .	2,816	3,191	3,485	3,535
Total W. Div. .. ..	8,924	9,254	9,572	10,369
Migratory .. .. .	650	879	667	650
Total Tasmania .. ..	308,752	350,340	371,217	376,212

(a) The 1961 figure involves some estimation.

## Distinction Between Urban and Rural

After the Censuses of 1954 and 1961, the Commonwealth Statistician published, as usual, a population classification using the terms metropolitan, urban and rural. *Metropolitan* was simply a sub-class of *urban* and was reserved for a defined area centred on each State capital; *urban* itself was applied to a defined area of any other locality if it had a population in excess of 1,000 persons (in Tasmania, 750).

To delineate the boundaries of these urban localities, the Statistician sought local advice, sent out field investigators, and inspected aerial photographs. However, although these procedures were an improvement on the earlier ones, the boundary decisions made for different urban areas, being highly subjective, did not provide sufficient comparability.

In the intercensal period 1961-1966, intensive research was undertaken and, in August 1965, the 27th Conference of Statisticians passed the following resolutions relating to the delimitation of urban areas:

- (i) (a) That the new concept of an *inner* and *outer* boundary around each of the State capitals and other cities with an urban population of at least 75,000 and a regional population of at least 100,000 be adopted; and
- (b) that the inner boundary be drawn to delimit the extent of urban development at each Census and it should, therefore, be a moving boundary to be adjusted after each Census, except that any State may extend the inner boundary during intercensal years to encompass significant and well-defined peripheral population growth; and
- (c) that the outer boundary be designed to contain the anticipated urban development of a city for a period of at least 20 to 30 years.
- (ii) (a) That an urban boundary be defined as soon as possible for all other settlements with a population of 1,000 or more; and

- (b) that State, Statistical Division, Local Government Area, and other boundaries be ignored in delimiting these urban areas.
- (iii) That urban boundaries be defined so as to include all contiguous census collector's districts which have a population density of 500 or more per square mile (subject to certain special rules which are specified in a subsequent section of this chapter).

### *Effect of Change in Tasmania*

The resolution previously quoted as (i) affected only one centre in Tasmania, since only the Hobart area has "an urban population of at least 75,000 persons and a regional population of at least 100,000". Resolutions (ii) and (iii) affected all other cities and towns, including Launceston. The concept of ringing the capital city with two statistical boundaries, an inner and an outer, is new in Australia and therefore the next section "Population Centred on Hobart" has been written to explain the logic of this approach.

### **Population Centred on Hobart**

#### *Historical*

As early as 1891, the Government Statistician realised the inadequacy of publishing population details purely in terms of individual administrative areas; Hobart, the City, and Hobart, a wider concept transcending the city boundary, were already beginning to require differentiation. Accordingly, he evolved a new grouping, *Hobart and Suburbs*, formed by combining the City of Hobart with adjoining towns and municipalities such as New Town, to the north, and Queenborough, to the south. By 1920, New Town and Queenborough had both been absorbed as part of the city, and the boundaries of the local government areas then encircling Hobart were not very different from those at the 1966 Census. The situation in 1966 can be summarised as follows:

**Hobart and Encircling Local Government Areas, 1966**

Local Government Area	Area (sq mi)	Location (from City)	Classification (Urban or Rural)
City of Hobart .. ..	31	Central	Population basically urban
City of Glenorchy .. ..	46	North and west	Population basically urban; small rural pockets
Municipality of Clarence ..	100	East	Population mainly urban; some rural settlement
Municipality of Kingborough	137	South and west	Population mainly urban; extensive rural settlement

The Statistician's problem, in 1921, 1933, 1947, 1954 and 1961 (Census years), had been how to combine these urban populations into a meaningful aggregate called *Hobart and Suburbs*. The solution, on each occasion, was to incorporate Hobart and Glenorchy into the total without dissection, and to add in defined urban areas of Clarence and Kingborough. In effect, it was necessary to partition the two larger municipalities, because of their large rural areas, and to establish statistical boundaries dividing urban from rural. Such boundaries were not static and underwent change as urban development spread out into previously rural areas. Thus, in the 1954 Census, *Hobart and Suburbs* was expanded to include Blackmans Bay (Kingborough), and Warrane and Howrah (Clarence); in the 1961 Census, the boundary was widened to include the Risdon Vale area (Clarence), the site of a newly-built suburb.

*Inadequacy of Concept*

The statistical boundary expansions just described raised difficult problems. Obviously *Hobart and Suburbs* in 1921 was a smaller area than in 1961; therefore population comparisons over time were, in strict theory, invalid. On the other hand, use of the same boundary for each census in the period 1921-1961 would have meant ignoring suburban development and producing a meaningless population figure for *Hobart and Suburbs*. There was, in addition, the difficult problem of deciding exactly what criteria to apply, when examining whether a rural area had developed to the point when it should be classified as urban. Continuity of urban development from the inner city outwards could be taken as a guide, but there seemed to be exceptions (e.g. the relatively unsettled road link between Kingston and Taroona; despite the break in continuity, Kingston is very much a Hobart suburb).

Community of interest, chief places of work, prevailing land use, these and other considerations all provided valid criteria, but no satisfactory objective measures were developed and their application, in the ultimate, involved a personal and subjective judgment by the Statistician at each census.

*An Australian Problem*

These problems were not confined to Hobart alone but demanded a solution for each of the other State capitals, and for other large towns throughout Australia (e.g. *Launceston and Suburbs* as opposed to Launceston City). Before the Census of 1966, the solution of these problems had involved an element of subjective evaluation, making it hard to decide whether *Hobart and Suburbs* was an area completely comparable as a statistical concept with *Perth and Suburbs*, *Melbourne and Suburbs*, etc. In the 1966 Census, the problem of defining urban boundaries and urban populations was solved with an entirely new approach, details of which appear later under the section headed "The Two Boundaries Concept".

*Topography of Hobart and Suburbs*

If the term "urban" calls to mind a picture of continuous densely inhabited terrain, then obviously the Hobart and Suburbs area fails to conform with this image, principally due to topography and the position of the western administrative boundaries. Both Hobart and Glenorchy have dense settlement along the Derwent but are bounded, in the west, by rugged hills (including Mt Wellington, 4,166 ft). Water from these western slopes is still used for municipal supply, and therefore there are very large reserved and unsettled areas within the two cities. In addition, much of the hill and mountain country is dedicated as a recreational reserve. In the simplest terms, some of Hobart's 31 square miles are completely built up whilst others are virgin bush; the same applies to Glenorchy's 46 square miles. Under such conditions, figures for the average density of population within the Hobart or Glenorchy administrative boundaries are not very meaningful measures, and are hardly comparable with densities for cities and towns not possessing such abnormal topography. Since Hobart and Glenorchy were incorporated in *Hobart and Suburbs* without dissection, it follows that density figures for this area would also be "diluted".

*Hobart and Suburbs from 1921*

The table that follows shows the population of Hobart and Suburbs recorded at successive censuses from 1921, and also the estimated population at 30 June 1965. The figures are now of *historical interest only* since, from the Census of 30 June 1966, the concept of *Hobart and Suburbs* became obsolete; its place was taken by areas defined under a new system of urban delimitation described in sections following the table.



## Population of Hobart and Suburbs (a), 1921-1965

Census Year	City of Hobart	City of Glenorchy	Municipality of Clarence (Part)	Municipality of Kingborough (Part)	Total Hobart and Suburbs
1921 ..	43,615	6,348	2,199	229	52,391
1933 ..	47,054	9,897	2,877	578	60,406
1947 ..	56,668	14,498	3,810	1,591	76,567
1954 ..	54,887	25,810	10,686	3,823	95,206
1961 ..	54,021	35,682	20,734	5,495	115,932
1965 (b)	53,493	38,442	25,786	6,834	124,555

(a) *Hobart and Suburbs* is now an *obsolete* classification.

(b) Estimate.

*Research Before 1966 Census*

In 1963, Dr G. J. R. Linge of the Australian National University was commissioned by the Commonwealth Statistician to examine and report on "the delimitation of metropolitan and other boundaries, together with suggestions as to nomenclature, boundaries, mapping and other matters considered pertinent". The results of his research, which included detailed investigation overseas and extensive field work (with officers of the Bureau) in Australia, were stated in "The Delimitation of Urban Boundaries", an A.N.U. publication, in August 1965. His report led to the adoption by the 27th Conference of Statisticians of a series of *objective* criteria for the delimitation of urban boundaries, variations from Dr Linge's recommendations being only of a minor nature. It was agreed that these new criteria should be applied in the 1966 Census.

*The Basic Criterion (1966 Census)*

The basic criterion adopted for the delimitation of urban boundaries was *population density* as applied to small areas. As urbanisation increases, the change from rural to urban uses is accompanied by increasing population density. Extensive field investigations have shown that areas at the fringe, which have largely lost their rural characteristics, and are developing towards urbanisation, have densities varying over only a small range. The adoption of a specific density from within that range provided a criterion which adequately delimits urban boundaries, and which can be applied objectively, uniformly, easily and without undue delay.

The criterion adopted was a density of 500 or more persons per square mile.

The geographic units classified according to the density criterion are Census collector's districts, the smallest units available. These areas vary in size and shape, but as far as possible they have been designed to ensure that significant urban development in large rural collector's districts is split off as a separate collector's district.

*Special Cases and Special Rules*

Rigid application of the 500-person density criterion in every case would have resulted in the discovery of "rural enclaves" in obviously urban areas, so special rules had to be made for collector's districts associated with airports, sports grounds and industrial sites (where urban land use results in low population density). In addition, a dwelling density criterion had to be applied to holiday areas which might be below acceptable population density because the Census was taken in mid-week during the winter.

The rules formulated by the 27th Conference of Statisticians to cover special cases were as follows: "That urban boundaries be defined so as to include all contiguous census collector's districts which have a population density of 500 or more per square mile, but that in applying this basic criterion, the following additional criteria and rules shall be taken into account:

- (i) land used for factories, airports, small sports areas, cemeteries, hostels, institutions, prisons, military camps and certain research stations shall be treated as being used for urban purposes if such land is contiguous with collector's districts which conform with density and other criteria;
- (ii) any area which does not conform with the population density criterion, and in which land is used for large sporting areas, explosives handling and munitions areas, large parks, holding paddocks and reservoirs, must be excluded from the urban area, unless it is bordered on three sides by collector's districts forming part of the urban area;
- (iii) any area which does not conform with the population density and land-use criteria, but which is completely surrounded by land included in an urban area, must be included in that urban area;
- (iv) if a collector's district, which would have been excluded from an urban area under other criteria, forms an indentation into an urban area which is less than one mile wide at the open end, it must be included in the urban area if a suitable boundary can be defined across the open end;
- (v) where there is a gap in urban development which is less than two miles (by the shortest rail or road distance) between the edge of one area of urban development and another, the gap is to be ignored and the urban areas treated as contiguous; if there is a gap of two or more miles between two urban areas, those urban areas are to be treated as separate urban areas even if the gap comprises mainly reserved land or a natural barrier;
- (vi) holiday resorts shall be recognised as urban on a dwelling rather than a population density criterion, but care must be taken to omit decaying mining towns and the like in applying this criterion; such resorts should be classed as urban if they have 250 or more dwellings (with at least 100 occupied dwellings) on Census night and have a recognisable core, except that where a holiday resort adjoins an urban area, it shall be encompassed by the urban boundary if it has a density of 125 or more dwellings per square mile."

#### *The Two Boundaries Concept*

To present 1966 Census results, *two* boundaries were drawn for each capital city and town with a population exceeding 75,000 persons. For the Hobart area, then, there was an outer and inner boundary described as follows:

(i) *The Outer Boundary*: This is *fixed* and circumscribes the area in close economic and social contact with the main city; the enclosed area is large enough to contain the anticipated growth of the major urban centre for a period of from 20 to 30 years, and its limits were defined after consultation with State authorities. This area is called the *Hobart Statistical Division*; with boundaries unchanged at successive censuses, the Hobart Statistical Division will record population totals for a constant area. Details of this Division are:

## Components of Hobart Statistical Division

Local Government Area	Remarks
(i) Cities of Hobart and Glenorchy, and Municipality of Clarence	} Included without partition.
(ii) Municipality of Kingborough.	
(iii) Municipality of New Norfolk	<i>Partitioned</i> south of Snug; northern portion included.
(iv) Municipality of Brighton	<i>Partitioned</i> ; west bank strip of Derwent River to New Norfolk, with Boyer and New Norfolk itself, included.
(v) Municipality of Sorell	<i>Partitioned</i> ; east bank strip of Derwent River as far north as Pontville included.
	<i>Partitioned</i> ; coastal strip to Carlton River, with Sorell and Midway Point, included.

The Hobart Statistical Division embraces a very much wider area than the old concept, Hobart and Suburbs, and it is formed from seven whole or partitioned local government areas; its boundaries are drawn wide enough to encompass all future urban development near Hobart over a long period.

(ii) *The Inner Boundary*: This confines the continuous area within which, at the time of the Census, there was a density of at least 500 persons per square mile. This density is ascertained for each collector's district (the smallest unit available). The boundary is *not fixed* and will move outwards from census to census, as urbanisation develops. The area within this inner boundary is called the *Hobart Metropolitan Area*.

The Hobart Metropolitan Area includes four local government areas (Hobart, Glenorchy, Clarence, Kingborough) but application of the density criterion means that all have to be partitioned. Details are:

## Components of Hobart Metropolitan Area

Local Government Area	Included	Excluded
(i) City of Hobart	Densely settled eastern portion	Hills and mountains to western boundary
(ii) City of Glenorchy	Densely settled eastern portion	Hills and mountains to western boundary
(iii) Municipality of Kingborough	Taroona (north of Shot Tower)	Balance of municipality
(iv) Municipality of Clarence	Densely settled western portion from Risdon Vale to Howrah	Balance of municipality

The Hobart Metropolitan Area embraces a much smaller area than the old concept, Hobart and Suburbs. Firstly, it excludes the sparsely settled hill and mountain country in the western parts of Hobart and Glenorchy (previously described as mainly water and recreational reserves). Secondly, application of the continuity criterion results in the exclusion of Kingston which, while satisfying the density criterion, is nevertheless separated from Taroona by several miles of very thinly populated terrain.

(iii) *Urban Areas Between Boundaries*: Between the inner and outer boundaries are a few areas which satisfy the density and other criteria and are therefore classified as urban; they are nevertheless excluded from the Hobart Metropolitan Area because there is a substantial break in continuity between them and the main inner urban centre. At present, there are four such centres, namely New Norfolk, Sorell-Midway Point, Lauderdale, and Kingston.

(iv) *Other Areas Between Boundaries:* All areas between the inner and outer boundaries not classified as urban are called rural.

(v) *Summary of Hobart Statistical Division:* This Division is made up of three components: (i) the continuous urban area within the inner boundary (i.e. the Hobart Metropolitan Area); (ii) urban centres between the two boundaries; (iii) the remaining area between the two boundaries (classified as rural).

(vi) *Administrative Boundaries:* In the delineation of both the Hobart Statistical Division and the Hobart Metropolitan Area, administrative boundaries have been ignored. The logic of this approach is that neither present nor future population growth can be adequately described purely in terms of local government areas.

#### *The Hobart Statistical Division*

The next table shows the population of the components of the Hobart Statistical Division at the Census of 1966, and also gives comparative figures from the Census of 1961. (To obtain the 1961 figures, it was necessary to draw boundaries according to the new criteria and to use some estimations.)

Population of Hobart Statistical Division

Components	Census 30 June 1961	Census, 30 June 1966				
		Males	Females	Persons	Intercensal Increase	
					Number	Percent
Hobart Metropolitan Area (a) ..	110,217	58,527	60,888	119,415	9,198	8.35
Other Urban Centres—						
Urban New Norfolk .. ..	5,494	2,879	2,896	5,775	281	5.11
Urban Kingston .. ..	2,980	1,628	1,635	3,263	283	9.50
Urban Sorell-Midway Pt ..	1,264	849	801	1,650	386	30.54
Urban Lauderdale .. ..	649	462	457	919	270	41.60
Total Other Urban ..	10,387	5,818	5,789	11,607	1,220	11.75
Total Urban .. ..	120,604	64,345	66,677	131,022	10,418	8.64
Rural .. ..	9,632	5,267	4,949	10,216	584	6.06
Total Hobart Statistical Division .. ..	130,236	69,612	71,626	141,238	11,002	8.45

(a) This concept replaces the obsolete classification *Hobart and Suburbs*.

In the previous table, the comparison 1961-1966 for the Hobart Statistical Division relates to the populations within the outer fixed boundary, i.e. the area is the same in both censuses; for the Hobart Metropolitan Area and for the other urban centres, which are delimited by moving boundaries, the intercensal increase 1961-1966 reflects: (i) population changes within the 1961 boundaries; (ii) urban growth beyond these boundaries as contained by the 1966 boundaries; and (iii) the merging of other urban areas, one with another, or with the Metropolitan Area.

If the population of *Hobart and Suburbs* (115,932) at the Census of 1961 is compared with that of the *Hobart Metropolitan Area* (110,217), the latter figure will be found lower by 5,715 persons. The chief cause of this difference is the exclusion of Kingston and Blackmans Bay from the Metropolitan Area, but the exclusion of thinly populated parts of Hobart and Glenorchy towards their western boundaries also contributed to the lower figure.

### Population Centred on Launceston

In 1891, the Government Statistician commenced publishing figures for an area called *Launceston and Suburbs*; he had encountered a problem similar to that in Hobart, i.e. the urban pattern of the inner city was spreading beyond the administrative boundaries into adjacent municipalities.

#### *Population of Launceston and Suburbs*

The following table shows the population of *Launceston and Suburbs* at successive censuses from 1947, and gives an estimate for 1965:

Population of Launceston and Suburbs (a), 1947-1965

Local Government Area	At 30 June			
	Census 1947	Census 1954	Census 1961	Estimated 1965
City of Launceston . . . . .	37,717	37,627	38,118	37,468
Municipality—Beaconsfield (Part) . . . . .	186	2,629	3,162	3,842
Lilydale (Part) . . . . .	350	2,392	4,462	5,424
St Leonards (Part) . . . . .	1,809	6,302	10,222	12,427
Westbury (Part) . . . . .	233	353	757	918
Evandale (Part) . . . . .	145	(b)	(b)	(b)
Total Launceston and Suburbs	40,440	49,303	56,721	60,079

(a) The classification *Launceston and Suburbs* is now *obsolete*.

(b) Excluded.

#### *Population of Urban Launceston*

As from the Census of 1966, the term *Launceston and Suburbs* became obsolete, and a new concept, based on application of an objective density criterion, was introduced. The area delimited in this way is called *Urban Launceston*.

Previously reference was made to the abnormal topography of the area within the administrative boundaries of Hobart and Glenorchy, resulting in large portions being thinly settled or uninhabited. Similar abnormalities are not encountered in Launceston and therefore the introduction of the objective density criterion has not substantially altered previous figures.

The population of *Urban Launceston* at 30 June 1961 was 56,465 persons and, at 30 June 1966, 60,453 persons. It should be noted that the boundaries of *Urban Launceston* have been delimited using the same criteria as those for the Hobart Metropolitan Area.

### Urban and Rural Population of Tasmania

In the previous sections, the delimitation of the Hobart Metropolitan Area and Urban Launceston has been described, the basic method being the inclusion of contiguous census collector's districts with a population density of 500 or more per square mile (subject to certain special rules). The same criteria were applied uniformly throughout Tasmania after the 1966 Census and the next table has been compiled to show a dissection of each local government area into urban and rural components; the Hobart Metropolitan Area and Urban Launceston are specified separately but it should be noted that these two areas are identical in statistical concept with other localities classified as urban.

One interesting result of the new approach to urban delimitation has been the creation of a "statistical town" of Burnie-Somerset, made necessary by continuous urban development linking Burnie and Wynyard municipalities. The north-west coastal towns of the State lie in an area where one or more conurbations are a distinct future possibility.

The localities classified as urban had to have populations exceeding 1,000 persons, but special rules applied to holiday resorts where housing density was taken into account. In the Tasmanian situation, this accounts for the inclusion of Beauty Point and Lauderdale, although their respective populations were less than 1,000 persons on 30 June (mid-winter) in 1966.

It should be stressed that the urban-rural distinction refers to areas, not to people. Thus, a sheep farmer driving every day to his property from a city flat is classified under "urban population"; similarly, a city factory worker making long daily drives to work from a house in the country forms part of the "rural population", because his residence is located in a non-urban area. The urban-rural dissection for Tasmania follows:

Population in Local Government Areas Classified as Urban and Rural  
Census, 30 June 1966

Local Government Area and Statistical Division	Total	Rural	Hobart Metropolitan Area	Urban Launceston	Other Urban (a)
Hobart (H) .. ..	53,226	1,117	52,109	..	..
Glenorchy (H) .. ..	39,034	1,282	37,752	..	..
Clarence (H) .. ..	30,233	2,333	26,981	..	919
Brighton { (H) .. ..	2,180	{ 1,133	..	..	..
(SE) .. ..		{ 1,047	..	..	..
Glamorgan (SE) .. ..	1,126	1,126	..	..	..
Green Ponds (SE) .. ..	867	867	..	..	..
Richmond (SE) .. ..	1,658	1,658	..	..	..
Sorell { (H) .. ..	3,306	{ 458	..	..	1,650
(SE) .. ..		{ 1,198	..	..	..
Spring Bay (SE) .. ..	1,205	1,205	..	..	..
Bruny (S) .. ..	398	398	..	..	..
Esperance (S) .. ..	3,740	3,740	..	..	..
Huon (S) .. ..	5,255	5,255	..	..	..
Kingborough { (H) .. ..	10,318	{ 3,360	2,573	..	3,263
(S) .. ..		{ 1,122	..	..	..
New Norfolk { (H) .. ..	10,319	{ 533	..	..	5,775
(S) .. ..		{ 4,011	..	..	..
Port Cygnet (S) .. ..	2,551	2,551	..	..	..
Tasman (S) .. ..	1,143	1,143	..	..	..
Totals—Hobart Div. ..	141,238	10,216	119,415	..	11,607
SE. Div. .. ..	7,101	7,101	..	..	..
S. Div. .. ..	18,220	18,220	..	..	..
Launceston .. ..	37,210	..	..	37,210	..
Total N. Central Div. ..	37,210	..	..	37,210	..
Burnie .. ..	18,599	2,806	..	..	15,793
Circular Head .. ..	7,866	5,173	..	..	2,693
Deloraine .. ..	5,190	3,397	..	..	1,793
Devonport .. ..	16,725	1,877	..	..	14,848
Kentish .. ..	5,619	5,619	..	..	..
King Island .. ..	2,461	2,461	..	..	..
Latrobe .. ..	4,810	2,569	..	..	2,241
Penguin .. ..	4,677	2,528	..	..	2,149
Ulverstone .. ..	10,160	3,311	..	..	6,849
Wynyard .. ..	9,562	3,972	..	..	5,590
Total NW. Div. .. ..	85,669	33,713	..	..	51,956

**Population in Local Government Areas Classified as Urban and Rural  
Census, 30 June 1966—continued**

Local Government Area and Statistical Division	Total	Rural	Hobart Metropolitan Area	Urban Launceston	Other Urban (a)
Beaconsfield .. .. .	9,972	4,167	..	3,903	1,902
Fingal .. .. .	3,786	3,786	..	..	..
Flinders .. .. .	1,220	1,220	..	..	..
George Town .. .. .	5,097	1,013	..	..	4,084
Lilydale .. .. .	7,841	2,252	..	5,589	..
Portland .. .. .	1,388	1,388	..	..	..
Ringarooma .. .. .	2,870	2,870	..	..	..
Scottsdale .. .. .	3,629	1,930	..	..	1,699
<b>Total NE. Div. .. ..</b>	<b>35,803</b>	<b>18,626</b>	<b>..</b>	<b>9,492</b>	<b>7,685</b>
Evandale .. .. .	1,552	1,525	..	27	..
Longford .. .. .	5,355	2,664	..	..	2,691
St Leonards .. .. .	13,663	878	..	12,785	..
Westbury .. .. .	4,964	4,025	..	939	..
<b>Total N. Midland Div. ..</b>	<b>25,534</b>	<b>9,092</b>	<b>..</b>	<b>13,751</b>	<b>2,691</b>
Bothwell .. .. .	1,005	1,005	..	..	..
Campbell Town .. .. .	1,753	1,753	..	..	..
Hamilton .. .. .	4,328	4,328	..	..	..
Oatlands .. .. .	2,500	2,500	..	..	..
Ross .. .. .	617	617	..	..	..
<b>Total Midland Div. ..</b>	<b>10,203</b>	<b>10,203</b>	<b>..</b>	<b>..</b>	<b>..</b>
Gormanston .. .. .	540	540	..	..	..
Queenstown .. .. .	4,386	94	..	..	4,292
Strahan .. .. .	466	466	..	..	..
Waratah .. .. .	695	695	..	..	..
Zeehan .. .. .	3,485	693	..	..	2,792
<b>Total W. Div. .. ..</b>	<b>9,572</b>	<b>2,488</b>	<b>..</b>	<b>..</b>	<b>7,084</b>
Migratory .. .. .	667	..	..	..	..
<b>Total Tasmania .. ..</b>	<b>371,217</b>	<b>109,659</b>	<b>119,415</b>	<b>60,453</b>	<b>81,023</b>

a) Details of urban localities are given in the next section.

### *Details of Urban Localities*

In the previous table, each local government area has been dissected to show the distribution of its population, the final column reading "Other Urban". The next table gives details of the localities classified as urban (but excludes the Hobart Metropolitan Area and Urban Launceston).

An analysis of the 21 centres classified as urban gives an indication as to why towns originate and grow. The two largest, Burnie and Devonport, are sites of overseas ports and the terminals for much interstate shipping. Four towns are connected with metals; Rosebery, Queenstown and Zeehan with mining; George Town with metallurgical refining. Two towns are suburban in character but separated from the Hobart Metropolitan Area by relatively thin settlement; they are Lauderdale and Kingston. New Norfolk was a population centre from the earliest days but derives its modern importance from the newsprint industry. The remaining centres largely serve surrounding rural areas.

**Populations in Localities Classified as Urban (Excluding Hobart Metropolitan Area and Urban Launceston) at Census 30 June 1966**

Locality Classed as Urban	Local Government Area (a)	Persons in Urban Locality	Locality Classed as Urban	Local Government Area (a)	Persons in Urban Locality
Lauderdale ..	Clarence ..	919	Ulverstone ..	Ulverstone ..	6,849
Sorell ..	Sorell ..	1,650	Wynyard ..	Wynyard ..	3,355
Kingston ..	Kingborough ..	3,263	Beaconsfield ..	Beaconsfield ..	1,027
New Norfolk ..	New Norfolk ..	5,775	Beauty Point ..	Beaconsfield ..	875
Burnie-Somerset ..	Burnie ..	(b) 15,793	George Town ..	George Town ..	4,084
Burnie-Somerset ..	Wynyard ..	(b) 2,235	Scottsdale ..	Scottsdale ..	1,699
Smithton ..	Circular Head ..	2,693	Longford ..	Longford ..	1,689
Deloraine ..	Deloraine ..	1,793	Perth ..	Longford ..	1,002
Devonport ..	Devonport ..	14,848	Queenstown ..	Queenstown ..	4,292
Latrobe ..	Latrobe ..	2,241	Rosebery ..	Zeehan ..	1,774
Penguin ..	Penguin ..	2,149	Zeehan ..	Zeehan ..	1,018

(a) See previous table for *total* population of local government area.

(b) See other component marked (b).

In a previous section, the components of the Hobart Statistical Division were stated to be three complete local government areas and four partitioned local government areas. The full details are as follows:

**Population of the Hobart Statistical Division at Census of 30 June 1966**

Local Government Area	Total	Rural	Hobart Metro- politan Area	Urban	Locality Classified as Urban (U)
Hobart .. .. .	53,226	1,117	52,109	..	..
Glenorchy .. ..	39,034	1,282	37,752	..	..
Clarence .. ..	30,233	2,333	26,981	919	(U) Lauderdale
Brighton (Part) ..	1,133	1,133	..	..	..
Sorell (Part) .. ..	2,108	458	..	1,650	(U) Sorell
Kingborough (Part) ..	9,196	3,360	2,573	3,263	(U) Kingston
New Norfolk (Part) ..	6,308	533	..	5,775	(U) New Norfolk
Total Hobart Div...	141,238	10,216	119,415	11,607	..

Although the City of Launceston is treated as a Statistical Division without combination with other components, a subsidiary grouping, Urban Launceston, is formed from the city and the suburban areas of five encircling local government areas. Details are as follows:

**Population of Launceston and Surrounding Local Government Areas at Census of 30 June 1966**

Local Government Area	Total	Rural	Urban Launceston	Other Urban	Locality Classified as Urban (U)
Launceston (N. Central)	37,210	..	37,210	..	..
Beaconsfield (NE) ..	9,972	4,167	3,903	1,027	(U) Beaconsfield
Evandale (N. Mid.) ..	1,552	1,525	27	875	(U) Beauty Point
Lilydale (NE) .. ..	7,841	2,252	5,589	..	..
St Leonards (N. Mid.) ..	13,663	878	12,785	..	..
Westbury (N. Mid.) ..	4,964	4,025	939	..	..
Total .. .. .	(a)	(a)	(a) 60,453	(a)	..

(a) Total distributed in North Central, North Eastern and North Midland Statistical Divisions.



*Australian Comparison*

The next table compares the proportions of urban and rural population of the Australian States at the Census of 30 June 1966. (In the table, Urban Launceston is included with "Other Urban".)

**Proportion of Urban and Rural Population, Australian States and Territories  
Census, 30 June 1966  
(Per Cent)**

Classification	Proportion of Total Population of State								
	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Urban—									
Metropolitan	57.78	65.53	43.29	66.65	59.78	32.17	..	96.13	58.23
Other ..	28.62	19.96	33.54	15.91	16.81	38.11	76.74	..	25.31
Rural ..	13.43	14.40	23.12	17.33	23.10	29.54	22.03	3.87	16.32
Migratory ..	0.17	0.11	0.05	0.11	0.31	0.18	1.23	..	0.14
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Decentralisation of Population*

Tasmania differs very significantly from the five continental States: (i) lowest proportion in the metropolitan area; (ii) highest proportion classified as "other urban"; (iii) highest proportion classified as "rural". The Tasmanian distribution is unique in one respect—none of the continental States has a non-metropolitan urban centre with a population exceeding 50 per cent of that in the metropolitan area; this is the Tasmanian situation, however, such a centre being Urban Launceston (included in "other urban" in the above table). This deviation from an Australian pattern is partly explained by the relative proximity of Launceston to the principal mainland markets, a factor also operating in favour of towns along the north west coast; the chief of these, Burnie and Devonport, together contain nine per cent of the State's population. In the continental States, decentralisation is currently being urged as a policy necessary to check the excessive concentration of population in metropolitan areas.

**Populations of Australian Capital Cities**

The populations of Australian capital cities at Censuses since 1901 are shown in the following table:

**Australia: Populations of Capital Cities at Census Dates (a)**

Metropolitan Area (b)	1901	1921	1933	1947	1954	1961 (c)	1966 (c)
Sydney .. .. ('000)	482	899	1,235	1,484	1,863	2,197	2,445
Melbourne .. ( " )	496	783	992	1,226	1,524	1,859	2,108
Brisbane .. ( " )	119	210	300	402	502	588	719
Adelaide .. ( " )	162	256	313	382	484	580	727
Perth .. .. ( " )	67	155	208	273	349	424	499
Hobart .. .. ( " )	35	52	60	77	95	110	119
Canberra .. ( " )	..	..	7	15	28	56	92
Total—Persons ('000)	1,361	2,355	3,115	3,859	4,845	5,814	6,709
Percentage (d)	36	43	47	51	54	55	58

(a) Census of 1911 not shown.

(b) Some of the apparent increase in the percentage of total population living in capital cities is due to periodic revision and extension of metropolitan boundaries.

(c) *Objective density criterion* introduced in 1966 Census, and 1961 figures revised on comparable basis.

(d) Percentage of total Australian population.

The Tasmanian metropolitan population, in the 65 years from 1901 to 1966, has averaged a growth rate of just under two per cent per annum; the corresponding growth rate for the total Australian metropolitan population has been 2.5 per cent per annum.

## VITAL STATISTICS

### Historical

In 1839, John Montagu, Colonial Secretary of Van Diemen's Land, submitted to the Governor, Sir John Franklin, a series of statistical returns; below is shown part of Return No. 17:

Vital Statistics of Van Diemen's Land

Year	Births	Deaths	Marriages
1824 .. ..	177	132	75
1828 .. ..	309	250	120
1829 .. ..	301	260	166
1830 .. ..	460	270	163

The complete table covers the period 1824-1838 but entries for 1825, 1826, 1827 and 1832 read "No Returns". In a commentary for the Governor's guidance, Montagu wrote: "I would also observe that the number of births and deaths are those only returned by ministers of the Church of England, and the former column refers to those only who have been christened; and although the number of deaths must be near the truth, yet the actual number of births has been very much under-stated". Thus, even though the Tasmanian record of births, deaths and marriages covers a period of 140 years, these early figures cannot be accepted as being very reliable.

### Registration Provisions

Franklin's Legislative Council had passed in 1838 *An Act for Registering Births, Deaths and Marriages in the Island of Van Diemen's Land and its Dependencies*. This provided for a Registrar in Hobart with subordinate Deputy Registrars in registration districts throughout the colony; they were to record births and deaths and report them to the Registrar. Ministers celebrating marriage were required to report direct to the Registrar; Deputy Registrars could also officiate and had certain licensing functions. As late as 1867, the Government Statistician complained that accurate death rates could not be compiled because Section 22 of the 1838 Act excluded the registration of the death of any prisoner of the Crown serving under an unexpired sentence of transportation. In 1868, he reported that the death rate could be accepted as correct since "only one transported offender died during the year". This would certainly suggest that *total* deaths for the island were not recorded for the years 1839 to 1866.

From 1857 to 1882, the Registrar of the Supreme Court was also Registrar of Births, Deaths and Marriages; from 1882 to 1919, the Government Statistician was the Registrar; from 1919, the Registrar-General's Department operated as a separate entity.

### The Registrar General

The principal Act under which the Registrar General operates is the *Registration of Births and Deaths Act* 1895 as amended which provides for district Registrars and the appointment of a Registrar General to be responsible for the maintenance of central registers; in essence, the regional approach of

the 1838 Act is retained. The functions of the Registrar General in relation to the registration of marriages were last defined in the *Marriage Act* 1942. However, in 1961, the Commonwealth Parliament passed the *Marriage Act* 1961. A few minor provisions (relating mainly to certain extensions of the application of the prohibited degrees) came into operation on the date the Act received the Royal Assent (6 May 1961) and the remainder of the Act came into operation on 1 September 1963. On this date, the Act superseded the marriage laws of all the States but did not affect the essential function of the Registrar General in the central registration of marriages. (The Commonwealth's passage of a uniform marriage law for Australia was the sequel to negotiations with all States.)

At the office of the Registrar General, there is kept a collection of all registrations made since 1839, as well as church records for earlier periods.

### Summary of Principal Statistics

The principal numbers and rates relating to vital statistics in Tasmania for recent years are given in the following table:

Summary of Vital Statistics

Year	Number of—				Rate per 1,000 of Mean Population			Infant Mortality
	Marriages	Live Births	Deaths	Infant Deaths (a)	Marriages (b)	Live Births (b)	Deaths (b)	Deaths Under One Year per 1,000 Live Births
1956	2,601	8,104	2,513	170	8.10	25.24	7.83	21.0
1957	2,507	8,435	2,670	170	7.63	25.68	8.13	20.2
1958	2,475	8,568	2,708	167	7.38	25.55	8.07	19.5
1959	2,567	8,625	2,780	202	7.52	25.26	8.14	23.4
1960	2,713	8,853	2,670	169	7.82	25.52	7.70	19.1
1961	2,677	8,982	2,789	151	7.57	25.40	7.89	16.8
1962	2,485	8,894	2,870	184	6.99	25.01	8.07	20.7
1963	2,579	8,530	2,818	153	7.15	23.66	7.82	17.9
1964	2,869	8,252	3,174	166	7.87	22.64	8.71	20.1
1965	2,888	7,535	3,043	125	7.85	20.49	8.27	16.6
1966	2,946	7,401	3,159	108	7.93	19.93	8.51	14.6

(a) Deaths under one year; included also in total deaths.

(b) Rates for period 1961-1965 have been revised.

### "Crude Rate" Comparisons

The rates per 1,000 of mean population for births, deaths and marriages are referred to as *crude* rates. It will be seen, in regard to marriages, that not *all* the population is "at risk", children and those already married being obvious excluded examples. Similarly, births are clearly events related to certain fertile age groups of women and not to the total population; births also are directly related to the number of married persons and to the age structure of the married proportion of the community. Finally, deaths have a definite relationship with the numbers of each sex and the age structure of the community. Crude rates are valid measures of comparison in the short term only.

Subject to this limitation, the following Tasmanian historical comparisons exist as from 1880:

1. Crude Marriage Rate: highest 10.51 (1946); lowest 5.50 (1895 and 1896).
2. Crude Birth Rate: highest 36.63 (1884); lowest 19.39 (1935).
3. Crude Death Rate: highest 17.41 (1883); lowest 7.70 (1960).

It is probably significant that 1946 was the year of rapid demobilisation after World War II and that a similar marriage trend was recorded for 1919 and 1920 after World War I; as to the minima for marriage and birth rates, the 1890s and 1930s were decades characterised by severe economic depression. The crude birth rate for 1966 (19.93 per 1,000 of mean population) is not far above the State's lowest figure recorded in the 20th century (i.e. 19.39 in 1935). There is, of course, no suggestion that 1966 was a year of economic depression and the popularly accepted theory attributes the low figure to deliberate family planning. However, other factors are operative, the principal being the age composition of the female population. Girls born in the immediate post-war period are now entering the ranks of those likely to marry and this will increase the number of potentially fertile women.

The effect of the post-war increase in births on the number of potentially fertile women may be inferred from the following table:

Pre-War, War-Time and Post-War Female Births

Year	Female Births	Year	Female Births	Year	Female Births
1934 .. ..	2,127	1941 .. ..	2,574	1948 .. ..	3,452
1935 .. ..	2,211	1942 .. ..	2,612	1949 .. ..	3,532
1936 .. ..	2,226	1943 .. ..	2,677	1950 .. ..	3,490
1937 .. ..	2,359	1944 .. ..	2,503	1951 .. ..	3,553
1938 .. ..	2,366	1945 .. ..	2,882	1952 .. ..	3,790
1939 .. ..	2,409				
		1946 .. ..	3,287	1953 .. ..	3,843
1940 .. ..	2,425	1947 .. ..	3,517	1954 .. ..	3,851

#### Revision of Crude Rates

Due to revision of intercensal estimates of population in the period 1961-1966 (resulting from the 1966 Census), *crude birth, death and marriage rates have been re-calculated* for the years 1961 to 1965 inclusive and will therefore differ slightly from those appearing in the 1967 Year Book.

#### Review of Infant Mortality

Infant mortality relates to the number of deaths *under one year* and the rate is expressed as the number of such deaths per 1,000 live births. It follows that comparisons over long periods of time are valid and not affected by the limitations attached to crude rates. In the record of infant mortality, the drop in rates has been dramatic:

Infant Mortality Rate, Selected Years, from 1880

Year	Deaths under One Year Per 1,000 Live Births	Year	Deaths under One Year Per 1,000 Live Births	Year	Deaths under One Year Per 1,000 Live Births
1880 ..	112.3	1920 ..	65.5	1960 ..	19.1
1890 ..	105.6	1930 ..	50.6	1964 ..	20.1
1900 ..	80.0	1940 ..	35.2	1965 ..	16.6
1910 ..	101.7	1950 ..	23.8	1966 ..	14.6

The peak year since 1880 was 1883 with a rate of 124.0. In the period 1880-1910, the annual infant mortality rate exceeded 100 on 14 occasions. By way of contrast, the rate in 1966 reached a *record minimum* of 14.6.

At the turn of the century, 20 to 25 per cent of all deaths were those of infants under one year. It is apparent that the rapid fall in infant mortality rates will have markedly affected crude death rates, infant deaths being a component of total deaths. Infant mortality rates are used by some authorities as an index of the degree of civilisation attained by a community; by such standards, Tasmania, in common with other Australian States, ranks extremely high in comparison with other countries of the world.

### Marriages

The following table summarises the number of marriages and the crude marriage rate since 1880:

Marriages and Crude Marriage Rates, Selected Years from 1880

Year	Marriages		Year	Marriages	
	Number	Crude Rates (a)		Number	Crude Rates (a)
1880 ..	840	7.39	1940 ..	2,476	10.27
1890 ..	954	6.66	1950 ..	2,422	9.18
1900 ..	1,332	7.72	1960 ..	2,713	7.82
1910 ..	1,493	7.82	1964 ..	2,869	7.87
1920 ..	1,999	9.50	1965 ..	2,888	7.85
1930 ..	1,450	6.56	1966 ..	2,946	7.93

(a) Number of marriages per 1,000 of mean population.

A feature of recent years has been the increase in the proportion of marriages which involve minors. This trend, dating from the end of World War II, still continues as shown in the following table:

### Marriages of Minors

Year	Age in Years							Total	
	14	15	16	17	18	19	20	Number	Percentage of Total Marriages (a)

### Bridegrooms

1961 ..	..	..	3	5	66	132	198	404	15.09
1962 ..	..	..	1	10	58	120	195	384	15.45
1963 ..	..	..	2	18	71	118	228	437	16.94
1964 ..	..	..	..	8	79	142	254	483	16.84
1965 ..	..	..	..	5	131	176	249	561	19.43
1966 ..	..	..	..	3	103	239	241	586	19.89

### Brides

1961 ..	..	8	93	185	290	359	331	1,266	47.29
1962 ..	1	14	79	192	286	329	318	1,219	49.06
1963 ..	2	12	94	193	296	361	311	1,269	49.20
1964 ..	..	1	118	237	314	382	370	1,422	49.56
1965 ..	..	3	105	253	370	401	382	1,514	52.42
1966 ..	..	2	128	189	350	448	425	1,542	52.34

(a) i.e. percentage of all marriages, including those involving adults.

The next table analyses the ages of all bridegrooms and brides contracting marriages:

Age of Bridegrooms and Brides, 1966

Age (Years)	Bridegrooms		Brides	
	Number	Per Cent of Total	Number	Per Cent of Total
Under 20 .. ..	345	11.71	1,117	37.92
20-24 .. ..	1,483	50.35	1,260	42.76
25-29 .. ..	575	19.52	196	6.65
30-34 .. ..	172	5.84	83	2.82
35-39 .. ..	98	3.33	67	2.28
40-44 .. ..	74	2.51	56	1.90
45-49 .. ..	44	1.49	52	1.77
50-54 .. ..	49	1.66	47	1.60
55-59 .. ..	36	1.22	23	0.78
60-64 .. ..	29	0.98	21	0.71
65 and Over .. ..	41	1.39	24	0.81
Total .. ..	2,946	100.00	2,946	100.00

The following table gives the average age of brides and bridegrooms in recent years:

Average Age of Bridegrooms and Brides  
(Years)

Particulars	1961	1962	1963	1964	1965	1966
Average Age of Bridegrooms—						
Bachelors .. ..	24.65	24.74	24.23	24.25	24.01	24.44
Widowers .. ..	54.58	55.12	56.63	57.44	55.40	57.55
Divorcees .. ..	40.06	40.07	41.43	42.02	40.60	40.87
All Bridegrooms .. ..	26.79	26.89	26.48	26.64	25.99	26.88
Average Age of Brides—						
Spinsters .. ..	21.48	21.22	21.16	21.09	21.05	21.50
Widows .. ..	45.64	49.86	49.25	51.39	49.86	51.59
Divorcees .. ..	35.52	37.47	36.97	38.14	36.83	38.84
All Brides .. ..	23.37	23.41	23.10	23.30	22.82	23.84

In the next table, the conjugal condition of persons marrying is shown for a six-year period:

Conjugal Condition of Persons Marrying

Year	Bridegrooms			Brides			Total Marriages
	Bachelors	Widowers	Divorced	Spinsters	Widows	Divorced	
1961 ..	2,403	100	174	2,406	119	152	2,677
1962 ..	2,225	91	169	2,221	93	171	2,485
1963 ..	2,334	100	145	2,332	89	158	2,579
1964 ..	2,581	112	176	2,592	122	155	2,869
1965 ..	2,638	106	144	2,643	96	149	2,888
1966 ..	2,636	125	185	2,634	117	195	2,946

Over the last ten years, the months in which marriages most frequently occur are April, followed by December and January in that order; July appears

to be the least popular. The numbers of marriages performed according to the rites of the principal religious denominations and of civil marriages contracted before Registrars are shown below for recent years:

#### Marriages, Religious and Civil

Particulars of Celebration	1961	1962	1963	1964	1965	1966
Religious Rites—						
Church of England .. ..	974	855	934	1,108	1,089	1,097
Catholic .. ..	567	522	518	605	641	652
Presbyterian .. ..	152	125	113	138	143	141
Methodist .. ..	406	367	398	377	381	416
Congregational .. ..	31	43	46	31	49	47
Baptist .. ..	76	64	85	75	98	79
Church of Christ .. ..	23	16	23	25	21	19
Salvation Army .. ..	25	19	20	21	20	17
Seventh Day Adventist .. ..	10	3	5	6	3	11
Other .. ..	51	60	74	71	86	92
Civil Ceremonies (a) .. ..	362	411	363	412	357	375
Total .. ..	2,677	2,485	2,579	2,869	2,888	2,946

(a) Marriages contracted before Registrars.

#### Divorce

Divorce in Tasmania was previously provided for under the *Matrimonial Causes Act* 1860 as amended in 1864, 1874 and 1959. However, as from 1 February 1961, Australia came under uniform divorce law, the new *Matrimonial Causes Act* 1959 of the Commonwealth Parliament having come into effect on that date. (Like the uniform marriage law, the Commonwealth legislation relating to divorce was the sequel to negotiations with the States.)

In 1966, dissolutions of marriage approached 11 per cent of the number of marriages contracted for that year (319 dissolutions against 2,946 marriages). The increase in the number of annual dissolutions is summarised in the historical table which follows.

#### Dissolutions of Marriage (a) Granted, Summary from 1881

Decade Ending—	Maximum in Decade		Minimum in Decade	
	Year	Number	Year	Number
1890 .. ..	1886	6	1884	..
1900 .. ..	1894	6	1896	3
1910 .. ..	1909	13	1904	2
1920 .. ..	1920	18	1916	2
1930 .. ..	1928	55	1924	20
1940 .. ..	1938	109	1937	30
1950 .. ..	1949	266	1942	83
1960 .. ..	1954	233	1958	176
1966 (b) ..	1966	319	1964	230

(a) Includes nullities of marriage and judicial separations.

(b) Incomplete decade.

The following table gives the number of petitions filed by husbands and wives respectively, and the number of dissolutions of marriage during the last six years. Every decree of dissolution of marriage is, in the first instance, a decree nisi and is not made absolute till the expiration of not less than three months thereafter.

## Petitions Filed and Dissolutions Granted

Particulars	1961	1962	1963	1964	1965	1966
Petitions for Dissolution (a) Filed By—						
Husband .. .. .	154	127	126	149	146	156
Wife .. .. .	168	153	147	175	185	201
Total Petitions .. ..	322	280	273	324	331	357
Dissolutions (a) Granted on Petition of—						
Husband .. .. .	124	125	108	116	131	142
Wife .. .. .	162	124	153	114	149	177
Total Dissolutions ..	286	249	261	230	280	319

(a) Includes nullities of marriage and judicial separations.

The next table deals with petitions filed:

## Petitions Filed, 1966

Petition For—	Petitioner		Total
	Husband	Wife	
Dissolution .. .. .	156	201	357
Nullity .. .. .	..	..	..
Judicial Separation .. ..	..	..	..
Total .. .. .	156	201	357

The table that follows analyses the grounds on which dissolutions were granted:

## Dissolutions Granted According to Grounds, 1966

Grounds	Petitioner		Total
	Husband	Wife	
DISSOLUTION OF MARRIAGE			
Single Ground—			
Desertion .. ..	69	72	141
Adultery .. .. .	33	25	58
Separation .. .. .	27	47	74
Cruelty .. .. .	..	9	9
Drunkenness .. .. .	..	3	3
Refusal to Consumate ..	1	..	1
Dual Grounds—			
Desertion and Adultery ..	2	3	5
Desertion and Separation	8	3	11
Cruelty and Drunkenness	..	6	6
Other .. .. .	..	7	7
Three Grounds or More ..	1	1	2
Total .. ..	141	176	317
NULLITY			
Bigamy .. .. .	1	..	1
JUDICIAL SEPARATION			
Adultery .. .. .	..	1	1



The more frequent grounds for the granting of dissolutions are:

**Dissolutions (a) Granted According to More Frequent Grounds**

Grounds	1961	1962	1963	1964	1965	1966
On Petition of Husband—						
Adultery .. .. .	47	42	32	37	30	33
Desertion .. .. .	63	60	46	48	61	69
Separation .. .. .	13	18	23	20	27	27
Other .. .. .	1	5	7	11	13	13
On Petition of Wife—						
Adultery .. .. .	34	14	27	17	27	25
Desertion .. .. .	102	54	66	47	58	72
Separation .. .. .	18	41	40	25	41	47
Other .. .. .	8	15	20	25	23	33
Total .. .. .	286	249	261	230	280	319

(a) Includes nullities and judicial separations.

An analysis is made of the ages of the parties:

**Dissolutions of Marriage, 1966—Ages of Parties at Time of Dissolution (a)**

Age of Husband (Years)	Age of Wife (Years)						Total Husbands
	Under 21	21-29	30-39	40-49	50-59	60 and over	
Under 21 .. .. .	..	..	..	..	..	..	..
21-29 .. .. .	1	55	4	..	..	..	60
30-39 .. .. .	..	32	56	6	1	..	95
40-49 .. .. .	..	2	41	51	1	..	95
50-59 .. .. .	..	..	2	24	26	1	53
60 and over .. .. .	..	1	1	1	6	5	14
Total Wives ..	1	90	104	82	34	6	317

(a) Excludes one nullity of marriage and one judicial separation.

The duration of marriage and issue are analysed below:

**Dissolutions of Marriage, 1966—Duration of Marriage and Issue (a)**

Duration of Marriage (Years)	Dissolutions of Marriages with—						Total Marriages Dissolved	Total Number of Children (b)
	No Children	1 Child	2 Children	3 Children	4 Children	5 or more Children		
0- 4 ..	12	7	2	..	..	..	21	11
5- 9 ..	21	31	21	5	2	1	81	101
10-14 ..	9	18	16	10	8	3	64	128
15-19 ..	14	8	9	14	10	6	61	143
20-24 ..	10	5	11	5	5	4	40	91
25-29 ..	18	7	3	..	..	1	29	21
30-34 ..	9	5	1	..	..	..	15	7
35-39 ..	1	..	..	..	..	..	1	..
40-44 ..	3	..	..	..	..	..	3	..
45 and over	2	..	..	..	..	..	2	..
Total Dis-solutions..	99	81	63	34	25	15	317	..
Total Children(a)	..	81	126	102	100	93	..	502

(a) Excludes one nullity of marriage and one judicial separation.

(b) Under 21 years of age.

## Births

The following table summarises births and crude birth rates from 1880:

Number of Births and Crude Birth Rates, Selected Years from 1880

Year	Births		Year	Births	
	Number	Per 1,000 of Mean Population		Number	Per 1,000 of Mean Population
1880 ..	3,739	32.90	1930 ..	4,785	21.66
1885 ..	4,637	36.29	1935 ..	4,456	19.39
1890 ..	4,813	33.60	1940 ..	4,994	20.71
1895 ..	4,790	31.16	1945 ..	5,785	23.27
1900 ..	4,864	28.18	1950 ..	7,242	25.96
1905 ..	5,257	28.50	1955 ..	8,089	25.63
1910 ..	5,586	29.25	1960 ..	8,853	25.52
1915 ..	5,845	29.78	1964 ..	8,252	22.64
1920 ..	5,740	27.29	1965 ..	7,535	20.49
1925 ..	5,218	24.21	1966 ..	7,401	19.93

The next table shows, for a six-year period, the number of births and the age-groups of the mothers:

Number of Births Classified According to Age of Mother, and Crude Birth Rates

Age Group of Mothers (Years)	1961	1962	1963	1964	1965	1966
10-14 .. ..	3	8	5	2	6	1
15-19 .. ..	957	988	1,001	1,073	1,074	1,113
20-24 .. ..	2,949	2,997	2,869	2,834	2,632	2,586
25-29 .. ..	2,383	2,371	2,302	2,190	2,039	2,000
30-34 .. ..	1,536	1,471	1,368	1,196	1,016	980
35-39 .. ..	879	772	717	704	572	541
40-44 .. ..	254	264	255	231	186	168
45 and over ..	21	23	13	22	10	12
Total .. ..	8,982	8,894	8,530	8,252	7,535	7,401
Crude Birth Rate (a)	25.40	25.01	23.66	22.64	20.49	19.93

(a) Births per 1,000 of mean population.

One common observation is that births of males, in total, usually exceed those of females. The next table shows births by sex and indicates masculinity:

Births by Sex and Masculinity

Particulars	1961	1962	1963	1964	1965	1966
Births of—						
Males .. ..	4,635	4,629	4,428	4,218	3,876	3,753
Females .. ..	4,347	4,265	4,102	4,034	3,659	3,648
Total .. ..	8,982	8,894	8,530	8,252	7,535	7,401
Masculinity (a) ..	106.63	108.53	107.95	104.56	105.93	102.88

(a) Number of male births per 100 female births.

In the following table, births are analysed by sex and by the age of the mother and classified as nuptial or ex-nuptial:

**Births by Sex, Age of Mother and Nuptial State, 1966**

Age Group of Mothers (Years)	Nuptial		Ex-Nuptial		All Births		
	Male	Female	Male	Female	Male	Female	Total
10-14 ..	..	..	..	1	..	1	1
15-19 ..	448	396	127	142	575	538	1,113
20-24 ..	1,212	1,242	65	67	1,277	1,309	2,586
25-29 ..	991	953	27	29	1,018	982	2,000
30-34 ..	497	445	19	19	516	464	980
35-39 ..	262	259	10	10	272	269	541
40-44 ..	88	73	2	5	90	78	168
45 and over ..	5	6	..	1	5	7	12
Total ..	3,503	3,374	250	274	3,753	3,648	7,401

In 1966, the 7,401 livebirths were the result of 7,338 confinements. Included in the confinements were 64 cases of twins, but no cases of triplets. ("Confinements" in this context relates only to those resulting in at least one live-birth.)

The table that follows summarises, for a six-year period, births according to whether the child was first-born or the issue of a subsequent birth:

**Births of First Born and Subsequent Births; Nuptial State of Mothers**

Classification of Births	1961	1962	1963	1964	1965	1966
Nuptial—						
First Born (a) ..	2,398	2,350	2,324	2,296	2,211	2,234
Subsequent Birth ..	6,180	6,072	5,742	5,454	4,853	4,643
Ex-Nuptial ..	404	472	464	502	471	524
Total .. ..	8,982	8,894	8,530	8,252	7,535	7,401
Ex-Nuptial Births as Percentage of Total Births .. ..	4.5	5.3	5.4	6.1	6.3	7.0

(a) In case of plural births with no previous issue, first child born alive is recorded as "First Born" and subsequent child or children as "Subsequent Birth".

It should be noted that "first born" in the previous tables refers specifically to the union from which the child originates; thus a mother married for the second time could be credited with a "first-born" child despite issue from the previous union.

### Infant Mortality

Infant mortality relates to children dying within one year of birth. The table that follows analyses such deaths at specified ages but a break in comparability occurs in 1962 when a more detailed analysis was employed and "one month" was replaced by "four weeks". The break in comparability is partly bridged by quoting 1962 figures both on the old and new basis of classification.

## Infant Mortality—Number of Deaths and Mortality Rates at Specific Ages

Year	Infant Deaths		Mortality Rate (a) at Age Specified—		
	Number	Per 1,000 Live Births	Under 1 Week	1 Week and under 1 Mth	1 Month and under 12 Mths
1961 .. ..	151	16.8	11	1	5
1962 .. ..	184	20.7	12	2	7

Year	Infant Deaths		Mortality Rate (a) at Age Specified—			
	Number	Per 1,000 Live Births	Under 1 Day	1 Day and under 1 Week	1 Week and under 4 Wks	4 Weeks and under 12 Mths
1962 ..	184	20.7	7	5	2	7
1963 ..	153	17.9	6	5	1	6
1964 ..	166	20.1	6	7	1	6
1965 ..	125	16.6	6	4	1	6
1966 ..	108	14.6	5	4	1	4

(a) Infant deaths per 1,000 live births; rates have been rounded to whole numbers.

## Cause of Infant Deaths

The next table shows the causes of infant deaths during the last six years, with specification of groups of items and single items:

## Infantile Mortality—Causes of Deaths Under One Year

Cause		1961	1962	1963	1964	1965	1966
057	Meningococcal Infections .. ..	..	..	..	..	..	1
001-056 } 058-326 }	Other General Diseases (a) .. ..	2	2	4	2	2	1
340	Meningitis .. ..	2	2	..	2	1	..
330-334 } 341-398 }	Other Diseases of the Nervous System	1	1	1	2	1	1
400-468	Diseases of the Circulatory System ..	..	..	1	..	..	..
470-475	Acute Upper Respiratory Infections..	1	..	..	..	..	..
480-483	Influenza .. ..	..	..	..	1	..	..
490-493	Pneumonia .. ..	17	22	22	18	15	13
500-502	Bronchitis .. ..	2	1	1	1	1	1
510-527	Other Diseases, Respiratory System..	..	7	3	6	8	2
571	Gastro-Enteritis .. ..	..	2	3	3	2	2
530-570 } 572-587 }	Other Diseases of the Digestive System	..	3	3	4	3	3
590-594	Nephritis and Nephrosis .. ..	..	..	..	..	..	..
600-637	Other Diseases of the Genito-Urinary System .. ..	..	1	1	1	..	..
690-716	Diseases of the Skin .. ..	..	..	1	..	..	..
720-749	Diseases of the Bones and Organs of Movement .. ..	1	..	..	..	..	..
750-759	Congenital Malformations .. ..	32	50	35	28	27	14
760-769	Birth Injuries, Asphyxia and Infections of the New-Born .. ..	43	44	34	51	37	26
770-776	Other Diseases of Early Infancy ..	47	44	38	40	24	37
780-795	Ill-defined Conditions .. ..	..	..	..	..	..	..
800-999	External Causes .. ..	3	5	6	7	4	7
Total .. ..		151	184	153	166	125	108

(a) Principally infective and parasitic diseases.

All death statistics, including those relating to infant mortality, are compiled in accordance with the Seventh Revision (1955) of the International List of Causes of Death (World Health Organisation).

## Deaths

The following table summarises the number of deaths and crude death rates since 1880:

Number of Deaths and Crude Death Rates, Selected Years from 1880

Year	Deaths		Year	Deaths	
	Number	Per 1,000 of Mean Population		Number	Per 1,000 of Mean Population
1880 ..	1,832	16.12	1930 ..	1,948	8.82
1885 ..	2,036	15.94	1935 ..	2,353	10.24
1890 ..	2,118	14.79	1940 ..	2,387	9.90
1895 ..	1,811	11.78	1945 ..	2,413	9.71
1900 ..	1,903	11.02	1950 ..	2,466	8.85
1905 ..	1,844	10.00	1955 ..	2,489	7.89
1910 ..	2,120	11.10	1960 ..	2,670	7.70
1915 ..	2,015	10.27	1964 ..	3,174	8.71
1920 ..	2,036	9.68	1965 ..	3,043	8.27
1925 ..	1,996	9.26	1966 ..	3,159	8.51

A marked difference exists between male and female crude death rates as shown in the next table:

Male and Female Deaths and Crude Rates

Year	Number of Deaths			Deaths Per 1,000 of Mean Population			Ratio of Male to Female Crude Death Rates
	Males	Females	Persons	Males	Females	Persons	
1956 ..	1,378	1,135	2,513	8.43	7.20	7.83	1.171
1957 ..	1,514	1,156	2,670	9.06	7.17	8.13	1.263
1958 ..	1,534	1,174	2,708	9.01	7.11	8.07	1.267
1959 ..	1,553	1,227	2,780	8.97	7.29	8.14	1.230
1960 ..	1,546	1,124	2,670	8.79	6.57	7.70	1.338
1961 ..	1,601	1,188	2,789	8.96	6.79	7.89	1.320
1962 ..	1,622	1,248	2,870	9.01	7.10	8.07	1.269
1963 ..	1,601	1,217	2,818	8.75	6.83	7.82	1.281
1964 ..	1,797	1,377	3,174	9.76	7.64	8.71	1.277
1965 ..	1,716	1,327	3,043	9.24	7.29	8.27	1.267
1966 ..	1,726	1,433	3,159	9.21	7.79	8.51	1.182

In the following table, crude death rates for Tasmania are compared with those of the continental States:

Australian States—Crude Death Rates (a)

State	1921 (b)	1933 (b)	1947 (b)	1954 (b)	1961 (b)	1965	1966 (b)
N.S.W. ..	9.50	8.58	9.53	9.46	8.95	9.34	9.58
Victoria ..	10.52	9.59	10.44	9.20	8.37	8.86	8.91
Queensland ..	9.37	8.83	9.15	8.64	8.42	8.65	8.94
S.A. ..	10.02	8.44	9.62	9.02	8.06	8.27	8.55
W.A. ..	10.42	8.64	9.39	8.38	7.77	7.70	8.10
<b>Tasmania</b> ..	<b>10.30</b>	<b>9.60</b>	<b>9.17</b>	<b>8.67</b>	<b>7.89</b>	<b>8.27</b>	<b>8.51</b>
Australia (c) ..	9.91	8.92	9.69	9.10	8.47	8.80	9.00

(a) Deaths per 1,000 of mean population.

(b) Census year.

(c) Includes Australian Capital Territory and Northern Territory.

#### Death Rates for Specific Age Groups

Previously in this chapter, crude death rates were described as unsuitable for comparisons over long periods of time due to changes in the age structure of the community. In the following table, this difficulty is overcome by

calculating death rates for specific age groups. The method employed is to obtain the average annual deaths for specific age groups over those three-year periods which are broken in equal parts by a census of population (e.g. 30 June 1933 is the census date for a calculation of rates in the three years 1932-1934 inclusive). Rates can then be calculated by comparing the average number of deaths for each group with the number of persons in each group as revealed by the census. In theory, the calculation of such rates need not be restricted to periods for which a census date forms the midpoint but the advantage of accepting such restriction lies in the accuracy of the age distribution obtained from the census. In the table, three-year periods have been selected appropriate to the censuses of 1933 and 1961.

Death Rates for Specific Age Groups (a)

Age Group (Years)	Males		Females		Persons	
	1932-34	1960-62	1932-34	1960-62	1932-34	1960-62
0-4 .. ..	12.77	5.25	10.42	4.33	11.62	4.81
5-9 .. ..	2.08	0.63	1.54	0.33	1.81	0.48
10-14 .. ..	1.27	0.43	0.91	0.35	1.09	0.39
15-19 .. ..	2.05	1.30	2.22	0.56	2.14	0.94
20-24 .. ..	2.73	1.60	2.58	0.36	2.66	0.99
25-29 .. ..	2.98	1.67	3.74	0.56	3.35	1.13
30-34 .. ..	3.78	1.23	3.63	0.84	3.71	1.05
35-39 .. ..	4.71	1.90	4.43	1.65	4.56	1.78
40-44 .. ..	4.85	3.62	4.88	1.92	4.86	2.78
45-49 .. ..	6.90	5.33	5.44	3.76	6.19	4.57
50-54 .. ..	9.96	9.18	10.08	5.14	10.02	7.25
55-59 .. ..	14.47	16.12	11.62	7.98	13.09	12.23
60-64 .. ..	23.92	26.21	16.87	13.65	20.52	19.72
65-69 .. ..	35.11	39.64	30.46	21.74	32.87	29.72
70-74 .. ..	59.22	65.56	48.31	37.48	53.89	49.91
75-79 .. ..	94.23	94.25	83.58	62.47	88.97	76.57
80-84 .. ..	160.80	130.89	125.15	107.61	142.64	117.12
85-89 .. ..	204.45	198.46	195.28	154.97	199.07	173.40
90 and over ..	401.97	407.69	363.63	276.59	376.36	323.29

(a) Rate per 1,000 of the population in the specified age group at census date.

While specific death rates for females in the age groups 55-74 years have decreased in the period covered by the table, corresponding rates for males in the same age groups have actually increased. Attention is also called to the differential rates applying to males and females in age groups 15-34 for the period 1960-62.

A later section of this chapter is headed "Expectation of Life and Life Tables". The theory of constructing life tables can be related to the table above, the major difference being that the former depend on the calculation of differential rates for each year, and not for five-year age groups.

### Causes of Death

The Sixth (1948) Revision of the International List of Causes of Death was adopted for use in classifying causes of death in 1950.

The Revision introduced international rules for a uniform method of selecting the underlying cause of death to be tabulated if more than one cause is stated on the death certificate. The adoption of the 1948 revision affected the comparability of statistics for years prior to 1950 with those for 1950 and subsequent years.

The Seventh (1955) Revision of the International List of Causes of Death was adopted for use in 1958 but has not materially affected comparability. The causes of deaths registered in Tasmania classified according to the abbreviated list of the Seventh (1955) Revision, the rates per 100,000 of mean population and the proportion of deaths from each cause are shown in the following table. The system of classification is under continuous scrutiny and the Eighth Revision will become operative on 1 January 1968.

Causes of Death: Numbers and Rates, 1966

Cause of Death	Detailed List Numbers	Number of Deaths	Rate per 100,000 of Mean Population	Percentage of Total Deaths
1. Tuberculosis of Respiratory System.. ..	001-008	9	2	0.29
2. Tuberculosis, Other Forms .. ..	010-019	2	1	0.06
3. Syphilis and its Sequelae .. ..	020-029	2	1	0.06
4-16 (a) .. ..	(a)	5	1	0.16
17. All Other Diseases Classified as Infective and Parasitic .. ..	(b)	17	5	0.54
18. Malignant Neoplasms				
Digestive Organs and Peritoneum ..	150-159	178	48	5.64
Lung .. ..	162, 163	88	24	2.79
Breast .. ..	170	45	12	1.43
Genital Organs .. ..	171-179	56	15	1.77
Urinary Organs .. ..	180, 181	26	7	0.82
Leukaemia and Aleukaemia .. ..	204	25	7	0.79
Other Malignant and Lymphatic Neoplasms	(c)	78	21	2.47
19. Benign and Unspecified Neoplasms ..	210-239	5	1	0.16
20. Diabetes Mellitus .. ..	260	46	12	1.46
21. Anaemias .. ..	290-293	9	2	0.28
22. Vascular Lesions Affecting Central Nervous System .. ..	330-334	387	104	12.25
23. Non-Meningococcal Meningitis .. ..	340	3	1	0.09
24. Rheumatic Fever .. ..	400-402	..	..	..
25. Chronic Rheumatic Heart Disease ..	410-416	21	6	0.66
26. { Arteriosclerotic Heart Disease .. ..	420	843	227	26.69
Degenerative Heart Disease .. ..	421, 422	104	28	3.29
27. { Other Diseases of the Heart .. ..	430-434	109	29	3.45
28. Hypertension with Heart Disease .. ..	440-443	43	12	1.36
29. Hypertension without mention of Heart ..	444-447	23	6	0.73
30. Influenza .. ..	480-483	4	1	0.13
31. Pneumonia .. ..	490-493	139	37	4.40
32. Bronchitis .. ..	500-502	101	27	3.20
33. Ulcer of Stomach and Duodenum .. ..	540, 541	31	8	0.98
34. Appendicitis .. ..	550-553	3	1	0.09
35. Intestinal Obstruction and Hernia .. ..	560, 561, 570	14	4	0.44
36. Gastritis, Duodenitis, Enteritis and Colitis except Diarrhoea of the Newborn ..	543, 571, 572	12	3	0.38
37. Cirrhosis of Liver .. ..	581	16	4	0.51
38. Nephritis and Nephrosis .. ..	590-594	28	8	0.89
39. Hyperplasia of Prostate .. ..	610	9	2	0.29
40. Complications of Pregnancy, Childbirth and the Puerperium .. ..	640-652, 660, 670-689	2	1	0.06
41. Congenital Malformations .. ..	750-759	29	8	0.92
42. Birth Injuries, Post-Natal Asphyxia and Atelectasis .. ..	760-762	20	5	0.63
43. Infections of the Newborn .. ..	763-768	2	1	0.06
44. Other Diseases Peculiar to Early Infancy and Immaturity Unqualified .. ..	769-776	41	11	1.30
45. Senility without mention of Psychosis, Ill-defined and Unknown Causes .. ..	780-795	12	3	0.38

## Causes of Death: Numbers and Rates, 1966—continued

Cause of Death		Detailed List Numbers	Number of Deaths	Rate per 100,000 of Mean Population	Percentage of Total Deaths
46.	General Arteriosclerosis .. .. .	450	88	24	2.78
	Other Diseases of Circulatory System ..	451-468	34	9	1.08
	Other Diseases of Respiratory System ..	470-475, 510-527	33	9	1.04
	All Other Diseases .. .. .	Residual	162	44	5.13
	47. Motor Vehicle Accidents .. .. .	E810-E835	105	28	3.32
48.	All Other Accidents .. .. .	E800-E802, E840-E962	112	30	3.55
49.	Suicide and Self-inflicted Injuries .. ..	E963, E970 -E979	33	9	1.04
50.	Homicide and Operations of War .. ..	E964, E965, E980-E999	5	1	0.16
All Causes .. .. .		..	3,159	851	100.00

(a) 040, 043, 045-048, 050, 051, 055-058, 080, 084, 085, 100-108, 110-117.

(b) 030-039, 041, 042, 044, 052-054, 059-074, 081-083, 086-096, 120-138.

(c) 140-148, 160, 161, 164, 165, 190-203, 205.

It will be noted that Items 4-16 in the table were not listed individually, few associated deaths having been recorded. The specification of causes reads: (4) Typhoid Fever; (5) Cholera; (6) Dysentery, All Forms; (7) Scarlet Fever and Streptococcal Sore Throat; (8) Diphtheria; (9) Whooping Cough; (10) Meningococcal Infections; (11) Plague; (12) Acute Poliomyelitis; (13) Smallpox; (14) Measles; (15) Typhus and Other Rickettsial Diseases; (16) Malaria. Uncertainty as to diagnosis in earlier periods makes comparison difficult but, at the turn of the century, whooping cough, diphtheria, typhoid fever and scarlet fever were diseases associated with numerous deaths.

#### Causes of Death in Age Groups

The previous table showing causes of death makes no reference to age, a complete dissection by age and cause being beyond the scope of a year book. Nevertheless, there is an extremely significant relationship between age and cause of death and the next table indicates, in summary form, their close inter-connection.

For each of the specified causes in the table, two percentages are shown:

- (i) Deaths in a particular age group as a proportion of total deaths from all causes in that age-group.
- (ii) Deaths in a particular age group as a proportion of total deaths from the same cause at all ages.

The causes chosen and specified are such that they account, in total, for approximately 75 per cent or more of deaths in most of the given age groups.

Attention is called to "Accidental and Violent Deaths" (800-999) which account for over 50 per cent of deaths in the age groups 5 to 14, 15 to 19, and 20 to 24 years. Also noteworthy is the present relative unimportance of "Infective and Parasitic Diseases" (001-138). The most important group, in a total sense, is "Diseases of the Heart" (401, 410-443) followed by "Malignant Neoplasms—All Forms" (140-205); then "Vascular Lesions Affecting Central Nervous System" (330-334) followed by "Pneumonia, Bronchitis and Influenza" (480-502, 763); nevertheless, the inter-connection between age and cause of death is so close that none of these causes needs to be specified for some age-groups in the table.



## Main Causes of Death (in Age Groups), 1966

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
	Under One Year:	108	100.0	..	..
762	Post-natal asphyxia and atelectasis	9	8.3	9	100.0
750-759	Congenital malformations ..	14	13.0	29	48.3
760, 761	Birth injuries .. ..	11	10.2	11	100.0
774-776	Immaturity .. ..	31	28.7	31	100.0
480-502, 763	Pneumonia, bronchitis and influenza	16	14.8	246	6.5
..	Other causes .. ..	27	25.0	..	..
	1-4 years:	34	100.0	..	..
800-999	Accidental and violent deaths ..	13	38.2	255	5.1
750-759	Congenital malformations ..	3	8.8	29	10.3
140-205	Cancer (all forms) (b) ..	1	3.0	496	0.2
480-502	Pneumonia, bronchitis and influenza	4	11.8	244	1.6
001-138	Infective and parasitic diseases ..	3	8.8	35	8.6
..	Other causes .. ..	10	29.4	..	..
	5-14 years:	35	100.0	..	..
800-999	Accidental and violent deaths ..	19	54.3	255	7.5
140-205	Cancer (all forms) (b) .. ..	9	20.0	496	1.8
480-502	Pneumonia, bronchitis and influenza	..	..	244	..
..	Other causes .. ..	7	25.7	..	..
	15-19 Years:	44	100.0	..	..
800-999	Accidental and violent deaths ..	35	79.5	255	13.7
140-205	Cancer (all forms) (b) .. ..	..	..	496	..
750-759	Congenital malformations ..	1	2.3	29	3.4
..	Other causes .. ..	8	18.2	..	..
	20-24 Years:	34	100.0	..	..
800-999	Accidental and violent deaths ..	25	73.6	255	9.8
140-205	Cancer (all forms) (b) .. ..	3	8.8	496	0.6
750-759	Congenital malformations ..	1	2.9	29	3.4
..	Other causes .. ..	5	14.7	..	..
	25-34 Years:	49	100.0	..	..
800-999	Accidental and violent deaths ..	22	44.9	255	8.6
140-205	Cancer (all forms) (b) .. ..	13	26.5	496	2.6
401, 410-443	Diseases of the heart .. ..	3	6.1	1,120	0.3
001-138	Infective and parasitic diseases ..	2	4.1	35	5.7
..	Other causes .. ..	9	18.4	..	..
	35-44 Years:	111	100.0	..	..
800-999	Accidental and violent deaths ..	20	18.0	255	7.8
140-205	Cancer (all forms) (b) .. ..	31	27.9	496	6.3
401, 410-443	Diseases of the heart .. ..	18	16.2	1,120	1.6
480-502	Pneumonia, bronchitis and influenza	4	3.6	244	1.6
001-138	Infective and parasitic diseases ..	1	0.9	35	2.9
..	Other causes .. ..	37	33.4	..	..
	45-54 Years:	259	100.0	..	..
401, 410-443	Diseases of the heart .. ..	92	35.5	1,120	8.2
140-205	Cancer (all forms) (b) .. ..	55	21.2	496	11.1
800-999	Accidental and violent deaths ..	33	12.7	255	12.9
330-334	Vascular lesions affecting central nervous system .. ..	17	6.6	387	4.4
480-502	Pneumonia, bronchitis and influenza	10	3.9	244	4.1
..	Other causes .. ..	52	20.1	..	..

Main Causes of Death (in Age Groups), 1966—*continued*

International List Number	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
401, 410-443 140-205 330-334 800-999 480-502 ..	55-64 Years:	463	100.0	..	..
	Diseases of the heart .. ..	205	44.4	1,120	18.6
	Cancer (all forms) (b) .. ..	99	20.9	496	19.8
	Vascular lesions affecting central nervous system .. ..	42	9.0	387	10.9
	Accidental and violent deaths ..	24	5.1	255	9.4
	Pneumonia, bronchitis and influenza	30	6.9	244	13.2
	Other causes .. ..	63	13.7	..	..
401, 410-443 140-205 330-334 480-502 800-999 ..	65-74 Years:	810	100.0	..	..
	Diseases of the heart .. ..	335	41.4	1,120	29.8
	Cancer (all forms) (b) .. ..	136	16.9	496	27.4
	Vascular lesions affecting central nervous system .. ..	128	16.0	387	33.3
	Pneumonia, bronchitis and influenza	49	5.7	244	18.9
	Accidental and violent deaths ..	21	2.6	255	8.2
	Other causes .. ..	141	17.4	..	..
401, 410-443 330-334 140-205 450-456 480-502	75 Years and Over:	1,212	100.0	..	..
	Diseases of the heart .. ..	467	38.5	1,120	41.7
	Vascular lesions affecting central nervous system .. ..	186	15.3	387	47.8
	Cancer (all forms) (b) .. ..	149	12.4	496	30.2
	Diseases of arteries .. ..	75	6.2	111	67.6
	Pneumonia, bronchitis and influenza	128	10.5	244	52.7
	Other causes .. ..	207	17.1	..	..

(a) Deaths in the specified age group as a percentage of total deaths for a particular cause.

(b) Includes Hodgkin's disease and the leukaemias.

*Heart Diseases*

As the previous table indicates, heart diseases (list items 401, 410-443) are the greatest single cause of death. In the following record of deaths due to heart diseases, 1950 has been chosen as a start-point since earlier figures are not strictly comparable:

## Deaths from Heart Diseases (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	413	304	717	257	29.1
1961 ..	580	370	950	270	34.1
1962 ..	622	405	1,027	289	35.8
1963 ..	599	426	1,025	284	36.4
1964 ..	677	454	1,131	310	35.6
1965 ..	701	458	1,159	315	38.1
1966 ..	656	464	1,120	302	35.5

(a) List items 401, 410-443.

*Tuberculosis*

A development of recent years has been the marked decline in deaths attributed to tuberculosis. In the following table, 1950 has been chosen as

the start-point, earlier figures being not strictly comparable due to changes in classification and in the method of determining a single cause of death where multiple causes are shown on the death certificate.

**Deaths from Tuberculosis (All Forms) (a)**

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	27	44	71	25	2.9
1961 ..	10	5	15	4	0.5
1962 ..	11	1	12	3	0.4
1963 ..	10	4	14	4	0.5
1964 ..	10	1	11	3	0.3
1965 ..	6	3	9	2	0.3
1966 ..	6	5	11	3	0.3

(a) List items 001-019.

*Malignant Neoplasms*

In the next table, deaths attributed to list items 140-205 are analysed, the causes being summarised as "Malignant Neoplasms including Hodgkin's Disease and the Leukaemias":

**Deaths from Malignant Neoplasms (All Causes) (a)**

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	159	164	323	115	13.1
1961 ..	200	196	396	112	14.2
1962 ..	263	203	466	131	16.2
1963 ..	207	211	418	116	14.8
1964 ..	230	221	451	124	14.2
1965 ..	246	233	479	130	15.7
1966 ..	251	245	496	134	15.7

(a) List items 140-205.

*Lung Cancer*

There has been considerable interest recently in lung cancer because of its suspected connection with smoking habits. The following table shows deaths attributed to "Malignant Neoplasm of Respiratory System" (160-165) since 1950:

**Deaths from Malignant Neoplasm of Respiratory System**

Year	Deaths, List Items 160-165			Year	Deaths, List Items 160-165		
	Males	Females	Persons		Males	Females	Persons
1950 ..	20	4	24	1960 ..	40	3	43
1953 ..	19	1	20	1961 ..	47	3	50
1954 ..	23	5	28	1962 ..	70	8	78
1955 ..	33	7	40	1963 ..	44	9	53
1956 ..	35	9	44	1964 ..	51	16	67
1957 ..	43	7	50	1965 ..	60	11	71
1958 ..	29	10	39	1966 ..	76	16	92
1959 ..	43	11	54				

### Expectation of Life and Life Tables

Previously reference was made to the limitations of crude death rates as a measure of mortality. However, a correct measurement of the mortality of the population can be obtained from life tables.

A life table is, in effect, a mathematical model, its starting point being a hypothetical population (say 100,000) of newly-born males or females. Using data for a given period (e.g. single year age distribution of an actual population, deaths at single ages, etc.), the compiler calculates the theoretical number of survivors at each age in the hypothetical population until there are no survivors remaining.

In the table that follows,  $l_x$  is the number of persons surviving at exact age  $x$ . From this survivors' table, other measures can then be computed, namely:

- $L_x$ : the average number living between any year  $x$  and  $x + 1$
- $e^{\circ}_x$ : the complete expectation of life (i.e. the average number of years lived after age  $x$  by each of a group of persons aged exactly  $x$ ).

Not only does the  $l_x$  column give numbers of survivors at each age but, if accumulated, it gives an approximate measure of the total number of years lived by the life-table population. To obtain a more refined measure of the total number of years lived, it is necessary to accumulate  $L_x$  values. These can be obtained by averaging each consecutive pair of  $l_x$  values.

Taking the male life table as an example:

Total of all  $l_x$  values (0-105) = 6,841,916 years

Total of all  $l_{x+1}$  values (1-105) = 6,741,916 years

Therefore, total  $L_x$  values (0-105) = 6,791,916 years

According to the table, 100,000 males live a total of 6,791,916 years.

It follows, then, that the complete expectation of life ( $e^{\circ}_x$ ) can be taken as 67.92 years as from birth.

The above calculation shows the derivation of  $e^{\circ}_x$  where  $x$  is 0. The same logic applies to all other ages:

Again taking the male life table as an example:

Total of  $l_x$  values (10-105) = 5,865,686 years

Total of all  $l_{x+1}$  values (11-105) = 5,768,624 years

Therefore, total  $L_x$  values (10-105) = 5,817,155 years

According to the table, 97,062 males live a total of a further 5,817,155 years.

It follows then that each male aged 10 has an average life expectancy of a further

59.93 years  $\left( \text{i.e. } \frac{5,817,155}{97,062} \right)$

From these examples, it will be seen that  $e^{\circ}_x$  is simply an average or per capita figure, the two elements involved being the total number of years lived by a given population and the given population itself.

For the sake of brevity in the table, the following usual values have not been given:

$dx$ ; the number of deaths in the year of age  $x$  to  $x + 1$  among the  $l_x$  persons who enter on that year.

$p_x$ ; the probability of a person aged  $x$  living a year.

$q_x$ ; the probability of a person aged  $x$  dying within a year.

If required, these values can be computed from the tables as follows:

$$dx = l_x - l_{x+1}$$

$$p_x = \frac{l_{x+1}}{l_x}$$

$$\text{and } q_x = 1 - p_x$$

**Australia: Life Tables, 1960-62**  
**Survivors ( $l_x$ ) and Complete Expectation of Life ( $e^{\circ}x$ )**

**Males**

Age $x$	$l_x$	$e^{\circ}x$	Age $x$	$l_x$	$e^{\circ}x$	Age $x$	$l_x$	$e^{\circ}x$
0 ..	100,000	67.92	35 ..	93,931	36.45	70 ..	54,944	9.77
1 ..	97,761	68.46	36 ..	93,749	35.51	71 ..	52,100	9.27
2 ..	97,584	67.59	37 ..	93,554	34.59	72 ..	49,168	8.80
3 ..	97,467	66.67	38 ..	93,343	33.67	73 ..	46,160	8.34
4 ..	97,379	65.73	39 ..	93,112	32.75	74 ..	43,092	7.90
5 ..	97,315	64.77	40 ..	92,859	31.84	75 ..	39,984	7.47
6 ..	97,259	63.81	41 ..	92,580	30.93	76 ..	36,860	7.06
7 ..	97,206	62.84	42 ..	92,274	30.03	77 ..	33,745	6.67
8 ..	97,154	61.87	43 ..	91,938	29.14	78 ..	30,661	6.29
9 ..	97,105	60.91	44 ..	91,569	28.25	79 ..	27,629	5.92
10 ..	97,062	59.93	45 ..	91,165	27.38	80 ..	24,669	5.57
11 ..	97,022	58.96	46 ..	90,723	26.51	81 ..	21,803	5.24
12 ..	96,981	57.98	47 ..	90,238	25.65	82 ..	19,054	4.92
13 ..	96,936	57.01	48 ..	89,705	24.80	83 ..	16,448	4.63
14 ..	96,885	56.04	49 ..	89,118	23.96	84 ..	14,008	4.35
15 ..	96,825	55.07	50 ..	88,473	23.13	85 ..	11,758	4.08
16 ..	96,752	54.11	51 ..	87,762	22.31	86 ..	9,716	3.84
17 ..	96,660	53.16	52 ..	86,979	21.51	87 ..	7,897	3.61
18 ..	96,541	52.23	53 ..	86,119	20.72	88 ..	6,306	3.40
19 ..	96,384	51.31	54 ..	85,175	19.94	89 ..	4,943	3.20
20 ..	96,215	50.40	55 ..	84,142	19.18	90 ..	3,800	3.02
21 ..	96,049	49.49	56 ..	83,015	18.43	91 ..	2,862	2.85
22 ..	95,886	48.57	57 ..	81,790	17.70	92 ..	2,111	2.70
23 ..	95,728	47.65	58 ..	80,459	16.99	93 ..	1,524	2.55
24 ..	95,577	46.73	59 ..	79,017	16.29	94 ..	1,076	2.42
25 ..	95,432	45.80	60 ..	77,456	15.60	95 ..	742	2.29
26 ..	95,292	44.86	61 ..	75,771	14.94	96 ..	500	2.17
27 ..	95,154	43.93	62 ..	73,954	14.29	97 ..	329	2.06
28 ..	95,014	42.99	63 ..	72,002	13.67	98 ..	211	1.96
29 ..	94,871	42.06	64 ..	69,915	13.06	99 ..	132	1.86
30 ..	94,726	41.12	65 ..	67,699	12.47	100 ..	80	..
31 ..	94,577	40.18	66 ..	65,361	11.90	101 ..	47	..
32 ..	94,425	39.25	67 ..	62,910	11.34	102 ..	27	..
33 ..	94,267	38.31	68 ..	60,353	10.80	103 ..	15	..
34 ..	94,103	37.38	69 ..	57,696	10.28	104 ..	8	..

Australia: Life Tables, 1960-62  
Survivors ( $l_x$ ) and Complete Expectation of Life ( $e^{\circ}_x$ )  
Females

Age $x$	$l_x$	$e^{\circ}_x$	Age $x$	$l_x$	$e^{\circ}_x$	Age $x$	$l_x$	$e^{\circ}_x$
0 ..	100,000	74.18	35 ..	96,183	41.70	70 ..	72,505	12.19
1 ..	98,243	74.49	36 ..	96,065	40.75	71 ..	70,378	11.54
2 ..	98,074	73.62	37 ..	95,936	39.81	72 ..	68,079	10.92
3 ..	97,974	72.70	38 ..	95,797	38.86	73 ..	65,600	10.31
4 ..	97,911	71.74	39 ..	95,646	37.92	74 ..	62,939	9.72
5 ..	97,854	70.78	40 ..	95,481	36.99	75 ..	60,096	9.16
6 ..	97,805	69.82	41 ..	95,302	36.06	76 ..	57,077	8.62
7 ..	97,762	68.85	42 ..	95,107	35.13	77 ..	53,888	8.10
8 ..	97,725	67.88	43 ..	94,893	34.21	78 ..	50,543	7.60
9 ..	97,693	66.90	44 ..	94,658	33.29	79 ..	47,058	7.13
10 ..	97,664	65.92	45 ..	94,400	32.38	80 ..	43,453	6.68
11 ..	97,637	64.94	46 ..	94,117	31.48	81 ..	39,756	6.25
12 ..	97,611	63.95	47 ..	93,809	30.58	82 ..	36,006	5.85
13 ..	97,584	62.97	48 ..	93,474	29.69	83 ..	32,247	5.47
14 ..	97,556	61.99	49 ..	93,109	28.80	84 ..	28,530	5.12
15 ..	97,525	61.01	50 ..	92,713	27.92	85 ..	24,909	4.79
16 ..	97,488	60.03	51 ..	92,283	27.05	86 ..	21,440	4.49
17 ..	97,443	59.06	52 ..	91,817	26.18	87 ..	18,174	4.20
18 ..	97,391	58.09	53 ..	91,314	25.32	88 ..	15,158	3.94
19 ..	97,335	57.12	54 ..	90,773	24.47	89 ..	12,427	3.70
20 ..	97,278	56.16	55 ..	90,191	23.63	90 ..	10,005	3.48
21 ..	97,220	55.19	56 ..	89,566	22.79	91 ..	7,905	3.27
22 ..	97,161	54.22	57 ..	88,895	21.96	92 ..	6,125	3.08
23 ..	97,101	53.26	58 ..	88,171	21.13	93 ..	4,650	2.91
24 ..	97,042	52.29	59 ..	87,388	20.32	94 ..	3,457	2.74
25 ..	96,984	51.32	60 ..	86,537	19.51	95 ..	2,515	2.59
26 ..	96,924	50.35	61 ..	85,608	18.72	96 ..	1,789	2.45
27 ..	96,861	49.38	62 ..	84,591	17.94	97 ..	1,243	2.32
28 ..	96,794	48.42	63 ..	83,479	17.17	98 ..	843	2.19
29 ..	96,723	47.45	64 ..	82,265	16.42	99 ..	557	2.08
30 ..	96,649	46.49	65 ..	80,944	15.68	100 ..	359	..
31 ..	96,570	45.53	66 ..	79,512	14.95	101 ..	225	..
32 ..	96,485	44.57	67 ..	77,962	14.24	102 ..	137	..
33 ..	96,392	43.61	68 ..	76,285	13.54	103 ..	81	..
34 ..	96,292	42.65	69 ..	74,470	12.86	104 ..	46	..

The tables are extracts from those produced by the Commonwealth Actuary, the source data being supplied by the Commonwealth Statistician and comprising: (i) the number of males and females living at each age last birthday, as shown by the 1961 Census; (ii) the number of male and female deaths at each age (last birthday) in the years 1960, 1961 and 1962.

There are no life tables prepared on the basis of Tasmanian experience and in most legal and actuarial situations, it is normal to use the Australian Life Tables.

### True Death Rates

The true death rate is the reciprocal of the complete expectation of life of a person at birth. In calculating  $e^{\circ}_x$  where  $x$  is 0, the sum of the  $L_x$  values was taken as the total number of years lived by the original 100,000 over a period of a century or more. To arrive at the true death rate, the life-table can also be regarded as the experience of *a single year* so that the sum of the  $L_x$  values

no longer represents years lived but simply persons "at risk" in association with 100,000 deaths. By way of illustration, in the male life table the sum of all survivors ( $L_x$  values) is 6,791,916 males associated with 100,000 deaths:

$$\text{True Death Rate} = \frac{100,000}{6,791,916} = 14.72 \text{ per } 1,000$$

The true death rate for a given period is unaffected by the particular age distribution of that period, and is determined solely by the mortality experience of the period as manifested in the rate of survival from each year of age to the next. The table below sets out complete expectation of life at birth and true death rates for the periods covered by Australian life tables:

**Australia—Complete Expectation of Life at Birth and True Death Rates**

Period	Complete Expectation of Life At Birth (Years)		True Death Rate (a)	
	Males	Females	Males	Females
1881-1890 .. ..	47.20	50.84	21.19	19.67
1891-1900 .. ..	51.06	54.76	19.58	18.26
1901-1910 .. ..	55.20	58.84	18.12	17.00
1920-1922 .. ..	59.15	63.31	16.91	15.80
1932-1934 .. ..	63.48	67.14	15.75	14.89
1946-1948 .. ..	66.07	70.63	15.14	14.16
1953-1955 .. ..	67.14	72.75	14.89	13.75
1960-1962 .. ..	67.92	74.18	14.72	13.48

(a) Number of deaths per 1,000 in stationary (or life-table) population.

While the complete expectation of life at birth has shown a marked increase in successive tables, the increase at other ages has not been so pronounced. The following table compares the complete expectation of life at selected ages for the period 1891-1900 with that for 1960-1962:

**Australia—Comparative Complete Expectation of Life**

Age x	Expectation of Life ( $e^{\circ}_x$ ) at each age according to experience of period.			
	Male Lives		Female Lives	
	1891-1900	1960-62	1891-1900	1960-62
0 .. .. .	51.06	67.92	54.76	74.18
5 .. .. .	55.61	64.77	58.64	70.78
10 .. .. .	51.43	59.93	54.46	65.92
15 .. .. .	46.98	55.07	49.97	61.01
20 .. .. .	42.81	50.40	45.72	56.16
25 .. .. .	38.90	45.80	41.69	51.32
30 .. .. .	35.11	41.12	37.86	46.49
35 .. .. .	31.34	36.45	34.14	41.70
40 .. .. .	27.65	31.84	30.49	36.99
45 .. .. .	23.99	27.38	26.69	32.38
50 .. .. .	20.45	23.13	22.93	27.92
55 .. .. .	17.08	19.18	19.29	23.63
60 .. .. .	13.99	15.60	15.86	19.51
65 .. .. .	11.25	12.47	12.75	15.68
70 .. .. .	8.90	9.77	9.89	12.19
75 .. .. .	6.70	7.47	7.37	9.16
80 .. .. .	5.00	5.57	5.49	6.68

It will be noted that  $e^{\circ}_x$  for age 5 years in the period 1891-1900 was actually higher than for age 0 years. This peculiarity was associated with the extremely high rate of infant mortality then prevailing.

## Chapter 6

### PRIMARY INDUSTRY—RURAL

#### LAND TENURE AND SETTLEMENT

##### Introduction

The area of Tasmania is 16,885,000 acres, all of which had been proclaimed as Crown property when the first settlers arrived in 1803. In the hundred and sixty years or so since their landing, 39 per cent of the State's total area has been alienated by grant or sale and is owned by individual persons, partnerships, companies and corporations; the balance, 61 per cent, is still vested in the Crown.

##### Historical

The first concern of the settlers on the Derwent and the Tamar in 1804 was the growing of grain for which small holdings were adequate; thus by 1820, land obtained as grants from the Crown was confined to areas within easy reach of Hobart and Launceston and of the 16,885,000 acres of Crown land, less than 70,000 acres had been alienated.

In the 1820s, the successful export of wool to Britain created a demand for land in very much larger holdings and annual alienation of Crown land by free grant increased rapidly as shown in the following table:

Area of Land Alienated by Grants in Van Diemen's Land, 1820 to 1843  
(<sup>'000 Acres</sup>)

Year	Area Granted	Year	Area Granted	Year	Area Granted	Year	Area Granted
1820 ..	} 69	1826 ..	60	1832 ..	33	1838 ..	45
1821 ..		1827 ..	77	1833 ..	24	1839 ..	15
1822 ..	(a)	1828 ..	165	1834 ..	9	1840 ..	10
1823 ..	434	1829 ..	208	1835 ..	9	1841 ..	7
1824 ..	43	1830 ..	108	1836 ..	8	1842 ..	..
1825 ..	(b)462	1831 ..	206	1837 ..	22	1843 ..	1

(a) Not available.

(b) Includes 350,000 acres granted to Van Diemen's Land Company.

From the previous table, it can be calculated that the alienation of Crown land by grant exceeded, in total, one million acres by 1825 and two million acres by 1843 (when this early system of free grants had virtually ceased). Apart from the 350,000 acres granted to the Van Diemen's Land Company in the north-west, the other alienated land included virtually the whole Midlands, the upper Derwent Valley and much of the east coast. At the same point in time—1843—less than 500,000 acres of Crown land had been sold, even though the price per acre ranged from \$0.50 to \$1.20.



A table in *Statistics of Van Diemen's Land* gives details of alienation, in aggregate, and of leasing of Crown land at 1 January 1850 as follows:

Total Area Granted and Sold to Settlers .. ..	2,722,513 Acres
Area of Land Held under Depasturing Licences .. ..	1,335,779 Acres

The Crown land under licence was a source of revenue to the Government which made available 1.3 million acres for a rental of \$33,428 in 1849. From this point of time, the process of alienation can be summarised as follows:

**Land Alienation from 1860**  
(<sup>'000 Acres</sup>)

Year (a)	Land		Year (a)	Land	
	Aggregate Alienated	In Process of Alienation		Aggregate Alienated	In Process of Alienation
1860 ..	3,069		1959 .. ..	6,362	199
1880 ..	4,233		1960 .. ..	6,386	190
1900 ..	4,835		1961 .. ..	6,403	212
1910 ..	4,932	1,104	1962 .. ..	6,417	197
1920 ..	5,242	964	1963 .. ..	6,430	199
1930 ..	5,721	542	1964 .. ..	6,598	220
1940 ..	5,912	423	1965 .. ..	6,619	204
1950 ..	6,143	365	1966 .. ..	6,616	208

(a) At 31 December until 1948; at 30 June for 1950 and following years.

**Sales of Crown Land**

The sale of Crown land is currently carried out under the *Crown Lands Act 1935* as amended. Sales fall into two broad categories: (i) by selection; (ii) by auction. In the case of selection, three classifications of rural land are established and purchase is made over a number of years by instalments, the term depending on the class of land. Land on which such instalments are being paid is defined as "Crown land in process of alienation". The following table shows details of recent sales:

**Sales of Crown Land, 1965-66**

Particulars	Number of Lots	Area	Value	
			Total	Average per Acre
Selections (Country Land) (a)—		acres	\$	\$
First-class land .. ..	32	1,931	17,967	9.30
Second-class land .. ..	78	20,480	86,050	4.20
Third-class land .. ..	1	490	1,667	3.41
Sold by Auction (Country Land) ..	26	1,134	21,782	19.20
Total .. ..	137	24,035	127,466	5.30
Town and Suburban Lots .. ..	111	1,591	89,330	56.76
Grand Total .. ..	248	25,626	216,796	..

(a) Financial details refer to the contract price, the actual payment being made in instalments over a period of years.

The next table summarises sales of Crown land over a five-year period:

**Sales of Crown Land—Summary**

Year	Area of Land Sold (Acres)			Average Price Per Acre (\$)	
	Country Lots	Town and Suburban Lots	Total	Country Lots	Town and Suburban Lots
1961-62 ..	5,457	65	5,522	4.94	318.45
1962-63 ..	14,478	318	14,796	4.93	120.65
1963-64 ..	33,518	747	34,265	3.73	53.33
1964-65 ..	22,454	255	22,709	7.94	154.47
1965-66 ..	24,035	1,591	25,626	5.30	56.76

**Present Use of Crown Lands**

The total area of Tasmania is 16,885,000 acres, of which, at 30 June 1966, 39.2 per cent had been alienated; 1.2 per cent was in the process of alienation; the balance, 59.6 per cent, was Crown land, a proportion of which was under lease or licence for pastoral, agricultural and mining purposes. Crown land reserved for forestry purposes, including the State Forests, accounted for 21.4 per cent of the State's area. ("Reservation" in the context of forestry does not imply land withheld from all types of use but simply land either used or to be used exclusively for forestry purposes.)

**Alienation and Occupation of Crown Lands, 30 June 1966**

Classification of Land	Area	
	Acres	Acres
Alienated (Aggregate) .. .. .		6,616,065
In Process of Alienation .. .. .		207,737
Crown Lands—		
Leased or Licensed—		
By Lands Department—		
Pastoral .. .. .	875,245	
Closer Settlement .. .. .	15,747	
Soldier Settlement .. .. .	40,882	
Short-term .. .. .	1,128	
By Mines Department .. .. .	44,606	
Total Leased or Licensed .. .. .		977,608
Forestry Reservations—		
State Forests .. .. .	2,434,463	
Other Land Reserved for Forestry Purposes .. .. .	1,173,764	
Total Forestry Reservations .. .. .		3,608,227
Other Crown Land .. .. .		5,475,363
Area of State .. .. .		16,885,000

In the previous table appears the item "forestry reservations". Over 1.7 million acres of this area are lands where cutting rights have been granted, either by exclusive forestry permit or by the award of pulpwood concessions.

Over 65 per cent (1965-66) of the logs for sawmills, paper mills, etc. were obtained from these forestry reservations. Further details of Crown land reserved for forestry appear in the Forestry section of Chapter 7, "Primary Industry—Non Rural".

The next table summarises the alienation and occupation of Crown lands over a five-year period:

**Alienation and Occupation of Crown Lands  
At 30 June**

Classification of Land	1962	1963	1964	1965	1966
AREA ('000 ACRES)					
Alienated (Aggregate) .. ..	6,417	6,430	6,598	6,619	6,616
In Process of Alienation ..	197	199	220	204	208
Crown Lands—					
Leased or Licensed (a) ..	1,137	1,076	1,104	1,025	977
Forestry Reservations (b) ..	3,263	3,407	3,511	3,532	3,608
Other .. .. .	5,871	5,773	5,452	5,505	5,476
PROPORTION OF TOTAL AREA (PER CENT)					
Alienated (Aggregate) .. ..	38.0	38.1	39.1	39.2	39.2
In Process of Alienation ..	1.2	1.2	1.3	1.2	1.2
Crown Lands—					
Leased or Licensed (a) ..	6.7	6.4	6.5	6.1	5.8
Forestry Reservations (b) ..	19.3	20.2	20.8	20.9	21.4
Other .. .. .	34.8	34.1	32.3	32.6	32.4

(a) By Lands Department and by Mines Department.

(b) Including State Forests.

As shown in the previous table, Crown land at 30 June 1966 occupies 59.6 per cent of the State's total area. The bulk of this land is located in the western half of the island where altitude, rainfall and soil, either individually or in combination, prevent successful farming development. The only other large concentration of Crown land is in the north-east.

Although the possibility of rapidly alienating more Crown land for farming purposes on any large scale may seem remote, it should be noted that much of this area is nevertheless of importance to the State's economy, specifically for forestry and tourism. Crown land reserved for forestry use occupies approximately 21.4 per cent of the area of the State while reservations classed as National Parks and Scenic Reserves account for nearly a further four per cent. Details of the latter type of reservation appear in the next section.

### National Parks and Scenic Reserves

The Scenery Preservation Board is responsible for the administration of the State's National Parks and Scenic Reserves which occupy a part of the residual Crown land. Details of National Parks are as follows:

## National Parks at 30 June 1967

Name	Locality	Area (Acres)
Cradle Mountain-Lake St Clair .. .. .	Central Highlands	338,496
Lake Pedder .. .. .	South-West	59,000
Mt Field .. .. .	Derwent Valley	40,058
Ben Lomond .. .. .	North-East	39,615
Frenchmans Cap .. .. .	West Coast	25,240
Hartz Mountains .. .. .	South	21,300
Mt Barrow .. .. .	North	1,134
Freycinet Peninsula .. .. .	East Coast	18,420
Rocky Cape .. .. .	North-West	4,000

The total area under reservation as National Park or Scenic Reserve exceeds 608,926 acres and the following list gives details of the various types of reserve, together with location and area (expressed to the whole number below where fractions of an acre are recorded):

## Scenic Reserves at 30 June 1967

Type of Reserve and Name	Locality	Area (Acres)
<b>Coastal Reserves—</b>		
Stewarts Bay .. .. .	Tasman Peninsula	4
Stewarts Bay, Esplanade, Pt Puer .. .. .	Tasman Peninsula	58
Pt Puer-Crescent Bay .. .. .	Tasman Peninsula	92
Brown Mt.-Remarkable Cave .. .. .	Tasman Peninsula	150
Eaglehawk Neck and Foreshore .. .. .	Tasman Peninsula	90
Eaglehawk Neck-Taranna .. .. .	Tasman Peninsula	61
Tasman Arch-Blowhole .. .. .	Tasman Peninsula	140
Waterfall Bay .. .. .	Tasman Peninsula	30
Fossil Island .. .. .	Tasman Peninsula	3
Tessellated Pavement .. .. .	Forestier Peninsula	9
Lookout Rock .. .. .	Bicheno	5
Cookville-Penguin Island .. .. .	Bruny Island	3
Fluted Cape-Cloudy Bay .. .. .	Bruny Island	600
Port Davey Foreshore .. .. .	South-West	1,350
Port Davey Islands .. .. .	South-West	202
Schouten Island .. .. .	East Coast	8,500
<b>Waterfalls—</b>		
St Columba .. .. .	Pyengana	775
Forth .. .. .	Sheffield	135
Marriott .. .. .	National Park	300
Liffey .. .. .	Western Tiers	250
Mt Barrow .. .. .	North	200
<b>River Reserves—</b>		
River Pieman .. .. .	West Coast	8,215
River Gordon .. .. .	West Coast	6,200
Roger River Pass .. .. .	North-West	430
Derwent Cliffs .. .. .	New Norfolk	11
<b>Cave Reserves—</b>		
Hastings .. .. .	South	131
Marakooa .. .. .	Mole Creek	146
King Solomon .. .. .	Mole Creek	500
Baldock (3 areas) .. .. .	Mole Creek	37 63 5
Gunns Plains .. .. .	Ulverstone	24
<b>Scenic Roads—</b>		
Lyell Highway .. .. .	Western Highlands	18,000
Zeehan-Renison Bell .. .. .	West Coast	272
St Marys Pass .. .. .	St Marys	674
Murchison Highway .. .. .	West Coast	1,640

## Scenic Reserves at 30 June 1967—continued

Type of Reserve and Name	Locality	Area (Acres)
<b>Fern Gullies, Forests, etc.—</b>		
Thermal Springs .. .. .	Kimberley	1
Thermal Springs .. .. .	Hastings	19
Chalet .. .. .	Hastings	1
Waterfall Creek .. .. .	Bruny Island	60
Ferndene Gorge .. .. .	Penguin	6
Notley Gorge .. .. .	West Tamar	28
Hellyer Gorge .. .. .	Waratah area	1,406
Corra Linn .. .. .	Launceston	1
Corinna .. .. .	West Coast	8
Bird Sanctuary .. .. .	Steppes	16
Fairy Glade .. .. .	Western Tiers	97
Bradys Lookout .. .. .	Rosevears	2
Parramores Lookout .. .. .	Port Arthur	1
Mt Strzelecki .. .. .	Flinders Is.	9,750
<b>Historic Sites, Buildings and Monuments—</b>		
Town of Port Arthur .. .. .	Tasman Peninsula	217
Mt Arthur .. .. .	Tasman Peninsula	10
Convict Coal Mines .. .. .	Saltwater River	528
Bowen's Monument .. .. .	Risdon	0
Bowen Park .. .. .	Risdon	6
"George III" Monument .. .. .	Southport	25
Tasman Monument .. .. .	Dunalley	0
D'Entrecasteaux Monument .. .. .	Gordon	1
York Town .. .. .	West Tamar	6
Recherche Bay .. .. .	Ramsgate	3
Settlement Island .. .. .	Macquarie Harbour	15
Isle of Condemned .. .. .	Macquarie Harbour	0
Old Gaol and Paddock .. .. .	Richmond	1
Entally House .. .. .	Hadspen	92
Steppes Homestead .. .. .	Steppes	25
Shot Tower .. .. .	Taroona	8
Waubadebar's Grave .. .. .	Bicheno	0
Toll House .. .. .	New Norfolk	0
Bluff Battery .. .. .	Bellerive	4
Oatlands Mill .. .. .	Oatlands	0
161 Davey Street .. .. .	Hobart	0

## War Service Land Settlement

After both World War I and World War II, Government schemes were operated with the aim of assisting ex-servicemen to settle on the land. The following section deals only with the scheme initiated to settle on the land eligible ex-servicemen from the 1939-45 War, and the Korean and Malaysian operations.

Finance for capital expenditure under the scheme is provided under the authority of the Commonwealth Parliament's Loan (War Service Land Settlement) Acts but the State Government is the administrative authority for actual operations, control being exercised through the War Service Land Settlement Division of the Agricultural Bank. The basic work of the Division has involved land acquisition and the development of rural holdings on which eligible ex-servicemen are then settled.

The following table summarises progress in physical terms (farms allotted, etc.) and in financial terms (loans to settlers, payments for acquisition, etc.):

**War Service Land Settlement**  
**(1939-45 War and Korea-Malaya Operations)**  
**Summary to 30 June 1966**

Operations		Commonwealth Expenditure (Aggregate)	
Particulars	Total to 30 June 1966	Advances in Respect of Tasmania	Total to 30 June 1966 (\$'000)
Land Acquired (Acres) ..	449,629	For Acquisition of Land .. ..	5,058
Farms Allotted—		For Development and Improvement of	
Number .. ..	506	Land .. ..	34,228
Area (Acres) ..	412,000	Contribution to Excess Cost over Val-	
Farms Being Developed—		uation .. ..	5,797
Number .. ..	9	Settlers' Credit Facilities .. ..	11,858
Area (Acres) ..	7,000	Remission of Settlers' Rent and Interest	463
Other Land (Acres) (a) ..	30,629	Living Allowances For Settlers ..	382
		Irrigation Projects .. ..	6
		Loss on Advances .. ..	113
		Cost of Administration of Credit	
		Facilities .. ..	572
		Total .. ..	58,477

(a) Land disposed of outside the scheme and discrepancies to be corrected upon survey.

Of the farms allotted to 30 June 1966, the largest concentrations were at King Island, Flinders Island, the Lawrenny estate and the Montagu project. The demand for properties under the scheme has not yet been completely satisfied although at 30 June 1966 there were only 27 eligible persons awaiting allocation of holdings.

### Advances to Settlers

Although the principal efforts in land settlement since World War II have been made under the War Service Land Settlement Scheme, the State Government has also operated its own schemes to assist settlers by providing loans. The following table shows particulars of advances under various Acts:

#### Advances to Settlers

Advances	Total Ad- vances Made During 1965-66	Total Advances to 30 June 1966	Balance Outstanding at 30 June 1966	
			Number	Amount
Agricultural Bank—	\$'000	\$'000		\$'000
State Advances Act (including Rural Credits) .. ..	715	11,651	1,188	3,729
Commonwealth Re-establish- ment and Employment Act 1945 .. ..	..	815	87	76
Primary Producers' Relief Act 1947 .. ..	..	595	15	6
Primary Producers' Relief Act 1960 .. ..	..	18	3	3
Primary Producers' Relief Act 1962 .. ..	..	19	7	13
Closer Settlement (Soldiers) Act .. ..	28	2,121	159	107
Closer Settlement Act .. ..	21	402	68	386
Total .. ..	764	15,621	1,527	4,320

Details of the main forms of assistance now available to settlers are as follows:

*The State Advances Act 1935*

Under Part III of the Act, loans may be made to persons in rural industries for the purchase of farm properties, discharge of mortgage or for making improvements. Loans may be made for periods up to 30 years at an interest rate determined by the Treasurer. The rate during 1965-66 was five and three-quarter per cent. The present limit on any single advance is \$20,000.

Under Part IV of the Act (Short Term Rural Credits), loans may be made to persons engaged in prescribed rural industries for the purchase of stock, plant, seeds and manures and for other purposes considered necessary for carrying on their industry. There is no statutory limit to the amount which may be advanced to each applicant. Usual period of loans are: plant, 10 years; stock, five years; land development, 10-15 years; structural improvements, 20 years; working expenses, one to three years.

## RURAL INDUSTRY

### General

Tasmania is associated in most peoples' minds with apples and hops, since it is Australia's leading producer of these crops, but its rural industry is based on a very much wider range of products. In fact, the Tasmanian rural economy is marked by great diversity and, even allowing for the special regional adaptations made necessary by soil, climate, terrain and altitude, there are many rural holdings which individually exhibit an extremely varied range of activities.

In the early colonial days, Tasmania was actually famed as Australia's granary (because of its wheat), yet there is hardly any extensive area suitable for the large-scale mechanised farming as now practised in the continental wheat belt. At a later stage, the island acquired a reputation for potato growing, production in some years outstripping that of any other Australian State. The present pattern of farming puts far more emphasis on the rearing of livestock and on the increased production of wool, meat and dairy products; field crops now include vegetables for canning and freezing but the relatively large areas devoted to oats, green fodder and vegetables for stock fodder are indicative of an orientation towards livestock raising. The traditional "specialties", orchards and hop growing, are still important in the total picture but the major development in the years since World War II has been the rapid creation of large areas of sown and semi-improved pasture.

The next section deals with the early history of Tasmanian farming and emphasises the importance of wheat growing in the early colonial era.

### Historical

In 1856 appeared the *Statistical Account of Van Diemen's Land or Tasmania* compiled by H. M. Hull from official records; the following extracts from this publication describe events in the colony when provision of food was undoubtedly the most urgent problem:

- 1804 February 19. Governor Collins landed in Sullivan's Cove from Port Phillip . . . 10s. an acre was charged for reaping wheat by the Convicts . . . Scurvy existed in the Settlement.
- 1805 Kangaroos were boiled down into Soup, and issued a quart at a time at the Colonial Hospital.

- 1806 Great scarcity of provisions. Grain prohibited from being used for brewing.
- 1807 Wheat crop failed.
- 1808 In July all the wheat and maize was gone, so 12 lb of barley was issued. In August, the beef and pork were expended, so kangaroo meat was issued instead. In October the barley was all gone, so 1½ lb a week of rice was issued instead.
- 1809 In October all the grain was expended; 7 lb of kangaroo meat was issued instead. Seed wheat and barley issued in March and May to the Settlers on loan.
- 1811 Acres in wheat 1500.
- 1812 The *Cyclops* sailed for Sydney with a cargo of wheat grown in the Colony.

In the same publication appear farm statistics for the Tamar settlement in 1816 and the Derwent settlement in 1817. Records for the next year (1818) contain statistics for the whole colony as follows:

"Land in cultivation—Wheat, 5049 acres; barley, 214 ditto; peas and beans, 148½ ditto; potatoes, 268 ditto; total, 5679½ acres. Livestock in the colony—horses, 267; horned cattle, 12,356; sheep, 127,883."

The pattern of early agricultural development can be inferred from the following summary of official farm statistics:

Area Under Crops—Van Diemen's Land, 1818-1841  
(Acres)

Year	Wheat	Barley	Oats	Peas	Beans	Pota- toes	Turnips	English Grasses	Tares	Total Crops
1818 ..	5,049	214	(a)	149		268	(a)	(a)	(a)	(b)
1828 ..	20,357	3,864	1,573	646	35	1,292	1,296	4,970	..	34,033
1838 ..	41,760	13,495	21,576	868	128	3,532	9,054	17,150	437	108,000
1841 ..	63,734	9,010	16,471	738	102	4,185	15,943	22,082	349	132,614

(a) Not reported.

(b) Not comparable.

Livestock statistics for the same period are summarised as follows:

Livestock—Van Diemen's Land, 1818-1841

Year	Horses	Horned Cattle	Sheep	Goats
1818 .. ..	267	12,356	127,883	..
1828 .. ..	2,034	84,476	553,698	708
1838 .. ..	9,656	75,087	1,214,485	2,400
1841 .. ..	12,000	90,498	1,167,737	2,630

#### Early Development—First Phase

Although the early colonists had come halfway round the globe, Tasmania's temperate climate allowed them to pursue a type of farming which was little different from that carried on in contemporary England—certainly the crops grown were the same; however, the grazing of livestock on extensive bush-runs, the use of convict labour, the clearing of scrub and the occasional menace of the aborigine and bushranger were sufficient reminders that home lay 12,000 miles away.

Early farm development round the Derwent settlement occurred in what are now Hobart suburbs (New Town and Glenorchy) and further up-river at New Norfolk. The attraction of open plains and open forest country then drew



settlers into the Coal River Valley (Richmond and Sorell), into the Midlands and parts of the East Coast. The Tamar settlers in the north first worked land on the plains around the site of Launceston, with early expansion to the Longford area and with grazing in the St Leonards and White Hills districts; the Northern Midlands were also developed as farming country in this era.

As suggested by the previous table of areas, the principal crop was wheat. It is hard today to picture Tasmania as Australia's principal wheatgrower but, in 1842, the island colony with nearly 80,000 acres sown to this crop, outstripped N.S.W., W.A., Victoria and S.A. individually and contained nearly half the Australian wheat acreage. Throughout the 19th century, wheat was a principal cash crop, but eventually competition from the continental States (both in type and price) caused a decline, as shown in the following table:

Wheat for Grain—Area Under Crop and Total Production, Selected Years

Year	Area Under Crop	Production	Year	Area Under Crop	Production
	acres	'000 bushels		acres	'000 bushels
1860-61 ..	66,450	1,416	1930-31 ..	19,107	391
1870-71 ..	57,382	897	1940-41 ..	8,038	140
1880-81 ..	50,022	750	1945-46 (b) ..	4,982	67
1890-91 ..	32,452	643	1950-51 ..	5,318	95
1898-99 (a) ..	85,287	2,304	1960-61 ..	6,912	148
1900-01 ..	51,825	1,110	1963-64 ..	17,562	483
1910-11 ..	52,242	1,121	1964-65 ..	16,805	364
1920-21 ..	28,284	566	1965-66 ..	14,107	368

(a) Peak production year.

(b) Record low production year.

As early as 1888, the Tasmanian Government Statistician, R. M. Johnston, warned that wheat and wheaten flour were being imported into Tasmania in increasing quantities and deplored the giving over of agricultural land to sheep grazing. Although production rose to a record level during the late 1890s, his warning failed to halt the eventual conversion of much wheat land to pastoral purposes.

The present position is that Tasmanian bread is made entirely from imported wheat and the home-grown product is used to make high quality biscuit flours for which it is well suited, and for stock fodder.

#### *Early Development—Second Phase*

Before the 1850s, most farm land had been confined to the eastern half of the State where open plains and open forest country encouraged penetration. Further development, supported by the buoyant market during the Victorian gold rush, required the clearing of more thickly timbered land, the principal attraction being the fertile chocolate-coloured volcanic soils of the North-West Coast; in the same decade, the discovery of the basalt lands in the Scottsdale-Ringarooma area was followed by settlement in the North-East.

Late in the 19th century, pioneers began to develop orchards, mainly for apples, in the thickly timbered country of the Huon, Tamar and lower Mersey Valleys. In the decade after Federation, annual apple production commenced to exceed one million bushels (as compared with the 1963-64 record crop of 8½ million bushels).

Because of the heavy clearing work necessary in the second phase of development (which lasted up till the First World War), it can appropriately be called the bush pioneering period.

*Recent Development*

Following World War I, the State fostered farming development through schemes for the settlement of returned soldiers, but this largely involved the acquisition and sub-division of existing properties, the only major conversion of virgin land being at Brittons Swamp on the North-West Coast. After World War II, soldier settlement and closer settlement schemes of a more ambitious nature were undertaken, the main areas of development being King and Flinders Islands, the Waterhouse and Tomahawk projects in the North-East and the reclamation of Montagu Swamp on the far North-West Coast. (Another project involved the sub-division of the Lawrenny estate in the Hamilton area of the Midlands.) Major private schemes are now in progress for pastoral development in the far North-East.

**Rural Industry Statistics***Sources of Information*

The statistics are, in the main, compiled from census returns of agricultural, pastoral and dairying production collected from rural holdings in Tasmania at 31 March each year. In conjunction with the general census, supplementary collections from farms are conducted where the harvesting of certain crops has not been completed by 31 March (e.g. apples, potatoes).

Additional information is also obtained from a number of entirely separate collections covering such data as slaughterings, meat production and dairy production and from various marketing and other authorities.

*Period Covered*

Data relating to area sown, production and number of holdings growing crops are, in general, for the season ended 31 March. In cases where harvesting has not been completed by 31 March (e.g. potatoes), total production is nevertheless collected and included in published figures. Livestock numbers also are reported at 31 March.

*Rural Holdings*

A "rural holding" is defined as a piece of land of one acre or more in extent, used for the production of agricultural products or for the raising of livestock and the production of livestock products. Care should be exercised in drawing conclusions from changes in the number of rural holdings over a series of years. There are many small sub-commercial holdings, a proportion being no more than large residential blocks with perhaps a small plot of potatoes or other crops, or carrying a house-cow or poultry. It is very difficult, in some cases, to determine whether or not they should be regarded as rural holdings within the definition, and some variation in treatment over time has occurred.

*Area of Crops*

Total area of land sown or planted to crops is shown irrespective of whether the whole area was subsequently harvested or whether a portion or the whole of the crops failed and was not harvested. Where two successive crops are grown on the same land during the one season, the land is included twice in the area of crops.

*Rounding of Areas*

In subsequent tables in this chapter, the areas of individual crops in acres are rounded figures, since information collected from some farms contains details of crops grown on less than one acre (e.g. intensive vegetable growing). As from 1965-66, any discrepancies between the totals shown and the sums of the component items are due to rounding.

*Value of Production*

The statistics in the following sections refer, in the main, to areas sown to crops and quantities produced. The value of the various crops is shown under "Value of Production" in Chapter 7.

*Classification of Rural Holdings By Type of Activity*

Because many Tasmanian holdings are devoted, in the main, to more than one specific type of farming activity, it is difficult to present, in summary form, the essential characteristics or structure of rural industry in the State today. Before considering in detail crop areas, production statistics and livestock numbers, it is logical to examine the "main line" of each farm and to determine what are the principal activities; from this study can be evolved a classification of holdings by type of activity. In 1959-60, the first attempt was made at classifying rural holdings in all States on a uniform basis. A similar classification was made for 1965-66, and Tasmanian details are shown in the next table. A detailed publication, which will be available from the Bureau of Census and Statistics, entitled *Classification of Rural Holdings by Size and Type Activity* 1965-66, is being issued for each State and Australia as a whole.

Because of the large number of holdings on which more than one type of activity occurs, it was necessary to determine the principal activity before such holdings could be classified to particular types. Since it was desirable to exclude from the principal classification small sub-commercial holdings (generally operated only on a part-time basis), it was also necessary to have some means of determining at what scale of operations holdings engaged in various activities could be considered as commercial propositions. The measuring of the importance of each type of activity was based on gross receipts at the farm (estimated from quantity details shown on the annual statistical returns together with price data from independent sources).

Holdings for which estimated farm gross receipts were less than \$1,600 (\$1,200 in 1959-60) were treated as "sub-commercial" and these, together with unused holdings, holdings used for intermittent grazing, and holdings attached to prisons, hospitals, etc. were not classified by type of farming activity. When these holdings had been eliminated, farms were classified according to the formulae that follow.

If a single activity accounted for 50 per cent or more of the total gross receipts, that activity determined the holding type. Where no single activity accounted for 50 per cent of the total gross receipts, the holdings were classified as "multi-purpose". Principal exceptions to this general rule were holdings reporting (i) sheep and cereal grains, and (ii) cattle (milk production) and pigs. In the former case, the holding was treated as a composite sheep-cereal grain type if the combined receipts obtained from the two activities added to 75 per cent or more of total gross receipts, so long as gross receipts from sheep were no more than four times and not less than one quarter of the gross receipts obtained from cereal grains. In the latter case, if the combined receipts obtained from cattle (milk production) and pigs represented 50 per cent or more of total gross receipts, the holding was classified as dairying.

The next table provides details of the number of holdings classified to each type of activity in each statistical division. Because of changes to the wording of the Farm Census schedule, statistics in this table are not strictly comparable with the 1959-60 classification.

A number of interesting conclusions emerge from a consideration of "classified holdings" in the following table: (i) the main activity of over 62 per cent of classified holdings is concerned with either cattle or sheep; (ii) cereal

grain growing barely exists as a main activity and is principally carried out in conjunction with the grazing of sheep or cattle; (iii) three main types of holding, namely dairying, sheep and fruitgrowing in that order, account for over 74 per cent of classified holdings; (iv) nearly 12 per cent of classified holdings must carry on at least three distinct activities, otherwise they could not be classified as "multi-purpose" in accordance with the 50 per cent formula prefacing the table; (v) dairying is clearly the major activity of the NW. Statistical Division, fruitgrowing of the Southern Statistical Division but the full importance of the Midland Statistical Division in sheep farming does not emerge since size of flocks is not covered in the table.

Holdings Classified According to Type of Activity, 1965-66

Type of Holding	Statistical Division								Total
	NW.	NE.	North Mid-land	Mid-land	SE.	South-ern	West-ern	Balance (a)	
Sheep-Cereal									
Grain ..	7	1	15	10	58	1	..	1	93
Sheep ..	185	272	315	360	353	61	..	1	1,547
Cereal Grain ..	..	..	..	..	2	..	..	..	2
Cattle (Meat) ..	146	60	17	4	10	31	5	3	276
Cattle (Milk) ..	2,109	546	164	26	48	128	..	5	3,026
Fruitgrowing ..	48	152	1	14	49	944	..	26	1,234
Vegetables—									
Potatoes ..	168	13	..	37	12	4	1	1	236
Other & Mixed	173	32	6	3	21	9	..	20	264
Poultry ..	17	18	9	3	12	27	..	7	93
Pigs ..	9	5	4	1	7	11	1	3	41
Other (One Main Purpose)	9	6	..	34	2	68	..	9	128
Multi-Purpose	474	118	161	45	66	54	1	5	924
Total "Classified" ..	3,345	1,223	692	537	640	1,338	8	81	7,864
Sub-Commercial	761	478	258	181	358	559	9	111	2,715
Unused ..	51	48	12	9	15	47	1	15	198
Total All Holdings	4,157	1,749	962	727	1,013	1,944	18	207	10,777

(a) Cities of Hobart, Launceston and Glenorchy.

### Size of Rural Holdings

A classification of rural holdings by size is carried out at irregular intervals; the following table compares the size of holdings in selected years:

Classification of Rural Holdings by Size

Size of Holdings (Acres)	Number of Holdings		Area of Holdings ('000 Acres)	
	1928	1966	1928	1966
1 and under 50 .. .. .	3,164	2,365	58	50
50 and Under 100 .. .. .	2,108	1,625	147	117
100 and Under 500 .. .. .	4,779	4,770	1,095	1,069
500 and Under 1,000 .. .. .	726	946	594	654
1,000 and Under 5,000 .. .. .	775	845	1,600	1,771
5,000 and Under 10,000 .. .. .	146	130	1,018	892
10,000 and Under 20,000 .. .. .	67	67	925	910
20,000 and Under 50,000 .. .. .	29	24	812	711
50,000 and Over .. .. .	5	5	384	323
Total .. .. .	11,799	10,777	6,633	6,496

## Types of Farming Activity, 1965-66

At 31 March 1966, there were 10,777 rural holdings (compared with 11,647 in 1956). The following table shows the number of holdings growing selected principal crops or carrying livestock; this gives some indication of farming activities but on a cruder basis than the earlier table since the same holding may be included more than once in the figures (in an extreme case, the one holding could be included eleven times):

Number of Holdings Growing Principal Crops or Carrying Livestock

Particulars	1955-56	1963-64	1964-65	1965-66
Holdings—				
Growing—				
Grain (a)—				
Barley .. .. .	90	227	255	348
Oats .. .. .	357	398	387	341
Wheat .. .. .	85	251	255	213
Hops .. .. .	95	108	109	107
Vegetables (b)—				
Potatoes .. .. .	3,041	1,741	1,605	1,963
Onions .. .. .	9	20	17	13
Fruit (b)—				
Orchard .. .. .	1,781	1,358	1,317	1,305
Small Fruit .. .. .	666	528	474	418
Carrying—				
Cattle .. .. .	9,338	8,547	8,384	8,667
Sheep .. .. .	5,329	5,255	5,114	5,276
Pigs .. .. .	3,783	3,304	3,315	3,153
Total Rural Holdings (c) ..	11,647	10,949	10,979	10,777

(a) Twenty acres and over.

(b) One acre and over.

(c) Not the sum of figures above, since the one holding may be included more than once.

It should be noted that a fall in the number of holdings engaged in a particular activity does not necessarily involve decreased total activity. For example, holdings carrying cattle have decreased over the last ten years, whereas cattle numbers have shown a 48 per cent increase in the same period; on the other hand, the decline in holdings growing potatoes in the decade ended 1965-66 has been matched by an actual fall in acreage of potato crops and in production.

## Land Utilisation on Rural Holdings

Rural holdings at present occupy over 38 per cent of Tasmania's total area which is 16,885,000 acres; details of utilisation follow:

Land Utilisation on Rural Holdings  
(Acres)

Particulars	1955-56	1963-64	1964-65	1965-66
Area Used for Crops (a) .. ..	339,765	391,182	412,484	389,560
Land Lying Fallow (b) .. ..	74,945	78,286	79,329	76,308
Sown Pasture Grazed (c) .. ..	987,633	1,363,155	1,423,909	1,537,590
Other Land Used for Grazing ..	3,414,202	3,106,738	2,976,243	2,992,488
Balance of Holdings .. ..	1,811,818	1,438,131	1,528,361	1,500,516
Total Area of All Holdings ..	6,628,363	6,377,492	6,420,326	6,496,461

(a) Includes area of sown pasture *cut* for hay, seed, silage or green fodder; includes also orchards and small fruits.

(b) Excludes short or summer fallow.

(c) Excludes area *cut* for hay, seed, silage or green fodder.

*Definition of "Crops"*

As defined in the previous table, crops are produced not only from cultivated fields and orcharding land but also from sown pasture if its growth is *cut* for hay, seed, silage or green fodder. The following table shows the total area of crops on this basis when double-cropping is taken into account:

**Total Area of Crops  
(Acres)**

Particulars	1955-56	1963-64	1964-65	1965-66
Area Used for Crops (a) .. ..	339,765	391,182	412,484	389,560
Area Double Cropped .. ..	400	3,732	3,672	7,217
Total Area of Crops .. ..	340,165	394,914	416,156	396,777

(a) First item in table "Land Utilisation on Rural Holdings".

*Definition of "Sown Pasture"*

Sown pasture is defined in these statistics as "clovers and grasses (other than native)." The next table shows the total area of sown pasture and distinguishes between areas *cut* for various purposes and areas simply grazed:

**Sown Pasture—Classification of Total Area  
(Acres)**

Particulars of Usage	1955-56	1963-64	1964-65	1965-66
Clover for Seed .. ..	1,183	881	2,400	728
Grass for Seed .. ..	4,728	2,853	6,613	2,382
Clover and Grasses Cut—				
For Hay .. ..	107,384	128,525	165,027	133,178
For Silage and Green Fodder	13,831	15,116	11,768	10,922
Total "Under Crop" .. ..	127,126	147,375	185,808	147,210
Clover and Grasses Grazed (Not Cut) .. ..	987,633	1,363,155	1,423,909	1,537,590
Total Sown Pasture .. ..	1,114,759	1,510,530	1,609,717	1,684,799

The distribution in statistical divisions of sown pasture (1965-66) is given in acres: NW., 497,187; Midland, 344,693; NE., 330,598; North Midland, 239,941; SE., 188,339; Southern, 80,082; remainder of State, 3,960.

**Trend in Land Utilisation**

The total area of rural holdings is still approximately the same as it was at the end of World War I. The most striking change is the rapid development of sown pasture, the previous table showing a 51 per cent increase in the decade ending 1965-66. Twenty one years ago (1944-45), the area of sown pasture was under 500,000 acres, it passed 1,000,000 acres in 1955-56 and reached 1,685,000 acres in 1965-66. A similar increase has also occurred in the area of sown pasture *cut* for hay, seed, silage or green fodder and since this is, for the purpose of these statistics, a component of the area used for crops, variations in crop areas are affected by this factor.

In fact, the area of land under the plough is slightly less than it was 50 years ago, which does not indicate a lack of progress in farming but rather a change in the farming pattern. Grain crops are no longer the dominant item and many primary producers, through their development of sown pasture, have become grassland farmers with the mower and pick-up baler as their main

“harvesting” machines (as opposed to the reaper and binder on ploughed fields). The trend to grassland farming has meant greatly increased capacity to carry stock, the numbers of both sheep and cattle having more than doubled since World War I. (In the decade ending 1965-66 sheep have increased from 2.7 million to 4.1 million; cattle from 339,000 to 492,000. The percentage increases for the ten-year period are: sheep, 54 per cent; cattle, 48 per cent.)

#### Temporary and Permanent Pasture

It should be noted that some of the areas included as sown pasture are “temporary” in the sense that they may be put under crop after some years of use for grazing. In the same sense, specific areas used for crops in any year are also “temporary” since they may later be converted to sown pasture. This rotational pattern, characteristic of much of Tasmania’s mixed farming, obviously is designed to maintain soil fertility at a high level and to guard against the soil exhaustion associated with the earlier era of intense cultivation of cash crops. “Ley” farming is the technical term for this rotational method.

Farm statistics for 1966-67 showed the area of sown pasture as 1,755,255 acres and indicated that the trend of the previous decade is being maintained. The main seed varieties produced on Tasmanian farms (in cwt) in 1965-66 were: perennial ryegrass, 3,389; H.I. short rotation ryegrass, 1,056; Italian ryegrass, 340; white clover, 340; red clover, 44; cocksfoot, 56. The total weight of grass and clover seed harvested was 5,316 cwt (as compared with 19,934 cwt in 1964-65). In all years since 1960-61, perennial ryegrass seed has accounted for more than 60 per cent of the total seed harvested.

In the sowing of temporary pastures, the main grasses and clovers used are: ryegrass (perennial, Italian and hybrid) and red clover. Permanent pastures are based on perennial ryegrass and white clover with *phalaris tuberosa* and subterranean clover especially suitable for the drier regions and cocksfoot in the wetter.

Tasmania’s capacity for extending the area of sown pasture is certainly not yet exhausted since, in 1965-66, in addition to the 1.7 million acres of sown pasture, there were a further three million acres of other land used for grazing.

#### Agriculture

Sufficient has been said on land utilisation to emphasise the trend to grassland farming. In the summary table below showing the area devoted to the principal crop types, the area of sown pasture *cut* for hay, seed, silage or green fodder is attributed to the appropriate crop, e.g. as a component of hay and green fodder areas.

Area of Principal Crops—Summary  
(Acres)

Crop	1955-56	1963-64	1964-65	1965-66
Cereals for Grain .. .. .	42,017	61,818	60,455	62,338
Hay .. .. .	137,157	149,640	180,256	147,828
Green Fodder .. .. .	68,208	86,120	79,199	89,153
Field Peas (Blue, Grey and Other)	11,342	10,982	7,545	7,866
Vegetables for Stock Fodder ..	19,215	31,785	26,595	29,726
Grass Seed .. .. .	5,958	3,734	9,013	3,110
Industrial Crops (Hops and Mustard)	2,043	1,896	1,907	1,822
Vegetables for Human Consumption	29,315	25,294	26,998	30,539
Orchard Fruit .. .. .	21,266	19,975	20,435	20,707
Small Fruit .. .. .	2,529	2,159	1,940	1,719
All Other Crops .. .. .	1,116	1,511	1,813	1,970
Total Area of Crops ..	340,166	394,914	416,156	396,777

Details of individual crops, their area, production and yield per acre, are shown in the next table:

**Crops—Area, Production and Yield Per Acre**

Crop and Unit of Quantity		Average, Ten Years Ended 1964-65			Year 1965-66		
		Area (Acres)	Production		Area (Acres)	Production	
			Total	Yield Per Acre		Total	Yield Per Acre
CEREALS FOR GRAIN							
Barley (bushels)		12,659	393,485	31.08	19,907	683,827	34.35
Oats (bushels)		25,000	545,511	21.82	28,290	676,739	23.92
Rye (bushels)		409	6,128	14.97	34	384	11.29
Wheat (bushels)		10,290	247,520	24.06	14,107	368,351	26.11
HAY							
Grass&Clover(tons)		127,157	240,460	1.88	133,178	230,069	1.73
Oaten (tons)		15,747	28,888	1.83	12,847	23,995	1.87
Other (tons)		3,739	7,290	1.95	1,803	3,173	1.76
GRASS SEED							
Clover (cwt)		1,342	914	0.68	728	454	0.62
Other (a) (cwt)		3,313	7,077	2.14	2,382	4,862	1.79
FIELD PEAS							
Blue (bushels)		4,888	106,360	21.76	5,493	102,100	18.59
Grey & Other (,,)		5,223	95,938	18.37	2,373	46,476	19.60
VEGETABLES FOR STOCK FODDER							
Horse Beans (bush.)		436	9,833	22.56	387	6,682	17.27
Turnips—Swede and White (tons)		21,917	(b)	(b)	29,216	(b)	(b)
Other		272	..	..	123	..	..
INDUSTRIAL CROPS							
Hops (c) (lb)		1,420	2,655,600	1,870	1,491	3,069,000	2,058
Mustard (lb)		372	151,100	406	253	94,000	371
VEGETABLES FOR HUMAN CONSUMPTION							
Beans, French and Runner ('000 lb)		290	1,840	6.346	606	5,548	9.155
Peas, Green (d)—							
For Processing (,,)		9,740	24,891	} 2.504	15,907	51,114	} 3.196
Sold in Pod (,,)		319	296		133	153	
Potatoes (tons)		14,942	76,967	5.15	11,993	76,400	6.37
Turnips—Swede and White (tons)		1,123	7,215	6.43	457	3,463	7.57
Other Vegetables		1,321	..	..	1,443	..	..



Crops—Area, Production and Yield Per Acre—*continued*

Crop and Unit of Quantity	Average, Ten Years Ended 1964-65			Year 1965-66		
	Area (Acres)	Production		Area (Acres)	Production	
		Total	Yield Per Acre		Total	Yield Per Acre
ORCHARD FRUIT						
Bearing—						
Apples (bushels)	16,100	6,087,030	378	15,454	8,364,000	541
Apricots (bushels)	625	53,145	85	395	26,000	66
Pears (bushels)	1,477	484,897	328	1,435	650,000	453
Plums & Prunes (,,)	95	19,464	205	67	14,000	209
Other	106	..	..	86	..	..
Non-bearing Areas	1,919	..	..	3,270	..	..
SMALL FRUIT						
Bearing—						
Currants (Black & Red) (lb)	872	2,835,600	3,251	765	2,936,000	3,838
Gooseberries (lb)	38	336,500	8,832	30	196,000	6,539
Loganberries (lb)	189	1,189,700	6,298	108	675,000	6,241
Raspberries (lb)	915	4,523,600	4,944	651	3,502,000	5,378
Strawberries (lb)	86	353,800	4,100	74	218,000	2,958
Non-bearing Areas	196	..	..	91	..	..

(a) Production includes seed harvested from areas sown to oats for grain; this seed is excluded from the average yield figures.

(b) Not available.

(c) Non-bearing area excluded; production expressed in dry weight.

(d) Ex-shell weight.

## Summary of Principal Crops

The following table summarises the area of selected principal crops and gives details of production for recent years:

## Selected Principal Crops—Area and Production

Crop	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
AREA (ACRES)							
Barley for Grain ..	6,320	15,330	18,728	19,751	13,790	15,479	19,907
Oats for Grain ..	28,675	23,350	26,953	31,104	30,344	28,086	28,290
Wheat for Grain ..	6,224	6,912	15,568	15,340	17,562	16,805	14,107
Hay ..	137,157	171,012	157,238	165,442	149,640	180,256	147,828
Field Peas ..	11,342	8,039	8,101	9,459	10,982	7,545	7,866
Grass Seed ..	5,958	5,139	3,818	5,297	3,734	9,013	3,110
Hops—Bearing ..	1,312	1,406	1,411	1,452	1,462	1,475	1,491
Peas, Green—							
For Processing ..	4,193	10,003	12,823	12,684	11,884	14,995	15,907
Sold in Pod ..	540	162	139	144	186	215	133
Potatoes ..	20,842	10,875	11,129	13,839	10,806	9,393	11,993
Bearing—							
Apples ..	17,175	15,825	15,417	15,489	15,545	15,532	15,454
Pears ..	1,644	1,451	1,471	1,454	1,460	1,469	1,435
Currants (Black & Red)	844	916	902	946	978	875	765
Loganberries ..	207	210	162	173	166	124	108
Raspberries ..	1,156	853	838	753	753	703	651
Strawberries ..	114	55	72	91	80	70	74

Selected Principal Crops—Area and Production—*continued*

Crop	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
PRODUCTION							
Barley for Grain (bushels)	190,904	344,137	606,927	630,966	414,230	529,377	683,827
Oats for Grain (bushels)	548,039	391,285	587,183	827,508	843,643	520,470	676,739
Wheat for Grain (bushels)	128,686	148,128	345,111	418,921	482,757	364,161	368,351
Hay (tons)	261,423	325,974	285,390	313,004	249,176	364,356	257,237
Field Peas (bushels)	227,363	92,032	180,421	193,494	186,533	190,376	148,576
Grass Seed (cwt)	7,963	7,972	4,757	10,549	7,361	19,934	5,316
Hops ('000 lb)	3,169	2,819	2,837	2,862	1,580	2,088	3,069
Peas, Green—							
For Processing ('000 lb)	12,112	14,281	37,479	32,986	32,757	51,383	51,114
Sold in Pod ('000 lb)	437	152	161	138	187	255	153
Potatoes (tons)	77,930	39,050	71,560	82,545	66,420	57,062	76,400
Apples ('000 bushels)	5,926	5,594	7,844	6,262	8,545	6,207	8,364
Pears ('000 bushels)	538	461	566	415	625	490	650
Currants (Black and Red) ('000 lb)	2,935	3,097	2,197	3,082	2,955	2,300	2,936
Loganberries ('000 lb)	1,505	1,196	1,431	1,188	977	623	675
Raspberries ('000 lb)	6,061	3,291	4,816	3,468	3,841	3,374	3,502
Strawberries ('000 lb)	465	172	275	370	175	317	218

## Principal Crops

The data on acreage and production of crops are compiled, in general, to give totals for each municipality. In subsequent parts of this chapter dealing with geographical distribution, the information is presented only in Statistical Divisions; however, the component attributable to the South Central, North Central and Western Divisions is usually so small in relation to the State total that these three Divisions have been combined and described as "Rest of State". (The three combined Divisions include the Cities of Hobart, Glenorchy and Launceston, and the West Coast where mining is the predominant activity.)

## Cereals for Grain

The next table shows the geographical distribution of cereal grain growing:

Cereals for Grain—Area of Crops in Statistical Divisions, 1965-66  
(Acres)

Cereals for Grain	NW.	NE.	North Midland	Midland	SE.	Southern	Rest of State	Total
Barley ..	7,031	1,735	4,680	842	5,353	176	91	19,907
Oats ..	1,453	2,316	10,351	10,019	3,696	457	..	28,290
Rye ..	20	..	10	..	4	..	..	34
Wheat ..	1,718	296	3,804	4,589	3,406	295	..	14,107
Total ..	10,222	4,347	18,845	15,450	12,459	928	91	62,338

The area for grain under barley and wheat has tended to increase in recent years, 1955-56 acreages being barley, 6,320; wheat, 6,224. Although areas of oats for grain over the last five years have been at the highest level for 25 years, the increases have not been as great as for barley and wheat.

*Hay and Green Fodder*

The following table shows the geographical distribution of hay and green fodder crops:

**Hay and Green Fodder—Area of Crops in Statistical Divisions, 1965-66**  
(Acres)

Crop	NW.	NE.	North Midland	Midland	SE.	Southern	Rest of State	Total
Hay—								
Grass & Clover	70,092	25,020	21,718	5,316	4,575	6,133	327	133,178
Oaten ..	5,305	1,448	3,241	1,154	1,266	425	8	12,847
Other ..	285	191	182	518	548	72	7	1,803
Total Hay	75,682	26,659	25,141	6,988	6,389	6,630	342	147,828
Green Fodder	27,028	14,475	13,143	20,828	11,150	2,447	83	89,153

It should be noted that the "hay, grass and clover" area in the table (133,178 acres) relates to hay produced by mowing sown pasture. Reference to a previous table on the geographical distribution of sown pasture indicates that the North West Division has the largest area used in this way and is therefore in the best position to produce hay.

The primacy of the North West Division in acreage under hay and green fodder can be related to the fact that it carries more than 50 per cent of the State's cattle and is the principal dairying area.

The chief sources of green fodder are areas sown to oats (usually about 50 to 60 per cent of total green fodder acreage), and areas of grasses and clovers cut from sown pasture (12 per cent in 1965-66); other green fodder crops are obtained from chou moellier, barley, lucerne, millet, rape, ryecorn and wheat.

*Oats for Grain, Hay and Green Fodder*

In 1965-66, 101,000 acres of oats were sown either for grain, hay, or green fodder (i.e. over 25 per cent of the total area of crops grown). For many years, oats were mainly Algerian, which in 1959-60 accounted for 90 per cent of all varieties sown. By 1965-66, the proportion of Algerian oats had declined to 54 per cent and Blythe oats, insignificant in 1959-60, represented 36 per cent of the crop. The main varieties of oats sown are shown in the following table:

**Varieties of Oats Sown (a)**  
(Acres)

Year	White	Algerian	Blythe	Other	Total
1959-60 .. ..	2,894	71,280	1,388	3,912	79,474
1962-63 .. ..	3,438	50,116	33,804	4,842	92,200
1965-66 .. ..	4,046	54,230	36,174	6,667	101,117

(a) For all purposes, i.e. grain, hay or green fodder.

*Vegetables for Human Consumption*

As previous acreage and production tables indicated, there has been a decline in potato growing; the next table traces the history of this crop over the last one hundred years:

## Potatoes—Area Under Crop and Total Production, Selected Years

Year	Area	Production		Year	Area	Production	
		Total	Yield Per Acre			Total	Yield Per Acre
	acres	tons	tons		acres	tons	tons
1860-61..	7,621	33,589	4.41	1930-31 ..	37,229	95,289	2.56
1870-71..	9,823	36,028	3.41	1940-41 ..	37,364	114,041	3.05
1880-81..	10,421	32,548	3.12	1944-45 (a)	81,092	345,232	4.26
1890-91..	20,133	73,158	3.63	1950-51 ..	31,581	124,000	3.93
1900-01..	23,068	93,862	4.07	1960-61 ..	10,875	39,050	3.59
1910-11..	26,230	70,090	2.67	1964-65 ..	9,393	57,000	6.07
1920-21..	32,000	88,679	2.77	1965-66 ..	11,993	76,400	6.37

(a) Peak acreage and production year.

Potato growing was for many years a major activity in the NW. Statistical Division and even in 1965-66, approximately 75 per cent of the acreage and production of the State's potato crop was located in that area. The size of the Tasmanian potato crop has always been influenced by the demand from other States, in particular, New South Wales. In 1951-52, over one hundred thousand tons were exported; in the last four years annual exports have not exceeded 31,000 tons. The considerably increased yield per acre in recent years has been due mainly to the greater use of irrigation and artificial fertilizers. (See "Technical Aspects of Rural Industry" later in this chapter.)

The decline in this export crop has been largely offset by increased opportunities for disposing of other vegetable crops to dehydrating, canning and deep-freezing plants developed on the North-West coast and in the Scottsdale area since World War II. The main crop now grown for processing is green peas, their area in 1965-66 exceeding the area planted to potatoes (16,040 acres as against 11,993 acres); a demand by processing plants also exists for other vegetables including french and runner beans, asparagus, beetroot, cabbages, cauliflowers, carrots, celery, broccoli, blue peas, parsnips, turnips, onions, tomatoes and potatoes.

The concentration of vegetable growing in certain areas of the State is illustrated in the following table which has been restricted to three selected crops:

Vegetables for Sale for Human Consumption (a)  
Area Under Selected Crops in Statistical Divisions, Season 1965-66  
(Acres)

Crop	NW.	NE.	North Midland	Midland	SE.	Southern	Rest of State	Total
Beans, French and Runner	559	34	1	..	1	5	5	606
Peas, Green ..	11,279	1,543	3,142	5	43	14	15	16,040
Potatoes ..	9,058	1,295	119	673	391	359	99	11,993
All Other Veg- etables ..	619	533	62	36	272	166	210	1,900
Total ..	21,515	3,405	3,324	714	707	544	329	30,539

(a) Includes vegetables for processing.

*Grass Seed*

The geographical distribution (in acres) of areas yielding grass seed in 1965-66 was as follows: NW., 456; NE., 692; N. Midland, 1,421; Midland, 348; SE., 193; Southern, 22; total, 3,110.

*Field Peas and Vegetables for Stock Fodder*

The geographical distribution of these crops is shown as follows:

**Field Peas and Vegetables for Stock Fodder—Area of Crops in Statistical Divisions, 1965-66  
(Acres)**

Crop	NW.	NE.	North Midland	Midland	SE.	Southern	Rest of State	Total
Field Peas—								
Blue ..	1,269	307	3,654	127	137	..	..	5,493
Grey and								
Other ..	867	179	926	52	296	4	50	2,373
Vegetables for								
Stock Fodder—								
Horse Beans	165	36	131	15	40	..	..	387
Turnips ..	9,546	7,523	2,659	6,635	2,174	664	15	29,216
Other ..	89	7	23	..	2	3	1	123

*Hops*

The principal industrial crop is hops grown mainly in the Derwent Valley, with most production in the Southern Statistical Division, and, across the Derwent, in the Midland Division. In 1965-66, the State's hop-bearing area was 1,491 acres. Hop growing is now being developed in other parts of the State.

Tasmania has for many years been the principal Australian grower of hops, producing over 70 per cent of the crop; hops are mainly used in brewing beer.

*Orchard Fruit and Small Fruit*

The geographical distribution of orchards and small fruit areas is shown below:

**Orchard Fruit and Small Fruit—Area (Bearing and Non-Bearing) in  
Statistical Divisions, 1965-66  
(Acres)**

Fruit	NW.	NE.	North Midland	Midland	SE.	Southern	Rest of State	Total
Orchard Fruit	998	3,692	5	6	1,017	14,862	128	20,707
Small Fruit ..	4	11	1	206	32	1,370	97	1,719

Orcharding is heavily concentrated in the Derwent and Huon Valleys (Southern Statistical Division); the other main area is in the Tamar Valley (NE. Division). Small-fruit growing is almost entirely confined to the Derwent Valley and the Huon Valley.

On the average over recent years, the value of the apple crop alone has represented one third of the value of the State's total agricultural production. The next table gives recent details of area, production and average yield:

## Apples—Area and Production

Year	Area		Number of Trees		Production		
	Bearing	Non-Bearing	Bearing	Non-Bearing	Total	Yield	
						Per Acre	Per Tree
	acres	acres	'000	'000	'000 bush	bushels	bushels
1960-61	15,825	1,726	2,308	252	5,594	353	2.42
1961-62	15,417	1,837	2,264	270	7,844	509	3.46
1962-63	15,489	1,894	2,277	278	6,262	404	2.75
1963-64	15,545	2,076	2,305	308	8,545	550	3.71
1964-65	15,532	2,543	2,310	378	6,207	400	2.70
1965-66	15,454	2,935	2,266	430	8,364	541	3.69

After World War I, apple acreage was 26,000 acres but the decline in area since then has been more than offset by greatly increased average yield per acre. The change in the marketing pattern, as between overseas, interstate, etc. is shown in the next table, with 1939 taken as the startpoint:

## Disposal of Apple Crop

Particulars	1939		1956		1966	
	'000 Bushels	Per Cent (a)	'000 Bushels	Per Cent (a)	'000 Bushels	Per Cent (a)
Exports—Overseas .. ..	3,341	58.4	3,492	58.9	6,205	74.2
Interstate .. ..	1,945	34.0	670	11.3	217	2.6
Used in Factories .. ..	379	6.6	1,408	23.8	1,479	17.7
Local Markets, etc. .. ..	59	1.0	356	6.0	463	5.5
Total .. ..	5,724	100.0	5,926	100.0	8,364	100.0

(a) Proportion of total crop.

From the aspect of return to growers, the three most important orchard crops are apples, pears and apricots in that order although cherries, nectarines, peaches, plums and quinces are also grown.

Production of small fruits in the State has dropped by two thirds over the last 20 years. In spite of this, Tasmanian production is over half the total for Australia. The decline is shown in the following table:

## Principal Small Fruits—Area and Production

Year	Currants (Black & Red)		Loganberries		Raspberries		Strawberries	
	Bearing Area	Pro-duction	Bearing Area	Pro-duction	Bearing Area	Pro-duction	Bearing Area	Pro-duction
	acres	'000 lb	acres	'000 lb	acres	'000 lb	acres	'000 lb
1948-49 (a) ..	2,006	6,030	213	837	2,086	7,603	250	871
1960-61 ..	916	3,097	210	1,196	853	3,291	55	172
1961-62 ..	902	2,197	162	1,431	838	4,816	72	275
1962-63 ..	946	3,082	173	1,188	753	3,468	91	370
1963-64 ..	978	2,955	166	977	753	3,841	80	175
1964-65 ..	875	2,300	124	623	703	3,374	70	317
1965-66 ..	765	2,936	108	675	651	3,502	74	218

(a) Representative year from period when small fruit areas were at record level.

*"All Other Crops"*

In the table "Area of Principal Crops" appears an item "All other crops", (1,970 acres in 1965-66). These crops, not specified in previous tables, include oil poppies, lavender, flower seeds, cut flowers, a variety of crops grown for seed, and green manure crops (e.g. lupins).

**LIVESTOCK****Introduction**

This subject is dealt with in two parts:

- (i) Number of Livestock on Rural Holdings;
- (ii) Livestock Products.

The first part needs no definition but the second part (livestock products) requires explanation. In relation to the various types of livestock, the following products are included:

*Cattle* — meat, milk, butter, cheese.

*Sheep* — meat, wool.

*Pigs* — meat.

*Poultry* — meat, eggs.

It should be noted that some of these products (e.g. butter and cheese) are made, in the main, in establishments classified as factories. From a theoretical point of view, it can therefore be correctly argued that some livestock products are attributable to secondary, rather than primary, industry; it is nevertheless impossible to describe adequately the pattern and scale of livestock farming without giving details of these basic products.

**Number of Livestock on Rural Holdings**

The following summary table shows the numbers of livestock on rural holdings since 1860:

**Livestock on Rural Holdings—Selected Years**

Year	Horses	Cattle	Sheep	Pigs
	No.	No.	'000	No.
1860 (a) .. .. .	21,034	83,366	1,701	31,290
1870 (a) .. .. .	22,679	101,459	1,350	49,432
1880 (a) .. .. .	25,267	127,187	1,794	48,029
1890 (a) .. .. .	31,165	162,440	1,619	81,716
1900 (a) .. .. .	31,607	165,516	1,684	68,291
1910 (a) .. .. .	41,388	201,854	1,788	63,715
1919-20 (a) .. ..	39,452	214,442	1,781	35,530
1929-30 (b) .. ..	34,336	214,643	2,091	52,899
1939-40 (b) .. ..	29,605	252,484	2,677	44,941
1949-50 (c) .. ..	21,197	274,740	2,170	35,841
1959-60 (c) .. ..	10,512	375,342	3,494	67,118
1965-66 (c) .. ..	(d)	491,917	4,127	96,156
1965-66—Tasmanian numbers as proportion of Australian total ..	(d)	2.7 per cent	2.6 per cent	5.5 per cent

(a) At varying dates.

(b) At 31 December.

(c) At 31 March.

(d) Not available.

## Cattle

## Classification

A desirable way of classifying cattle is to distinguish between "dairy" and "beef" cattle, but there is a possibility of confusion since the definition of these terms may be based either on *purpose* or on *breed*. Such a classification presents no difficulty to farmers in the following categories:

- (i) running a dairy herd only, for milk only, with all cattle of recognised dairy breeds;
- (ii) running a beef herd only, for meat only, with all cattle of recognised beef breeds.

It is also apparent that the above two cases are not representative of all holdings and the following cases are frequently encountered:

- (i) herds wholly of dairy breeds used for milk production; from these, culled cows and heifers and some calves are fattened for slaughter;
- (ii) composite herds (i.e. with dairy-breed cows and heifers kept for milk production and with some dairy-breed and/or dairy-beef cross cows and heifers for vealer production).

As from 1942-43, the annual census questions on cattle were amended to require a dissection between "beef" and "dairy" but the terms were not defined as relating to either purpose or breed. The following table summarises cattle numbers in terms of this classification from 1942-43 to 1962-63 (when it ceased):

Number of Cattle on Rural Holdings—Dairy and Beef Classification

31 March	Dairy	Beef	31 March	Dairy	Beef	31 March	Dairy	Beef
1943	142,946	101,735	1950	157,959	116,781	1957	195,894	158,276
1944	128,775	101,352	1951	157,024	114,760	1958	204,773	166,636
1945	128,066	96,602	1952	155,536	110,727	1959	203,482	170,842
1946	126,167	90,139	1953	162,212	112,919	1960	206,770	168,572
1947	132,265	87,854	1954	173,595	121,583	1961	214,382	179,826
1948	144,041	100,066	1955	189,711	129,706	1962	228,637	196,514
1949	155,122	111,297	1956	183,602	147,987	1963	238,084	205,519

The geographical distribution of cattle in the last year of the "dairy and beef" classification was as follows:

Cattle on Rural Holdings—Distribution in Statistical Divisions, 31 March 1963

Particulars	NW.	NE.	North Midland	Midland	SE.	Southern	Rest of State	Total
Dairy ..	156,780	39,346	18,620	5,894	6,102	10,410	932	238,084
Beef ..	73,793	44,498	26,174	33,428	13,502	13,009	1,115	205,519
Total ..	230,573	83,844	44,794	39,322	19,604	23,419	2,047	443,603

In the 1963-64 annual census, the questions on cattle were amended to introduce the following principles:

- (i) Bulls to be classified according to breed (i.e. dairy or beef breed).
- (ii) All other cattle to be classified according to purpose (i.e. milk production or meat production).
- (iii) The number of "house" cows to be established (i.e. cows and heifers being kept primarily for the owner's own milk supply).



The results obtained from the two collection forms are illustrated by showing, in total, the answers to questions asked in 1962-63 and 1963-64:

### Description of Cattle on Rural Holdings

(1) 31 MARCH 1963

<b>Cattle</b> At 31 March 1963	<b>Dairy—</b>	
	Dairy Cows (in milk and dry) .. .. .	141,255
	Heifers 1 year and over (for dairying) .. .. .	40,045
	Calves (under 1 year)—Heifer calves .. .. .	42,724
	Other calves .. .. .	9,539
	Bulls, 1 year and over .. .. .	4,521
	<b>Total Number of Dairy Cattle</b> .. .. .	<b>238,084</b>
	<b>Beef—</b>	
	Cows (including heifers), 1 year and over .. .. .	88,923
	Calves, under 1 year .. .. .	70,120
	Bulls, 1 year and over .. .. .	4,423
	Other (including Speyed Cows, Bullocks, etc.) .. .. .	42,053
	<b>Total Number of Beef Cattle</b> .. .. .	<b>205,519</b>
	<b>Total Number of all Cattle (Dairy and Beef)</b> .. .. .	<b>443,603</b>

(2) 31 MARCH 1964

<b>Cattle and Calves</b>  Number at 31 March 1964	<b>Bulls</b> used or intended <b>For Service</b>	Bulls (1 year and over)—Dairy Breeds .. .. . Beef Breeds .. .. . Bull Calves (under 1 year) .. .. .	4,141 3,984 4,195
	<b>Cows and Heifers</b> used or intended for production (for sale) of <b>Milk and Cream</b>	Cows—In Milk and Dry at 31 March .. .. . Heifers (1 year and over) .. .. . Heifer Calves (under 1 year) .. .. .	140,425 39,928 43,082
	<b>House Cows</b> (in milk and dry) and <b>Heifers</b> (one year and over) being kept primarily for own milk supply .. .. .		6,545
	<b>Other Cattle and Calves</b> (not included above) i.e. mainly for <b>Meat Production</b>	Cows and Heifers (1 year and over) .. .. . Calves (under 1 year) including Vealers .. .. . Other (1 year and over) i.e. Steers, Bullocks, etc. .. .. .	89,292 75,108 43,298
	<b>Total Cattle and Calves for all Purposes</b> .. .. .		<b>449,998</b>

The previous change in classification makes it impossible to compare, in full detail, the description of cattle in 1963-64 and subsequent years with descriptions reported in previous years but the following table is compiled to show broad groups regarded as generally comparable:

## Description of Cattle on Rural Holdings

At 31 March	Number of Holdings with Cattle	Bulls (1 yr & over)	Cows and Heifers (1 yr & over)	Calves (Under 1 yr)	Other Cattle	Total Cattle
1950 .. ..	9,759	6,186	158,424	60,601	49,529	274,740
1955 .. ..	9,668	7,002	194,016	78,252	40,147	319,417
1960 .. ..	9,031	7,237	229,162	100,849	38,094	375,342
1962 .. ..	8,825	8,668	256,342	118,614	41,527	425,151
1963 .. ..	8,671	8,944	270,223	122,383	42,053	443,603
1964 .. ..	8,547	(a) 8,125	276,190	122,385	43,298	449,998
1965 .. ..	8,384	(a) 8,311	283,955	119,455	39,750	451,471
1966 .. ..	8,667	(a) 8,816	298,954	141,536	42,611	491,917

(a) The specification of "Bull Calves (under 1 year)" from 1963-64 may have affected the comparability of this figure.

The distribution of holdings with cattle is shown below:

## Cattle on Rural Holdings in Statistical Divisions, 31 March 1966

Particulars	NW.	NE.	North Mid-land	Mid-land	SE.	South-ern	Rest of State	Total
Holdings with Cattle	3,738	1,459	781	534	675	1,350	130	8,667
Total Cattle (All Descriptions) ..	248,929	101,188	50,485	40,599	19,631	28,679	2,406	491,917
Cows in Milk and Dry (a) .. ..	101,860	25,767	10,828	2,318	2,391	5,133	155	148,452
Heifers (1 year and over) (a) .. ..	26,975	7,699	3,598	738	1,044	1,816	81	41,951
Heifer Calves (under 1 year) (a) .. ..	31,965	8,402	3,753	578	923	1,647	49	47,317
Bulls (1 yr and over)—								
Dairy Breeds ..	2,646	841	365	74	132	218	20	4,296
Beef Breeds ..	1,478	966	675	734	260	377	30	4,520

(a) "Cows and heifers used or intended for production (for sale) of milk and cream".

*Breeds of Cattle*

The main breeds of dairy cattle in Tasmania are Jersey, Ayrshire, milking Shorthorn, Friesian and Guernsey, while beef breeds are Hereford, Devon, Aberdeen Angus and Shorthorn.

## Sheep

The table below indicates the increase in sheep since the end of World War II:

## Sheep on Rural Holdings At 31 March ('000)

Year	Sheep	Year	Sheep	Year	Sheep	Year	Sheep
1945 ..	2,156	1951 ..	2,182	1957 ..	2,943	1963 ..	3,570
1946 ..	1,926	1952 ..	2,338	1958 ..	3,298	1964 ..	3,600
1947 ..	1,933	1953 ..	2,422	1959 ..	3,536	1965 ..	3,793
1948 ..	2,087	1954 ..	2,465	1960 ..	3,494	1966 ..	4,127
1949 ..	2,160	1955 ..	2,595	1961 ..	3,439	1967 ..	4,321
1950 ..	2,170	1956 ..	2,673	1962 ..	3,532		

The next table shows the geographical distribution of sheep, also the various descriptions and the outcome of the lambing season:

Description of Sheep at 31 March 1966 in Statistical Divisions

Particulars	NW.	NE.	North Mid-land	Midland	SE.	South-ern	Rest of State	Total
Holdings with Sheep	1,598	951	764	654	812	467	30	5,276
Sheep—								
Rams (1 year and over) ..	7,032	7,443	10,388	12,385	6,238	1,146	35	44,667
Breeding Ewes ..	296,798	320,209	384,420	475,072	288,091	59,992	1,853	1,826,435
Other Ewes (1 year and over)	12,238	28,652	37,716	57,710	27,783	7,316	98	171,513
Wethers (1 year and over) ..	53,471	156,031	170,385	376,153	167,008	27,831	356	951,235
Lambs and Hoggets (under one year) ..	171,484	178,246	233,433	338,384	176,976	34,059	824	1,133,406
Total Sheep and Lambs ..	541,023	690,581	836,342	1,259,704	666,096	130,344	3,166	4,127,256
Lambing, Season 1965—								
Ewes Mated ..	265,342	276,692	351,507	438,303	266,092	51,608	1,248	1,650,792
Lambs Marked—								
Number ..	267,169	258,755	336,237	427,555	253,805	49,028	1,052	1,593,601
Marking Ratio (a)	100.7	93.5	95.7	97.5	95.4	95.0	84.3	96.5

(a) Lambs marked as percentage of ewes mated.

The following table summarises the description of sheep on a State basis and also gives details of lambing:

Description of Sheep at 31 March and Details of Lambing—Summary

Particulars	1956	1961	1962	1963	1964	1965	1966
Holdings with Sheep(No.)	5,295	5,764	5,675	5,415	5,255	5,114	5,276
Sheep ('000)—							
Rams (1 year and over)	32	42	43	42	41	43	45
Breeding Ewes ..	1,216	1,552	1,548	1,608	1,567	1,739	1,826
Other Ewes (1 year and over) ..	151	200	208	195	193	157	172
Wethers (1 year and over) ..	673	850	848	886	890	943	951
Lambs and Hoggets (under one year) ..	601	795	885	839	909	910	1,133
Total Sheep and Lambs ..	2,673	3,439	3,532	3,570	3,600	3,792	4,127
Lambing (a)—							
Ewes Mated .. ('000)	979	1,378	1,440	1,419	1,458	1,478	1,651
Lambs Marked—							
Number .. ('000)	877	1,267	1,368	1,310	1,353	1,374	1,594
Marking Ratio (b)	89.6	91.9	95.0	92.3	92.8	93.0	96.5

(a) In the season preceding the year named.

(b) Lambs marked as percentage of ewes mated.

*Breeds of Sheep*

Over the last ten years, the breeds of sheep reported by growers have shown a marked trend in favour of Polwarths with a slight relative decline in Merinos and a greater decline in Comebacks and Crossbreds. The following table shows the percentage of the main breeds of sheep (including rams):

Proportion of Breeds of Sheep at 31 March  
(Per Cent)

Breed	1956	1962	1963	1964	1965	1966
Polwarth .. .. .	26.9	34.0	35.8	36.7	38.6	39.3
Corriedale .. .. .	16.5	14.6	16.1	16.3	17.8	18.6
Merino .. .. .	11.3	9.5	9.7	9.7	9.3	8.7
Romney Marsh .. .. .	2.7	2.4	2.5	2.3	2.2	2.1
Border Leicester .. .. .	1.5	1.6	1.3	1.1	1.1	1.0
Other Breeds (a) .. .. .	2.7	2.8	3.1	2.4	2.2	2.4
Comebacks .. .. .	14.1	12.2	11.5	12.2	11.1	10.0
Crossbreds .. .. .	24.3	22.9	20.0	19.3	17.7	17.9
Total .. .. .	100.0	100.0	100.0	100.0	100.0	100.0

(a) Recognised breeds of sheep which individually, in 1966, accounted for less than 1 per cent of all sheep; includes Cheviot, Dorset Horn, English Leicester, Ryeland, Southdown, Suffolk, Lincoln, Poll Dorset and Shropshire.

The Polwarths and Merino Comebacks are well adapted to the sparse grazing of the plateau regions of the Midland Statistical Division. While the Corriedales are mainly run on improved pasture, the Merinos tend to thrive in the drier regions on native grasses; increasing numbers of Merinos are now being raised on sown and semi-improved pastures, the theory that they *had* to be run on hard country being discredited.

**Pigs**

The geographical distribution of pigs is shown in the next table:

Description of Pigs in Statistical Divisions  
At 31 March 1966

Particulars	NW.	NE.	North Mid- land	Mid- land	SE.	South- ern	Rest of State	Total
Holdings with Pigs ..	1,719	610	263	95	157	277	32	3,153
Pig Numbers—								
Boars .. .. .	1,327	444	153	28	59	112	20	2,143
Breeding Sows ..	8,182	2,994	1,048	164	354	768	278	13,788
Other (a) .. .. .	48,384	18,234	6,192	680	1,565	3,689	1,481	80,225
Total Pigs .. .. .	57,893	21,672	7,393	872	1,978	4,569	1,779	96,156

(a) Includes baconers and porkers, backfatters, stores, weaners, suckers and slips.

The concentration of pigs in the North West Statistical Division can be related to the fact that this is the main dairying area and that pig-raising and dairying are almost invariably carried on as closely associated activities, separated milk providing an important item of pigfeed.

*Pig Population*

The pig population at 31 March each year is not, of itself, a very significant figure. It is possible for a sow to produce two litters within the one year and the offspring to number more than ten in each litter. Even allowing for high

initial mortality, it is possible to wean anything from ten to twenty offspring, or even more, from a single sow within a year. It follows, therefore, that the real measure of activity in pig-raising is not so much the size of the pig herd at a particular point in time but rather the number of pigs slaughtered and the dressed carcass weight of the meat so produced; such information is given in the Livestock Products section of this chapter.

The following table summarises pig descriptions and pig numbers:

**Description of Pigs on Rural Holdings**

At 31 March	Boars	Breeding Sows	Other (a)	Total Pigs
1950 .. ..	1,106	5,451	29,284	35,841
1955 .. ..	1,608	9,065	47,709	58,382
1960 .. ..	2,075	10,730	54,313	67,118
1962 .. ..	2,123	11,422	62,209	75,754
1963 .. ..	2,112	11,447	56,443	70,002
1964 .. ..	2,260	13,234	67,040	82,534
1965 .. ..	2,327	14,578	75,116	92,021
1966 .. ..	2,143	13,788	80,225	96,156

(a) Includes baconers and porkers, backfatters, stores, weaners, suckers and slips.

In the previous table, the most significant item is the number of breeding sows. A sow can be mated at nine or ten months and the gestation period is a mere four months. The older technique was to allow the piglets to suckle for eight weeks before weaning but this could involve a 250 lb sow in the loss of 80 to 100 lbs live weight. A newer technique involves weaning within a fortnight so that the sow loses relatively little weight and can be re-mated within a fortnight or so after farrowing; the short gestation period and the planned synchronisation of farrowing with the maximum periods of food supply make possible the production of two litters within the one year.

## LIVESTOCK PRODUCTS

### Value of Production

The statistics in the following section refer, in the main, to quantities of livestock products. The associated values will be found under "Value of Production" in Chapter 7.

### Wool

In a report in 1836, the Colonial Secretary, John Montagu, described the early export trade in wool: "It appears that the quantity of Wool imported into England from N.S.W. and Van Diemen's Land in 1810 was 167 lbs; in 1820, it amounted to 99,415 lbs; in 1825, to 323,995 lbs. From 1827, the returns for the two Colonies are separated." The report then quotes the following exports of wool from the island colony:

**Exports of Greasy Wool—Report of John Montagu  
(lb)**

Year	Quantity	Year	Quantity	Year	Quantity
1827 .. ..	192,075	1830 .. ..	993,979	1833 .. ..	1,547,201
1828 .. ..	528,846	1831 .. ..	1,359,203	1834 .. ..	1,601,280
1829 .. ..	925,320	1832 .. ..	951,131	1835 .. ..	1,942,800

Prices in 1824 varied from two and a half cents to five cents per lb but, by 1836, they had increased to range from 15 to 25 cents. The progress of wool production in the remainder of the 19th century can be gathered from the following table (compiled from export figures, since production details were not collected for the whole period):

**Exports of Wool (a) (Overseas and Interstate)—Historical Summary**  
(<sup>000</sup> lb)

Year	Quantity	Year	Quantity	Year	Quantity
1835 .. ..	(b) 2,429	1860 ..	4,538	1885 ..	5,774
1840 .. ..	3,637	1865 ..	4,924	1890 ..	8,984
1845 .. ..	3,662	1870 ..	4,147	1895 ..	7,223
1850 .. ..	5,855	1875 ..	6,199	1900 ..	6,754
1855 .. ..	5,858	1880 ..	9,025	1905 ..	9,566

(a) The figures relate basically to greasy wool but a small proportion of washed wool is included in the later years.

(b) An amendment of Montagu's original figure.

Unfortunately the above series cannot be carried through the period 1910-1922 due to lack of interstate trade figures, or through the period 1922-1951 because "pure" greasy wool export figures (i.e. separated from scoured wools and tops and noils) are not available. Recent exports are:

**Exports of Wool, Greasy (Overseas and Interstate) from 1950-51**  
(<sup>000</sup> lb)

Year	Quantity	Year	Quantity	Year	Quantity
1950-51 ..	12,008	1956-57 ..	20,707	1961-62 ..	27,209
1952-53 ..	16,850	1957-58 ..	23,659	1962-63 ..	26,278
1953-54 ..	15,474	1958-59 ..	25,167	1963-64 ..	25,086
1954-55 ..	17,663	1959-60 ..	27,977	1964-65 ..	30,329
1955-56 ..	18,491	1960-61 ..	24,403	1965-66 ..	34,376

It should be noted, however, that not all Tasmanian wool is exported in the grease, some being used for manufacturing purposes within the State; any locally processed wool exported would not be classified under greasy wool.

### Wool Production

For statistical purposes, the total amount of wool produced in the State in any year does not just consist of the "clip" (shorn wool) but also of the wool on skins, irrespective of whether it is actually removed by local fellmongers or still on the skins when they are exported. Production figures follow:

**Wool Production Since 1954-55**  
(<sup>000</sup> lb)

Year	Wool as in the Grease			Year	Wool as in the Grease		
	Shorn Wool (including Crutchings)	Fell- mongered and Dead Wool, and Wool on Skins Exported	Total		Shorn Wool (including Crutchings)	Fell- mongered and Dead Wool, and Wool on Skins Exported	Total
1954-55	21,149	2,648	23,797	1960-61	27,881	3,989	31,870
1955-56	20,790	2,632	23,422	1961-62	30,039	4,430	34,469
1956-57	25,705	2,974	28,679	1962-63	30,318	4,243	34,561
1957-58	26,110	3,065	29,175	1963-64	29,597	4,410	34,007
1958-59	28,892	3,742	32,634	1964-65	35,619	4,052	39,671
1959-60	29,091	4,509	33,600	1965-66	36,948	4,910	41,858

In the previous tables dealing with exports, a gap exists between 1905 and 1950-51 but production statistics are available as follows:

**Total Wool Production—Historical Summary**  
(’000 lb)

Year	Production of Wool (as in the Grease) (a)	Year	Production of Wool (as in the Grease) (a)	Year	Production of Wool (as in the Grease) (a)
1905 ..	11,753	1924-25	12,483	1944-45	16,324
1910 ..	13,339	1929-30	15,000	1949-50	16,958
1914-15 ..	12,049	1934-35	14,035	1954-55	23,797
1919-20 ..	13,069	1939-40	18,334	1959-60	33,600

(a) Total wool production, including shorn, dead and fellmongered wool and wool exported on skins; fellmongered converted to greasy wool equivalent weight.

*“Wool as in the Grease”*

The above term is used to indicate that fellmongered wool included in total production has been attributed a weight as though it were untreated wool (i.e. wool in the grease) although the original information is supplied in terms of the weight of slipe wool emerging from the fellmongering process. (The relationship between greasy wool and fellmongered wool can be calculated from two yields: (i) yield of clean wool from fellmongered wool; (ii) yield of clean wool from greasy wool.) Conversion of such wool to a greasy wool equivalent is logically necessary since the components of total production—shorn wool, etc.—all need to be on a common basis. One hundred pounds of slipe wool may have a greasy wool equivalent weight from approximately 120 to 135 lbs, depending on the nature of the fellmongering process and of the wool itself.

*Shorn Wool*

The principal months for shearing in Tasmania are October, November and December. The following table gives shearing details for recent years:

**Shearing and Shorn Wool Obtained**

Year Ended 31 March	Numbers Shorn			Shorn Wool Obtained			Average Yield		
	Sheep	Lambs	Total	From Sheep (a)	From Lambs	Total	From Sheep (a)	From Lambs	Total
	’000	’000	’000	’000 lb	’000 lb	’000 lb	lb	lb	lb
1956 .. ..	2,211	522	2,733	19,562	1,228	20,790	8.85	2.36	7.61
1961 .. ..	2,945	733	3,678	26,193	1,688	27,881	8.89	2.30	7.58
1962 .. ..	3,003	827	3,830	28,193	1,846	30,039	9.39	2.23	7.84
1963 .. ..	3,021	762	3,783	28,524	1,794	30,318	9.44	2.35	8.02
1964 .. ..	3,049	819	3,868	27,862	1,735	29,597	9.14	2.12	7.65
1965 .. ..	3,171	807	3,978	33,752	1,867	35,619	10.64	2.31	8.95
1966 .. ..	3,339	979	4,318	34,524	2,424	36,948	10.34	2.48	8.56

(a) Includes crutchings from sheep.

The next table shows the geographical distribution of shorn wool production:

Shearing and Shorn Wool Obtained (a) in Statistical Divisions, 1965-66

Particulars	NW.	NE.	North Mid- land	Mid- land	SE.	South- ern	Rest of State	Total
Number Shorn—								
Sheep (No.)	362,828	553,869	679,051	1,075,821	566,654	99,216	1,818	3,339,257
Lambs (No.)	135,050	152,328	210,774	313,946	140,164	26,168	350	978,780
Shorn Wool Obtained								
From Sheep ('000 lb)	3,422	5,760	6,824	11,848	5,679	972	19	34,524
From Lambs ('000 lb)	487	439	493	661	275	68	1	2,424
Total ('000 lb)	3,909	6,198	7,317	12,509	5,954	1,040	20	36,948
Average Yield—								
Sheep (lb)	9.43	10.40	10.05	11.01	10.02	9.79	10.38	10.34
Lambs (lb)	3.61	2.88	2.34	2.10	1.96	2.60	3.86	2.48

(a) Includes crutchings from sheep.

### Wool Auctions

The bulk of Tasmanian shorn wool is marketed in Hobart and Launceston at auctions organised by the wool-selling brokers; in a typical year, there are three sales usually in November, February-March, and May. Some wool, however, is bought direct from growers by dealers and by local manufacturers of woollen goods. A small proportion of the State's wool is marketed at Victorian auctions, growers on King Island and Flinders Island tending to use this outlet because of sea transport factors.

The following table shows the average price of shorn greasy wool sold at Tasmanian auctions since World War II and also the value of all wool produced:

Tasmanian Average Auction Price and Total Value of Wool Produced

Year	Average Auction Price per lb of Shorn Greasy Wool	Total Value of Wool Produced (b)	Year	Average Auction Price per lb of Shorn Greasy Wool	Total Value of Wool Produced (b)
	cents	\$'000		cents	\$'000
1944-45 (a)	16.17	2,680	1955-56 ..	54.60	12,380
1945-46 (a)	15.52	2,262	1956-57 ..	71.82	19,948
1946-47 ..	23.00	3,880	1957-58 ..	54.62	15,484
1947-48 ..	37.23	5,714	1958-59 ..	43.99	13,688
1948-49 ..	46.92	7,530	1959-60 ..	51.62	16,508
1949-50 ..	59.65	9,530	1960-61 ..	48.18	14,458
1950-51 ..	150.05	24,226	1961-62 ..	48.62	15,752
1951-52 ..	57.59	11,218	1962-63 ..	55.12	17,772
1952-53 ..	67.42	12,758	1963-64 ..	67.40	21,352
1953-54 ..	69.09	13,310	1964-65 ..	49.35	19,050
1954-55 ..	63.75	14,464	1965-66 ..	56.20	22,405

(a) In years 1944-45 and 1945-46, price is the average appraised price fixed under an agreement with the British Government (the agreement operating from 1939-40 to 1945-46).

(b) Includes value of shorn wool, fellmongered and dead wool and estimated value of wool exported on skins. Excludes profits of \$3,201,510 arising from the War-time Wool Disposals Plan and distributed to growers in the period 1949-50 to 1954-55.



The preceding price series refers only to shorn greasy wool sold at auction. In arriving at the value series for all wool produced, account is taken not only of auction prices but also of dealers' transactions, manufacturers' direct purchases from growers, fellmongering operations and exports of wool on skins.

#### *Classification of Greasy Wool Sold at Auction*

The next table shows, on a percentage basis, the proportion of wool sold at auction according to its predominating quality:

**Classification of Greasy Wool Sold at Tasmanian Auctions According to Quality**  
(Source: Australian Wool Bureau)

Predominating Quality	Proportion of Each Quality (Per Cent)					
	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
70s and Finer .. .. .	6.7	5.8	5.9	6.4	4.8	5.2
64/70s .. .. .	2.6	2.7	3.3	2.8	2.7	2.3
64s .. .. .	4.0	4.4	4.8	4.9	3.3	3.2
64/60s .. .. .	0.8	0.4	0.6	0.8	0.6	0.7
60/64s .. .. .	7.8	8.2	8.3	9.7	7.0	8.7
60s and 60/58s .. .. .	16.0	17.7	17.5	19.1	15.6	17.3
Total 60s and Finer .. .. .	37.9	39.2	40.4	43.7	34.0	37.4
58s .. .. .	24.2	27.0	25.9	25.0	30.5	29.4
56s .. .. .	22.1	18.5	18.4	16.9	20.6	19.8
50s .. .. .	9.3	9.2	8.9	8.0	8.8	8.1
Below 50s .. .. .	4.5	4.3	4.0	3.3	4.3	3.3
Oddments .. .. .	2.0	1.8	2.4	3.1	1.8	2.0
Total All Wool .. .. .	100.0	100.0	100.0	100.0	100.0	100.0

The above information is compiled by the Wool Statistical Service of the Australian Wool Board on the basis of catalogues of auction sales. "Quality" (64s, 60s, 58s, etc.) is a measure of the fineness and texture of wool for spinning purposes. Broadly, it means the maximum number of hanks of yarn, each of 560 yards in length, which can be spun from one pound of combed wool. For instance, wool of 64s quality is of a fineness and texture which will produce 64 hanks, each of 560 yards, from one pound of tops (combed wool) of that particular wool.

#### *Clean Wool Yield*

The Tasmanian proportion of auctioned greasy wool classified as "60s and finer" in recent years has ranged from 34 to 44 per cent whereas the corresponding Australian proportion exceeds 70 per cent. In the matter of price, however, the Tasmanian auction average is usually a few cents above the Australian auction average. Tasmanian averages, with Australian equivalents in brackets, have been: 1962-63, 55.12c (49.17c); 1963-64, 67.40c (58.08c); 1964-65, 49.35c (47.83c); 1965-66, 56.20c (50.08c). This apparent contradiction is explained by taking into account a second factor, not included in the foregoing quality analysis, namely the yield of clean wool that can be obtained from greasy wool. In respect of this factor, Tasmanian wools tend to yield higher than Australian, both natural and artificial environmental factors operating to the advantage of the Tasmanian clip. Evidence of this peculiarity of Tasmanian wool is provided in the next table:

**Average Clean Yield of Wool Clip, Tasmania and Other Australian States**  
(Source: Wool Statistical Service)

State of Sale (a)	Percentage of Clean Yield from Greasy Wool					
	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
N.S.W. .. .. .	54.61	56.75	56.92	57.42	56.84	55.86
Victoria .. .. .	55.93	59.19	58.99	59.63	59.21	58.98
Queensland .. .. .	56.85	55.63	56.16	56.21	55.70	54.50
S.A. ....	53.05	54.07	53.12	63.98	53.10	53.07
W.A. ....	54.41	55.27	54.04	55.26	54.76	54.94
<b>Tasmania .. .. .</b>	<b>63.02</b>	<b>62.51</b>	<b>62.93</b>	<b>62.93</b>	<b>62.93</b>	<b>62.82</b>
Australia .. .. .	56.82	56.96	56.81	57.38	56.86	56.38

(a) Wool from the continental States is not sold at Tasmanian auctions so, for Tasmania, 'State of Sale' and 'State of Origin' are virtually the same except that some King and Flinders Islands' wool is sold at Victorian auctions.

As the above figures suggest, Tasmanian wool is freer from dust and vegetable fault than wool produced in the continental States.

While the proportion of fine wool (60s and finer) is comparatively low in the Tasmanian clip (since the State is historically and climatically a producer of crossbred wool), nevertheless growers offering "60s and finer" sell a very high proportion of superfine Merino wool at premium prices; this factor also operates to raise Tasmanian average auction prices above the Australian average.

### Meat

#### *Slaughtering*

An obvious starting point in any description of meat production is the slaughtering of livestock for human consumption. To fully record the level of this activity, statistics should deal with operations in abattoirs, other slaughtering establishments and factories; slaughtering on farms also needs to be taken into account. Information on this complete basis did not become available before 1912, previous statistics relating only to slaughtering in Hobart and Launceston. The following table has been compiled to give an indication of slaughtering activity from 1912 to the present day:

**Stock Slaughtered (a) For Human Consumption—Historical Summary**  
(\*000)

Year	Cattle and Calves	Sheep and Lambs	Pigs	Year	Cattle and Calves	Sheep and Lambs	Pigs
1912 .. ..	29	216	16	1954-55 ..	75	643	79
1915 .. ..	32	309	32	1959-60 ..	145	1,166	115
1924-25 ..	36	276	55	1960-61 ..	115	1,076	111
1929-30 ..	35	342	64	1961-62 ..	135	1,160	120
1934-35 ..	38	349	51	1962-63 ..	158	1,095	115
1939-40 ..	48	461	73	1963-64 ..	176	1,127	124
1944-45 ..	47	509	58	1964-65 ..	174	987	135
1949-50 ..	58	508	51	1965-66 ..	154	1,164	146

(a) In all registered slaughtering establishments and on farms.

The next table, compiled on the same basis, analyses the items "Cattle and Calves" and "Sheep and Lambs":

**Stock Slaughtered (a) for Human Consumption  
(<sup>'000</sup>)**

Year	Cattle and Calves				Sheep and Lambs			Pigs
	Bulls, Bullocks & Steers	Cows and Heifers	Calves	Total	Sheep	Lambs	Total	
1955-56 ..	32	36	20	88	256	389	645	88
1960-61 ..	36	43	36	115	475	601	1,076	111
1961-62 ..	42	49	44	135	511	649	1,160	120
1962-63 ..	50	62	46	158	466	629	1,095	115
1963-64 ..	51	71	54	176	545	582	1,127	124
1964-65 ..	53	71	50	174	425	562	987	135
1965-66 (b) ..	47	61	47	154	567	597	1,164	146

(a) In all registered slaughtering establishments and on farms.

(b) In 1965-66, the farm component of total livestock slaughtered was: cattle and calves, 952; sheep and lambs, 81,352; pigs, 1,637.

**Meat Production**

Slaughtering statistics in the previous two tables suggest that there has been a very marked increase in meat production in the last ten years but a more certain indicator is the actual carcass weight produced. The necessary weight data are collected from abattoirs, factories and licensed slaughterhouses (including "country butchers"); in the case of livestock killed on farms, only the numbers are available and the resulting carcass weight has to be estimated. Statistics in terms of carcass weight cover the same field as the previous tables on slaughtering. The following table shows, in summary form, details of meat production since 1924-25:

**Production of Meat—Historical Summary  
(<sup>'000</sup> Tons—Carcass Weight)**

Year	Beef and Veal	Mutton and Lamb	Pigmeat (a)	Total Meat	Year	Beef and Veal	Mutton and Lamb	Pigmeat (a)	Total Meat
1924-25 ..	8.1	5.0	2.5	15.6	1959-60	23.1	20.8	5.4	49.3
1929-30 ..	8.0	6.0	2.8	16.8	1960-61	16.9	18.9	5.1	40.9
1934-35 ..	8.1	6.0	2.3	16.4	1961-62	19.7	20.2	5.4	45.3
1939-40 ..	10.6	7.7	3.5	21.8	1962-63	23.7	19.4	5.4	48.5
1944-45 ..	9.2	9.2	3.0	21.4	1963-64	25.9	20.1	5.9	51.9
1949-50 ..	12.3	8.9	2.6	23.8	1964-65	26.3	18.1	6.6	51.0
1954-55 ..	13.7	11.9	3.4	29.0	1965-66	23.0	21.1	7.0	51.1

(a) Includes pork for manufacture into bacon and ham.

The next table, compiled on the same basis, analyses the items "Beef and Veal" and "Mutton and Lamb":

**Production of Meat  
(<sup>'000</sup> Tons—Carcass Weight)**

Year	Beef and Veal			Mutton and Lamb			Pigmeat (a)	Total Meat
	Beef	Veal	Total	Mutton	Lamb	Total		
1955-56 ..	14.9	0.5	15.4	5.2	6.6	11.8	3.6	30.8
1960-61 ..	16.1	0.8	16.9	9.4	9.5	18.9	5.1	40.9
1961-62 ..	18.8	0.9	19.7	10.1	10.1	20.2	5.4	45.3
1962-63 ..	22.7	1.0	23.7	9.5	9.9	19.4	5.4	48.5
1963-64 ..	24.6	1.3	25.9	10.9	9.2	20.1	5.9	51.9
1964-65 ..	25.4	0.9	26.3	9.1	9.0	18.1	6.6	51.0
1965-66 ..	22.1	0.9	23.0	11.5	9.6	21.1	7.0	51.1

(a) Includes pork for manufacture into bacon and ham.

*Export of Meat*

As early as 1890, the Australian continental States were exporting frozen (and later, chilled) lamb, mutton, beef and veal to overseas destinations but the development of a similar meat export trade from Tasmania has been of comparatively recent origin. The first major step was in the field of fat lamb production when the 1931-32 season resulted in approximately 19,000 carcasses being exported overseas; unfortunately the birth of this activity coincided with the economic depression of the 1930s and the attempt to introduce a new line in "mixed" farming was at first discouraged by low prices. World War II saw a revival of demand with over 100,000 carcasses exported overseas in 1943-44, and, after something of a decline in the early post-war period, exports climbed to 161,815 carcasses in 1959-60. Statistics of the number of carcasses exported in recent years are not available.

The other major development has been the growth of an export trade in beef and veal, the first shipments overseas commencing in 1954-55. The following are meat export figures expressed in tons. Unfortunately export weights cannot be directly compared with production weights since the former include boneless meat while the latter are in terms of carcass weight.

Exports of Meat, 1965-66  
(Tons)

Destination	Beef and Veal	Lamb	Mutton	Pork	Offal (Edible)	Bacon and Ham
Interstate .. ..	2,206	490	922	743	3	16
Overseas .. ..	3,871	1,137	2,469	24	626	..
Total ..	6,077	1,627	3,391	767	629	16

The importance of the overseas meat trade can be judged from Australian Meat Board estimates of the percentage of Tasmanian production actually exported. The trend in recent years is shown in the following table:

Proportion of Tasmanian Meat Production Exported Overseas (a)  
(Source: Australian Meat Board)  
(Per Cent)

Meat	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Beef & Veal	..	2.5	4.5	8.7	7.7	14.7	20.2	26.1	28.5	24.6
Mutton	..	1.8	1.4	6.0	3.2	10.9	17.5	27.8	19.8	39.2
Lamb	13.0	13.2	25.5	23.0	17.7	12.7	13.7	9.5	14.7	12.3

(a) The estimated percentages are derived by converting actual export weights to a carcass weight equivalent, thus giving a basis for comparison with production figures.

*Meat Export Works*

In 1965-66, there were nine licensed export slaughtering establishments in Tasmania. These were in Launceston (two), Hobart, Burnie, Devonport, Longford, King Island, Smithton and Sorell.

In broad terms, it is true to say that Tasmania has changed from a meat importing to a meat exporting State and this development can be related to the changed pattern of farming, the most significant indicator being the increase in the area of sown pasture and in the number of livestock carried.

*Bacon and Ham*

In the tables on meat production, the product from pig slaughtering has been referred to as "pigmeat". Approximately 20 per cent of pigmeat was converted to bacon and ham in 1965-66. The next table shows the production of bacon and ham since 1939-40 in summary form:

**Production of Bacon and Ham  
(Tons)**

Year	Bacon and Ham			Year	Bacon and Ham		
	Factory (a)	Farm	Total		Factory (a)	Farm	Total
1939-40	1,142	150	1,292	1961-62	1,112	19	1,131
1944-45	1,122	68	1,190	1962-63	1,165	17	1,182
1949-50	948	43	991	1963-64	1,151	15	1,166
1954-55	992	35	1,027	1964-65	1,158	13	1,171
1959-60	1,120	24	1,144	1965-66	1,062	(b) (c)	1,062

(a) From 1959-60, includes small quantities made in establishments not classified as factories.

(b) Not available.

(c) Excludes farm production.

Previous reference has been made to the close association between pig-raising and dairying, many dairy holdings raising pigs as a subsidiary activity.

**Dairy Products**

In 1965-66, Tasmania's production of milk reached a record level of 87,890,000 gallons. The following table summarises milk production since World War II:

**Milk Production and Milk Utilisation—Summary**

Year	Quantity of Milk Used For—			Total Milk Production	Dairy Cows at 31 March	Average Annual Production of Milk per Dairy Cow (b)
	Factory Butter	Factory Cheese	Other Purposes (a)			
	'000 gal	'000 gal	'000 gal	'000 gal	No.	gal
1944-45 ..	(c) 19,019	(c) 2,629	7,080	28,728	75,435	382
1954-55 ..	38,737	548	12,736	52,021	111,781	485
1959-60 ..	54,597	735	14,894	70,226	126,183	554
1960-61 ..	47,676	780	15,402	63,858	126,611	505
1961-62 ..	56,069	1,355	15,782	73,206	134,048	562
1962-63 ..	60,877	1,440	16,201	78,518	141,255	570
1963-64 ..	63,525	2,994	16,605	83,124	(d) 140,425	(d) 577
1964-65 ..	64,621	5,265	17,457	87,343	(d) 143,257	(d) 589
1965-66 ..	65,092	6,592	16,206	87,890	(d) 148,452	(d) 578

(a) Milk used for "other purposes" goes into the making of cream, ice cream, milk powder, concentrated milk, and other preserved milk products. It includes milk consumed as such. As from 1954-55, the milk equivalent of farm-made butter and cheese is also included.

(b) Milk yielding population is taken as mean of "dairy cows—in milk and dry" at 31 March in year of production and in preceding year. The figures should therefore be treated as an index rather than as an actual average quantity of milk produced per dairy cow.

(c) Includes milk equivalent of farm-made butter and cheese.

(d) The 1963-64 farm census recorded house cows (i.e. kept primarily for own milk supply) as a separate item excluded from the dairy cow population. It follows that 1963-64 and following figures are not strictly comparable with those of previous years.

*Production of Butter and Cheese*

The Australian dairying industry is capable of producing butter and cheese in quantities considerably greater than are required for domestic consumption, but competition from other countries in overseas markets has resulted in low prices which tend to discourage exports. The solution to this problem has been, in general terms, to pool the returns from both domestic sales and overseas sales and to distribute from the pool to each individual factory, irrespective of whether its products are sold at home or abroad; in effect, a process of price equalisation operates, the higher domestic price being used as an offset to the lower overseas price. The administrative body implementing this scheme is the Commonwealth Dairy Produce Equalisation Committee Ltd.

The industry also receives subsidies from the Commonwealth Government under the provisions of the various Dairy Industry Assistance Acts, the first of which was passed in 1942. Subsidies are distributed by the Commonwealth Dairy Produce Equalisation Committee through factories to milk producers by payments on milk and cheese manufactured. It follows, then, that in the marketing of butter and cheese, two factors are in operation: (i) price equalisation directly affecting the return to factories; (ii) subsidies directly affecting the return to milk producers.

It should be noted that the Commonwealth subsidy is applicable to factory butter and cheese but not to the same products manufactured on farms; the decline in farm production is probably related in part to this factor.

Although Tasmanian butter factories had been in operation before the turn of the century, it was not till 1911 that annual factory production exceeded 1,000 tons and even by 1938-39, factory butter output was only approximately 4,000 tons. The next table summarises total production of butter and cheese since 1939-40:

Production of Butter and Cheese  
(Tons)

Year	Butter			Cheese		
	Factory (a)	Farm	Total	Factory	Farm	Total
1939-40 ..	4,156	1,139	5,295	1,395	52	1,447
1944-45 ..	3,643	448	4,091	1,122	59	1,181
1949-50 ..	5,069	456	5,525	418	3	421
1954-55 ..	8,334	236	8,570	274	..	274
1959-60 ..	11,744	144	11,888	328	38	366
1961-62 ..	12,063	118	12,181	605	26	631
1962-63 ..	13,097	96	13,193	643	27	670
1963-64 ..	13,667	96	13,763	1,337	..	1,337
1964-65 ..	13,903	96	13,999	2,350	(b)	(c) 2,350
1965-66 ..	14,004	(b)	(c) 14,004	2,942	(b)	(c) 2,942

(a) Includes butter equivalent of butter oil.

(b) Not available.

(c) Excludes farm production.

Farmers in the past traditionally "separated" their milk, producing a cream concentrate for delivery to the butter factory; the residue, skim milk, was used to feed pigs. Some factories now are buying whole milk because they have diversified their output to include casein (a raw material for synthetic fibres, etc.) and dried skim milk. If this trend continues, then the long association between dairying and pig-raising may be upset in some degree.

*Disposal of Butter*

Tasmania is a butter exporting State as shown in the following table:

**Butter—Production, Exports and Local Sales  
(Tons)**

Year	Production (Farm and Factory)	Net Exports (a)	Local Sales (b)	Year	Production (Farm and Factory)	Net Exports (a)	Local Sales (b)
1955-56	10,214	5,696	4,620	1961-62	12,181	7,457	4,467
1957-58	10,845	5,845	4,703	1962-63	13,193	8,642	4,521
1958-59	11,001	6,956	4,300	1963-64	13,763	8,227	4,885
1959-60	11,888	7,741	4,612	1964-65	13,999	10,231	4,527
1960-61	10,385	5,301	4,685	1965-66	(c) 14,004	8,787	4,804

(a) Net and gross are identical except in 1960-61 when 35 tons were imported. Includes overseas and interstate.

(b) Source: Commonwealth Dairy Produce Equalisation Committee Ltd. Includes factory consumption of butter.

(c) Excludes farm production.

**Bee-Farming**

Originally bee-farming statistics were collected from all apiarists irrespective of the number of hives operated but, as from 1956-57, the collection was restricted to apiarists operating five or more hives. The next table summarises bee-keeping statistics from 1956-57:

**Bee-Farming**

Year	Apiarists	Hives	Honey Produced		Beeswax Produced	
			Quantity	Average Per Productive Hive	Quantity	Average Per Productive Hive
	No.	No.	'000 lb	lb	'000 lb	lb
1956-57 ..	183	5,422	372.2	87.6	4.8	1.13
1960-61 ..	175	6,429	441.0	92.7	4.8	1.02
1961-62 ..	164	6,651	278.6	57.1	3.8	0.78
1962-63 ..	153	7,156	547.3	103.3	6.2	1.16
1963-64 ..	160	7,261	632.1	111.9	6.3	1.11
1964-65 ..	202	8,373	715.3	114.5	10.1	1.61
1965-66 ..	229	9,305	630.0	94.0	8.0	1.20

A proportion of the larger commercial apiarists can be described as "migratory", in the sense that they seasonally move their hives into the leatherwood areas of the West Coast; some hives are also moved into the orchard and small fruit areas at flowering time. The sources of honey for the Tasmanian market, and estimated honey consumption per head of population are shown in the following table:

**Honey Consumption**

Average for Three Years Ended—	Production	Imports	Exports	Balance Available For Local Con- sumption (a)	Estimated Per Capita Consumption
	'000 lb	'000 lb	'000 lb	'000 lb	lb
1955-56 .. ..	303	314	54	563	1.80
1965-66 .. ..	659	137	143	654	1.79

(a) Production *plus* imports *less* exports.

## Poultry Farming

*Egg Production*

Not only farmers, but also many persons on holdings in rural and urban areas not coming within the "rural holding" definition, keep poultry and it therefore follows that the annual farm census cannot give an indication of the total number of eggs produced annually. Some indication of the trend in commercial egg production in other States is available from the reports of the Australian Egg Board which publishes data supplied by the various State egg marketing boards. Until the year 1957-58, details were also published for Tasmanian commercial production but from February 1958, the operation of the Tasmanian Egg Marketing Board was modified by the lifting of restrictions on the private sale of eggs by producers and by the withdrawal of the requirement that producers should notify the Board progressively of quantities sold.

Details of commercial production of eggs in Tasmania (expressed in millions of dozens) and published by the Australian Egg Board were: 1944-45, 1.2; 1945-46, 1.2; 1946-47, 0.9; 1947-48, 0.8; 1948-49, 1.1; 1949-50, 1.5; 1950-51, 1.3; 1951-52, 1.0; 1952-53, 1.1; 1953-54 to 1956-57, 0.9 annually. Operations of the State Egg Board continue but there is insufficient information to extend the series beyond 1956-57.

*Chicken Hatching*

In 1964-65, the first Tasmanian census of commercial chicken hatcheries (i.e. those establishments hatching chickens for sale) was conducted. The 1965-66 census was extended to all hatcheries which set 1,000 or more eggs during the year, including hatcheries producing chickens for their own use, and not for sale. Details of eggs set and chickens hatched by the 47 hatcheries in the 1,000 or more egg per annum category are shown in the following table:

Eggs Set and Chickens Hatched, 1965-66

Description	Number ('000)	Proportion of Total (Per Cent)
EGGS SET		
Meat Strains .. .. .	953	47.2
Egg Strains .. .. .	1,067	52.8
Total Eggs Set .. .. .	2,020	100.0
CHICKENS HATCHED		
Chickens Intended for—		
Chicken Meat —Meat Strains—Unsexed .. .. .	582	41.8
Egg Strains —Crossbred and Other Cockerels .. .. .	107	7.7
Egg Production—Egg Strains —Pullets .. .. .	372	26.7
Breeding —Meat Strains—Pullets .. .. .	15	1.1
Cockerels .. .. .	2	0.1
Egg Strains —Pullets .. .. .	24	1.7
Cockerels .. .. .	6	0.4
Chickens Destroyed (a) .. .. .	286	20.5
Total Chickens Hatched .. .. .	1,394	100.0

(a) Mainly chickens culled after hatching as unsuitable for purpose hatched (e.g. cockerels from egg laying strains and not wanted for meat).



*Poultry Slaughtering*

As from 1960-61, a collection was instituted covering the operations of commercial poultry slaughterers in Tasmania. Hens in the next table are birds no longer required for egg laying (commercial producers replace most of their egg laying stock each year). Stags are male birds no longer required for breeding. The number of stags killed is not recorded but is believed not to exceed five per cent of the figures shown for hens and stags:

**Poultry Slaughtering (a)**  
(<sup>000</sup>)

Kind of Poultry	1961-62	1962-63	1963-64	1964-65	1965-66
Chickens (broilers, fryers and roasters)—					
Under 2 lb dressed ..	76	110	140	171	} (b) 545
2 lb and over dressed ..	288	267	273	335	
Hens and Stags (c) ..	91	88	99	127	117
Ducks and Drakes (c) ..	12	7	9	17	11
Turkeys ..	9	6	8	9	9
Geese ..	1	1	1	1	1

(a) In commercial establishments where more than 100 birds are slaughtered during the year.

(b) Separate details not available.

(c) Comparability may have been slightly affected by minor changes to the collection form in 1965-66.

## RURAL POPULATION AND EMPLOYMENT

### Employment on Rural Holdings

The following table gives details of males working on rural holdings as reported in the annual farm census at 31 March:

**Male Farm Workers at 31 March**

Particulars	1956	1963	1964	1965	1966
Number of Rural Holdings, One Acre and Over ..	11,647	10,974	10,949	10,979	10,777
Males Working Permanently Full-time on Holdings—					
Owners, Lessees or Share Farmers ..	9,211	7,457	7,685	7,651	7,450
Relatives of Owners, etc. over 14 years not Receiving Wages ..	154	111	40	20	6
Employees including Managers and Relatives Working for Wages or Salary ..	4,243	4,053	4,038	4,075	4,073
Total Permanent Males	13,608	11,621	11,763	11,746	11,529
Males Working Temporarily on Holdings on Wages or Contract ..	5,339	5,139	5,733	5,993	5,715

### *Female Workers on Rural Holdings*

Similar details of female employment are not available due to a difficulty of definition; the difficulty is to establish in what degree a woman performing ordinary domestic duties on a rural holding performs other tasks that justify her classification as a *permanent full-time worker*, in the same sense that the term is applied to a male.

### Permanent Residents on Rural Holdings

Persons of all ages residing permanently on rural holdings (as defined for statistical purposes) numbered 25,123 males, 22,767 females, or 47,890 persons at 31 March 1966. The number in 1965 was 49,190 and in 1964, 49,626.

When those of school and lower ages, and women engaged in domestic duties, etc. have been excluded, the remaining rural population is not necessarily engaged full-time in farming. Some who are included in farm population devote much of their time to non-farming activities such as working in commercial or industrial enterprises, commercial fishing, sawmilling, etc. (which is only to be expected since a rural holding may be as small as one acre).

## TECHNICAL ASPECTS OF RURAL INDUSTRY

### Artificial Breeding

#### *Introduction*

Artificial breeding (by artificial insemination) is a technique applicable to animals, birds and bees. In Tasmania, its main application has been in cattle breeding where two major aims are being achieved: (i) the improvement of dairy herds by the use of semen from outstanding sires; (ii) the elimination of infertility diseases.

#### *Herd Improvement*

Herd improvement has always depended on selective breeding, but few primary producers can afford to own or even hire first-class stud bulls; artificial breeding techniques overcome this difficulty and give every farmer the chance to improve his herd at low cost. In 1964-65 for example, a Friesian bull named Calthorpe Vrouka Domino was reported as providing 6,265 inseminations in Tasmania; in total, 79 bulls provided 36,847 inseminations involving 23,884 cows. (The population of cows in milk and dry at 31 March 1965 was 143,257.)

#### *Infertility Diseases*

Herd improvement relates to the quality of cattle, but even more basic, there is the problem of infertility and the diseases which cause it, principally by inducing abortion. Abortion in a cow means a direct financial loss to the farmer. The principal diseases are:

*Brucellosis (Contagious Abortion):* Fortunately this section can be written in the past tense—brucellosis was virtually eradicated from Tasmania by vigorous government action in 1965. The eradication campaign was based mainly on the test and slaughter of carrier cows, with Strain 19 vaccination used in limited areas.

*Vibriosis:* This bovine venereal disease is a cause of abortion but differs from brucellosis in that the infection will die out if the cows remain 'empty'. Since the bull *on the property* is the main agent in spreading the infection, artificial insemination is effective in completely eliminating the disease from a herd.

*Trichomoniasis:* The bull *on the property* is the main agent in propagation so artificial insemination is equally effective in eliminating this disease.

#### *Infertility Research and Clinics*

In 1956, the Department of Agriculture commenced an investigation of livestock reproductive diseases and of infertility. One finding was that 'empty' cows (those not conceiving) ranged from ten per cent in the Circular Head area to four per cent in northern and southern regions, and that brucellosis infected herds were less fertile than uninfected ones.

The vigorous measures taken to stamp out brucellosis were successful but *vibriosis* and *trichomoniasis* were also detected as causes of infertility, both diseases being spread by traditional breeding methods. In this situation, artificial insemination was seen as the most effective method of producing herds free from either disease.

The Department set up infertility clinics for treating badly infected herds, the necessary semen for artificial insemination being provided from the Mount Pleasant laboratory stud. Herds serviced in this way recovered fertility and were then transferred to commercial insemination centres. Treatment has been so successful that the clinics have now been disbanded but the service is still made available from Hadsden Park when herds are found to be infected.

#### *Government Control of Artificial Breeding*

The first A.I. (artificial insemination) centre was set up by north-west farmers at Marrawah in 1955, semen being imported from other States.

In 1957, the Government established the Artificial Breeding Board consisting of the Chief Veterinary Officer as Chairman, the Chief Dairy Officer, two representatives of farmers' organizations and one representative of breed societies. When the Board first met in 1958, other farmers' groups which had begun to operate A.I. centres were having financial difficulties, whilst the pioneering Marrawah group had ceased to operate. Commercial A.I. centres were approved and licensed by the Board at Circular Head, Wynyard, Ulverstone, Devonport, Launceston and Ringarooma. In some cases, financial assistance was provided by the Board and by 1963 there were nine commercial centres operating, all controlled by committees of local farmers.

The *Artificial Breeding Act* 1964 re-constituted the Board, adding a sixth member who was to be a financial expert, and giving the new body authority to buy and sell semen, to produce semen from its own bulls, to employ staff and to function in general as a corporate body marketing a commodity and providing a service. The Board then took over the semen production facilities of the Department of Agriculture and relieved local farmers of the responsibility for management of local commercial A.I. centres.

#### *Artificial Breeding Statistics*

Details follow of artificial breeding by commercial centres and in the treatment of infertility by Department of Agriculture infertility clinics.

**Artificial Breeding: Commercial and Infertility Services (a)**

Year	Cows Served			Total Inseminations	Non-Return Rate for Commercial Service (c) (Per Cent)
	Commercial Service	Infertility Service (b)	Total Cows		
1958-59 .. ..	2,173	2,084	4,257	n.a.	58.8
1959-60 .. ..	5,239	3,910	9,149	15,003	57.9
1960-61 .. ..	8,144	7,457	15,601	24,378	61.2
1961-62 .. ..	10,008	9,527	19,535	30,674	61.5
1962-63 .. ..	10,879	11,422	22,301	34,077	64.7
1963-64 .. ..	14,427	9,765	24,192	38,029	61.2
1964-65 .. ..	17,430	6,454	23,884	36,847	62.5
1965-66 .. ..	27,152	2,010	29,162	46,106	60.6

(a) Compiled from annual reports, Artificial Breeding Board.

(b) Includes cows inseminated in Department of Agriculture's research programme.

(c) Percentage of cows not returning for further service within the 90-120 days following first service.

The number of inseminations supplied by the various breeds of bull in 1965-66 were: Friesian, 26,654; Jersey, 13,454; Hereford, 4,144; Aberdeen Angus, 412; Illawarra Shorthorn, 265; Beef Shorthorn, 204; Guernsey, 170; Dairy Shorthorn, 167; Ayrshire, 88; total 45,558. The number of herds subjected to artificial insemination at Board centres was 1,220 (25,300 cows) and, at centres licensed by the Board, 100 (3,652 cows). A further 210 cows were given 548 artificial inseminations by the Department of Agriculture in a research programme.

### Farm Machinery on Rural Holdings

A previous table showing male farm workers over a ten-year period indicated a substantial fall in the rural work force. This decline must be associated, in some degree, with the increasing use of machinery on farms. In reviewing the complete field of farm mechanisation, it is not possible to make a ten-year comparison since some items have only become available in the required detail since 1959. The following table gives details of machinery on rural holdings at 31 March:

Machinery on Rural Holdings at 31 March

Type of Machinery	1959	1962	1963	1964	1965	1966
Cultivating Equipment—						
Rotary Hoes—						
Self Contained Power Unit						
Type .. .. .	1,134	1,112	1,127	1,218	1,270	1,199
Tractor Mounted Type ..	525	605	610	681	680	626
Harvesting Equipment—						
Headers, Strippers and Other						
Harvesters .. .. .	699	656	687	637	717	703
Mowers—						
Power Drive .. .. .	3,639	4,341	4,592	4,703	4,940	5,132
Ground Drive .. .. .	2,000	1,510	1,324	1,294	1,176	994
Hay Rakes—						
Side Delivery .. .. .	1,650	1,977	2,121	2,198	2,336	2,386
Buck .. .. .	923	1,027	1,005	1,034	1,017	1,022
Dump .. .. .	1,448	1,233	1,161	1,147	1,060	971
Forage Harvesters .. .. .	69	186	216	231	241	269
Pick-up Balers .. .. .	1,025	1,346	1,405	1,494	1,599	1,661
Potato Diggers .. .. .	1,139	1,020	995	1,002	951	950
Seeding and Planting Equipment—						
Grain Drills (All Types) ..	3,871	3,899	3,884	4,002	4,036	4,036
Fertiliser Distributors and Broad-						
casters—						
Rotary .. .. .	2,989	3,225	3,338	3,455	3,657	3,841
Direct Drop .. .. .	1,778	1,947	1,917	1,970	1,978	1,925
Potato Planters .. .. .	(a)	210	214	204	215	239
Other Equipment—						
Shearing Machines (No. of						
Stands) .. .. .	3,798	4,113	4,249	4,371	4,493	4,652
Milking Machines (No. of						
Stands) .. .. .	10,721	12,220	12,701	13,382	13,806	15,894
Hammer Mills .. .. .	225	301	343	415	440	512
Power Driven Spray Plants—						
Fruit .. .. .	1,273	1,165	1,179	1,214	1,224	1,195
Vegetable and Pasture ..	744	1,186	1,283	1,528	1,678	1,870
Power Driven Irrigation Plants	862	1,280	1,330	1,865	1,836	2,034

(a) Not available.

The next table deals with tractors and gives a ten-year comparison:

## Number of Tractors on Rural Holdings at 31 March

Type of Tractor	1956	1963	1964	1965	1966
Wheeled .. .. .	6,272	9,605	9,831	10,250	10,856
Crawler .. .. .	745	1,022	1,073	1,129	1,091
Total .. .. .	7,017	10,627	10,904	11,379	11,947

Every three years details are obtained from all farmers regarding characteristics of tractors used. A summary of this information for wheeled tractors is given in the next table:

## Classification of Wheeled Tractors on Rural Holdings at 31 March 1966

Horsepower (a)	Tractors Using as Fuel			Tractors Classified According to Age				
	Diesel Oil	Kero-sene	Petrol	Under 5 Years	5 and Under 10 Years	10 and Under 15 Years	15 Years and Over	Total
Over Up To								
.. 10	2	..	17	11	3	1	4	19
10 .. 20	47	158	85	15	33	51	191	290
20 .. 30	1,000	864	2,023	119	840	2,100	828	3,887
30 .. 40	3,586	701	530	1,937	1,834	677	369	4,817
40 .. 55	1,305	111	10	842	303	186	95	1,426
55 .. 100	411	5	..	354	52	8	2	416
100 ..	1	..	..	1	..	..	..	1
Total ..	6,352	1,839	2,665	3,279	3,065	3,023	1,489	10,856

(a) Maximum belt horsepower.

## Artificial Fertilisers

The trend over the last ten years has been to greater use of artificial fertilisers, not only in total, but also in average application per acre as illustrated in the next table:

## Artificial Fertilisers Used

Particulars	Unit	1955-56	1962-63	1963-64	1964-65	1965-66
<b>Vegetables (a)—</b>						
Area Fertilised .. ..	'000 acres	49	26	25	26	30
Fertiliser Used—Total ..	'000 cwt	162	142	132	142	192
Per Acre	cwt	3.31	5.53	5.26	5.49	6.35
<b>Fruit—</b>						
Area Fertilised .. ..	'000 acres	21	20	21	21	21
Fertiliser Used—Total ..	'000 cwt	125	133	149	142	154
Per Acre	cwt	5.95	6.64	7.08	6.89	7.31
<b>Pastures—</b>						
Area Fertilised .. ..	'000 acres	830	1,165	1,291	1,380	1,475
Fertiliser Used—Total ..	'000 cwt	1,204	1,905	2,165	2,235	2,545
Per Acre	cwt	1.45	1.63	1.68	1.62	1.72
<b>Other Crops—</b>						
Area Fertilised .. ..	'000 acres	92	160	189	172	184
Fertiliser Used—Total ..	'000 cwt	168	310	384	333	388
Per Acre	cwt	1.82	1.95	2.04	1.94	2.11
<b>Total Usage—</b>						
Area Fertilised .. ..	'000 acres	993	1,371	1,526	1,598	1,711
Fertiliser Used .. ..	'000 cwt	1,659	2,490	2,830	2,853	3,278

(a) From 1962-63, figures refer to vegetables for human consumption only.

In the twenty-year period ending in 1965-66, artificial fertiliser usage has risen rapidly, the area treated increasing by 290 per cent and the quantity applied by 380 per cent. Three factors mainly account for these movements: (i) the marked increase in the area of treated pasture; (ii) the trend to more intensive application per acre generally; (iii) the encouragement provided by the Commonwealth Government through fertiliser subsidies.

### *Types of Artificial Fertiliser*

The basic types of artificial fertiliser employed are phosphatic (e.g. super phosphate), nitrogenous (e.g. sulphate of ammonia) and potassic (e.g. muriate of potash), their essential chemical contribution to plant nutrition being phosphoric acid ( $P_2O_5$ ), nitrogen (N) and potash ( $K_2O$ ). Superphosphate, either "straight" or with additives, is most widely used in Tasmania, the additives consisting of trace elements such as cobalt, molybdenum, copper, boron, zinc, etc. In addition to the basic fertiliser types, the following combinations are also in use: mixed nitrogenous and phosphatic; mixed nitrogenous and potassic; mixed phosphatic and potassic; mixed nitrogenous, phosphatic and potassic. Due to the numerous combinations on the market, it has not been possible to obtain any detailed analysis of the fertiliser types applied to various purposes.

### **Aerial Agriculture**

The term "aerial agriculture" is applied to the use of aircraft for top-dressing and seeding, for spraying and dusting of crops and pastures, and for pest and vermin destruction. In Tasmania, the obvious limitations to more extensive development of this technique are small holdings and the nature of the terrain. The area treated from aircraft in the year 1965-66 (in '000 acres) was as follows: N.S.W., 8,463; Victoria, 2,472; Queensland, 776; S.A., 1,157; W.A., 1,747; Tasmania, 247. Even though the area treated in Tasmania is relatively small compared with that in the continental States, there has nevertheless been rapid development of this technique, particularly since 1964-65.

The following table gives details:

**Aerial Agriculture**  
(Source: Department of Civil Aviation)

Year	Total Area Treated (a)	Superphosphate and Seed					Aircraft Utilisation (Flying Time)
		Area Treated			Material Used		
		Super-phosphate Alone	Super-phosphate and Seed	Seed Alone	Super-phosphate	Seed	
	acres	acres	acres	acres	tons	lb	hours
1956-57	41,260	26,410	14,850	..	3,361	31,900	1,861
1957-58	104,055	95,780	7,025	..	6,167	7,800	2,234
1958-59	61,910	59,010	300	..	3,484	300	1,224
1959-60	72,617	63,295	2,675	80	4,759	582	1,270
1960-61	82,931	81,060	..	..	6,237	..	1,782
1961-62	88,200	78,430	..	100	4,612	300	1,107
1962-63	80,290	58,330	21,820	..	5,631	24,280	1,122
1963-64	101,986	62,570	20,656	..	7,668	10,560	1,640
1964-65	223,254	199,905	..	8,150	16,261	39,950	2,678
1965-66	247,334	220,590	..	..	14,475	..	2,808

(a) Including spraying and dusting of crops and pastures with insecticides, herbicides, etc.

## Area of Land Irrigated

*Comparison*

Both N.S.W. and Victoria have over one million acres of irrigated land; by way of contrast, the Tasmanian total was only 45,196 acres in 1965-66. Owing to the generally more reliable rainfall in Tasmania, scarcity of water is not such a problem as it is in the continental States, though not all streams are by any means permanently flowing.

*Farm Storages*

Until a few years ago, Tasmanian irrigated areas were negligible except for long-established hop fields, but there is a rapidly expanding use of spray irrigation on orchards and pastures and to some extent on potatoes and other vegetable crops. Up to the present, there has been an almost complete dependence on natural stream flows, but the need for some regulating storages is now apparent. Farmers are constructing storages of their own, and the extension of this practice is seen as the logical solution in most areas, as valleys are narrow and steep sided. Single large reservoirs cannot economically serve large areas of suitable land, as nearly every valley is separated from others by pronounced hills, prohibiting the construction of cross-country channels.

*Water Resources*

It is true that the State has very large volumes of water stored in the central lakes and behind the dams of the State Hydro-Electric Commission but no large irrigation scheme based on power-house discharge has yet been initiated. Unlike the Snowy River scheme, Tasmanian hydro-electric construction has been undertaken with production of power as the primary goal although the resulting storages of water at high level could obviously be the logical starting point for extensive irrigation schemes if the decision were taken to develop them.

The Derwent affords an example of the benefits of hydro-electric power development in regulating the flow of a river. Prior to the installation of the Waddamana Power Station in 1916, when the river was completely unregulated, the summer minimum flow was known to have fallen as low as 200 cusecs, and it is estimated that the lowest ever was possibly 120 cusecs. Today, regulated by the highland storages, the minimum summer flow in normal operating conditions is about 1,400 cusecs and the average summer flow is considerably above this figure. In actual fact, the long term average flow at present being maintained in the River Derwent at its lower levels is about 4,500 cusecs (i.e. 2,250 million gallons per day or approximately nine times the average amount consumed daily from the water supply system serving Sydney and Wollongong). A flow of 4,500 cusecs, assuming no evaporation, would fill Australia's largest storage—the Eucumbene—in just over a year, the Eildon in 10 months, the Hume in nine months, the Menindee Lakes in seven months, or the Warra-gamba in six months. The Derwent is an obvious example of a river from which large quantities of water can now be obtained without the creation of storages and similar opportunities exist on the South Esk, Huon, Lake, Mersey and Forth Rivers. The State's biggest rivers, the Gordon and Pieman, flow out to the West Coast and no diversion to the eastern half of the watersheds has been planned, if indeed such a scheme were practicable.

There are no State irrigation projects at present, but the State Rivers and Water Supply Commission is investigating the possibility of establishing a storage for the Coal Valley and preliminary investigations have also been made in the Jordan Valley and in other areas. The Commission advises farmers on dam construction and estimates that farm dams are currently being constructed at a rate of about 300 per year.

To summarise, it can be said that irrigation still plays only a minor role in Tasmanian farming generally but the basic resource—water—is available in plenty if ever the decision is taken to exploit the possibilities more fully.

### *Irrigation Methods*

A small proportion of the area under irrigation is watered by gravitational systems and the remainder comprises areas devoted to fruit and vegetables and served by municipal water supplies or private spray systems.

### *Area Irrigated*

Details of the area of crops and pastures irrigated in Tasmania are shown in the following table:

Area of Land Irrigated  
(Acres)

Year	Area of Irrigated Land Used For—						Total
	Hops	Green Fodder	Fruit	Pasture	Potatoes	Other Crops	
1958-59	1,292	782	1,737	7,502	471	1,647	13,431
1959-60	1,311	1,286	2,350	11,339	467	1,355	18,108
1960-61	1,364	1,177	3,311	10,369	863	1,850	18,934
1961-62	1,447	1,589	3,930	11,713	1,374	3,136	23,189
1962-63	1,465	2,043	4,446	11,435	1,688	3,208	24,285
1963-64	1,463	2,703	5,933	15,693	1,984	5,794	33,570
1964-65	1,553	2,583	5,955	14,194	2,246	7,791	34,322
1965-66	1,524	3,948	7,241	17,651	4,216	10,616	45,196

The next table highlights the growing importance of irrigation in the potato growing industry:

Potatoes Irrigated

Particulars	1961-62	1963-64	1965-66
Total Area of Potatoes Sown .. .. (acres)	11,129	10,806	11,993
Area Irrigated—			
Total .. .. (acres)	1,374	1,984	4,216
As Proportion of Area Sown .. .. (per cent)	12.3	18.4	35.2

## TASMANIAN DEPARTMENT OF AGRICULTURE

### Aims and Structure

The original Department of Agriculture created in the late 1880s had very narrow aims, principally administering plant and animal regulations, and advising the Government on all phases of agriculture. In 1927, however, the State Government decided to re-organise the Department, a new aim having been suggested by the Commonwealth Development and Migration Commission which most strongly urged the spread of scientific knowledge among primary producers.

The functions of the modern Department are: (i) active research and investigation into agricultural problems; (ii) wide dissemination of technical information to help farmers; (iii) regulatory and administrative action as required under various State Acts.



To carry out these functions, the Department headed by the Director is divided into six *divisions* (agronomy, horticultural, dairy, plant pathology, entomology and fisheries), three *services* (extension, animal health and administrative) and three *sections* (wool, piggery and poultry). The Department has its own laboratories, research stations and experimental farms.

### Research and Investigations

#### *Introduction*

The fundamental work, undertaken in the State's research farms and laboratories, is aimed at increased production through improvements in plant and animal performance.

At present, there are three research stations and one laboratory associated with agronomical research, two research stations and a laboratory involved in horticultural research, one bacteriological laboratory devoted to dairy research and bacterial investigations, and laboratories which deal with entomological and pathological investigations. Livestock studies are conducted on two of the stations associated with agronomical research.

The following shows current work programmes:

#### *Cressy Research Farm*

This station is comprised of two properties which together total more than 1,500 acres. Since its foundation in 1937, a wide range of research has been undertaken in crop, pasture and livestock production.

The major activity has been, and still is, the production of cereal, pulse and pasture species foundation seed. This work involves the evaluation and field testing of the strains and varieties of crop and pasture seeds offering most promise under local conditions, as well as breeding programmes to grow the suitable types as foundation seed.

The most noteworthy achievements in this field have been obtained with Algerian, Onward and Blythe varieties of oats; Macquarie wheat; Proctor barley; blue and grey field peas; Tasmanian No. 1 Strain perennial ryegrass. All these certified lines have given better production results than the ones they superseded. In the current programme, new strains and varieties of crop seeds and pasture plants such as white clover, phalaris, lucerne, etc. are under review.

Livestock pursuits to date have been, in the main, concentrated on poultry, sheep and pigs.

*Poultry:* The facilities of the Cressy Poultry Centre have, since 1960, been used exclusively for poultry random sample testing. Six "tests" have been successfully completed in that time and it is already felt that the effects are evident in the superior strains of laying stock now being bred for egg production.

*Sheep:* Sheep studies conducted at Cressy include the evaluation of grazing management systems; breed performance tests; winter feeding trials; autumn versus spring shearing investigations; seasonal woolgrowth studies; sucker versus carryover lamb trials to ascertain their relative suitability to the prime-lamb trade; oestrus studies with Corriedale weaners; late lambing trials and nutrition trials.

*Pigs:* The pig research investigations conducted on the farm have been directed, in the main, by the trend of the industry. At the present time the following investigations are in progress; temperature studies involving the use of artificial heat in pig housing; the investigation of growth stimulants by the

supplementation of the standard Cressy Research Farm ration with copper, terramycin and nitrofurans; the investigation of grain supplements to a skim milk diet; comparative feed trials using protein feed supplements and including fish meal, meat meal and skim milk; observations on the efficiency of different types of sleeping floors; investigations into the need for mineral supplements to pig rations; a comparison trial involving the simple Cressy feed ration and a complex ration in pelleted form.

In addition to the research programme, a breeding programme involving Large White and Berkshire stud stock is also conducted. The young stock resulting from this programme are progeny tested and released to the public to improve the overall quality of livestock in the local industry, after the requirements of the research projects, which take precedence, have been satisfied.

#### *Elliott Research Farm*

This station was established in 1950 as a second testing area for Cressy-proven materials and for some specific crop and livestock investigations. The station is located on basalt soil which is representative of the North-West region of the State, and which differs markedly from the alluvial and lateritic soils at Cressy.

At the present time, the foundation seed production programme on the farm incorporates the following crops: Algerian oats, Proctor barley, blue field peas and potatoes. Pasture plant investigations, including plant selections, also constitute an important segment of the farm work. In practice, it is common for the same strains and varieties of pasture species used at Cressy to be grown and evaluated concurrently on the two stations.

Other crop investigational work includes a multi-species forage crop, fertiliser trials, and several undertakings with potato crops. These include the screening of all promising potato seedling selections by growing them from the third year up, under irrigation, and a "time of planting" investigation to determine the optimum planting dates for the main varieties. In addition, potato varieties are selected for their suitability to local conditions, and fertiliser requirements, particularly the type and application rates, are assessed with regard to their effect on yield and quality. The spacing of setts under conditions of irrigation is also being investigated to determine the optimum space with regard to yield.

In livestock research, activities on the farm are restricted to sheep investigations and, of these, the carpet-wool breeding project is of primary importance at the moment. Other projects include a replacement ewe trial comparing the breeding performance of ewe lambs with two-tooths and cast-for-age ewes, and a stock management trial comparing the set-stocking method of grazing, on a whole farm basis, with conventional rotational grazing methods.

#### *Tewkesbury Potato Station*

The primary function of this station (the first established and dating from 1933), is to improve the cropping capacity of seed potatoes. In practice, this is realised by maintaining a healthy condition in the foundation seed supplies of the major potato varieties, through heavy roguing and plant selection.

A limited research programme is conducted under which a study of the effect of time of planting on a seed crop with regard to the number and size of tubers is currently in progress. Selections of varieties suited to local conditions are continuously made, and the effect of type and application rates of

fertilisers on potato yield and quality is also being measured. Investigations into the treatment of seed and cut setts with dips and dusts, etc. are also conducted to determine effects on germination.

#### *Laboratories*

Both laboratories with agronomical associations are located at Launceston. At the main centre, the Mt Pleasant Laboratories, the current programme involves plant breeding and selection studies; pot culture investigations of problem soils; quality testing of potatoes including specific gravity determinations, ability to withstand bruising, and resistance to black spot as well as cooking and tasting tests; seed testing for the Certification Scheme; chemical soil analyses with particular regard to their fertiliser requirements.

At the bacteriological laboratory, one of the functions is the production of cultures of *Rhizobium* species for all legume hosts of economic importance and these are maintained and released for inoculation purposes on request.

#### *Huon Horticultural Research Station*

At this station, most of the projects undertaken are long term and have been primarily designed to answer practical problems. The results are making a useful contribution towards improved orchard management.

The current work programmes are confined almost exclusively to the pome fruits and some ninety projects are being handled. These include rootstock trials to investigate their suitability under local conditions; pruning trials to determine its influence on crop production; combined rootstock, pruning and management trials which are designed to study the economics of varying tree size and tree numbers per acre; manurial and cultural trials; propagation trials which are directed towards the establishment of cheaper methods of propagating rootstocks of fruit trees; the evaluation of improved varieties, bud sports and selections.

Subsidiary trials related to "guard" and "inter-plant" trees are currently contained in the main planting designs and also included are: (i) studies on the effects of top and root treatments when applied to a wide range of commercial varieties worked on medium and dwarfing rootstocks; (ii) the interacting effects of early fruit loads on trees; (iii) tree establishment factors under local conditions.

#### *Forthside Vegetable Research Farm*

The primary aim on this farm is to undertake general research on all appropriate horticultural crops, including performance testing of new strains and varieties. With certain crops, the reselecting and multiplication of promising stocks are carried out for the production of foundation seed. Those crops at present under consideration in the current research programme include green peas, french beans, broad beans, carrots, onions, brassica crops, tomatoes and oil poppies.

Other aspects considered with regard to some vegetables are seeding rates and plant densities, evaluation of their canning and freezing qualities, fertiliser requirements and optimum harvest maturity.

## Chapter 7

### PRIMARY INDUSTRY—NON-RURAL

#### FORESTRY

##### Introduction

Writing in 1891, the Government Statistician, R. M. Johnston, painted a glowing picture of Tasmania as an island covered with "an almost continuous virgin forest", and drew this conclusion: "With such a wealth of forest trees, Tasmania's sources of timber supply must be infinitely great, and, in the near future, must be of great industrial value."

It is doubtful whether this picture of an island almost completely forested was true, even when the early settlers arrived, since some of them established holdings on open savanna-like country which owed its origin to a long history of firing by the Tasmanian natives. Far away in the west and south were extensive areas of sedgeland and button-grass plain while the upper mountain country took on the appearance of moors. In the one hundred and sixty years or so since the first settlement, land clearing, timber exploitation and fires have left their mark and the Forestry Commission estimated the total forest area as 7,773,000 acres at 30 June 1966, (i.e. approximately 46 per cent of the State's total area). By Australian standards, however, a State with 46 per cent of its area under forest is uniquely endowed.

##### Trees of the Tasmanian Forests

###### *Forest Types*

There are two basic types of forest in Tasmania, namely rain forest and sclerophyll forest, and their respective occurrence may be correlated with intensity of rainfall. The rain forest is principally located in the western half and also in the north-east highlands, the sclerophyll forest predominating elsewhere. In the Tasmanian situation, the sclerophyll forest can be regarded as eucalypt forest with very little loss of accuracy, so dominant are the eucalypts. The temperate rain forest is characterised by the dominance of *Nothofagus cunninghamii* (myrtle), *Eurcypbia lucida* (leatherwood), *Atherosperma moschatum* (sassafras), *Acacia melanoxydon* (blackwood) and other trees which appear with changed soil conditions. The exclusive appearance of myrtle types or of eucalypts is determined by rainfall factors. In areas with annual falls above 60 inches, the myrtle appears to exclude the eucalypts, while in areas averaging 45 to 60 inches myrtle is found as understorey cover to eucalypt growth. Since the eucalypts are the most important Tasmanian source of timber, in general it can be said that the better quality forests grow in regions between the 30-inch and 60-inch isohyets. The most valuable eucalypts in such forests belong to the ash group and include *delegatensis* (Alpine ash), *obliqua* (stringybark), and *regnans* (mountain ash). In areas with falls of less than 30 inches, the forests have *globulus* (blue gum), *linearis* and *pauciflora* (peppermint), *ovata* (swamp gum), *viminialis* (white gum) and also *obliqua* (stringybark).

###### *Hardwoods and Softwoods*

Tasmanian forests are now almost exclusively cut for hardwood, the slow growing indigenous softwoods having been exploited in the past without

effective regeneration; they were never very plentiful. The principal varieties are *Athrotaxis selaginoides* (King Billy pine), *Dacrydium franklinii* (Huon pine) and *Phyllocladus aspleniifolius* (celery-top pine). The scarcity of indigenous softwoods is being met, in part, by the creation of exotic plantations, the principal variety grown being *Pinus radiata*, but at 30 June 1966 the softwood plantations (33,000 acres) accounted for only 0.4 per cent of the State's total forested area.

#### *Demand for Forestry Products*

Timber was always in demand as a fuel, and as a building and construction material from the days of the original settlement. The possibility of using eucalypts for paper manufacture was investigated in the nineteenth century by Sir Ferdinand von Mueller, the celebrated botanist, and he concluded that eucalypts provided a bark which was suitable for the manufacture of paper. In actual fact, when paper making was begun at Burnie in 1938 the process involved discarding the bark and converting whole de-barked billets to pulp. Shortly afterwards, the only newsprint mill in Australia was established at Boyer on the Derwent and more recently, a pulp mill has begun operations at Geeveston in the south. Another paper mill is to be built at Wesley Vale in the north. Further utilisation of forestry products has been introduced by factories producing plywood, hardboard, particle board, etc.

#### Forest Area

In the next table showing details of Tasmania's total forest area, a distinction is made between *exploitable* and *potentially exploitable*. The first term needs no definition but the second describes forest too immature to warrant exploitation at present, or forest of higher quality where transport costs to the nearest market are prohibitive in present circumstances.

Obviously the distinction will change from time to time; for example the establishment of the paper pulp industry at Geeveston created a local market near forest areas once classed as only *potentially* exploitable, and created a demand for trees of lower grade than those used in sawmilling.

Classification of Forest Area (Gross) at 30 June 1966 (a)  
(<sup>000</sup> Acres)

Forest Area	Located on—		Total
	Crown Land	Private Land	
Exploitable (b)—Hardwood .. ..	2,653	1,125	3,778
Softwood .. ..	6	3	9
Total .. ..	2,659	1,128	3,787
Potentially Exploitable (b)—Hardwood ..	2,077	424	2,501
Softwood ..	18	6	24
Total .. ..	2,094	430	2,525
Other Areas Classified as Forest .. ..	944	517	1,461
Estimated Total Forest Area .. ..	5,698	2,075	7,773

(a) Includes 33,000 acres of softwood plantations, and 1,000 acres of hardwood plantations at 30 June 1966.

(b) The figures are not comparable with those for earlier years due to the Forestry Commission adopting new definitions to conform with those of the United Nations Food and Agricultural Organisation.

The previous table includes all forests and plantations, whether easily accessible or not, and also the forested areas in scenic reserves. The next table gives details of that part of the total area which is under reservation ("reservation" in this context means land either used or to be used exclusively for forestry purposes; it includes also the forested areas of scenic reserves):

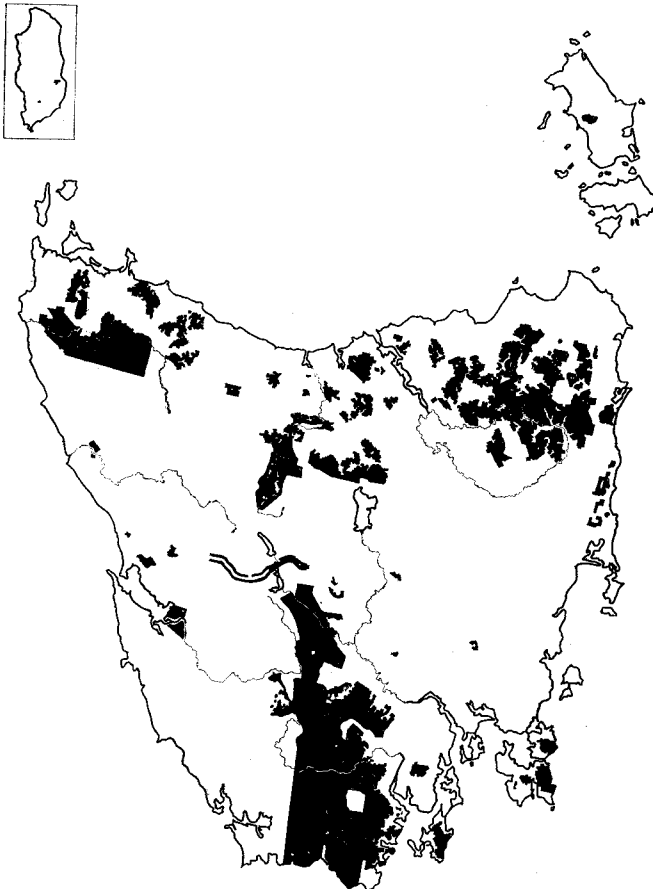
**Forest Area (Gross) Under Reservation at 30 June 1966**  
(<sup>0</sup>000 Acres)

Particulars	Pulpwood Concessions	Exclusive Forestry Permits	Scenic Reserves (a)	Other	Total
State Forests (b)	465	305	..	1,664	2,434
Timber Reserves (c)	..	..	..	248	248
Other Forested Reserves .. ..	612	314	234	..	1,159
Total .. ..	1,077	619	234	1,912	3,842

(a) Estimated forested component of national parks and scenic reserves.

(b) Land permanently dedicated to timber production.

(c) Land reserved for timber supply, including fuel.



**Distribution of State Forests**

The area of plantations of exotic pines at 30 June 1966 was 32,727 acres, of which 9,102 acres were on private land.

### Classification of State Forests

The classification by the Forestry Commission of the State Forests is a continuous process and a large section still remains unclassified. The position is as follows:

Classification of State Forests at 30 June 1966  
(<sup>'000 Acres</sup>)

Particulars	Area	
Commercial Forest—		
Eucalypt (sawlog quality) .. .. .	515	
Eucalypt (pulpwood and firewood) .. .. .	244	
Regrowth (immature forest) .. .. .	192	
Rain Forest (myrtle, sassafras, etc.) .. .. .	227	
Cleared Land (deforested areas) .. .. .	57	
Total Productive Forest .. .. .		1,235
Protection Forest—		
Scrubland and Plains .. .. .	328	
Barren and Waste .. .. .	255	
Total Unproductive Forest .. .. .		583
Total Classified Forest .. .. .		1,817
Total Unclassified Forest .. .. .		765
Total State Forest .. .. .		(a) 2,582

(a) Includes area as proclaimed at 30 June 1966 (2,434,463 acres) plus 147,678 acres, the additional area disclosed by revised mapping.

The State Forests are located, in the main, in four distinct regions: (i) far north-west about the axis of the Arthur River; (ii) north-eastern highlands; (iii) north and north-west of the Great Lake; (iv) from the south coast north to Lake King William.

### Paper and Newsprint Industries

The establishment of paper, paper pulp and newsprint industries in the State has given rise to the need for some guarantee of assured timber supplies to the manufacturers, and therefore certain concessions and cutting rights have been awarded on Crown lands. Details follow.

#### *Burnie and Wesley Vale*

Associated Pulp and Paper Mills Ltd and subsidiaries: manufacturer of paper and hard lining-board at Burnie and also of particle board at Wesley Vale. The company owns much forested land and holds cutting rights over Crown lands 15 miles each side of the Emu Bay railway line from the coast to the Pieman River. Particle board manufacture is based on northern *Pinus radiata* plantations.

In September 1965, plans were announced for installation of the first paper machine at Wesley Vale, the programmed output of the plant to be 30,000 tons of fine paper a year, thus increasing present capacity available at Burnie by up to 30 per cent; the first machine is due to start production in 1970, and is to operate on imported pulp. A second machine, operating on native eucalypt pulp, is then to be installed and the general programme, subject

to favourable economic conditions, envisages duplication at Wesley Vale of the company's Burnie operations. Large areas of Crown land in the north and north-east will provide the raw material for the Wesley Vale plant.

#### *Boyer*

Australian Newsprint Mills Ltd: manufacturer of newsprint at Boyer on the Derwent. The company's concession follows the general line of the Derwent as far north as Lake King William.

In September 1965, plans were announced for installation by 1969 of a third paper-making machine with the object of raising capacity from 94,000 to 165,000 tons of newsprint a year; subject to favourable economic conditions, the new machine should be in operation shortly.

#### *Geeveston*

Australian Paper Manufacturers Ltd: manufacturer of paper pulp at Geeveston on the Huon River. The company's pulpwood concession includes virtually the whole D'Entrecasteaux Channel coastline and extends west as far inland as the Mt Picton area; also included in the concession are Bruny Island and Tasman Peninsula.

When built, the plant had an annual capacity of 25,000 tons of pulpwood; plans were announced to raise this to 75,000 tons by 1967.

### **Multiple Use of the Forests**

The establishment of paper-making industries in Tasmania has required careful use of existing forests and the Forestry Commissioners described the process in their 1960 report as follows:

"In respect of timber products, pulpwood and sawmill logs will come from the same areas and often the same trees. In this, the co-operation of the wood-using industries is already functioning well. Sawmill logs come out of both the A.N.M. and A.P.P.M. concession areas. Pulpwood is cut from areas cut by sawmillers or in conjunction with mill-log production; sawmill edgings and offcuts are delivered to the pulp mill at Burnie." Since this report, A.P.M. has commenced operations at Geeveston and sawmill logs are also produced from this company's concession. In their 1964 report, the Commissioners made this point: "The increased demand for pulpwood has led to the utilisation of trees and timber that would otherwise have been wasted."

Two obvious examples of multiple use are: (i) pulpwood obtained as a by-product from mill-logging; (ii) waste from sawmilling operations used as a raw material in pulp and hardboard making. Despite this rational approach to more complete utilisation of timber resources, supplies are not inexhaustible and greater use must now be made of lower quality trees in milling. The Commissioners referred in their 1965 report to the role of Australian forests in the Australian economy as follows: "National policy and a national plan to meet Australia's future requirements of forest products are being formed. In this plan, Tasmania has been allotted a part disproportionate to its population just as is *present* forestry and forestry industry development in Tasmania disproportionate to its population. In this, the State is serving Australia in its necessity, as well as relying heavily on its forests for its present development and industry."

### **Employment in Forestry and Milling**

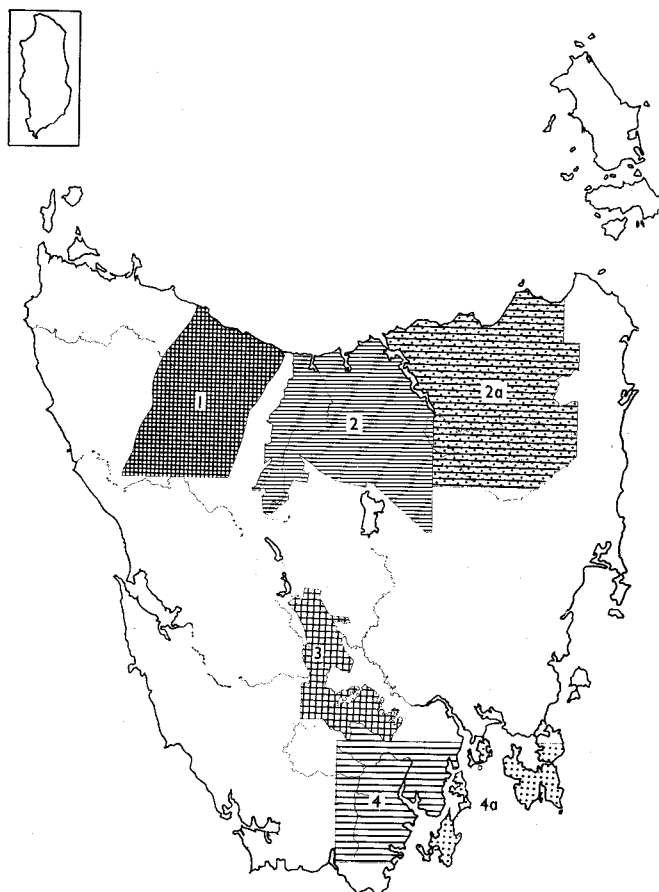
The table that follows shows employment at 30 June in forestry and in associated milling activities for a five-year period:



## Persons Employed in Forestry and Milling at 30 June

Particulars	1962	1963	1964	1965	1966
Employed by Forestry Commission—					
Professional Staff (Foresters, etc.) ..	32	35	39	41	45
Non-professional Field Staff .. ..	87	96	94	96	117
Clerical Staff .. .. .	85	88	85	96	94
Other Labour .. .. .	298	341	399	455	399
Others Working in Forestry and Milling—					
Professional Staff (Foresters, etc.) ..	15	14	13	13	14
Non-professional Field Staff .. ..	34	36	38	35	33
Clerical .. .. .	23	22	24	22	18
Extraction (felling, carting, etc.), Milling (sawing, peeling, pulping, etc.) (a) ..	4,831	5,463	5,797	6,044	6,206
Other Labour .. .. .	128	116	136	141	145
Total .. .. .	5,533	6,211	6,625	6,943	7,071

(a) Extraction component partly estimated.



Disposition of timber concession areas

(1), (2) and (2a) : A.P.P.M. Ltd.

(3) : A.N.M. Ltd.

(4) and (4a) : A.P.M. Ltd.

In the previous employment table, the extraction of forest products (felling, carting, etc.) and their processing (sawing, peeling, pulping, etc.) are treated as associated activities; however, for purposes of estimating value of production, the two types of activity are treated separately as indicated in the following section dealing with definitions.

### Definition of Forest Production

The cutting of logs in a forest and the production of sawn timber in a mill seem closely related activities and may both, in fact, be conducted by a single operator with the same team of employees; similarly, the cutting of pulpwood and its later conversion to newsprint or fine paper may be viewed, in a broad sense, as a single activity. For statistical purposes, however, sawmills, paper mills, newsprint mills, etc. are classified as factories and the raw materials on which they operate—logs, etc.—are treated as the product of the forestry sector of primary industry. It necessarily follows that the definition of forest production must be restricted to include only the output of logs, hewn timber, firewood, tanning bark, etc. before such products have passed into the sector covered by factory statistics (e.g. logging is a forestry activity, sawmilling a factory activity). Some forestry products, as just defined, (e.g. fence posts and rails, hewn sleepers, firewood, etc.) may go direct to the final consumer without passing as a raw material to the factory sector.

Subsequent tables dealing with forest production give details of quantity and value; the following definitions apply:

#### *Measurement of Volume*

There are three convenient units for expressing the volume of timber, namely cubic feet, true super feet and hoppus super feet. The volume in true super feet can be derived from this relationship:

- (i) Volume in true super feet = Volume in cubic feet  $\times$  12. (A true super foot is the volume equivalent to a solid body, one foot long by one foot wide by one inch thick.)

The remaining measure, hoppus super feet, is used in the forest to record log volumes and is derived from the following formula for dealing with round timber:

- (ii) Volume in hoppus super feet = (One quarter the average girth in inches) squared, the result being multiplied by the length in feet and divided by 12.

The relationship between hoppus super feet and true super feet can be stated as follows:

$$(iii) \frac{\text{Volume in hoppus super feet}}{\text{Volume in true super feet}} = \frac{\pi}{4} = 0.7854$$

In this section, the volume of logs, timber, etc. is expressed in true super feet, some data originally received in terms of hoppus super feet having been converted.

### Value of Forest Production

*Gross Value of Production* is the value placed on the recorded production at the wholesale price realised in the principal markets. In cases where forestry products are consumed at the place of production or where they become raw material for a secondary industry, these points of consumption are presumed

to be the principal markets (e.g. the value of logs cut for sawmilling is the value on the mill skids, analogous to "value at the factory door" for the input of raw materials in general factory statistics).

*Local Value* (i.e. gross production valued at the place of production) is ascertained by deducting marketing costs from gross value. Marketing costs include freight, cost of containers, commission, and other charges incidental thereto.

In other production sectors, local value of production is further reduced by subtracting the value of materials used in the process of production, the final figure being *net value of production*. In the forestry sector, however, these data on the cost of materials are not available and therefore the only two measures available are: (i) gross value of production, and (ii) local value of production. (In logging operations, a principal material used in the process of production is fuel used in motor-driven saws, haulage vehicles and haulage equipment.)

#### Source of Production Data

The principal source of data are the returns of the various establishments classified as factories (e.g. sawmills, newsprint mills, paper mills, plywood mills, etc.) and these establishments report their log input, their pulpwood input or their input of sawmill edgings and offcuts; other data are available from the State Forestry Department and from the Bureau's own trade statistics showing exports.

#### Statistics of Forest Production

The following table shows details of forest production, dissected between Crown and private land:

Forest Production, 1965-66

Product	Obtained From—		Total
	Crown Land	Private Land	
Logs for sawing, peeling, slicing or pulping—			
Forest hardwoods .. ('000 sup ft true)	435,124	232,734	667,858
Indigenous softwoods ('000 sup ft true)	3,452	23	3,474
Plantation grown pines ('000 sup ft true)	15,738	9,637	25,375
Total logs—quantity ('000 sup ft true)	454,313	242,394	696,707
gross value .. (\$'000)	(a)	(a)	13,105
Hewn and other timber (not included above)—			
Firewood (weight) .. ('000 tons)	27	413	440
Other (gross value) (b) .. (\$'000)	(a)	(a)	799
Gross value of hewn and other timber (\$'000)	(a)	(a)	2,882
Other forest products (gross value) (c) .. (\$'000)	(a)	(a)	3
Total gross value of forest products (\$'000)	(a)	(a)	15,990

(a) Available only in total.

(b) Includes sleepers, transoms, girders, bridge timbers, mining timber, poles, piles, etc.

(c) Principally bark for tanning.

In the previous table, log production is a composite figure including the log input of sawmills and the log equivalent of cords of pulpwood taken into paper mills and newsprint mills.

*Production Summary*

The next table shows details of forest production for a five-year period on a basis comparable with the previous analysis (logs in true volume):

**Forest Production**

Product	1961-62	1962-63	1963-64	1964-65	1965-66
Logs for sawing, peeling, pulping, etc.—					
Forest hardwoods .. (mill. sup ft)	510.9	567.9	625.5	645.7	667.9
Indigenous softwoods .. (mill. sup ft)	4.8	2.5	3.3	2.8	3.5
Plantation grown pines .. (mill. sup ft)	11.5	13.8	20.4	20.9	25.4
Total logs—quantity (mill. sup ft)	527.2	584.2	649.2	669.5	696.7
gross value (\$'000)	9,214	10,724	11,459	12,431	13,105
Hewn and other timber (not included above)—					
Firewood (weight) .. ('000 tons)	419	418	410	431	440
Other (gross value) (a) .. (\$'000)	611	440	398	949	799
Gross value of hewn and other timber .. .. (\$'000)	2,490	2,384	2,227	2,883	2,882
Other forest products (gross value) (b) (\$'000)	16	18	13	12	3
Total gross value of forest products .. .. (\$'000)	11,720	13,126	13,699	15,326	15,990

(a) Includes sleepers, transoms, girders, bridge timbers, mining timber, poles, piles, etc.

(b) Principally bark for tanning.

*Tasmanian and Australian Log Production*

In the last table, log production is defined as relating to "logs for sawing, peeling, slicing or pulping", (i.e. it includes logs destined for sawmills and also the log equivalent of pulpwood for processing in newsprint mills, paper mills, etc.). In terms of this definition, Tasmania is a major producer, the State's log production being over 16 per cent of the Australian total in 1964-65; the ranking of the major producers was Victoria with 23.8 per cent and N.S.W. with 23.2 per cent. Considering Tasmania's small relative size and population, it is apparent that forest production is one of its more important contributions to the Australian economy.

*Summary—Gross and Local Value of Production*

The following table gives details of gross and local values of forestry production for a five-year period:

**Gross and Local Value of Forestry Production (\$'000)**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Gross Value (Gross Production Valued at Principal Markets) .. .. .	11,720	13,126	13,699	15,326	15,990
Less Marketing Costs .. .. .	1,540	1,812	2,060	2,057	2,154
Local Value (Gross Production Valued at Place of Production) .. .. .	10,180	11,314	11,638	13,270	13,837

**Values Derived From Factory Processing**

For statistical purposes, some forest products are treated as passing through two sectors, namely (i) the forestry sector of primary production, and (ii) the factory sector. This treatment is necessary to the extent that the finished product of one sector may become the raw material of another (e.g. logs from

the forestry sector pass to sawmills in the factory sector). To view the timber industry as a whole, it is necessary to take account of factory processing. The next table shows details of processing in the two most important factory sub-classes, namely sawmills and paper mills:

**Factory Processing of Forest Products, 1965-66**  
**Factory Class X, Sub-class 1—Sawmills**  
**Factory Class XII, Sub-class 9—Paper Making**

Item	Sawmills	Paper Making	Total
Factories Working .. .. (No.)	289	4	293
Average Workers (a) .. .. (No.)	2,942	3,556	6,498
Value of Output .. .. (\$'000)	30,058	46,121	76,179
Value of Production (b) .. (\$'000)	12,117	21,825	33,942

(a) Average whole year, including working proprietors.

(b) Value of output less recorded costs of manufacture, other than labour.

The previous table does not include factory sub-classes X-2 (plywood mills), X-10 (wall and ceiling boards) or minor processors of untreated forest products; total values of output and production would be increased as much as five per cent by their inclusion. (Further details of factory processing appear in Chapter 8, "Secondary Industry—Manufacturing".)

### Timber and Timber Products

#### *Mill Production of Timber*

Particulars of logs treated and the production of sawn, peeled and sliced timber by sawmills and plywood mills are shown in the following table; the figures have been compiled from the annual factory collections and show the geographical distribution of milling activity (pulpwood treatment is excluded):

**Logs Treated and Sawn Timber Produced, 1965-66**

Statistical Division	Logs Treated (True Volume)		Sawn, Peeled or Sliced Timber Produced
	Quantity	Proportion of Total	
	'000 sup ft	per cent	'000 sup ft
South Central .. .. .	13,515	2.9	6,280
North Central .. .. .	26,157	5.7	9,561
North West .. .. .	156,236	34.0	60,308
North East .. .. .	73,073	15.9	27,526
North Midland .. .. .	40,801	8.9	15,733
Midland .. .. .	56,894	12.4	21,543
South East .. .. .	26,540	5.8	10,782
Southern .. .. .	54,706	11.9	21,690
Western .. .. .	11,037	2.4	5,056
Total .. .. .	(a) 458,958	100.0	178,479

(a) Hardwood logs, 446,145,000 super feet; softwood logs, 12,813,000 super feet; approximately 21 per cent of softwood logs were indigenous, the balance coming from plantations.

The difference between the volume of logs treated and of timber produced is not all waste from the miller's point of view. Admittedly, there is very limited use for sawdust but some offcuts are sold to the paper pulp industry and other waste is docked and sold as firewood.

In the previous table (from which logs cut for pulpwood are excluded), the principal centres of sawmilling activity are shown to be the North West, the North East, the Southern and the Midland Statistical Divisions. These are the Divisions in which the major part of the State Forests is located. If logs cut for pulpwood were taken into account, the only effect would be to further emphasise the relative importance of these areas in which the major pulpwood concessions also are located.

### *Output and Exports*

The following table shows timber production by mills for a five-year period, together with exports of sawn timber:

#### **Production and Exports of Sawn Timber**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
<b>LOGS TREATED ('000 Super Feet True)</b>					
Hardwood .. .. .	364,187	397,705	425,220	439,480	446,145
Softwood .. .. .	13,207	15,568	15,111	12,906	12,813
Total .. .. .	377,394	413,273	440,331	452,386	458,958

#### **SAWN, PEELED OR SLICED TIMBER PRODUCED FROM LOGS ABOVE (a) ('000 Super Feet)**

Hardwood .. .. .	142,767	153,729	164,946	172,987	173,622
Softwood .. .. .	6,218	6,135	5,911	5,086	4,857
Total .. .. .	148,985	159,864	170,857	178,073	178,479

#### **VALUE OF TIMBER AT ROUGH SAWN STAGE (\$'000)**

Total .. .. .	12,989	12,788	14,317	15,450	16,239
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#### **EXPORTS OF SAWN TIMBER (b) ('000 Super Feet)**

Total .. .. .	56,800	60,591	71,398	80,446	73,863
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#### **VALUE OF EXPORTS OF SAWN TIMBER (b) (\$'000)**

Total .. .. .	8,589	9,858	11,175	12,811	12,145
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(a) Rough sawn timber including that subsequently seasoned and dressed to produce flooring, weatherboards, etc.

(b) Includes dressed and undressed timber.

### *Comparison*

In the treatment of logs as defined in the previous table (i.e. basically of logs for sawmilling), Tasmania processed 13.0 per cent of the Australian total in 1964-65. The Tasmanian volume of logs treated was below that of all States except S.A. but its production of sawn, peeled or sliced timber far exceeds the demand generated by its relatively small population, a factor which accounts for considerable Tasmanian interstate exports of timber.

*Employment*

The next table shows the number of sawmills and the number of persons employed:

Number of Sawmills and Persons Employed (a)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Number of Sawmills .. ..	327	322	305	308	289
Average Number Employed During Year—					
Males .. ..	2,548	2,560	2,701	2,793	2,880
Females .. ..	53	37	53	57	62
Persons .. ..	2,601	2,597	2,754	2,850	2,942

(a) In mills; excludes those engaged on logging operations.

In recent years, a number of small mills, particularly those operated on a part-time basis by orchardists for the cutting of case timber, have gone out of production. At the same time, the larger more efficient mills have intensified their operations, the result being a general rising trend in the number of persons employed.

*Production of Wood Pulp and Paper*

Details of paper and newsprint production are not available for publication but wood pulp figures are an indicator of activity.

Wood pulp is the basic material in the production of paper, newsprint, etc. and is made by any one of three processes, namely mechanical, chemical, or mechanical and chemical combined; the last process is referred to as "semi-chemical". The basic technological problem in producing satisfactory pulp from some eucalypt species, and from some other pulpwoods, was related to the relative shortness of their wood fibre; in the semi-chemical process, the preliminary chemical treatment of the wood reduces the amount of grinding required and thus prevents excessive fibre destruction. The following table shows production of this material over a five-year period, together with employment details for the industry:

Factory Class XII, Sub-class 9—Paper Making

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Number of Establishments ..	3	4	4	4	4
Average Number Employed During Year—					
Males .. ..	2,631	2,727	2,863	2,887	3,029
Females .. ..	411	471	510	448	527
Persons .. ..	3,042	3,198	3,373	3,335	3,556
Wood Pulp Produced (a) (tons)	116,082	136,188	157,413	172,130	181,868

(a) Ground wood pulp, chemical and semi-chemical pulp.

In the previous table, figures for wood pulp should be regarded only as an index of production since the pulp is an "intermediate" product which has still to be converted to fine paper, newsprint, etc.

**Role of the Forestry Commission**

The State Forestry Commission is primarily concerned with the conservation of Tasmania's forests; this requires that it should exercise control over the rate at which logs and pulpwood are taken, and also that it should introduce

effective measures to ensure regeneration. Other important functions include: (i) fire prevention and suppression; (ii) road construction to give access to forests; (iii) development of plantations. Some concept of the scope of Forestry Commission activities can be obtained from the following table:

Summary—Activities of Forestry Commission (a)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Production of Seedlings ('000)	1,333	803	823	1,351	1,876
Plantations—					
Established .. (acres)	935	1,224	1,235	1,800	3,489
Pruned .. .. (acres)	1,899	3,538	3,178	2,409	2,782
Thinned .. .. (acres)	235	366	489	631	851
Firebreaks—					
Constructed .. (miles)	106	47	105	127	75
Secondary Roads—					
Constructed .. (miles)	68	59	77	105	81
Improved .. .. (miles)	55	27	12	23	19
Major Roads—					
Constructed .. (miles)	24	25	24	24	28

(a) Source: Reports of Forestry Commission.

At 30 June 1966, the Forestry Commission was responsible for the maintenance of 1,695 miles of major and secondary forest access roads; of this total, 1,329 miles had been constructed by the Commission, the balance by sawmillers.

### Fire Protection

The Commission has a responsibility for preventing and fighting forest fires; losses through bush fires fought by the Commission are reported in the following table (preliminary figures have been obtained for 1966-67 to show the effect of the February disaster on forested land):

Bush Fires (a)

Year	Fires Reported	Area Burnt				Cost of Sup-pression
		State Forest	Other Crown Land	Private Property (b)	Total (c)	
	No.	acres	acres	acres	acres	\$
1961-62 .. ..	137	7,760	15,982	4,162	27,904	21,316
1962-63 .. ..	126	6,001	11,640	4,039	21,680	17,918
1963-64 .. ..	252	19,706	35,352	11,460	66,518	72,624
1964-65 .. ..	146	4,037	4,701	3,077	11,815	31,828
1965-66 .. ..	317	33,015	50,489	45,643	129,147	71,918
1966-67 .. ..	264	83,954	194,979	147,286	426,219	108,018

(a) Source: Reports of the Forestry Commission. Restricted to fires fought by the Commission.

(b) Includes only fires fought to protect adjoining State Forest or timbered Crown Land.

(c) Incomplete; see note (b).

### Finances of the Forestry Commission

The main revenue of the Forestry Commission is derived from royalties, i.e. charges paid by those taking timber from Crown lands. By law, such revenue is specifically reserved for expenditure on forestry. The next table has



been compiled to show the revenue and expenditure of the Commission for the last four years; expenditure exceeds revenue since money from State loan funds devoted to forestry purposes is included in expenditure.

**Forestry Commission—Revenue and Expenditure**  
(£'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
REVENUE					
Royalties .. .. .	910	1,007	1,115	1,387	1,427
Sale of Forest Products .. .. .	29	45	61	73	34
Other .. .. .	25	37	35	39	40
Total .. .. .	964	1,089	1,211	1,499	1,500
EXPENDITURE (a)					
Administration—					
Revenue Collection .. .. .	120	128	136	120	117
Forest Management .. .. .	374	375	383	512	492
General .. .. .	279	331	391	319	327
Forest Works—					
Road Construction .. .. .	433	451	763	1,086	809
Building and Other .. .. .	51	66	38	80	69
Afforestation and Reforestation .. .. .	181	287	293	504	789
Forest Protection (n.e.i.) .. .. .	329	298	225	119	87
Mapping and Surveys .. .. .	38	45	52	77	73
Land Purchases .. .. .	4	5	9	10	8
Purchase, Plant and Equipment .. .. .	60	68	96	158	27
Total .. .. .	1,869	2,054	2,386	2,985	2,798

(a) Aggregate expenditure from all sources, i.e. Consolidated Revenue, Loan and Trust Funds.

## MINING

### Introduction

For statistical purposes, mining is taken to cover the operations normally thought of as mining and quarrying (i.e. the removal from underground or surface workings of ores, etc.), the recovery of minerals from ore dumps, tailings, etc. and ore dressing (i.e. concentration and other elementary treatment). It does not include the smelting and/or refining of metallic minerals or the processing of non-metallic minerals (e.g. limestone into cement). These are classified as manufacturing.

In the present Tasmanian economy, three important metals will serve to illustrate the distinction between mining and manufacturing: aluminium, produced at Bell Bay on the Tamar; zinc at Risdon near Hobart; and copper at Mt Lyell on the west coast. In terms of the previous definition, the three metals are considered to be the output of manufacturing and only a small part of their value is attributable to the mining industry in Tasmania. In the case of aluminium, no Tasmanian ores or concentrates are used and no value accrues to the Tasmanian mining industry. A substantial part of the value of the aluminium is, in fact, accounted for by imported materials. Zinc is produced from both imported and locally-produced concentrates, but only the value of the local concentrates produced at Rosebery is included in the Tasmanian

mining industry. Blister copper is produced entirely from locally-produced concentrates, the whole operation, from mining the ore to producing blister copper, being integrated at the one location in the Mt Lyell area. In this case, a division of the one establishment is made into mining (covering operations up to the concentration stage) and manufacturing (smelting). Refining of blister copper at Mt Lyell ceased in October 1965 and is now done at Port Kembla in N.S.W.

### Source of Information

(i) Employment, Production Costs, Values of Output and Production, etc.: an annual census of mines and quarries is conducted by the Bureau of Statistics and details are collected for calendar years. The information on materials used, salaries and wages, etc., is compiled for mines and quarries employing four or more persons, thus achieving uniformity with other Australian States. Value of output is shown in two ways, either for all mines and quarries, or for mines and quarries employing four or more persons.

(ii) Data appearing on quantities produced, assayed contents, etc. are obtained primarily from the State Mines Department, with supplementary information from the Bureau's annual census of mines and quarries and from the Commonwealth Bureau of Mineral Resources.

### Importance of West Coast

The main mineral wealth of the State is derived from mines on the west coast, the chief centres being Queenstown (copper ores) and Rosebery (zinc-lead ores); iron ore mining at the Savage River began in 1967. The region lies generally within the belt of heaviest rainfall and is in the most rugged and mountainous part of the island. Vegetation reflects the heavy rainfall; Charles Gould's geological party in 1862 took 25 days to cover barely 15 miles from the Queen River to Strahan—and they were hurrying, not prospecting.

Mining towns rise and fall, the two obvious Tasmanian examples being Waratah and Zeehan. The great Bischoff tin mine explains the foundation of Waratah, galena and silver mines of Zeehan; as production declined, so did these towns. Queenstown still holds its population despite 70 years of constant exploitation of the copper ores in the region. The full account of the opening up of this very difficult country is obviously beyond the scope of this chapter but a chronology follows giving details of some of the principal events; 1936 is used as a terminal date because this was the year in which the Rosebery mines re-opened.

### West Coast Mining Chronology

- 1642 Tasman sighted Mt Heemskirk and Mt Zeehan, his erratic compass suggesting that an iron mass lay somewhere to the east.
- 1798 Bass and Flinders circumnavigated Tasmania, naming the peaks of Heemskirk and Zeehan after Tasman's vessels.
- 1815 James Kelly circumnavigated Tasmania in an open whale boat, discovering Port Davey and Macquarie Harbour.
- 1821 Convict settlement established in Macquarie Harbour to use timber for ship building; closed down 13 years later.
- 1862 Charles Gould, a government geologist, sent on search for gold; entered the Linda Valley and camped close to the Iron Blow (the outcrop which eventually started the Mt Lyell copper boom). He found small traces of unpayable gold and named the principal peaks in the area—Owen, Jukes, Sedgwick, Huxley, Darwin and Lyell.

- 1871 James Smith discovered tin at Mt Bischoff. Activity in this area provided a base for penetration by land from the north.
- 1875 Tin smelters fired at Launceston to handle Mt Bischoff tin.
- 1876 Charles Sprent crossed Pieman River, finding tin and gold near Mt Heemskirk.
- 1878 Tin mining commenced at Heemskirk.
- 1879 Opening up of the Pieman gold-fields.
- 1881 Trial Harbour established as a port for the mining fields. Cornelius Lynch struck gold five miles from Mt Lyell.
- 1882 Frank Long discovered silver-lead ore near Zeehan.
- 1883 Western miners on four fields—Mt Bischoff (tin), the Pieman (gold), Heemskirk (tin) and King River (gold). The McDonough brothers (known as the Cooneys) and Johannes Karlson discovered the Iron Blow near Linda Creek in the Mt Lyell area.
- 1885 The Iron Blow blasted in search for reef gold.
- 1888 The Mt Lyell Gold Mining Company formed to work the Iron Blow. Silver boom filled Zeehan-Dundas area with syndicates and companies.
- 1889 Steam mill used to crush ore from the Iron Blow and produce gold.
- 1890 Government commenced construction of three foot six inch gauge railway Strahan to Zeehan, since Trial Harbour was unsatisfactory as a port.
- 1891 159 companies and syndicates in the Zeehan-Dundas silver fields. Collapse of first silver boom due to general financial crisis, bank failures, etc. The owners of the Iron Blow gold mine decided to sell out to investors interested in its possibilities as a copper mine.
- 1892 Mt Lyell Mining Company carried out first copper smelting trials on Iron Blow ore.
- 1893 Formation of Mt Lyell Mining and Railway Company Ltd. Discovery of complex zinc-lead ores at Rosebery; smelting technology later defeated by zinc content.
- 1894 Iron Blow copper mine yielded large pocket of high grade silver ore, giving a return sufficient to allow further development.
- 1895 Robert Carl Sticht supervised installation of copper smelting plant brought into Mt Lyell before rail communication established to Macquarie Harbour.
- 1896 Sticht's copper smelting technique successful.
- 1897 Official opening of copper smelters and of Mt Lyell railway from mines to Teepookana on the King River. Great copper boom in progress with dozens of companies capitalising on the name "Lyell", e.g. Mt Lyell Anaconda, Mt Lyell Comstock, Mt Lyell Tharsis, etc. Bar at Macquarie Harbour entrance gave depths of only nine to 11 feet. Teepookana the chief port for the Lyell mines.
- 1898 Strahan Marine Board formed with commission to deepen the entrance to Macquarie Harbour. Three major railway constructions under way, each operator hoping to monopolise transport to the fields; Mt Lyell company, with the unfinished linking of Teepookana to Strahan; the North Mt Lyell company, building from Linda to Kellys Basin; the Emu Bay company pushing its line south from Waratah. In the same year, smelters were established at Zeehan, main prize being silver. The Mt Lyell company put out nearly 5,000 tons of blister copper, in addition to recovering large quantities of gold and silver.

- 1899 Completion of Mt Lyell line through Teepookana to Strahan. West coast mining areas had a peak population approaching 25,000 persons, railway construction employing many workers.
- 1900 Completion of North Mt Lyell railway from Linda to Kellys Basin. Emu Bay line linked to Zeehan by junction with Dundas line. Renison Bell tin lodes discovered during construction of Emu Bay railway. Over-capitalisation obvious in transport: Zeehan fields with two railways linked to two ports (Strahan and Burnie); Lyell fields with two railways linked to three ports (Strahan, Burnie and Kellys Basin). Mt Lyell company produced nearly 10,000 tons of copper.
- 1901 Census established that, of State's eleven largest cities and towns, four were West Coast mining centres and two were ports serving the area. North Mount Lyell copper smelting operations at Crotty a failure.
- 1902 Sticht smelted Mt Lyell copper without use of coke, i.e. he perfected pure pyritic smelting. Later operations used coke in very small quantities.
- 1903 Amalgamation of Mt Lyell and North Mt Lyell companies. Close-down of smelters at Crotty and use of Strahan as port in preference to Kellys Basin. Mixture of Iron Blow ore with North Mt Lyell ore improved smelting operations.
- 1905 Export of pyritic ore for superphosphate manufacture at Yarraville.
- 1909 Smelters at Zeehan closed down for lack of suitable silver ore. Galena lodes not payable below the 600 foot level.
- 1911 Zeehan smelters re-opened but problem of profitably smelting silver ores with high zinc content still not solved.
- 1914 Generation of hydro-electric power at Lake Margaret by Mt Lyell Co. and electrification of much machinery at copper refineries.
- 1918 First refined zinc produced at Risdon near Hobart by Electrolytic Zinc Company—basic concentrates imported from Broken Hill mines in N.S.W.
- 1922 Earlier direct copper smelting method at Mt Lyell replaced by flotation process for concentration prior to smelting. Copper prices so low that many producers in Australia and overseas closed down but Mt Lyell kept working.
- 1925 Electrolytic zinc process at Risdon started to use Rosebery zinc concentrates.
- 1928 First cathode copper produced by electrolytic process at Mt Lyell.
- 1930 Mining of Rosebery zinc-lead ores suspended due to low world price of zinc.
- 1932 Completion of direct road link, Hobart to Queenstown.
- 1936 Resumption of Rosebery mining on larger scale.

While this account of events on the west coast gives some background to the present production of copper and zinc, it fails to record activity in other parts of the State or to cover the mining of numerous other minerals. The next section deals with each product separately and on a State basis.

### Historical

#### *Supply and Demand*

While Tasmanian farm and factory activity over the years has displayed, in the main, an orderly pattern of growth, mining activity has been subject to frequent and severe fluctuations, the result of changes in supply and demand

as reflected in the market price of particular metals. Examples of factors contributing to this relative instability are: (i) *Supply*—the possible fall in prices when major fresh discoveries are worked in other countries; (ii) *Demand*—the possible rise in prices when war, or fear of war, leads to large-scale purchases of particular metals; (iii) *Technological change*—for example, after the invention of the ball point pen, osmiridium, used for tipping fountain pen nibs and once produced in large quantities in Tasmania, suffered a resulting decline in value.

### *Definition of Mining*

Unfolding the record of the various minerals produced in the State is made difficult by the manner in which previous official mining statistics were compiled. In current statistics, a distinction is made, in broad terms, between mining a mineral and subsequently refining it to obtain its metallic content—the second process is treated as manufacturing and included under Class IV in factory statistics. However, this distinction was not made in earlier statistics and therefore historical comparisons cannot be made with any accuracy. A further difficulty occurs with regard to the value of ores which, in older series, were valued, in the main, according to the world price for their estimated metallic content, irrespective of whether the extraction was carried out in Tasmania itself, in other States or in overseas countries. Thus the earlier historical value series is inflated and does not reflect the true earnings of mineral producers within the State. In the evolution of a proper basis for current mining statistics, the chief requirement was to satisfactorily define a border between mining and factory activities and, for Tasmanian data, this was not accomplished until 1952 when the Bureau of Census and Statistics conducted its first annual mining census.

Because of the definitional difficulties just listed, the historical account of mining in the State has been deliberately restricted largely to details of physical production, other measures such as employment, value of output, etc., not being comparable with those used in the current series commencing 1952.

### *Early Fields*

### **Coal**

The site of Tasmania's first mine was on Tasman Peninsula when the convicts from Port Arthur dug out 60 tons of coal in 1834. Highest production was 10,400 tons in 1840 but, within three years, the work ceased due to the poor quality of the coal and discoveries at other sites, namely Schouten Island and near Southport; in the 1850s further discoveries were made near Latrobe in the Mersey Valley and near Bicheno on the east coast. The island's principal coalfields eventually were opened up in the Fingal Valley in the north-east, and the following table shows the localities producing coal at the time of their discovery (1886):

**Coal Production at Tasmanian Mines, 1885, 1886 and 1890  
(Tons)**

Locality (a)	1885	1886	1890
Mersey and Latrobe .. ..	2,114	1,400	3,778
Longford .. ..	..	1,230	1,000
Oatlands .. ..	700	600	600
Hobart (New Town) .. ..	460	936	..
Richmond (Jerusalem) .. ..	1,320	605	600
Kingborough .. ..	560	500	150
Franklin (Port Cygnet) .. ..	1,500	1,300	2,738
Fingal .. ..	..	3,820	44,946
Total .. ..	6,654	10,391	53,812

(a) Localities as listed in 1890 in "Statistics of Tasmania".

*Decline in Production*

By 1920, annual production had reached 75,000 tons; by 1950, it exceeded 220,000 tons. The peak production year was 1959-60 with an output of over 300,000 tons but, since then, there has been a decline due to competition from oil (the introduction of diesel locomotives contributed, in minor degree, to the fall in demand but the major factor has been a change from coal to oil fuel in manufacturing industries). Throughout this whole period, from 1886 till today, the mines of the Fingal Valley have been the State's principal source of coal. In 1966, annual Tasmanian production had fallen to 83,000 tons.

The fall in the demand for coal had an adverse effect upon employment in the Fingal Valley, and resulted in an enquiry into the possibility of generating electric power from Tasmanian coal; the subsequent report was not in favour of thermal generation, and considered expansion of existing hydro-electric works the more economic proposition. The State Government has begun plantations of exotic pines in the valley, with the aim of absorbing some of the displaced miners into forestry work.

By Australian standards, the State's black coal production has never been on a large scale and even in the year of peak Tasmanian production (1959-60), it represented only one and a half per cent of the Commonwealth total to which N.S.W. contributed nearly 80 per cent. (This total excludes brown coal which is mined in very large quantities almost exclusively in Victoria.)

*Introduction***Gold**

The discovery of gold in payable quantities in the 1850s was an epoch-making event in Australian history, for, as one writer aptly phrases it, this event "precipitated Australia into nationhood". The major strikes, however, were confined to Victoria and, to a lesser extent, to N.S.W., so that, if gold then had any significance for Tasmania, it was in its attraction for prospectors. Searching for this one metal, often without success, they eventually discovered those other minerals from which the State's principal mining wealth is derived.

*Early Fields*

The first appearance of gold mining in *Statistics of Tasmania* dated from 1866 when crushing at Fingal in the north-east produced 347 ounces from 2,872 tons of quartz; alluvial mining is also mentioned with this footnote: "It is impossible to give the quantity and value of gold obtained from alluvial diggings, although there is reason to believe that those employed thereon are doing well". In actual fact, gold had been discovered much earlier, in slate rocks near Lefroy in 1849 and then at Mangana near Fingal in 1852, the second find setting off a minor gold rush to the alluvial diggings. The early miners were secretive and able to take their wealth out of the State without record.

During 1859 the first quartz mine started operations at Fingal; in the same year James Smith (better known as "Philosopher Smith") found gold at the River Forth, and Peter Lette at the Calder. Reef gold was discovered in 1869 at Lefroy by S. Richards. The first recorded returns from the Mangana fields date from 1870; Waterhouse, 1871; Hellyer, Denison and Beaconsfield, 1872; Lisle, 1878; Gladstone and Cam, 1881; Minnow and River Forth, 1882; Branhholm, 1883; and Mt Lyell, 1886.

Throughout the rest of the 19th century, gold was produced at a variety of locations, including Mathinna, Lefroy, Fingal, Lisle, Mangana, Corinna and Hellyer but the largest single source was the "Tasmania Mine" at Beaconsfield which began operating in 1878. The effect of Beaconsfield operations can be

judged from the following State gold production figures (in ounces): 1877, 5,777; 1878, 25,249; 1879, 60,155. Employment in gold mining in 1879 was stated to exceed 2,000 men. Peak gold production for the State was reached in 1899 with 83,992 ounces but this was still only a minor contribution—just over 2 per cent—to the Australian total; a year earlier, production in W.A. had, for the first time, exceeded that in Victoria. To set Tasmanian gold mining in its correct perspective, the following production figures (in '000 oz) are quoted for the Commonwealth in 1903: N.S.W., 254; Victoria, 767; Queensland, 669; S.A., 21; W.A., 2,065; Tasmania, 60; total, 3,836 (1903 was the peak production year for both the Commonwealth and W.A.).

Ranked in order of accumulated yield, the State's three principal gold mining centres were Beaconsfield, Mathinna and Lefroy. The 20th century witnessed a decline in Tasmanian gold mining, as such; when the "New Golden Gate" at Mathinna closed in 1912, State annual gold production had fallen to 37,973 ounces. In 1919, with the closure of the "Tasmania Mine" at Beaconsfield, annual gold production fell to 7,686 ounces. The Mines Department has recently drilled test bores into the old "Tasmania Mine", with a view to reopening it. Tenders were called from private interests but none was lodged.

#### *Present Production*

Today there are no gold mines, as such, operating but gold is still produced as a by-product from other minerals, principally concentrates of lead-copper, copper, lead and zinc. It is paradoxical that the Tasmanian yield, in relation to the Commonwealth total, is now relatively greater than it was in the days of "pure" gold mining. The assayed gold content of Tasmanian minerals mined in 1966 was 36,507 ounces, compared with a Commonwealth total of 914,000 ounces, i.e. the Tasmanian proportion had increased to 4.0 per cent.

#### *Mt Bischoff*

#### **Tin**

Tasmania's early gold finds had been discouraging when compared with the rich sources uncovered in Victoria but, in 1871, Mr James Smith discovered "tin oxide" (cassiterite) in what later became known as Tinstone Creek near Mt Bischoff. He smelted it at the store at Table Cape and showed it to friends, some of whom thought the metallic lump might be silver.

Investigation of Mt Bischoff showed it to be the greatest tin deposit then known in the world. It lay inland over 30 miles south-west from Burnie in rugged and inhospitable country, the immediate problem being to bring in equipment and to get the ore out to the coast. The first solution was a horse-drawn tramway, later to be replaced by the 48-mile Burnie-Waratah line, opened for traffic by the Emu Bay and Mount Bischoff Railway Company in 1884. It was an extension of this line to Zeehan at the turn of the century that gave the west coast mining areas a direct rail link to the north-west coast. Thus, the original tin deposits at Mt Bischoff, quite apart from their vast yield of a valuable metal, played a vital part in opening up communications to the remote west coast, and in developing the town of Burnie as an outlet port.

The following report appeared in *Statistics of Tasmania*, 1907:

"The Mount Bischoff Tin Mining Company, Registered.

Capital, £60,000 in 12,000 shares of £5 each, 4,400 paid up to £5 per share and 7,600 paid up to £1 per share.

Dividends paid to 31st December, 1907, £2,124,000 or £177 per share.

Yield of 66,562 tons, Tin Ore, valued at £4,181,698".

Before production finally ceased shortly after World War II, more than 80,000 tons of tin ore had been mined from Bischoff.

*Other Fields*

The Bischoff discovery was followed by numerous others, first in the north-east and then at Mt Heemskirk on the west coast; many of the north-east deposits were alluvial. Main production today is centred on Rossarden, Gladstone and South Mt Cameron in the north-east and Renison Bell on the west coast; other sources now worked on a small scale are very widely distributed (e.g. Port Davey, Waratah and Pioneer).

*Present Production*

In 1966, the assayed tin content of tin concentrates produced throughout Australia was 4,418 tons, the Tasmanian component being 1,031 tons. Some concept of the earlier scale of Tasmanian tin mining can be obtained from these export figures: average annual Tasmanian exports of tin, decade ending 1890, 3,800 tons; decade ending 1900, 2,650 tons. A mixture of export and production figures in the decade ending 1910 suggests that tin production had lifted to an annual average of 3,350 tons. In 1920, annual production fell to 1,310 tons and, since then, has often been below 1,000 tons with no indication of any return to the high levels recorded up to 1918 (when annual production was 1,580 tons).

*Expansion Programmes*

The Renison Bell tin mine on the west coast was first worked in 1905, has closed down on a number of occasions, but is now engaged in an expansion programme which included the building of workers' homes at near-by Zeehan. New milling plant is designed to treat 1,000 tons of ore per day, ore reserves being estimated at 12m tons averaging 0.95 per cent tin. At Mt Cleveland near Waratah, production is being increased and the new township of Luina has been built to house miners.

*Early Fields***Silver**

Silver-lead ore was found near Zeehan in 1882; six years later, the Zeehan-Dundas area was invaded by numerous syndicates in search of silver. The optimism of the period was reflected in the Tasmanian Government's decision to commence construction of a Zeehan-Strahan railway in 1890, Trial Harbour being too exposed a port to serve the new fields.

In 1891, there were 159 companies and syndicates operating in the Zeehan-Dundas area when a general financial crisis halted most operations. The set-back was only temporary and in 1898 a smelting plant was installed at Zeehan, over 20,000 tons of silver-lead ore being mined annually. Although the fields initially gave rich returns of silver, the ore was not comparable with that at Broken Hill and could not be obtained in payable quantities below the 600 foot level. Silver is also present in the complex ores mined at Rosebery but the high zinc content defeated most early efforts to extract it profitably. By 1909, the smelters at Zeehan closed down for lack of galena ore to process, although calcining of the Rosebery ores was continued.

*Present Production*

The State still produces silver today but mainly as a by-product of copper mining at Mt Lyell and zinc-lead mining at Rosebery; "pure" silver-lead mining is carried on at Tullah but there is no silver production from the once famous Zeehan fields. In 1966, the assayed silver content of Tasmanian mine production was 1,834,000 ounces, approximately 10 per cent of the corresponding Australian total. N.S.W. and Queensland are the leading producers.

*Mt Lyell***Copper**

The mining of Tasmanian copper at Mt Lyell dates from the 1890s, the original source of ore being the Iron Blow near Linda Creek; this outcrop had been developed without much success as a gold mine after its discovery



in 1883. The problems of exploitation were difficult, the complete lack of road or rail communication with Macquarie Harbour being the most challenging. Although dozens of companies and syndicates pegged claims on the Lyell fields, only two—the Mount Lyell and the North Mount Lyell—had the necessary capital to face up to the problem of transport, each deciding to build a railway to its own chosen port on the harbour. By 1900, each company had its own line, the Mt Lyell running to Strahan, the North Mount Lyell to Kellys Basin. The absurdity of two railways and two ports serving the same field was ended in 1903 when an amalgamation occurred.

The Mt Lyell operations were notable for a metallurgical discovery of world importance when Robert Sticht smelted copper in 1902 without use of coke, relying on the sulphur content of the pyritic ores and using a cold forced air draught in lieu of the accepted hot air method. Successful low cost smelting played a large part in establishing the industry. At the turn of the century, Mt Lyell, with its annual output of 10,000 tons or so of copper, was the leading Australian producer; since then, other important fields in Australia have been developed and its relative importance has declined even though its annual output of copper has actually increased. For a mining field, Mt Lyell has shown remarkable stability over its seventy years of exploitation. As the original rich finds were worked out, improvements in handling and recovery allowed the profitable processing of lower grade ores, and successful operations continue today using some ores of less than one per cent average copper content—a task impossible with the techniques available at the turn of the century. Open cut mining has been, and still is, a widely-used method although underground mining is becoming more important.

#### *Present Production*

In 1966, the assayed copper content of Tasmanian mineral production was 17,005 tons, or about 16 per cent of the corresponding Australian total, Queensland being the principal producing State. Over 90 per cent of the Tasmanian total derives from Mt Lyell ores but there is also a copper content in the ores mined at Rosebery and Williamsford.

### **Zinc**

#### *Rosebery*

The present township of Rosebery 20 miles north of Queenstown supports a population of nearly 2,000, the principal activity being the mining of zinc ores for treatment at the Electrolytic Zinc Company's Risdon plant near Hobart. It is therefore paradoxical that, from the discovery of zinc-lead ores near Mt Read in 1894 until the early 1920s, the large percentage of zinc found in the region's minerals should have been the main bar to successful development of the field. Early penetration had sprung from the search for gold but once treatment of the complex Rosebery ores was attempted, the smelting techniques then available were not capable of recovering the zinc; lead, gold and silver were the metals recovered but removal of the zinc, a complete waste, made the process costly.

#### *Risdon*

In 1914, the war prevented the shipping of N.S.W. Broken Hill zinc concentrates to German and Belgian zinc works and therefore the producers decided to establish their own refinery, selecting Risdon near Hobart as the site and planning to use hydro-electric power generated from the Great Lake. Tests were made on the complex Rosebery ores and methods evolved so that both lead and zinc could be efficiently recovered. At first the Risdon plant operated on the imported Broken Hill concentrates but, by 1925, it had

sufficient capacity to also process local ores brought from Rosebery. The Rosebery mines have been in continuous operation since 1925, apart from a temporary shut-down in the period 1930-1936 when depressed world zinc prices curbed production. While the primary aim is the production of zinc, by-products recoverable from the Rosebery and Williamsford ores include lead, copper, cadmium, gold and silver. In terms of total value of metallic content, the minerals mined in this area closely approach in importance those mined at Mt Lyell.

#### *Present Production*

In 1966, the assayed zinc content of Tasmanian mine production was 49,851 tons, approximately 14 per cent of the corresponding Australian total; N.S.W. was the major producer of zinc bearing ores. (Tasmania is still the leading producer of refined zinc, the recovery process using both local and interstate concentrates. Production constitutes about 74 per cent of the Australian total.)

#### **Lead**

The mining fields at Zeehan and Dundas had been established with silver as the goal, silver-lead ores being the source; lead was produced as a by-product. Silver-lead mining has long since ceased on the Zeehan fields but is still in progress at Tullah, a few miles north-west of Rosebery, where the ore is now processed.

Lead is also a constituent of the complex Rosebery and Williamsford ores and these are now the principal source of lead in the State. In 1966, the assayed lead content of Tasmanian mine production was 15,578 tons, about four per cent of the corresponding Australian total; N.S.W. and Queensland are the principal producers.

#### **Tungsten**

Tungstic oxide ( $\text{WO}_3$ ) occurs in two forms: in scheelite (calcium tungstate) and wolfram (iron manganese tungstate). There is a marked distinction between the mining of scheelite and of wolfram. Whereas scheelite in Tasmania is mined for its  $\text{WO}_3$  content, wolfram is usually found in association with tin. Production of wolfram began in 1906 at Moina in the north-west but most now comes from mixed tin-wolfram mines in the Avoca area. The tin-wolfram combination is a good basis for operations because producers can stockpile their wolfram concentrates when tungsten prices are unfavourable.

Production of scheelite has been carried out on King Island, first in the period 1917-1920, and then again from 1938 onward, apart from a short close-down in 1959. For a few years after this, prices were unfavourable and the industry was only able to survive with the help of a subsidy from the Tasmanian Government, the level of assistance being related to movements in world price. A price recovery then enabled the operator to repay the subsidy in full, final payment being made in 1966.

In 1966, the assayed tungstic oxide content of Tasmanian mine production was 1,306 tons; this was also the Australian total, Tasmania being the sole producer.

#### **Sulphur**

There are no known deposits of elemental sulphur in Australia, but its use is of vital importance in the heavy chemical and fertiliser industry, the principal form being as sulphuric acid. The sulphur content of the Mt Lyell

and Rosebery ores is used to manufacture this acid. Mt Lyell pyritic ore is concentrated and exported, while the Rosebery zinc concentrates are used to produce sulphuric acid as a by-product at the Risdon zinc plant. In 1966, the assayed sulphur content of Tasmanian mine production was 62,796 tons, approximately 17 per cent of the corresponding Australian total.

### Iron Oxide and Iron Ores

Tasmania has large deposits of iron ore, the principal use until recently being for oxidised ore in the local manufacture of cement. However, in 1956, the Tasmanian Department of Mines, in conjunction with the Commonwealth Bureau of Mineral Resources, commenced a series of geological and geophysical surveys followed by drilling. A large iron ore deposit at the Savage River attracted the attention of Australian-American interests, the project being the conversion of the ore to a slurry and its transfer by pipe-line and pumping to Port Latta, near Stanley, for shipment to Japanese ports in pellet form.

#### *The Savage River Iron Ore Scheme*

In November 1965, Pickands Mather and Co. International and Mitsubishi Shoji Kaisha Ltd agreed to proceed with a plan for the export of Savage River iron ore to Japan. The cost of installing the necessary plant was estimated at \$62m and the target date for the start of concentrating the ore was late in 1967. Under the *Iron Ore (Savage River) Act 1965*, a 30-year lease was granted for an annual rental of \$5,796 and royalty payments of 15 cents per ton on the first 60m tons of pellets shipped; a ceiling of 30 cents will limit royalties to be paid on shipments in excess of 60m tons.

The ore deposit on the Savage River lies south-west of Mt Bischoff in rugged country without easily accessible roads or railways; the west coast is not far from the field but no suitable harbour is available on shores open to the prevailing westerly swell. The two possible outlets were Macquarie Harbour and a port site on the north-west coast—the deposit lies roughly equidistant between these points. The eventual decision was to construct a port on the north-west coast, and to link the ore field to the port by pipe line. Port Latta is the shipping terminal specifically constructed for feeding pellets into giant carriers.

Although the basic aim is to export the ore, processing is necessary in the State, both at the ore field and at the port. The crude ore is mined by open-cut methods with power shovels and special trucks. At this stage, the ore is ground to a powder and then magnetically separated from the waste; this concentration converts the ore from its crude form—about 38 per cent iron—up to an estimated 67 per cent. The concentrate is then mixed with water and pumped 52 miles to Port Latta; there it is dried out and rolled into small balls which are heated to high temperatures to make them into hard pellets. The final product—pellets—is then shipped from a special pier at Port Latta.

## STATISTICS OF MINERAL PRODUCTION

### Source of Data

Statistics relating to quantities of minerals produced (including assayed metallic content) are, in the main, obtained from the State Mines Department and are supplemented, where necessary, with data obtained from the annual census of mines and quarries conducted by the Bureau of Census and Statistics, and from the Commonwealth Bureau of Mineral Resources.

**Metallic Minerals**

The table that follows shows the quantity of metallic minerals produced in Tasmania for a five-year period. In general, the minerals are shown as concentrates except the item reading "copper ore", and this does not refer to the total copper ore mined but only to that portion fed direct to the smelters without passing through the concentration process.

**Metallic Minerals—Production**

Mineral	Unit	1962	1963	1964	1965	1966
Copper Concentrate ..	tons	49,361	55,405	49,463	48,740	55,981
Copper Ore .. ..	tons	9,882	10,394	10,215	8,262	11,112
Copper Precipitate ..	tons	13	22	51	13	66
Gold (not in Concentrates) .. ..	ounces	453	181	106	108	82
Iron Oxide .. ..	tons	4,082	4,221	6,808	3,524	2,797
Lead Concentrate ..	tons	13,742	16,321	14,853	13,565	14,462
Lead-Copper Concentrate .. ..	tons	11,192	9,309	10,214	10,424	12,083
Pyrite Concentrate ..	tons	8,373	19,463	46,166	46,912	61,006
Tin Concentrate ..	tons	1,507	1,435	1,438	1,493	1,510
Tungsten Concentrates—						
Scheelite Concentrate ..	tons	988	958	1,016	1,150	1,307
Wolfram Concentrate ..	tons	488	394	380	487	497
Zinc Concentrate ..	tons	44,382	44,871	84,791	77,715	83,761

*Assayed Content*

In the following table, the various concentrates have been grouped to show their content in terms of individual metals. The contents stated are as determined by assay and include all pay metals and metals which are a refiner's prize; totals compiled on this basis contain no allowances for losses in smelting and refining and therefore, in general, exceed the quantities actually recoverable. The table refers exclusively to minerals mined in Tasmania and excludes minerals imported for smelting and refining:

**Assayed Contents of Metallic Minerals Produced**

Mineral	1962	1963	1964	1965	1966
<b>COPPER (Tons)</b>					
Copper Concentrate .. ..	12,785	14,919	13,158	13,376	14,831
Copper Ore .. ..	438	427	342	367	563
Copper Precipitate .. ..	6	6	20	4	15
Lead Concentrate .. ..	80	125	74	78	90
Lead-Copper Concentrate ..	961	1,090	1,018	1,085	1,196
Zinc Concentrate .. ..	245	238	267	258	310
Total .. ..	14,515	16,805	14,879	15,168	17,005
<b>GOLD (Fine Oz)</b>					
Copper Concentrate .. ..	7,230	10,171	7,714	8,180	8,706
Copper Ore .. ..	223	134	122	132	151
Lead Concentrate .. ..	3,384	4,335	3,939	3,166	3,339
Lead-Copper Concentrate ..	18,021	18,820	19,271	18,732	21,430
Zinc Concentrate .. ..	2,843	2,797	3,233	2,589	2,802
Other Sources .. ..	417	165	97	98	79
Total .. ..	32,118	36,422	34,376	32,897	36,507

## Assayed Contents of Metallic Minerals Produced—continued

Mineral	1962	1963	1964	1965	1966
LEAD (Tons)					
Lead Concentrate .. ..	8,056	9,557	8,689	7,966	8,447
Lead-Copper Concentrate .. ..	4,228	2,934	3,832	3,858	4,497
Zinc Concentrate .. ..	2,470	2,491	2,827	2,414	2,634
Total .. ..	14,754	14,982	15,348	14,238	15,578
SILVER ('000 Fine Oz)					
Copper Concentrate .. ..	73	60	53	50	60
Copper Ore .. ..	12	9	9	3	11
Lead Concentrate .. ..	388	461	398	344	369
Lead-Copper Concentrate .. ..	995	942	1,048	1,035	1,108
Zinc Concentrate .. ..	232	231	272	242	286
Total .. ..	1,700	1,703	1,780	1,674	1,834
SULPHUR (Tons)					
Lead Concentrate .. ..	2,817	3,360	3,053	2,768	2,924
Lead-Copper Concentrate .. ..	2,926	2,624	2,649	2,774	3,160
Pyrite Concentrate .. ..	4,131	9,537	22,437	22,893	29,344
Zinc Concentrate .. ..	26,684	26,797	27,965	25,539	27,368
Total .. ..	36,558	42,318	56,104	53,974	62,796
ZINC (Tons)					
Lead Concentrate .. ..	2,113	2,537	2,338	2,303	2,500
Lead-Copper Concentrate .. ..	1,423	1,081	1,221	1,202	1,391
Zinc Concentrate .. ..	44,382	44,871	46,596	42,805	45,960
Total .. ..	47,918	48,489	50,155	46,310	49,851
TIN (Tons)					
Tin Concentrate .. ..	1,058	1,005	990	1,027	1,031
TUNGSTIC OXIDE (WO <sub>3</sub> ) (Tons)					
Scheelite Concentrate .. ..	686	675	717	822	941
Wolfram Concentrate .. ..	349	285	276	355	365
Total .. ..	1,035	960	993	1,177	1,306
CADMIUM (Tons)					
Zinc Concentrate .. ..	72	74	77	70	75
MANGANESE (Tons)					
Zinc Concentrate .. ..	264	258	243	233	254

**Fuel Minerals (Coal)**

The only fuel mineral mined in Tasmania is coal and details of production are shown for a five-year period:

**Production of Coal in Tasmania**  
(<sup>000 Tons</sup>)

Description	1962	1963	1964	1965	1966
Coal, Black—					
Semi-anthracite .. ..	2	2	2	2	2
Bituminous .. ..	270	205	149	100	80
Total .. ..	272	207	151	102	83

As indicated in the historical section of this chapter, imported fuel oils are tending to replace coal in a number of applications, chiefly industrial, and the decline in production of coal is due to the resulting fall in demand.

**Non-Metallic (Excluding Fuel) Minerals**

The quarrying of limestone is the earliest recorded activity in the field of non-metallic mineral mining in the State, burnt lime being sought as a base for building mortar. (The extensive shell deposits on the shores of Pitt Water near Sorell were another lime source used by the colonists in the making of mortar.) Production has gradually increased, there being a steady demand for limestone in the making of cement, in various chemical and metallurgical processes and in the manufacture of calcium carbide; limestone also is used as a source of agricultural lime. Large exports of limestone were made in the period 1918-1947, when B.H.P. Co. Ltd operated quarries at Melrose on the north-west coast, for material to use as a flux in metallurgical processes carried out at their Newcastle iron and steel plant.

The next table shows the Tasmanian production of non-metallic minerals for a five-year period:

**Non-Metallic (Excluding Fuel) Minerals Production**  
(Tons)

Mineral	1962	1963	1964	1965	1966
Clays—					
Brick and Shale .. ..	140,536	146,885	170,496	185,623	165,546
Kaolin .. ..	606	1,875	2,400	..	..
Other .. ..	29,966	24,229	31,488	36,070	72,875
Dolomite .. ..	2,217	2,623	923	1,145	2,606
Limestone (a) .. ..	318,538	354,465	351,518	338,414	344,734
Ochre .. ..	60	51	69	40	65
Pebbles .. ..	375	518	727	920	895
Silica (b) .. ..	514	2,641	13,606	10,393	5,417

(a) Excludes quantities used directly as a building or road material.

(b) For glass, chemical, etc. manufacturing.

**Construction Materials**

In addition to the types of mining and quarrying previously described, there is the quarrying of construction materials (for buildings, roads, etc.) such as crushed and broken stone, gravel, sand, etc. This type of activity also is taken into account when placing a value on the output from mines and quarries, measuring their level of employment, etc.

## Mining Industry Statistics

In the earlier sections of this chapter, the data on mining and quarrying have been confined to physical production and metallic content by assay, but other measures such as the level of employment, values of output, etc. are also available. A definition of the field of activity classified as "mining and quarrying" appears as an introduction to the "Mining" section of this chapter.

The following table gives details of employment in mines and quarries for a five-year period:

Employment in Mines and Quarries (a)

Particulars	1962	1963	1964	1965	1966
Number of Mines and Quarries	61	63	42	46	51
Number Employed (b)—					
Working Proprietors ..	22	23	16	20	12
Salaried Employees—					
Above ground ..	282	330	288	330	469
Below ground ..	48	36	75	60	77
Wage Earners—					
Above ground ..	1,539	1,586	1,449	1,479	1,693
Below ground ..	768	667	683	685	676
Total .. ..	2,659	2,642	2,511	2,574	2,927

(a) Mines and quarries employing four or more persons.

(b) On last full working day of year shown.

## Values of Output and Production

*Value of Output* is the selling value at the mine or quarry (i.e. exclusive of transport costs from mine or quarry to the point of sale). Value added by reduction of ores, concentrates, etc. to metals is excluded.

*Value of Production* is the selling value at the mine or quarry *less* the cost of power, fuel and light and the cost of certain materials and stores such as timber, explosives, etc. No allowance is made for depreciation or costs of maintenance.

The next table gives details of value of output, value of production and costs data for mines and quarries employing four or more persons:

Mines and Quarries (a)—Value of Output; Value of Production; Costs (\$'000)

Particulars	1962	1963	1964	1965	1966
Value of Output .. ..	17,374	19,763	24,109	27,929	33,569
Less Cost of Power, Fuel and Light used .. ..	760	789	786	785	844
Less Other Costs (mainly materials) .. ..	4,758	4,984	5,965	7,801	7,791
Value of Production (b) ..	11,856	13,990	17,358	19,343	24,933
Salaries and Wages Paid (c)—					
Salaries .. ..	964	981	1,264	1,305	1,832
Wages (d) .. ..	6,216	6,515	6,819	7,604	8,045
Total Salaries and Wages ..	7,180	7,496	8,083	8,909	9,877

(a) Mines and quarries employing four or more persons.

(b) The cost of labour is *not* deducted in determining the value of production.

(c) Exclusive of drawings by working proprietors.

(d) Net amount after deducting value of explosives sold to own employees.

The previous tables on employment, output, etc. have been restricted to data obtained from mines and quarries employing four or more hands, this size level providing a basis for uniform mining statistics in all Australian States. However, the annual mining census in Tasmania seeks information from all engaged in mining and quarrying and includes operations with less than four persons employed. The following table shows the value of output for all mining and quarrying operations and also the contribution of specific types of activity:

**All Mines and Quarries (a)—Value of Output**  
(\$'000)

Particulars	1962	1963	1964	1965	1966
Metal Mining .. .. .	14,450	16,915	21,600	25,349	30,187
Fuel Mining .. .. .	1,232	842	649	430	362
Non-metal (excluding Fuel) Mining (b) .. .. .	714	788	864	744	732
Total Mining .. .. .	16,396	18,545	23,113	26,523	31,281
Construction Material Quarrying	1,410	1,757	1,935	2,475	3,345
Total Mining & Quarrying	17,806	20,302	25,048	28,998	34,626

(a) Includes output of mines and quarries employing less than four persons.

(b) Includes clays, dolomite, silica, limestone, etc.

### *Smelting and Refining of Metals*

The value of output of mining and quarrying is defined as the selling value of the product at the mine or quarry, (e.g. in metal mining, usually the selling value of specific concentrates at the mine). Earlier, reference was made to the fact that Tasmanian manufacturing industry includes the extraction and refining of metals, not only from locally produced ores and concentrates, but also from those that have been imported; in actual fact, extraction and refining in Tasmania employ more persons than mining and result in greater values, both of output and of production. The following table is compiled from factory statistics to illustrate this point:

**Non-Mining Activity—Extracting and Refining Metals**  
Factory Class IV, Sub-class 5—Values of Output, Production, etc.

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Factories .. .. . (No.)	3	4	4	4	4
Average Workers (a) .. .. . (No.)	3,283	3,413	3,444	3,394	3,404
Value of Output .. .. . (\$'000)	48,472	59,020	66,238	81,336	83,049
Value of Production (b) .. .. . (\$'000)	18,079	23,699	24,065	27,185	28,792

(a) Average whole year, including working proprietors.

(b) Value of output less recorded costs of manufacture, other than labour.

In the previous table, the principal metals included are: copper (from local ores), zinc and cadmium (from local and imported ores), aluminium (from imported bauxite) and ferro-manganese alloy (from imported ores).

The value of production in the factory table does not duplicate values already recorded in the mining sector since the cost of the basic raw materials—ores or concentrates—is one of the recorded costs of manufacture deducted from the value of output.

The next table gives details of the production of zinc and copper by refinery processes:



**Non-Mining Activity—Production of Zinc and Copper  
(Tons)**

Year	Refined Zinc	Cathode Copper	Year	Refined Zinc	Cathode Copper
1960-61 ..	125,936	9,600	1963-64 ..	138,610	11,790
1961-62 ..	129,069	11,812	1964-65 ..	138,779	12,125
1962-63 ..	136,205	11,694	1965-66 ..	143,911	(a) 3,894

(a) Refinery closed down in October 1965; blister copper production for year was 13,912 tons. Blister copper is now refined at Port Kembla (N.S.W.).

*Aluminium Production*

The refinery for the production of alumina and refined aluminium is situated at Bell Bay on the River Tamar. The choice of Tasmania was determined by the availability of large supplies of relatively cheap hydro-electric power. Production of alumina commenced in February 1955, and of refined aluminium in September 1955. Published statements indicate that the capacity of the plant, in terms of primary aluminium, was lifted to 35,000 tons in 1962 and to 52,000 tons in 1963; the Mines Department Report quotes a figure of 52,202 tons for production in 1966. Another published statement describes plans to lift the annual capacity to 75,000 tons. When the Bell Bay plant began operating, it was the sole Australian producer of aluminium but another plant has now been established at Geelong in Victoria.

**Assistance Provided by Mines Department**

The Department of Mines provides financial assistance to mining lessees for the purchase of plant and machinery, for sinking, repairing or de-watering of shafts, for construction of dams and water races, for testing and proving a deposit of any mining product, for developmental work, and for diamond and other types of drilling. The Department has available for hire percussion and diamond drills for exploration, as well as complete plant for small shaft sinking and tunnelling. Other assistance is rendered to the industry in the form of geological and engineering advice, through ore-dressing research into metallurgical discoveries, and the selection and design of treatment plant.

**FISHERIES**

**Description of Main Fish Varieties**

This section is devoted to a discussion of the important species in the Tasmanian fishery. These species are not all scale fish but include elasmobranchs (sharks), molluscs (scallops, oysters, abalone), and crustaceans (crayfish). The Tasmanian fishery involves about 1,100 licensed fishermen in 600 vessels, and harvests approximately 5,000 tons of fish, molluscs and crustaceans annually. The catch is composed of about 40 types of which six—crayfish, shark, barracouta, abalone, scallop and salmon—are of major importance (about 90 per cent of the catch). One, the tuna, may have great potential for the future.

The State Government exercises control over the taking of fish through the Fisheries Division (saltwater fisheries) and the Inland Fisheries Commission (freshwater fisheries).

Each of the types discussed is numbered according to the code prepared by the Fisheries Division of the Department of Primary Industry on behalf of the Commonwealth/State Fisheries Conference.

The descriptions of the types of fish include their common name and scientific name, a brief description of each fish, criteria for distinguishing different species (if more than one species are caught under the same general name), notes concerning their distribution and habit, and the methods of fishing employed.

### *Terms Used*

The following is a non-technical explanation of some of the terms used: *anal*, near the anus; *anterior*, towards the head; *caudal*, tail; *dorsal*, back; *operculum*, gill cover; *pectoral*, side of body near gills; *ventral*, pelvic.

### *Authorities for Reference*

The descriptions of genera and species are very brief and in many cases will be insufficient for detailed scientific work, but should be effective as a general guide. Further information on identification of species may be obtained from:

*Fish and Fisheries of Australia*—T. C. Roughley.

*Handbook of Australian Fishes*—I. S. R. Munro.  
(published in *Fisheries Newsletter*)

*Vertebrate Animals of Tasmania*—C. E. Lord and H. H. Scott.

### **Eels** (*Anguilla australis occidentalis*-035)

The commercial freshwater fishery for the short finned eel was established in 1965 and the catch for 1966 was 89,000 lb. It is likely that the eel fishery will expand to satisfy local and overseas markets. This activity is regulated by the Inland Fisheries Commission.

### **Whitebait** (*Lovettia sealii*-076)

Whitebait are well known as a canned fish and consist of the young of a number of species of fish. The most common constituent of Tasmanian whitebait is a species called *Lovettia sealii*. They are very small fish (about one inch long), practically transparent with conspicuous black eyes, and move from the sea to fresh water to spawn in spring or early summer. They travel in long but narrow concentrations or in dense shoals, and are captured by scoop nets of fine mesh in brackish or fresh water as they move upstream. The catching of whitebait comes under the control of the Inland Fisheries Commission.

Commercial fishing began during 1941 and 1942 and reached a peak in 1947 when over a million pounds were caught. The canning of whitebait ceased in the early 1950s and the annual catch declined to a few thousand pounds; however, in 1965-66, it had increased to 71,000 pounds.

### **Flounder and Sole** (*Lophonectes gallus*, *Paraplagusia unicolour*, *Pseudorhombus tenuirastrum*; all species-151)

The flat fishes are almost wholly marketed as flounder, although three distinct species make up the local catch. These are the Crested Flounder (*Lophonectes gallus*), the Deepwater Flounder (*Pseudorhombus tenuirastrum*) and the Lemon-tongued Sole (*Paraplagusia unicolour*).

There is much misunderstanding of the use of the terms "flounder" and "sole"; generally speaking, the flounder group has the caudal fin separate from the dorsal and anal fins, whereas the sole has the caudal fin reduced in size and completely fused with the dorsal and anal fins.

The crested flounder is very small, never attaining more than seven and a half inches. It is a very common fish in the catch of trawlers, and is easily recognised by the long anterior dorsal rays extending into a crest. Although it is

very common in coastal waters, it is too small for commercial exploitation. The deep water flounder occurs in estuaries and shallow coastal waters. It has small spots and ring-like markings, with two blotches on the base of its tail rays; the species is also characterised by a notch on the snout.

The lemon-tongued sole is tongue shaped, the snout curled around with the mouth in a long, hooked lobe. It attains 13 inches and occurs on sandy bottoms in up to 18 fathoms. The fish is not heavily fished commercially and is usually captured at night with lights by spearing.

#### **Cod** (*Physiculus barbatus*-201)

The family Gadidae, the true cods, is represented in Tasmania by the Southern Rock Cod (*Physiculus barbatus*). Although this group includes the most important commercial fish after the herring in the Northern Hemisphere, it is not a commercially important fish in Australia.

The southern rock cod lives in rocky situations offshore and because of this and its benthonic habits, it is almost always caught on hand-lines. The fish is readily distinguishable by the presence of a fleshy barbel on the lower jaw, which probably helps in the search for food. It may grow to a length of 17 inches. Its colour is reddish brown, with dark spots near its pectoral fins. The cod is not highly prized as a food fish, its flesh being rather soft.

#### **Tuna and Mackerel** (*Thunnus thynnus maccoyii*-301; *Thunnus alalunga germo*-303; *Katsuwonus pelamis*-315; *Auxis thazard*)

Although tuna is caught at present in Tasmanian waters in only small quantities, it is reported to be present in large numbers in coastal waters. It is an excellent canning fish and the basis of important industries in N.S.W. and overseas.

There are four major species of tuna found in Tasmanian waters. They are:

- (i) Southern Blue Fin Tuna (*Thunnus thynnus maccoyii*)—a large chunky fish tapering sharply towards the tail. Dark blue above and silver below, with yellow tinges on the second dorsal fin and tail. This tuna may reach nine to 10 feet in length and 1,500 pounds and quite commonly ranges from 500-800 pounds in Australian waters. However, the average commercial fish is about 50 pounds. Open coastal waters are its habitat.
- (ii) Albacore (*Thunnus alalunga germo*)—a chunky robust fish tapering sharply to the tail. Pectoral fin very long (behind the anal fin). Colour, dark green-blue above, silver below, dorsal finlets yellowish, others grey. Size—up to three and a half feet and 60 pounds but averaging 5 to 15 pounds. Oceanic waters are its habitat.
- (iii) Striped Tuna or Skipjack (*Katsuwonus pelamis*)—plump, robust, tapering sharply to the tail behind the second dorsal and anal fins. Colour—black above with metallic purple and green sheen and silvery white, characterised by five dark-grey longitudinal stripes along the sides below the lateral line. Size—may grow to 25 inches and weigh 12 pounds, but normally five to 10 pounds. Deep coastal and oceanic waters are its habitat.
- (iv) Frigate Mackerel or Leadenall (*Auxis thazard*)—elongated and slightly compressed body. Colour—lead-grey colour above and silver below; the back has a pattern of oblique broken wavy lines and blotches. The frigate mackerel is the smallest of the tuna group of fishes and seldom grows larger than three pounds.

The tuna group is excellent canning fish and makes up a large proportion of fish caught overseas. Although tuna have been known to exist in Australian waters for many years, and studies and tests as long ago as 1936 showed that the fish occurs in large quantities, it was not until the 1950s that it was caught in commercial quantities. Since then, quite a large industry has been developed by N.S.W. and S.A. boats, the N.S.W. boats sometimes fishing in Tasmanian waters. In Tasmania itself, the tuna has been left to the anglers who find very good sport off the east coast.

A tuna fishery for Tasmania may be possible in the immediate future but its development has been slow due to the large capital investment involved. The method of fishing in Australia is usually by polling or trolling, using artificial lures when they are effective, or live bait of pilchards, etc. The whole of the catch is usually canned.

**Barracouta (Snoek)** (*Leionura atun-335*)

The barracouta (sometimes referred to as 'couta) and King Barracouta (*Rexea solandri*) belong to a group of fishes which includes Snake Mackerels and should not be confused with the savage Barracuda (*Agriposphyraena barracuda*) of the West Indies.

The fish has an elongate compressed body covered with minute scales. The mouth is large with a wide cleft and powerful teeth. The dorsal fin is spinous (19 to 20 spinous rays) and sits back in a groove; the caudal fin is strongly forked. The colour is blue-black with silvery white sides and belly. The barracouta can grow to four feet six inches and 10 pounds but averages two and a half to three feet and three to five pounds.

Spawning occurs mainly in summer and early autumn along the eastern and northern coasts. The adults occur in shoals and although they may enter estuaries, they are usually found in ocean waters close to the coast and in open bays such as Storm Bay and Oyster Bay.

The fish is of major importance to the Tasmanian fishery and occurs in large numbers but is subject to pronounced seasonal fluctuations. It is a fish of good edible quality. Commercial fishermen use mainly "jigs" or trolling. (A jig is a rod attached to a short line or chain with a barbless hook; when the fish strikes it is jerked on to a shute, frees itself, and slides into the well.)

The king barracouta (or kingfish), until about eighty years ago, was one of the State's principal commercial fish but today is rarely seen or caught except in deep water. It can be distinguished from the ordinary barracouta by its more thick-set appearance, larger eyes and the possession of two lateral lines; it is a fish of excellent edible quality.

**Mullet** (*Mugil cephalus-351; Aldrichetta forsteri-370*).

The mullet is a very common fish in Australian waters but is not important commercially in Tasmania due to its rather variable edible qualities. Because it has often been the commonest and therefore the cheapest fish available, it has been looked down on; also, in certain areas, it becomes infected with a fungus (*Actomyces*) which gives the flesh an earthy taste and renders it quite unpalatable. In prime condition, the mullet, although rather oily, is a good table fish.

In Tasmania, there are two species of mullet; the Sea Mullet (*Mugil cephalus*) and the Yellow Eye Mullet (*Aldrichetta forsteri*). The family Mugilidae is one of the most uniform in the kingdom of fishes and there is a general similarity between the species. All have blunt heads with toothless mouths, large scales, general blue-silver colour and rarely exceed two feet in length.

The only way to accurately distinguish the species is to count the spines in the anal fin and the number of scales from behind the base of the pectoral fin back to the base of the caudal fin. The sea mullet has eight anal rays and 32 to 42 lateral scales and the yellow eye mullet has 12 anal rays and 34 to 58 lateral scales.

The mullet is typically an estuarine fish which migrates upstream when about a year old, stays there for the next two years and may even enter fresh water. It then migrates in shoals and moves to the sea to spawn. It is a typical bottom-dwelling fish, feeding mainly on plant material.

Most fish are captured commercially by beach seining; anglers find the yellow eye mullet relatively easy to catch but not the sea mullet.

### **Trevally** (*Seriolella brama*-453)

The trevally, or more precisely, the Snotgall Trevalla, is a common school fish around the Tasmanian coast. ("Trevally" is also the name applied to a silver fish of another species.)

It has a laterally compressed body, silver in colour with darker patches. The eye is large and in the mid line of the head. The first dorsal fin is low with the middle spines being longest; the ventral fin is below the pectorals. The fish attains a length of 22 inches.

When freshly caught, the fish is of excellent quality and edible standard, its flesh white, tender and delicately flavoured. However it does not keep well and should be gutted soon after capture.

It is commonly caught by gill or mesh nets set close inshore amongst kelp; it can be caught by line.

### **Salmon** (*Arripis trutta*-490)

The Australian salmon is not a true salmon and is completely unrelated to the salmon of the Northern Hemisphere. It probably received this name from the early colonists who confused the fish with the true salmon because of a superficial resemblance and its fighting qualities when hooked. It is commonly referred to as the native, colonial or black back salmon.

This fish belongs to the perch-like fishes, and has a spindle-shaped body, covered with moderately sized scales. The mouth has minute teeth on the jaws and roof. The dorsal fin bears nine to 11 spinous rays and the anal fin has three spines in front. The pectoral fins are small and placed directly above the ventral fins. The colour is variable but usually grey-green above with irregular black spots and blotches on the head. Young fish are olive green with a silver-white belly. In Australian waters, the fish may grow to 36 inches and 21 pounds; however, the average weight is between five and 10 pounds, and those caught in Tasmanian waters tend to be smaller.

Spawning occurs in sheltered estuaries and harbours from January to March. The fish spends the first two years of its life in these waters and migrates to offshore waters when it is eight to 10 inches long. By the age of nine years, the fish may measure 24 inches in length and weigh six to seven pounds. The salmon is found in large shoals travelling close to the coast at or near the surface of water less than 15 fathoms deep.

Although the fish is of importance to Tasmanian fishermen, it is of variable edible quality with dark coarse flesh. Most salmon are captured commercially by beach seine nets. For the angler, it is one of the finest small-game fish in Australian waters.

**Perch** (*Nemadactylus macropterus*-502)

The Silver and Black Perch or Jackass-fish (*Nemadactylus macropterus*) belongs, with the Morwong, to the family Cheilodactylidae, and is readily distinguished by the great elongation of a pectoral fin ray, which is approximately twice the length of the other rays. The perch is distinguished from the morwong by a black band extending from in front of the dorsal fin to behind the gill cover. It is not a true perch, which is mainly a freshwater species.

Although the Tasmanian perch is of high quality as an edible fish, few fishermen attempt to catch them for sale due to the high cost of nets and gear.

**Trumpeter** (*Latridopsis forsteri*-536, *Latris lineatus*-535)

This fish is represented in Tasmania by the Bastard or Silver Trumpeter (or simply Trumpeter)—*Latridopsis forsteri*, and the Striped Trumpeter—*Latris lineatus*.

The silver trumpeter has a compressed body with length slightly more than three times its depth. Colour varies with age. It rarely exceeds two feet in length. The striped trumpeter is a handsome fish, with three prominent longitudinal olive green or brown bands along the back and a fourth one less distinct. The dorsal fins are deeply notched and are olive green splashed with pale iridescent blue. The fish grows to about four feet and 60 pounds.

Both are found near offshore reefs but the striped trumpeter is now mostly restricted to deep waters. The silver trumpeter is caught in gill nets and the striped by handlines. The striped trumpeter is highly prized and is recognised as one of the best two or three table fish in Australia.

**Flathead** (*Neoplatycephalus fuscus*-615, *N. richardsoni*-616

*N. speculator*-617, *Trudis bassensis*-621, *Levipora laevisgata*-625)

The flathead is a very common fish in Tasmanian waters and makes up a large percentage of the catch of anglers in estuaries and bays. The fish belongs to the family Platycephalidae and has a very depressed head, much broader than deep, with extensive gill slits and a scaly skin. On each side of the head, at the corner of the operculum, are two sharp spikes which can inflict a severe cut but are not venomous. The lower jaw projects in front of the upper lips so that the mouth is directed upwards.

The Tasmanian species of flathead of commercial value are:

- (i) The Rock Flathead (*Levipora laevisgata*)—variable colour, no exposed ridges on the head, may grow to 15 inches in length.
- (ii) The Sand Flathead (*Trudis bassensis*)—space between eyes narrower than diameter of eye; lower spine on the operculum more than twice length of upper spine, and a rounded tail; an oceanic species but lives close to shore; grows to 25 inches and two and three-quarter pounds, but usually averages 16 to 17 inches and about one and a half pounds.
- (iii) The Dusky or Mud Flathead (*Neoplatycephalus fuscus*)—head dusky with brown spots. It spends its time almost exclusively in estuaries and may reach four feet and 28 pounds.
- (iv) The Tiger Flathead (*Neoplatycephalus richardsoni*)—jaws and palate have large canine teeth. It is a fish similar in size to the sand flathead but usually lives farther offshore and is the backbone of the commercial flathead fishery.
- (v) The King or Deep Sea Flathead (*Neoplatycephalus speculator*)—very closely related to the tiger flathead, differing only in the structure of the gills.

The flathead, in general, is an excellent edible fish with white, tender and well-flavoured flesh. The fish is a bottom-dweller but although it can be caught by trawlers, the Tasmanian industry is based on hand-lines and the fish filleted, frozen and exported to the continental States.

**Shark** (*Mustelus antarcticus*-651; *Galeorhinus australis*-655)

Tasmania's shark fishery is confined in the main to two fish—the School or Snapper Shark (*Galeorhinus australis*) and the Gummy Shark (*Mustelus antarcticus*). The proportion of gummy shark in the catch varies seasonally from nil per cent to 100 per cent; both fish are marketed together and the flesh sold as "flake".

The school shark has a flattened head with a pointed, translucent snout. The anterior dorsal fin is situated over the interval between the pectoral and ventral fins and is twice the size of the second dorsal fin. The upper surface is slate-grey in colour, the fins are dark-grey and the belly white. This fish is reputed to grow to six feet and 170 pounds but there is no authentic record of a fish longer than five feet eight inches.

The gummy shark has an obtuse snout. The anterior dorsal fin is situated between the dorsal and ventral fins. The caudal fin is slightly elevated and has a notch in the distal lobe. The teeth are reduced to flattened crushing plates. The upper surface is ash-grey in colour and spotted, the belly white. It may grow to a length of five to six feet.

Although sharks have been fished commercially in Australia for many years, the Tasmanian industry did not begin until the early years of World War II. It has now become established as one of the most important units of the Tasmanian fishery. The fish are caught by the "long-line" method. Each line consists of a number of "fleets", each "fleet" carrying 100 to 200 hooks. Each boat carries a number of lines which can be set individually or linked together.

Unlike the scale and bony fish and some other sharks, these two varieties bear their young alive and do not lay eggs. Mating usually takes place from May to June with the young "pups" born about December. The average litter is 28.

**Garfish** (*Hemiramphus melanochir*-712).

The Australian garfish belong to the family Hemiramphidae, fish of this family being called "half-beaks" in the U.S.A.

The garfish may reach a length of 18 inches, but usually average about 12 inches. The fish is very slender with the lower jaw extended into a slender spine one to two inches long. Its scales are very deciduous and fall off at the slightest handling. As an edible fish, the flesh is white and tender, but the bones are small and very numerous.

The sea garfish are oceanic species but often enter estuaries and are seldom found more than a mile or two offshore. Because it swims either on or very near the surface, it is captured with seine nets. Fishing is concentrated from March to April, with most fish being caught in seine nets from sheltered ocean beaches.

**Rainbow Trout** (*Salmo gairdneri*-775)

In 1964, the first commercial trout farm was licensed and rainbow trout are being raised in holding ponds using water from the Brid River (at Bridport, on Bass Strait). The fish are fed dry pelletised food with raw protein supplement until they are large enough for killing. There are, of course, rainbow and

brown trout in Tasmanian lakes and rivers (introduced as exotic species) but these may only be fished for by sportsmen with a licence at times and places regulated by the Inland Fisheries Commission.

**Crayfish** (*Jasus lalandei*-780)

The crayfish is by far the most important unit in the Tasmanian fishery, not only in terms of pounds of fish landed, but also in monetary return. It is, of course, not a true fish or even a vertebrate (back-boned) animal. It belongs to the phylum Arthropoda (which includes insects, spiders, ticks and scorpions) and to the class Crustacea of this phylum, along with the crabs. It is more correctly referred to as a Spiny Lobster (*Jasus lalandei*).

As with crabs, the conspicuous hard outer covering is present but the pincer-like appendages are much less pronounced. The Tasmanian species is distinguished by antennules with two short flagella and the stridulating organ at the base of the antennae is absent. The rostrum is small and mostly points upward and the carapace is covered with forward-pointing spines. The abdominal tergites are sculptured.

The crayfish are caught in traps which are hemispherical, mainly made of cane and bush sticks and called pots. The pots are baited with fish or flesh and "shot" from dinghies or directly from the boat. The boats range from 20 feet to 70 feet long, most having diesel engines and auxiliary sails. They operate all round the Tasmanian coast, including the Bass Strait Islands, as seasons permit, and the pots are set in from one to 50 fathoms of water.

The crayfish is boiled and either sold locally or exported to New South Wales and Victoria, or overseas to the United States. The whole fish is usually sold in Australia but only the tails, which contain most of the edible meat, are sent to the U.S.A. in uncooked, frozen form.

**Oyster** (*Ostrea angasi*-831; *Crassostrea gigas*-828)

There are two types of oyster found in Tasmania—the Mud Oyster, *Ostrea angasi*, which is a native of the State, and the Japanese (or Pacific Oyster), *Crassostrea gigas*, which was first introduced into the State in 1947. The taking of oysters is now on a very small scale and this shellfish has little commercial significance in Tasmania.

The Pacific oyster was first introduced to stock beds in Pittwater (near Hobart). Later attempts were made in the warmer waters of Port Sorell in the north of the State; however, no fishery has been established.

**Scallop** (*Pecten meridionalis*-835; *Equichlamys bifrons*-836;  
*Mimachlamys asperimus*-837)

The Tasmanian scallop industry is based on the Commercial Scallop, *Pecten meridionalis*. There are two other species found, the Queen Scallop, *Equichlamys bifrons*, and the Doughboy Scallop, *Mimachlamys asperimus*, but neither is important commercially although the doughboy has been of value in the past.

The queen scallop has a large, finely-ribbed shell and is relatively uncommon. The doughboy has a moderately-sized shell up to four to five inches across with equally curved valves. The commercial scallop shell may reach five to six inches in diameter but only one valve is curved, the other being flat. Scallops rest unattached on the sea floor in practically all depths of water to 500 feet. The scallop lies on the curved valve and may swim short distances by producing a jet of water, generated by clapping the valves together. Spawning probably takes place in winter but may be extended over a long period. The larvae settle and the adult reaches a commercial size in two to six years.



The fishery has shown three major phases:

- 1904-1918 An initial period in which fishing (by dredging) was confined to the Derwent estuary.
- 1918-1960 A period of varying but generally heavy commercial exploitation of beds in the D'Entrecasteaux Channel. This was the time when the fishery developed into an important primary industry.
- 1960-1966 The development of the oceanic beds on the east and north-east coasts in deeper water and the decline of the D'Entrecasteaux Channel beds. During the latter part of this period, there has been a drastic fall off in the catch.

Scallops are collected by dredges towed behind fishing boats and hauled to the surface on wire lines by mechanical winches. Fishing regulations limit each boat to two dredges which may be pulled simultaneously. On reaching the surface, the dredge is emptied and its contents sorted (minimum legal limit is three and a half inches shell diameter). The "size" scallops are boxed or bagged and the rest returned to the sea. From 1928 to 1963, the fishing season was restricted to three or four months as a further conservation measure. Certain areas have been completely closed from time to time.

The sorted shells are taken to the "splitting" sheds where they are opened and the white adductor muscle and roe removed from the shell. The bulk of the catch is marketed locally.

#### **Abalone (*Notohaliotis Ruber*-845; *Schismotis Laevigata*-846)**

A new industry based mainly on the Black Lip Abalone (*Notohaliotis ruber*) began late in 1964. This large marine snail is found on rocks from just below low tide level to below 100 feet. The shell is orange-red in the form of a low spiral with ridges radiating from the spine; a row of holed protuberances extend from the growing margin of the shell to the spine. Shell diameters exceeding seven inches have been found.

The Green Lip Abalone (*Schismotis laevigata*) has a deeper, white, smooth shell and occurs in the far north of the State, attaining a shell diameter sometimes in excess of six inches. Abalone is collected by skin divers who prise the shell from the rocks with curved bars. The muscle is separated from the shell and viscera, cleaned, and canned or frozen for export to Asia or America.

## **FISHERIES STATISTICS**

### **Source of Data and Method of Presentation**

Statistics presented in this section have been supplied, in the main, by the Fisheries Division of the State Department of Agriculture. In the preparation of fisheries production statistics, the quantities are generally in terms of the form in which the catch is taken from the water. For example, the statistics of fish production are in terms of "estimated live weight" which is calculated from landed weights by using conversion factors for the various species. These conversion factors allow for the fact that the quantities of fish reported are frequently in a gutted, headed and gutted, or otherwise reduced condition. Crustaceans are reported on a "whole weight" basis and molluscs (edible) on a "gross (in-shell) weight" basis.

The actual edible yield varies, depending on types of fish, and methods of preparation. Barracouta yield about 51 per cent of liveweight when headed, gutted and filleted, and shark about 60 per cent when headed and gutted. The

edible flesh in molluscs represents only a small portion of the in-shell weight. The conversion factor for scallops is  $\frac{1}{3}$ , and for abalone  $\frac{1}{3}$ , e.g. 300 lb of abalone in-shell yield approximately 100 lb of flesh.

The catch is generally defined as that taken in Tasmanian waters; however, a quantity of sharks and crayfish taken by Victoria-based fishermen in Tasmanian waters, but marketed in Victoria, is included in the Victorian catch and excluded from Tasmanian figures, the logic being that the catch influences the Victorian economy.

Details of production refer only to recorded commercial production. In view of the importance of amateur fishermen in certain types of fishing, details shown cannot be taken as representing the whole catch. In addition, it is likely that the figures shown understate, to some extent, the full commercial catch since no information is available on fish taken for sale by persons not licensed as professional fishermen.

### Persons Engaged in Fisheries

In the following table, which gives details collected in the Population Census at 30 June 1961, the numbers of persons whose industry was classified to "fishing and whaling" are shown together with the numbers engaged in all primary industries and in the total work force; Australian and Tasmanian figures are compared:

Australia and Tasmania—Persons Engaged in Fisheries  
Population Census, 30 June 1961

Particulars	Australia	Tasmania
Persons engaged in—		
Fishing and whaling .. .. (No.)	8,252	575
All primary industries .. .. (No.)	513,286	20,788
Total work force .. .. (No.)	4,225,096	130,917
Persons engaged in fishing and whaling as a proportion of—		
All primary industries .. (per cent)	1.6	2.8
Total work force .. (per cent)	0.2	0.4

### Employment, Boats and Equipment

The boats used for the estuarine fisheries are mostly small vessels, propelled by diesel or petrol motors of low power. The offshore vessels range in length from 30 feet to 100 feet and almost invariably are powered by diesel engines. Refrigeration of the catch at sea is becoming more common, the four main types being ice box, ice cooling, brine tanks and dry refrigeration; almost all boats have wells or deck tanks which serve to keep the catch alive, e.g. crayfish or abalone.

#### Equipment

In the Tasmanian fisheries, a wide range of equipment is used. The following table sets out the main types of fish, crustaceans and molluscs and the equipment most commonly used:

Fish Equipment Used in Tasmania

Type of Fish	Equipment Used	Type of Fish	Equipment Used
Silver Trumpeter ..	Gill net	Barracouta .. ..	Jig and Troll
Shark (edible) .. ..	Long-lines	Crayfish .. ..	Pots
Australian Salmon ..	Beach seine	Scallops .. ..	Dredge

A feature of the Tasmanian fisheries is the use of dual, triple or even quadruple types of equipment from a single boat on the one voyage. Examples of possible combinations are as follows:

*Dual*—beach seine net and crayfish pot; crayfish pot and long line; jig and long line, etc.

*Triple*—crayfish pot, gill net and long line; crayfish pot, hand line and jig, etc.

*Quadruple*—beach seine net, crayfish pot, gill net and long line; crayfish pot, dredge, gill net and long line, etc.

#### *Persons Engaged, Boats and Equipment*

The following table shows details of persons and boats employed in the taking of fish, crustaceans and edible molluscs. The data are derived from boat registration records of the State Fisheries Division. The term "number of crew" refers to the usual number of crew on registered fishing vessels, and lacks the precision of the concept "average number employed" used in statistics of other production sectors. Many of the fishermen operate part-time only, and may normally follow other occupations:

**Fisheries—Number and Value of Boats, Number of Crew, etc.**

Length of Boat (feet)	1965			1966		
	Number of Boats	Value of Boats	Number of Crew	Number of Boats	Value of Boats	Number of Crew
		\$'000			\$'000	
Under 20 .. ..	163	109	250	126	108	189
20 and under 30 ..	116	268	173	140	389	205
30 and under 40 ..	138	839	266	151	958	288
40 and under 50 ..	108	1,236	254	120	1,509	268
50 and under 60 ..	56	1,067	155	63	1,316	174
60 and under 70 ..	10	316	34	10	384	36
70 and under 85 ..	2	160	7	4	194	14
85 and over ..	3	230	15	4	381	26
Total .. ..	596	4,225	1,154	618	5,239	1,200

The next table indicates the high proportion of relatively new boats now operating in the fishing industry and analyses the 618 boats according to age:

**Number of Boats Classified According to Length and Age, 1966**

Length of Boat (feet)	When Constructed						
	Before 1930	1930 to 1939	1940 to 1949	1950 to 1954	1955 to 1959	1960 to 1964	1965 and later
Under 20 .. ..	2	4	16	13	24	42	25
20 and under 30 ..	5	8	39	33	20	25	10
30 and under 40 ..	18	19	35	17	22	29	11
40 and under 50 ..	22	9	29	7	14	20	19
50 and under 60 ..	7	4	13	3	9	17	10
60 and under 70 ..	1	1	3	..	3	2	..
70 and under 85 ..	3	..	..	..	..	1	..
85 and over ..	2	..	2	..	..	..	..
Total .. ..	60	45	137	73	92	136	75

## Production

*Fish Catch*

The following table shows the production of the main types of fish caught in Tasmania for a five-year period. The fish types appear in the table without any further description to identify the particular species but a specification of the commoner types appears as an introduction to this section.

**Fish—Production by Type**  
(<sup>0</sup>000 lb Estimated Live Weight) (a)

Type	1961-62	1962-63	1963-64	1964-65	1965-66
Mullet .. ..	7	12	18	152	34
Tuna .. ..	5	24	29	52	67
Shark .. ..	994	832	816	659	1,088
Australian Salmon ..	2,921	1,165	850	501	432
Flathead .. ..	34	45	43	69	74
Barracouta .. ..	2,061	1,130	1,409	2,018	3,003
Whitebait .. ..	22	12	21	41	71
Cod .. ..	30	18	9	18	20
Flounder .. ..	8	9	11	14	28
Trevally .. ..	45	35	55	24	21
Trumpeter .. ..	38	28	21	29	34
Garfish .. ..	77	138	129	44	46
Other .. ..	17	21	18	15	73
Total .. ..	6,259	3,469	3,429	3,637	4,989

(a) Estimated live weights are calculated from landed weights by conversion factors since quantities of fish are reported frequently in a gutted, headed and gutted, or otherwise reduced condition, (e.g. barracouta and shark).

*Crustaceans and Molluscs*

In terms of value, the most important item in the Tasmanian catch is crayfish and the next table shows details of production of this crustacean and also of molluscs:

**Crustaceans and Molluscs—Production by Type**

Type	1961-62	1962-63	1963-64	1964-65	1965-66
CRUSTACEANS ( <sup>0</sup> 000 lb Whole Weight)					
Crayfish .. ..	3,426	3,310	3,572	3,336	3,939
MOLLUSCS ( <sup>0</sup> 000 lb In-shell Weight)					
Oysters .. ..	1	1	2	..	..
Scallops .. ..	4,772	5,871	4,260	2,916	868
Abalone .. ..	..	..	72	496	1,600
Total .. ..	4,773	5,872	4,334	3,412	2,468

*Comparison with Other States*

In 1965-66, Tasmania ranked third as a producer of crayfish, the two leading States being W.A. with 60 per cent of the Australian total and S.A. with 20 per cent; the Tasmanian catch was 13 per cent of the total and excluded a further 2.0 per cent taken in Tasmanian waters by Victoria-based fishermen.

The comparatively new Tasmanian abalone fishery in 1965-66 accounted for almost 55 per cent of Australian production of 2,924,000 pounds of abalone in the shell. Victoria and New South Wales ranked second and third with 32 per cent and 12 per cent respectively.

For many years, Tasmania was the only State of the Commonwealth with a commercial scallop fishery; in 1955-56 Tasmania was joined by Queensland, but continued to retain its dominant position in the industry. In 1963, however, Tasmanian fishermen started a Victorian fishery in beds known to exist in Port Phillip Bay and the new site, in its first year (1963-64), produced more than twice the Tasmanian fishery. Tasmanian production in 1965-66 was only three per cent of the Australian total, the Victorian proportion being 95 per cent.

### Catch Landed at Fishing Ports

#### *Distribution of Fish Landed*

The table that follows shows the proportion of fish and crayfish landed at Tasmanian fishing ports. The information relates to port of landing only, and not to the area in which catch was made.

**Proportion of Total Fish and Crayfish Landed at Each Port, 1965-66  
(Per Cent)**

Port	Fish	Crayfish	Port	Fish	Crayfish
Derwent and Channel			Bass Strait & Islands		
Dover .. ..	2.4	9.7	Bridport .. ..	9.4	5.4
Hobart .. ..	8.8	8.6	Currie .. ..	0.0	2.9
Kettering .. ..	7.3	2.5	Lady Barron .. ..	0.5	9.2
Margate .. ..	10.7	3.9	Port Sorell .. ..	8.1	0.5
Woodbridge .. ..	0.1	0.1	Smithton .. ..	1.8	1.3
			Stanley .. ..	5.5	8.1
			"Tamar" (a) .. ..	6.2	0.6
			Wynyard .. ..	1.7	0.4
Total .. ..	29.3	24.9	Total .. ..	33.2	28.5
East Coast & Penin- sula—			West Coast—		
Bicheno .. ..	4.3	6.3			
Coles Bay .. ..	1.5	0.1			
St Helens .. ..	1.0	13.4	Strahan .. ..	0.3	10.2
Triabunna .. ..	10.8	7.3			
Dunalley .. ..	11.0	6.5			
Port Arthur .. ..	8.7	2.8			
Total .. ..	37.3	36.4	Total Tasmania	100.0	100.0

(a) Launceston, Beauty Point and other Tamar ports.

#### *Seasonal Influence*

The next table shows the proportion of the total crayfish catch landed each month:

**Proportion of Crayfish Landed In Each Month  
(Per Cent)**

Month	1964	1965	Month	1964	1965
January .. ..	9.1	13.5	July .. ..	5.1	7.1
February .. ..	18.5	12.0	August .. ..	4.5	4.5
March .. ..	11.3	7.1	September (a) .. ..	0.5	0.4
April .. ..	8.0	6.9	October (a) .. ..	0.9	1.6
May .. ..	1.7	4.1	November .. ..	21.3	18.5
June .. ..	3.6	4.4	December .. ..	15.5	19.9

(a) Closed season in most waters during these months.

### Value of Production—Fishing

The table that follows gives details of gross and local values of edible fisheries products. The following definitions apply:

*Gross Value of Production* is the value placed on recorded production at the wholesale price realised at the principal markets.

*Local Value* (i.e. gross production valued at the place of production), is ascertained by deducting marketing costs from the gross value. Marketing costs include freight, cost of containers, commission, and other charges incidental thereto.

Fisheries—Gross and Local Value of Production  
(\$'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Gross Value of Production—					
Fish (a) .. .. .	510	324	312	353	491
Crustaceans (Crayfish) ..	1,422	1,474	1,580	2,105	2,557
Molluscs .. .. .	362	456	311	229	252
Total .. .. .	2,294	2,254	2,203	2,686	3,300
Less Marketing Costs .. ..	476	484	477	492	552
Local Value of Production	1,818	1,770	1,726	2,194	2,747

(a) Includes value of seaweed harvested for production of alginate. Separate figures are not available for publication.

In other production sectors, local value is further reduced by deducting the value of materials used to arrive at the net value of production. For the fishing sector, this is not possible since data on materials used in the course of production are not available. (Petrol and diesel fuel are examples of such materials.)

#### Marketing

In general terms, it can be said that production of fish, crustaceans and molluscs from the Tasmanian fisheries far exceeds the demand generated by the State's relatively small population; it follows, therefore, that the industry is dependent, in large measure, on its ability to find export markets, both interstate and overseas, and this raises the problem of preserving a perishable product. In the past, shark and barracouta, when caught in large quantities, had actually been sold to orchardists as manure simply because there was no other way of disposing of the glut. Cold storage facilities are now generally available and in addition, canneries offer an alternative method of preservation, the principal cannery being located at Margate in the south. The problem of preservation has three aspects: (i) at sea; (ii) on shore; (iii) in transit to market. A survey made during 1965 indicated that approximately 90 (i.e. 15 per cent) of the 596 licensed fishing boats had refrigeration plant of various types. Fifty four of the boats had dry refrigeration; in addition, some catches, e.g. crayfish, can be kept alive in boats' wells. Cold storage facilities ashore serve to hold the catch before its despatch to interstate and overseas markets while actual exports are carried by air, by refrigerated trailer on the roll-on roll-off ferries and in the refrigeration chambers of conventional ships.

The following table shows the value of exports and imports of fishery products. The fact that Tasmania has an exportable surplus, yet nevertheless imports some fishery products, is chiefly due to differences in type; the imported varieties include canned sardines, anchovies, oysters, crabs, etc., together with frozen, salted or smoked varieties of European, New Zealand or South African origin.

Fishery Products—Value of Exports and Imports  
(\$'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
EXPORTS					
Fish (a) —Overseas .. ..	..	14	7	17	..
Interstate .. ..	572	538	363	233	408
Crayfish —Overseas .. ..	492	336	326	693	922
Interstate .. ..	596	778	684	597	1,235
Molluscs—Overseas .. ..	..	..	63	159	101
Interstate .. ..	132	148	45	22	21
All Types—Overseas ..	492	350	396	869	1,023
Interstate ..	1,300	1,464	1,092	852	1,664
Total .. ..	1,792	1,814	1,488	1,721	2,687
IMPORTS					
Fish—					
Fresh and Frozen—Overseas	66	98	145	147	196
Interstate	42	54	60	56	68
Preserved in Tins—Overseas	74	88	89	101	164
Interstate	118	138	164	209	308
Other (b) —Overseas	20	22	25	7	32
Interstate	2	6	11	11	6
All Types—Overseas ..	160	208	259	255	392
Interstate ..	162	198	235	276	382
Total .. ..	322	406	494	531	774

(a) Includes fresh and frozen fish and fish preserved in tins.

(b) Includes smoked and salted fish and potted fish, extracts and caviare.

Fisheries Division  
(Department of Agriculture)

Under the *Fisheries Act* 1959, provision is made for a Sea Fisheries Advisory Board to advise the Minister on fisheries except in respect of salmon-trout, eels and whitebait which come under the control of the Inland Fisheries Commission. The Board consists of nine members appointed by the Governor as follows: the Director of Agriculture (or his representative); the Commissioner of Police (or his representative); a representative of Societies interested in the science of Zoology; two representatives of processors; and four representatives of professional fishermen.

The Division of Fisheries is administered by a Secretary who is responsible to the Director of Agriculture. The activities of the Division are as follows:

*Law Enforcement*

The *Fisheries Act* provides for regulations governing the taking of fish of particular species, oysters, scallops, abalone and seals in State territorial waters generally. Particular attention has lately been focussed on the taking of under-sized and illegal crayfish.

*Extension and Management*

Considerable advice and assistance is given to professional fishermen on all matters affecting sea fishing. The provision of facilities such as cool stores, slipways and finance is a continuing function under this heading.

*Research*

A joint Commonwealth/State tuna survey was commenced in February 1965, and investigations are continuing.

An investigation into the abalone fishery is providing information for the framing of regulations to protect the stock of this relatively new Tasmanian industry, and supplying basic biological information for its development. State officers are investigating the crayfish fishery with particular reference to the methods of fishing.

## VALUE OF PRODUCTION

### PRIMARY AND SECONDARY INDUSTRIES

#### Introduction

The value of production for Tasmania and the other Australian States is computed in accordance with the decisions reached at the Conferences of Australian Statisticians, and principally at the Conference held in 1935. The values shown in the tables that follow refer only to the production of primary industries and factories and exclude the building and construction industry, those industrial establishments not classified as factories, and certain agricultural and farmyard operations on areas of less than one acre.

#### Primary Industries

The following primary industries are those for which data are separately compiled in the value of production tables:

<i>Primary, Rural</i>	<i>Primary, Non-Rural</i>
Agriculture	Trapping
Pastoral	Forestry
Dairying	Fishing
Poultry	Mining and Quarrying
Bee-farming	

In respect of these primary industries, the following uniform definitions are employed:

- (i) *Gross Value of Production* is the value placed on recorded production at the wholesale prices realised at the principal markets. In cases where primary products are consumed at the place of production, or where they become raw material for a secondary industry, these points of consumption are presumed to be the principal markets. Subsidies and bounties paid by the State and Commonwealth Governments to primary industries are, in general, included in gross value of production.
- (ii) *Local Value* (i.e. gross production valued at the place of production) is ascertained by deducting marketing costs from the gross value. Marketing costs include freight, cost of containers, commission and other charges incidental thereto.
- (iii) *Net Value of Production* represents local values less value of materials used in the process of production. Materials used in the process of production include seed, power, petrol and oils, fodder consumed by farm stock, manures, dips, sprays and other costs of a similar nature. No deductions from local values have been made for depreciation, certain maintenance charges, interest, or some other costs normally incurred.



### Secondary Industries (Factories)

To place a value upon the production of factories, the following definitions are employed:

- (i) *Value of Output* is the value of goods manufactured and includes the amount received for repair work, work done on commission, etc. The basis is the selling value *at the factory*, exclusive of all delivery charges.
- (ii) *Value of Production* is the value of output *less* the value (at the factory) of the materials used, containers and packing, power, fuel and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges).

In examining values for primary and secondary production, it will be seen that *gross value of production* is a concept confined to primary industries; that *local value* for primary industries is broadly analogous in concept with *value of output* for factories; that *net value of production* for primary industries is comparable with *value of production* for factories, since both are derived by deducting the value of materials used in the process of production, a procedure which eliminates possible duplication of values.

### Comparing or Combining Industries

In comparing or combining production values for any of the previous industries, it is logically necessary to use only *net value of production* (primary) and *value of production* (secondary); both *gross* and *local* values will be found unsatisfactory because some degree of duplication will be involved. An obvious example of duplication can occur when the raw material for a factory process is the final product of a farm (e.g. the value of hops is contained in the *gross value of agriculture* and also in the *value of output of factories*, specifically of breweries). The primary-secondary relationship not only involves primary products becoming raw materials for factories but also factory products, (e.g. fertilisers) becoming essential materials for primary industries. Less obvious, perhaps, is the fact that one rural industry may supply the "raw material" for another rural industry (e.g. hay from *agriculture* consumed by livestock in the *pastoral* and *dairying* industries).

In the following chapter, *gross* and *local* values are shown for the various primary industries; the basic reason for publication is not to facilitate comparison and combination of these values for individual industries, or groups of industries, but rather to show *net value of production* is computed.

In accordance with the previous definitions, net value of production for primary industries is computed by deducting the cost of materials used in the process of production from the local value. Details of such costs are not available for: (i) bee-farming; (ii) trapping; (iii) forestry; (iv) fishing. In the case of these industries, only local value can be computed.

### Sources of Information—Value of Production

#### *Primary Production, Rural*

The data used are those concerning quantity of primary production (supplied principally by farmers, etc.) together with information collected from various sources on prices realised in the principal markets for different products, the costs of marketing these products and the costs of certain materials used in their production. Price and cost data are obtained from statutory authorities, (e.g. Dairy Produce Equalisation Committee), market reports, special returns collected from wholesalers, brokers, auctioneers, etc., and from overseas and interstate trade statistics.

*Primary Production, Non-Rural*

(i) *Trapping*—Principal data are derived from export of skins and information on the annual mutton bird catch.

(ii) *Forestry*—Principal value data are available from the annual factory census, since forestry products are the basic raw material for sawmills, newsprint and paper mills, etc.

(iii) *Fishing*—Quantity data are supplied by fishermen and prices are collected from fish wholesalers and agents.

(iv) *Mining and Quarrying*—Principal value data are supplied by mine operators in the annual mining census.

*Secondary Production*

*Factories*—Both quantity and value data are supplied by factories in the annual factory census. Further details will be found in Chapter 8, "Secondary Industry—Manufacturing".

**GROSS VALUE OF PRODUCTION****Rural Industries**

The Rural Industries are defined, for value of production purposes, to comprise: (i) agriculture; (ii) pastoral; (iii) dairying; (iv) poultry; (v) bee-farming. These industries have no relation, however, to any classification of individual rural holdings on an industry basis; a single holding would, in fact, usually produce several products, some attributable to one and some to another such industry, (e.g. wheat and oats which would be counted in agriculture, wool in pastoral and milk in dairying). The industries represent merely a convenient grouping of the aggregate production of individual products.

**Agriculture**

The following table shows quantity and value details for the agricultural industry. Also included in the table is the "unit gross value", (i.e. the average price per unit).

**Gross Value of Production—Agriculture, 1965-66**

Crop	Unit of Quantity	Production	Unit Gross Value	Gross Value
Cereals for Grain—			\$	\$'000
Barley .. .. .	bushels	683,827	1.315	899
Oats .. .. .	bushels	676,739	0.824	558
Wheat .. .. .	bushels	368,351	1.379	508
Total Cereals for Grain .. ..	..	..	..	(a) 1,965
Hay .. .. .	tons	257,237	15.516	3,991
Green Fodder .. .. .	..	..	..	963
Field Peas—				
Blue .. .. .	bushels	102,100	2.589	264
Grey and Other .. .. .	bushels	46,476	2.536	118
Total Field Peas .. .. .	..	..	..	382

## Gross Value of Production—Agriculture, 1965-66—continued

Crop	Unit of Quantity	Production	Unit Gross Value	Gross Value
Vegetables for Stock Fodder—			\$	\$'000
Horse Beans .. .. .	bushels	6,682	3.900	26
Turnips (Swede and White) .. ..	..	(b)	..	4,763
Other .. .. .	..	..	..	24
Total Vegetables for Stock Fodder	..	..	..	4,813
Grass Seed—				
Clover .. .. .	cwt	454	45.227	21
Other .. .. .	cwt	4,862	15.288	74
Total Grass Seed .. .. .	..	..	..	95
Industrial Crops—				
Hops (Dry weight) .. .. .	lb	3,069,000	0.710	2,178
Mustard .. .. .	lb	93,820	0.137	13
Total Industrial Crops .. .. .	..	..	..	2,191
Vegetables for Human Consumption—				
Beans—French and Runner .. ..	'000 lb	5,548	69.955	388
Peas—Green (Ex-shell) .. .. .	'000 lb	51,267	43.748	2,243
Potatoes .. .. .	tons	76,400	37.388	2,856
Turnips .. .. .	tons	3,463	76.411	265
Total Vegetables for Human Consumption .. .. .	..	..	..	(a) 6,747
Orchard Fruit—				
Apples .. .. .	bushels	8,364,000	1.906	15,944
Apricots .. .. .	bushels	26,000	2.825	73
Pears .. .. .	bushels	650,000	1.384	900
Total Orchard Fruit .. .. .	..	..	..	(a)(c) 17,874
Small Fruit—				
Currants .. .. .	lb	2,936,000	0.094	276
Loganberries .. .. .	lb	675,000	0.080	54
Raspberries .. .. .	lb	3,502,000	0.103	362
Total Small Fruit .. .. .	..	..	..	(a) 749
All Other Crops .. .. .	..	..	..	752
Total Crops .. .. .	..	..	..	40,523

(a) Includes other crops not specified in table.

(b) Not available.

(c) Government subsidy to compulsory hail insurance scheme excluded from Apples and Pears, but included in Total Orchard Fruit.

## Average Unit Gross Values

In the next table, average unit gross values for the principal crops are shown for a five-year period. The unit values have been calculated for the principal agricultural products, by dividing the total quantity produced into the total gross value of production for each unit. They therefore represent weighted average "prices" of the product in all markets (including the farm itself where quantities are retained for farm use).

Average Unit Gross Value of Principal Crops  
(\$)

Crop	Unit	1961-62	1962-63	1963-64	1964-65	1965-66
Cereals for Grain—						
Barley ..	bushels	1.450	1.392	1.433	1.391	1.315
Oats ..	bushels	0.975	0.758	0.758	0.918	0.824
Wheat ..	bushels	1.600	1.475	1.433	1.333	1.379
Hay ..	tons	16.408	14.158	16.000	12.774	15.516
Field Peas—						
Blue ..	bushels	3.000	2.500	3.042	3.187	2.589
Grey and Other	bushels	2.300	2.858	2.775	3.060	2.536
Vegetables for Stock Fodder—						
Horse Beans ..	bushels	2.500	3.000	2.942	4.010	3.900
Industrial Crops—						
Hops (dry weight) ..	lb	0.650	0.650	0.650	0.683	0.710
Vegetables for Human Consumption—						
Peas—Green (a)	'000 lb	56.442	54.242	52.121	46.767	43.748
Potatoes ..	tons	52.483	25.175	64.875	117.968	37.388
Turnips ..	tons	46.658	46.658	46.600	62.801	76.411
Orchard Fruit—						
Apples ..	bushels	1.992	2.142	2.040	2.157	1.906
Pears ..	bushels	1.783	2.492	2.258	2.636	1.384
Small Fruit—						
Currants ..	lb	0.117	0.112	0.119	0.102	0.094
Raspberries ..	lb	0.096	0.102	0.104	0.099	0.103

(a) Ex-shell.

The following table summarises the gross value of production of agriculture for a five-year period:

Gross Value of Production—Agriculture  
(\$'000)

Crop	1961-62	1962-63	1963-64	1964-65	1965-66
Cereals for Grain ..	2,012	2,123	1,927	1,703	1,965
Hay ..	4,683	4,432	3,987	4,654	3,991
Green Fodder ..	932	892	916	818	963
Field Peas ..	487	508	544	595	382
Vegetables for Stock Fodder ..	3,440	4,039	4,495	3,824	4,813
Grass Seed ..	129	270	178	481	95
Industrial Crops ..	1,863	1,879	1,038	1,440	2,191
Vegetables for Human Consumption ..	7,817	5,357	7,436	10,820	6,747
Orchard Fruit ..	16,876	14,716	19,042	15,199	17,874
Small Fruit ..	930	912	888	707	749
All Other Crops ..	501	422	497	633	752
Total All Crops ..	39,670	35,550	40,948	40,875	40,523

Three items in the previous table illustrate forcibly the duplication in values which can result from combining gross values of production for individual industries. The items are: (i) hay; (ii) green fodder; (iii) vegetables

for stock fodder, all being "raw materials" for the pastoral and dairying industries.

### Pastoral, Dairying, Poultry and Bee-farming

For value of production purposes, the pastoral industry is taken to comprise the three products—wool (including wool on skins), cattle (other than culled dairy cows and bobby calves) slaughtered, and sheep and lambs slaughtered. ("Bobby" calves are calves sold as soon as practicable after birth.) Dairying is taken to comprise the three products—milk, dairy cattle (culled cows and bobby calves) slaughtered, and pigs slaughtered. Poultry comprises eggs and poultry slaughtered, and bee-farming honey and bees-wax produced.

The prime source of data on livestock slaughtered is information supplied by slaughtering establishments, supplemented by farmers' annual census returns giving details of slaughtering on farms. As sufficiently detailed information is not available on the types of cattle slaughtered to enable a precise dissection of total slaughtering to be made between the pastoral and dairying industries, data on the known culling rate in dairy herds is also used for this purpose.

The table that follows gives details of the gross value of production for each of the products of these industries:

Gross Value of Production—Pastoral, Dairying, Poultry and Bee-farming  
(\$'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
<b>Pastoral—</b>					
Shorn Wool (including Crutchings) .. .. .	14,264	16,195	19,359	17,411	20,399
Other Wool (a) .. .. .	1,488	1,577	1,993	1,639	2,006
Sheep and Lambs Slaughtered (b) (c) .. .. .	3,589	4,089	4,662	5,640	6,382
Cattle Slaughtered (b) (d) .. .. .	3,969	5,674	6,831	8,542	8,563
<b>Total .. .. .</b>	<b>23,310</b>	<b>27,535</b>	<b>32,844</b>	<b>33,233</b>	<b>37,350</b>
<b>Dairying—</b>					
Milk .. .. .	15,252	17,008	18,367	19,416	19,100
Cattle Slaughtered (b) (d) .. .. .	1,606	1,192	1,418	1,662	1,854
Pigs Slaughtered (b) .. .. .	2,696	3,204	3,687	4,156	4,490
<b>Total .. .. .</b>	<b>19,553</b>	<b>21,404</b>	<b>23,472</b>	<b>25,234</b>	<b>25,445</b>
<b>Poultry—</b>					
Eggs .. .. .	3,686	3,704	3,765	4,210	4,414
Poultry Slaughtered .. .. .					
<b>Total .. .. .</b>	<b>3,686</b>	<b>3,704</b>	<b>3,765</b>	<b>4,210</b>	<b>4,414</b>
<b>Bee-farming—</b>					
Honey .. .. .	46	93	113	122	86
Beeswax .. .. .	3	3	3	9	7
<b>Total .. .. .</b>	<b>49</b>	<b>96</b>	<b>116</b>	<b>131</b>	<b>92</b>

(a) Dead, fellmongered and wool on skins exported.

(b) Includes adjustment for net exports of livestock.

(c) Excluding value of wool on skins.

(d) Culled dairy cows and bobby calves slaughtered are allocated to dairying; all other cattle slaughtered to pastoral.

An adjustment is made to the value of animals slaughtered to allow for the net export of livestock from the State. Otherwise, no allowance is made in the pastoral and dairying industries for the raising of livestock or their sale, except at the point of slaughter. In particular, in contrast with the practice in some other fields, (e.g. taxation), no allowance is made for changes in livestock inventories.

### Primary Industries

The following table brings together gross values of production for all primary industries for a five-year period:

Gross Value of Production—Primary Industries  
(\$ million)

Industry	1961-62	1962-63	1963-64	1964-65	1965-66
Agriculture .. .. .	39.7	35.6	40.9	40.9	40.5
Pastoral .. .. .	23.3	27.5	32.8	33.2	37.4
Dairying .. .. .	19.6	21.4	23.5	25.2	25.4
Poultry .. .. .	3.7	3.7	3.8	4.2	4.4
Bee-farming .. .. .	(a)	0.1	0.1	0.1	0.1
Total Rural .. .. .	86.3	88.3	101.1	103.7	107.8
Trapping .. .. .	0.4	0.5	0.5	0.4	0.4
Forestry .. .. .	11.7	13.1	13.7	15.3	16.0
Fishing .. .. .	2.3	2.3	2.2	2.7	3.3
Mining and Quarrying ..	18.9	20.8	23.4	28.5	32.8
Total Non-Rural .. ..	33.3	36.7	39.8	46.9	52.5
Total Primary .. .. .	119.5	125.0	140.9	150.6	160.3

(a) Less than \$50,000.

## NET VALUE OF PRODUCTION—ALL RECORDED INDUSTRIES

### Definition

In the preliminary section dealing with definitions, it was emphasised that *gross values of production* are unsuitable for making comparisons or for combining individual industries or groups of industries. In fact, it is impossible to make a comparison between gross value of production for primary industries and for factories, since gross value of production is not collected for factories; the primary-secondary comparison (or combination) can only be made on the basis of *net value of production* (primary industries) and *value of production* (factories).

### Net Value, 1965-66

The next table shows, in detail, the method whereby gross values (primary industries) are reduced to local values and then further reduced to net values; also, the reduction of value of output (factories) to value of production. It will be noted that the combination of primary and secondary industries is made only in respect of the final column, where the net value of production (primary) is added to the value of production (factories).

*Value of Production*

**Value of Production—All Recorded Industries, 1965-66**  
**(\$ million)**

Industry	Gross Production Valued at Principal Market	Less Marketing Costs	Local Value, (i.e. Gross Production Valued at Place of Production)	Less Cost of Materials, Fuel, etc. Used	Net Value of Production
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## PRIMARY

Rural—					
Agriculture ..	40.5	11.1	29.3	6.3	23.1
Pastoral .. ..	37.4	2.3	35.0	12.7	22.3
Dairying .. ..	25.4	1.2	24.3	6.2	18.0
Poultry .. ..	4.4	0.4	4.0	2.2	1.8
Bee-farming (a) ..	0.1	(b)	0.1	..	0.1
Total Rural ..	107.8	15.1	92.7	27.4	65.3
Non-Rural—					
Trapping (a) ..	0.4	(b)	0.3	..	0.3
Forestry (a) ..	16.0	2.2	13.8	..	13.8
Fishing (a) ..	3.3	0.6	2.7	..	2.7
Mining & Quarry- ing .. ..	32.8	3.8	29.0	8.7	20.3
Total Non-Rural	52.5	6.5	45.9	8.7	37.2
Total Primary ..	160.3	21.7	138.6	36.1	102.5

## SECONDARY

Industry	Value of Output	Less Cost of Materials, Fuel, etc. Used	Value of Production
Factories .. .. .	404.6	229.0	175.6

## ALL INDUSTRIES

Net Value of Production, Primary and Secondary Industries .. .. .	278.1
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*General Note:* Reference is made to value definitions in the introduction to this section.

(a) Gross and local values available, but production costs not available.

(b) Under \$50,000.

**Cost of Materials, Fuel, etc. Used**

In the previous table, *local value* has been reduced to *net value of production* (primary) and *value of output* to *value of production* (factories); in each case, the process involved deduction of certain costs. Full details of factory costs appear in Chapter 8, "Secondary Industry—Manufacturing"; the following table has been compiled to show details of those costs taken into account in primary industries.

Primary Industries—Recorded Costs, 1965-66  
(\$'000)

Cost Item	Agriculture	Pastoral	Dairying	Poultry	Mining and Quarrying	Total
RURAL						
Seed .. ..	1,854	647	277	..	..	2,779
Fertilizers .. ..	1,405	2,395	1,026	..	..	4,825
Spraying, Sheep-Dip	1,100	129	30	..	..	1,259
Stock Feed .. ..	114	8,752	4,127	2,089	..	15,082
Water for Irrigation	130	59	59	..	..	249
Power, Fuel & Light	1,671	747	708	110	..	3,236
Total Rural ..	6,274	12,730	6,227	2,199	..	27,430

NON-RURAL						
Total (a) ..	..	..	..	..	(a) 8,689	(a) 8,689

RURAL AND NON-RURAL (b)						
Total Primary	6,274	12,730	6,227	2,199	8,689	36,119

(a) Includes power, fuel and light (\$841,000) and cost of repairs, timber, explosives and other expendable stores used in mining and quarrying (\$7,848,000).

(b) Costs not available for bee-farming, trapping, forestry and fishing.

Net Value—Summary

The next table summarises, for a five-year period, the net value of production for all recorded industries.

Net Value of Production—All Recorded Industries  
(\$ million)

Industry	1961-62	1962-63	1963-64	1964-65	1965-66
Primary, Rural—					
Agriculture .. ..	25.9	22.3	25.7	27.2	23.1
Pastoral .. ..	11.7	15.1	19.6	21.0	22.3
Dairying .. ..	13.6	15.0	16.8	19.0	18.0
Poultry .. ..	1.1	1.2	1.3	1.6	1.8
Bee-farming (a) .. ..	(b)	0.1	0.1	0.1	0.1
Total Rural .. ..	52.3	53.7	63.4	69.0	65.3
Primary, Non-Rural—					
Trapping (a) .. ..	0.3	0.5	0.5	0.4	0.3
Forestry (a) .. ..	10.2	11.3	11.6	13.3	13.8
Fishing (a) .. ..	1.8	1.8	1.7	2.2	2.7
Mining and Quarrying ..	10.4	12.2	14.5	18.2	20.3
Total Non-Rural ..	22.7	25.8	28.3	34.0	37.2
Total Primary ..	75.0	79.5	91.7	103.1	102.5
Secondary—					
Factories .. ..	127.9	142.0	152.6	167.3	175.6
Total Industries ..	202.9	221.5	244.2	270.3	278.1

(a) Local value of production.

(b) Less than \$50,000.



The next table covers the decade ending in 1959-60 and shows the emerging dominance of secondary industry.

**Net Value of Production to 1959-60: Primary-Secondary Industry Comparison**

Year	Primary		Secondary		Total Net Value
	Net Value	Proportion of Total	Net Value	Proportion of Total	
	\$'000	per cent	\$'000	per cent	\$'000
1950-51 .. ..	66,947	57.6	49,229	42.4	116,176
1951-52 .. ..	69,418	53.8	59,588	46.2	129,006
1952-53 .. ..	69,099	53.1	60,997	46.9	130,096
1953-54 .. ..	65,427	49.7	66,129	50.3	131,556
1954-55 .. ..	74,213	49.3	76,228	50.7	150,441
1955-56 .. ..	87,417	48.8	91,862	51.2	179,280
1956-57 .. ..	79,181	44.9	97,365	55.1	176,546
1957-58 .. ..	77,078	42.6	103,660	57.4	180,739
1958-59 .. ..	70,216	39.3	108,602	60.7	178,818
1959-60 .. ..	75,808	38.6	120,392	61.4	196,201

### Tasmania and Australia Compared

Some indicator other than comparison with previous years is needed. Probably the most significant measure is the comparison between the net values of production for all recorded Tasmanian industries and those for Australia as a whole.

**Net Value of Production: Tasmania and Australia**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66 (a)
NET VALUE OF PRODUCTION—ALL RECORDED INDUSTRIES (\$ million)					
Tasmania .. ..	202.9	221.5	244.2	270.3	278.1
Australia .. ..	6,826.4	7,496.7	8,398.1	9,073.9	9,307.3

**TASMANIAN PROPORTION OF AUSTRALIAN TOTAL  
(per cent)**

Primary, Rural—					
Agriculture .. ..	3.5	2.7	2.8	2.8	2.7
Pastoral .. ..	1.2	1.4	1.5	1.7	1.9
Dairying .. ..	5.0	4.9	5.1	5.3	5.1
Poultry .. ..	2.2	2.3	2.0	3.1	2.9
Bee-farming (b) .. ..	1.4	3.0	2.1	2.9	2.4
Total Rural .. ..	2.6	2.4	2.4	2.6	2.7
Primary, Non-Rural—					
Trapping (b) .. ..	2.8	4.0	3.6	3.1	2.6
Forestry (b) .. ..	11.1	11.8	11.3	11.9	12.4
Fishing (b) .. ..	6.4	5.8	5.5	5.7	6.6
Mining and Quarrying .. ..	3.8	4.2	4.4	4.6	4.6
Total Non-Rural .. ..	5.5	6.0	6.0	6.0	6.1
Total All Primary .. ..	3.1	2.9	2.9	3.3	3.3
Secondary—					
Factories .. ..	2.9	2.9	2.9	2.8	2.8
Total Industries .. ..	3.0	3.0	2.9	3.0	3.0

(a) Australian figures are preliminary estimates.

(b) Local value of production.

## Chapter 8

### SECONDARY INDUSTRY—MANUFACTURING FACTORIES

#### Historical

The evolution of Tasmanian farming is described in continuous annual statistics from 1818 but the early records relating to factories are extremely meagre. While the early colonial statisticians had immediately put on record such fundamental measures as acreages, crop yields and livestock numbers, they were content, in the matter of factories, to merely classify and count the number of establishments. Some concept of early manufacturing activity can be derived from the following table which has been adapted from the *Statistical Returns of Van Diemen's Land, 1824 to 1839*:

Comparative Account of Manufactories and Trades in Van Diemen's Land

Description of Establishment	Number of Establishments		Description of Establishment	Number of Establishments	
	1824	1838		1824	1838
Agricultural Implement Makers .. ..	..	9	Mills, Steam .. ..	..	3
Breweries .. ..	3	19	Mills, Water and Wind ..	5	51
Candle Makers .. ..	..	4	Potteries .. ..	..	1
Cooperages .. ..	..	9	Printing Offices .. ..	1	8
Coachmakers .. ..	..	2	Ropemakers .. ..	1	1
Distilleries .. ..	1	4	Sailmakers .. ..	1	5
Dyers .. ..	..	2	Sawmills .. ..	1	2
Engineers .. ..	..	7	Shipwrights .. ..	..	5
Fellmongers .. ..	2	4	Snuff Makers .. ..	..	1
Foundries .. ..	..	3	Soap Makers .. ..	1	1
Furriers .. ..	..	2	Tanners .. ..	6	15
Mast and Block Makers ..	..	1	Wool Staplers .. ..	..	3

The grinding of wheat for flour gave rise to the first demand for power, the original solution being water mills and windmills followed by use of the steam engine (the first steam mill commenced in 1831). Later records refer to "mills, horse-driven", the beast being driven around an endless circle. The relation between early factory activity and the farming and whaling economy in which it grew is indicated by the fact that, in the table, five of the descriptions (fellmongers, etc.) refer to processing of animal products, four (shipwrights, etc.) to the construction and maintenance of ships and two (breweries, etc.) to the making of alcoholic beverages for which there were nearly as many licensed outlets as exist today.

The *Account of Manufactories and Trades*, on a simple establishment basis similar to the last table, was published annually right throughout the 19th century and is at least a guide to the introduction of new industries and new skills to the State.

The presentation of factory statistics, in the private sector, on a simple establishment basis failed to answer a number of questions such as the number of employees, the quantities produced, the value of output, the capital invested,

etc., and this lack of information persisted until 1882 when the Government Statistician began publishing quantity, value and employment data for jam factories and breweries; the coverage of industries was then gradually expanded until, by 1911, publication had commenced of annual factory statistics showing most of the basic information sought in current collections.

Some indication of the transformation of Tasmania from an essentially rural economy is given in the following table in which the proportion of the work force engaged in manufacturing activities is compared in the period commencing with 1911:

**Employment in Tasmanian Factories Compared with Total Work Force**

Particulars	1911	1933	1947	1954	1961	1966
Work Force (a)—						
Males ..	61,182	69,226	80,201	93,976	101,289	106,552
Females ..	13,343	16,861	20,117	24,232	29,628	40,763
Persons ..	74,525	86,087	100,318	118,208	130,917	147,315
Factory Employment (b)—						
Males ..	8,737	7,147	16,186	20,249	24,811	28,041
Females ..	1,561	2,086	3,751	4,340	5,347	6,274
Persons ..	10,298	9,233	19,937	24,589	30,158	34,315
Factory Employment as Percentage of Work Force—						
Males ..	14.3	10.3	20.2	21.5	24.5	26.3
Females ..	11.7	12.4	18.6	17.9	18.0	15.4
Persons ..	13.8	10.7	19.9	20.8	23.0	23.3

(a) Source: censuses of population in years shown; includes employers and self-employed.

(b) Average number of persons engaged, including working proprietors, as reported in the annual factory census for 1911 and those for financial years ending in 1933, 1947, 1954, 1961 and 1966.

### **Electric Power and Industrialisation**

In 1900, the Government Statistician published operational details of Tasmania's chief manufacturing industries; these read in part as follows (with specification of the number of "hands" employed): Sawmills, 920 hands; Jam Factories, 499; Boot Factories, 364; Brickyards and Potteries, 247; Woollen Mills, 177; Tanneries and Fellmongeries, 131; Flour Mills, 126; Breweries, 97; Butter Factories, 92; Fruit-drying, 76; Soap and Candle Factories, 57; Bark Mills, 33; Bacon Factories, 18. At this point in time, virtually all power was generated by steam engine on the factory site, the alternative sources such as "gas, oil and electricity" being very little used. A year later the establishment of the Commonwealth of Australia introduced free trade between the States and this deprived Tasmanian industries of the protection which they had previously enjoyed. The free importation of Australian manufactures, chiefly from Victoria, brought about a period of stagnation and inhibited the further development of manufacturing industry within the State; loss of population by migration to other parts of Australia in each decade up to World War II reflected the lack of employment opportunities which an expansion of manufacturing activity would have provided.

If no new factor had been introduced in the years after Federation, the probability is that Tasmania would have maintained a predominantly rural economy, diversified to a limited extent by sawmilling and mining. In these circumstances, employment opportunities would have been severely restricted

and the more industrialised continental States would have continued to rapidly drain off the island's population growth attributable to natural increase. The new factor that eventually transformed the State's economy was hydro-electric power but its possibilities could not be exploited without heavy capital expenditure and massive construction works, all of which required time. It is paradoxical, therefore, that the first major hydro-electric construction works were initiated in a period of stagnation immediately prior to World War I, and that the second major construction phase was pushed forward during the 1930s when the State's factory activity was at a very low ebb due to the general economic depression.

The key to the further industrialisation of Tasmania was its abundant supply of water at high level in the central plateau and the State's industrial revolution may be thought as beginning in 1916 when the Waddamana turbines below the Great Lake began operating; from the initial 10,000 horsepower then developed, the hydro-electric system has expanded to today's capacity of nearly 1.2 million horsepower. The availability of cheap electric power resulted in the establishment of new types of industry, some on a very large scale; examples are: electrolytic zinc production, 1917; carbide manufacture, 1918; cement manufacture, 1930; fine paper production, 1938; newsprint production, 1941; aluminium production, 1955; ferro-manganese production, 1962. The introduction of pulp and paper manufacture is a special case to the extent that changes in technology made possible the use of native hardwoods for the first time; the production of a suitable pulp from eucalypts was pioneered in Tasmania before plants were established in other Australian States.

Given that electrical power is cheap and usually abundant, the question arises as to why the industrialisation of the State has not progressed further. The two obvious impediments to the rapid introduction of new enterprises are the small size of the local market and the costs of transportation to the principal markets in the continental States. The weighing of these factors, (i.e. cheaper power against possibly higher transportation costs), has naturally had the effect of attracting industries requiring large quantities of power. Such undertakings are not necessarily large employers of labour so it is possible that industrialisation, measured by capital investment and electrical power consumption, may have progressed more rapidly than industrialisation measured by involvement of the work force in factory activities.

Without this advantage in electrical power, Tasmania would be largely restricted to an economy based on its own primary products—and even these, in many cases, would need to be processed in other Australian States. With it, Tasmania is not only capable of processing its own primary products but also of importing raw materials (e.g. the ores and concentrates used at Risdon and Bell Bay) for its own manufacturing industries.

## FACTORY STATISTICS

### Definitions in Factory Statistics

The statistics dealing with factories have been compiled from returns collected under the authority of the Commonwealth *Census and Statistics Act* and supplied annually by manufacturers. A return must be supplied for every factory, which is defined for this purpose as an establishment where four or more persons are employed or where power (other than manual) is used in any manufacturing process.

If a manufacturing business is conducted in conjunction with any other activity, particulars relating to the manufacturing section only are included

in the statistics. Where two or more industries are conducted in the same establishment, a separate return is obtained for each industry, if practicable.

Manufacturers are required to state in their returns particulars of the number, wages, etc. of their employees, the value of premises and equipment and of factory stocks, the horsepower of machinery, the value, and, in many cases, the quantities of raw materials and fuel used, and quantities and values of principal articles produced. The returns obtained from manufacturers are not intended to show a complete record of the income and expenditure of factories nor to show the profits or losses of factories collectively or individually.

#### *Employment Definitions*

The average number of persons employed is compiled on two different bases: the average during the period of operation, and the average over the whole year. Of these, the former is simply the aggregate of the average number of persons employed in each factory during its period of operation (whether the whole or only part of the year). This average is used only for details dealing with the classification according to the number of persons employed. The latter, which is used in all other instances, is calculated by reducing the average number working in the factories to the equivalent number working for a full year.

Working proprietors are included in all employment figures other than those dealing with monthly employment, but salaries and wages paid in all cases exclude drawings by working proprietors.

#### *Value Definitions*

*The value of factory output* is the value of goods manufactured or their value after passing through the particular process of manufacture, and *includes the amount received for repair work*, work done on commission and receipts for other factory work. The basis of the valuation of the output is the selling value of the goods at the factory, exclusive of all delivery costs and charges and excise duties, but inclusive of Government bounty and subsidy payments to the manufacturer of the finished article.

*The value of production* is the value added to raw materials by the process of manufacture. It is calculated by deducting from the value of factory output the value (at the factory) of those items of cost, other than wages and salaries, specified on the factory statistical collection form, namely materials used, containers and packing, power, fuel and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges); the remainder so derived constitutes the value added to raw materials in the process of manufacture, and represents the amount available for wages, taxation, rent, interest, insurance, etc. and profit.

*Avoidance of Duplication in Values:* Because of the duplication of materials used (which means that the finished product of one process of manufacture often forms raw material for another), an inaccurate impression would be obtained by using the value of factory output in inter-industry and in year-to-year comparisons. Woollen manufactures will illustrate the point. Greasy wool forms the raw material for the woolscouring industry, the product of which is scoured wool. This is afterwards combed into wool tops which are used in the spinning mills for the manufacture of yarn. In due course, the yarn is woven into cloth, the raw material for the clothing industry. If these processes are carried out separately in different factories, it is evident that the value of the wool would be counted at each of the five stages of manufacture, assuming value of output was used as the basis for comparisons.

The concept of *value added* (i.e. value of production) prevents this double counting and gives a truer picture of the relative economic importance of industries.

### Classification of Factories

In the compilation of statistical data dealing with factories in Australia, a standard classification of manufacturing industries, formulated at a Conference of Australian Statisticians in 1902 and periodically revised, was used until the year 1929-30. A new classification based on that used in Great Britain for census purposes was introduced in 1930-31, and this, revised and extended to a minor degree in regard to sub-classes of industry in accordance with decisions of the Statisticians' Conference, 1945, still obtains.

It should be noted that where a factory, engaged in the production of such goods as would entitle it to a classification in more than one sub-class of industry, is unable to give separate production costs, etc. for such activities, it is classified to its predominant activity. The concept of manufacturing is broadened in many fields to include repair work and some sub-classes of the basic classification which follows shortly are specifically reserved for repairing (e.g. IV-10 "Motor Vehicles—Repairs") while others include both construction and repair work (e.g. IV-7 "Construction and Repair, Tramcars and Railway Rolling Stock").

The list that follows shows *all* the classes and sub-classes in the current Commonwealth classification of factories. Each sub-class is followed by the number of Tasmanian factories classified to that sub-class for the year shown. It will be noted that many sub-classes contain a nil entry, indicating that no factory of this type exists in Tasmania, or alternatively, that no factory entitled to classification in more than one sub-class engages predominantly in the described activity. Despite this, the complete list has been given because the fact that particular types of industry do not exist in Tasmania may be just as significant as the fact that other types do exist.

#### Classification of Factories Showing Number in Each Class and Sub-Class of Industry 1965-66

Class and Sub-Class	Number of Factories
<i>Class I. Treatment of Non-Metalliferous Mine and Quarry Products</i>	
1. Coke Works .. .. .	..
2. Briquetting and Pulverised Coal .. .. .	..
3. Carbide .. .. .	1
4. Lime, Plaster of Paris, Asphalt .. .. .	8
5. Fibrous Plaster and Products .. .. .	12
6. Marble, Slate, etc... .. .	3
7. Cement, Portland .. .. .	1
8. Asbestos Cement Sheets and Mouldings .. .. .	1
9. Other Cement Goods .. .. .	32
10. Other .. .. .	..
Class Total I .. .. .	58
<i>Class II. Bricks, Pottery, Glass, etc.</i>	
1. Bricks and Tiles .. .. .	11
2. Earthenware, China, Porcelain, Terra Cotta .. .. .	3
3. Glass (other than Bottles) .. .. .	8
4. Glass Bottles .. .. .	1
5. Other .. .. .	..
Class Total II .. .. .	23

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,  
1965-66—continued**

Class and Sub-Class	Number of Fac- tories
<i>Class III. Chemicals, Dyes, Explosives, Paints, Oils, Grease</i>	
1. Industrial and Heavy Chemicals and Acids .. .. .	6
2. Pharmaceutical and Toilet Preparations .. .. .	..
3. Explosives (including Fireworks) .. .. .	..
4. Whitelead, Paints, Varnishes .. .. .	2
5. Oils, Vegetable .. .. .	..
6. Oils, Mineral .. .. .	2
7. Oils, Animal .. .. .	..
8. Boiling Down, Tallow Refining .. .. .	11
9. Soap and Candles .. .. .	2
10. Chemical Fertilisers .. .. .	7
11. Inks, Polishes, etc. .. .. .	..
12. Matches .. .. .	..
13. Other .. .. .	..
Class Total III .. .. .	30
<i>Class IV. Industrial Metals, Machines, Conveyances</i>	
1. Smelting, Converting, Refining, Rolling of Iron and Steel ..	..
2. Foundries (Ferrous) .. .. .	3
3. Plant, Equipment and Machinery, incl. Machine Tools ..	43
4. Other Engineering .. .. .	85
5. Extracting and Refining of Other Metals; Alloys .. .. .	4
6. Electrical Machinery, Cables and Apparatus .. .. .	25
Construction and Repair of Vehicles—	
Tramcars and Railway Rolling Stock—	
7. Government and Municipal .. .. .	4
8. Other .. .. .	1
Motor Vehicles—	
9. Construction and Assembly .. .. .	1
10. Repairs .. .. .	357
11. Motor Bodies .. .. .	57
12. Horse Drawn Vehicles .. .. .	..
13. Motor Accessories .. .. .	4
14. Aircraft .. .. .	2
15. Cycles, Foot and Hand Driven, and Accessories .. .. .	3
16. Other Conveyances .. .. .	..
Ship and Boat Building and Repairing, Marine Engineering—	
17. Government .. .. .	..
18. Other .. .. .	10
19. Cutlery and Small Hand Tools .. .. .	1
20. Agricultural Machines and Implements .. .. .	9
Non-ferrous Metals—	
21. Rolling and Extrusion .. .. .	..
22. Founding, Casting, etc. .. .. .	8
24. Sheet Metal Working, Pressing and Stamping .. .. .	33
25. Pipes, Tubes and Fittings—Ferrous .. .. .	..
26. Wire and Wire Working (incl. Nails) .. .. .	9
27. Stoves, Ovens and Ranges .. .. .	1
28. Gas Fittings and Meters .. .. .	..
29. Lead Mills .. .. .	..
30. Sewing Machines .. .. .	1
31. Arms, Ammunition (excl. Explosives) .. .. .	..
32. Wireless and Amplifying Apparatus .. .. .	13
33. Other Metal Works .. .. .	2
Class Total IV .. .. .	676
<i>Class V. Precious Metals, Jewellery, Plate</i>	
1. Jewellery .. .. .	..
2. Watches and Clocks (incl. Repairs) .. .. .	15
3. Electroplating (Gold, Silver, Chromium, etc.) .. .. .	4
Class Total V .. .. .	19

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,  
1965-66—continued**

Class and Sub-Class	Number of Fac- tories
<i>Class VI. Textiles and Textile Goods (not Clothing except Knitted)</i>	
1. Cotton Ginning .. .. .	..
2. Cotton Spinning and Weaving .. .. .	1
3. Wool: Carding, Spinning, Weaving .. .. .	5
4. Hosiery and Other Knitted Goods .. .. .	4
5. Silk, Natural .. .. .	..
6. Rayon, Nylon and Other Synthetic Fibres .. .. .	3
7. Flax Mills .. .. .	..
8. Rope and Cordage .. .. .	..
9. Canvas Goods, Tents, Tarpaulins, etc. .. .. .	7
10. Bags and Sacks .. .. .	..
11. Textile Dyeing, Printing and Finishing .. .. .	1
12. Other .. .. .	2
Class Total VI .. .. .	23
<i>Class VII. Skins and Leather (not Clothing or Footwear)</i>	
Furs, Skins, Leather—	
1. Furriers and Fur Dressing .. .. .	..
2. Woolscouring and Fellmongery .. .. .	1
3. Tanning, Currying and Leather Dressing .. .. .	1
Saddlery, Harness, Bags, Trunks and Other Goods of Leather and Leather Substitutes—	
4. Saddlery, Harness and Whips .. .. .	2
5. Machine Belting (Leather or Other) .. .. .	..
6. Bags, Trunks and Other Goods of Leather and Leather Substitutes .. .. .	1
Class Total VII .. .. .	5
<i>Class VIII. Clothing (except Knitted)</i>	
1. Tailoring and Ready-made Clothing .. .. .	14
2. Waterproof and Oilskin Clothing .. .. .	..
3. Dressmaking, Hemstitching .. .. .	1
4. Millinery .. .. .	..
5. Shirts, Collars, Underclothing .. .. .	..
6. Foundation Garments .. .. .	..
7. Handkerchiefs, Ties, Scarves .. .. .	1
8. Hats and Caps .. .. .	..
9. Gloves .. .. .	..
10. Boots and Shoes (not Rubber) .. .. .	2
11. Boot and Shoe Repairing .. .. .	33
12. Boot and Shoe Accessories .. .. .	..
13. Umbrellas and Walking Sticks .. .. .	..
14. Dyeworks and Cleaning (incl. Renovating and Repairing) .. .. .	31
15. Other .. .. .	1
Class Total VIII .. .. .	83
<i>Class IX. Food, Drink and Tobacco</i>	
1. Flour Milling .. .. .	5
2. Cereal Foods and Starch .. .. .	2
3. Animal and Bird Foods .. .. .	7
4. Chaffcutting and Corncrushing .. .. .	..
5. Bakeries (incl. Cakes and Pastry) .. .. .	139
6. Biscuits .. .. .	1
7. Sugar Mills .. .. .	..
8. Sugar Refining .. .. .	..
9. Confectionery (incl. Chocolate and Icing Sugar) .. .. .	4
10. Jam, Fruit and Vegetable Canning .. .. .	17
11. Pickles, Sauces, Vinegar .. .. .	..
12. Bacon Curing .. .. .	12
13. Butter Factories .. .. .	12
14. Cheese Factories .. .. .	7



**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,  
1965-66—continued**

Class and Sub-Class	Number of Fac- tories
<i>Class IX. Food, Drink and Tobacco—continued</i>	
15. Condensed and Dried Milk Factories .. .. .	4
16. Margarine .. .. .	1
17. Meat and Fish Preserving .. .. .	16
18. Condiments, Coffee, Spices .. .. .	3
19. Ice and Refrigerating .. .. .	29
20. Salt .. .. .	..
21. Aerated Waters, Cordials, etc. .. .. .	13
22. Breweries .. .. .	2
23. Distilleries .. .. .	..
24. Winemaking .. .. .	..
25. Cider and Perry .. .. .	1
26. Malting .. .. .	1
27. Bottling .. .. .	..
28. Tobacco, Cigars, Cigarettes, Snuff .. .. .	..
29. Dehydrated Fruit and Vegetables .. .. .	3
30. Ice Cream .. .. .	2
31. Sausage Skins .. .. .	2
33. Other .. .. .	1
Class Total IX .. .. .	284
<i>Class X. Sawmills, Joinery Works, Boxes and Cases, Woodturning and Woodcarving</i>	
1. Sawmills .. .. .	289
2. Plywood Mills (incl. Veneers) .. .. .	2
3. Bark Mills .. .. .	1
4. Joinery .. .. .	109
5. Cooperage .. .. .	3
6. Boxes and Cases .. .. .	10
7. Woodturning, Woodcarving, etc. .. .. .	4
8. Basketware and Wickerware, (incl. Seagrass and Bamboo Furniture) .. .. .	2
9. Perambulators (incl. Pushers and Strollers) .. .. .	..
10. Wall and Ceiling Boards (not Plaster or Cement) .. .. .	2
11. Other .. .. .	3
Class Total X .. .. .	425
<i>Class XI. Furniture of Wood, Bedding, etc.</i>	
1. Cabinet and Furniture Making (incl. Billiard Tables and Upholstery) .. .. .	49
2. Bedding and Mattresses (not Wire) .. .. .	8
3. Furnishing Drapery .. .. .	..
4. Picture Frames .. .. .	..
5. Blinds .. .. .	5
Class Total XI .. .. .	62
<i>Class XII. Paper, Stationery, Printing, Bookbinding, etc.</i>	
1. Newspapers and Periodicals .. .. .	5
2. Printing, Government .. .. .	2
3. Printing, General, incl. Bookbinding .. .. .	30
4. Manufactured Stationery .. .. .	..
5. Stereotyping, Electrotyping .. .. .	..
6. Process and Photo Engraving .. .. .	..
7. Cardboard Boxes, Cartons and Containers .. .. .	2
8. Paper Bags .. .. .	3
9. Paper Making .. .. .	4
10. Pencils, Penholders, Chalks, Crayons .. .. .	..
11. Other .. .. .	2
Class Total XII .. .. .	48

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,  
1965-66—continued**

Class and Sub-Class	Number of Fac- tories
<i>Class XIII. Rubber</i>	
1. Rubber Goods (incl. Tyres Made) .. .. .	..
2. Tyre Retreading and Repairing .. .. .	20
Class Total XIII .. .. .	20
<i>Class XIV. Musical Instruments</i>	
1. Gramophones and Gramophone Records .. .. .	..
2. Pianos, Piano Players, Organs .. .. .	..
3. Other .. .. .	..
Class Total XIV .. .. .	..
<i>Class XV. Miscellaneous Products</i>	
1. Linoleum, Leathercloth, Oilcloth, etc. .. .. .	..
2. Bone, Horn, Ivory and Shell .. .. .	..
3. Plastic Moulding and Products .. .. .	2
4. Brooms and Brushes .. .. .	3
5. Optical Instruments and Appliances .. .. .	4
6. Surgical and Other Scientific Instruments and Appliances .. .. .	2
7. Photographic Material (incl. Developing and Printing) .. .. .	1
8. Toys, Games and Sports Requisites .. .. .	2
9. Artificial Flowers .. .. .	..
10. Other .. .. .	6
Class Total XV .. .. .	20
<i>Class XVI. Heat, Light and Power</i>	
Electric Light and Power—	
1. Government .. .. .	11
2. Local Authority .. .. .	..
3. Companies .. .. .	3
Gasworks—	
4. Government .. .. .	..
5. Local Authority .. .. .	..
6. Companies .. .. .	2
Class Total XVI .. .. .	16
Grand Total—All Classes .. .. .	1,792

### Summary of Factory Statistics

In the tables that follow, factory statistics, where appropriate, are presented generally in terms of the class of industry but not of sub-class. (Details for individual sub-classes appear in the bulletin *Secondary Industries*, a publication of the Tasmanian Office of the Bureau of Census and Statistics.)

The next table has been compiled to show factory development over a long period as measured by number of factories, employment, value of production, etc. In making comparisons over so long a period, account should be taken of changes in the purchasing power of money.

## Development of Factories from 1911—Selected Years

Year	Number of Factories	Average Number of Persons Engaged (a)	Salaries and Wages Paid (b)	Value of—			
				Materials Used, Fuel, etc. (c)	Production (d)	Output	Land, Buildings, Plant and Machinery
	No.	No.	\$ m	\$ m	\$ m	\$ m	\$ m
1911 ..	609	10,298	1.7	4.2	2.9	7.1	4.5
1920 ..	616	10,225	3.0	8.8	5.5	14.3	5.8
1929-30	845	10,820	4.1	10.0	7.1	17.1	19.9
1934-35	926	10,555	3.2	8.1	6.3	14.4	17.5
1939-40	980	14,670	5.4	13.5	12.5	26.0	21.1
1944-45	1,006	19,511	10.0	24.9	17.8	42.7	26.9
1949-50	1,456	23,506	19.3	51.5	38.7	90.2	44.8
1954-55	1,597	25,452	37.7	101.0	76.2	177.2	118.9
1959-60	1,683	29,662	57.6	147.7	120.4	268.1	251.3
1960-61	1,766	30,158	60.7	151.0	124.9	275.9	259.7
1961-62	1,760	30,070	61.4	155.7	127.9	283.6	280.7
1962-63	1,764	30,755	64.8	170.5	142.0	312.5	301.9
1963-64	1,746	31,833	70.6	188.5	152.6	341.1	310.1
1964-65	1,805	32,580	76.5	214.2	167.3	381.5	364.3
1965-66	1,792	34,315	83.0	229.0	175.6	404.6	370.6

(a) Average for whole year after 1927-28; earlier averages relate to the period of operation. Includes working proprietors.

(b) Excludes drawings of working proprietors.

(c) Includes materials used plus cost of power, fuel, light, water and lubricating oils, containers, packing, etc., tools replaced and repairs to plant but excludes depreciation allowance and sundry overhead charges (e.g. rates, land tax, etc.) not specified on the factory form.

(d) Value of output less cost of materials used, fuel, etc. as defined in note (c).

Earlier, reference was made to the role played by hydro-electric power in the development of Tasmania's manufacturing industries. The next table has been compiled to show the sources of power employed to drive machinery in factories, and also the power available in the central electric stations; these series cannot be taken back to 1911 but the start-point, 1938-39, is early enough to illustrate the rapid growth in the application of industrial power.

## Engines and Motors Employed in Factories; Generators in Central Electric Stations ('000 Horsepower)

Year	Factories—Rated Horsepower of Engines Ordinarily in Use (a)				Generators in Central Electric Stations (b)		
	Steam	Internal Combustion	Electric (c)	Total (d)	Total Installed Capacity	Effective Capacity	Maximum Load
1938-39	4.0	2.5	55.9	62.5	158.9	126.0	117.0
1949-50	4.6	8.7	131.5	145.0	256.0	267.7	262.5
1959-60	1.2	11.7	251.9	265.1	778.8	771.0	587.1
1961-62	1.0	10.9	269.6	281.7	851.4	846.4	648.6
1962-63	1.0	11.5	290.2	302.7	884.9	879.9	778.3
1963-64	0.6	11.7	302.3	314.6	1,078.0	1,073.0	800.5
1964-65	0.5	13.1	308.5	322.2	1,149.6	1,144.6	828.9
1965-66	0.7	10.2	319.2	330.0	1,150.9	1,145.7	880.7

(a) Excluding central electric stations.

(b) The kilowatt measures for the stations have been changed to horsepower equivalents.

(c) Excludes motors driven by electricity of plant's own generation.

(d) Includes, until 1961-62, small amounts of water power driving factory machinery directly.

The effective capacity of the central electric stations is obviously more than adequate to meet the power needs of machines in factories but there is additional demand for power for metallurgical refining (e.g. electric furnaces and electrolytic processes), for traction and for commercial, farming and domestic purposes. In 1965-66, machines in Tasmanian factories were driven by engines and electric motors with a total rating of 330,000 horsepower of which 97 per cent was available from electric motors.

### Factories in Tasmania and Other Australian States

A comparison of Tasmanian factory activity with that in other States is shown in the following table. To compare the relative intensity of factory activity in the Australian States, account needs to be taken of their widely different populations and the first column in the table—"Population Relativity"—calls attention to this fact.

Australian States—Factories, 1965-66

State	Population Relativity (a)	Factories	Employment (Average Whole Year including Working Proprietors)	Salaries and Wages Paid (b)	Value of—			
					Materials Used, Fuel, etc. (c)	Production (d)	Output	Land, Buildings, Plant and Machinery
		No.	No.	\$m	\$m	\$m	\$m	\$m
N.S.W. . .	11.4	24,531	519,364	1,303.7	3,491.0	2,693.3	6,184.3	3,331.3
Victoria . .	8.6	17,980	439,149	1,077.2	2,597.3	2,027.7	4,624.9	2,385.9
Queensland	4.5	6,010	117,581	268.0	968.2	543.0	1,511.2	751.1
S.A. . .	2.9	6,065	118,343	283.0	743.1	527.5	1,270.5	700.0
W.A. . .	2.2	4,906	60,282	134.2	389.9	288.8	678.8	348.2
Tasmania	1.0	1,792	34,315	83.0	229.0	175.6	404.6	370.6
Total (e)	30.6	61,284	1,289,034	3,149.1	8,418.5	6,255.9	14,674.3	7,887.1

(a) Tasmania's total mean population for 1965-66 is expressed as 1.0; other State populations in proportion to 1.0.

(b) Excludes drawings of working proprietors.

(c) Includes materials used plus cost of power, fuel, light, water and lubricating oils, containers, packing, etc., tools replaced and repairs to plant but excludes depreciation allowance and sundry overhead charges not specified on the factory form.

(d) Value of output less cost of materials used, fuel, etc., as defined in note (c).

(e) Excludes A.C.T. and N.T.

Applying the appropriate population relativity factors to Tasmanian factory figures, it will be seen that, on most indicators, Tasmania is relatively more industrialised than W.A. and Queensland, that its pro-rata value of production approaches that of S.A. and that its pro-rata value of land, buildings, plant and machinery exceeds that of any other State. In regard to the last comparison (land, buildings, plant, etc.), account should be taken of the fact that central electric stations are treated as factories for the purpose of these statistics and, in the case of Tasmania, over 46 per cent of the value of land, buildings, plant and machinery is derived from a single factory class, namely "XVI—Heat, Light and Power". Since the other States rely for power largely on thermal generation not generally involving such heavy capital outlays as hydro-electric construction, the results are not unexpected.

### Value of Production Comparison

The comparison of manufacturing in Tasmania with that for Australia as a whole produces some interesting results. Taking Tasmania's "norm" as

3.2 per cent (based on population relativity), it can be established that the island's principal contribution to Australian totals is in X, the sawmilling group, XII, the papermaking group, XVI, the power group and VI, the textiles group. In all other classes, its performance either equals or falls below the norm.

The value of production for Tasmanian secondary industries is compared with the Australian value of production over a five year period in the following table:

Factories, Value of Production: Tasmania and Australia Compared

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
TOTAL VALUE OF PRODUCTION (\$m)					
Tasmania .. .. .	127.9	142.0	152.6	167.3	175.6
Australia .. .. .	4,394.6	4,975.2	5,270.0	5,897.0	6,280.4
TASMANIAN COMPONENT AS PROPORTION OF AUSTRALIAN TOTAL (PER CENT)					
Class— I. Treatment of Non-Metalliferous Mine and Quarry Products ..	2.9	3.5	3.2	2.9	3.1
II. Bricks, Pottery, Glass, etc. ..	1.5	1.4	1.3	1.2	1.2
III. Chemicals, Dyes, etc. ..	1.6	1.3	1.6	1.6	1.5
IV. Industrial Metals, Machines, etc.	2.2	2.4	2.3	2.2	2.2
V. Precious Metals, Jewellery, Plate	0.6	0.7	0.7	0.6	0.6
VI. Textiles and Textile Goods (not Dress) .. .. .	4.4	4.3	4.2	4.8	4.4
VII. Skins and Leather (not Clothing or Footwear) .. .. .	0.6	0.5	0.4	0.4	0.4
VIII. Clothing (except Knitted) ..	0.7	0.7	0.6	0.7	0.7
IX. Food, Drink and Tobacco ..	3.4	3.3	3.2	3.1	3.0
X. Sawmills, Joinery, Boxes, etc.	6.3	6.4	6.6	6.8	7.2
XI. Furniture, Bedding, etc. ..	1.7	1.8	1.9	1.9	1.8
XII. Paper, Stationery, Printing, Binding, etc. .. .. .	6.6	6.9	6.8	6.2	6.1
XIII. Rubber .. .. .	0.8	0.7	0.7	0.7	0.7
XIV. Musical Instruments, etc. ..	0.0	0.0	0.0	0.0	0.0
XV. Miscellaneous Products ..	0.3	0.3	0.2	0.3	0.3
Total Classes I to XV..	2.8	2.8	2.8	2.7	2.6
XVI. Heat, Light and Power ..	5.7	5.8	5.8	6.1	5.9
Total All Classes ..	2.9	2.9	2.9	2.8	2.8

A similar table is presented at the end of Chapter 7, "Primary Industry—Non Rural"; this details all recorded primary industries, as well as the manufacturing industry in total, to give an all-industry Tasmanian-Australian comparison for the same period.

### Size Classification of Factories

The size classification of factories is based on the average number of persons employed during the period of operation and *includes working proprietors*. The following table has been compiled to show size changes in the structure of Tasmanian industry since 1928-29:

## Number of Factories and Persons Employed by Size of Factory

Year		Size of Factory (i.e. Average Number of Persons Employed)							
		Under 4	4	5 to 10	11 to 20	21 to 50	51 to 100	101 and over	Total
NUMBER OF FACTORIES									
1928-29	..	187	96	305	112	49	22	14	785
1938-39	..	256	114	362	110	71	17	14	944
1948-49	..	478	142	390	162	106	43	25	1,346
1958-59	..	736	151	400	174	126	46	33	1,666
1965-66	..	753	137	434	229	145	52	42	1,792
PERSONS EMPLOYED (a)									
1928-29	..	430	384	2,091	1,632	1,558	1,492	3,984	11,571
1938-39	..	582	456	2,422	1,569	2,252	1,155	6,231	14,667
1948-49	..	1,062	568	2,633	2,344	3,308	3,033	10,549	23,497
1958-59	..	1,447	604	2,755	2,589	3,869	3,298	14,278	28,840
1965-66	..	1,447	548	3,003	3,341	4,629	3,854	17,765	34,587

(a) The average number of persons employed as shown in the above table (34,587 in 1965-66) differs from the average number of persons employed shown in all other tables (34,315 in 1965-66) because the average number of persons employed over the period of operation used for size classification exceeds average employment over the whole year.

The change in the size structure of Tasmanian factories since 1928-29 is summarised in the next table:

Change in Average Number of Persons Employed  
According to Size of Factory, 1928-29 to 1965-66

Particulars	Size of Factory (i.e. Average Number of Persons Employed)							Persons
	Under 4	4	5 to 10	11 to 20	21 to 50	51 to 100	101 and over	
Increase in Number Employed—								
Persons ..	1,017	164	912	1,709	3,071	2,362	13,781	23,016
As Percent of Total Increase..	+4.4	+0.7	+4.0	+7.4	+13.3	+10.3	+59.9	100.0

As indicated in the previous table, the main characteristic of the period under review has been the marked increase in employment in the largest establishments employing 101 hands and over.

The apparent disproportionate increase in the number of factories employing less than four hands can be misleading. The increase is thought to be due largely to definitional factors; establishments with less than four hands are excluded if using only manual power but included if using other types of power. Thus, over the years, the greater use of fractional horsepower electric motors would have progressively qualified more and more small establishments as "statistical factories". (A two-man bakery mixing by hand is excluded; using a powered mixer, it is included.)

The next table has been compiled to indicate in which classes of industry the largest establishments occur:

**Factories—Classification According to Number  
of Persons Employed in Each Industry Class, 1965-66**

Class of Industry	Number of Factories Employing on the Average—				
	20 or under	21 to 50	51 to 100	101 and over	Total
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	51	5	..	2	58
II. Bricks, Pottery, Glass, etc. .. ..	15	7	1	..	23
III. Chemicals, Dyes, etc. .. ..	27	1	..	2	30
IV. Industrial Metals, Machines, etc. ..	588	53	25	10	676
V. Precious Metals, Jewellery, Plate ..	19	..	..	..	19
VI. Textiles and Textile Goods (not Dress) .. ..	13	1	1	8	23
VII. Skins and Leather (not Clothing or Footwear) .. ..	4	1	..	..	5
VIII. Clothing (except Knitted) .. ..	77	3	3	..	83
IX. Food, Drink and Tobacco .. ..	240	30	7	7	284
X. Sawmills, Joinery, Boxes, etc. .. ..	385	28	7	5	425
XI. Furniture, Bedding, etc. .. ..	56	6	..	..	62
XII. Paper, Stationery, Printing, Binding, etc. .. ..	31	4	6	7	48
XIII. Rubber .. ..	19	1	..	..	20
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	19	1	..	..	20
Total Classes I to XV .. ..	1,544	141	50	41	1,776
XVI. Heat, Light and Power .. ..	9	4	2	1	16
Total All Classes .. ..	1,553	145	52	42	1,792

It will be seen that the largest establishments (101 hands and over) occur, with descending order of frequency in IV, industrial metals, etc.; VI, the textile group; IX, foodprocessing, etc.; XII, paper making, etc.; and X, sawmilling, etc. As a later table will indicate, 88 per cent of all factory employment is concentrated in these five classes.

### Factories in Statistical Divisions

A general indication of the geographical distribution of factories is given in the following table, the analysis dealing with factory Classes I to XV inclusive. In Tasmania, factory Class XVI, "Heat, Light and Power", constitutes something of a problem in any geographical distribution because the chief component of the class is the power houses, or "central electric stations" generating electricity for the State Hydro-Electric Commission. To take a specific case, it is theoretically possible for the basic water storage to be in one statistical division, the generating stations in a second division and the point of delivery, through transmission lines, in seven other divisions. Since the output of energy from the stations is integrated into a State-wide grid, the allocation of value of output, value of production, etc. to various statistical divisions would merely confuse the issue; accordingly, Class XVI, "Heat, Light and Power", is not dissected according to area and is completely excluded from the table.

**Factories: Principal Items by Statistical Divisions and Selected Areas, 1965-66 (a)**  
**Classes I-XV Only**

Particulars	Factories (No.)	Employment (No.)	Salaries and Wages Paid (\$'000)	Value (\$'000) of—			
				Materials Used, Fuel, etc.	Produc- tion	Output	Land, Buildings, Plant and Machinery
STATISTICAL DIVISIONS							
South Central ..	473	11,745	29,488	75,214	53,846	129,060	53,081
North Central ..	305	7,283	14,868	30,677	26,366	57,043	22,581
North Western ..	433	8,675	22,015	64,776	44,608	109,385	55,056
North Eastern ..	148	1,970	5,370	25,207	13,879	39,086	41,220
North Midland ..	85	1,062	2,244	7,386	4,236	11,622	5,224
Midland ..	59	301	644	2,442	1,347	3,790	594
South Eastern ..	69	328	619	1,685	993	2,678	2,370
Southern ..	175	1,915	4,540	11,949	9,827	21,777	16,287
Western ..	29	619	1,867	8,794	5,471	14,265	993
Total Classes I-XV ..	1,776	33,898	81,655	228,131	160,574	388,705	197,406
SELECTED AREAS							
Hobart and Suburbs ..	503	11,873	29,727	75,942	54,213	130,155	53,749
Launceston and Suburbs ..	352	8,158	16,784	37,101	29,937	67,038	27,490
Remainder of State ..	921	13,867	35,145	115,088	76,424	191,512	116,167
Total Classes I-XV ..	1,776	33,898	81,655	228,131	160,574	388,705	197,406

(a) Definitions of employment, salaries and wages, materials used, fuel, etc., and value of production have been given in initial summary tables.

As indicated in the previous table, the chief centre of factory activity, measured in terms of value of production, was the South Central Division (Cities of Hobart and Glenorchy); its contribution to total added value was 34 per cent. Major establishments in the Division engaged in zinc and chemical fertiliser production, confectionery making, fruit processing and various types of metalworking and engineering.

Contributing 28 per cent to the total value of production was the NW. Division, with major industries including paper manufacture, cement production, plywood and building-board making, fruit and vegetable canning and preserving, and some textile making. The North Central Division (City of Launceston) contributed 16 per cent and is the acknowledged textile "capital" of the State. Next came the NE. Division with nine per cent, major establishments engaging in aluminium and ferro-manganese production, and food preserving. With major industries devoted to newsprint production and carbide manufacture, the Southern Division contributed six per cent. The principal industry in the Western Division is the smelting of copper, this Division contributing three per cent.

The previous table shows that Tasmanian factories are not concentrated in the metropolitan area to the extent found in most of the continental States and that a considerable degree of de-centralisation of industry has been achieved.



## Factories Classified According to Class of Industry

The following table contains a summary of the principal statistics for factories by class of industry in Tasmania:

## Principal Items by Class of Industry, 1965-66

Class of Industry	Factories (No.)	Employment (No.)	Salaries and Wages Paid (\$ m)	Value (\$ m) of—			
				Materials Used, Fuel, etc.	Production	Output	Land, Buildings, Plant and Machinery
I. Treatment of Non-Metalliferous Mine and Quarry Products .. .. .	58	824	2.17	6.47	5.21	11.68	5.68
II. Bricks, Pottery, Glass, etc. .. .. .	23	369	0.91	0.89	1.69	2.58	2.02
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease .. .. .	30	1,021	3.25	9.73	8.15	17.88	11.27
IV. Industrial Metals, Machines, Conveyances .. .. .	676	11,463	29.88	76.73	58.17	134.91	71.91
V. Precious Metals, Jewellery, Plate .. .. .	19	46	0.07	0.04	0.14	0.19	0.17
VI. Textiles and Textile Goods (Not Dress) .. .. .	23	3,933	7.54	19.89	12.46	32.35	12.77
VII. Skins and Leather (not Clothing or Footwear) .. .. .	5	48	0.11	0.72	0.17	0.89	0.10
VIII. Clothing (except Knitted) .. .. .	83	746	1.12	1.17	2.13	3.30	2.43
IX. Food, Drink and Tobacco .. .. .	284	5,358	11.65	56.66	24.42	81.07	35.50
X. Sawmills, Joinery, Boxes, etc., Wood Turning and Carving .. .. .	425	4,200	9.36	22.89	17.32	40.21	13.46
XI. Furniture of Wood, Bedding, etc. .. .. .	62	536	0.95	2.05	1.66	3.71	1.37
XII. Paper, Stationery, Printing, Bookbinding, etc. .. .. .	48	5,059	14.05	29.83	28.03	57.86	38.95
XIII. Rubber .. .. .	20	144	0.31	0.70	0.60	1.30	1.02
XIV. Musical Instruments .. .. .	..	..	..	..	..	..	..
XV. Miscellaneous Products .. .. .	20	151	0.27	0.36	0.41	0.77	0.77
Total Classes I to XV .. .. .	1,776	33,898	81.66	228.13	160.57	388.71	197.41
XVI. Heat, Light and Power .. .. .	16	417	1.31	0.84	15.03	15.88	173.19
Total All Classes .. .. .	1,792	34,315	82.96	228.97	175.61	404.58	370.60

The next table shows the change in the number of factories in Tasmania during recent years:

## Number of Factories in Each Class of Industry

Class of Industry	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
I. Treatment of Non-Metalliferous Mine and Quarry Products .. .. .	53	48	51	58	59	58
II. Bricks, Pottery, Glass, etc. .. .. .	17	18	19	19	23	23
III. Chemicals, Dyes, etc. .. .. .	23	29	29	28	29	30
IV. Industrial Metals, Machines, etc. .. .. .	448	602	602	618	656	676
V. Precious Metals, Jewellery, Plate .. .. .	6	19	19	19	20	19
VI. Textiles and Textile Goods (not Dress) .. .. .	15	19	19	20	21	23
VII. Skins and Leather (not Clothing and Footwear) .. .. .	8	7	6	5	5	5
VIII. Clothing (except Knitted) .. .. .	72	95	97	87	87	83
IX. Food, Drink and Tobacco .. .. .	305	293	298	285	289	284
X. Sawmills, Joinery, Boxes, etc. .. .. .	497	468	458	440	446	425
XI. Furniture, Bedding, etc. .. .. .	76	67	69	70	66	62
XII. Paper, Stationery, Printing, Binding, etc. .. .. .	31	41	43	46	49	48
XIII. Rubber .. .. .	18	22	22	20	19	20
XIV. Musical Instruments, etc. .. .. .	..	..	..	..	..	..
XV. Miscellaneous Products .. .. .	15	16	16	14	19	20
Total Classes I to XV .. .. .	1,584	1,744	1,748	1,729	1,788	1,776
XVI. Heat, Light and Power .. .. .	10	16	16	17	17	16
Total All Classes .. .. .	1,594	1,760	1,764	1,746	1,805	1,792

### Employment in Factories

All persons employed in the manufacturing activities of a factory, including proprietors working in their own business and persons working regularly at home (e.g. piece workers in the garment industry) are counted as factory workers while those engaged in selling and distributing, such as salesmen, travellers and carters employed solely in *outward* delivery of manufactured goods, are excluded. The grouping of occupations comprises: (i) working proprietors; (ii) managerial and clerical staff including salaried managers and working directors; (iii) chemists, draftsmen, and other laboratory and research staff; (iv) workers in factories (skilled and unskilled); foremen and overseers; carters (excluding outward delivery only), messengers, and persons working regularly at home.

The figures showing average employment in factories represent the equivalent average number of persons employed, including working proprietors, over a full year.

The next table shows average whole-year employment in Tasmanian factories according to class of industry for a five-year period:

**Employment—Total Number of Workers According to Class of Industry**

Class of Industry	1961-62	1962-63	1963-64	1964-65	1965-66
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	737	813	819	803	824
II. Bricks, Pottery, Glass, etc. .. ..	389	382	367	379	369
III. Chemicals, Dyes, etc. .. ..	910	926	943	979	1,021
IV. Industrial Metals, Machines, etc. ..	9,989	10,335	10,719	10,873	11,463
V. Precious Metals, Jewellery, Plate ..	40	43	45	41	46
VI. Textiles and Textile Goods (not Dress)	3,123	3,213	3,426	3,818	3,933
VII. Skins and Leather (not Clothing or Footwear) .. ..	63	61	47	48	48
VIII. Clothing (except Knitted) .. ..	831	716	710	755	746
IX. Food, Drink, and Tobacco .. ..	5,000	5,088	5,053	4,995	5,358
X. Sawmills, Joinery, Boxes, etc. .. ..	3,634	3,665	3,886	4,021	4,200
XI. Furniture, Bedding, etc. .. ..	438	476	527	520	536
XII. Paper, Stationery, Printing, Binding, etc. .. ..	4,258	4,419	4,683	4,702	5,059
XIII. Rubber .. ..	140	132	129	126	144
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	139	120	111	134	151
Total Classes I to XV .. ..	29,691	30,389	31,465	32,194	33,898
XVI. Heat, Light and Power .. ..	379	366	368	386	417
Total All Classes .. ..	30,070	30,755	31,833	32,580	34,315

The factory class associated with the greatest employment in 1965-66 was IV, industrial metals, etc. with 33 per cent (the major sub-class of this class is 5, the extraction and refining of metals). The second greatest employment was in IX, food processing, with 16 per cent; then follow XII, the paper making group, with 15 per cent; X, the sawmilling group, with 12 per cent and VI, the textile group, with 11 per cent. Nearly 90 per cent of Tasmanian factory employment is concentrated in these five classes which also contain the largest establishments.

The following table shows the number of males and females employed in factories according to occupational groups:

Employment—Occupational Grouping in Factories by Sex

Year	Working Proprietors		Salaried Staff				Wages Staff (c)		Total Workers			Masculinity of Factory Workers (d)
			Managerial, etc. (a)		Technical (b)							
	Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Per-sons	
1955-56 ..	967	31	1,763	888	410	49	18,988	3,966	22,128	4,934	27,062	448
1961-62 ..	976	39	2,232	1,082	536	102	20,998	4,105	24,742	5,328	30,070	464
1962-63 ..	1,019	61	2,283	1,124	572	102	21,579	4,015	25,453	5,302	30,755	480
1963-64 ..	930	71	2,434	1,146	512	110	22,345	4,285	26,221	5,612	31,833	467
1964-65 ..	976	80	2,482	1,211	536	116	22,774	4,405	26,768	5,812	32,580	461
1965-66 ..	963	75	2,641	1,298	538	120	23,899	4,781	28,041	6,274	34,315	447

(a) Managerial and clerical staff, including salaried managers and working directors.

(b) Chemists, draftsmen and other laboratory and research staff.

(c) Foremen, overseers, workers in factories (skilled and unskilled), carters (excluding outward delivery only), messengers and persons working regularly at home.

(d) Number of males per 100 females.

The long-term trend in masculinity of factory workers is illustrated by the following series: 1906, 565; 1911, 559; 1921, 532; 1930-31, 363; 1940-41, 353; 1950-51, 445; 1960-61, 464; 1965-66, 447. The maximum was 591 recorded in 1920 and the minimum, 289 in 1943-44. Very low masculinity figures in the continuous series from 1906 are associated with the depression years in the 1930s and with the war years in the 1940s. A later table shows the classes of industry in which women predominate.

The following table shows the age distribution of factory workers as at the last pay-day in June; the figures exclude working proprietors:

Distribution of Employees According to Age  
(Excluding Working Proprietors)

Year	Number of Persons on Factory Payrolls on last Pay-day in June—							
	Males				Females			
	Under 16 years	16 and under 21 years	21 years and over	Total	Under 16 years	16 and under 21 years	21 years and over	Total
1956..	113	2,547	18,931	21,591	76	1,439	3,988	5,503
1962..	91	2,858	20,917	23,866	101	1,395	4,230	5,726
1963..	95	2,977	21,442	24,514	69	1,400	3,770	5,239
1964..	123	3,329	21,940	25,392	96	1,587	4,218	5,901
1965..	121	3,441	22,253	25,815	107	1,672	4,166	5,945
1966..	126	3,738	23,279	27,143	87	1,730	4,730	6,547

It will be observed that the proportion of factory workers under 16 years is extremely low, a reflection of the 16 year compulsory minimum leaving age operative in Tasmanian schools (the "under 16" workers shown are not breaking the law since a system of exemption allows limited departure from the legal minimum age).

The next table has been compiled to show the considerable difference in the pattern of male and female employment:

**Employment by Sex in Each Class of Industry, 1965-66**

Class of Industry	Average Employment (Whole Year) including Working Proprietors					
	Number			Percentage in Each Class		
	Males	Females	Persons	Males	Females	Persons
I. Treatment of Non-Metalliferous Mine and Quarry Products .. .. .	784	40	824	2.80	0.64	2.40
II. Bricks, Pottery, Glass, etc. . . . .	351	18	369	1.25	0.29	1.08
III. Chemicals, Dyes, etc. . . . .	961	60	1,021	3.43	0.96	2.98
IV. Industrial Metals, Machines, etc. . . . .	10,766	697	11,463	38.39	11.11	33.41
V. Precious Metals, Jewellery, Plate.. . . .	44	2	46	0.16	0.03	0.13
VI. Textiles and Textile Goods (Not Dress) .. . . .	1,787	2,146	3,933	6.37	34.20	11.46
VII. Skins and Leather (not Clothing or Footwear) .. . . .	46	2	48	0.16	0.03	0.14
VIII. Clothing (except Knitted).. . . .	304	442	746	1.08	7.04	2.17
IX. Food, Drink and Tobacco.. . . .	3,664	1,694	5,358	13.07	27.00	15.61
X. Sawmills, Joinery, Boxes, etc. . . . .	4,053	147	4,200	14.45	2.34	12.24
XI. Furniture, Bedding, etc. . . . .	451	85	536	1.61	1.35	1.56
XII. Paper, Stationery, Printing, Binding, etc. . . . .	4,162	897	5,059	14.84	14.30	14.74
XIII. Rubber .. . . .	128	16	144	0.46	0.26	0.42
XIV. Musical Instruments, etc.... . .	..	..	..	..	..	..
XV. Miscellaneous Products .. . . .	125	26	151	0.46	0.41	0.44
Total Classes I to XV	27,626	6,272	33,898	98.52	99.97	98.78
XVI. Heat, Light and Power .. . . .	415	2	417	1.48	0.03	1.22
Total All Classes .. . . .	28,041	6,274	34,315	100.00	100.00	100.00

As demonstrated in the above table, female workers predominate in only two classes of industry in absolute numbers: VI, the textiles group and VIII, the clothing group. Four factory classes account for over 87 per cent of all female workers; in descending order of magnitude, these classes are the textiles group, the food processing group, the paper making group and the industrial metals group. The four factory classes accounting for most male employment (81 per cent) are, in descending order: the industrial metals group, the paper making group, the sawmilling group and the food processing group. When males and females are combined, the four major classes become the industrial metals group, the food processing group, the paper making group and the sawmilling group.

### Salaries, Wages and Other Costs

The table that follows has been compiled to show male and female earnings and also to show separately the amounts paid to "managerial and clerical staff, including salaried managers and working directors, chemists, draftsmen and other laboratory and research staff".

**Salaries and Wages in Factories (a), 1965-66**  
(\\$'000)

Class of Industry	Managers, Clerical Staff, Chemists, Draftsmen, etc.		All Other Employees		Total		
	Males	Fe- males	Males	Fe- males	Males	Fe- males	Persons
I. Treatment of Non-Metalliferous Mine and Quarry Products .. .. .	330	38	1,788	13	2,118	51	2,169
II. Bricks, Pottery, Glass, etc. ..	92	22	791	3	883	25	908
III. Chemicals, Dyes, etc. ..	752	90	2,391	19	3,144	109	3,252
IV. Industrial Metals, Machines, etc. ..	4,676	665	24,176	361	28,851	1,026	29,877
V. Precious Metals, Jewellery, Plate .. .. .	4	4	66	..	70	4	74
VI. Textiles and Textile Goods (not Dress) .. .. .	879	317	3,401	2,946	4,280	3,263	7,542
VII. Skins and Leather (Not Clothing or Footwear) ..	28	..	83	1	110	1	112
VIII. Clothing (except Knitted) ..	110	34	489	481	600	516	1,115
IX. Food, Drink and Tobacco ..	1,995	547	7,274	1,837	9,269	2,384	11,653
X. Sawmills, Joinery, Boxes, etc. .. .. .	1,001	105	8,196	61	9,197	166	9,363
XI. Furniture, Bedding, etc. ..	134	41	717	58	850	99	949
XII. Paper, Stationery, Printing, Binding, etc. .. ..	1,982	362	10,744	967	12,726	1,329	14,055
XIII. Rubber .. .. .	63	21	227	..	290	21	311
XIV. Musical Instruments, etc. ..	..	..	..	..	..	..	..
XV. Miscellaneous Products ..	40	10	201	24	241	34	275
Total Classes I to XV ..	12,084	2,256	60,544	6,772	72,628	9,027	81,655
XVI. Heat, Light and Power ..	123	3	1,182	..	1,304	3	1,307
Total All Classes ..	12,206	2,259	61,726	6,772	73,932	9,030	82,963

(a) Excludes drawings of working proprietors.

The ranking of factory classes according to salaries and wages paid in 1965-66 was: Class IV, 36 per cent; Class XII, 17 per cent; Class IX, 14 per cent; Class X, 11 per cent; Class VI, nine per cent.

The total amount of wages and salaries paid in Tasmania is shown in summary form with average amounts paid per employee:

**Salaries and Wages Paid in Factories (a)**

Year	Males		Females		Persons	
	Amount	Per Em- ployee	Amount	Per Em- ployee	Amount	Per Em- ployee
	\$'000	\$	\$'000	\$	\$'000	\$
1955-56 .. ..	38,292	1,810	4,904	1,000	43,196	1,657
1961-62 .. ..	54,496	2,294	6,944	1,312	61,440	2,114
1962-63 .. ..	57,834	2,368	7,002	1,336	64,836	2,184
1963-64 .. ..	63,006	2,492	7,576	1,368	70,582	2,290
1964-65 .. ..	68,183	2,644	8,332	1,454	76,515	2,427
1965-66 .. ..	73,932	2,730	9,030	1,457	82,963	2,493

(a) Excludes drawings of working proprietors.

The relationship between salaries and wages, and other costs is shown in a subsequent section headed "Relation of Costs to Output and Production".

### Costs of Manufacture (other than Salaries and Wages)

The next table has been compiled to summarise the various costs which are specified in the factory collection (apart from salaries and wages):

"Statistical" Costs of Manufacture Other Than Wages and Salaries (a)  
(\$'000)

Particulars	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Power, Fuel and Light Used ..	7,874	12,702	13,959	15,768	17,676	18,453
Water Used (Not as Power) ..	158	274	296	404	448	501
Lubricating Oils ..	161	163	181	193	203	227
Repairs and Replacements ..	5,052	7,205	7,140	7,795	9,407	9,564
Wrappers, Containers, Labels, etc.	6,568	9,201	9,210	9,722	10,644	11,552
Total (Excluding Materials Used) ..	19,813	29,545	30,786	33,882	38,378	40,296
Materials Used ..	95,882	126,128	139,725	154,613	175,920	188,678
Total "Statistical" Costs (a)	115,695	155,673	170,511	188,495	214,299	228,974

(a) "Statistical" costs are restricted to those shown in the table and exclude items such as interest, rates and taxes, insurances, depreciation, etc.

As indicated in the above table, the two heaviest costs are those of power, fuel and light, and materials used in the manufacturing process. The following table shows the distribution of these costs and total costs as between the various classes of industry:

"Statistical" Costs of Manufacture in Classes of Industry, 1965-66  
(\$'000)

Class of Industry	Materials Used	Power, Fuel and Light	Other Costs (a)	Total 'Statistical' Costs
I. Treatment of Non-Metalliferous Mine and Quarry Products ..	4,940	963	567	6,470
II. Bricks, Pottery, Glass, etc. ..	424	347	120	891
III. Chemicals, Dyes, etc. ..	6,911	1,703	1,121	9,734
IV. Industrial Metals, Machines, etc. ..	63,576	8,663	4,493	76,732
V. Precious Metals, Jewellery, Plate ..	37	5	2	43
VI. Textiles and Textile Goods (not Dress)	18,215	547	1,131	19,893
VII. Skins and Leather (not Clothing or Footwear) ..	701	9	10	720
VIII. Clothing (except Knitted) ..	979	79	108	1,167
IX. Food, Drink and Tobacco ..	45,928	1,399	9,330	56,6
X. Sawmills, Joinery, Boxes, etc. ..	20,545	881	1,462	22,888
XI. Furniture, Bedding, etc. ..	1,984	23	42	2,050
XII. Paper, Stationery, Printing, Binding, etc. ..	23,188	3,760	2,881	29,830
XIII. Rubber ..	627	36	38	701
XIV. Musical Instruments, etc. ..	..	..	..	..
XV. Miscellaneous Products ..	330	11	16	357
Total Classes I to XV ..	188,384	18,429	21,319	228,131
XVI. Heat, Light and Power ..	294	24	524	843
Total All Classes ..	188,678	18,453	21,843	228,974

(a) Water (not as power), lubricating oils, repairs and replacements, wrappers, containers, labels, etc.

The table below shows the expenditure on power, fuel and light analysed according to type:

**Cost of Power, Fuel and Light Used in Factories**  
(\$'000)

Year	Coal	Coke	Wood	Fuel Oil	Electricity	Gas	Other, Including Steam	Total
1955-56 ..	2,484	437	389	866	3,341	71	285	7,874
1961-62 ..	2,231	741	210	1,883	6,926	85	626	12,702
1962-63 ..	1,962	666	192	2,425	7,953	85	676	13,959
1963-64 ..	1,368	645	158	3,251	9,697	73	576	15,768
1964-65 ..	1,085	578	132	3,634	11,522	76	649	17,676
1965-66 ..	596	654	137	4,073	12,207	76	711	18,453

As suggested by the above table, coal is not being used to the same extent as previously; in 1955-56, 248,493 tons were used, compared with 59,361 tons in 1965-66. By way of contrast, factory fuel oil consumption has increased from 5,650,000 gallons in 1955-56 to 56,686,551 gallons in 1965-66. The present importance of electricity for factories is underlined by the fact that its cost in 1965-66 represented 66 per cent of the total cost of power, fuel and light (in contrast with 1955-56 when it represented only 42 per cent); in the same period, the rated horsepower of electric motors ordinarily in use in factories has increased more than 40 per cent but the major factor in the increased use of electrical power has been in metallurgical refining (electric furnaces and electrolytic recovery).

The next table shows, in summary form, the cost of power, fuel and light used in each class of industry for a five-year period:

**Cost of Power, Fuel and Light Used in Each Class of Industry**  
(\$'000)

Class of Industry	1961-62	1962-63	1963-64	1964-65	1965-66
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	759	911	911	1,046	963
II. Bricks, Pottery, Glass, etc. .. ..	329	320	337	336	347
III. Chemicals, Dyes, etc. .. ..	1,208	1,062	1,263	1,591	1,703
IV. Industrial Metals, Machines, etc. ..	4,774	5,772	7,369	8,414	8,663
V. Precious Metals, Jewellery, Plate ..	4	4	4	4	5
VI. Textiles and Textile Goods (not Dress)	484	492	530	542	547
VII. Skins and Leather (not Clothing or Footwear) .. ..	10	10	10	8	9
VIII. Clothing (except Knitted) .. ..	78	76	79	79	79
IX. Food, Drink and Tobacco .. ..	1,184	1,205	1,238	1,307	1,399
X. Sawmills, Joinery, Boxes, etc. .. ..	649	681	730	854	881
XI. Furniture, Bedding, etc. .. ..	15	18	21	23	23
XII. Paper, Stationery, Printing, Binding, etc. .. ..	3,138	3,337	3,207	3,402	3,760
XIII. Rubber .. ..	38	38	36	34	36
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	7	6	7	9	11
Total Classes I to XV .. ..	12,677	13,932	15,742	17,650	18,429
XVI. Heat, Light and Power .. ..	25	27	26	25	24
Total All Classes .. ..	12,702	13,959	15,768	17,676	18,453

As indicated in the previous table, the total cost of power, fuel and light has increased \$5,751,000 (45 per cent) in the five-year period to 1965-66, and most of the rise can be accounted for in IV, the industrial metals group, where the cost has increased \$3,889,000 (81 per cent increase).

The largest single cost in manufacturing is that of the materials used and the next table shows, in summary form, this cost in each class of industry for a five-year period:

**Cost of Materials Used in Each Class of Industry**  
(£'000)

Class of Industry	1961-62	1962-63	1963-64	1964-65	1965-66
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	2,703	4,038	4,437	3,982	4,940
II. Bricks, Pottery, Glass, etc. .. ..	467	380	351	432	424
III. Chemicals, Dyes, etc. .. ..	4,671	5,006	5,438	6,366	6,911
IV. Industrial Metals, Machines, etc. .. ..	40,121	45,091	50,772	61,612	63,576
V. Precious Metals, Jewellery, Plate .. ..	23	24	32	34	37
VI. Textiles and Textile Goods (not Dress)	11,532	13,262	16,775	17,810	18,215
VII. Skins and Leather (not Clothing or Footwear) .. ..	688	803	630	826	701
VIII. Clothing (except Knitted) .. ..	961	788	799	937	979
IX. Food, Drink and Tobacco .. ..	33,984	35,567	37,127	41,569	45,928
X. Sawmills, Joinery, Boxes, etc. .. ..	13,999	15,738	16,805	18,465	20,545
XI. Furniture, Bedding, etc. .. ..	1,254	1,277	1,693	1,916	1,984
XII. Paper, Stationery, Printing, Binding, etc. .. ..	14,953	16,877	18,902	20,996	23,188
XIII. Rubber .. ..	394	473	475	521	627
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	109	115	102	153	330
Total Classes I to XV .. ..	125,859	139,439	154,338	175,621	188,384
XVI. Heat, Light and Power .. ..	269	286	275	299	294
Total All Classes .. ..	126,128	139,725	154,613	175,920	188,678

The total cost of materials used in manufacturing has risen \$62,550,000 (50 per cent) in the five-year period covered by the table. Class IV, the industrial metals group, has shown the largest increase.

### Value of Output and Value of Production

Value of factory output by classes of industry for a five-year period is shown in the following table:

**Value of Factory Output**  
(£ million)

Class of Industry	1961-62	1962-63	1963-64	1964-65	1965-66
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	7.46	10.03	10.58	10.38	11.68
II. Bricks, Pottery, Glass, etc. .. ..	2.30	2.19	2.26	2.58	2.58
III. Chemicals, Dyes, etc. .. ..	12.56	12.16	14.90	16.93	17.88
IV. Industrial Metals, Machines, etc. .. ..	87.96	100.76	110.66	128.85	134.91
V. Precious Metals, Jewellery, Plate .. ..	0.13	0.14	0.17	0.17	0.19
VI. Textiles and Textile Goods (not Dress)	22.00	24.58	28.70	32.90	32.35
VII. Skins and Leather (not Clothing or Footwear) .. ..	0.95	1.02	0.81	1.01	0.89
VIII. Clothing (except Knitted) .. ..	2.86	2.72	2.78	3.13	3.30
IX. Food, Drink and Tobacco .. ..	63.25	65.42	68.55	74.59	81.07
X. Sawmills, Joinery, Boxes, etc. .. ..	27.48	29.69	32.30	36.44	40.21
XI. Furniture, Bedding, etc. .. ..	2.44	2.59	3.24	3.58	3.71
XII. Paper, Stationery, Printing, Binding, etc. .. ..	41.46	46.83	50.41	53.72	57.86
XIII. Rubber .. ..	1.01	1.08	1.18	1.19	1.30
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	0.42	0.43	0.39	0.51	0.77
Total Classes I to XV .. ..	272.28	299.64	326.93	365.97	388.71
XVI. Heat, Light and Power .. ..	11.27	12.91	14.13	15.58	15.88
Total All Classes .. ..	283.55	312.55	341.06	381.55	404.58



In the section dealing with the definitions used in factory statistics, it was indicated that value of output is not a satisfactory indicator for making year-to-year comparisons or for making comparisons between classes of industry. To the extent that the finished article from one industry may become a material for use in the manufacturing process of another industry, values of output are likely to be inflated by "double-counting". Cardboard boxes and containers, for example, are a finished product of Class XII but they may be used to pack the products of industries in most other classes; similarly, electric power is a final output from Class XVI but is also taken into all other industry classes as a cost of production. For these and other considerations, the better measure for purposes of comparison is undoubtedly value of production, (i.e. value of output less "statistical costs" but with no deduction of wages and salaries).

The next table shows the value of production in Tasmanian factories for a five-year period:

Value of Factory Production  
(\$ million)

Class of Industry	1961-62	1962-63	1963-64	1964-65	1965-66
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	3.51	4.54	4.77	4.86	5.21
II. Bricks, Pottery, Glass, etc. .. ..	1.37	1.36	1.43	1.64	1.69
III. Chemicals, Dyes, etc. .. ..	5.88	5.18	7.15	7.88	8.15
IV. Industrial Metals, Machines, etc. ..	39.49	46.72	49.25	54.50	58.17
V. Precious Metals, Jewellery, Plate ..	0.10	0.12	0.13	0.13	0.14
VI. Textiles and Textile Goods (not Dress)	9.24	9.99	10.50	13.48	12.46
VII. Skins and Leather (not Clothing or Footwear) .. ..	0.24	0.20	0.16	0.16	0.17
VIII. Clothing (except Knitted) .. ..	1.78	1.79	1.82	2.02	2.13
IX. Food, Drink and Tobacco .. ..	20.32	21.26	22.47	23.17	24.42
X. Sawmills, Joinery, Boxes, etc. .. ..	11.90	12.26	13.58	15.67	17.32
XI. Furniture, Bedding, etc. .. ..	1.15	1.28	1.47	1.60	1.66
XII. Paper, Stationery, Printing, Binding, etc. .. ..	21.56	24.35	25.72	26.52	28.03
XIII. Rubber .. ..	0.54	0.54	0.64	0.59	0.60
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	0.29	0.30	0.27	0.33	0.41
Total Classes I to XV .. ..	117.37	129.89	139.36	152.56	160.57
XVI. Heat, Light and Power .. ..	10.50	12.14	13.21	14.69	15.03
Total All Classes .. ..	127.87	142.03	152.57	167.25	175.61

The value of production for all factories has risen by 37 per cent in the period covered by the table. Corresponding increases in "added value" for individual classes are: IV, the industrial metals group, 47 per cent; VI, the textiles group, 35 per cent; IX, the food processing group, 20 per cent; X, the sawmilling group, 46 per cent; XII, the paper making group, 30 per cent; and XVI, the power group, 43 per cent.

The class of industry showing the greatest percentage increase was Class I, treatment of non-metalliferous mine and quarry products, 48 per cent.

#### Relation of Costs to Output and Production

The costs data collected from factories are not complete but cover major items such as materials used; power, fuel and light; lubricants, water and containers, etc. The following table summarises these costs for each class of industry and gives the balance remaining after such costs, together with salaries and wages, have been deducted from the value of output. The balance so

obtained for each industry is the fund available to provide for all other costs and overhead expenses such as rent, interest, insurance, pay-roll tax, income tax, depreciation, etc., as well as drawings by working proprietors and profit.

Factory Costs, Output and Residual Balance, 1965-66  
(\$'000)

Class of Industry	Specified Costs of Production			Balance between Value of Output and Specified Costs (b)	Value of Output
	Materials Used	Other "Statistical" Costs (a)	Salaries and Wages		
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	4,940	1,530	2,169	3,045	11,684
II. Bricks, Pottery, Glass, etc. .. ..	424	467	908	781	2,579
III. Chemicals, Dyes, etc. .. ..	6,911	2,823	3,252	4,894	17,880
IV. Industrial Metals, Machines, etc. ..	63,576	13,156	29,877	28,296	134,905
V. Precious Metals, Jewellery, Plate ..	37	6	74	71	187
VI. Textiles and Textile Goods (not Dress)	18,215	1,678	7,542	4,919	32,354
VII. Skins and Leather (not Clothing or Footwear) .. ..	701	19	112	60	892
VIII. Clothing (except Knitted) .. ..	979	188	1,115	1,017	3,299
IX. Food, Drink and Tobacco .. ..	45,928	10,729	11,653	12,765	81,075
X. Sawmills, Joinery, Boxes, etc. .. ..	20,545	2,344	9,363	7,957	40,208
XI. Furniture, Bedding, etc. .. ..	1,984	65	949	715	3,714
XII. Paper, Stationery, Printing, Binding, etc. .. ..	23,188	6,641	14,055	13,973	57,857
XIII. Rubber .. ..	627	75	311	290	1,302
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	330	27	275	138	770
Total Classes I to XV .. ..	188,384	39,748	81,655	78,918	388,705
XVI. Heat, Light and Power .. ..	294	549	1,307	13,725	15,875
Total All Classes .. ..	188,678	40,296	82,963	92,644	404,581

(a) Power, fuel, light, water, lubricating oil, repairs and replacements, wrappers, containers, labels, etc.

(b) Balance available for costs and charges not specified on the factory form and for profit (including drawings by working proprietors).

The *value of production* does not appear in the above table but can be calculated by subtracting "materials used" and other "statistical" costs from the value of output.

There are considerable variations in the proportions which the cost of materials and the expenditure on wages bear to the value of output in the various classes of industry. These are, of course, due to the difference in treatment required to convert the materials to their final form. Class XVI, heat, light and power, obviously constitutes a major deviation from all other classes of industry; the major component in this class is hydro-electric power production characterised by heavy capital expenditure and extremely light operational costs since the basic "raw material" is water. The comparatively large residual balance attributable to Class XVI is required to meet a heavy burden in interest and depreciation charges associated with the substantial outlay of capital which created the water storages and generating capacity.

In the following table, the previous data on costs and residual balances have been converted to percentages of the value of output for each class of industry:

**Factory Costs and Residual Balance as Proportion of Value of Output, 1965-66  
(Per Cent)**

Class of Industry	Specified Costs of Production			Balance between Value of Output and Specified Costs	Value of Output
	Materials Used	Other "Statistical" Costs	Salaries and Wages		
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	42.3	13.1	18.6	26.1	100.0
II. Bricks, Pottery, Glass, etc. .. ..	16.4	18.1	35.2	30.3	100.0
III. Chemicals, Dyes, etc. .. ..	38.6	15.8	18.2	27.4	100.0
IV. Industrial Metals, Machines, etc. .. ..	47.1	9.8	22.1	21.0	100.0
V. Precious Metals, Jewellery, Plate .. ..	19.5	3.3	39.5	37.7	100.0
VI. Textiles and Textile Goods (not Dress)	56.3	5.2	23.3	15.2	100.0
VII. Skins and Leather (not Clothing or Footwear) .. ..	78.7	2.1	12.5	6.7	100.0
VIII. Clothing (except Knitted) .. ..	29.7	5.7	33.8	30.8	100.0
IX. Food, Drink and Tobacco .. ..	56.6	13.2	14.4	15.7	100.0
X. Sawmills, Joinery, Boxes, etc. .. ..	51.1	5.8	23.3	19.8	100.0
XI. Furniture, Bedding, etc. .. ..	53.4	1.8	25.6	19.2	100.0
XII. Paper, Stationery, Printing, Binding, etc. .. ..	40.1	11.5	24.3	24.2	100.0
XIII. Rubber .. ..	48.1	5.7	23.9	22.3	100.0
XIV. Musical Instruments, etc. .. ..	.. ..	.. ..	.. ..	.. ..	.. ..
XV. Miscellaneous Products .. ..	42.9	3.5	35.7	17.9	100.0
Total Classes I to XV .. ..	48.5	10.2	21.0	20.3	100.0
XVI. Heat, Light and Power .. ..	1.9	3.5	8.2	86.5	100.0
Total All Classes .. ..	46.7	10.0	20.5	22.8	100.0

The next table has been compiled to summarise total specified costs of production, residual balances and value of output:

**Total Factory Costs, Output and Residual Balance**

Year	Specified Costs of Production			Balance between Value of Output and Specified Costs ( <i>b</i> )	Value of Output		
	Materials Used	Other “Statistical” Costs ( <i>a</i> )	Salaries and Wages				
VALUE (\$'000)							
1960-61	..	..	122,508	28,501	60,660	64,233	275,902
1961-62	..	..	126,128	29,545	61,440	66,434	283,547
1962-63	..	..	139,725	30,786	64,836	77,198	312,545
1963-64	..	..	154,613	33,882	70,582	81,988	341,065
1964-65	..	..	175,920	38,379	76,515	90,735	381,549
1965-66	..	..	188,678	40,296	82,963	92,644	404,581

## Total Factory Costs, Output and Residual Balance—continued

Year			Specified Costs of Production			Balance between Value of Output and Specified Costs (b)	Value of Output
			Materials Used	Other “Statistical” Costs (a)	Salaries and Wages		
PROPORTION OF VALUE OF OUTPUT (PER CENT)							
1960-61	..	..	44.4	10.3	22.0	23.3	100.0
1961-62	..	..	44.5	10.4	21.7	23.4	100.0
1962-63	..	..	44.7	9.9	20.7	24.7	100.0
1963-64	..	..	45.4	9.9	20.7	24.0	100.0
1964-65	..	..	46.1	10.1	20.0	23.8	100.0
1965-66	..	..	46.7	10.0	20.5	22.8	100.0

(a) Power, fuel, light, water, lubricating oils, repairs and replacements, wrappers, containers, labels, etc.

(b) Balance available for costs and charges not specified on the factory form and for profit (including drawings by working proprietors).

## Land, Buildings, Plant and Machinery

The values recorded in this section are generally the *values shown in the books* of the individual firms after allowance has been made for depreciation, but they include estimates of the capital value of rented premises and plant. The totals shown in the tables consequently do not represent the actual amount of capital invested in industry and are largely influenced by individual accounting methods and policies in use at a given point in time.

Where land and buildings, etc. and plant and machinery, etc. are rented by occupiers of factories, their capital value has been computed by capitalising the rent paid at fifteen years' and ten years' purchase respectively.

The table that follows shows the value of land and buildings used in connection with the various classes of manufacturing industries for a five-year period. Excluding Class XVI which is a special case because of its coverage of hydro-electric power generation, it will be seen that the value of land and buildings is greatest in Class IV (\$31.19m), Class IX (\$18.88m) and Class XII (\$13.72m). An examination of the value of plant and machinery in a subsequent table shows the same classes as the three most prominent, namely Class IV (\$40.71m), Class XII (\$25.23m) and Class IX, (\$16.62m). Associated with Class IV are major establishments at George Town, Risdon and Mt Lyell all concerned with the extraction and refining of metals (aluminium, ferro-manganese alloys, zinc and copper). Included in Class XII are major establishments at Burnie, Boyer and Geeveston, producing fine paper, newsprint and paper pulp. Class IX includes the northern and southern breweries, a major confectionery factory and a variety of large food-processing establishments.

A high level of investment in plant and machinery and in land and buildings normally can be correlated with a high level of employment, for particular classes of industry. Class X, the sawmilling group, appears to be an exception to this rule; employment in this class is not significantly lower than for IX, the food group, or XII, the paper group, but the value of land, plant, etc. is very much less in X than in IX or XII.

**Value at 30 June of Land and Buildings in Each Class of Industry  
(\$ million)**

Class of Industry	1961-62	1962-63	1963-64	1964-65	1965-66
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	1.48	1.57	1.64	1.78	1.72
II. Bricks, Pottery, Glass, etc. .. ..	0.77	0.85	1.03	1.14	1.23
III. Chemicals, Dyes, etc. .. ..	2.61	2.79	3.01	3.17	3.56
IV. Industrial Metals, Machines, etc. ..	23.69	26.76	28.95	30.23	31.19
V. Precious Metals, Jewellery, Plate ..	0.14	0.14	0.14	0.17	0.14
VI. Textiles and Textile Goods (not Dress)	3.15	3.21	3.52	4.35	4.55
VII. Skins and Leather (not Clothing or Footwear) .. ..	0.08	0.08	0.08	0.07	0.06
VIII. Clothing (except Knitted) .. ..	1.54	1.60	1.70	1.85	1.80
IX. Food, Drink and Tobacco .. ..	14.10	15.13	16.58	17.74	18.88
X. Sawmills, Joinery, Boxes, etc. .. ..	3.59	3.97	4.62	5.22	5.81
XI. Furniture, Bedding, etc. .. ..	0.77	0.84	0.99	1.10	1.12
XII. Paper, Stationery, Printing, Binding, etc. .. ..	12.28	12.96	12.98	13.12	13.72
XIII. Rubber .. ..	0.61	0.79	0.87	0.69	0.72
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	0.29	0.24	0.25	0.37	0.44
Total Classes I to XV .. ..	65.10	70.93	76.36	81.00	84.93
XVI. Heat, Light and Power .. ..	94.05	92.99	92.04	128.01	126.99
Total All Classes .. ..	159.15	163.92	168.40	209.01	211.92

It will be observed that the value of land and buildings associated with XVI, heat, light and power, is greater than the corresponding total value for all other factory classes. The chief component of XVI—hydro-electric power generation—has involved the creation of extensive dams, storages and flumes and the book value of such installations is included under “land and buildings”; the actual generating plant, however, is included under “plant and machinery”.

The next table shows the value of plant and machinery in each class of industry for a five-year period:

**Value at 30 June of Plant and Machinery in Each Class of Industry  
(\$ million)**

Class of Industry	1961-62	1962-63	1963-64	1964-65	1965-66
I. Treatment of Non-Metalliferous Mine and Quarry Products .. ..	2.37	2.65	2.49	2.56	3.95
II. Bricks, Pottery, Glass, etc. .. ..	0.72	0.61	0.61	0.69	0.79
III. Chemicals, Dyes, etc. .. ..	4.08	5.88	6.66	7.43	7.71
IV. Industrial Metals, Machines, etc. ..	28.37	39.09	39.89	40.59	40.71
V. Precious Metals, Jewellery, Plate ..	0.03	0.03	0.03	0.03	0.03
VI. Textiles and Textile Goods (not Dress)	5.28	5.27	6.65	8.84	8.22
VII. Skins and Leather (not Clothing or Footwear) .. ..	0.05	0.05	0.04	0.04	0.04
VIII. Clothing (except Knitted) .. ..	0.72	0.78	0.82	0.68	0.63
IX. Food, Drink and Tobacco .. ..	12.77	13.75	14.60	15.09	16.62
X. Sawmills, Joinery, Boxes, etc. .. ..	4.66	4.54	5.97	6.78	7.65
XI. Furniture, Bedding, etc. .. ..	0.15	0.22	0.23	0.21	0.25
XII. Paper, Stationery, Printing, Binding, etc. .. ..	24.11	27.00	26.07	25.55	25.23
XIII. Rubber .. ..	0.25	0.26	0.28	0.26	0.30
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products .. ..	0.07	0.06	0.06	0.23	0.33
Total Classes I to XV .. ..	83.63	100.19	104.40	108.99	112.47
XVI. Heat, Light and Power .. ..	37.96	37.74	37.25	46.35	46.20
Total All Classes .. ..	121.59	137.93	141.65	155.34	158.67

### Additions, Replacements and Depreciation Allowed

In stating the current book value of land and buildings and of plant and machinery, each factory proprietor is required to complete a reconciliation along the following lines:

	Land and Buildings	Plant and Machinery
	\$	\$
(i) Book value at beginning of year ..		
Plus (ii) Additions and replacements during year ..		
Less (iii) Depreciation allowed during year ..		
Less (iv) Sales and losses by fire, etc., during year ..		
(±) (v) Adjustment due to revaluation ..		
(vi) Book value at end of year ..		

If no proprietors used rented land and buildings or rented plant and machinery, then the totals for the items "additions and replacements" and "depreciation allowed" would give a complete record of these important capital items in the factory sector. However, factory proprietors who rent premises or plant are simply required to report the annual rental and, to this extent, the totals for additions and replacements, and depreciation allowed, are incomplete since they refer only to land, buildings, plant and machinery *owned* by the factory proprietor. In 1965-66, eight per cent of the value of land and buildings comprised rentals capitalised at 15 years' purchase and two and a half per cent of the value of plant and machinery comprised rentals capitalised at 10 years' purchase. The following table summarises additions and replacements and depreciation allowed:

**Factories—Reported Additions, Replacements and Depreciation Allowed**  
(\$ million)

Year	Land and Buildings			Plant and Machinery		
	Additions and Replacements (Excluding Rented)	Depreciation (Excluding Rented)	Book Value, 30 June (Including Rented)	Additions and Replacements (Excluding Rented)	Depreciation (Excluding Rented)	Book Value, 30 June (Including Rented)
1955-56 ..	28.34	1.08	93.16	16.68	5.18	80.85
1956-57 ..	19.16	0.93	112.95	16.03	5.55	89.67
1957-58 ..	3.54	1.52	118.91	10.61	6.51	93.72
1958-59 ..	4.53	1.66	123.66	8.70	7.19	96.45
1959-60 ..	21.05	1.77	144.02	17.39	7.70	107.31
1960-61 ..	4.33	1.83	147.10	13.69	8.50	112.63
1961-62 ..	13.93	1.86	159.15	19.16	9.01	121.59
1962-63 ..	4.92	1.91	163.92	24.60	10.19	137.93
1963-64 ..	4.77	2.16	168.40	15.04	11.65	141.65
1964-65 ..	41.35	2.22	209.01	24.62	11.78	155.34
1965-66 ..	4.79	2.45	211.92	17.69	12.09	158.67

## Power Equipment in Factories

*General*

Since 1936-37, statistics of power equipment in factories relate to the "rated horsepower" of engines ordinarily in use and engines in reserve or idle, omitting obsolete engines. In addition, particulars of the power equipment of central electric stations are collected in greater detail. Since the central electric stations supply part of their power output to factories and since they are themselves classified as factories, it is necessary to make a clear distinction between engines in the stations and engines in all other types of factory, otherwise duplication may occur. In the following tables, central electric stations have been treated separately from other factories.

*Rated Horse-power of Engines in Factories Other Than Central Electric Stations*

The following table shows the types of engines and motors employed in each class of industry, also the horsepower rating related to each type:

## Factories, Excluding Central Electric Stations—

## Types and Power Rating of Engines in Each Class of Industry, 1965-66

Class of Industry	Rated Horsepower of Engines and Motors Ordinarily in Use—				Rated HP of Engines in Reserve or Idle (excluding Obsolete Engines)
	Steam	Internal Combustion	Motors Driven by Purchased Electricity	Total (a)	
I. Treatment of Non-Metalliferous Mine and Quarry Products .. .. .	..	12	21,429	21,441	1,411
II. Bricks, Pottery, Glass, etc. ..	..	137	4,006	4,143	1,018
III. Chemicals, Dyes, etc. ..	22	142	19,851	20,015	3,983
IV. Industrial Metals, Machines, etc. .. .	..	332	66,023	66,355	16,539
V. Precious Metals, Jewellery, Plate .. .	6	..	95	101	8
VI. Textiles and Textile Goods (not Dress) .. .	..	..	11,350	11,350	1,300
VII. Skins and Leather (not Clothing or Footwear) ..	..	..	506	506	26
VIII. Clothing (except Knitted) ..	8	1	889	898	71
IX. Food, Drink and Tobacco ..	126	814	31,551	32,491	3,572
X. Sawmills, Joinery, Boxes, etc. .. .	465	8,747	48,814	58,026	1,818
XI. Furniture, Bedding, etc. ..	..	..	1,579	1,579	33
XII. Paper, Stationery, Printing, Binding, etc. ..	..	..	111,966	111,966	19,422
XIII. Rubber .. .	25	..	527	552	51
XIV. Musical Instruments, etc. ..	..	..	..	..	..
XV. Miscellaneous Products ..	..	..	481	481	112
Total Classes I to XV ..	652	10,185	319,067	329,904	49,364
XVI. Heat, Light and Power ..	6	..	120	126	55
Total All Classes ..	658	10,185	319,187	330,030	49,419

(a) Excludes motors driven by electricity of own generation.

The total rated horsepower of engines and motors ordinarily in use as shown in the previous table is free from duplication since electric motors driven by power from a factory's own generation are excluded. The same freedom from duplication is not possible in relation to the power rating of reserve engines and motors, the figures shown being simply unadjusted totals of reported capacity. In 1965-66, motors ordinarily in use and driven by electricity were rated at 319,187 horsepower using purchased electricity and only 689 horsepower using electricity of own generation. As indicated by the previous table, the class with the greatest horsepower rating of electric motors is Class XII, paper making, etc. This does not necessarily imply that Class XII uses most electricity since power is employed industrially for purposes other than the driving of machinery, e.g. for electrolytic processes. In actual fact, Class IV, industrial metals, etc., consumes more electricity than Class XII.

The table that follows summarises the types and power capacity of engines and motors in Tasmanian factories over a ten-year period:

**Factories, Excluding Central Electric Stations—  
Types and Power Rating of Engines**

Year	Rated Horsepower of Engines and Motors Ordinarily in Use							Rated HP of Engines in Reserve or Idle (ex- cluding Obsolete Engines) ( <i>b</i> )
	Steam		Internal Combustion	Water	Motors Driven by Electricity		Total without Duplica- tion ( <i>a</i> )	
	Recip- rocating	Tur- bine			Purch- ased	Own Genera- tion		
1955-56 ..	1,607	3	11,126	193	220,725	8	233,655	32,413
1961-62 ..	1,048	21	10,901	192	269,580	..	281,743	40,439
1962-63 ..	1,040	..	11,504	..	290,198	273	302,742	43,298
1963-64 ..	612	..	11,747	..	302,277	281	314,636	46,830
1964-65 ..	547	..	13,112	..	308,521	280	322,180	47,449
1965-66 ..	658	..	10,185	..	319,187	689	330,030	49,419

(a) Excludes electric motors driven by power of own generation; includes gas driven engines not specified in table.

(b) Includes all electric motors in reserve.

### Central Electric Stations

The generation of hydro-electric power in Tasmania is sufficiently important to warrant detailed treatment in its own right but the Commonwealth uniform definition of factory establishments classifies producers of "electric light and power" as a sub-class of XVI, heat, light and power, and therefore a short account of the central electric stations is included at this point. A more detailed description of government electricity generation will be found in the section, "Hydro-Electric Power", further on in this chapter.

In 1965-66, the horsepower rating (or installed capacity) of generators in the Tasmanian central electric power stations was 1,150,874 horsepower; of this total, 1,149,890 horsepower was associated with turbines driven by water and 984 horsepower with internal combustion engines. The following table summarises the main power characteristics of the central electric stations (with horsepower equivalents for kilowatt measures):



## Central Electric Stations (a)—Power Rating Characteristics of Generators

Description	Unit	1961-62	1962-63	1963-64	1964-65	1965-66
Total Installed Capacity ..	kW	604,530	628,530	767,990	818,990	819,176
	hp	851,434	884,934	1,078,034	1,149,634	1,150,874
Effective Capacity ..	kW	601,700	625,700	765,160	816,160	816,290
	hp	846,414	879,914	1,072,970	1,144,570	1,145,740
Maximum Load .. ..	kW	467,279	560,619	576,604	597,044	634,338
	hp	648,621	778,276	800,477	828,870	880,668

(a) Not only Hydro-Electric Commission; see the following paragraph.

In 1965-66, there were 14 establishments classed as central electric stations, 11 government and three "company". The only two establishments using internal combustion engines were located on King and Flinders Islands where the capacity for generation by water-power is almost non-existent. The government-owned stations, apart from an internal combustion unit on King Island, all derived power from water and formed part of an integrated generation, transmission and distribution system serving the whole State. In the continental States, by way of contrast, the predominant method of generating electric power is by the steam turbine although hydro-electric generation is being extended.

## Principal Articles Manufactured

The next table lists the principal articles manufactured in Tasmania, irrespective of the sub-class of industry in which production took place. In several cases, however, where there are only one or two producers or where one producer dominates, it is not possible to publish details for articles that are important and would otherwise appear in the table. To give some indication of changes in production, quantity details are given for 1938-39, 1959-60 and 1965-66, but values are shown only for 1965-66.

## Principal Articles Manufactured

Article	Unit of Quantity	Quantity			Value 1965-66 (\$'000)
		1938-39	1959-60	1965-66	
Acid, Sulphuric (100 per cent)	ton	14,158	127,038	195,415	(a)
Aerated Waters .. ..	'000 gal	338	1,838	2,444	1,482
Bacon and Ham .. ..	'000 lb	1,935	2,562	2,378	1,429
Bran and Pollard .. ..	short ton	8,939	13,201	11,366	507
Bread (2 lb loaf equivalents) ..	'000	11,337	27,175	27,994	4,314
Bricks, Clay .. ..	'000	14,541	23,975	24,352	1,079
Butter (b) .. ..	ton	4,053	11,744	14,004	11,119
Cadmium, Refined .. ..	lb	385,287	567,967	724,172	1,591
Cakes, Pastry, Pies .. ..	..	..	..	..	1,885
Cases, Fruit .. ..	'000	3,143	4,081	2,897	958
Cheese .. ..	ton	1,420	328	2,942	1,572
Copper, Blister .. ..	ton	(c)	(c)	13,912	(a)
Electricity, Total Generated ..	m kWh	567	2,532	3,900	(a)
Fertilisers—					
Sulphate of Ammonia .. ..	ton	..	57,601	64,106	(a)
Superphosphate .. ..	ton	30,086	102,613	159,875	(a)
Plaster Sheets .. ..	sq yd	120,678	778,522	557,190	519
Flour .. ..	short ton	19,582	30,872	27,582	2,194

## Principle Articles Manufactured—continued

Article	Unit of Quantity	Quantity			Value 1965-66 (\$'000)
		1938-39	1959-60	1965-66	
Fruits, Canned or Bottled—					
Apples, Solid Pack .. ..	'000 lb	2,313	16,584	11,657	1,248
Berry Fruits .. ..	'000 lb	918	2,944	706	158
Fruit—					
Dehydrated and Evaporated					
Apples .. ..	'000 lb	762	558	941	293
Furniture, Wooden .. ..	..	..	..	..	2,411
Joinery (Excluding Doors) ..	..	..	..	..	3,627
Mattresses, Woven Wire ..	No.	3,386	7,286	4,675	41
Paper, Newsprint .. ..	ton	..	88,510	93,211	12,106
Structural Steel Fabricated ..	ton	(a)	10,154	13,532	3,425
Tallow .. ..	'000 lb	1,694	7,699	10,994	696
Timber (Sawn, Peeled or Sliced)—					
Hardwood (d) .. ..	'000 sup ft	83,499	164,895	173,622	15,557
Softwood (d) .. ..	'000 sup ft	1,529	4,764	4,857	682
Dressed Timber—					
Floorboards .. ..	'000 sup ft	5,124	29,511	33,604	5,869
Weatherboards .. ..	'000 sup ft	1,911	3,743	3,736	659
Other .. ..	'000 sup ft	1,165	15,979	21,864	4,140
Tyres, Retreaded and Recapped	No.	10,650	81,820	107,703	(c)
Zinc, Refined .. ..	ton	69,825	117,893	143,911	(c)

(a) Not available for publication.

(b) Includes butter equivalent of butter oil.

(c) Not available.

(d) Includes timber to be further processed.

The articles just listed do not include the following important Tasmanian products: aluminium, automotive engine bearings, carbide, cement, confectionery, welding electrodes, ferro-manganese alloys, hand tools, hard-board, particle board, printing, writing and wrapping papers, titanium di-oxide, canned, dehydrated and quick frozen vegetables, wood pulp, woollen manufactures and other textile products. An unusual unlisted product is sodium alginate made from seaweed kelp.

## Individual Industries

The items given for each industry are defined as follows:

Rating of Engines and Motors ..	engines and motors driving factory machinery and ordinarily in use.
Average Number of Workers ..	average whole year, including working proprietors.
Salaries and Wages Paid ..	excludes amounts drawn by working proprietors.
Other Costs of Manufacture ..	cost of power, fuel, light, water, lubricating oils, containers, etc., tools replaced, repairs to plant (but not depreciation charges).
Value of Production .. ..	value of output less "statistical" costs, other than labour, (i.e. less cost of materials and "other costs of manufacture", as just defined).
Value of Land, Machinery, etc...	at 30 June; includes estimated value for rented premises and machinery.

## Selected Individual Industries, 1965-66

Particulars	Unit	I-5	I-9	II-1	IV-3	IV-5
		Fibrous Plaster and Products	Other Cement Goods	Bricks and Tiles	Plant, Equipment and Machinery	Extracting and Refining, Non-ferrous Metals (a)
Factories .. .. .	No.	12	32	11	43	4
Rating of Engines and Motors ..	hp	147	1,880	2,907	2,610	46,230
Average Workers .. .. .	No.	80	240	215	1,278	3,404
Salaries and Wages Paid ..	\$'000	184	637	558	3,058	12,031
Cost of Materials Used ..	\$'000	299	3,566	145	2,939	42,793
Other Costs of Manufacture ..	\$'000	18	121	322	228	11,463
Value of Output .. .. .	\$'000	623	5,653	1,420	7,610	83,049
Value of Production .. .. .	\$'000	306	1,967	953	4,443	28,792
Value of Land and Buildings ..	\$'000	176	473	664	3,089	12,933
Value of Plant and Machinery ..	\$'000	27	819	576	1,020	34,317

(a) Includes aluminium, cadmium, copper, ferro-manganese alloy and zinc.

## Individual Industries, 1965-66 (Continued)

Particulars	Unit	IV-7	IV-10	IV-22	IV-24	VI-3
		Tramcar and Railway Work-shops, Government (a)	Motor Vehicle Repairs	Non-Ferrous Founding, Casting, etc.	Sheet Working, Metal Pressing and Stamping	Wool Carding, Spinning, Weaving
Factories .. .. .	No.	4	357	8	33	5
Rating of Engines and Motors ..	hp	3,106	2,642	405	880	7,731
Average Workers .. .. .	No.	592	2,078	145	405	2,672
Salaries and Wages Paid ..	\$'000	1,289	4,018	292	814	4,853
Cost of Materials Used ..	\$'000	574	4,216	395	2,366	9,807
Other Costs of Manufacture ..	\$'000	68	236	41	83	939
Value of Output .. .. .	\$'000	2,280	10,845	844	4,269	17,862
Value of Production .. .. .	\$'000	1,638	6,392	409	1,821	7,116
Value of Land and Buildings ..	\$'000	1,386	5,905	146	839	2,093
Value of Plant and Machinery ..	\$'000	722	867	122	346	3,361

(a) Railway rolling stock only. Trams ceased to operate in October 1960.

## Individual Industries, 1965-66 (Continued)

Particulars	Unit	VIII-14	IX-1	IX-5	IX-9	IX-10
		Dyeworks and Cleaning	Flour Milling	Bakeries (including Cakes and Pastry)	Confectionery	Jam, Fruit and Vegetable Canning
Factories .. .. .	No.	31	5	139	4	17
Rating of Engines and Motors ..	hp	614	1,966	1,181	7,487	8,426
Average Workers .. .. .	No.	297	130	659	1,348	1,389
Salaries and Wages Paid ..	\$'000	517	314	1,033	3,184	2,943
Cost of Materials Used ..	\$'000	129	2,559	3,210	9,079	5,727
Other Costs of Manufacture ..	\$'000	131	227	337	2,660	3,519
Value of Output .. .. .	\$'000	1,287	3,469	6,255	18,168	13,673
Value of Production .. .. .	\$'000	1,027	683	2,708	6,429	4,427
Value of Land and Buildings ..	\$'000	942	661	2,208	2,713	3,800
Value of Plant and Machinery ..	\$'000	390	662	1,299	3,849	3,343

## Individual Industries, 1965-66 (Continued)

Particulars	Unit	IX-12	IX-13	IX-14	IX-15	X-1
		Bacon Curing	Butter Factories	Cheese Factories	Con- densed and Dried Milk Factories	Sawmills
Factories .. .. .	No.	12	12	7	4	289
Rating of Engines and Motors	hp	1,137	2,493	338	1,257	45,735
Average Workers .. .	No.	276	255	82	186	2,942
Salaries and Wages Paid ..	\$'000	685	628	176	479	6,417
Cost of Materials Used ..	\$'000	4,330	9,771	1,395	2,753	16,420
Other Costs of Manufacture	\$'000	354	405	128	987	1,520
Value of Output .. .	\$'000	6,125	11,454	1,847	5,354	30,058
Value of Production ..	\$'000	1,442	1,278	324	1,614	12,117
Value of Land and Buildings	\$'000	966	647	425	334	3,230
Value of Plant and Machinery	\$'000	325	1,256	831	538	3,722

## Individual Industries, 1965-66 (Continued)

Particulars	Unit	X-4	XI-1	XII-9	XIII-2	XVI-1
		Joinery	Cabinet and Furniture Making	Paper Making (a)	Tyre Retread- ing and Repairing	Electric Light and Power, Govt
Factories .. .. .	No.	109	49	4	20	11
Rating of Engines and Motors	hp	3,847	1,381	108,528	552	1,134,160
Average Workers .. .	No.	665	447	3,556	144	368
Salaries and Wages Paid ..	\$'000	1,395	818	10,489	311	1,159
Cost of Materials Used ..	\$'000	2,350	1,466	17,964	627	..
Other Costs of Manufacture	\$'000	65	51	6,332	75	503
Value of Output .. .	\$'000	4,699	2,840	46,121	1,302	15,338
Value of Production ..	\$'000	2,285	1,323	21,825	601	14,834
Value of Land and Buildings	\$'000	998	838	10,097	721	126,610
Value of Plant and Machinery	\$'000	364	201	22,757	300	45,144

(a) Includes pulp and paper mills at Boyer, Burnie and Geeveston.

The 25 individual industries appearing in the previous tables are, in effect, a sample only of the data on factories compiled by the Bureau of Census and Statistics in Tasmania; the major reference is the bulletin *Secondary Industries* (annual).

## Government Factories

The concept of the factory is not restricted to the private sector of the economy and all factory data previously quoted in this chapter have referred to private and government establishments without distinction. Of the 1,792 factories in the 1965-66 collection, 80 were classified as "government", the term being applied to all levels whether Commonwealth, State, local or semi-government. To give an indication of the various fields of government factory activity, the next table has been compiled showing the number of establishments in the relevant sub-classes:

## Number of Government Factories in Sub-Classes, 1965-66

Sub-Class of Industry	Title of Sub-Class	Number of Government Factories
I-4	Lime, Plaster of Paris, Asphalt .. .. .	2
I-9	Other Cement Goods .. .. .	5
III-8	Boiling Down, Tallow Refining .. .. .	2
IV-3	Plant, Equipment and Machinery, including Machine Tools ..	13
IV-4	Other Engineering .. .. .	4
IV-6	Electrical Machinery, Cables and Apparatus .. .. .	1
IV-7	Construction and Repair, Tramcars and Railway Rolling Stock	4
IV-10	Motor Vehicles—Repairs .. .. .	20
IV-33	Other Metal Works .. .. .	1
V-3	Electroplating (Gold, Silver, Chromium, etc.) .. .. .	1
IX-5	Bakeries (including Cakes and Pastry) .. .. .	1
IX-19	Ice and Refrigerating .. .. .	4
IX-33	Other Food Processing .. .. .	1
X-4	Joinery .. .. .	2
X-11	Other Woodworking .. .. .	1
XI-1	Cabinet and Furniture Making .. .. .	2
XII-2	Printing, Government .. .. .	2
XV-4	Brooms and Brushes .. .. .	1
XV-6	Surgical and Other Scientific Instruments and Appliances ..	2
XVI-1	Electric Light and Power, Government .. .. .	11
Total .. .. .		80

Some of the authorities maintaining these establishments are the Hydro-Electric Commission, Postmaster-General's Department, the Transport Commission, the Metropolitan Transport Trust, the various marine boards, local government authorities and the Public Works Department.

The following table analyses the principal items of factory statistics, showing the government and non-government components of the totals:

## Government and Non-Government Factories, 1965-66

Particulars	Government Factories	Non-Government Factories	Total
Factories .. .. . (No.)	80	1,712	1,792
Average Employment (a)—			
Males .. .. . (No.)	2,592	25,449	28,041
Females .. .. . (No.)	52	6,222	6,274
Salaries and Wages Paid (b)—			
Males .. .. . (\$'000)	6,658	67,275	73,932
Females .. .. . (\$'000)	75	8,956	9,030
Cost of Materials Used .. (\$'000)	5,873	182,805	188,678
Other Costs of Manufacture (c) (\$'000)	980	39,316	40,296
Value of Production .. (\$'000)	22,804	152,802	175,606
Value of Output .. (\$'000)	29,657	374,924	404,581
Value at 30 June of Land and Buildings .. .. (\$'000)	(d) 131,941	79,982	211,923
Value at 30 June of Plant and Machinery .. .. (\$'000)	48,222	110,450	158,672

(a) Average whole year (including working proprietors).

(b) Excludes amounts drawn by working proprietors.

(c) Comprises cost of power, fuel, light, water, lubricating oils, containers, tools replaced and repairs to plant.

(d) Includes value of dams, flumes, earth works, etc. ancillary to production of electricity from water.

In the costing of the output of some Government factories, reliance is placed on internal accounting procedures since, in most cases, the product does not find its way to the open market but may appear as a book-entry between

sections of the one department. An obvious example of this occurs in sub-class IV-10 (Motor Vehicles—Repairs), the situation being that various departments and authorities maintain repair workshops for maintenance of their own vehicles.

## INDUSTRIAL GROWTH SINCE 1945

### Source of Data

In normal circumstances, the Bureau of Census and Statistics does not publish information relating to any single enterprise or establishment, and regards any information it collects as strictly confidential. It does, however, publish statistical aggregates where they do not reveal the operations of any single informant.

A description of industrial growth without mentioning individual organisations is not very illuminating; therefore the *State Directorate of Industrial Development and Trade* has prepared the following section and accepts responsibility for the information given.

### Primary-Secondary Relativity

Prior to World War II, there were few large manufacturing establishments in Tasmania. The economy of the State was dominated by primary industries which, in 1938-39, accounted for 60 per cent of the net value of production of all recorded industries.

By today's criteria, pre-war operations of manufacturing establishments were on a small scale but some enterprises have since emerged as national leaders in particular fields. Despite the limitations of geographical isolation and a relatively small domestic market, the State has been going through a period of important industrial development since World War II; the cessation of hostilities released a world-wide demand for goods and services, and a number of new Tasmanian factories were established to take advantage of the situation.

Post-war expansion of factory activity has made the State an important supplier of manufactured goods and processed materials; the economy is now dominated by *secondary industry* which accounted for 63 per cent of the net value of production of all recorded industries in 1965-66. The following table shows the changing primary-secondary relativity since 1938-39, in terms of net value of production:

Net Value of Production: Primary and Secondary Industries Compared

Year	Net Value of Production			Secondary Component as a Proportion of Total
	Primary Industries (a)	Secondary Industries (Factories)	Total	
	\$m	\$m	\$m	per cent
1938-39.. ..	16.3	10.8	27.1	40
1945-46.. ..	24.2	18.4	42.6	43
1950-51.. ..	66.9	49.2	116.2	42
1955-56.. ..	87.4	91.9	179.3	51
1960-61.. ..	73.6	124.9	198.5	63
1965-66.. ..	102.5	175.6	278.1	63

(a) Rural industries and the non-rural group (trapping, forestry, fishing and mining and quarrying).

### Tasmania as a Site for Industry

The State has certain advantages which have attracted new industrial enterprises. The principal factors are:

*Hydro-Electric Power:* This is fully described elsewhere in this chapter and it is therefore sufficient to mention the need of power-intensive industries for cheap bulk electricity (e.g. in metal smelting and refining, heavy chemicals, paper and paper pulp making). The State supply is based on hydro-electric generation, and its capacity is being continuously increased. Rates charged to industrial consumers compare very favourably with those in other Australian systems based principally on thermal generation.

*Water Resources:* In some parts of the world, water resources are inadequate; shortage of water and the high cost of conservation, re-use and "purification" have become major problems in the expansion of industry. This is definitely not the situation in Tasmania where water is abundant. The terrain favours the economical construction of high-level storages and run-of-the-river pumping schemes are feasible at many sites.

*Industrial Land, Harbours and Shipping:* Cheap land, and its proximity to deep-sea ports, are factors influencing the expansion of industry in the four main centres of population, Hobart, Launceston, Burnie and Devonport.

The associated ports are served by overseas ships and by interstate ships using modern roll-on roll-off and containerised cargo techniques.

*Legislation and Government Assistance:* The State *Industrial Development Act* 1954 provided for the establishment of the Industrial Development Branch of the Premier's and Chief Secretary's Department. This organisation is now attached to the Attorney General's Department and has been re-named as the Directorate of Industrial Development and Trade. The Directorate gives advice, information and assistance on a wide range of important industrial matters, and is empowered to provide financial assistance, including loan guarantees, with the object of helping establish new industries or expanding those in operation.

In common with manufacturers in other Australian States, Tasmanian manufacturers may be granted tariff protection by the Commonwealth, the policy being to assist efficient producers compete with those in other countries.

### Major New Factories Since 1945

The following lists some of the major factories established in the post-war years:

*Petersville Australia Ltd (Ulverstone and Devonport):* Both Gordon Edgell Pty Ltd and International Cannery Pty Ltd operated in the post-war period to make Tasmania a major producer of processed peas; the two companies now operate as subsidiaries of Petersville Australia Ltd.

*Stanley-Titan Pty Ltd (Moonah):* Originally established in 1945 by the Titan Manufacturing Co. Pty Ltd to produce wood chisels, the plant went on to make auger bits, cane knives, flat power bits, wood screw pilot bits and plane irons. The present company resulted from a merger with the Stanley works (U.S.A.), the expanded range of products including tape rules, trimming knives, bench planes, block planes, spoke-shaves, hand drills and brace bits.

*Silk and Textile Printers Ltd (Derwent Park):* Operations commenced in 1947; the processes include the weaving, dyeing, printing and finishing of silk, nylon, terylene, rayon and cotton.

*Australian Titan Products Pty Ltd (Burnie)*: Production of titanium oxide (rutile) pigments began in 1949, plant capacity rising from an initial 1,800 tons to 22,000 tons per annum.

*Murex (Asia) Pty Ltd (Derwent Park)*: The company was incorporated in 1950 to make arc welding materials; activities have steadily expanded to meet the demand for the company's welding electrodes, machines and accessories.

*James Nelson (Aust.) Pty Ltd (Launceston)*: Established in 1951, the mill began with 150 looms and is installing more to bring the total to 332. Current production is 7m square yards of synthetic material per annum.

*Tootal Ltd (Devonport)*: First operations in 1952 used piece-goods imported from the U.K. to make textiles. In 1955, capacity was increased to include the weaving, dyeing and finishing of locally produced fabrics.

*Comalco Aluminium (Bell Bay) Ltd*: The production of aluminium commenced in 1955 at a plant erected with Commonwealth Government funds (with the State Government also participating). The present company was formed in 1960 to buy out the Commonwealth's interest.

Production capacity has grown from 13,000 to 54,000 tons of primary aluminium per annum and work is proceeding to raise it to 72,000 tons. The capacity of the alumina (aluminium oxide) plant has recently been doubled and its output of more than 50,000 tons per annum meets about half Comalco's present requirements. A new company, Comalco Aluminium Powder Pty Ltd, is establishing a plant at Bell Bay to make aluminium powder and paste.

*Tasmanian Scottish Carpet Manufacturing Pty Ltd (E. Devonport)*: The first piece of Tasmanian carpet was woven in 1961 and capacity has now been increased, the product being of the Spool Axminster type.

*Kraft Foods Ltd (Scottsdale)*: In 1961, Kraft Foods Ltd acquired Dewcrisp Products Ltd, manufacturers of dehydrated vegetables and of frozen and canned peas. Capacity was expanded and the making of instant mashed potatoes began in 1964.

*Australian Paper Manufacturers Ltd (Port Huon)*: Production began in 1962 with an initial capacity of 25,000 tons of wood pulp per annum; capacity has now been lifted to 75,000 tons.

*Tasmanian Electro Metallurgical Co. Pty Ltd (Bell Bay)*: The plant began production of ferro-manganese for the Australian steel industry in 1962. Recent expansion has doubled production capacity from 35,000 tons to 70,000 tons per annum.

*Alginates (Aust.) Co. (Orford)*: Operations commenced in 1964, the process extracting sodium alginate from sea kelp. Alginate is a colloid agent, used in film forming, jelling, stabilising, suspending and emulsifying processes. Kelp is obtained from the eastern shoreline in specially designed barges.

### Other New Products

The previous section described some of the factories which have started large-scale manufacturing activities since 1945. The list is by no means exhaustive; other new products which have been added recently to the range of goods manufactured in Tasmania include: bottles, jars and glass containers; domestic electric appliances; fibreboard shipping containers; mattresses; corrugated and solid fibre containers; multi-wall paper bags; tubes for paper,



building and textile industries; hot bitumen and bituminous emulsions; roofing material; malt products; anhydrous milk fat; casein; and long-keeping milk treated by a new ultra-heat process.

### Expansion of Established Industries

Not all expansion of manufacturing activity originates in new factories and an account of post-war development would be deficient if it ignored the role played by long-established enterprises. Examples follow:

*Australian Newsprint Mills Ltd (Boyer)*: The first paper machine, with a 27,000 ton capacity per annum, began operating in 1941; a second machine, installed after the war, increased capacity to 94,000 tons of newsprint per annum. The current \$28m expansion programme requires the installation of a third machine to lift the total capacity to 165,000 tons; the plant with this capacity will be able to supply about 40 per cent of Australia's needs. The Boyer plant is Australia's sole newsprint producer.

*Associated Pulp and Paper Mills Ltd (Burnie)*: Paper manufacturing capacity has increased from an initial 14,000 tons per annum in 1938 to 100,000 tons at present; the company has become Australia's largest manufacturer of fine papers, and has subsidiaries making specialty papers, hard board and particle board and producing sawn timber. At Wesley Vale, thirty miles east of the Burnie works, the company is constructing a new integrated pulp and paper complex, with paper production expected to begin before 1970.

*Cadbury-Fry-Pascall Pty Ltd (Claremont)*: Production of confectionery commenced in 1922. Since then the plant has grown continually to become the largest cocoa and chocolate factory in Australia, accounting for 30 per cent of all block chocolate production in Australia. Recent expansion projects include the construction of a \$0.8m manufacturing block at Claremont and the completion of a \$0.3m plant at Edith Creek to process 3m gallons of milk each season on the north-west coast.

*Electrolytic Zinc Company of A/sia Ltd (Risdon)*: Operations include the refining of zinc, the making of sulphuric acid and the recovery of lead and silver as residues. Other products include metallic cadmium, zinc base die-cast alloy, special galvanising alloys, zinc dust, zinc sulphate and cobalt di-oxide.

Superphosphate production increased from 28,000 tons in 1944-45 to 160,000 tons in 1965-66. In 1956, a sulphate of ammonia plant with a 62,000 ton annual capacity was brought into production and, in 1964, a small plant for making aluminium sulphate began operating.

Production of the company's principal metal—refined zinc—has almost doubled since 1944-45, 1965-66 output standing at 144,000 tons. The zinc plant supplies a large proportion of Australia's total requirements.

*Goliath Cement Holdings Ltd (Railton)*: In 1944-45, production of Portland cement approached 44,000 tons. Modernisation has been undertaken in several stages, the last lifting annual capacity to 200,000 tons. A new dry process cement plant with a 300,000 ton annual capacity is being installed at a cost of \$4.5m. The economical handling of the product is being facilitated by the installation of bulk handling facilities both at the Railton works and at the port of Devonport.

*Kelsall and Kemp (Tas.) Ltd (Launceston)*: From a small beginning in 1921, the company has become one of Australia's leading producers of high fashion fabrics. Furniture fabrics have recently been added to its range of products. An expansion programme will lift output 25 per cent within two years.



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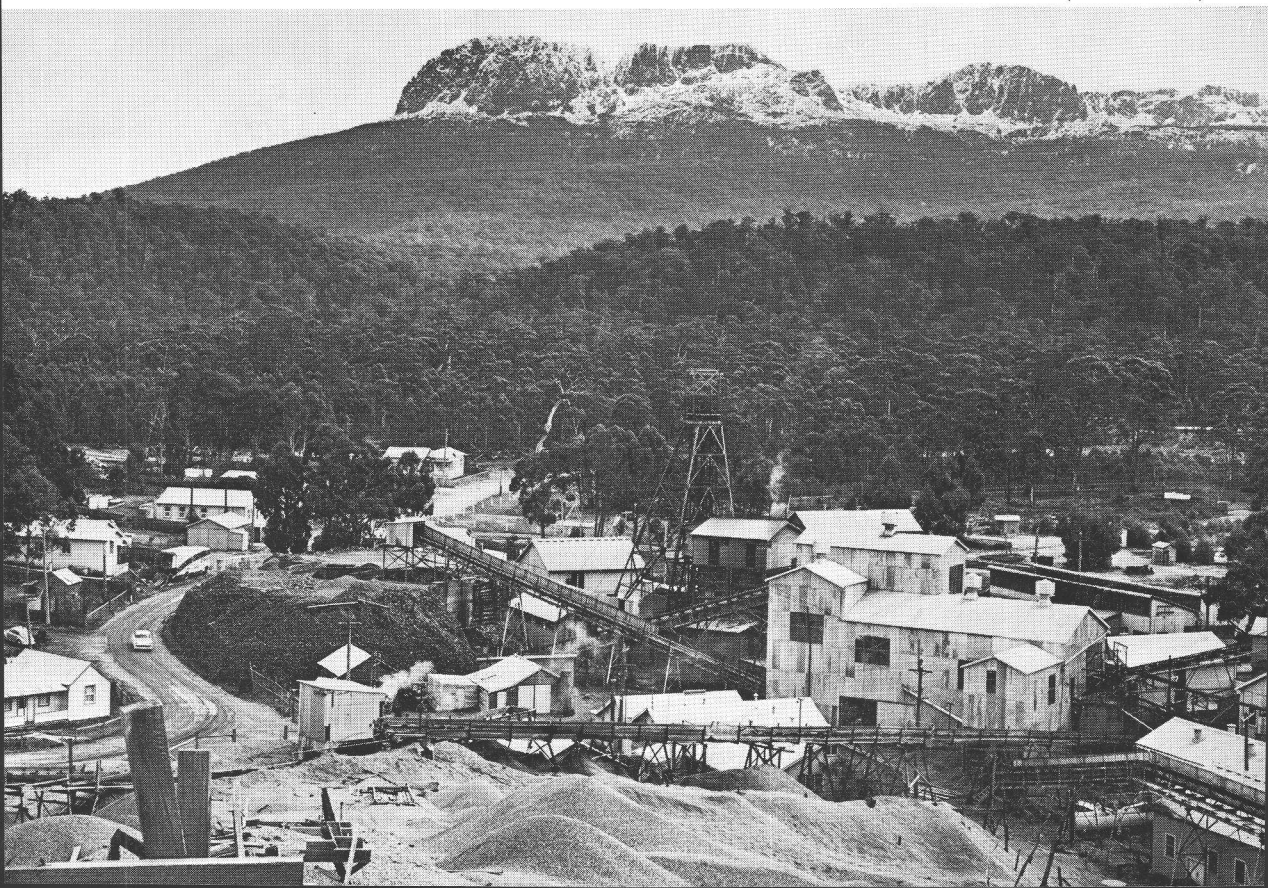
*Meadowbank dam and power station, the downstream end of the Derwent chain*

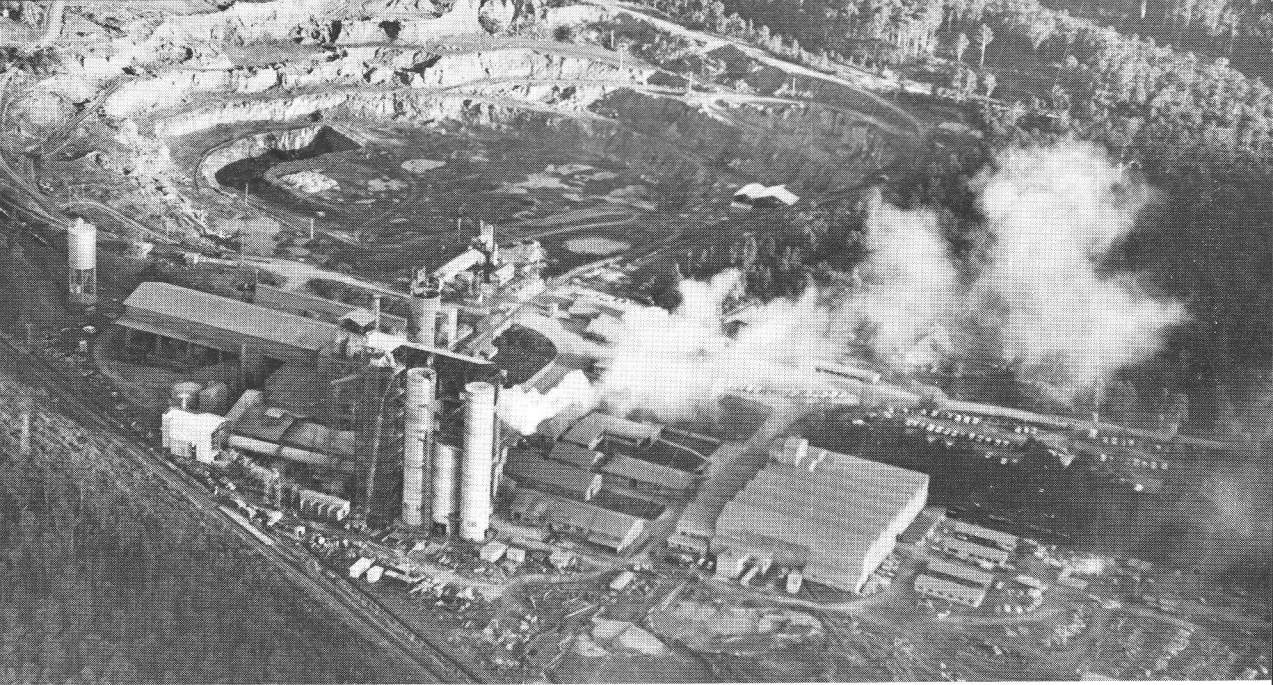
(Brian Curtis)

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*The Aberfoyle tin mine beneath Stacks Bluff*

(The Examiner)





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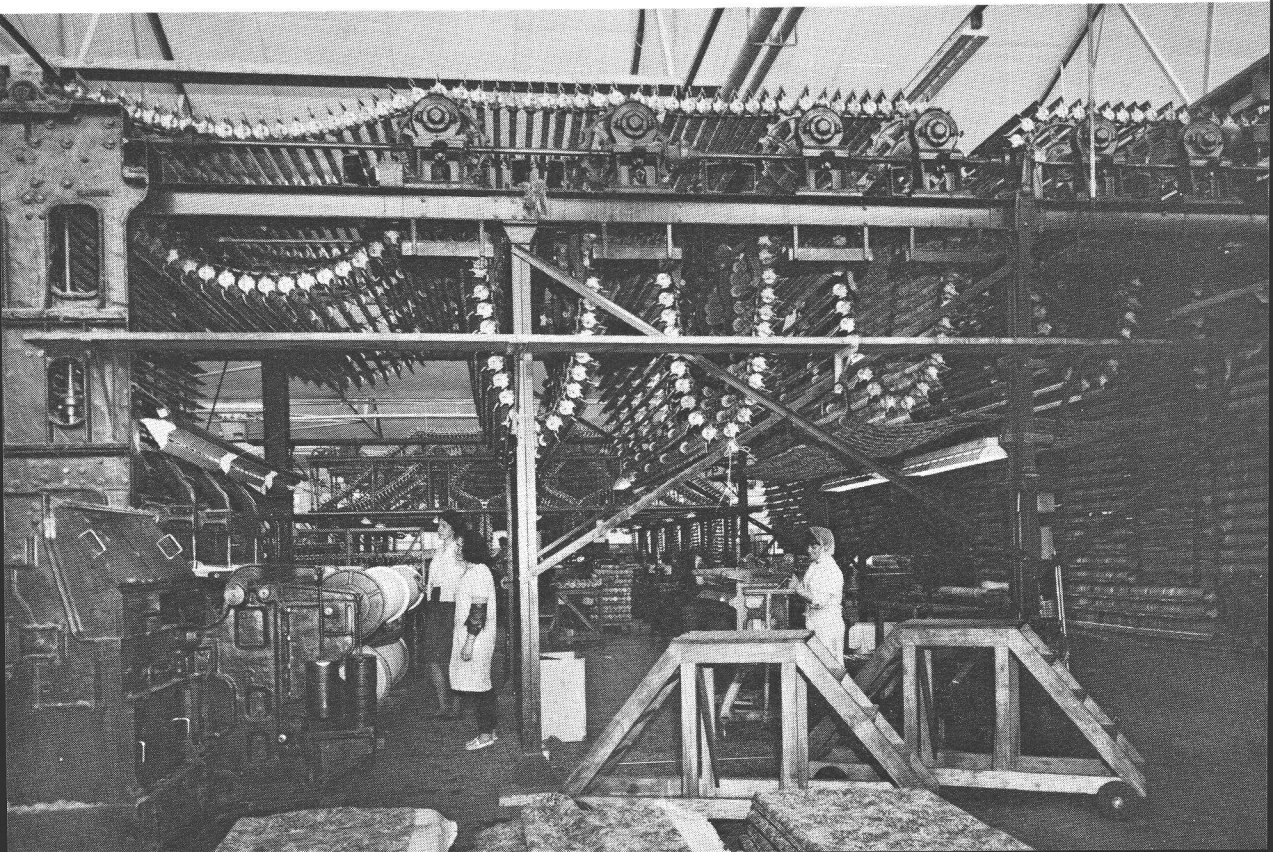
*Goliath Portland Cement Co. Ltd at Railton*

*(The Examiner)*

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*Tasman Scottish Carpet Manufacturing Pty Ltd's plant at East Devonport*

*(Dept of Film Production)*





*Patons and Baldwins (Aust.) Ltd (Launceston)*: Worsteds and woollen hand knitting and machine knitting yarns are spun at this factory which first began yarn making in 1923. The post-war period saw steady expansion, plant development requiring over \$6.5m in the last ten years. The company is now establishing a \$0.75m plant at George Town to produce high quality acrylic yarns for machine knitting.

*Repco Bearing Company Pty Ltd (Launceston)*: Established in 1933 to manufacture engine bearings for the Australian domestic automotive spare parts trade, the company has now expanded and secured export markets in overseas countries. Special equipment has been installed recently to produce self-lubricating bushings and shaped parts from metal powders. Repco bearings have been used in the world's major motor races since they are incorporated in Jack Brabham's special motors.

*A. Wander (Aust.) Pty Ltd (Quoiba)*: Established in Tasmania in 1941, the Quoiba unit has become the second largest "Ovaltine" factory in the world and is still growing. About 75 per cent of the output goes to Singapore and Thailand, most of the balance being consumed in Australia. Recent additions to the range of products include malt extracts, "Ovaltine" infant rusks, and pharmaceutical products.

### Planned Projects

The expansion of manufacturing activity described in the previous sections would not be complete without some mention of new projects. The next section lists some of the major developments that are either in the planning or construction stage:

*Iron Ore Pellets (Port Latta)*: The most important project at present is the establishment of an iron ore pelletising industry by a consortium which includes Pickands Mather and Co. International, and Mitsubishi Shoji Kaisha Ltd. The scheme will involve expenditure of more than \$62m to be incurred over a period of less than two years.

Initial output will be more than 2m tons of high grade iron ore pellets which will be shipped to Japanese steel mills as blast furnace feed. Production of iron ore pellets is expected to begin towards the end of 1967.

*W. Angliss and Co. (Aust.) Pty Ltd*: A long range project to expand activities in the fish processing field is expected to involve the company in expenditure of over \$3m.

*Ceilkote Pty Ltd (Devonport)*: This company plans to establish a factory at East Devonport to manufacture corrosion-resistant materials.

*Longford Abattoir Co. (Longford)*: In addition to a \$0.2m by-products plant which has been recently established, the Company plans to spend \$0.5m on expansion of their works at Longford.

*Blue Ribbon Holdings Pty Ltd (Burnie)*: The company plans to open a meat cannery in Burnie to supply home and overseas markets. There are no meat canning factories in Tasmania at present.

### GOVERNMENT HYDRO-ELECTRIC POWER

The year 1967 saw a continuation and intensification of drought in the catchment areas and was notable for the following developments: (i) a 25 per cent cut in industrial power supplies to operate from 1 October; (ii) daylight saving to operate from 1 October to conserve power; (iii) an average 7.5 per cent increase in non-bulk electricity price to

*operate from 1 October; (iv) legislation passed empowering the Hydro-Electric Commission to acquire small gas turbine units to relieve the strain on water resources. Given the fact that drought in the catchment areas is an exceptional phenomenon, the generality of the text that follows is not materially invalidated. (In late November, a 35 per cent cut was made in industrial power.)*

### Introduction

Tasmania is unique among Australian States in that its electric power system is based exclusively on hydro-electric installations, although a thermal station is planned to operate in 1971. Other Australian States rely, in the main, on thermal plants and hydro-electric power, if available, is used only to supplement the basic supply. The Snowy River Hydro-Electric Scheme which feeds power to the Victorian and N.S.W. grids is not designed to cope with the base load demand in these two States, and its essential function is to provide the extra power necessary to meet peak loads, and also to supply irrigation water to the inland. The Tasmanian system, despite its lower installed capacity, produces more power than the Snowy Scheme.

Thermal power stations of any type are best suited to steady operation on base load. Steam cannot be raised at a moment's notice and having thermal capacity standing by to meet peak demands becomes very expensive. By way of contrast, a water turbine can pick up load very quickly as soon as the valve is opened.

In the Tasmanian situation, water power is required to meet the base load at all times and yet have the extra capacity to cope with peak loads. The Poatina machines, for example, with a head of 2,729 feet and a turbine rating of 346,000 horsepower, have the ability to take up a very big load, up to a maximum of 250,000 kilowatts, in a matter of minutes. The decision to introduce a thermal station into the system has been taken before even half the State's water resources have been exploited. The reason for the decision is discussed in a later section headed "Construction Policy"; economy in the use of capital is the main consideration.

Concentration on water as a source of power in Tasmania has resulted in a particular pattern of development. Since water is virtually the sole source of electric power, it must be conserved even if rainfall is bountiful. Accordingly certain characteristics can be seen in the massive engineering works undertaken by the Hydro-Electric Commission:

(i) Emphasis on creation of storages; a scheme depending on the "run of the river" is found at Trevallyn but the decision not to create any substantial storage was forced by consideration for valuable agricultural land up-stream.

(ii) Emphasis on use of the same water over and over again; for example water from Lake St Clair may pass through eight power stations before reaching the tidal waters of the Derwent at New Norfolk. Water from Lake Echo, thirty miles to the east of Lake St Clair, also may pass through eight stations, the lower six being those fed by water from Lake St Clair.

Certain indirect advantages have also accrued to the State through its concentration on hydro-electric power development. The first major undertaking at Waddamana on the Great Lake, opened in 1916, had relied heavily on horses and a wooden railway to get plant to the construction site. Subsequent development, usually in remote areas, led to the making of excellent roads, initially built by the Hydro-Electric Commission for access and construction purposes. In 1963, the Prime Minister announced that his government

would make available a \$5,000,000 grant for a road in the remote south-west to facilitate investigations of future projects and this highway has been driven west to the junction of the Gordon and the Serpentine rivers.

The extensive storages built by the Hydro-Electric Commission on the Derwent drainage system have given engineers the ability to exercise extensive control over the flow, to the point where the scheme can be viewed as equivalent to flood prevention. Although no extensive irrigation systems have yet been based on the controlled flows now available, the fact remains that the storages are there and the irrigation potential exists.

The possibilities of the Derwent catchment area have been fully exploited and the centre of activity has now shifted to the head waters of the north-west rivers, Mersey, Forth and Wilmot. The north-west scheme will not be finished until approximately 1971 but, in the meanwhile, survey is pushing ahead in the river systems of the south-west and west (the Gordon, Franklin, King, etc.). The future development of hydro-electric power in these areas is full of exciting possibilities for the State. Quite apart from the massive loads of power available from these heavy-rainfall river systems, there is the certainty that an adequate road system will penetrate areas which have traditionally been described as "uninhabited and virtually unexplored." The new road from Maydena to the Gordon-Serpentine junction, opened for public use in June 1967, will be merely the first step in such development.

In the generation of power from water, Tasmania has tended to be the pioneer State of the Commonwealth, as the following historical section will indicate.

### Beginnings

The pioneering of public hydro-electric power in Tasmania was undertaken by the City of Launceston in 1895 when a 579 horse-power generator was installed at Duck Reach, situated on the South Esk two miles from its junction with the River Tamar. The station, with enlarged capacity, ran for sixty years but its function was purely municipal supply.

The scheme which eventually led to the establishment of a State-owned, State-wide supply of electricity was based upon exploitation of the waters of the Central Plateau; the original impetus was given by Complex Ores Ltd which, under an act of 1909, was given the right to generate power from the Great Lake. Complex Ores Ltd assigned its property and undertakings to Hydro-Electric Power and Metallurgical Company Ltd which began construction; in 1914 physical and financial difficulties eventually persuaded this company to sell out to a newly formed State authority, the Hydro-Electric Department, the purchase price being \$624,000.

Construction proceeded despite war-time difficulties, the work requiring a low dam across the Shannon outlet of the Great Lake to increase the lake storage to 500 square mile feet, a diversion canal from the Shannon, and finally pipelines to contain a head of 1,123 feet above Waddamana powerhouse on the left bank of the Ouse. In May 1916, two machines, each of 4,900 horse-power, were brought into operation. Some indication of construction difficulties may be gained from the fact that chaff was a significant part of the capital cost—in the absence of adjacent roads or railways, a horse-drawn wooden tramway gave the only access.

In January 1930, the *Hydro-Electric Commission Act* 1929 came into force; the Hydro-Electric Commission was created to manage the existing works and to control the waters of the State, and in the Commission was

vested the sole right of generating, distributing and selling electricity throughout Tasmania. Considering that present capacity of the generating system approaches 1.2 million horsepower, it is interesting to record the system taken over by the Hydro-Electric Commission in 1930. It consisted of a single power station, Waddamana "A", with an installed turbine capacity of 65,800 horsepower; load on the system was 65,070 horsepower of which 37,000 horsepower was being taken by the Electrolytic Zinc Co. This company had commenced operations in 1917 at Risdon (near Hobart), the attraction to a Tasmanian site being the availability of cheap power for metallurgical refining.

### Subsequent Development

To trace the expansion of turbine capacity from 65,800 horsepower in 1930 to the present day would be confusing if undertaken purely chronologically; the better course is to show the development of each major section of the generating network. Full details of the present schemes appear in the 1967 *Year Book* and the following section summarises the more important features. The item "Source" has been written to indicate the main water systems but only a large-scale map will show full details of the rivers, streams and lakes involved.

#### *Waddamana-Shannon*

*Source:* Great Lake.

*Details:* Miena dam built across Shannon outlet of Great Lake; water passed through Shannon station to become input for Waddamana stations.

*Operation:* First generated power in 1916 (about 7,300 kW) and built to full capacity (107,500 kW) by 1949. In 1964, Shannon and Waddamana "A" stations were closed down, the "B" station being retained as spare plant and for emergency peak operation (the *Poatina scheme* with a greater head, 2,729 feet, makes more efficient use of the Great Lake water).

Details of the Waddamana-Shannon scheme in its final form were as follows:

Waddamana-Shannon

Power Station	Head ft	Turbines		Station Capacity	
		No.	Rating hp	Turbines hp	Generators kW
Waddamana "A" (a) ..	1,123	2 7	4,900 8,000	65,800	49,000
Shannon (a) .. ..	258	2	7,250	14,500	10,500
Waddamana "B" (b) ..	1,127	4	16,700	66,800	48,000
Total .. ..	..	..	..	147,100	107,500

(a) Closed down in 1964 when Poatina station commenced operating.

(b) Retained as reserve plant.

#### *Tarraleah-Butlers Gorge*

*Source:* Lake St Clair and Upper Derwent.

*Details:* Artificial Lake King William formed by Clark Dam at Butlers Gorge; low head station at foot of dam discharges into canals leading to

Tarraleah. The discharge from Tarraleah station enters the bed of the Nive. The useful storage in Lake King William now is 0.43m acre feet, Clark Dam having been built 20 feet higher in the period 1964-1966.

*Operation:* Three turbines running at Tarraleah by 1938 and full capacity available by 1951.

Particulars of the scheme are:

**Tarraleah-Butlers Gorge**

Power Station	Head ft	Turbines		Station Capacity	
		No.	Rating hp	Turbines hp	Generators kW
Butlers Gorge .. ..	184	1	17,100	17,100	12,200
Tarraleah .. ..	981	6	21,000	126,000	90,000
Total .. ..	..	..	..	143,100	102,200

*Tungatinah-Lake Echo*

*Source:* The Nive and Ouse Rivers and Lake Echo.

*Details:* Bradys Lake is fed with water from the Nive and the Ouse, the Ouse diversion passing first through Lake Echo station. From Bradys Lake, the water is led to Tungatinah station and discharged into the bed of the Nive. (The Tarraleah and Tungatinah stations lie almost opposite each other.)

*Operation:* First power produced in 1955.

Particulars of the scheme are as follows:

**Tungatinah-Lake Echo**

Power Station	Head ft	Turbines		Station Capacity	
		No.	Rating hp	Turbines hp	Generators kW
Lake Echo .. ..	568	1	45,000	45,000	32,400
Tungatinah .. ..	1,005	5	35,000	175,000	125,000
Total .. ..	..	..	..	220,000	157,400

*Liapootah-Wayatinah*

*Source:* Discharge from Tarraleah and Tungatinah in bed of Nive; Derwent River.

*Details:* Liapootah station is fed with water from a dam across the Nive. The Liapootah discharge and the waters of the Derwent are impounded by a dam below the confluence of the Derwent and Nive and are then led to Wayatinah station.

*Operation:* The first power was produced in 1957 and full capacity reached in 1960.



Particulars of the scheme are as follows:

**Liapootah-Wayatinah**

Power Stations	Head ft	Turbines		Station Capacity	
		No.	Rating hp	Turbines hp	Generators kW
Liapootah .. ..	361	3	39,000	117,000	83,700
Wayatinah .. ..	203	3	20,500	61,500	38,250
Total .. ..	..	..	..	178,500	121,950

**Catagunya**

*Source:* Discharge from Wayatinah; the Derwent augmented by its tributaries, the Florentine and Black Bobs Rivulet.

*Details:* Water drawn from storage created by pre-stressed concrete Catagunya dam built across the Derwent.

*Operation:* The scheme began yielding power in 1962.

Particulars of the scheme are as follows:

**Catagunya**

Power Station	Head ft	Turbines		Station Capacity	
		No.	Rating hp	Turbines hp	Generators kW
Catagunya .. ..	144	2	33,500	67,000	48,000

**Lower Derwent**

*Source:* Catagunya discharge and various Derwent tributaries, e.g. Repulse, Broad, Dee, Ouse, Clyde, etc.

*Details:* Water will pass through three stations formed by dams across the Derwent, namely Repulse, Cluny and Meadowbank in that order.

*Operation:* Meadowbank completed in 1967; Repulse and Cluny scheduled for completion in 1968.

Particulars of the scheme are as follows:

**Lower Derwent**

Power Station	Head ft	Turbines		Station Capacity	
		No.	Rating hp	Turbines hp	Generators kW
Repulse .. ..	88	1	39,000	39,000	28,000
Cluny .. ..	56	1	28,500	28,500	21,250
Meadowbank ..	96	1	56,000	56,000	40,000
Total .. ..	..	..	..	123,500	89,250

**Trevallyn**

*Source:* South Esk (supplemented by discharge into its tributary from Poatina station).

*Details:* A "run of the river" scheme with only daily pondage at the tunnel inlet (to store more water would flood agricultural land). Trevallyn station, near Launceston, discharges into the Tamar River.

*Operation:* Completed in 1955.

Particulars of the scheme are as follows:

**Trevallyn**

Power Station	Head ft	Turbines		Station Capacity	
		No.	Rating hp	Turbines hp	Generators kW
Trevallyn .. ..	415	4	28,000	112,000	80,000

*Great Lake (Poatina)*

*Source:* Great Lake (with supplementary pumping from Arthurs Lakes).

*Details:* The Great Lake, naturally draining south, is diverted at its north-eastern end by a tunnel and led to the underground Poatina station. The discharge feeds through a tributary into the South Esk and thus becomes input for the Trevallyn station. A new Miena dam across the Shannon has been built to give a useful storage in the Great Lake of 1.71m acre feet (i.e. about half the storage of the Eucumbene in N.S.W.). The storage is supplemented by pumping water from Arthurs Lakes and the small Tods Corner station (1,600 kW) operates on the discharge of this pumped water into the Great Lake.

*Operation:* First started yielding power in 1964 and five turbines operating by 1966; provision exists to instal a sixth turbine later.

Particulars of the scheme are as follows:

**Poatina**

Power Station	Head ft	Turbines		Station Capacity	
		No.	Rating hp	Turbines hp	Generators kW
Poatina .. .. .	2,729	(a) 5	69,200	(a) 346,000	(a) 250,000

(a) Five turbines installed; provision exists for a sixth.

With the completion of the Poatina scheme, the possibility of further developing the Derwent catchment area was exhausted (apart from the Lower Derwent Scheme which is expected to be operating at all three sites by 1968). The centre of activity now is located in the area of three rivers flowing towards Bass Strait, and also at the junction of the Gordon and Serpentine rivers in the south-west.

*Mersey-Forth (Under Construction)*

The theory of the Mersey-Forth-Wilmot scheme is derived from the fact that none of these three rivers in isolation provides an economic source of power; the essence of the scheme is the diversion of the Mersey and Wilmot Rivers into the Forth River and the construction of Forth River dams, the power to be derived from the operation of seven distinct power stations. The total installed capacity of the generators in the seven north-western stations will be approximately 309,700 kW.

To comprehend the scheme, it is necessary to visualise the Forth as lying in the centre with the Mersey to the east and the Wilmot to the west. The power stations are planned as follows:

(i) *Rowallan*. The upper Fisher, a Mersey tributary, has been dammed to form Lake Rowallan and a power station with a head of 163 feet will be built by 1968. (Generator capacity, 10,450 kW.)

(ii) *Fisher*. Fisher power station (head 2,100 feet) will be fed from Lake MacKenzie and discharge into the Fisher above its junction with the Mersey. (Generator capacity, 44,650 kW.)

(iii) *Lemonthyme*. The Mersey will be dammed below its junction with the Fisher and diverted, through Lemonthyme power station (head 530 feet), into the Forth River. (Generator capacity, 51,000 kW.)

(iv) *Cethana*. A dam lower down the Forth will feed the Cethana power station (head 320 feet). (Generator capacity, 85,000 kW.)

(v) *Wilmot*. A dam on the Wilmot will divert water to the Forth through Wilmot power station (head 840 feet); the discharge will occur above Cethana station. (Generator capacity, 30,600 kW.)

(vi) *Devils Gate*. A dam on the Forth below Cethana will feed Devils Gate station (head 230 feet). (Generator capacity, 60,000 kW.)

(vii) *Paloona*. The final dam on the Forth will feed the Paloona station (head 100 feet). The discharge from Paloona will be about 70 feet above sea level, so all possibility of further exploitation will have been exhausted at this point. (Generator capacity, 28,000 kW.)

The order of stations in the previous description was chosen to show the logical progression from the headwaters in the highlands to the final point on the coastal plains. The actual programme approaches the task in a different order, the stations in construction sequence being: Rowallan, Lemonthyme, Devils Gate, Wilmot, Cethana, Paloona and Fisher. The first station is expected to be in operation by 1968 and the last by 1971.

#### *The Gordon River—Stage One (Projected)*

The Gordon is Tasmania's largest river but its development as a power source has only recently become a practical proposition. The river lies in the State's wildest, wettest and most remote terrain and the main problem has been access; however, a Commonwealth Government grant of \$5m helped build a road from Maydena to the junction of the Gordon and Serpentine rivers; the road was made available for public use in June 1967.

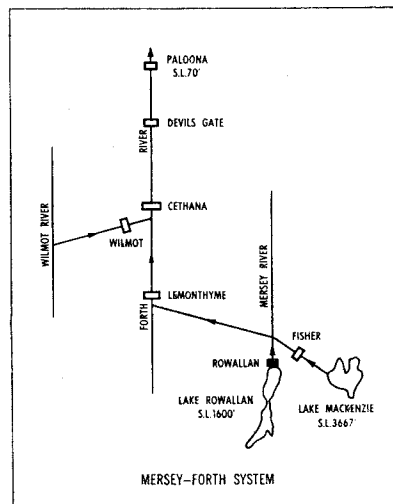
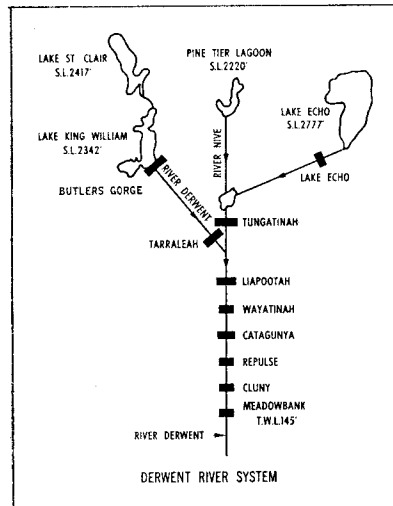
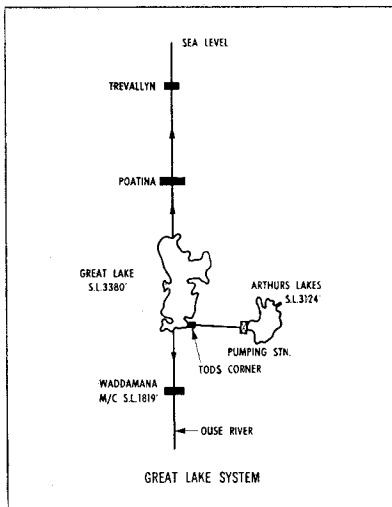
The first projected development of power on the Gordon is termed Stage One because later schemes in the west and south-west can utilise the Gordon at other sites, as well as exploiting the waters of the Franklin, Olga and King.

Stage One (the *Middle Gordon* scheme) aims at producing 240,000 kW generator capacity from a 600 foot head of water. The storage will be created by dams across the Serpentine and the Gordon very close to their junction; a third dam is also required at Scotts Peak across the Huon River headwaters. Construction of these three dams will result in the creation of Australia's largest artificial storage with a useful capacity of 10m acre feet. (Comparisons are: Eucumbene, N.S.W., 3.54m acre feet; the projected Chowilla, S.A., 5.00m; Great Lake, Tas., 1.71m; Lake King William, Tas., 0.43m.)

The storage will develop as two artificial lakes connected by a short canal near McPartlans Pass. The southern lake will be created by dams across the Serpentine and Huon, and the northern lake by the dam across the Gordon. The power station will receive its water from the northern lake (approximate height 1,010 feet above sea level) and its discharge will flow into the Gordon.

The remaining altitude for further exploitation of the Gordon, 400 feet, may seem low but the river is fed below the projected lakes by big tributaries; accordingly, a later *Lower Gordon* scheme based on high volume-low head is thought possible and likely to produce a further 240,000 kW generator capacity.

Such is the immensity of the planned storage that four years will be required for the water to build up to the designed level; 10m acre feet of water discharged on Tasmania's area, 16.9m acres, would flood it to a depth of seven inches. The programme envisages the completion of the dams by 1971 or 1972 and the first output of power in 1975. Estimated cost of Stage One is \$95m. The creation of the southern lake will cause Lake Pedder to disappear under 50 feet of water.



Diagrams illustrating main generating systems. Black rectangles represent power stations; open rectangles represent proposed stations. (M/C is machine centre; T.W.L. is tail water level; S.L. is height above sea level.)

*Bell Bay Thermal Station (Projected)*

Tasmania has relied exclusively on hydro-electric power so long that a scheme based on thermal generation seems surprising. A thermal plant using oil is to be built at Bell Bay and will have generators with 120,000 kW capacity. The capital cost is estimated at \$20.75m but its output will cost 0.55 cents per unit; by way of contrast, a Gordon Stage One unit is estimated to cost 0.38 cents and a Mersey-Forth unit 0.46 cents (the unit is one kilowatt-hour). The reasons for introducing a thermal plant into a completely hydro-powered network are discussed in a later section, "Construction Policy". First output is planned for 1971.

**System Capacity**

The previous section has shown details of all schemes, either operating now, under construction or projected. The next table brings this information together and shows how the capacity of the system will grow from 849,150 kW (1967) to 1,568,100 kW (1975), assuming that all construction goes according to plan.

**Capacity of Present and Planned Power Stations**

Power Stations	Water System	Date of Entry Into Service (a)	Station Generator Capacity (kW)	Cumulative Aggregate Capacity of All Stations (kW)
INSTALLED BEFORE 1968				
Waddamana "B"	Great Lake	1944	48,000	..
Tarralcah .. ..	Derwent	1938	90,000	..
Butlers Gorge .. ..	Derwent	1951	12,200	..
Tungatinah .. ..	Nive/Ouse/ Little Pine	1953	125,000	..
Trevallyn .. ..	South Esk (b)	1955	80,000	..
Lake Echo .. ..	Little Pine/ Ouse	1956	32,400	..
Wayatinah .. ..	Derwent	1957	38,250	..
Liapootah .. ..	Derwent	1960	83,700	..
Catagunya .. ..	Derwent	1962	48,000	..
Poatina .. ..	Great Lake	1964	250,000	..
Tods Corner .. ..	Arthurs Lakes	1966	1,600	..
Meadow Bank .. ..	Derwent	1967	40,000	849,150
CONSTRUCTION PLANNED OR IN PROGRESS				
Cluny .. ..	Derwent	1968	21,250	..
Repulse .. ..	Derwent	1968	28,000	..
Rowallan .. ..	Mersey-Forth	1968	10,450	908,850
Lemonthyme .. ..	Mersey-Forth	1969	51,000	..
Devils Gate .. ..	Mersey-Forth	1969	60,000	1,019,850
Wilmot .. ..	Mersey-Forth	1970	30,600	..
Cethana .. ..	Mersey-Forth	1970	85,000	1,135,450
Paloona .. ..	Mersey-Forth	1971	28,000	..
Fisher .. ..	Mersey-Forth	1971	44,650	..
Bell Bay Thermal .. ..	..	1971	120,000	1,328,100
Gordon River Stage (1)	Gordon:Ser- pentine:Huon	1975	240,000	1,568,100

(a) Actual till 1967; planned dates for subsequent years.

(b) Discharge from Poatina enters South Esk via tributaries.

In the previous table, no allowance has been made for the introduction of a sixth turbine at Poatina; if installed, this turbine would lift the aggregate capacity of all stations by 30,000 kW and raise the 1975 estimate to over 1,600,000 kW.

### Control

The Hydro-Electric Commission is an autonomous semi-government authority, responsible almost entirely for the conduct of its own affairs. The "Minister Administering the Hydro-Electric Commission Act" is answerable to Parliament for the activities of the Commission, but the Commission is not directed by or responsible to the Minister as is a government department. In other words, the Commission is envisaged as a trading or business organisation, and the purpose of the legislation that created it was to remove it from day to day political control. The power exerted by Parliament is mainly financial, not over the ordinary revenue and expenditure of the authority, but over the supply of loan moneys for new capital works. Thus at 30 June 1966, the loan debt of the authority stood at \$263 million of which \$239 million came from State loan funds; the balance was raised by the authority itself on the semi-government loan market, power to raise money in this field having been conferred in 1952. New power developmental works require the sanction of Parliament before any work may be commenced, and loan funds are allocated through the State Treasury from the sums made available to the State by a Federal body, the Australian Loan Council, which borrows money on behalf of all States.

Two other restrictions on the Commission can be listed: (i) It cannot change its tariff charges for the supply of electricity to consumers except with the approval of the Governor-in-Council. Theoretically this could lead to tariff charges being deliberately kept lower than at an economic level; in practice, this has not happened since the Commission is expected to operate as a bona-fide business organisation and to recoup its operating expenses from adequate charges. (ii) In certain of its dealings, such as in real estate, the Commission must obtain the approval of the Minister.

The status of the Commission was described thus by the High Court of Australia in a judgment delivered in 1950: "In the eye of the law the corporation is its own master and is answerable as fully as any other person or corporation. It is not the Crown and has none of the immunities or privileges of the Crown. Its servants are not civil servants and its property is not Crown property."

### Organisation

Under the Commission, with its full time Commissioner and three part-time Commissioners, there are five branches:

(i) *Civil Engineering Branch*. Responsible for: survey of water resources; design and construction of all civil works involved in power development and allied projects.

(ii) *Electrical Engineering Branch*. Responsible for: studies of load growth and system development; design and construction of all electrical engineering works in conjunction with the Civil Engineering Branch.

(iii) *Power Branch*. Responsible for: operation and maintenance of completed power developments; generation and transmission of power in bulk.

(iv) *Retail Supply Branch*. Responsible for: distribution of electricity to consumers; operation and maintenance of the distribution system; inspection of installations and equipment.

(v) *Secretarial*. Responsible for: general administrative business of Commission with sub-sections dealing with accounts, law, personnel, transport, stores and purchasing, medical services, central records and other services.

### Construction Policy

Apart from its function of meeting all present demands for electrical power, the Commission has the heavy responsibility of estimating probable future demand and of having the necessary capacity to satisfy it as it occurs. In making estimates of future demand, there are four basic factors to be considered:

(i) Growth of population affecting number of home consumers, light industries, shops, etc.

(ii) Technological change favouring greater use of electrical power in homes, factories, shops and offices.

(iii) Increased demands for power by heavy industrial users now operating e.g. in the metallurgical, chemical and paper pulp industries.

(iv) Possibility of other "power-intensive" industries setting up plants in the State.

The difficulty of good planning is accentuated by the fact that hydro-electric development consumes capital far more avidly than the creation of equivalent capacity by thermal generation (put another way, thermal plants are cheaper to build but much more expensive to operate). Prudent economic policy dictates that an authority should try to keep just ahead of demand, and not have an unremunerative investment in a large block of idle generating capacity; the margin in hand at any given time is therefore comparatively small. Construction is a continuous process regulated to ensure that future demand will be met and restrictions in supply avoided. The pattern of the Commission's plan for the immediate future can be seen in terms of the following schedule:

By 1968: full development of Lower Derwent scheme with all three power stations in operation.

By 1971: full development of Mersey-Forth-Wilmot scheme with seven power stations operating; completion of Bell Bay thermal unit; dam work on Gordon Stage One nearing completion.

The decision to introduce an oil-fed thermal unit at Bell Bay into the system was taken because estimated future power demand required a major addition by 1971, even allowing for all Lower Derwent and Mersey-Forth stations being in operation by that year. In the period 1968-1971, the Commission will be constructing two major water-power schemes (Mersey-Forth and Gordon Stage One); to meet expected demand in 1971, it could hardly hope to simultaneously undertake a third water-power scheme for, apart from other considerations, the capital cost would be immense.

The alternative is to build a thermal plant and thereby economise on capital outlay. Admittedly the cost per thermally generated kilowatt hour is higher but, considering 120,000 kW *thermal* capacity against 1,328,100 kW *total* system capacity (1971 estimate), average cost per power unit would not be greatly increased. When the Gordon Stage One becomes operative in 1975, the thermal capacity will constitute only eight per cent of total system capacity (1,568,100 kW) and the higher thermal generating costs will have even less effect.

The Commission has not ignored the possibility of atomic energy but finds that a nuclear power station, in present circumstances, would not be as economical as the water-power Gordon scheme. Pioneering nuclear generation would seem to be the appropriate role for Australian States with more limited water resources. Once a water-power scheme is built, the annual running cost is completely predictable since the main "fuel", water, costs nothing; the same certainty with regard to future fuel costs does not exist in the case of a nuclear power station, or, for that matter, of any thermal station.

### **Generation and Transmission**

The system of generation and transmission employed in Tasmania is completely integrated and load control engineers can call upon the capacity of any generator throughout the State. Operation can be viewed in both short term and long term aspects. In the short term, the major consideration is meeting the daily fluctuation in demand (which follows a fairly standard pattern with morning and evening peaks); there is the added responsibility of having stand-by turbines spinning as a precaution against break-down of generators under load.

In the long term, the main consideration is the operation of storages in such a way as to conserve water, to ensure that all water released is exploited to the maximum, and to obtain maximum benefits from rainfall. The more dispersed the Commission's storages become, the greater the opportunity for taking advantage of local rainfall by maximum operation of power stations below the affected catchment since the process of drawing on the storage "makes room" for drainage from the downpour.

The original high voltage transmission in the State was at 88,000 volts. When Tarraleah came into operation, new lines operated at 110,000 volts; main transmission lines built since 1957 operate at 220,000 volts.

### **Retail Distribution**

In the early days of the Commission's operation, consumers of electrical power received it from three sources: from municipalities with their own generating capacity; from municipalities retailing power bought from the Commission; and from the Commission direct. Gradually uniformity was achieved, municipalities stopped generating and retailing and the one authority became the sole supplier, both of bulk power to industry and retail power to homes, shops, businesses, etc. One effect has been uniformity in tariff charges for retail power so that the farmer on the most remote holding is charged no more than dwellers in the principal cities.

Earlier it was stated that the Commission is supposed to operate as a business organisation and "pay its way". This posed something of a problem in the carrying of power to remote locations with few potential consumers—in such cases, the capital cost of the extension would be a heavy burden on the consumer. Special legislation existed to subsidise the Commission when it made "uneconomic extensions", the State Treasury granting assistance up to 75 per cent of the capital cost, if not exceeding \$600 per consumer. This State subsidy was withdrawn in 1964-65. The operation of this provision undoubtedly contributed to Tasmania's achieving an Australian record figure for distribution of electrical power—it is estimated that over 98 per cent of homes and farms are now connected.

To complete the picture, it is necessary to deal with electricity supply in the three main islands off the Tasmanian coast. Bruny Island is connected



to the major grid by under-sea cable, King Island is supplied from an internal combustion plant operated by the Commission while Flinders Island depends upon an internal combustion plant leased by a private operator.

### Growth of Hydro-Electric System

The following table shows the growth of the system in recent years:

**Hydro-Electric Commission—Operating Statistics**

Year	Total Rating of Turbines	Total Rating of Alternators	Peak Loading	Average Loading	Average (a) Load Factor
	hp	kW	kW	kW	per cent
1956 ..	622,200	447,100	343,300	225,690	65.7
1957 ..	683,700	485,350	372,200	254,100	68.3
1958 ..	683,700	485,350	394,900	266,660	67.5
1959 ..	683,700	485,350	403,600	274,150	67.9
1960 ..	800,700	569,050	415,400	285,250	68.7
1961 ..	800,700	569,050	438,400	297,080	67.8
1962 ..	867,700	617,050	461,600	323,790	70.1
1963 ..	867,700	617,050	550,300	378,000	68.7
1964 ..	1,130,000	806,550	582,000	405,620	69.7
1965 ..	1,133,400	807,550	593,700	427,580	72.0
1966 ..	1,194,870	849,150	624,100	451,047	72.3

(a) Average loading as a percentage of peak loading.

#### *Average Load Factor*

The alternator rating (i.e. generator capacity) is necessarily much higher than the peak loading since some generating plant must be held in reserve against the possibility of break-down.

A power system must be designed to meet both the peak loading (the demand component) and the average loading (the energy component). Peak loading tends to represent high demand for relatively short periods, i.e. it has relatively little energy associated with it. The obvious design and operational problem is to create sufficient capacity to meet peak loading and, at the same time, to encourage the use of power so that the highest possible average loading is obtained. "Off-peak" heating systems are an obvious example of one way in which the average load factor can be maximised; the steady use of power in a continuous industrial production process also has the effect of raising the average loading and lifting the load factor.

All things being equal, the cheapest system, from the consumers' point of view, will be the one with the highest average load factor. By world standards, the average load factors in the previous table indicate a high standard of design and operational efficiency.

### Price of Power to Consumers

Hydro-electric power requires heavy initial capital expenditure; actual operating expenses are comparatively low, the major burden on revenue being interest and other associated debt and depreciation charges. Thermal stations do not require such heavy capital outlay but their operating expenses are considerably higher. In considering the data in the table below, it is to be recalled that Tasmania currently draws its power exclusively from water-driven turbines while the other States rely basically on thermal plants (although the eastern States make limited use of hydro-electric power). The table shows comparative average prices for power in the Commonwealth:

**Price of Electric Power—Tasmania and Other States, 1965-66 (a)**  
(Cents per Kilowatt Hour)

State or Territory	Residential Sales	Commercial Sales	Industrial Sales	Average, All Sales (b)
New South Wales .. .. .	1.94	2.84	1.62	1.93
Victoria .. .. .	2.05	3.25	1.62	2.03
Queensland .. .. .	2.06	3.25	1.82	2.21
South Australia .. .. .	1.70	2.91	1.53	1.89
Western Australia .. .. .	2.35	2.91	1.81	2.32
<b>Tasmania .. .. .</b>	<b>1.41</b>	<b>1.95</b>	<b>0.51</b>	<b>0.75</b>
Commonwealth Territories ..	2.17	(c)	(c)	2.43
Commonwealth (Average) ..	1.95	(d)	(d)	1.86

(a) Source: "Statistics of the Electricity Supply Industry in Australia" (published by Electricity Supply Association of Australia).

(b) Includes power for traction, public lighting, etc. not specified in first three columns.

(c) Not recorded separately.

(d) Not available.

It will be observed that the Tasmanian average is the *lowest* in all types of sale. The Tasmanian householder pays less per unit on the average than his counterpart on the Australian continent but the difference in residential price gives little indication of the economy of hydro-electric generation; this can be best obtained by comparing the prices charged industrial users.

The following table shows the amount of power sold in the Commonwealth:

**Sales of Electric Power—Tasmania and Other States, 1965-66 (a)**  
(Million Kilowatt Hours)

State or Territory	Residential Sales	Commercial Sales	Industrial Sales	Total Sales (b)
New South Wales .. .. .	4,439.0	1,630.0	4,746.7	11,313.4
Victoria .. .. .	3,005.3	1,179.9	3,602.5	8,131.0
Queensland .. .. .	1,376.7	549.2	1,064.9	3,044.0
South Australia .. .. .	1,051.5	337.1	1,092.0	2,510.8
Western Australia .. .. .	480.5	281.2	375.2	1,157.9
<b>Tasmania .. .. .</b>	<b>677.4</b>	<b>120.2</b>	<b>2,662.5</b>	<b>3,475.0</b>
Commonwealth Territories ..	191.7	245.5	(c)	446.2
Commonwealth Total .. ..	11,222.0	4,343.1	(c)	30,078.3

(a) Source: "Statistics of the Electricity Supply Industry in Australia" (published by the Electricity Supply Association of Australia).

(b) Includes power for traction, public lighting, etc. not specified in first three columns.

(c) Not available.

It is noteworthy that Tasmania, despite its small population, ranks third in total sales and third in industrial sales; no other State sells such a large proportion of total power to industrial users.

#### Industrial Use of Electric Power

It is possible to obtain some indication of the importance of industrial electrical power in Tasmania from the following table:

## Industrial Electrical Energy Consumption (a) 1965-66

Commonwealth Total (Six States)	Tasmanian Consumption	
	Total	Proportion of Six State Total
million kWh	million kWh	per cent
13,544	2,663	19.7

(a) Source: "Statistics of the Electricity Supply Association of Australia".

When the Tasmanian proportion (19.7 per cent) is compared with Tasmania's share of the Australian population (3.2 per cent), the contribution of electrical power to the island's economy is seen in its correct perspective.

## Finances of Hydro-Electric Commission

The table that follows shows the Commission's income and expenditure, and also its total loan debt for the last three years:

**Hydro-Electric Commission**  
**Income, Expenditure and Net Loan Debt**  
**(\$'000)**

Particulars	1963-64	1964-65	1965-66
INCOME			
Sales—Bulk Power .. .. .	7,392	8,834	9,297
Retail Current .. .. .	14,921	15,920	16,734
Other Income .. .. .	429	256	262
Total .. .. .	22,742	25,009	26,293
EXPENDITURE			
Operation, Distribution, Administration .. .. .	7,252	8,187	9,170
Interest on Loans and Reserves .. .. .	10,731	11,620	12,797
Less Interest Capitalised .. .. .	Cr. 1,828	Cr. 1,093	Cr. 1,292
Depreciation Provision .. .. .	2,625	2,986	3,064
Superannuation Contribution .. .. .	1,271	989	865
Other Expenditure .. .. .	799	811	967
Net Profit .. .. .	1,892	1,509	723
Total .. .. .	22,742	25,009	26,293
NET LOAN DEBT AT 30 JUNE			
Net Loan Indebtedness to State Treasury .. .. .	210,311	224,961	239,425
Other Loans .. .. .	22,001	22,701	23,702
Total .. .. .	232,312	247,662	263,127

At 30 June 1967, net loan debt was \$281.0m, the liability to the State Treasury standing at \$255.2m.

## Chapter 9

### SOCIAL CONDITIONS

#### HOUSING AND BUILDING

#### Dwelling Statistics, 1966 Census

##### *General*

The following section deals with the number of dwellings in Tasmania at two successive Censuses, those of 1961 and 1966. For a definition of the Hobart Statistical Division, the Hobart Metropolitan Area and Urban Launceston, see Chapter 5, "Demography".

Terms used to describe various classes of dwellings are defined below.

##### *Occupied Dwelling*

An occupied 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, therefore, has a very wide reference.

##### *Private Dwellings*

Private dwellings are further classified into the following four categories: *Private House*: These include houses, sheds, huts, garages, etc. used for dwelling purposes, and shared private houses for which only one Householder's Schedule was received.

*Share of Private House*: This is a portion of a shared private house occupied separately and for which a separate Householder's Schedule was furnished.

*Flat*: This is a part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities.

*Other Private Dwellings*: These include private dwellings such as rooms, apartments, etc. which are parts of buildings but are not self-contained units.

##### *Other Than Private Dwellings*

These include hotels; motels; boarding houses; hostels; educational, religious and charitable institutions; hospitals; defence and penal establishments; police and fire stations; residential clubs; staff barracks and quarters, etc.

##### *Unoccupied Dwellings*

These include vacant dwellings available for sale or renting; dwellings such as "week-enders", "holiday-home", "second home", "seasonal workers' quarters", which were not occupied on the night of the census; dwellings normally occupied but whose usual occupants were temporarily absent on the night of the census; newly completed dwellings whose owners or tenants had not entered into occupation on the night of the census; dwellings described as "to be demolished", "condemned", "deceased estate" and buildings constructed as dwellings but used for non-dwelling purposes on the night of the census. The total of unoccupied dwellings must not be read as the number of vacant houses and flats available for sale or renting.

*Dwellings at 1961 Census*

The following shows the classification of occupied dwellings in Tasmania at the 1961 Census:

**Occupied Dwellings at Census of 30 June 1961**

Description	Private Dwellings (No.)	Description	Other Than Private Dwellings (No.)
House .. .. .	79,797	Hotels and Motels.. ..	294
Shed, Hut, etc. .. ..	1,484	Boarding Houses, Guest Houses, etc. .. ..	456
Share of Private House .. ..	2,455	Educational, Religious and Charitable Institutions ..	91
Flat .. .. .	5,574	Hospitals .. .. .	53
Other .. .. .	888	Other .. .. .	166
Total .. .. .	90,198	Total .. .. .	1,060

*Dwellings at 1966 Census*

The next table has been compiled to show all Tasmanian dwellings in local government areas at two successive Censuses. The groups headed "Occupied" include both *private* and *other than private* dwellings (as shown in the previous table, *other than private* dwellings in 1961 accounted for slightly more than one per cent of all occupied dwellings). Assuming that *other than private* dwellings account for about one per cent of all occupied dwellings in 1966, it appeared that occupied private dwellings increased by approximately 9,000 in the intercensal period 1961-1966. The 1966 data are the result of the field count and are subject to revision.

**Dwellings in Local Government Areas  
Censuses of 30 June 1961 and 1966**

Local Government Area and Statistical Division	Occupied Dwellings		Unoccupied Dwellings	
	1961	1966	1961	1966
Hobart (H) .. .. .	15,281	15,687	507	778
Glenorchy (H) .. .. .	8,834	10,143	172	341
Clarence (H) .. .. .	5,649	7,600	623	722
Brighton (SE) (H) .. .. .	548	574	73	58
Glamorgan (SE) .. .. .	326	350	166	277
Green Ponds (SE) .. .. .	265	249	27	25
Richmond (SE) .. .. .	453	466	48	63
Sorell (SE) (H) .. .. .	807	946	698	936
Spring Bay (SE) .. .. .	330	362	186	237
Bruny (S) .. .. .	152	131	150	212
Esperance (S) .. .. .	892	986	208	302
Huon (S) .. .. .	1,367	1,391	259	323
Kingborough (S) (H) .. .. .	2,673	2,813	265	470
New Norfolk (S) (H) .. .. .	2,225	2,303	320	274
Port Cygnet (S) .. .. .	673	658	70	173
Tasman (S) .. .. .	306	319	129	269
Total—Hobart Div. .. .. .	40,781	38,141	3,901	3,117
SE. Div. .. .. .		4,787		1,541
S. Div. .. .. .		2,050		802
Launceston .. .. .	11,004	11,103	435	576
Total N. Cent. Div. .. .. .	11,004	11,103	435	576

**Dwellings in Local Government Areas**  
**Censuses of 30 June 1961 and 1966—continued**

Local Government Area and Statistical Division	Occupied Dwellings		Unoccupied Dwellings	
	1961	1966	1961	1966
Burnie .. .. .	4,180	4,790	124	161
Circular Head .. .. .	1,866	1,994	110	257
Deloraine .. .. .	1,444	1,411	110	127
Devonport .. .. .	3,896	4,635	184	182
Kentish .. .. .	1,094	1,349	107	150
King Island .. .. .	661	647	122	117
Latrobe .. .. .	1,110	1,240	237	224
Penguin .. .. .	1,158	1,206	58	54
Ulverstone .. .. .	2,498	2,779	219	202
Wynyard .. .. .	2,208	2,488	151	224
<b>Total NW. Div. .. .. .</b>	<b>20,115</b>	<b>22,539</b>	<b>1,422</b>	<b>1,698</b>
Beaconsfield .. .. .	2,370	2,770	513	654
Fingal .. .. .	1,142	1,082	131	263
Flinders .. .. .	302	331	28	95
George Town .. .. .	881	1,240	364	376
Lilydale .. .. .	1,557	1,892	87	88
Portland .. .. .	379	433	334	476
Ringarooma .. .. .	807	789	112	133
Scottsdale .. .. .	916	995	227	268
<b>Total NE. Div. .. .. .</b>	<b>8,354</b>	<b>9,532</b>	<b>1,796</b>	<b>2,353</b>
Evandale .. .. .	429	432	62	73
Longford .. .. .	1,711	1,541	83	134
St Leonards .. .. .	2,706	3,484	113	181
Westbury .. .. .	1,273	1,376	86	89
<b>Total N. Mid. Div. .. .. .</b>	<b>6,119</b>	<b>6,833</b>	<b>344</b>	<b>477</b>
Bothwell .. .. .	338	303	194	392
Campbell Town .. .. .	496	497	41	137
Hamilton .. .. .	968	1,137	172	678
Oatlands .. .. .	748	722	72	75
Ross .. .. .	187	177	8	24
<b>Total Mid. Div. .. .. .</b>	<b>2,737</b>	<b>2,836</b>	<b>487</b>	<b>1,306</b>
Gormanston .. .. .	113	120	18	16
Queenstown .. .. .	1,106	1,124	43	43
Strahan .. .. .	135	132	44	70
Waratah .. .. .	106	127	14	11
Zeehan .. .. .	688	784	78	116
<b>Total W. Div. .. .. .</b>	<b>2,148</b>	<b>2,287</b>	<b>197</b>	<b>256</b>
<b>Total Tasmania .. .. .</b>	<b>91,258</b>	<b>(b) 100,108</b>	<b>8,582</b>	<b>12,126</b>
Metropolitan Hobart .. .. .	(a)	32,538	(a)	1,305
Urban Launceston .. .. .	(a)	16,947	(a)	824
Rest of State .. .. .	(a)	50,623	(a)	9,997

(a) Not available on comparable basis.

(b) Excludes 25 caravans.

**Building Statistics***Hobart and Launceston*

In this section, it is necessary to present statistics for *Hobart and Suburbs* and *Launceston and Suburbs*; data in terms of the *Hobart Metropolitan Area* and *Urban Launceston* will be first compiled for the year 1966-67.

*Scope*

In the section that follows, building statistics relate exclusively to the erection of new buildings, including major new additions to existing buildings; construction work such as the building of railways, bridges, earthworks, water storages, piers, wharves, etc. is excluded. Minor additions, alterations, renovations and repairs to buildings are also excluded because of the difficulty of obtaining lists of persons who undertake this work.

When a dwelling is attached to a new building, the whole unit, both in regard to number and value, is classified according to the type of new building (e.g. a new shop and dwelling is classified simply as a shop). Figures for flats include "home units", but not conversions of existing buildings into flats. Number of flats refers to number of new individual dwelling units.

Details obtained from government authorities on their construction programmes and from building contractors refer to all parts of the State. Details for owner-builders cover only those areas subject to building control by local government authorities; thus, some farm buildings are excluded, but this does not affect the figures materially.

*Source of Data*

The main statistics relate to building approvals and to building operations (commencements, completions, etc.). The data are derived as follows:

*Building Approvals:* These comprise (a) approvals by local government authorities for the construction of private buildings; (b) contracts let and day labour projects commenced by governmental authorities; (c) private buildings reported by contractors to have been commenced in certain areas of the few rural municipalities where building regulations do not apply to the whole municipality. Details are compiled monthly.

*Building Operations:* Returns are obtained from (a) building contractors engaged in the erection of new buildings; (b) owner-builders; (c) Commonwealth, State, local and semi-government authorities. Statistics are compiled at quarterly intervals.

*Definitions*

*Contract-built:* Includes the operations of all building contractors and government authorities which undertake the erection of new buildings.

*Owner-built:* An "owner-built" house is one actually erected or being erected by the owner, or under the owner's direction, without the services of a contractor who is responsible for the whole job.

*Commenced:* A building is regarded as having been commenced when work on the foundations has begun.

*Completed:* A building is regarded as having been completed when the contractor has fulfilled the terms of the contract.

Both with "completions" and "commencements", there is some difficulty in maintaining a uniform classification since the definition of an exact point of time in building operations is involved.

*Under Construction:* A building is so classified if it is uncompleted at the end of the period, whether or not work on it was actively proceeding at that date.

*Values:* All values shown exclude the value of land and represent the estimated value of buildings *on completion*. In the case of owner-built dwellings, the owner-builder is required to estimate the value from the cost of the materials and the cost of labour, including his own.

New buildings, including dwellings, with an estimated value on completion of less than \$1,000 are excluded from the tabulations.

### Building Approvals

The following table shows details of building approvals; a distinction is made between "private" and "government", and the information is dissected to give separate figures for Hobart and Suburbs, Launceston and Suburbs and the remainder of the State. In 1965-66, nearly 28 per cent of the total value of building approvals was attributed to Hobart and Suburbs, 13 per cent to Launceston and Suburbs and 59 per cent to the remainder of the State.

**Building Approvals, 1965-66**

Particulars	Hobart and Suburbs	Launceston and Suburbs	Remainder of State	Total Tasmania
New Houses—	No.	No.	No.	No.
Private .. .. .	440	311	1,086	1,837
Government .. .. .	204	76	311	591
Total .. .. .	644	387	1,397	2,428
Value—	\$'000	\$'000	\$'000	\$'000
New Houses—Private .. .. .	4,602	2,828	7,799	15,229
Government .. .. .	1,269	437	2,148	3,854
Other New Buildings (a)—				
Private .. .. .	4,691	2,218	12,934	19,843
Government .. .. .	2,222	527	5,227	7,976
Alterations and Additions—				
Private .. .. .	710	304	600	1,614
Government .. .. .	122	70	163	355
Total Value—Private .. .. .	10,003	5,350	21,333	36,686
Government .. .. .	3,613	1,034	7,538	12,185
Total .. .. .	13,615	6,384	28,871	48,870

(a) Includes flats.

The next table shows building approvals on a State basis:

**Building Approvals**

Particulars	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
New Houses—	No.	No.	No.	No.	No.	No.
Private .. .. .	2,126	1,910	1,921	2,064	2,062	1,837
Government .. .. .	529	617	550	584	607	591
Total .. .. .	2,655	2,527	2,471	2,648	2,669	2,428
Value—	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
New Houses—Private .. .. .	11,754	12,780	13,328	15,424	16,452	15,229
Government .. .. .	2,950	3,710	3,214	3,422	3,756	3,854
Other New Buildings (a)—						
Private .. .. .	5,524	11,608	9,368	7,240	11,490	19,843
Government .. .. .	1,578	7,766	9,840	6,456	11,058	7,976
Alterations and Additions—						
Private .. .. .	2,470	1,756	1,472	1,696	1,666	1,614
Government .. .. .	586	186	194	282	450	355
Total Value—Private .. .. .	19,748	26,144	24,168	24,360	29,608	36,686
Govt .. .. .	5,114	11,662	13,248	10,160	15,264	12,185
Total .. .. .	24,862	37,806	37,416	34,520	44,872	48,870

(a) Includes flats.



*Construction of New Houses*

Although building statistics include the construction of shops, factories, offices, hotels, etc., the erection of new houses is possibly the most interesting field because of its social significance. During World War II, the shortage of materials and manpower virtually brought house construction to a halt, with the result that there was an acute shortage when hostilities ceased; the prosperous state of the economy in the post-war years aggravated the situation by increasing the demand for home ownership.

*Government Construction of Houses:* The post-war era was notable for the entry of the State Government into the housing field on a large scale; in November 1945, the Commonwealth Government entered into an agreement with the States whereby it would provide finance for, and the State Governments would undertake the building of, housing projects. Under the agreement, Tasmania received \$5,670,000 which it repaid on withdrawing from the scheme in August 1950. The Tasmanian Government nevertheless continued to build houses using the resources available from its own Loan Fund; at 30 June 1966, its aggregate net loan expenditure on housing advances and housing construction totalled \$27,970,000. In 1956, the State Government entered into a new agreement with the Commonwealth, an arrangement renewed with minor modifications in 1961 and 1966. The aggregate net advances in Tasmania to 30 June 1966, under the Commonwealth-State Agreements, amounted to \$50,105,000. (Advances under the Commonwealth-State Agreements are additional to State net loan expenditure.)

The following table shows, for Tasmania, the number of new houses completed, and distinguishes between those built for government authorities and those built for private persons:

**Number of New Houses Completed From 1950-51  
For Government Authorities and Private Persons**

Year	For Govern- ment Authorities	For Private Persons	Total	Year	For Govern- ment Authorities	For Private Persons	Total
1950-51	1,175	2,739	3,914	1958-59	506	2,071	2,577
1951-52	1,133	2,866	3,999	1959-60	443	2,032	2,475
1952-53	883	2,431	3,314	1960-61	473	2,014	2,487
1953-54	716	1,914	2,630	1961-62	547	1,850	2,397
1954-55	720	1,760	2,480	1962-63	563	1,941	2,504
1955-56	729	1,992	2,721	1963-64	554	1,957	2,511
1956-57	585	2,174	2,759	1964-65	579	2,000	2,579
1957-58	611	1,955	2,566	1965-66	557	1,703	2,260

The proportion of houses built for government authorities has fluctuated between 30 per cent of total houses completed (1950-51) to as low as 18 per cent (1959-60). For each of the three years ended 30 June 1963 to 1965 the proportion was 22 per cent, rising to 25 per cent in 1965-66. Statistics of houses completed for government authorities do not fully reflect the effect of government policy since the category "houses built for private persons" includes construction financed, in some cases, by government loans to private persons. Of the \$50,105,000 aggregate net advances made in Tasmania to 30 June 1966, under the Commonwealth-State Housing Agreements, 25 per cent represents advances to private persons, either through the mechanism of the Agricultural Bank or the co-operative building societies. Similarly, "houses built for private persons" includes those built with advances under the Commonwealth's *War Service Homes Act* where the ex-serviceman has obtained the services of a private contractor or operates as an owner-builder.

The principal construction authority in Tasmania is the State Housing Department but "houses built for government authorities" includes also construction by the Public Works Department for various departments and authorities, group schemes of the War Service Homes Division and farm houses erected under the War Service Land Settlement Scheme.

*New Houses Constructed:* The next table shows details of commencements, completions, etc., both with regard to number and value:

Construction of New Houses

Year	Commenced		Completed		Under Construction (a)	
	Number	Value (When Completed)	Number	Value (When Completed)	Number	Value (When Completed)
		\$ m		\$ m		\$ m
1949-50 .. ..	3,664	11.7	2,852	8.4	3,357	11.3
1950-51 .. ..	4,122	14.9	3,914	13.5	3,558	14.2
1951-52 .. ..	3,584	15.3	3,999	16.3	3,143	14.4
1952-53 .. ..	2,285	10.6	3,314	15.2	2,114	10.6
1953-54 .. ..	2,665	13.2	2,630	13.5	2,149	11.3
1954-55 .. ..	2,867	14.6	2,480	12.8	2,536	13.4
1955-56 .. ..	2,490	13.6	2,721	14.8	2,305	12.8
1956-57 .. ..	2,591	14.8	2,759	15.7	2,137	12.2
1957-58 .. ..	2,378	14.5	2,566	15.6	1,949	11.4
1958-59 .. ..	2,563	15.5	2,577	15.3	1,935	11.8
1959-60 .. ..	2,357	14.9	2,475	15.5	1,817	11.3
1960-61 .. ..	2,248	15.1	2,487	16.3	1,578	10.3
1961-62 .. ..	2,475	16.3	2,397	15.7	1,656	10.7
1962-63 .. ..	2,442	16.0	2,504	16.5	1,594	10.3
1963-64 .. ..	2,550	18.4	2,511	17.3	1,633	11.3
1964-65 .. ..	2,546	19.5	2,579	19.2	1,600	11.6
1965-66 .. ..	2,202	17.8	2,260	17.8	1,542	11.6

(a) At end of year.

The peak year of commencements, in terms of numbers, in the post-war period was 1950-51, and of completions, 1951-52. The housing shortage became somewhat less acute after 1952-53 and completions since then have averaged between 2,500 to 2,600 houses per year, falling to 2,260 in 1965-66.

*Material of Outer Walls:* The following table shows the number of new houses completed and their classification according to the material used in their outer walls. Until recently, wood has been the predominant material used for outer wall construction but the trend of the last ten years has revealed a growing preference for brick veneer. In 1964-65, for the first time, new houses completed with brick veneer walls exceeded those completed with wooden walls.

Number of New Houses Completed Classified by Material of Outer Walls

Material of Outer Walls	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Brick, Concrete, etc.—						
Solid .. ..	418	190	231	178	174	128
Veneer .. ..	267	720	775	920	1,178	1,126
Wood (Weatherboard, etc.) ..	1,934	1,413	1,426	1,337	1,142	932
Fibro-Cement .. ..	102	74	72	76	78	62
Other .. ..	..	..	..	..	7	12
Total .. ..	2,721	2,397	2,504	2,511	2,579	2,260

*Construction of New Houses and Flats*

In the following table, details are given of completions of new houses and new flats:

**New Houses and Flats Completed**

Particulars	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
NUMBER COMPLETED						
New Houses—						
Government Ownership—						
Contract Built .. .. .	373	237	288	271	275	309
Day Labour .. .. .	356	310	275	283	304	248
Private Ownership—						
Contract Built .. .. .	830	1,027	1,086	1,061	1,200	1,015
Owner Built .. .. .	1,162	823	855	896	800	688
Total New Houses .. .. .	2,721	2,397	2,504	2,511	2,579	2,260
New Flats (Individual Units) (a)	49	154	97	164	153	221
Total New Houses and Flats .. .. .	2,770	2,551	2,601	2,675	2,732	2,481
VALUE (\$'000)						
New Houses .. .. .	14,782	15,718	16,484	17,332	19,216	17,806
New Flats (Individual Units) (a)	356	912	404	738	844	1,204

(a) Individual dwelling units; conversions of existing dwellings to flats are excluded.

*Construction of All New Buildings*

The previous tables in this section have been concerned with the construction of new houses, or of new houses and flats. In the five years ended 30 June 1966, the value of houses and flats completed has approximated 50 per cent of the total value of all new buildings completed in each year. The next table shows the value of all new buildings completed; the various types of building are specified and houses and flats are included to allow comparison.

**Value of All New Buildings Completed (a)—Classified According to Type (\$'000)**

Type of Building	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Houses .. .. .	14,782	15,718	16,484	17,332	19,216	17,806
Flats .. .. .	356	912	404	738	844	1,204
Hotels, Guest Houses, etc. .. .. .	146	1,412	1,590	370	980	264
Shops .. .. .	814	2,278	868	944	1,216	1,529
Factories .. .. .	4,382	4,502	5,050	2,844	2,536	2,218
Offices .. .. .	284	2,080	1,210	2,210	1,246	1,454
Other Business Premises .. .. .	1,176	1,044	2,306	1,866	2,332	2,731
Educational .. .. .	2,142	2,880	1,956	3,454	2,586	5,113
Religious .. .. .	84	418	290	238	308	254
Health .. .. .	232	820	2,148	2,060	3,272	4,086
Entertainment and Recreation .. .. .	348	488	826	886	1,008	666
Miscellaneous .. .. .	850	902	996	1,034	2,200	2,355
Total .. .. .	25,596	33,454	34,128	33,976	37,744	39,680

(a) Includes estimated value of owner-built houses.

The following table gives details of the total value of all new buildings commenced, completed and under construction. A specification of the items included under "all new buildings" appears in the previous table.

**Value (When Completed) of All New Buildings (a)**  
(\$ million)

Year	Com- menced	Com- pleted	Under Construc- tion (b)	Year	Com- menced	Com- pleted	Under Construc- tion (b)
1956-57	28.3	25.2	24.2	1961-62	35.4	33.5	27.8
1957-58	25.5	25.7	23.9	1962-63	34.6	34.1	28.4
1958-59	28.8	26.9	26.1	1963-64	34.7	34.0	29.1
1959-60	36.5	31.6	31.2	1964-65	42.0	37.7	33.5
1960-61	28.3	34.0	25.9	1965-66	43.8	39.7	37.4

(a) Includes estimated value of owner-built houses.

(b) At end of period.

### The State Housing Department

#### General

The Housing Department was established in July 1953 as a separate authority to administer that portion of the *Homes Act* 1953 which relates to the purchase and development of land for housing, and the erection of homes for rental and sale. Funds for these purposes are made available under the Commonwealth-State Housing Agreement; the funds form part of the State's annual loan borrowings (but are excluded from the State Public Debt). The Department uses both day-labour and private contractors and has its own factory which incorporates joinery works, timber mill, plumbing and electrical workshops, etc. Most dwellings constructed are three-bedroom timber units usually roofed with corrugated iron. Flats for elderly persons and multi-unit flats have also been constructed.

#### Department's Construction of Dwellings

During 1965-66, 544 dwellings (houses and individual dwelling units in flats) were completed. The following table shows the aggregate of dwelling units produced by the Housing Department (and by an earlier State housing construction authority) since 1944:

**Aggregate of Dwellings Constructed by State Housing Department**  
From 1944 to 30 June 1966 (a)

Type of Dwelling	One Bedroom	Two Bedroom	Three Bedroom	Total
Single Unit—Timber .. .. .	..	562	7,202	7,764
Other Material .. .. .	..	..	1,284	1,284
Elderly Persons' Flatettes .. .. .	82	118	..	200
Maisonettes .. .. .	..	12	10	22
Multi-unit Flats (Individual Units) .. .. .	125	157	14	296
Total Dwelling Units .. .. .	207	849	8,510	9,566

(a) Construction to 30 June 1953 undertaken by Housing Division of State Agricultural Bank; subsequent construction by State Housing Department.

#### Dwellings for Rental

Flats, maisonettes and elderly persons' homes are for rental only. Although generally houses are allotted on a purchase-contract basis, they may under certain circumstances be rented. The weekly rental of a newly erected three-

bedroom timber house in the Hobart metropolitan area approximated \$12.40 in the June quarter 1966. In certain necessitous cases, rental rebates are allowed. Rebates on rentals of elderly persons' flatettes are graduated according to the incomes of the occupiers. Under the current rental rebate formula, a married couple whose only income is the age pension pay \$3.85, while a single person solely dependent on the pension pays \$2.00 a week. (These rates were current in July 1967.)

### *Dwellings for Sale*

Sales are made on a no-deposit purchase-contract basis with repayments over a maximum term of 53 years, but buyers are encouraged to pay a deposit if they are in a position to do so. When the agreed purchase price and other charges have been paid, ownership of the property is transferred from the Department to the purchaser. Purchase contracts are sometimes surrendered to the Department; when this happens, any equity which may have been established in the property is forfeited. Purchasers may sell their homes in certain circumstances. The aggregate number of purchase contracts less surrenders entered into by 30 June 1966, was 6,267. The sale price, excluding land, of a new three-bedroom house in the Hobart metropolitan area was approximately \$6,950 in the June quarter 1966. Elsewhere prices tend to be slightly lower.

The weekly repayment instalment for a dwelling is less than the weekly rent of a similar dwelling, because a purchaser is responsible for maintenance.

Amounts outstanding in respect of loans made by the Housing Department by way of purchase contracts are shown in the following table:

**Housing Department—Purchase Contracts At 30 June**

Particulars	1962	1963	1964	1965	1966
Loans Outstanding—					
Number .. ..	4,156	4,428	4,835	5,354	5,781
Value .. .. (\$'000)	25,202	27,181	30,206	34,098	37,452

The interest rate on contracts signed after 1 May 1965 was  $4\frac{1}{4}$  per cent, immediately prior to which the rate was four per cent. To be eligible for purchase contract terms, an applicant must be married or about to be married, or have dependants for whom it is necessary to provide a home. Number of dependants, income and existing accommodation are considered in determining an applicant's priority.

### **Agricultural Bank of Tasmania—Advances to Homebuilders**

#### *Housing Function*

The Agricultural Bank, as an approved institution under the Commonwealth-State Housing Agreement, receives part of Commonwealth housing funds for advances to home builders. Prior to the commencement of the agreement (1956), the Bank borrowed from the State Loan Fund and from private institutions. To be eligible for a loan, an applicant must be married or about to be married or have dependants for whom it is necessary to provide a home, and be over the age of 21 years; he must also own a block of land. The maximum amount of an advance is \$8,000 for all types of houses, provided that the total advance does not exceed 90 per cent of the Bank's valuation of land and dwelling cost. Advances are repayable by equated instalments over a period of up to 31 years. Advances made from 1 July 1965 were at an interest rate of  $5\frac{3}{4}$  per cent, immediately prior to which the rate was  $5\frac{1}{2}$  per cent.

The following table shows details for recent years:

**Agricultural Bank—Advances for Housing (a)**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Advances Approved—					
Number .. .. .	239	157	302	304	214
Value .. .. . (\$'000)	1,460	972	2,090	2,108	1,479
Advances Outstanding (b) (\$'000)	9,024	9,992	11,244	12,746	14,086

(a) Excludes advances to building societies.

(b) At end of period.

The Agricultural Bank also acts as agent for the State in the transmission of advances under the Commonwealth-State Housing Agreement to the co-operative building societies; details of such advances and of the building societies appear in Chapter 11, "Finance".

**The Commonwealth Department of Housing**

*General*

The Department has two main functions: (i) to assist certain ex-servicemen obtain housing with finance made available on a term of up to 45 years at an interest rate of  $3\frac{3}{4}$  per cent, and (ii) to administer the Homes Savings Grant Scheme. The bulk of Commonwealth housing money, however, is expended by the State acting as trustee for the Commonwealth (as detailed in the two previous sections).

*War Service Homes Loans*

Broadly, to be eligible for a loan, an ex-serviceman must have dependants, and must have volunteered for or had overseas service. Also he must not be the owner of a home at the time of seeking a loan. The following table shows details of War Service Homes activities in the provision of finance for Tasmanian housing. Transfers of loans (and of course houses) between borrowers are not shown as expenditure, nor are details given of additional loans advanced for alterations, etc. to homes already subject to War Service Homes finance.

**War Service Homes Operations: Homes Financed in Tasmania**

Year	Loans Approved (a)	Homes Financed			Expenditure
		Homes Purchased (b)	Homes Built	Mortgages Discharged (c)	
	No.	No.	No.	No.	\$'000
1955-56 .. ..	262	100	157	36	1,508
1961-62 .. ..	239	88	116	34	1,400
1962-63 .. ..	247	78	120	30	1,550
1963-64 .. ..	237	114	60	48	1,584
1964-65 .. ..	232	133	59	24	1,486
1965-66 .. ..	252	167	35	24	1,562

(a) Loans *approved* are not necessarily paid out in the same year. A transfer from one borrower and a resale to another is included as a loan approved, but not included elsewhere.

(b) New or old existing properties, not previously subject to War Service Homes finance.

(c) Mortgages, raised by individuals to build homes, discharged by the Division on satisfactory completion of the home.

*Homes Savings Grant Scheme*

The scheme was introduced by the Commonwealth Government in 1964 to encourage young people to save for their first marital home.

The maximum grant (a gift) is \$500; the actual amount is assessed on the amount saved and the time and rate of saving up to the signing of a contract to build or buy a home. The following table details grants made since inception of the scheme:

Home Savings Grants in Tasmania

Year	Grants Approved for—			Grants Made	Expenditure
	Home Purchase	Contractor Construction	Owner Construction		
	No.	No.	No.	No.	\$'000
1964-65 .. ..	396	306	134	813	364
1965-66 .. ..	341	240	174	760	325

## EDUCATION IN TASMANIA

## Introduction

This section deals with: (i) education in government and non-government schools; (ii) technical education; (iii) adult education; and (iv) university education.

The task of Tasmanian educational authorities, as in other Australian States in the post-war period, has been to provide more schools, more teachers and better facilities; the principal factors exerting pressure have been: (i) a rapidly growing school population; (ii) a change in attitude resulting in increased demand for secondary and tertiary education; (iii) community acceptance of the need for better education in general.

The most notable change in 1967 was the amendment of the *Education Act 1932*; this allowed the State Government to begin making grants to independent (non-government) schools and brought to an end a period of 82 years in which the State accepted no financial responsibility for this type of education.

## Schools, Government and Non-Government

*Attendance*

Tasmania became, in 1869, the first colony in the British Empire to make it compulsory for a parent to educate his child. In 1898 school attendance was made obligatory between the ages of 7 and 13, and in 1912, between 6 and 14. In 1946, Tasmania became the only Australian State to make it compulsory for children to attend school until their sixteenth birthday, and government and non-government systems of education were then reorganised to provide a *minimum* of four years post-primary education, and a *maximum* of six. (The pre-war system of secondary education had comprised two stages, a three-year course followed by a two-year course; with a leaving age of 14, and with *selective entry* to government high schools, the proportion of pre-war pupils taking secondary education was very low.)

The following table shows the dual nature of educational responsibility in Tasmania and gives the numbers of pupils in both government and non-government schools, in primary and secondary grades:

**Government and Non-Government Schools  
Total Pupils Enrolled at 1 August**

Particulars	1956	1962	1963	1964	1965	1966
Government Schools—						
Primary Grades .. ..	(a)	46,919	47,300	47,840	48,501	48,759
Secondary Grades .. ..	(a)	20,707	21,470	21,948	22,378	22,962
Special (b) .. ..	(a)	720	863	855	736	740
Total .. ..	57,121	68,346	69,633	70,643	71,615	72,461
Non-Government Schools (c)—						
Primary Grades .. ..	(a)	8,416	8,444	8,548	8,634	8,621
Secondary Grades .. ..	(a)	5,355	5,645	5,837	6,054	6,122
Total .. ..	10,757	13,771	14,089	14,385	14,688	14,743
Total All Schools ..	67,878	82,117	83,722	85,028	86,303	87,204

(a) Not available on a comparable basis.

(b) Correspondence school pupils studying normal school subjects allocated to primary or secondary from 1965.

(c) At 31 December prior to 1962.

### The State (or Government) School System

#### *Introduction*

The present system had its genesis in the *Education Act 1885*, a department being established and a Director of Education appointed responsible to a Minister. Under the Act, aid to non-government schools was abolished and only in 1967 has this principle been re-introduced (with a system of capitation subsidies).

Education is compulsory between the ages of 6 and 16 years although, in some cases, special exemptions may be obtained. Virtually all schools are co-educational. Education is secular and free; parents buy their children's books, paints, instruments, etc. Pupil's transport is either provided by the Department or subsidised where daily travel costs exceed eight cents. The arrangement of transport has been important in the organisation of area schools where educational facilities are concentrated and centralised, thereby eliminating the smaller country schools.

#### *Organisation*

Under the Director operate superintendents responsible for specific activities and districts; supervisors either assist in administration or provide services to schools. Specialist sections deal with curriculum, teaching aids, speech education, music, physical education, guidance and welfare, school libraries, educational planning and research, etc.

#### *Enrolment*

The following table shows enrolments in government schools over a five-year period:

**Government Schools  
Total Number of Pupils at 1 August**

Particulars	1962	1963	1964	1965	1966
Boys .. ..	35,359	36,249	36,879	37,306	37,742
Girls .. ..	32,987	33,384	33,764	34,309	34,719
Total .. ..	68,346	69,633	70,643	71,615	72,461



*Finance*

The following table gives a summary of Government expenditure on education over a five-year period. The principal source of the money expended from State Trust Funds is the Commonwealth Government, the State acting as agent for the Commonwealth.

**Expenditure on Education from Consolidated Revenue, Loan Fund and Trust Funds  
(\$'000)**

Details of Expenditure	1961-62	1962-63	1963-64	1964-65	1965-66
From Consolidated Revenue—					
Primary, Secondary and Technical Education—					
Education Department ..	11,584	12,543	14,054	15,566	16,800
Other (Schools Board, Pre-Schools, etc.) .. ..	(a) 107	(a) 135	54	56	56
Adult Education .. ..	97	102	111	119	127
University of Tasmania ..	866	895	924	1,360	1,332
Other Educational Grants ..	1	1	1	1	1
Total .. ..	12,654	13,676	15,145	17,102	18,316
From Loan Fund—					
School Buildings, University and Adult Education (b) ..	3,771	4,047	4,759	4,456	4,655
From Trust Funds .. ..	792	858	1,005	1,551	2,164

(a) Includes expenditure from Commonwealth Employment Stimulation Grant for repairs and maintenance.

(b) Includes expenditure from Commonwealth contribution to construction of new University.

The expanding interest of the Commonwealth in education is illustrated by the Trust Fund expenditure in the previous table. The items included in 1965-66 were: University grant, \$942,000; University college grants, \$28,000; Commonwealth scholarships, \$210,000; technical college buildings, etc., \$566,000; school science laboratories, \$319,000; private school grants, \$79,000 and other purposes, \$20,000.

The following table gives a dissection of expenditure from State Consolidated Revenue on education:

**Expenditure on the Education Department (a) from Consolidated Revenue Fund  
1965-66**

Particulars	\$'000
Salaries, Wages and Allowances for Administrative Staff .. ..	561
Salaries, Wages and Allowances for Teaching Staff .. ..	12,696
Payroll Tax .. ..	331
Maintenance of Schools and Other Properties .. ..	310
Lighting, Heating, Water and Sanitary Charges .. ..	332
Conveyance and Fares of Scholars .. ..	1,500
Materials and Equipment (including Schools Library Service) .. ..	565
Other (including Office Requisites, Rents, Rates, Travelling Expenses, Furniture, Allowances, Free Supplies to Scholars, etc.) .. ..	505
Total Expenditure .. ..	16,800

(a) Includes all Technical Education.

*Age of Pupils in Each Class*

The following table summarises the system of government schooling in Tasmania, showing the average ages of pupils in each class according to the type of school available, and the final examinations which determine the types of course followed:

**Government Schools****Average Age of Pupils, Primary and Secondary, in each Class and Certificates Issued**

Primary Schools (including Primary Classes of District and Area Schools)			Secondary Schools (including High Schools and Secondary Classes of District and Area Schools)			
Grade	Mean Age at 1.8.66		Class	Mean Age at 1.8.66		Certificate Issued
	Years	Months		Years	Months	
Pre-School ..	4	11	1 ..	12	10	..
Kindergarten	5	7	2 ..	14	0	..
1 ..	6	6	3 ..	14	11	(a) Sec. Schools
2 ..	7	8	4 ..	15	11	(a) Schools Board
3 ..	8	8	5 (b)	16	9	} Matriculation
4 ..	9	9	6 (b)	17	9	
5 ..	10	9				
6 ..	11	11				

(a) The Secondary Schools Certificate marks the final stage of a self-contained course, and is not a part of the Schools Board Certificate course.

(b) Classes 5 and 6 indicate pupils in their first or second year at matriculation level.

*Number of Primary Schools*

The following table shows the number of schools providing primary and pre-school education in the State.

**Number of Government Schools Providing Primary Education at 1 August**

Type of School	1962	1963	1964	1965	1966
Pre-School .. .. .	53	52	56	56	56
Primary School .. .. .	137	138	139	141	138
Area (a) .. .. .	36	36	35	35	35
District (a) .. .. .	6	5	7	6	6
Primary with Secondary Classes					
(a) .. .. .	17	17	15	14	14
Special School (a) .. .. .	13	15	14	14	15

(a) These figures are also included in a later table on numbers of secondary schools.

*Pre-School Centres*

Pre-schools are established on the initiative of groups of parents, the Department providing the cost of the building but eventually recovering half its outlay from the parents. The Department trains and pays the teachers who control their own programmes; it subsidises or meets most other costs.

Children from  $3\frac{1}{2}$  to  $6\frac{1}{2}$  years may attend pre-schools which are considered valuable in personality development and therefore encouraged by the Department. The following table shows the number of teachers, teachers in training, and enrolled pupils at the centres:

## Pre-Schools—Teachers, Teachers in Training and Pupils at 1 August

Particulars	1962	1963	1964	1965	1966
Teachers (Full-time) .. ..	55	49	54	55	51
Teachers (Part-time) .. ..	6	10	7	..	11
Teachers in Training .. ..	10	12	11	12	13
Pupils .. ..	2,324	2,279	2,424	2,431	2,447

The high pupil-teacher ratio in the previous table is reduced in practice by attendance of pupils in half-days or on occasional days. Classes do not exceed 25 pupils.

*State Primary Schools*

*State Infants Schools and Infants Classes:* Infants schools, and infants classes in all primary schools, cater for children for one, two or three years, depending on facilities available, age at entry, and pre-school experience. Kindergarten classes are provided at some primary schools for children below the age of six who may not have been able to attend pre-school centres.

The following table shows the number of boys and girls in kindergartens and infants classes:

## Enrolments in Government Infants Schools and Infants Grades at 1 August 1966

Pupils	Kindergarten	Grade 1	Grade 2	Total
Boys .. ..	1,137	4,895	3,820	9,852
Girls .. ..	1,061	4,482	3,516	9,059
Total ..	2,198	9,377	7,336	18,911

*Primary Classes:* The majority of government primary schools have six *grades* only, without kindergartens attached; some have secondary grades as well. Parents may select the school they prefer for their children without restriction other than that imposed by excessive travel.

Thirty-five area schools and six district schools have primary grades, and draw many pupils from outlying localities previously served by one or two-teacher schools. Free transport has made this possible and has led to a reduction in the total number of primary schools.

*Primary Curriculum:* The primary school curriculum has undergone considerable changes in recent years, both in teaching methods and subject matter. The subjects are English (including reading, spelling, oral and written work), history, geography, arithmetic, science, art, music, handiwork, religious and moral education, and health and physical education.

*Pupil Grouping:* Promotion within the schools is generally by age at the beginning of the school year, with accelerated progress or repetition of classes at the headmaster's discretion; grouping is by ability, where numbers allow, with each child being able to work with his equals in each subject, regardless of chronological age. *Differential teaching* adapts the school programme to meet the widely varying needs and abilities of pupils. The skill subjects of reading, writing, spelling and arithmetic are particularly suited to this method of teaching, testing and grading.



(Page 547)

*Emu Bay Railway; Rosebery concentrates bound for Burnie for shipment to Hobart*

(The Examiner)

(Page 311)

*Ovaltine plant at South Devonport*

(Dept of Film Production)









(H.E.C.)

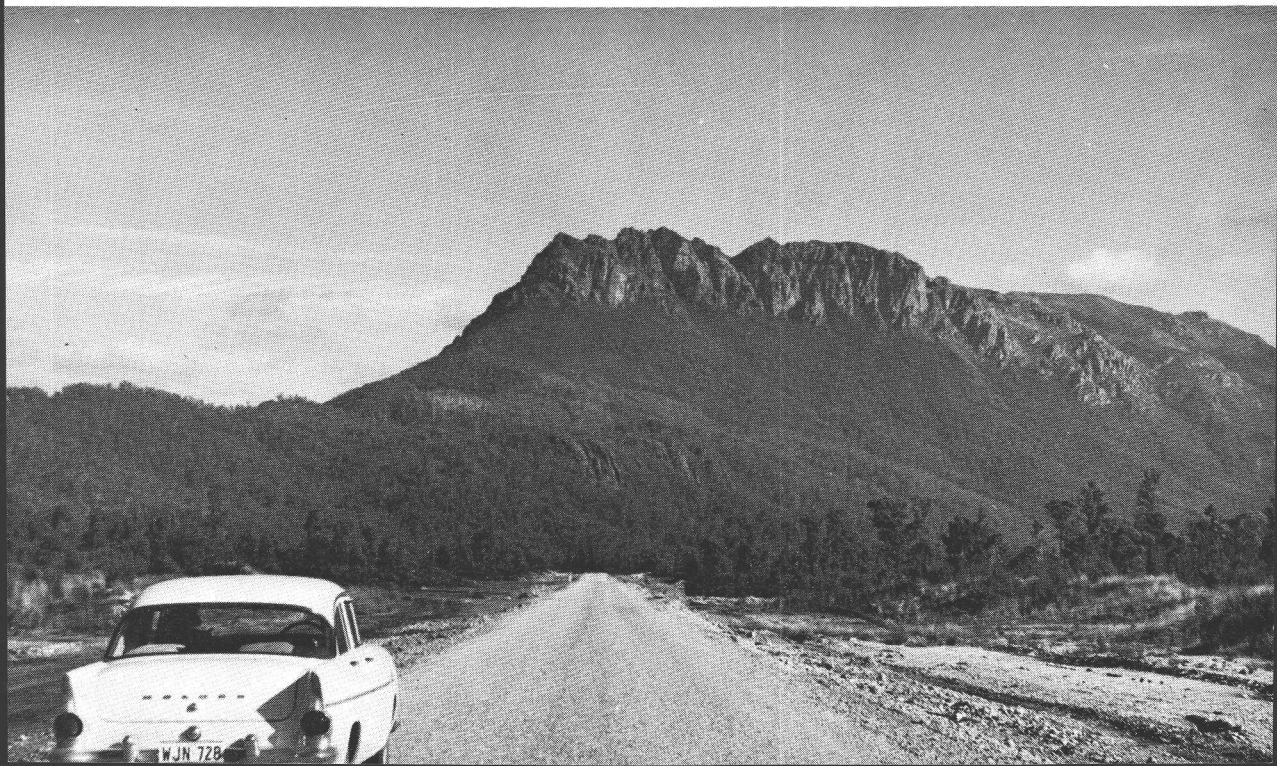
(Page 318)

*Rowallan Dam with power station under construction*

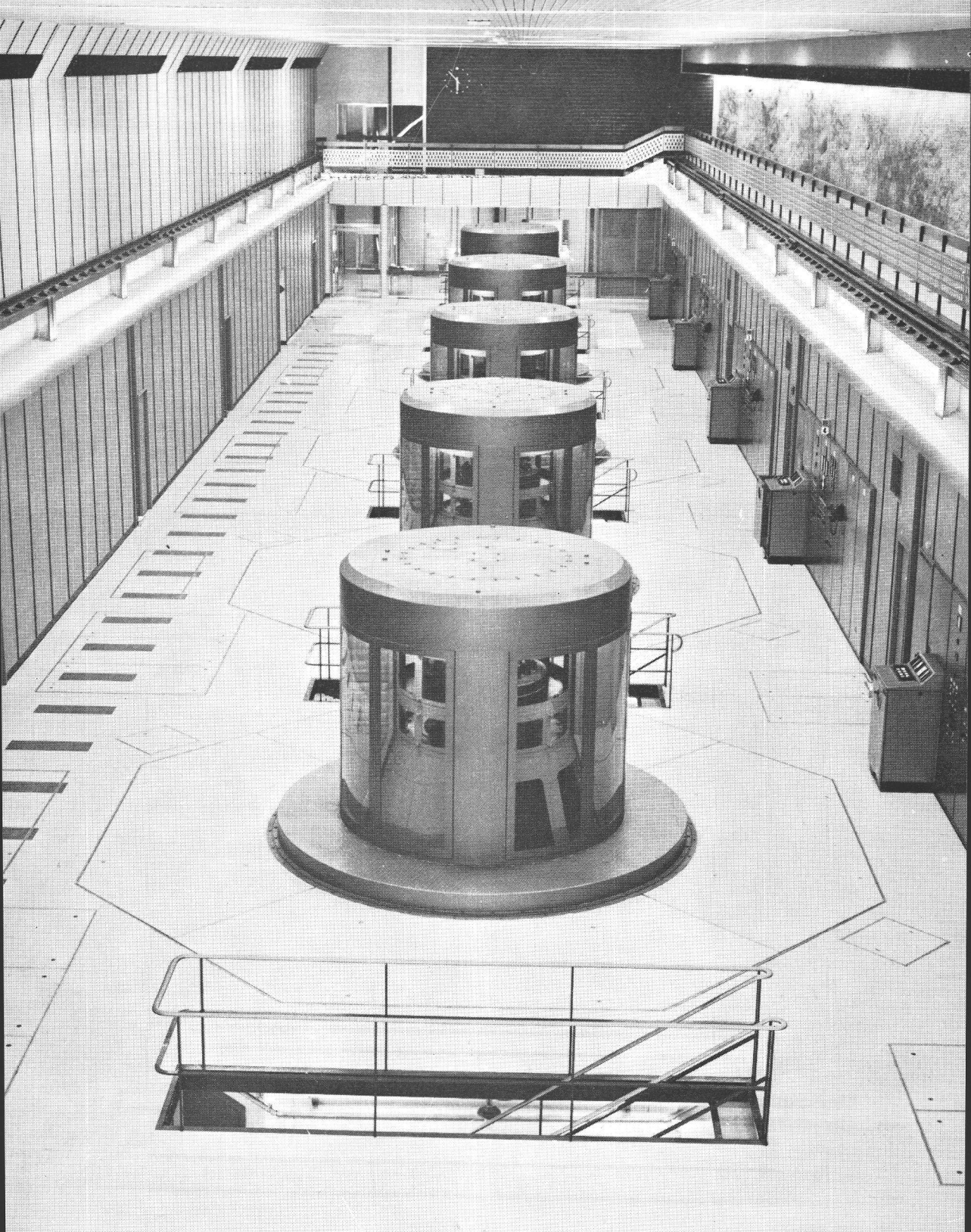
(Page 556)

*The Murchison highway and Mt Murchison*

(Don Stephens)







*Primary Pupils:* The following table shows the age and number of pupils receiving primary education in Tasmanian government schools:

**Age and Number of Pupils Receiving Government Primary Education (a) at 1 August**

Age Last Birthday (Years)	1962	1963	1964	1965	1966
Under 7 .. .. .	12,352	12,580	12,925	13,256	12,984
7 .. .. .	6,635	6,780	6,613	6,901	7,081
8 .. .. .	6,486	6,595	6,944	6,744	6,926
9 .. .. .	6,590	6,352	6,521	6,766	6,568
10 .. .. .	6,342	6,491	6,313	6,515	6,874
11 .. .. .	5,724	5,902	5,959	5,912	5,953
12 .. .. .	2,400	2,252	2,282	2,105	2,084
13 .. .. .	353	312	252	271	266
14 .. .. .	34	32	23	22	22
15 and Over .. ..	3	4	8	9	1
Total—Boys .. ..	24,257	24,536	24,794	25,063	25,295
Girls .. ..	22,662	22,764	23,046	23,438	23,464
Pupils.. ..	46,919	47,300	47,840	48,501	48,759

(a) Includes pre-school pupils.

#### *Special Schools and Special Classes*

The Department has special schools, and also special classes in ordinary schools, for children who are physically handicapped, mentally retarded, or otherwise unable to profit from ordinary class teaching. Instruction varies according to the handicap; where it is physical, the main need is to maintain normal or near-normal individual programmes. Many pupils eventually can be transferred to ordinary schools into the grade appropriate for their age.

Schools and classes for slow learners and mentally retarded children follow the curricula for pre-schools and primary schools, and no attempt is made to reach examination standards. The teaching of activities and basic skills is the main concern in these classes, which are to be found in most primary schools, and all district, high and area schools.

#### *State Secondary Schools*

The following table shows the number of government secondary schools in the State:

**Number of Government Schools Providing Secondary Education at 1 August**

Type of School	1962	1963	1964	1965	1966
Primary with Secondary Classes					
(a) .. .. .	17	17	15	14	14
Area (a) .. .. .	36	36	35	35	35
District (a) .. .. .	6	5	7	6	6
High (b) .. .. .	23	25	27	30	30
Special School (a) .. ..	13	15	14	14	15

(a) These figures are included in a previous table on numbers of primary schools.

(b) Includes matriculation colleges.

All children attend secondary classes, starting at an age varying from 11½ to 13 years. If a choice has to be made between a high and an area school, a transfer committee considers the matter, taking note of tests given in grade VI. High schools are non-selective, comprehensive and, almost without exception, co-educational.



The differences between the types of secondary schools are mainly due to the level of the final exam or of certificate offered. The levels are: (i) the Secondary Schools Certificate (three-year course); (ii) the Schools Board Certificate (four-year course); (iii) Matriculation (five or six year course).

The following table shows the age and number of students in Tasmanian government secondary schools:

**Age and Number of Pupils Receiving Government Secondary Education at 1 August**

Age Last Birthday (Years)	1962	1963	1964	1965	1966
11 .. .. .	255	308	387	329	359
12 .. .. .	3,271	3,326	3,558	3,868	3,853
13 .. .. .	5,127	5,510	5,436	5,702	5,718
14 .. .. .	5,530	5,444	5,737	5,786	5,927
15 .. .. .	4,519	4,330	4,226	4,213	4,336
16 .. .. .	1,419	1,969	1,881	1,734	1,852
17 .. .. .	425	461	613	580	702
18 and Over .. ..	161	122	110	166	215
Total—Boys .. ..	10,753	11,277	11,616	11,812	11,995
Girls .. ..	9,954	10,193	10,332	10,566	10,967
Pupils .. ..	20,707	21,470	21,948	22,378	22,962

The next table shows the number of secondary pupils by sex and class in all government schools and classes:

**Secondary Pupils in Government Schools by Classes at 1 August 1966**

Pupils	Post-Primary Class						Total
	1	2	3	4	5	6	
Boys ..	3,392	3,319	2,885	1,659	392	348	11,995
Girls ..	3,220	3,093	2,711	1,368	352	223	10,967
Pupils	6,612	6,412	5,596	3,027	744	571	22,962

### *Area Schools*

These cater mainly for non-academic children following courses leading to the award of the *Secondary Schools Certificate* after three years by internal examination. There is a bias towards agriculture, technical subjects and home arts, the aim being to provide training for the environment in which the child is likely to find himself on leaving school. The English course is framed to help children write and speak fluently and mathematics is concerned largely with practical examples. There has been an amount of experimental work in these schools, especially in programmed learning, mainly in mathematics.

The Secondary Schools Certificate Course is available to pupils in some primary schools with secondary classes, in all area and district schools, and in all high schools except the two matriculation high schools. In general, pupils intending to proceed to the Schools Board Certificate standard do not sit for the Secondary Schools Certificate examination.

Some area schools provide courses leading to the award of the Schools Board Certificate, especially where high or district schools are too far away for pupils to be able to attend them.

*Government Matriculation Schools*

In 1965, the Hobart High School became the Hobart Matriculation College, no junior students having been enrolled after 1960. The Launceston High School reached this stage in 1967. At these colleges, students are exclusively concerned with matriculation subjects, undertaken as a one-year or two-year course. A third college will begin in the Hobart area in 1968, but the elimination of junior students will not be completed until 1970. Students may also matriculate from high schools at Burnie and Devonport. Subsidised transport and hostels assist many students attempting matriculation.

*Correspondence School*

This school offers a wide variety of courses at the primary and post-primary levels, and provides instruction for adults as well as children. Valuable assistance is given to pupils in secondary classes of some primary schools and area schools to assist them achieve Schools Board Certificate standard.

The courses available include all primary and most secondary subjects; matriculation mathematics and history at the advanced and ordinary levels; the university subject of education for teachers wishing to study externally; advanced English for junior temporary assistant teachers; English for New Australians; and courses for adults with special problems such as illiteracy.

*Teacher Training and Recruitment*

There is a variety of courses available to trainee teachers in this State. The University of Tasmania awards the Diploma of Education after one year of a post-graduate course, or the Certificate of Education after a two year undergraduate course. The Hobart and Launceston teachers' colleges provide two-year courses for primary and infants teachers. A two-year course in physical education and a three-year course in music are obtainable at the University; and courses are available at the Launceston Teachers' College (home arts), the Hobart School of Art, and at the Victorian School of Speech Therapy, the Kew Kindergarten Training College, the Hobart Technical College, etc. Beginning with 1965 entrants, an increasing proportion of teachers' college students are following a three-year course.

The following table shows the number of teachers in Tasmanian government schools:

Number of Government Teachers at 1 August 1966 (a)

Type of School	Full-time			Part-time		
	Males	Females	Persons	Males	Females	Persons
Pre-School .. .. .	..	51	51	..	11	11
Special .. .. .	14	64	78	1	9	10
Primary .. .. .	247	976	1,223	2	120	122
Primary with Secondary Classes ..	17	36	53	2	9	11
Area .. .. .	152	271	423	6	44	50
District .. .. .	59	69	128	..	2	2
High (b) .. .. .	733	494	1,227	16	57	73
Teachers' Colleges .. .. .	23	18	41	..	1	1
Technical Colleges .. .. .	124	19	143	463	85	548
School of Art .. .. .	6	1	7	24	19	43
School of Music .. .. .	4	..	4	..	..	..
Total (a) .. .. .	1,379	1,999	3,378	514	357	871

(a) Excludes teachers in non-teaching positions (e.g. curriculum branch staff, guidance officers, and speech education, music and teaching aids centres, etc.).

(b) Includes matriculation colleges.

In the primary schools in 1966, 81.8 per cent of the teachers were women, and the available men usually taught grades V and VI. All subjects are taught by each teacher in these schools, but itinerant teachers, when available, take physical education, music and speech classes.

In the post-primary schools, most teachers are specialists attached to subject departments within each school. In area and district schools, one teacher may take several subjects, and agriculture, cooking and technical subjects are handled by resident or itinerant specialists as available. Many secondary teachers are graduates of the University of Tasmania, but some have been recruited from overseas in recent years, mainly from the United Kingdom. There are shortages of qualified staff in all fields, especially in languages, mathematics and science. This is an Australia-wide experience.

The following table shows the number of teachers and teachers-in-training in Tasmania:

**Full-time Teaching Staff in Government Schools (a) and Teachers-in-Training  
At 1 August**

Type of Teacher	1962	1963	1964	1965	1966
Head Teachers—					
Males .. .. .	229	226	224	238	236
Females .. .. .	10	16	17	13	7
Other Teachers—					
Males .. .. .	798	872	974	1,056	1,063
Females .. .. .	1,828	1,846	1,885	1,942	1,991
Monitors—					
Females .. .. .	54	58	23	17	10
Total Teachers—					
Males (a) .. .. .	1,027	1,098	1,198	1,294	1,299
Females (a) .. .. .	1,892	1,920	1,925	1,972	2,008
Probationary Students—					
Males .. .. .	42	71	67	21	(b)
Females .. .. .	72	107	96	26	(b)
Teachers-in-Training—					
Males .. .. .	229	221	225	258	299
Females .. .. .	414	450	529	600	614

(a) Includes teachers in non-teaching positions (e.g. curriculum branch staff, guidance officers, etc.) but excludes those engaged in teacher training and technical education, and part-time teachers.

(b) The appointment of probationary students ceased in 1965.

### Independent (or Non-Government) Schools

#### Introduction

Non-government schools have long played a valuable part in Tasmanian education. Policies are framed by headmasters in conjunction with their senior staffs and with the approval of their governing bodies or church. There can be freedom to experiment and to develop breadth in courses if desired, and this is shown by the number of subjects available to students.

#### Registration

Non-government schools and teachers have to conform with the regulations of the *Teachers' and Schools' Registration Board*. This Board consists of eight members who hear and determine all applications for registration and keep a record of all teachers and schools not administered by the Education Department. Every school is graded and every teacher classified to teach

either in one or more grades of school or as a special subject teacher. Temporary or student teachers or monitors need not be registered. The Board may prescribe the mode of classifying teachers, the course of study and training required, the examinations to be passed, and the recognition of overseas qualifications. To secure registration, schools must provide for proper access, drainage, light, ventilation and sanitary conveniences, and inspections may be made by officers of the Department. A daily register of attendance has to be kept.

#### *State Assistance to Non-Government Schools and Pupils*

The *Education Act* 1932 was amended in 1967 to provide for direct payments to non-government schools, the amount being calculated on a capitation basis; the subsidies provided are \$10 per annum per primary pupil and \$20 per annum per secondary pupil. The principle of giving no aid to non-government schools was first incorporated in the *Education Act* 1885 and persisted for 82 years. The 1967-68 appropriation was \$208,000.

Apart from these subsidies, benefits include matriculation allowances; secondary scholarships; free or subsidised transport; use of the facilities of the Department's Curriculum, Teaching Aids, Speech Education and Guidance Branches; attendance at trade and domestic science classes if room is available, and attendance by teachers at Departmental schools of method. Equipment can be purchased at favourable rates through the Supply and Tender Department, and the Schools Library Service can be used.

#### *Enrolment at Independent Schools*

Most non-government school pupils are in schools controlled by religious denominations as the next table shows:

**Non-Government Schools  
Number of Pupils and Number of Schools at 1 August**

Particulars	Church of England	Methodist	Presbyterian	Catholic	Seventh Day Adventist	Friends (Quaker)	Un-denominational	All Schools
No. of Pupils—								
1962 .. Boys	954	4	305	4,654	79	421	112	6,529
Girls	884	351	309	5,058	85	452	103	7,242
1963 .. Boys	940	3	274	4,779	91	445	119	6,651
Girls	881	346	331	5,237	75	457	111	7,438
1964 .. Boys	944	11	268	4,933	86	481	103	6,826
Girls	883	353	323	5,364	74	478	84	7,559
1965 .. Boys	980	7	303	5,040	74	490	149	7,043
Girls	863	336	324	5,465	70	482	105	7,645
1966 .. Boys	1,004	10	273	5,063	63	520	150	7,083
Girls	839	323	314	5,529	65	474	116	7,660
No. of Schools 1966 ..	4	1	2	50	3	1	3	64

Of the 37 schools in 1966 which catered for secondary pupils, 20 had matriculation classes, but only one was co-educational. They have a tradition of comprehensive type schooling, but increased applications for entry have imposed some element of selectivity such as an entrance examination. Preference is usually given to children of past pupils or brothers or sisters of current pupils.

Most independent school pupils are to be found in primary classes, and most of these are in Catholic schools. The following table shows the ages and numbers of all pupils in non-government primary classes and sub-primary classes:

**Age and Number of Pupils Receiving Non-Government Primary Education at 1 August**

Age Last Birthday (Years)	1962	1963	1964	1965	1966
Under 7 .. .. .	1,996	1,937	1,872	1,962	1,905
7 .. .. .	1,140	1,142	1,255	1,246	1,191
8 .. .. .	1,078	1,098	1,106	1,180	1,189
9 .. .. .	1,120	1,095	1,155	1,212	1,202
10 .. .. .	1,168	1,154	1,110	1,115	1,214
11 .. .. .	1,070	1,074	1,140	1,142	1,104
12 .. .. .	592	683	639	567	556
13 .. .. .	183	209	219	177	210
14 .. .. .	42	41	48	30	37
15 and Over .. ..	27	11	4	3	13
Total—Boys .. ..	4,023	4,088	4,131	4,232	4,159
Girls .. ..	4,393	4,356	4,417	4,402	4,462
Pupils .. ..	8,416	8,444	8,548	8,634	8,621

The following table shows the age of pupils in the independent schools at secondary level:

**Age and Number of Pupils Receiving  
Non-Government Secondary Education at 1 August**

Age Last Birthday (Years)	1962	1963	1964	1965	1966
11 .. .. .	63	141	78	100	95
12 .. .. .	729	667	741	804	887
13 .. .. .	1,106	1,166	1,143	1,226	1,253
14 .. .. .	1,273	1,224	1,334	1,273	1,317
15 .. .. .	1,196	1,163	1,115	1,280	1,196
16 .. .. .	652	806	862	838	871
17 .. .. .	269	355	404	406	394
18 and Over .. ..	67	123	160	127	109
Total—Boys .. ..	2,506	2,563	2,695	2,811	2,924
Girls .. ..	2,849	3,082	3,142	3,243	3,198
Pupils .. ..	5,355	5,645	5,837	6,054	6,122

The following table shows the number of secondary pupils by sex and class in all non-government schools:

**Secondary Pupils in Non-Government Schools by Classes at 1 August 1966**

Pupils	Post-Primary Class						Total
	1	2	3	4	5	6	
Boys ..	669	690	589	568	248	160	2,924
Girls ..	758	800	663	653	207	117	3,198
Pupils	1,427	1,490	1,252	1,221	455	277	6,122

**Other Education Matters**

Various functions of the Education Department are described in the following section; some are applicable to both government and non-government schools.

*Equipment:* The Department maintains an active interest in the development of teaching methods and of teaching aids. The Teaching Aids Centre gives assistance to schools by the provision of a library of 16 mm films, film strips and coloured slides. Records are distributed on loan, and are mainly used for music appreciation, poetry and languages. Printed aids, in the form mainly of charts and booklets, are provided (e.g. charts for cursive writing and booklets for the Cuisenaire system). Audio-visual aids (tape recorders, film projectors, centralised radio systems, strip and sound projectors, television receivers, etc.) are bought by the Centre and re-sold to the schools with a \$ for \$ subsidy given by the Department. Repair and maintenance of this equipment is done free of charge by the Centre. Specialised electronic equipment has been developed and produced, e.g. auditory training equipment for the schools for the deaf.

*Libraries:* These have been built up in most schools, with Departmental subsidies matching local funds up to levels determined by the size of the school. The Department's Schools Library Service, with its nineteen thousand volumes, supplements the individual school libraries and circulates a wide variety of reference books on all topics.

*Television and Radio Programmes:* Receivers are found in the majority of schools; lessons are frequently co-ordinated with the scheduled programmes arranged by liaison between the Department and the Australian Broadcasting Commission.

*Road Safety Officers:* Police officers visit the schools regularly to give lectures and practical demonstrations. Special efforts have been made to increase the safety of child cyclists, and warnings have also been given on firearms, explosives, dangerous drugs, etc.

*Parents and Friends Associations:* While a major function of these bodies is fund-raising for the provision of subsidised equipment and library books, they also act as a valuable forum for discussion on education.

*Migrant Education:* This is arranged by the Department at certain schools or by combined radio-correspondence lessons, the aim being the teaching of English. The cost of migrant education is reimbursed by the Commonwealth Government.

*The School Milk Scheme:* Free milk is available to all children under 13 years attending government and non-government primary and infants schools, pre-school centres, creches, child-minding centres, and orphanages. One-third of a pint of milk is supplied daily, and the cost is borne by the Commonwealth. In 1966, the cost of milk supplied was \$440,000.

*Bursaries:* A system of bursaries exists to assist pupils in post-primary government and non-government schools. Junior bursaries, which may be held for four years, are awarded to pupils under the age of 13 who live in areas where the required type of secondary education is not available. Senior bursaries are awarded on the results of a competitive examination for pupils under 17.

There were 149 junior and 39 senior bursaries held during 1966, at a cost to the Bursaries Board of \$23,000. Thirty-five junior and 15 senior bursaries were awarded for 1967. The Bursaries Board fund is made up of moneys from the Government and private donations.

Matriculation allowances are also paid to all pupils in fifth and sixth years of post-primary education if parents' income does not exceed \$50 per week (subject to variation if there are additional children).

### Technical Education

Government technical colleges operate at Hobart, Launceston, Devonport and Burnie and provide professional, technician and trade courses. Part-time students attend classes, providing largely trade work for apprentices, at Queenstown, Rosebery, Smithton, Ulverstone, George Town and Huonville. Students are charged nominal fees. A Tasmanian College of Advanced Education is to be built at Mt Nelson in Hobart, the 170 acre site having 130 acres suitable for the erection of the proposed buildings.

#### Courses

Professional courses provide the theoretical background for the award of a diploma issued by the Education Department. The following table shows the professional courses available, enrolments, and the number who completed courses:

**Technical Colleges**  
**Number of Students Taking Diploma and Post-Diploma Courses**

Type of Course	1964		1965		1966	
	Total Enrolled (a)	Completed Course	Total Enrolled (a)	Completed Course	Total Enrolled (a)	Completed Course
Accountancy ..	557	12	539	11	467	2
Architecture ..	55	2	61	3	58	6
Art ..	118	13	111	21	158	28
Bankers Institute ..	..	..	1	..	22	..
Building ..	6	1	1	..	..	..
Chemistry ..	60	7	61	2	75	3
Electronic Data Processing ..	..	..	..	..	28	..
Engineering—						
Civil ..	73	5	83	10	80	12
Electrical ..	99	13	95	20	78	13
Mechanical ..	52	4	50	6	50	6
Electronics ..	3	3	6	3	..	..
Insurance Institute	16	3	20	2	17	..
Library Association	39	7	43	9	41	2
Management ..	139	8	96	2	76	12
Metallurgy ..	26	2	14	1	16	1
Modelling and Sculpture ..	4	..	10	..	7	3
Music ..	..	..	13	..	27	4
Pharmacy ..	23	7	17	4	22	3
Quantity Surveying	5	3	6	4	4	1
Technical Teaching	4	1	2	..	..	..
Town Planning ..	8	7	12	9	10	..
Valuation ..	18	3	23	5	29	5
Total ..	1,305	101	1,264	112	1,265	101

(a) At 1 August.

*Technician Courses:* These do not aim to reach the standard of the professional courses, nor are they directed towards acquiring skill in a trade. They are intermediate between the two and are designed to meet the needs of industry in which there is a growing demand for technicians. On successful completion of a course, a certificate is awarded by the Education Department. Chemistry, draughtsmanship, health inspection, hotel management, shorthand-typing, and merchandising are examples of the large number of courses available.

*Trade Courses:* These are designed to complement trade experience and to lead the apprentice to skill in his craft. From 1965, apprentices have been required to attend one full day per week for three years; this has eliminated

many evening classes. A certificate of trade proficiency is issued by the Department and courses are available in most trades. Post-trade or journeymen courses are also provided.

The following table shows the number of students who received certificates on successful completion of technician or trade courses, and of preparatory and qualifying courses:

**Number of Technician and Trade Students who Completed Courses**

Course	1962	1963	1964	1965	1966
Technician and Trade Certificates	646	745	768	1,022	978
Preparatory and Qualifying Examinations (a) .. ..	320	303	285	337	482

(a) These courses prepare students for Schools Board, Matriculation, public service entry, teachers' and miscellaneous examinations.

*Technical Correspondence Courses:* These are administered through the Hobart Technical College and are given when attendance at technical classes is not practicable. Approximately 200 apprentices and others utilise these courses.

*Rehabilitation Training:* This is financed and arranged by the Commonwealth Social Services Department for handicapped persons receiving rehabilitation training in technical colleges, business colleges and approved industrial establishments. Further details appear in this chapter under "Social Welfare".

The following table shows the number of correspondence and rehabilitation students in training:

**Technical Students in Training—Correspondence and Rehabilitation**

Type of Student	1962	1963 (r)	1964 (r)	1965	1966
Technical Correspondence ..	(a)	201	265	232	249
Rehabilitation .. .. .	(a)	28	33	38	30

(a) Not available.

(r) Revised.

#### *Technical Education—Miscellaneous*

*Fees:* In 1966, fees were approximately \$30 per year for professional part-time courses, \$60 for full-time courses and \$12 for certificate and trade courses. Apprentices receive training without charge.

*Enrolments:* In 1966, part-time enrolments comprised 94 per cent of the total technical college enrolment of 7,962. The full-time students attended art, pharmacy, technical teaching or day commercial classes. Fifty four per cent of the total enrolment was at the Hobart College and 26 per cent at the Launceston College. Sixteen per cent were attempting diploma or post-diploma courses; 29 per cent certificate or post-certificate courses; 39 per cent trade or post-trade courses; and 16 per cent miscellaneous subjects. Seventy one per cent were males and 29 per cent females.

*College Councils:* These are appointed locally and represent local trades and industries, professions, and municipal councils. They supervise and act as advisory bodies.



State advisory committees advise the Board of Technical Education on the scope and details of syllabuses and matters connected with various professions or trades. They consist of nominees of employers' and employees' associations, and Government nominees.

*Examinations:* These are conducted by the Education Department in November each year and restricted supplementary examinations are held in February. Papers are set and marked, or assessments carried out, by outside examiners.

#### *Technical Teachers, Students and Expenditure*

The following table shows the numbers of schools, teachers and students engaged in senior technical education, and the yearly expenditure:

**Technical Education—Teachers, Students and Expenditure**

Particulars	1962	1963	1964	1965	1966
Schools (a) .. .. (No.)	11	10	9	12	11
Teachers—Full-time .. (No.)	95	90	102	146	143
Part-time .. (No.)	414	449	488	442	548
Students—Aggregate (b) (No.)	6,746	7,587	7,692	7,916	7,962
Expenditure (c) .. .. (\$'000)	485	681	717	797	954

(a) Includes school buildings in which senior technical classes are provided as well as technical colleges.

(b) *Gross* number enrolled during the year.

(c) Excludes capital expenditure on new buildings, etc.

#### **Examinations**

This section deals with certificates and examinations affecting pupils of government and non-government secondary schools.

##### *The Schools Board Certificate*

This is awarded after a four-year secondary academic course. Subjects may be taken at various levels and a wide choice is available, to cater for different levels of ability or interest. Compulsory basic subjects are complemented by optional subjects to permit concentration on interests, without undue specialisation at this stage. At present, examinations may be internal (in accredited schools) or external (set by the Schools Board of Tasmania). The Certificate may be issued endorsed "A" or "B", or unendorsed. The "A" certificate requires a pass in English among other subjects; the "B" certificate is less restricted in specification of required subjects.

A number of pupils who are either unable to attain the standard required by any of the examining bodies, or who do not wish to acquire a certificate, may follow a non-certificate secondary course, which is similar to that for the Secondary Schools Certificate (described earlier under "Area Schools"). Below this level in all schools is at least one special non-examination class for slow learners, who follow a curriculum designed by the Superintendent of Research and Special Education and the district superintendent for that school.

By 1969, an accrediting system for use in all schools, both government and independent, will have replaced the present Schools Board Certificate.

##### *The Matriculation Examination*

This is taken at the end of the fifth or sixth secondary year, individual subjects being attempted at the advanced or ordinary level. Examinations are conducted by the University of Tasmania and are held in December. A candid-

ate may matriculate at the one examination or, if he chooses, at two examinations held in consecutive years. Supplementary examinations are also held in February. At least three subjects at advanced level and two at ordinary level, in certain groupings, are required. Study of subjects outside his specific specialist field of interest is compulsory for a candidate.

Although it is a five-year secondary course, students are encouraged to aim at matriculation after six years' study, and to regard the fifth year examination either as a trial effort or as the first stage of the complete course.

### Examination Results

The following table shows the number of students attempting the Schools Board and Matriculation examinations, and the percentages who passed:

**Schools Board and Matriculation Examination Results  
Government and Non-Government Schools**

Particulars	1962	1963	1964	1965	1966
Schools Board Certificate—					
Total Examined .. .. (No.)	3,392	3,982	4,182	4,433	4,713
Attempted Certificate .. .. (No.)	2,904	3,185	3,368	3,478	3,618
Gained Certificate (a) .. .. (No.)	1,589	1,642	1,800	1,830	2,153
Pass Rate (b) .. .. (%)	57.82	51.67	53.44	52.62	59.51
Matriculation Examination—					
Secondary Schools Students—					
Total Examined .. .. (No.)	940	1,292	1,561	1,804	2,021
Attempted Matriculation .. .. (No.)	650	837	968	1,008	1,163
Matriculated .. .. (No.)	319	462	563	551	661
Pass Rate (b) .. .. (%)	49.08	55.12	58.16	54.65	56.83
Non-Secondary School Students Matriculated .. .. (No.)	22	28	44	18	26

(a) Refers to Schools Board Certificate endorsed "A".

(b) Successful proportion of those attempting to obtain the full qualification.

### Adult Education

*Courses:* Classes and lectures form the core of the Government adult education programme. Consisting usually of ten meetings each, the courses cover a wide range of subjects, including languages, literature, drama, philosophy, psychology, science, geology, navigation, art, music, creative writing, public speaking, animal and plant breeding, garden management, mechanics, home arts, crafts, and film appreciation. About 600 of these courses, conducted by about 250 part-time tutors, are held each year.

*Organisation:* The Adult Education Board has a full time director, and nine professional officers. There are two permanent centres in Hobart, one with an auditorium suitable for major lectures and exhibitions, and seating about 300. There are adult education or community centres in Launceston, Devonport, Burnie and Smithton, and a residential college for short term courses, on lease from the National Trust, at Campbell Town ("The Grange").

*Classes:* Most classes are held in the evening, but some in home arts are held during the day. The standard of the courses ranges from the very elementary to advanced levels. Special lectures by well known speakers are arranged from time to time, particularly in the fields of international affairs, literature and science. In 1966, 99 of these were arranged and were attended by more than 8,738 people.

Seminars are arranged in a wide range of topics. Some of these are in fact refresher courses and are often organised in conjunction with professional bodies, e.g. in the fields of town planning, education, and industrial psychology. The Executive Seminar in business administration is of one week's duration.

*Remote Areas:* No correspondence courses are conducted by the Board, but for those living in isolated places, encouragement is given to the formation of discussion groups and a recorded lecture service frequently illustrated by slides is provided. Notes on books, their literary qualities and the ideas presented in them help to maintain adult education services in the more remote areas.

*Drama:* This is fostered by the provision of producers, equipment and advisory services. As well as raising standards of production and acting, the aim is to train audiences to appreciate live theatre productions, and drama companies such as the Young Elizabethan Players tour each year.

*Music:* This includes open air concerts, concerts of recorded music, lunch hour recitals in the State Library and art galleries, and tours of country districts by individual musicians and groups.

*Art:* An open air art exhibition is held each summer in Hobart and Launceston and special exhibitions of the work of Tasmanian and other Australian artists are occasionally held. Travelling exhibitions are also arranged.

*Residential School:* An important part of the Board's work is the Summer School held in Hobart, when the main subject is in the field of international affairs. Separate schools in the arts are also held and about 20 short-term schools are arranged throughout the State during the year. This number is expected to increase substantially when the residential college is working fully.

The following table shows the annual expenditure on adult education:

**Expenditure on Adult Education  
(\$'000)**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Adult Education (excluding Loan Fund expenditure) . . . . .	97	102	111	119	127

### University of Tasmania

#### *History*

The University of Tasmania was founded in 1890, and was the fourth to be established in Australia. Teaching began in 1893 with three lecturers and six students on four acres of land in the Queen's Domain at Hobart.

Growth of the University was slow for the first half century, despite the State's progressive policy in education generally. The Faculties of Arts, Science and Law were originally established, with Commerce added in 1919 and Engineering in 1922. At the outbreak of World War II, the teaching staff in many departments consisted of one full-time professor or lecturer, possibly with part-time assistants.

After the war, the influx of ex-servicemen filled all Australian universities to capacity and student enrolments in Tasmania rose to 740 in 1947. Financial assistance from both State and Commonwealth Governments enabled the staff to be almost doubled between 1945 and 1950 and energetic research schools developed. A Faculty of Education was established with responsibility for some of the State's teacher training. New chairs in such subjects as psychology, geology, botany, zoology and political science were created. In 1957 came the Murray Report on the Australian Universities, leading to a significantly increased flow of Commonwealth money into Australian universities generally. It also led to the decision to found Faculties of Agricultural Science and Medicine in Tasmania.

*New Site and Post-war Enrolments*

The present site at Sandy Bay was chosen in 1944. Army-type huts were erected to accommodate temporarily the rapidly growing science departments. The first permanent building was occupied in 1957 and rapid development has followed, with Commonwealth assistance in financing the building programme.

The following table shows the number of teaching staff and students in selected years:

**University Teaching Staff and Students Enrolled**

Particulars	1945	1961	1962	1963	1964	1965	1966
Teaching Staff (Full-time)							
Professors .. ..	12	19	19	19	19	20	25
Others .. ..	31	91	101	108	112	125	134
Total Staff ..	43	110	120	127	131	145	159
Individual Students Enrolled .. ..	503	1,460	1,572	1,691	1,863	2,083	2,346

The next table shows the teaching staff and courses in which students were enrolled:

**University Staff and Enrolments, 1966**

Teaching Staff (Full-Time)		Student Enrolments Gross (a)			
Particulars	Number	Course	New Enrolments 1966	Total Enrolments	
				Males	Females
Professors .. ..	25	Arts .. ..	244	358	442
Associate Professors and Readers ..	14	Science .. ..	126	320	66
Senior Lecturers and Lecturers .. ..	87	Law .. ..	38	109	12
Assistant Lecturers ..	33	Economics/Commerce	65	190	11
		Engineering ..	32	140	..
		Education .. ..	17	108	102
		Medicine .. ..	25	48	10
		Other (b) .. ..	143	327	134
Total ..	159	Total ..	690	1,600	777

(a) Students enrolled in more than one course are shown in each course for which enrolled.

(b) See following paragraph for analysis.

Of the 461 enrolments classified as "other", 141 were students seeking a master's or doctor's degree (Ph.D.), 4 were taking forestry, and 50 taking the diploma course in public administration. The remaining 266 enrolments represent students taking individual subjects but not as part of a degree or diploma course.

*Constitution and Administration*

The senior academic body is the Professorial Board which includes the head of every University teaching department and the faculties, boards and committees are subject to it.

The governing body of the university is the Council, consisting of four members appointed by the teaching staff, four by the graduates through Convocation, one by the undergraduates, two by the two Houses of Parliament, four by the Governor, and three by the Governor on the recommendation of the Council. The Director of Education is an ex-officio member. The Chancellor is chairman, as he is constitutionally and ceremonially the senior

member of the University. The chief executive officer is the Vice-Chancellor. Graduates are represented in University affairs through Convocation, every graduate being qualified as a member of this body.

### Degrees Conferred

The following table shows degrees conferred:

University of Tasmania—Degrees Conferred (a)

Degree (b)			1956	1962	1963	1964	1965	1966
M.A.	..	.. Males	2	3	2	2	4	2
		Females	..	..	..	..	..	1
B.A.	..	.. Males	20	33	40	42	53	64
		Females	24	30	37	50	61	56
M.Sc.	..	.. Males	1	1	4	..	1	1
		Females	..	..	1	..	..	..
B.Sc.	..	.. Males	23	35	48	44	49	63
		Females	3	5	6	10	8	12
LL.B.	..	.. Males	10	10	6	13	11	10
		Females	..	..	1	1	..	2
B.Com./B.Ec.	..	.. Males	13	14	21	11	15	19
		Females	2	1	1	..	1	3
B.E.	..	.. Males	9	10	20	18	21	13
		Females	..	..	..	..	..	2
Other	..	.. Males	5	..	5	8	7	11
		Females	..	1	..	..	1	..
Total	..	.. Males	83	106	146	138	161	183
		Females	29	37	46	61	71	76

(a) Excluding honorary degrees.

(b) Bachelors' degrees include bachelors' degrees with honours.

### Finance

The following table shows the income and expenditure of the University of Tasmania:

University Income and Expenditure (a) 1966

Income	\$'000	Expenditure	\$'000
State Government Grant ..	1,457	Teaching and Research ..	2,263
Commonwealth Govt Grant ..	1,169	Administration and General ..	333
Other Grants and Donations ..	100	Libraries .. .. .	184
Student Fees .. .. .	426	Building and Grounds—Main-	
Halls of Residence .. ..	78	tenance .. .. .	267
Other .. .. .	75	Other .. .. .	227
Total .. .. .	3,305	Total .. .. .	3,274

(a) This statement refers only to current income and expenditure. An additional amount of \$192,000 met from State Loan Fund was expended on new buildings and major alterations and additions in 1966.

The next table summarises income and expenditure over a five-year period:

University Income and Expenditure—Summary  
(\$'000)

Particulars	1962	1963	1964	1965	1966
Income—					
Government Grants (a) ..	1,631	1,592	2,077	2,275	2,626
Other .. .. .	401	371	511	660	679
Total .. .. .	2,032	1,964	2,589	2,935	3,305
Expenditure—					
Total (b) .. .. .	1,992	2,029	2,349	3,092	3,274

(a) State and Commonwealth.

(b) Excludes expenditure on new buildings and other capital works.

*Residential Colleges*

There are four residential colleges in the University. Christ College was affiliated with the University in 1933, moved to new premises at Dynnyrne from the Domain in 1962 and provides accommodation for 75 students. It still caters for a few Anglican theological students. Hytten Hall was opened in 1959 and accommodates 120 students. Extensions to the Hall were commenced in 1967. St John Fisher College was opened in 1962, accommodates 33 students and is under the direction of the Catholic Church. Jane Franklin Hall was founded by the Tasmanian Council of Churches in 1950 as a hall of residence providing accommodation for 85 female students.

*Buildings*

By 1967, the Faculties of Arts, Commerce, Education, Science and Engineering were mainly housed in permanent buildings, and others have been completed for the Library, the Union, and the administrative staff. Projects under construction or planned for the immediate future include buildings for Mathematics, Medicine, Agricultural Science and Law, and a gymnasium. Most of the present teaching buildings will have to be extended.

*Future Plans*

The development of the Medical School will be the University's major project for some time to come, needing one building at the University (under construction 1967) for the teaching of anatomy, physiology and biochemistry, and a clinical building on the site of, and linked with, the Royal Hobart Hospital.

Further development is required for the Faculty of Agricultural Science, the Library and the Computer Centre. This Centre is a joint project with the Hydro-Electric Commission, a computer being installed in 1964.

**Commonwealth Department of Education and Science**

Because of the rapidly growing commitment of the Commonwealth Government in education, an education office was established in Hobart in 1964. Its major function is the administration of Commonwealth scholarship schemes and sponsored training.

*Sponsored Training*

Students sponsored from overseas receive training in Tasmanian educational institutions, some of the scholarship funds and the administration for this purpose being a responsibility of the Commonwealth Government. Schemes include the *Colombo Plan*; *Special Commonwealth Aid Programme*; *United Nations Educational, Scientific and Cultural Organisation* (Unesco); *Australian-American Educational Foundation Awards*, etc. Training is arranged on a full-time or part-time basis with the University of Tasmania, the Education Department, independent schools, government departments and industry, according to need. The number of sponsored students rose from nine in 1961 to 109 in 1966.

In addition to long-term sponsored students, 55 short-term visitors were brought to the State in 1966 for periods of up to one year. These visitors, whose trips were financed in the same manner as those for sponsored students, came for specialised experience in industrial, technical or scientific fields, or for post-graduate study.

Reception, accommodation, travel and payment of allowances are handled by the Department. Professional guidance and advice on academic and welfare matters are made available by education officers for all overseas students, both private and sponsored.

*Commonwealth Scholarships*

*University Scholarships:* These are awarded each year on the results obtained in the Matriculation Examination. In 1966, the quota was 200 and in 1967, 194; the 1968 quota is likely to exceed 200. Benefits payable include payment of university fees, and subject to a means test, payment of a living allowance.

*The Commonwealth Secondary Scholarship Scheme:* Each year about 325 Tasmanian students are awarded a two-year scholarship to assist them to study for the matriculation examination. Each scholarship is worth a maximum amount of \$400 per year and a minimum of \$250 a year (components being \$200 living allowance, \$50 book allowance and \$150 school fees, if paid).

*The Commonwealth Technical Scholarship Scheme:* A quota of 80 scholarships is available annually to Tasmanian students to assist them to take approved full-time or part-time technical college and art school courses, and approved full-time courses in music and agriculture. Full-time students are paid a maximum of \$400 and a minimum of \$250 per year, and part-time students \$100 a year plus tuition fees.

*The Commonwealth Advanced Education Scholarship Scheme:* This scheme provides assistance to students taking approved courses of advanced education in Australia. In Tasmania, 33 scholarships are offered each year to assist students taking diploma courses at a technical college, the certificate course conducted by the Pharmacy Board and teacher training courses at Education Department Teachers' Colleges. With this scheme, all compulsory fees are paid and, subject to a means test, a maximum allowance of \$559 per annum for a scholar living with his parents, or \$852 per annum for a scholar living away from his parents, is payable.

**SOCIAL WELFARE****Commonwealth Department of Social Services**

The following table shows expenditure in Tasmania from the National Welfare Fund on benefits under the *Social Services Act*. The most noticeable fluctuations occur in expenditure on unemployment benefits.

**Commonwealth Welfare Services Payments  
(\$'000)**

Benefit or Service	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Age and Invalid Pensions ..	6,900	11,404	11,717	12,343	13,184	13,439
Child Endowment (a) .. ..	4,569	4,993	5,045	6,113	6,306	6,318
Rehabilitation Service .. ..	31	50	39	44	60	54
Funeral Benefits .. ..	19	23	24	25	26	33
Maternity Allowances .. ..	273	289	277	272	251	243
Widows' Pensions .. ..	537	1,037	1,084	1,467	1,699	1,791
Unemployment Benefits .. ..	20	696	783	750	583	275
Sickness Benefits .. ..	102	163	203	215	201	174
Special Benefits .. ..	27	38	44	52	52	57
Total .. ..	12,479	18,694	19,216	21,281	22,363	22,384

(a) In 1955-56 and 1963-64, five twelve-weekly payments were credited directly to bank accounts instead of four. Endowment payable on 4 July 1961 was brought to account in 1960-61.

Commonwealth activity in social services began in 1909 with the passage of the *Invalid and Old Age Pensions Act*. This and the *Maternity Allowances Act* were administered by the Department of the Treasury until 1941 when the Department of Social Services commenced to function as a separate organisa-

tion. Later, the functions of the Department were widened with the passing of the *Child Endowment Act*, the *Widows' Pensions Act* and the *Unemployment and Sickness Benefits Act*. A referendum held in 1946 empowered the Commonwealth to legislate for the provision of certain social services formerly provided by the States. In 1947, a consolidated *Social Services Act* was passed. The Department also administers the *Aged Persons Homes Act* and the *Sheltered Employment (Assistance) Act* and co-operates with the Commonwealth Department of Health in the administration of the *National Health Act*.

#### *Description of Pensions, Benefits, etc.*

In the section that follows, a description is given of the various pensions, benefits, etc. The rates and conditions are varied from time to time by amending legislation; those shown include amendments made in 1966 (after the Budget) and in April 1967.

#### *Age and Invalid Pensions*

Generally pensions are payable to persons who have been resident in Australia, New Zealand or the United Kingdom for 10 years in the case of age pensioners, and five years in the case of invalid pensioners. (Reciprocity agreements exist with New Zealand and the United Kingdom.)

The qualifying ages for age pensions are 65 years for men and 60 years for women; invalid pensions are payable to persons over 16 years of age who are permanently incapacitated for work. Additional allowances are payable for dependants under certain conditions.

For age and invalid pensions, the same means test on income and property operates. "Means" can consist entirely of income, entirely of property, or any combination of them. The calculation of income excludes the pension itself, income from property, gifts from family, benefits from hospital and medical insurance schemes, child endowment, etc.; the property component excludes home, furniture, personal effects, the first \$400 of property and \$1,500 surrender value of life policies, and the capital value of any life interest, annuity or contingent interest, etc. Blind persons, however, may receive the maximum rate of pension free of means test.

The next table shows the pension rates and the limits of the sliding scale used to progressively reduce them when means as assessed exceed the allowable minima:

**Age and Invalid Pension Rates, May 1967**  
(**\$**)

Particulars	Yearly Amounts		Weekly Equivalents	
	Maximum Rate Pension	Means as Assessed: Sliding Scale Limits (a)	Maximum Rate Pension	Means as Assessed: Sliding Scale Limits (a)
Single Pensioner ..	676	520-1,196	13.00	10.00-23.00
Married Pensioners..	1,222	884-2,106	23.50	17.00-40.50

(a) Lower limit and below, no reduction in pension; if upper limit exceeded, pension ceases.

The sliding scale operates as follows: the amount by which means as assessed exceed the permissible minima in the table is deducted from the maximum rate pension. Property taken into account in calculating means as assessed is taken at 10 per cent to give an annual value. A single pensioner can therefore own property, in addition to exempt property, up to \$5,600 without reduction of pension (10 per cent of [\$5,600 less \$400] = \$520), and



up to \$12,360 before pension ceases (10 per cent of [\$12,360 less \$400] = \$1,196). With married pensioners, the corresponding lower and upper property limits are \$9,640 and \$21,860.

Supplementary (rental) assistance of up to \$2 a week is payable to age or invalid pensioners who pay rent and whose *means as assessed* do not exceed \$52. This assistance is reduced by the amount of means in excess of \$52.

Free medical service and medicine are provided for pensioners and their dependants, and a concessional telephone rental equal to two-thirds of the amount otherwise payable is available to blind people, pensioners who live alone, and to certain others. Radio and television licences at a reduced rate are also available to these pensioners.

If an invalid pensioner is earning income, the question of permanent incapacity for work is reconsidered. Employment is not necessarily inconsistent with permanent incapacity and each case is determined on its merits.

A wife's allowance of \$312 a year (\$6 a week) may be paid, subject to the means test, to a non-pensioner wife, and is reduced by *means as assessed* over \$442. A child's allowance of \$78 a year (\$1.50 a week) may be paid, free of means test, for one child, and subject to means test for each other child. A guardian's allowance of \$208 a year (\$4 a week) is payable, subject to means test, to widowers and other unmarried pensioners with one or more children.

Pensions are paid fortnightly by cheque posted to the pensioner's address.

#### *Widows' Pensions*

These were introduced by the Curtin Government in 1942. They are payable to widows who have been resident in this country, New Zealand or the United Kingdom for five years before claiming a pension, or for one year if the woman and her husband were living permanently in Australia before he died. The classes of widows are as follows: (i) a Class A widow has one or more dependent or student children in her care; (ii) a Class B widow is at least 50 years of age, or 45 years when her Class A pension ceases (because she no longer has a child in her care); (iii) a Class C widow is under 50, without children, and in necessitous circumstances in the 26 weeks following her husband's death. The term "widow" includes a deserted wife, a divorcee and a woman whose husband has been imprisoned for at least six months or is a patient in a mental hospital. Certain "dependent females" may also qualify for pension. Women ineligible for pension include those receiving war widows', age or invalid pensions, and deserted wives or divorcees who have not taken reasonable steps to obtain maintenance from husbands or former husbands.

The maximum rate of widows' pensions are as follows:

Class A—\$884 a year (\$17 a week) plus \$1.50 weekly for each qualifying child;  
Class B—\$611 a year (\$11.75 a week); Class C—\$11.75 a week.

There is no specific means test for Class C pensioners, the decision on "necessitous circumstances" being at the discretion of the Director of Social Services; if the widow is expecting a child, payment continues until the birth, when she may qualify for a Class A pension. A means test on income and property for A and B class pensioners operates. Widow pensioners are also eligible for the pensioner medical service, supplementary (rental) assistance of \$2 per week where rent is paid and the widows' means as assessed do not exceed \$52, concessional radio and television licence fees and telephone rentals.

The following table shows, for Tasmania, the number and sex of persons receiving age, invalid and widows' pensions, and the amounts paid out in pensions and allowances:

**Age, Invalid and Widow Pensioners and Payments**

Particulars	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Age and Invalid Pensions—						
Number of Age Pensioners (a)—						
Males	4,585	5,548	5,572	5,779	5,799	5,809
Females	9,489	11,974	12,188	13,024	13,093	13,372
Persons	14,074	17,522	17,760	18,803	18,892	19,181
Number of Invalid Pensioners (a)						
Males	1,275	1,822	1,844	1,966	2,055	2,027
Females	1,321	1,477	1,499	1,397	1,477	1,417
Persons	2,596	3,299	3,343	3,363	3,532	3,444
Amount of Pensions Paid (\$'000)	6,900	11,404	11,717	12,343	13,184	13,439
Widows' Pensions—						
Number of Pensioners (a)	1,419	1,912	1,977	2,109	2,248	2,327
Amount of Pensions Paid (\$'000)	537	1,037	1,084	1,467	1,699	1,791

(a) At 30 June.

#### *Budget of August 1967*

The Federal Treasurer announced that age and invalid pension rates would remain unchanged, and that the means test would not be liberalised. A taxable income of up to \$1,196 for an individual (or up to \$2,106 for a married couple) was to be tax free, in the case of age pensioners.

#### *Unemployment, Sickness and Special Benefits*

Legislation for these benefits was introduced in 1944 by the Curtin Government and payments began in 1945. The minimum age is 16 years, the maximum 65 (male) and 60 (female). There are no nationality restrictions, but if a claimant has not been resident in Australia for one year before making the claim, the Department must be satisfied that he intends to live here permanently. Benefits are not payable to people qualified to receive invalid, age, widows' or service pensions, or tuberculosis allowances.

To receive unemployment benefit, a person must be out of work (but not through being a direct participant in a strike); must be capable of undertaking and willing to undertake suitable work; and have taken reasonable steps to obtain employment. Registration with the Commonwealth Employment Service is necessary; payment is at the discretion of the Department of Social Services.

Sickness benefit may be paid to a person temporarily unable to work because of sickness or accident, and who has suffered a loss of income because of this.

A special benefit may be granted to a person not qualified for a pension or an unemployment or sickness benefit if, because of age, physical or mental disability, domestic circumstances, or for other valid reasons, he is unable to earn a sufficient livelihood for himself and his dependants.

The maximum rate of unemployment, sickness and special benefit payable is \$8.25 weekly for an adult or married minor, plus \$6 for a dependent spouse (or unpaid housekeeper if one or more children are maintained), and \$1.50

for each dependent child under 16 years; unmarried minors receive either \$3.50 or \$4.75 a week, according to age. A means test operates which allows a maximum income of \$4 a week, or \$2 in the case of minors. If the claimant's income from other sources (with exclusions such as child endowment, war pension and reimbursements from registered health or benefit organisations) exceeds the maximum, the benefit is reduced by the amount of the excess. The spouse's income can cause reduction or elimination of additional dependant's benefit.

The following table shows, for Tasmania, the unemployment, sickness and special benefits granted, and the expenditure on each:

**Commonwealth Unemployment, Sickness and Special Benefits  
Beneficiaries and Payments**

Particulars	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Unemployment Benefits—						
Claims Granted .. (No.)	454	8,273	7,141	6,720	5,255	2,742
Persons on Benefit—						
At 30 June .. (No.)	71	1,778	1,777	1,399	926	433
Weekly Average .. (No.)	58	1,541	1,497	1,435	1,117	516
Benefits Paid .. (\$'000)	20	696	783	750	583	275
Sickness Benefits—						
Claims Granted .. (No.)	1,950	2,000	2,099	2,167	2,238	2,040
Persons on Benefit—						
At 30 June .. (No.)	241	304	303	289	272	298
Weekly Average .. (No.)	229	262	301	300	287	263
Benefits Paid .. (\$'000)	102	163	203	215	201	174
Special Benefits—						
Claims Granted .. (No.)	115	93	111	135	122	122
Persons on Benefit—						
At 30 June .. (No.)	95	95	103	129	120	115
Weekly Average .. (No.)	100	96	102	118	116	121
Benefits Paid .. (\$'000)	27	38	44	52	52	57
Total Benefits—						
Total Claims Granted .. (No.)	2,519	10,366	9,351	9,022	7,615	4,904
Persons on Benefit—						
At 30 June .. (No.)	407	2,177	2,183	1,817	1,318	846
Weekly Average .. (No.)	387	1,899	1,900	1,853	1,520	900
Total Benefits Paid .. (\$'000)	149	897	1,030	1,017	837	506

#### *Funeral Benefits*

These were introduced by the Curtin Government in 1943 and provide for a payment of \$20 to the person meeting funeral costs, following the death of an invalid or age pensioner, or of a tuberculosis sufferer otherwise qualified to receive a pension. The amount is increased up to \$40 where the claimant is himself a pensioner, or if the payment is in respect of the pensioner claimant's wife or child.

#### *Maternity Allowances*

Maternity allowances were introduced by the Fisher Government in 1912. There is no means test and any mother is entitled to a maternity allowance if she gives birth to a child in Australia and if she resides or intends to remain in Australia. It may also be paid in certain other cases, e.g. a birth on a ship proceeding to Australia. Payment is a *single grant* of \$30 where there are no other children; \$32 where there are one or two other children and \$35 where there are three or more children in the mother's care. The amount is increased by \$10 for each additional child in a multiple birth; \$20 of the allowance may be paid four weeks before the birth, and the balance soon after.

The following table shows payments in Tasmania:

**Maternity Allowances**

Particulars	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Claims Paid During Year (No.)	8,328	8,942	8,560	8,437	7,821	7,578
Amount Paid During Year (\$'000)	273	289	277	272	251	243

*Child Endowment*

Child endowment was introduced by the Menzies Government in 1941, and is paid to persons or institutions having the care, custody and control of children under 16 years, or student children under 21. One year's residence in Australia is required if the mother and child were not born here, but this requirement is waived if the Department is satisfied they intend to remain here permanently.

There is no means test and weekly rates are 50 cents for the first child, \$1 for the second and \$1.50 for each other child in the acceptable age groups. The rate for all student children and for children being cared for by institutions is \$1.50. Endowment is paid in arrears and either credited to a bank account each twelve weeks, sent by cheque or cashed by order at a post office each 28 days. For student children, payment is made only by cheque each 12 weeks.

The following table shows statistics of child endowment in Tasmania:

**Child Endowment  
Children (including Students) Endowed and Payments**

Particulars	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Endowed Children and Students (a)—						
Children in Endowed Families (No.)	108,285	126,634	127,261	126,413	126,526	126,870
Children in Approved Institutions .. .. (No.)	495	381	403	483	521	401
Students .. .. (No.)	..	..	..	3,026	3,623	3,933
Total Endowed .. (No.)	108,780	127,015	127,664	129,922	130,670	131,204
Amount Paid During Year (b) (\$'000)	4,569	4,993	5,045	6,113	6,306	6,318

(a) Number at 30 June. Children, those under 16 years; students, 16 but under 21 years.

(b) In 1955-56 and 1963-64, five twelve-weekly payments were credited directly to bank accounts, instead of four. Endowment payable on 4 July 1961 was brought to account in 1960-61.

*Budget of August 1967*

The Federal Treasurer announced that the fourth child's endowment was to be \$1.75; the fifth's \$2.00; the sixth's \$2.25; and so on. A family of nine children, for example, would receive \$18.25, an increase of \$5.25 on previous entitlement.

*Pensioner Health Benefits and Tuberculosis Allowances*

The pensioner medical service and tuberculosis allowances are described in this chapter under the heading "Health".

*Commonwealth Rehabilitation Service*

In 1941, the Curtin Government introduced provisions for the vocational training of invalid pensioners. In 1948, the Chifley Government provided for the rehabilitation of invalid pensioners and of unemployment and sickness benefit recipients. The Menzies Government in 1955 extended eligibility to persons receiving tuberculosis allowances and to children of 14 and 15 years who otherwise might qualify for an invalid pension at 16. In 1958, widow pensioners and people receiving special benefit were granted eligibility.

The Service aims to fit handicapped people for employment by supplying medical and hospital treatment, surgical aids and appliances, and where necessary, arranging special education and training courses in industry, public service, etc. Vocational counsellors arrange employment with suitable employers and follow up progress. During training, rehabilitees receive the invalid pension plus a \$6 per fortnight training allowance.

Rehabilitation training is given if the disability is a substantial handicap to engaging in full employment and if there are reasonable prospects of the person working within three years of starting treatment or training. Disabled people who do not qualify for free service may pay for rehabilitation themselves, or may be sponsored by private or government organisations. In Tasmania, the Department's rehabilitation centre is located in Hobart.

The following table shows the numbers accepted for rehabilitation and placed in employment in Tasmania:

**Operation of Commonwealth Rehabilitation Service**

Particulars	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Persons—						
Accepted for Rehabilitation (No.)	79	100	79	102	80	100
Placed in Employment . . (No.)	71	96	74	82	75	86
Expenditure (a) . . . . (\$'000)	31	50	39	44	60	54

(a) Excludes capital expenditure on sites and buildings, and administrative costs of the Rehabilitation Service.

*Homes for the Aged*

Under the *Aged Persons Homes Act* 1954, the Menzies Government provided for subsidies, on a \$ for \$ basis, to approved organisations intending to build or acquire homes for aged persons. In 1957 the cost of land was allowed as part of the capital cost, and the Commonwealth contribution was increased to \$2 for \$1. The aim is the provision of conditions approaching ordinary domestic life. ("Homes" in this context does not refer to houses built under the Commonwealth-State Housing Agreement.) Three grants were made in 1965-66 totalling \$68,000, bringing the number of grants to 54 and expenditure in Tasmania to \$1.7m since the inception of the scheme.

*Sheltered Workshops*

The *Commonwealth Sheltered Employment (Assistance) Act* 1967 incorporated the *Disabled Persons Act* 1963. The Act's object is to foster and encourage the development of sheltered workshops for disabled people who, on medical grounds qualify, or who may later qualify, as invalid pensioners; and to provide work experience, and the opportunity to earn to the limit of their capabilities for work done, possibly to graduate to normal employment in the future.

Assistance is given by a \$2 for \$1 subsidy towards: (i) the capital cost of erection or addition to workshops; (ii) the accommodation of people engaged in sheltered employment; (iii) the rental for up to three years of premises used to provide sheltered employment; (iv) the cost of workshop equipment.

In addition, under a 1967 amendment to the *Social Services Act*, a sheltered employment allowance may be paid and the means test is relaxed to provide an incentive to earn.

### State Department of Social Welfare

#### *Expenditure*

Activities of this State Government Department are grouped under Child Welfare and Relief. The following table shows expenditure over a five-year period:

Department of Social Welfare—Expenditure  
(\$'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Administration and General ..	153	167	183	196	213
Relief Division .. ..	136	142	152	167	157
Child Welfare Division ..	140	156	161	177	178
Ashley Home for Boys ..	69	69	83	82	88
Grants to Organisations ..	54	64	78	110	94
Total .. ..	552	599	657	732	730

In 1965-66, the major expenses were: under Relief Division, fuel allowances for eligible pensioners, \$83,000 and relief and maintenance \$68,000; under Child Welfare Division, maintenance of boarded-out children, \$93,000 and contributions towards maintenance of children in approved institutions, \$61,000; and under Grants to Organisations, Tasmanian Institute for Blind and Deaf, \$61,000, including supplement to wages of blind employees, \$18,000, to Eskleigh Home, \$14,000, Sunshine Home, \$6,000, and Salvation Army, \$4,000.

#### *Relief Division*

The functions of this Division are to investigate applications for assistance from needy mothers with dependent children and to give cash relief where necessary; to issue fuel allowances (subject to a means test) to aged and invalid pensioners; and to help pay for funerals, transport, furniture removals and artificial limbs, spectacles, etc. for persons in indigent circumstances. Special grants are made to deserted wives (and sometimes deserted husbands) left with children, wives with husbands in gaol, to certain persons awaiting receipt of Commonwealth benefits or pensions, and to relatives supporting deserted children. Domestic aid can be provided where because of illness, a mother is unable to undertake her normal duties, or where lack of domestic help would cause hardship. Housekeeper help was supplied on nine occasions in 1965-66 at a net cost of \$3,000.

#### *Child Welfare Division*

The work of this Division includes the investigation of complaints that children are neglected or inadequately controlled; the supervision of neglected children in their own homes to avert the need for more drastic action; the investigation of cases to appear in Children's Courts; the supervision of children under order of the Court; the placement and supervision of children declared by the Court to be wards of the State; the control of the Department's receiving and other homes; the recovering of maintenance costs, where possible, from parents of children who are a charge on the Department; the

licensing and supervision of children's boarding homes and day nurseries; the supervision of child migrants; welfare of children referred by Courts in divorce actions.

*Adoption of Children:* Women child welfare officers investigate applications by prospective adoptive parents and interview mothers wishing to place their children for adoption. Applications for adoption of children are heard by a magistrate. There were 301 orders for adoption made in 1965-66.

### *Children's Court Statistics*

In Tasmania, a child cannot be prosecuted without his case having first been referred to a welfare officer for investigation and a recommendation having been made. In 1965-66, 96 children originally referred to welfare officers with a view to proceedings were not brought before Children's Courts; the following table shows the ages and sex of children *reported* in that year (but not necessarily involved in Children's Court proceedings):

**Number of Children Reported for Prosecution, 1965-66**  
**Classified by Age and Sex**

Sex	Age (in Years)										Total
	Under 8	8	9	10	11	12	13	14	15	16	
Boys .. .. .	12	18	27	46	63	89	116	178	207	335	1,091
Girls .. .. .	14	2	3	6	8	10	13	31	25	54	166
Total .. .. .	26	20	30	52	71	99	129	209	232	389	1,257

The offences for which children were reported over a five-year period are shown in the following table. Where a child was reported for more than one offence, the apparently more serious one has been listed.

**Children Reported for Prosecution**  
**Classes of Offences**

Offence	1961-62	1962-63	1963-64	1964-65	1965-66
Damage to Property .. .. .	141	105	132	94	109
Breaking, Entering and Stealing	190	205	245	211	249
Stealing .. .. .	220	251	243	262	296
Receiving .. .. .	8	18	17	7	29
Illegal Use of Vehicle .. .. .	46	70	59	61	75
Offences Involving Fraud .. .. .	5	3	12	6	8
Sex Offences .. .. .	12	12	15	12	16
Other Offences Against the Person .. .. .	8	17	21	18	9
Offences Against Decency .. .. .	2	10	8	13	10
Disorderly Conduct .. .. .	45	30	27	29	51
Traffic Offences .. .. .	108	99	134	83	105
Breaches of Licensing Laws .. .. .	43	35	107	96	176
Breaches of By-Laws .. .. .	26	37	52	18	24
Firearm Offences .. .. .	42	40	44	43	27
Sub-total .. .. .	896	932	1,116	953	1,184
Appearing as Uncontrolled .. .. .	17	19	34	38	28
Appearing as Neglected .. .. .	106	92	70	79	42
Breaches of Supervision .. .. .	(a)	5	6	6	3
Total .. .. .	1,019	1,048	1,226	1,076	1,257

(a) Not available.

*Wards of the State and Supervised Children*

Children are made wards of the State either on application of a parent or relative (e.g. in the case of both parents' death or desertion), or by order of a Court. They are wards until they reach the age of eighteen years, but wardship can be terminated earlier or extended to twenty-one years at the discretion of the Minister. At 30 June 1966, there were 771 wards of the State under the supervision or control of the Department. These wards were accounted for as follows: 34 per cent in foster homes; 11 per cent in Departmental homes; 25 per cent in other children's homes; 18 per cent with friends or relatives; 8 per cent in employment and not living at home; 4 per cent in other government institutions and untraced.

Wards of the State are placed either in foster homes (in the main, ordinary family residences) or in children's homes; some of the latter institutions are privately administered while others are a direct Departmental responsibility. Payment for wards in foster homes is made by the Department and varies according to the age of the child. The total cost was \$93,000 in 1965-66. Often such payments are not required, e.g. in the case of a child whose adoption is being arranged. Non-departmental children's homes receive contributions towards the cost of maintaining wards. The total contributions were \$61,000 in 1965-66. While still under the supervision of welfare officers, wards are often returned to their parents or guardians; wardship in these cases is frequently terminated early, as it is with many who successfully take up employment.

During 1965-66, 102 children came under the guardianship of the Department. Of these, 26 were admitted on the application of parents or guardians, two being uncontrollable and 24 being deserted children or children with parents unable to provide for them. Courts declared a further 76 children to be wards of the State, 43 having been charged with delinquency and 33 with being neglected. During the year, 15 children were discharged from control on being legally adopted and 115 because of age or because there was no further need of Departmental supervision. At 30 June 1966 there were 270 children under the supervision of child welfare officers as a result of orders imposed by the Court.

*Departmental Homes:* State receiving homes which provide temporary accommodation for children are maintained at Hobart, Launceston and Wynyard. Also, in Hobart, a hostel provides accommodation for older boys who have left school and need to be established in employment.

Ashley Home for Boys, Deloraine, provides care and training for older wards who, because of maladjustment or delinquency, require special institutional control. Wybra Hall (Mangalore) fulfills a somewhat similar function with the special adaptations necessary to cater for younger boys between the ages of nine and fourteen years, as does Westwinds at Woodbridge.

Weeroona Girls' Training Centre (Latrobe) provides for those adolescent girls in the care of the Department who require special institutional supervision and training. Girls of school age attend schools in the district and others receive correspondence school education. Older girls are trained in various aspects of domestic work.

*Non-Departmental Homes:* Other children's homes in which wards are placed are Kennerley Boys' Home, Salvation Army Boys' Home, Salvation Army Girls' Home, Aikenhead House, Bethany Boys' Hostel, Mt St Canice Convent, all in Hobart; Boys' Town and Yalambee Hostel, Glenorchy; Clarendon Home, Kingston; Girls Home, and Northern Tasmanian Home for Boys, Launceston, and Roland Boys' Home, Sheffield.



## REPATRIATION SERVICES AND PENSIONS

### General

The Repatriation Department was established as a Commission under Federal legislation in 1920. The term "repatriation" does not adequately describe the Department which is responsible for: (i) the payment of war and service pensions to eligible ex-servicemen and women and their dependants; (ii) the provision of medical treatment to ex-servicemen and women for injuries and illnesses caused or aggravated by their war service; (iii) the provision of medical treatment to widows and dependants of deceased ex-servicemen whose deaths are due to war service; and (iv) the provision of medical treatment in certain circumstances to ex-servicemen and women who are suffering from injuries and illnesses not caused or aggravated by war service.

Benefits are provided in respect of service in the 1914-18 and 1939-45 Wars, in the Korea and Malaya operations, with the British Commonwealth Far East Strategic Reserve, and the Special Overseas Forces; more recently, benefits have been extended to ex-servicemen from the Vietnam theatre of operations.

### Medical Services

To discharge these functions in Tasmania, the Repatriation Department maintains a branch office, a repatriation general hospital and an artificial limb and appliance centre in Hobart. Facilities exist at the Repatriation General Hospital for medical treatment of hospitalised patients, and specialist services for out-patients. Generally, treatment for out-patients throughout the State is provided by doctors the Department has appointed as Local Medical Officers. People entitled to treatment can select a doctor from the panel of L.M.Os, and receive treatment at the Department's expense. Payment for treatment in hospitals other than the Repatriation General Hospital is met by the Department in certain circumstances.

### Repatriation Pensions—General

War pensions are payable, without general application of a means test, for war-caused or war-aggravated disabilities. Service pensions are payable, in the main, to certain ex-servicemen 60 years and over (and ex-servicewomen 55 years and over) subject to a means test; no disability need be claimed.

### War Pensions

#### *Eligibility and Rates*

War and dependants' pensions may be granted to persons, or in respect of persons, who come within the following categories and who suffered death or disability: (i) arising from any occurrence before discharge, on overseas war service or on service in Australia within certain areas; (ii) attributable directly to service where the member served only in Australia; (iii) from pulmonary tuberculosis where the member served in any theatre of war; (iv) from aggravation of a condition existing at enlistment where camp service exceeded six months.

Those who receive war pensions are also eligible for free medical and hospital treatment for their pensionable disabilities. With certain categories of pensioners, the eligibility for free treatment is widened to cover all disabilities. It is also possible for an ex-serviceman to qualify for free treatment for a disability without necessarily being granted a pension. The rates payable (varied after the 1966 Federal Budget) are as follows:

(i) *Special Rate (TPI)*: paid to totally and permanently incapacitated exservicemen (including those blinded as a result of war service). The weekly rate is \$30.50 plus \$4.05 wife's allowance and \$1.3750 for each child under 16.

(ii) *Intermediate Rate*: paid where the incapacity prevents engagement in continuous employment. The rate is \$21.25 with dependant's pensions the same as for the special rate.

(iii) *General Rate*: paid to those who can still work, although their earning power may be reduced. The maximum (100 per cent) rate is \$12 weekly but may be granted as low as 10 per cent of the maximum, according to disability. Dependant's allowances in respect of a pensioner receiving the 100 per cent rate are the same as for the special rate, or scaled down proportionately where he receives a lower percentage.

(iv) *War Widows' Pension*: paid to widows of ex-servicemen who died as a result of war service, and to their children under 16. The weekly rates are: widow, \$13.00; first child, \$3.90; second and each subsequent child, \$2.75. A domestic allowance of \$7.00 may be paid to a widow over 50 years, and to younger widows in special circumstances.

(v) *Medical Sustainance*: paid to raise the pension of an ex-serviceman to the 100 per cent rate while treatment for a war-caused disability prevents him from following his usual occupation.

#### *Budget of August 1967*

The Federal Treasurer indicated that rates generally were to remain unchanged but there were to be increases affecting orphaned children.

#### *War Pension Payments*

The following table shows, for Tasmania, the number of pensions in respect of ex-servicemen and their dependants, together with expenditure on war pensions:

**War Pensions—Pensioners and Payments**

Year	Number of Pensions Current at 30 June				Expenditure During Year (c)
	Incapacitated Ex-Servicemen	Dependants of—		Total (b)	
		Incapacitated Ex-Servicemen	Deceased Ex-Servicemen (a)		
1955-56	8,219	16,614	1,650	26,483	\$'000 4,036
1961-62	8,537	18,095	1,766	28,398	4,988
1962-63	8,620	17,763	1,831	28,214	5,668
1963-64	8,659	17,366	1,879	27,913	6,158
1964-65	8,627	16,506	1,968	27,109	6,214
1965-66	8,623	15,831	1,984	26,446	6,919

(a) Includes war widows' pensions.

(b) Includes miscellaneous pensions not specified under the "ex-servicemen" details, e.g. Seamen's War Pensions and Allowances.

(c) Includes widows' allowances.

At 30 June 1966, the proportion of ex-servicemen in Tasmania receiving war pension in respect of service in the 1914-18 War was 16.2 per cent; the 1939-45 War, 82.2 per cent; the Korea and Malaya operations, 1.5 per cent, and other operations, 0.1 per cent.

## Service Pensions

### Eligibility and Rates

Service and dependant's pensions may be granted to persons (or in respect of persons) who come within the following categories, and satisfy a means test: (i) men aged 60 or over who served in a theatre of war, or women 55 years and over who served abroad; (ii) men and women who are totally unemployable with similar service particulars; (iii) sufferers from pulmonary tuberculosis not qualifying for a war pension on this ground. The conditions governing the means test are the same as for old age pensions, described earlier in this chapter.

The weekly rates (as varied after the 1966 Budget and further amending legislation in April 1967) are: maximum, single ex-serviceman, \$13.00; married, \$11.75; wife under 60 years, \$6.00 (at 60 years, the wife may qualify for \$11.75 old age pension). The rate for dependent children is \$1.50 for the first child and \$0.25 for each other child up to and including the fourth. If an ex-serviceman is receiving a service pension on the grounds of being unemployable, *his* service pension may be increased by \$1.50 a week in respect of each dependent child other than the first. A guardian's allowance of \$4.00 weekly is payable where the service pensioner has the care, custody and control of children, e.g. where he is a widower.

### Service Pension Payments

The following table shows, for Tasmania, the number of service pensions in respect of ex-servicemen and their dependants, and expenditure on pension payments:

Service Pensions—Pensioners and Payments

Year	Number of Pensions Current at 30 June				Expenditure During Year
	Ex-Servicemen	Dependants of—		Total	
		Living Pensioners	Deceased Pensioners		
1955-56	933	787		1,720	\$'000 292
1961-62	1,581	870		2,451	736
1962-63	1,687	898		2,585	838
1963-64	1,739	777	144	2,660	874
1964-65	1,737	776	145	2,658	904
1965-66	1,709	827	101	2,637	964

### Budget of August 1967

The Federal Treasurer indicated that service pension rates would not be changed.

## HEALTH

### State Health Services—General

#### Organisation, Department of Health Services (1967)

The State Department of Health Services is under the jurisdiction of the Minister for Health, with the Director General of Health Services as the permanent head. The Headquarters of the Department controls three Divisions, each under a director, namely Public Health, Psychiatric Services and Tuberculosis. Four specialised services are also part of the Department, namely the

State Health Laboratory under the control of the Director of Pathology; the Government Analyst and Chemist Laboratory, under the control of the Government Analyst; Geriatric Services; and Cardio-Vascular Services; each of the latter two services operates under a director. The balance of the Department's responsibilities are functions of Headquarters, under the direct control of the Director General.

Legislation in 1967 provided for the establishment of a Mental Health Services Commission, thereby removing responsibility for psychiatric services from the Director General. The Commission is expected to be operating in 1968 and will be directly responsible to the Minister.

### Expenditure

Expenditure from Consolidated Revenue for a five-year period is as follows:

#### Department of Health Services—Expenditure from Consolidated Revenue (\$'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Administration, Head Office .. ..	163	164	185	212	212
Hospital and Medical Services—					
Administration .. ..	113	131	135	170	183
Grants to Hospitals .. ..	4,079	4,227	4,546	5,233	5,842
Medical Services—Country Districts .. ..	81	77	83	77	126
District Nursing Service .. ..	154	160	163	161	168
Dental Health Service .. ..	116	100	130	144	236
State Laboratory—Pathology .. ..	..	..	(a)	4	5
National Fitness Section .. ..	26	27	30	38	42
Nurses' Registration Board .. ..	2	3	4	4	4
Government Analyst and Chemist .. ..	37	37	45	43	51
St John's Park Hospital .. ..	704	718	783	847	944
Public Health—					
Administration and Inspectors .. ..	88	124	121	149	148
School Health Service .. ..	70	71	81	94	110
Child Health Service .. ..	112	113	119	126	134
Mothercraft Home .. ..	57	57	61	65	73
Tuberculosis Division—					
Administration .. ..	134	136	143	155	157
Chest Hospitals .. ..	298	297	305	305	295
Psychiatric Services—					
Administration .. ..	78	77	84	106	109
Mental Health Hospitals .. ..	1,164	1,216	1,331	1,503	1,691
Miscellaneous Grants .. ..	221	249	212	258	286
<b>Total .. ..</b>	<b>7,697</b>	<b>7,984</b>	<b>8,561</b>	<b>9,694</b>	<b>10,816</b>

(a) Less than \$500.

### Headquarters Division

#### General

The responsibility of the Headquarters of the Department of Health Services includes: the public hospital services and the licensing of private hospitals and other medical establishments under the *Hospitals Act* 1918; the District Medical Service; the School Dental Service; the Tourist and District Nursing Service; legislation concerned with health and allied matters; the Nurses' Registration Board and the Dental Mechanics' Registration Board; some specialist medical services; the State Drug Advisory Committee; liaison with the Health Departments of other States and the Commonwealth (the Director General is a member of the National Health and Medical Research Council); as controlling authority, the Hospital Employees' Award, the Medical Officers' Award and the Nurses' (Public Hospitals) Award; the

control and maintenance of Crown property occupied by the various sections of the Department; the appointment and salaries of staff who are not officers of the Public Service.

#### *School Dental Health Service*

This service, available free to children attending school, aims to examine and treat every child each six months, but staff shortages have prevented this from happening in the past. At 30 June 1967, clinics were in use in Hobart and Launceston, surgeries were operating in 14 country towns and two others were under construction. Mobile caravans were also in use in most country districts. An orthodontic service based on Hobart, and using a mobile caravan, supplements the therapeutic dental service.

*Dental Nursing:* Adopting the New Zealand system, Tasmania became the first Australian State to develop a School of Dental Nursing. Ten students were enrolled in 1966 for the first year of a two-year course, and 10 will be enrolled annually. The first class will graduate in time to start duty in January 1968. A residential hostel is attached. The School, located in Hobart, has a principal and a matron, and will itself treat forty patients a day. It is expected that a total of approximately 30 dental nurses will work with dentists in the districts; a dental nursing certificate or its equivalent will be needed for a nurse to be appointed.

#### *Fluoridation*

In 1964, Hobart became the first Australian capital city to add sodium fluoride to its water supply. Many municipal councils have arranged for its addition, while others supply fluoride tablets to mothers wanting them for their children; fluoride is not administered in all water supplies in Tasmania. The whole question of fluoridation is being considered by a Royal Commission.

#### *District Medical Service*

In 1937 the Government undertook to help the more remote municipalities to obtain medical services; at present, participating municipalities levy a rate under the *Local Government Act* 1962 as amended, and meet between one half and one third of the cost of the scheme.

The scheme provides a general practitioner service free to all residents of the municipality for consultations and home visits. A surgery is usually attached to the district medical officer's house, and branch surgeries are sometimes located elsewhere within the district. Attention out-of-hours is charged for in accordance with a set scale, as are insurance medical examinations, compensation treatment and attention to visitors to the State.

As well as general practice, activities include the dispensing of drugs if no chemist is available; duties as Medical Officer of Health (under the *Public Health Act*) if a municipal council requests it; in some cases, duty as superintendent, if there is a district hospital within the municipality; attention to district nursing centres; and post mortem examinations.

#### *Nursing*

Nursing training is under the control of the Nurses' Registration Board. Of the State's nursing training schools, eight are general, six midwifery, two psychiatric, two child health, one tuberculosis and one geriatric.

#### *Tourist Nursing Service*

This service is based on the fact that trained nursing sisters from outside Tasmania like to visit the State and have a working holiday. These "tourist nurses" are employed for short periods in hospitals or district nursing centres.

Not more than two months' service at any one time is required of a sister in any one place but she may stay longer. Some hospitals are completely staffed, at times, by sisters enjoying working holidays.

#### *State Drug Advisory Committee*

This advises on the nature, strength and variety of drugs to be supplied to public hospitals by the medical store of the Supply and Tender Department. It is not concerned with administration but helps the store to avoid stocking drugs with different brands but similar properties, and stocking drugs not likely to be required.

#### *General*

### **Division of Public Health**

The Division of Public Health has responsibility for the preventive medical services of the State. The Director is responsible for the operation of the *Public Health Act* 1957, and the control of medical officers of health and other health officers employed by the Department and municipalities throughout the State. A major responsibility is public immunisation programmes, conducted through the municipalities; preparations distributed include the Salk and Sabin anti-poliomyelitis vaccine and the Triple Antigen vaccine (against whooping cough, tetanus and diphtheria). The Division is responsible for the Nutrition Advisory Service; industrial hygiene; environmental sanitation; pure food and pure drug quality control; the public health aspects of the building regulations. Other major functions are discussed separately in the following sections.

#### *Child Health Service*

Child welfare nurses attached to child health centres advise mothers on the care and upbringing of their babies and younger children. In 1966 there were 94 centres and 11 travelling units. Voluntary child health committees working for the centres raise money for furnishings and equipment in buildings erected by the Department. The functions of the centres include examination of babies, maintenance of individual histories, and advice on diets, feeding techniques and hygiene. Phenistix tests are carried out for the detection of phenylketonuria, a rare complaint which results in mental deficiency if not treated in infancy. New-born babies are visited in their homes by the sisters; details of births and addresses are supplied by the hospitals.

*The Mothercraft Home:* This Home, located in Hobart, provides training for qualified nursing sisters who want to gain child health nursing certificates, and for women who want to become mothercraft nurses. It accommodates children under two years who need care or who cannot be looked after at home, and mothers learning to look after children or having feeding problems. When space is available, children under two years can be boarded in the Home for short periods.

#### *School Health Service*

This is available free to children under 16 years. The aim is for an annual inspection at each school by a medical officer, but staff shortages have limited this to examinations at school entry, next at 10 or 11, and finally at 14 or 15 years. Doctors particularly look for conditions likely to affect a child in a school situation. Parents can make appointments for their children to be examined at centres in Hobart, Launceston, Devonport and Burnie.

School nursing sisters visit schools regularly to supervise the health and hygiene of pupils. They maintain medical records, perform cleanliness inspections, test sight and hearing, assist at medical examinations and follow-up defects notified. They also organise immunisation sessions in their schools.

*Infectious Diseases*

These are notifiable under the *Public Health Act*, the aim being to prevent or check their spread. In 1964-65 and 1965-66, a mild strain of scarlet fever led to an increase in the number of cases notified; there was also an increase in the number of cases of rubella (German measles) notified. There has been a decline in notifications of infectious hepatitis, possibly due to a build-up in general immunity.

Special conditions apply to venereal diseases. Persons suffering from them must not marry until cured, or engage in the manufacture or distribution of foodstuffs, and are liable to arrest and detention if failing to continue treatment until cured.

Quarantine provisions and tuberculosis are dealt with in later sections.

The following table shows the incidence of infectious diseases in Tasmania for a five-year period:

**Infectious Diseases Notified to Department of Health Services**  
**Number of Cases**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Rheumatic Fever .. .. .	10	13	33	26	27
Nephritis .. .. .	..	2	2	6	12
Bacillic Dysentery .. .. .	6	11	9	1	1
Infantile Diarrhoea and Enteritis .. .. .	11	16	15	21	29
Diphtheria .. .. .	1	..	..	3	1
Meningitis .. .. .	13	20	8	14	4
Glandular Fever .. .. .	31	34	11	..	..
Hydatids .. .. .	18	27	16	21	7
Infectious Hepatitis .. .. .	488	608	997	293	172
Rubella .. .. .	11	20	28	107	448
Scarlet Fever .. .. .	21	46	149	867	1,207
Typhoid Fever (including Paratyphoid) .. .. .	1	1	3	6	..
Tuberculosis .. .. .	118	111	105	81	66
Poliomyelitis .. .. .	..	..	..	..	3
Malaria .. .. .	2	..	1	..	3
Encephalitis .. .. .	..	..	1	..	..
Brucellosis .. .. .	..	..	1	..	1
Filariasis .. .. .	1	1	..	..	..
Puerperal Fever .. .. .	1	1	..	..	..
Ophthalmia Neonatorum .. .. .	1	..	..	..	..
Gonorrhoea .. .. .	263	230	173	200	200
Syphilis .. .. .	11	5	10	7	2
Total .. .. .	1,008	1,146	1,562	1,653	2,183

*Health Education*

The Health Education Council is composed of representatives of the Divisions of Public Health and Psychiatric Services, the Education Department and the Dean of the Faculty of Medicine. It aims to ensure that information on health is available to those engaged in education and has encouraged the inclusion of physiological subjects in the primary school curriculum. Activities have included planning an anti-smoking campaign, devising menus for school tuck-shops and recommending improvements in school lavatory facilities to combat infectious hepatitis.

*National Fitness Section*

This is concerned with putting into effect the Tasmanian National Fitness Council's policy, which is the promotion of amateur sport and physical recreation, co-ordination of youth work, and assistance to existing youth and recreation groups. The main cost is met by the State Government (\$42,000 in 1965-66) and a small grant is made by the Commonwealth Government.



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*Corner of Waterworks and Proctors Roads in February 1967*

(Don Stephens)

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*Corner of Waterworks and Proctors Roads in September 1967*

(Don Stephens)







Close contact is maintained with local government authorities and community organisations interested in aspects of youth work and national fitness. Assistance is given in the development of indoor recreation centres, youth and adventure camping programmes and other outdoor activities such as canoeing, mountaineering and bushwalking. Sports coaching classes are conducted for young people as well as classes for people of older age groups, particularly housewives. Assistance is given in the establishment and conduct of youth clubs. The Youth Hostel Association is supervised by this Section.

### General

### Division of Psychiatric Services

The Division controls the major psychiatric rehabilitation hospital, Lachlan Park, and the associated Millbrook Rise hospital, both at New Norfolk. It provides regional clinical psychiatric facilities, the specialists employed including social workers. Some of these services operate at the general hospitals whilst others, such as the child psychiatric unit and the alcoholic rehabilitation service, are established separately. Day hospital facilities are also available.

Legislation in 1967 provided for the establishment of a Mental Health Services Commission but it is not expected to be in operation until 1968.

The legislation previously administered by the Department included the *Mental Hospitals Act* 1858, the *Mental Deficiency Act* 1920 and the *Sexual Offences Act* 1951. These Acts were all superseded by the *Mental Health Act* 1963 which is based on the modern theory that a mental institution should be a true hospital where the majority of patients attend voluntarily; there should be a high turnover of short-stay patients who are given intensive medical treatment and who return home with health restored. Application of this principle has had the effect of reducing the number of patients compulsorily detained from about 75 per cent of the total psychiatric hospital patient population to about 25 per cent.

### Lachlan Park Hospital

In 1965-66, 475 new patients were admitted to the Hospital and a further 419 re-admitted. The principal mental disorders diagnosed for these 894 cases were: senile and pre-senile dementia, 54; alcoholic psychosis, 43; other psychoses, 72; schizophrenia, 216; neurosis, 44; personality disorders, 89; alcoholism, 163; and mental retardation, 180. The following table shows the number of patients admitted and discharged, or who died:

**Lachlan Park Hospital**  
**Number of Patients Admitted and Discharged, and Deaths, 1965-66**

Particulars	Males	Females	Total
Patients at Beginning of Year .. .. .	463	425	888
Patients Admitted—			
Admissions and Re-admissions .. .. .	470	424	894
Returned from Leave .. .. .	75	39	114
Total .. .. .	545	463	1,008
Patients—			
Discharged from Hospital .. .. .	427	307	734
Proceeded on Leave .. .. .	123	94	217
Died .. .. .	32	32	64
Total .. .. .	582	433	1,015
Patients at End of Year .. .. .	426	455	881

The following table shows the diagnosis of mental illness of patients in Lachlan Park hospital:

Lachlan Park Hospital				
Number of Patients at 30 June 1966 According to Diagnosis of Mental Disorder				
Mental Disorder	Males	Females	Persons	
Senile and Pre-Senile Dementia .. .. .	16	68	84	
Alcoholic Psychosis .. .. .	21	3	24	
Psychoses Associated With—				
Intra-Cranial Infection .. .. .	1	..	1	
Other Cerebral Condition .. .. .	18	17	35	
Schizophrenia .. .. .	153	90	243	
Affective Psychoses .. .. .	14	22	36	
Paranoid States .. .. .	15	10	25	
Unspecified Psychosis .. .. .	1	..	1	
Neuroses .. .. .	3	6	9	
Personality Disorders .. .. .	23	22	45	
Sexual Deviation .. .. .	3	..	3	
Alcoholism .. .. .	7	5	12	
Drug Dependence .. .. .	2	3	5	
Behaviour Disorders of Childhood .. .. .	1	..	1	
Mental Disorders, not Specified as Psychotic, Associated with Physical Disorders .. .. .	6	8	14	
Mental Retardation—				
Borderline .. .. .	3	9	12	
Mild .. .. .	20	16	36	
Moderate .. .. .	44	54	98	
Severe .. .. .	45	82	127	
Profound .. .. .	17	34	51	
Other .. .. .	13	6	19	
Total .. .. .	426	455	881	

#### Other Institutions

Millbrook Rise is a small neurosis hospital at New Norfolk for voluntary patients. It charges fees and provides intensive psychiatric and nursing treatment for patients with severe neuroses and early psychoses. In 1965-66, 141 patients were treated, the principal mental disorders being: anxiety states, 58 cases; melancholia and depressive states, 39; schizophrenia and schizoid states, 39.

“Karingal” at St John’s Park, New Town, houses some mentally deficient patients under the care of the Guardianship Board, constituted under the *Mental Health Act* 1963. (This Board has replaced the former Mental Deficiency Board.)

*Extra-Mural Psychiatric Services:* Psychiatrists provide consultant services to the general and district hospitals of the State. Psychiatric social workers and welfare officers supervise mentally defective patients and give after-care to people discharged from psychiatric hospitals.

A clinic is maintained at the Division of Public Health in Hobart. Attached to it is the Alcoholism Information Centre. Psychiatrists based on Launceston provide a regional service, travelling to the Mersey and Burnie Hospitals weekly.

#### Division of Tuberculosis

The Division is concerned with diagnosis, treatment and after-care. Under an arrangement with the Commonwealth, the Tasmanian Government conducts a campaign against T.B. The State is reimbursed by the Commonwealth Government for approved capital and maintenance expenditure, in carrying out the physical work of the campaign.

An allowance is paid by the Commonwealth Department of Social Services to T.B. sufferers to encourage them to give up work, to minimise the spread of the disease, and to promote better treatment. The allowance is subject to a means test on income (but not on property) and provides \$13 a week for a single person in hospital and \$16.25 weekly whilst at home; married sufferers at home or in hospital are paid \$26.75 per week plus \$1.50 for each dependent child.

Tubercular patients are treated at the Tasmanian Chest Hospital (New Town) and the Northern Chest Hospital (Evandale). The X-ray campaign has led to a reduction in demand for in-patient treatment and to generally shorter periods in hospital. The Chest Clinics at Hobart, Launceston, Devonport and Burnie are expected increasingly to become the focal points for treatment and supervision. Compulsory X-ray examinations at regular intervals often uncover chest abnormalities other than tuberculosis.

The following table shows the diagnosis of tuberculosis cases notified in Tasmania over a five-year period:

**New Cases Notified to Tuberculosis Division**  
**Classification by Diagnosis and by Sex**

Particulars		1961-62	1962-63	1963-64	1964-65	1965-66
Pulmonary .. .. .	Males	95	64	61	48	34
	Females		27	18	18	23
Tuberculous Pleural Effusion	Males	5	6	5	1	..
	Females		1	3	2	1
Primary Tuberculosis ..	Males	2	2	1	1	..
	Females		1	2	..	..
Non-Pulmonary Cases ..	Males	16	8	5	5	1
	Females		2	10	6	7
All New Cases .. .	Males	118	80	72	55	35
	Females		31	33	26	31
Persons .. .. .		118	111	105	81	66

### State Controlled Hospitals

#### General

In Tasmania, there are private hospitals and also hospitals for which the State Government accepts the major financial responsibility; in the case of the latter group, control is either direct or exercised through hospital boards. (Each board consists of seven members of whom five are appointed by the Minister for Health.)

Institutions controlled by the State (either directly or through boards) include four general hospitals, 16 district hospitals, 12 district nursing centres with bed accommodation, two mental hospitals, two maternity hospitals, two chest hospitals and three homes for the aged. (The Department of Health Services directly administers the chest hospitals, mental hospitals, district nursing centres and one home for the aged.) These institutions could all legitimately be described as "public". However, in the tables in this section, the term "public" is applied only to the general and district hospitals, the other types of institution being specified separately.

#### General Hospitals (Public)

Hospitals providing all facilities and specialised treatment are the Royal Hobart, Launceston General, Mersey General (at Latrobe) and North Western General (at Burnie). The Queen Alexandra (Hobart) and the Queen Victoria (Launceston) are obstetric and gynaecological hospitals.

Specialist treatment is available at general hospitals in obstetrics, gynaecology, orthopaedics, urogenital surgery, plastic and reconstructive surgery, neuro-surgery and neurology, radiology, pathology, radiotherapy, psychiatry and ophthalmology; skin diseases and venereal diseases are also treated and clinics operate in thoracic medicine and surgery. An emergency obstetrical service, with specialists based on Hobart and Launceston, provides a free service to the smaller public hospitals, district nursing centres, and district medical officers outside the two cities.

The Lady Clark and Peacock Homes and Clare House are annexes of the Royal Hobart Hospital, the first two admitting patients for convalescence and physiotherapy as an extension of treatment, and the last treating nervous diseases and alcoholism.

### *Fees*

The daily general ward fees charged in the State-controlled hospitals are not much lower than those in private hospitals. However, the former fees are all-inclusive, (i.e. covering medical attendance, surgery, pathology, etc.) while the latter cover only accommodation and general nursing. Under the "personal patient" scheme, a patient in the Hobart and Launceston general hospitals may have his own doctor, if he is an honorary doctor at the hospital, for the payment of an additional fee. Voluntary insurance with hospital fund organisations and Commonwealth hospital benefits enable most patients to meet the fees charged.

### *District Hospitals (Public)*

These do not provide the full range of services available in the general hospitals, and do not have resident medical officers. They are located at Beaconsfield, Campbell Town, Currie, Franklin, Longford, New Norfolk, Ouse, Queenstown, Rosebery, Scottsdale, Smithton, St Marys, Ulverstone, Whitemark, Wynyard and Zeehan.

### *Homes for Aged and Invalids*

The State Government administers three homes caring for the aged and for invalids. In the table that follows, the average daily number of inmates is dissected between "general" and "hospital"; "general" refers to inmates who are not receiving treatment in the hospital sections of the homes.

**Aged and Invalid Persons in Government Homes, 1965-66**

Home	Average Daily Number of Inmates			Beds Available		
	For General Care	For Hospital Treatment	Total	For General Care	For Hospital Treatment	Total
Cosgrove Park (a) ..	97	134	231	140	134	274
St John's Park ..	162	276	438	236	295	531
Spencer (b) ..	10	23	33	10	25	35
Total .. ..	269	433	702	386	454	840

(a) Cosgrove Park is administered as part of the Launceston General Hospital.

(b) This is a geriatric wing of the Spencer Hospital, Wynyard.

*Finances of State Controlled Hospitals*

The following table gives a financial summary of the operation of State controlled hospitals and homes for the aged ("public" hospitals in the table include general and district hospitals):

**State Controlled Hospitals and Homes for the Aged—Receipts and Payments (a)**  
1965-66  
(\$'000)

Particulars	Hospitals (excluding Mental)				Mental Hospitals	Homes for Aged
	Public (b)	Chest	Maternity (c)	Total		
Receipts—						
Government Aid—						
State Government	5,229	452	325	6,006	1,548	897
Commonwealth						
Hospital Benefits	541	..	5	546	..	326
Fees .. ..	1,881	..	337	2,218	56	121
Donations and Other	21	..	1	22	9	7
Total .. ..	7,672	452	668	8,792	1,613	1,351
Payments—						
Salaries and Wages	5,060	333	426	5,819	1,050	964
Repairs, Maintenance and Provisions ..	2,134	114	203	2,451	468	347
Miscellaneous ..	479	5	36	520	95	42
Total .. ..	7,673	452	665	8,790	1,613	1,353

(a) Excludes Loan Fund receipts and expenditure.

(b) Includes maternity wards in public hospitals.

(c) Excludes maternity wards in public hospitals.

*Staff and Patients in State Controlled Hospitals*

The following table gives a summary of the main statistics relating to patients and staff in State controlled hospitals and homes for the aged.

**State Controlled Hospitals and Homes for the Aged, 1965-66**  
Staff, Accommodation and In-Patients

Particulars	Hospitals (excluding Mental)				Mental Hospitals	Homes for Aged
	Public (a)	Chest	Maternity (b)	Total		
Hospitals and Homes .. (No.)	20	2	2	24	1	3
Nursing Staff .. .. (Males)	27	6	..	33	132	135
.. .. (Females)	1,311	31	157	1,499	137	145
Beds Available (Patients) .. (No.)	1,766	153	210	2,129	900	840
In-Patients—						
Admissions During Year (Males)	15,472	57	..	15,529	545	223
.. .. (Females)	18,290	43	3,894	22,227	463	148
Daily Average Number of Patients During Year .. .. (Males)	540	20	..	560	440	374
.. .. (Females)	553	15	106	674	446	351
.. .. (Persons)	1,093	35	106	1,234	886	725
In-Patient Costs—						
Total .. .. (\$'000)	6,858	452	662	7,972	1,613	1,353
Daily Average Per Patient (\$)	17.19	(c) 35.38	17.11	17.70	4.99	5.11

(a) Includes maternity wards in public hospitals.

(b) Excludes maternity wards in public hospitals.

(c) The high cost per patient is due to a reduction in the number of patients and to a reduction in the time spent in hospital by patients, without a corresponding reduction in the size of the establishments or their operating costs.

*District Nursing Centres*

These are operated by members of the Department's District Nursing Service. They provide general and maternity nursing facilities for country areas which do not have easily accessible hospitals. Most are visited regularly by doctors. District nursing centres with beds are located at Alonnah (Bruny Island), Cape Barren Island, Cygnet, Dover, George Town, Koonya, Oatlands, St Helens, Sheffield, Swansea, Triabunna and Westbury, those without beds at Avoca, Dunalley, Gladstone, Grassy (King Island), Lilydale, Mole Creek, Redpa, Ringarooma, Rossarden, Storys Creek and Waratah.

The following table gives a summary of the work performed by the Centres over a five-year period:

District Nursing Service—Operating Statistics

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Number of Centres .. ..	25	25	25	25	25
Beds Available in Centres .. ..	52	50	49	49	49
Visits to Centres .. ..	38,612	34,330	37,205	39,406	40,749
Visits to Patients .. ..	10,873	9,568	9,684	12,626	13,257
In-Patient Bed-Days .. ..	4,969	4,333	3,698	2,923	2,856
Births .. ..	341	327	302	272	257
Child Health Visits .. ..	11,961	10,004	9,707	9,892	7,479
School Visits .. ..	100	65	88	110	116

**Private Hospitals**

These are operated by church and other private organisations. They are licensed to receive surgical, medical, maternity or psychiatric cases. Of the seven medical-surgical private hospitals, Calvary and St John's (Hobart) and St Luke's and St Vincent's (Launceston) are the largest.

Nursing homes, operated by private bodies, are institutions which do not conform to private hospital specifications with regard to equipment, construction and staffing, as laid down under the *Hospitals Act*. They are licensed to treat general cases within limits as specified in the licence. Rest homes are licensed usually to admit old people who require minimal medical care. At 30 June 1966, there were 33 private institutions concerned with aged people who were ambulant, convalescent, or suffering from geriatric illnesses. Nazareth House (St Leonards), St Ann's Rest Home (Hobart) and Meercroft Home (Devonport) are the biggest of these, 16 of which have accommodation for 20 or more patients. Two other private hospitals cater for incurable or chronic illnesses, two for general convalescence and two for retarded children.

**State Health Laboratory**

The State Health Laboratory is under the control of the Director of Pathology. Apart from providing certain pathological services to the Royal Hobart Hospital, other hospitals and to doctors, the laboratory provides special bacteriological and cytological services.

The Laboratory is located at the Royal Hobart Hospital; prior to 1965 special tests had to be done in Melbourne, but equipment installed in that year now enables all work to be done in Tasmania. Magnifications of 100,000 can be gained with the electron microscope and photographs in colour taken of the magnified images; this is particularly useful in medical teaching and in diagnosis. Specimens from suspected T.B. sufferers, discovered in the compulsory chest X-ray programme, are examined and uterine and other cancers can be discovered by the Papanicolaou smear test. Tasmania was the first

Australian State to introduce this test on a large scale; early diagnosis by this simple and effective method, particularly in women who show no symptoms, usually makes possible the cure of this type of cancer. Mass screening of newborn babies is done to correct errors of inborn metabolism, especially phenylketonuria. Other work includes examination of food, water and milk samples for bacterial impurities.

### **Government Analyst and Chemist Laboratory**

This laboratory analyses a wide variety of foods, drugs and other substances and undertakes work for government departments and the public. Its work includes food and agricultural chemistry, forensic chemistry and toxicology, analyses for industrial hygiene purposes, water and corrosion problems, and other matters.

### **Other Health Matters**

#### *Children's Health Institutions*

These are medical institutions run by the State or subsidised by public funds. They provide treatment and supervision along with general education. The Sight Saving School, School for the Deaf, School for the Blind, Talire (for retarded children) and Wingfield (for orthopaedic patients) are government institutions for children with particular defects.

#### *Ambulance Services*

The Ambulance Commission of Tasmania co-ordinates services throughout the State and is responsible to the Minister for seeing they operate effectively. Ambulance Boards, centred on Hobart, Launceston, Devonport and Burnie, control services in the adjacent municipalities. Almost half the municipalities, however, operate services outside the Ambulance Board scheme. The total Government grant to ambulance services, both under Board and independent control, was \$62,000 in 1965-66.

Ambulance services under control of the four Boards provide free transport for ratepayers, occupiers and pensioners. In addition to receiving Government subsidies, their income is derived from fees (payable by visitors) and municipal grants (in 1965-66, from a rate of 0.208 cents in the \$).

The Ambulance Commission has adopted the training standards of the Victorian Ambulance Officers' Training School.

#### *Royal Flying Doctor Service*

This was established in Tasmania in 1960 and has as its purpose the provision of medical and dental services to persons in isolated areas. If the illness or injury is serious, a doctor flies to the patient and if necessary brings him back to a hospital. The ambulance services receive the calls, make arrangements to charter aircraft and supply medical equipment. The Commonwealth Government makes an annual grant towards operational expenses.

#### *Blood Transfusion Service*

Prior to 1954, the Australian Red Cross Society, which operates the Service, was assisted only by the State Government; since then, a grant equal to 30 per cent of operating expenses has been made by the Commonwealth Government and 60 per cent by the State. The combined grant in 1965-66 was \$37,000.



### *Municipal Health Functions*

Municipal councils and city corporations possess wide powers and responsibilities in public health. They organise triple antigen immunisation campaigns against diphtheria, whooping cough and tetanus, and vaccinations against poliomyelitis and smallpox. (These are available without charge to children under 17 years.) They control the condemnation of sub-standard dwellings, the effective disposal of sewerage and drainage, the provision of garbage and night soil services, the construction of reservoirs and the reticulation of water. A Medical Officer of Health, often appointed by two councils, is responsible, among other things, for enquiring into the causes, origins and distribution of diseases; for investigating influences affecting the public health of the district; for directing and supervising the municipal health inspectors in the execution of the *Public Health Act*, for inspection of local certificates of notification of infectious disease and direction of control of such disease; for reporting the existence of any nuisance and inspection of any animal, carcass, provisions or food for sale for human consumption; and for inspecting any premises where milk or milk products are produced or stored and for reporting on the health of inmates or animals on the premises.

### **Commonwealth Department of Health**

#### *General*

The Department is concerned in Tasmania with the maintenance of a quarantine service involving supervision of persons, animals, plants and goods from overseas; the provision of hospital, medical and pharmaceutical benefits; the payment of grants for free milk to school children; the pensioner medical service; tuberculosis allowances; home nursing, mental institution and other subsidies; the control and maintenance of health laboratories at Hobart and Launceston; the Acoustic Laboratory in Hobart; co-operation with the State Department of Health Services, in planning and taking measures to improve public health, including the anti-tuberculosis and anti-poliomyelitis campaigns, and National Fitness; the conduct of certain medical examinations; and the supervision of radio and television advertising and talks on medical matters.

#### *Commonwealth National Health Payments*

The following table shows the total Commonwealth payments for health benefits and services in Tasmania:

**Commonwealth National Health Payments (a)**  
(\$'000)

Benefit or Service	1955-56	1961-62	1962-63	1963-64	1964-65	1965-66
Hospital and Nursing Home Benefits .. .. .	623	1,301	1,321	1,703	1,811	1,991
Medical Benefits .. .. .	227	578	634	686	1,000	1,140
Free Milk Scheme .. .. .	370	342	376	391	380	398
Medical Benefits for Pensioners ..	110	231	234	253	256	386
Pharmaceutical Benefits .. .. .	403	1,091	1,454	1,234	1,706	2,098
Pharmaceutical Benefits for Pensioners .. .. .	59	451	506	527	578	637
Tuberculosis Campaign (b) .. ..	440	462	442	442	437	388
Miscellaneous .. .. .	37	55	56	65	66	82
Total .. .. .	2,270	4,510	5,023	5,301	6,235	7,120

(a) Payments from National Welfare Fund and minor items of expenditure from Consolidated Revenue Fund.

(b) Includes allowances to persons and reimbursements to State Government for approved expenditure.

### *Pensioner Medical Service*

Free general practitioner medical treatment is available for most age, invalid, widow and service pensioners and their dependants (the exclusion relates to those admitted to pension by liberalisation of the means test in April 1967). However, no exclusion is made in respect to free pharmaceutical benefits and free in-patient treatment at public hospitals. Entitlement cards for these benefits are issued by the Social Services Department (or by the Repatriation Department in respect of service pensioners).

### *Commonwealth Acoustic Laboratory*

The main function of the Laboratory is the provision and maintenance of hearing aids, without charge, to deaf school and pre-school children, and to those whose hearing loss was discovered after leaving school, but who are still under 21 years of age. It also provides and maintains hearing aids on behalf of the Repatriation and other Commonwealth departments and assists the Education Department in measuring deafness by providing and maintaining portable audiometers.

### *Quarantine*

Quarantine, as administered by the Commonwealth, guards against the importation *from overseas* of three types of possible infection. The safeguards are as follows: human quarantine, which controls the movement of persons until it is apparent they are free of disease; animal quarantine, which controls the importation of animals and animal products; and plant quarantine, which regulates the conditions of importation of all plants and plant products to exclude plant diseases, insect pests and weeds.

The administration of safeguards against infection from *interstate travel and trade* is left to the States unless Commonwealth action is necessary for the protection of a State.

### *National Health Benefits*

*General:* A basic principle in the provision of medical and hospital benefits is Commonwealth support for voluntary insurance against the costs involved. Registered health insurance organisations collect contributions from members and refund a proportion of hospital or doctors' charges. They also act as paying agents for Commonwealth medical and hospital benefits, non-contributors to organisations receiving from the Commonwealth a reduced rate of hospital benefit and no medical benefit. Membership may be had in, and benefits received from, more than one organisation, but Commonwealth benefit is paid only once in respect of each claim.

A Special Account system provides an assured rate of benefit to contributors who would otherwise have been excluded because of organisations' rules relating to pre-existing ailments, chronic illnesses and maximum organisation benefits; payments made by organisations under this provision are re-imbursed by the Commonwealth.

*Medical Benefits:* These benefits are given for medical services detailed in the Schedule to the Commonwealth *National Health Act*. Combined Commonwealth and organisation benefits must not exceed 90 per cent of the fee charged for the service. For the most common form of service, consultation at a general practitioner's surgery, a contributor receives a Commonwealth benefit of 80 cents and, in Tasmania, an organisation benefit as high as \$1 (organisation benefits are not uniform).

*Hospital Benefits:* These benefits are paid for all patients by the Commonwealth at a minimum rate of \$0.80 a day, but if a person contributes to an organisation, the Commonwealth benefit increases to \$2, as long as the organisation's contribution is not less than \$1.60 a day. The highest organisation benefit in Tasmania is \$15.20 a day (organisation benefits are not uniform) and the maximum rate of family contribution is \$1.10 a week.

*Nursing Home Benefits:* The Commonwealth pays a benefit of \$2 per day direct to the homes for each patient. The institutions need to be approved as nursing homes under the *National Health Act*. Patients do not have to be insured with a hospital benefits organisation and there is no time limit on the payment of benefits.

*Hospital and Medical Benefit Payments:* Commonwealth hospital benefit payments are made on a hospital-bed-day basis as follows: insured patients, \$2; uninsured, \$0.80; pensioner patients, \$5; and nursing home patients, \$2. The following tables show payments by the Commonwealth, and also by the health insurance organisations (referred to as "fund benefits") in Tasmania, together with details of the number of such organisations and their membership:

#### Hospital Insurance: Members and Benefits

Particulars	1955-56	1962-63	1963-64	1964-65	1965-66
At 30 June—	No.	No.	No.	No.	No.
Registered Organisations ..	10	10	10	10	10
Members .. .. ('000)	78	108	116	114	120
Benefits Paid—	\$'000	\$'000	\$'000	\$'000	\$'000
Commonwealth Benefits—					
Insured Patients (a) ..	n.a.	n.a.	657	677	670
Uninsured Patients (b) ..	n.a.	n.a.	58	50	50
Pensioner Patients (b) ..	n.a.	n.a.	376	420	515
Nursing Home Patients (b) ..	n.a.	n.a.	612	664	756
Total .. ..	(c) 623	(d) 1,321	1,703	1,811	1,991
Fund Benefits .. ..	435	1,370	1,492	1,854	2,087

(a) Includes Special Account deficits.

(b) Paid direct to hospitals by Commonwealth.

(c) Includes \$511,000 paid direct to hospitals and \$112,000 paid to insured patients through organisations.

(d) As from 1 January 1963, the *whole* Commonwealth benefit was paid to insured patients through registered organisations.

#### Medical Insurance: Members and Benefits

Particulars	1955-56	1962-63	1963-64	1964-65	1965-66
At 30 June—	No.	No.	No.	No.	No.
Registered Organisations ..	10	10	10	10	10
Members .. .. ('000)	64	100	107	108	114
Medical Services During Year ('000)	250	662	719	771	835
	\$'000	\$'000	\$'000	\$'000	\$'000
Cost of Medical Services Paid By—					
Commonwealth Benefits ..	227	634	686	1,000	1,140
Fund Benefits .. ..	287	998	1,082	1,150	1,246

*Pharmaceutical Benefits:* Under this scheme, drugs and medicines for patients, who are required to pay a flat charge of 50 cents, can be prescribed by a medical practitioner or by a hospital. Not all drugs and medicines can be supplied under this scheme, but the Health Department's list of approved pharmaceutical preparations is extensive.

## Commonwealth-Assisted Health Organisations

### *National Heart Foundation of Australia*

This was established to promote research in cardiovascular disease, to rehabilitate heart sufferers and to foster the dissemination of information about heart diseases. The State Division deals especially with rehabilitation and education. The State Government recognised the importance of this work by creating a Cardio-Vascular Services section within its own Department of Health Services in 1967.

### *Lady Gowrie Child Centre*

This pre-school demonstration centre in Hobart was established by the Commonwealth in 1940. Its specialised function is demonstration and research and its programme is carried out under the supervision of the Federal Pre-School Officer in Canberra. It is concerned with a study of the factors promoting or retarding physical and mental health in young children and in demonstrating an educational health programme based on the developing needs of children aged three to six years. The Centre is used for observation by students of medicine, psychology, education, domestic science and nursing.

### *Other Organisations*

Other organisations associated with public health and receiving Commonwealth grants are the Red Cross Blood Transfusion Service, the Royal Flying Doctor Service and the Tasmanian National Fitness Council; these have been dealt with in an earlier section.

## LAW, ORDER AND PUBLIC SAFETY

### Law in Tasmania

#### *History*

The origin and evolution of Tasmanian law, and the origin of the various courts, are described in the 1967 *Year Book*.

#### *Juries*

Tasmanian legislation regulating juries seems to have been first passed in 1830 although, for many years before that date, the introduction of the British system of trial by jury in civil and criminal cases had been persistently urged in the colony. The *Hobart Town Gazette* shows that juries had been employed in the colony for the trial of criminal cases from the establishment of the Supreme Court in 1824. Juries remain as the tribunal for trying indictable criminal cases and there is a limited right to a jury in civil cases, although in 1935 they were abolished for the purpose of trying motor-accident cases.

Although the Tasmanian jury system was based on the English system, it now embodies a new principle in allowing *majority* decisions in certain circumstances instead of requiring the *unanimous* decisions once characteristic of jury usage in England and most other countries.

Civil cases have a seven-member jury and, if after three hours' deliberation a 7-0 decision cannot be reached, a 5-2 decision is accepted. If the minimum 5-2 decision cannot be reached after four hours, the jury may be discharged.

In criminal cases, similar principles apply except that a 10-2 decision is accepted in lieu of 12-0 after stipulated periods of deliberation. In the case of crimes punishable with death, 12-0 is necessary to convict, but 10-2 can bring in a verdict of not guilty, or not guilty of the capital crime, but guilty of a lesser crime.

## Description of Courts Having Jurisdiction in Tasmania

### *Courts of Petty Sessions*

For every municipality in the State, there is a Court of Petty Sessions. The Court is constituted by a legally qualified police magistrate or by two or more lay justices sitting in Petty Session. In major centres of population, a Court sits regularly and, in smaller centres, a Court sits less frequently or is convened as occasion requires. A police magistrate has power to do alone whatever may be done by a Court of Petty Sessions and any other act which may be done by two or more justices in Petty Session.

A Court of Petty Sessions has jurisdiction over all summary offences and also over certain indictable offences at the option of the defendant. Under the *Justices Act* 1963, a defendant may choose summary trial in the Court of Petty Sessions when charged with the following crimes: (a) Escape or rescue; facilitating escape of a prisoner or harbouring an offender; assisting escape of a criminal lunatic; rescuing goods legally seized; making a false declaration (or statement). (b) Stealing; killing an animal with intent to steal; unlawfully branding an animal; obtaining goods by a false pretence; cheating; fraud in respect of payment for work; receiving stolen property. (In all these cases the value of the property concerned must exceed \$20 but not \$400. If the value does not exceed \$20 the defendant will be tried summarily. If it exceeds \$400 he will be committed for trial in the Supreme Court.) (c) Breaking a building other than a dwelling-house. (It is necessary for the defendant to be committed to the Supreme Court for trial where it is alleged that in the commission of the offence: property to the value of more than \$400 has been stolen; violence has been used or offered to any person in or about the building; the person had in his possession a gun, pistol, dagger, cosh, or other offensive weapon; explosives were used; or the defendant intended to commit a crime other than stealing.) (d) Forgery; uttering. (The complaint must be for an offence in respect of a cheque for not more than \$400.)

The following table shows the number of cases tried in the lower courts over a five-year period. (Minor traffic offences settled without court appearance are excluded.)

**Cases Tried in Lower Courts**

Offence			1962	1963	1964	1965	1966
Offences Against the Person	.. Males		516	575	455	754	640
	Females		8	21	9	13	20
Offences Against Property (a)	.. Males		2,073	2,090	2,471	3,588	3,558
	Females		151	148	117	294	352
Offences Against the Currency	.. Males		22	62	92	361	171
	Females		6	2	4	9	100
Offences Against Good Order	.. Males		1,580	1,523	1,494	1,985	1,957
	Females		53	132	89	46	106
Offences Against Traffic Regulations							
	Males		17,800	20,384	20,596	24,135	23,626
	Females		747	762	971	1,188	1,479
All Other Offences (b)	.. Males		6,983	8,572	4,981	7,082	9,197
	Females		476	457	423	489	764
Total Offences	.. Males		28,974	33,206	30,089	37,905	39,149
	Females		1,441	1,522	1,613	2,039	2,821

(a) The increase in these offences may be partly due to amendments to the Justices Act 1963, which empowered lower courts to determine many cases which formerly would have been taken to the Supreme Court.

(b) Includes offences mainly against liquor, education, neglected children, revenue, and gambling suppression laws, desertion of wives and children, perjury and subornation, and conspiracy.

The following table shows cases tried and their results. (Minor traffic offences settled without court appearance are excluded.)

## Lower Courts, 1966

Offence	Cases Tried	Convictions	Committed to Higher Courts	Ad-journed Since Die	Dismissed or Withdrawn <sup>(a)</sup>	Re-manded
MALES						
Offences Against the Person ..	640	369	85	65	113	8
Offences Against Property ..	3,558	2,431	356	496	230	45
Offences Against the Currency ..	171	144	19	6	1	1
Offences Against Good Order ..	1,957	1,448	3	335	155	16
Offences Against Traffic Regulations .. .. .	23,626	18,779	..	2,468	2,364	15
All Other Offences <sup>(b)</sup> .. .. .	9,197	7,143	1	837	1,186	30
Total .. .. .	39,149	30,314	464	4,207	4,049	115
FEMALES						
Offences Against the Person ..	20	9	2	6	3	..
Offences Against Property ..	352	255	20	56	19	2
Offences Against the Currency ..	100	77	..	23	..	..
Offences Against Good Order ..	106	70	..	27	9	..
Offences Against Traffic Regulations .. .. .	1,479	1,120	..	148	211	..
All Other Offences <sup>(b)</sup> .. .. .	764	569	..	56	133	6
Total .. .. .	2,821	2,100	22	316	375	8
PERSONS						
Total .. .. .	41,970	32,414	486	4,523	4,424	123

(a) "Dismissed" is equivalent to "not guilty" in the higher courts.

(b) Includes offences mainly against liquor, education, neglected children, revenue, and gambling suppression laws, desertion of wives and children, perjury and subornation, and conspiracy.

*Courts of Requests*

These are constituted as courts with civil jurisdiction for each municipality in accordance with the authority given by the *Local Courts Act* 1896. Courts are held before a commissioner, who is a legally qualified police magistrate. In the larger centres these courts sit weekly but in smaller centres monthly, and in sparsely populated country areas four times a year.

Every Court has jurisdiction throughout the State but a plaintiff may lose costs if he brings his action in a Court other than the Court nearest to which the defendant lives or carries on business.

The jurisdiction of a Court of Requests, which is a court of record, covers all personal actions where the debt or damage claimed does not exceed the maximum amount fixed under the Act. Since 1 November 1966 the sum of \$1,500 has been fixed as the maximum jurisdiction for a Court of Requests in respect of a debt or liquidated sum, and \$1,000 in any other case.

The commissioner alone determines all questions of fact as well as of law and his decision is the judgement of the Court, unless a jury is required. In any action either party may require a jury as of right and there is power for the commissioner to order that an action be tried by a jury, even though neither party has required it.

Law and equity are administered concurrently in the Court and the general principles of practice in the Supreme Court are adopted and applied in cases not expressly provided for in the Act or Rules.

#### *Courts of General Sessions*

A Court of General Sessions with civil jurisdiction is constituted under the *Local Courts Act* 1896 for each municipality of the State. The cities are excluded, civil actions there being dealt with by Courts of Requests. A Court of General Sessions is constituted by a chairman (elected by the justices for the municipality) and at least one other justice. All questions are decided by a majority of the justices present and, if they are equally divided in opinion, the chairman has both a deliberative and casting vote. The Court sits once a month if there is business requiring its attention.

A Court of General Sessions has jurisdiction to deal with civil proceedings of a minor nature and the limit of the Court's jurisdiction has been fixed at the sum of \$100.

#### *Litigation in Civil Courts*

The following table shows the number of plaints entered and writs issued in the lower and higher Tasmanian courts over a three-year period:

Litigation in Civil Courts

Particulars	1964		1965		1966	
	Number	Amount	Number	Amount	Number	Amount
Lower Courts—		\$'000		\$'000		\$'000
Plaints Entered .. ..	40,864	2,575	39,102	2,400	39,539	2,693
Verdicts for Plaintiff .. ..	18,697	1,253	18,755	1,153	17,383	1,196
Higher Courts—						
Writs Issued .. .. .	1,733	(a)	1,651	(a)	1,759	(a)

(a) Not available.

#### *The Supreme Court of Tasmania*

The Supreme Court of Tasmania is constituted by the Chief Justice and four Puisne Judges. Regular sittings of the Court are held at Hobart, Launceston, Devonport and Burnie, although the Court is empowered to sit and act at any time and at any place for the exercise of any part of the jurisdiction and business of the Court.

The Court has jurisdiction over all causes, both civil and criminal, except those reserved to the High Court of Australia under the Commonwealth Constitution. It also exercises federal jurisdiction in matters such as matrimonial causes, bankruptcy, etc. Its civil jurisdiction extends to all causes of action, whatever the amount involved may be, and its criminal jurisdiction includes the trial of all indictable offences. In civil cases the Court has power to call in the aid of one or more assessors specially qualified to assist in the trial of the action, but is not bound by the opinion or advice of any such assessor.

There is an appeal to the Supreme Court of Tasmania from all inferior courts, and from many statutory tribunals.

Law and equity are administered concurrently in the Court which is enjoined to grant, either absolutely or on such terms and conditions as seem just, all such remedies as any of the parties may be entitled to so that, as far as possible, all matters in controversy between the parties may be completely and finally determined, and a multiplicity of legal proceedings avoided. The Judges, on the recommendation of the Rules Committee, are empowered to make rules regulating the practice and procedure of all proceedings in the Court.

The jurisdiction of the Court is usually exercised by a Judge of the Court and from his decision there is an appeal to the Full Court of the Supreme Court of Tasmania. A Full Court consists of two or more Judges of the Court. The Full Court is also a Court of Criminal Appeal under the Criminal Code. The latter is a Court to which appeals may be brought by the Crown or by an accused person where an indictable offence is involved. In some cases, there is an appeal as of right but, in other cases, special leave is required.

The following table shows the number of cases tried in the higher courts, and the number of convictions:

Supreme Court Actions, 1966

Offence	Cases Tried		Convictions	
	Males	Females	Males	Females
Offences Against the Person—				
Murder .. .. .	1	..	..	..
Attempted Murder .. .. .	1	..	..	..
Manslaughter (including Offences arising from Traffic Accidents) .. .. .	6	1	1	..
Robbery with Violence .. .. .	12	..	9	..
Wounding and Grievous Bodily Harm .. .. .	6	2	6	1
Aggravated Assault .. .. .	1	..	1	..
Rape .. .. .	7	..	6	..
Indecent Assault .. .. .	6	..	6	..
Defilement and Unlawful Carnal Knowledge .. .. .	28	..	28	..
Unnatural Carnal Knowledge .. .. .	1	..	1	..
Indecent Practices between Male Persons .. .. .	5	..	5	..
Incest .. .. .	2	..	2	..
Dangerous Driving .. .. .	8	..	2	..
Offences Against Property—				
Burglary or Housebreaking .. .. .	51	7	51	6
Breaking a Building other than a Dwelling .. .. .	37	1	35	1
Stealing from the Person .. .. .	24	5	21	2
Embezzlement and Stealing by Servants .. .. .	2	..	2	..
Receiving .. .. .	3	1	3	1
Obtaining Goods by False Pretences .. .. .	3	3	3	3
Arson .. .. .	5	..	5	..
Forgery and Offences Against the Currency—				
Forgery and Uttering Offences .. .. .	1	..	1	..
Offences Against Good Order—				
Escape from Custody .. .. .	2	..	2	..
All Other Offences—				
Perjury and Subornation .. .. .	..	..	..	..
Total (a) .. .. .	212	20	190	14

(a) There are fewer Supreme Court cases tried than the number committed from the lower courts would lead one to expect. This is because (i) *complaints* often embrace several *offences* in the lower courts; (ii) some cases are not proceeded with.



The following table shows the number of convictions in the higher courts over a five-year period:

Supreme Court Cases—Convictions

Offence	1962	1963	1964	1965	1966
Offences Against the Person .. ..	54	29	48	64	68
Offences Against Property (a) .. ..	204	237	111	97	133
Forgery and Offences Against the Currency .. ..	7	8	10	6	1
Offences Against Good Order .. ..	4	13	3	1	2
All Other Offences .. ..	1	6	..	2	..
Total (a) .. ..	270	293	172	170	204

(a) A 1963 amendment to the Justice Act provided that if the amount involved in an offence against property was less than \$400, the defendant could elect to be tried in a magistrate's court. This had the effect of reducing the number of cases coming before the judges' courts.

### *The High Court of Australia*

This Court was created by the Commonwealth Constitution and it has both original and appellate jurisdiction. It is constituted by the Chief Justice of Australia and six other Justices.

There is an appeal as of right to the High Court from the Supreme Court of the State in any civil matter where the sum involved amounts to at least \$3,000 or where the decision under appeal affects the status of any person under the laws relating to aliens, marriage, divorce, bankruptcy or insolvency. In other cases (including criminal cases) there is an appeal to the High Court if leave or special leave is granted.

Sittings of the High Court of Australia are held in each capital city and one sitting is held in Hobart each year if the volume of business warrants it. Tasmanian cases otherwise are usually heard either in Melbourne or Sydney.

### *Privy Council*

An appeal lies direct from the Supreme Court to the Privy Council in a civil action where the amount involved is not less than \$2,000 and in other cases an appeal may be heard by special leave. Special leave may also be obtained to appeal to the Privy Council from a decision of the High Court of Australia but there are restrictions where the interpretation of the Commonwealth Constitution is involved.

### *Tribunals*

There are many tribunals which are not true courts and the powers and functions of these depend upon the detailed provisions of the particular statute under which they operate. Certain specialised courts have been created by statute. For example, there is the Wardens' Court constituted under the *Mining Act* 1929 and the Licensing Court constituted under the *Licensing Act* 1932.

### *Coroner's Courts*

Coroners are appointed by the Governor and have jurisdiction throughout the State. Under the *Coroner's Act* 1957, a coroner may hold an inquest: (a) concerning the manner of death of any person who has died a violent or unnatural death, who died suddenly, or who died in a prison, hospital or mental institution; at the direction of the Attorney General, he may also be required to hold an inquest concerning any death; (b) concerning the cause of any fire if the Attorney General has directed, or has approved a request by the owner or insurer of the property; or at the request of the Fire Brigades Commission or the Rural Fires Board.

The coroner usually acts alone in holding an inquest, but in the case of a death, either the Attorney General or the relatives of the deceased may request that a four or six man jury be empanelled. The inquest may be dispensed with and post mortem by a doctor substituted, unless the circumstances of death make an inquest mandatory under the Act.

The duty of the court is to determine who the deceased was, and the circumstances by which he came to his death. Medical practitioners and other persons may be summoned to give evidence. Viewing of the body is not essential but in the case of the death of an infant in a nursing home, the coroner may also enquire generally into the conditions and running of the institution. On the evidence submitted at the inquest, the coroner can order a person to be committed to the Supreme Court and can grant bail. In the case of murder, a coroner can issue a warrant for apprehension.

#### *Children's Courts*

Under provision of the *Child Welfare Act* 1960, Children's Courts are established to deal with offenders under the age of 17 years. Special magistrates may be appointed by the Governor to adjudicate in these Courts and one such magistrate is sufficient to constitute a Court. In the absence of a special magistrate, the Court may be constituted by a police magistrate or two justices.

A Children's Court is a court of summary jurisdiction and, in the case of children under 14 years of age, it may hear and determine all indictable offences except murder, attempt to murder, manslaughter, and wounding with intent to do grievous bodily harm. When children over this age are charged with an indictable offence they, or their parents on their behalf, may elect to be dealt with by the Court in a summary way instead of being tried by a jury, except when the offences are murder, attempt to murder, manslaughter, rape, wounding with intent to do grievous bodily harm, and robbery with violence.

It is a requirement of the *Child Welfare Act* that before a court may finally determine the case of any child appearing before it, a child welfare officer must be given the opportunity to investigate the circumstances of the case and to report on it. This aspect of child welfare work is important for three reasons:

- (i) these investigations often uncover causes of delinquency in the child's background and indicate the need for continued work with the child;
- (ii) the reports serve as a guide to the courts, and in over 90 per cent of cases, the treatment of offenders follows the recommendations made;
- (iii) information gained about the child in the initial investigation is the basis of the methods to be used should the court place on the Social Welfare Department the responsibility of continued supervision.

Statistics of offences for which children were reported appear in this chapter under "Department of Social Welfare".

#### *Bankruptcy*

Under the Federal *Bankruptcy Act* 1924-1960 which came into operation on 1 August 1928, Tasmania was proclaimed a bankruptcy district. A Federal Court of Bankruptcy was established with jurisdiction throughout Australia. This jurisdiction, however, is exercised only in New South Wales and Victoria while the Supreme Court of Tasmania exercises federal jurisdiction in bankruptcy throughout the State.

A new Federal *Bankruptcy Act* 1966 has still to be proclaimed; it will have the effect of changing some of the information which follows. Proclamation is expected early in 1968 and any person contemplating new proceedings in 1968 should ask the Official Receiver, Hobart, if the new provisions are operative.

Under existing legislation, if any person is unable to meet his debts, he may voluntarily file a petition with the Court requesting sequestration of his estate, or his creditors may apply for a compulsory sequestration, provided that the debts involved amount to not less than \$100. After sequestration:

- (i) the property of the bankrupt vests in an official receiver (who acts under the general authority of the Federal Attorney General and is controlled by the Court) for division amongst the creditors; or
- (ii) the bankrupt may compound with his creditors and enter into a scheme of arrangement, subject to Court approval.

Part XI of the Bankruptcy Act makes provision, without sequestration, for composition, schemes of arrangement and deeds of assignment while Part XII provides for deeds of arrangement. Under Part XI, the debtor may call a meeting of his creditors and either compound with them to pay a certain sum in the \$ as full settlement of his debts or enter into a scheme of arrangement allowing him a specified time in which to pay. Alternatively, under Part XII, his creditors may require him to execute a deed of assignment by which control of his affairs passes to a trustee registered under the Act, or to file a petition in bankruptcy.

The following table shows the number of bankruptcies of the various types together with the assets and liabilities of debtors:

**Tasmania—Bankruptcy Proceedings**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Sequestration Orders and Orders for Administration of Deceased Debtors' Estates—					
Number .. .. .	93	116	123	92	103
Liabilities .. .. (\$'000)	507	768	499	340	810
Assets .. .. (\$'000)	202	276	224	163	202
Deeds of Assignment, Compositions and Schemes under Part XI—					
Number .. .. .	2	2	..	1	1
Liabilities .. .. (\$'000)	21	62	..	32	157
Assets .. .. (\$'000)	35	47	..	..	25
Deeds of Arrangement under Part XII—					
Number .. .. .	3	1	3	4	3
Liabilities .. .. (\$'000)	84	15	44	37	17
Assets .. .. (\$'000)	92	10	41	30	7
Total—					
Number .. .. .	98	119	126	97	107
Liabilities .. .. (\$'000)	612	844	543	409	984
Assets .. .. (\$'000)	329	333	265	193	234

#### *Trade Practices Tribunal*

The Commonwealth Parliament passed the *Trade Practices Act* 1965 "to preserve competition in Australian trade and commerce to the extent required by the public interest"; due to constitutional limitation of Commonwealth power, provision was made in the Act for co-operation between the Commonwealth and the States, the requirement being that each State should adopt complementary legislation, if it so desired. In this way, practices in both

interstate and intrastate trade would be subject to scrutiny. The only State to pass supporting legislation so far has been Tasmania with its *Commonwealth Powers (Trade Practices) Act* 1966.

The Commonwealth Act deals with agreements and practices where an element of restriction is involved and defines which are "examinable". It establishes a Register of Trade Agreements to be kept by a Commissioner and obliges parties making examinable agreements to register them. The Commissioner, on the basis of registered information, or of information from any other source, may consider an examinable agreement or a particular practice to contain restrictions *contrary to the public interest*, in which case he may institute proceedings before a Trade Practices Tribunal. It is the task of the Tribunal to determine whether the restrictions are contrary to the public interest; if this is the finding of the Tribunal, it has the power to make an order ending the practice, or restraining all or any of the parties from giving effect to, or enforcing or purporting to enforce, the restrictive agreement. Part IX of the Act deals specifically with collusive tendering and collusive bidding. What amounts to a right of appeal is conferred by the creation of a Review Division of the Tribunal which excludes the presidential member who heard, or presided over, the original proceedings.

The Tasmanian Parliament could have passed complementary legislation but it chose instead to make an Act referring the necessary constitutional power to the Commonwealth so that the Commonwealth, in pursuance of the reference, could make its own Act fully applicable to intrastate trade (interstate trade is, of course, within Commonwealth jurisdiction).

The 1965 Commonwealth Act did not take immediate effect, many sections being reserved to come into operation by later proclamation. Registration of examinable agreements began in October 1967.

#### *The Licensing Court*

Prior to 1953 there were forty-nine licensing courts. They each consisted of a police magistrate as chairman and two justices of the peace.

With a view to obtaining uniformity of standards and to improving accommodation throughout the State, amendments in 1952 were made to the *Licensing Act* 1932. These made provision for the appointment of a Licensing Court to consist of a police magistrate as chairman and two Government nominees. The Act also empowered the Court to determine the minimum standards of service, management, accommodation, structure and equipment which should apply to hotels, and also the qualifications required by persons holding or applying for licences. Since then the standard of hotels throughout Tasmania has continually improved.

The following table shows the total bedroom accommodation available to the public during recent years:

Standard of Accommodation—Hotels (a)

Date	Total Number of Bedrooms	Number of Bedrooms Furnished With—	
		Private Bath, Showers, Toilets and Hand-basins	Handbasins with Hot and Cold Running Water
31 Dec.—1957 ..	3,763	182	1,557
30 June—1962 ..	3,672	576	(b)
1967 ..	3,599	937	2,164

(a) Includes licensed motels.

(b) Not available

Every hotel in Tasmania is visited annually by a member of the Court and the Court's inspectors and the public health inspector make a thorough examination of each hotel prior to the annual sittings at which renewals of licences are considered. Reports are furnished for the information of the Court and the Tourist Department. An officer of the Fire Brigades Commission also carries out an annual inspection to ensure that each hotel complies with the requirements of the Commission.

The following table shows the licences and club registrations operative:

**Licensed Hotels, Clubs and Other Licensed Dealers**

At 30 June	Hotels and Motels	Public Houses (a)	Railway Refreshment Rooms	Wholesale Licences	Registered Clubs	Total
1956 ..	285	7	4	(b)	92	388
1963 ..	273	5	1	28	121	428
1964 ..	273	5	1	28	128	435
1965 ..	270	5	2	28	130	435
1966 ..	266	5	1	29	131	432

(a) These licensed premises do not provide accommodation.

(b) Issued by the Treasury until 1960. Wholesale merchants are permitted to sell to the public in 2-gallon lots.

The Ogilvie ministry introduced 10 am to 10 pm bar trading hours before World War II and, in the post-war period, Tasmania's 10 pm closing contrasted with 6 pm closing in S.A., Victoria and N.S.W. However, N.S.W. in the 1950s and, more recently, Victoria liberalised their drinking laws so that S.A. was the only State with 6 pm closing in 1967 (when amending legislation was introduced in that State).

In 1967, the Tasmanian *Licensing Act* was amended to allow 11.30 pm closing on Friday and Saturday nights; 10 pm closing is now the rule for other nights (excluding Sunday) with provision nevertheless to obtain extension permits for special functions. The permitted age for drinking on licensed premises has been lowered from 21 to 20 years; restaurants complying with defined conditions can now obtain licences to sell liquor (previously diners could take their own liquor to certain restaurants, but not buy it on the premises); licensed restaurants can open till 11.30 pm six nights a week.

The following table shows the estimated consumption of alcoholic liquor in Tasmania over a five-year period:

**Estimated Consumption of Beer, Wine and Spirits**

Year	Beer		Wine		Spirits	
	Total	Per Head of Mean Population	Total (a)	Per Head of Mean Population	Total	Per Head of Mean Population
	'000 gallons	gallons	'000 gallons	gallons	'000 proof gallons	proof gallons
1961-62	6,632	18.58	416	1.17	134	0.37
1962-63	6,618	18.28	422	1.17	138	0.38
1963-64	6,609	18.05	427	1.17	140	0.38
1964-65	(b)	(b)	429	1.17	143	0.39
1965-66	(b)	(b)	443	1.19	147	0.39

(a) Wholesale sales of resident distributors.

(b) Not available for publication.

Comparative Australian consumption figures per head for 1965-66 were: beer, 24.3 gallons; wine, 1.3 gallons; spirits, 0.3 proof gallons.

## Prisons

*General*

The establishment, regulation and conduct of prisons and the custody of prisoners in Tasmania are provided for under the *Prison Act* 1868 and 1908. Under the Act, a Controller of Prisons is appointed by the Governor and is responsible for the management of the main prison as well as the custody of prisoners.

Two justices are appointed each year to act as Visiting Justices. They visit the prison at least once per month to examine the treatment, behaviour and condition of prisoners, and the condition of the prison. They hear complaints with regard to offences committed in the gaol, and have power to punish offenders either by solitary confinement or by extending the term of imprisonment.

The main prison in Tasmania is at Risdon near Hobart, and has, as an outstation, the Prison Farm at Hayes in the Derwent Valley. The prison at Launceston is limited in function, receiving only persons on remand or sentenced for periods not exceeding seven days.

The following table shows Prisons Department expenditure from Consolidated Revenue:

**Prisons Department—Expenditure From Consolidated Revenue  
(\$'000)**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Total Expenditure .. ..	445	454	500	539	587
Net Receipts (a) .. ..	..	10	8	16	18
Net Expenditure .. ..	445	444	492	523	569

(a) From prison industry and gaol farm activities described later in the text.

*Prisoners Received and Discharged*

In the following table giving details of prisoners received into and discharged from Tasmanian prisons, no distinction is made between those on remand and those convicted and sentenced to imprisonment. (Figures for H.M. Prison, Risdon, include those held in custody at the Hayes prison farm.)

**Prisoners Received and Discharged, 1965-66**

Particulars	H.M. Prison, Risdon		H.M. Prison, Launceston		Total	
	Males	Females	Males	Females	Males	Females
In Custody 30.6.65	212	3	2	..	214	3
Received 1965-66 .. (a)	853	(a) 50	(b) 145	(b) 7	(c) 998	(c) 57
Discharged 1965-66	805	47	147	7	952	54
In Custody 30.6.66	260	6	..	..	260	6

(a) Includes transfers from H.M. Prison, Launceston: males 292; females 17.

(b) Excludes transfers to H.M. Prison, Risdon: males 292; females 17.

(c) *Net* receipts, i.e. transfers from Launceston to Risdon counted as Risdon receipts only.

*Age of Prisoners*

Young offenders account for a high and rising proportion of receipts, as in other countries. The proportion of male prisoners *received* in the under 25 year age group was 51 per cent in 1961-62; 49 per cent in 1962-63; 55 per

cent in 1963-64; 59 per cent in 1964-65; this age group comprised 55 per cent of all *convicted* male prisoners in 1965-66. The following table shows the ages of convicted prisoners received:

**Ages of Convicted Prisoners Received at Risdon 1965-66**

Sex	Age Group (in Years)								Total
	Under 18	18 and 19	20-24	25-29	30-39	40-49	50-59	60 and Over	
Males .. ..	38	72	173	58	86	58	31	9	525
Females .. ..	2	6	8	3	3	1	..	..	23
Total .. ..	40	78	181	61	89	59	31	9	548

### *Prisoners' Offences*

Forty-five per cent of the offences for which people were gaoled in 1965-66 involved "stealing" and "breaking and entering". The following table shows the offences for which convicted prisoners were received:

**Offences for Which Convicted Prisoners Were Received at H.M. Prison, Risdon, 1965-66**

Offence	Offences By—		Offences	
	Males	Females	Total	Proportion of all Offences
	No.	No.	No.	per cent
Stealing .. .. .	312	13	325	28.8
Breaking and Entering .. .. .	179	1	180	16.0
Unlawful Use, Motor Vehicle .. .. .	73	..	73	6.5
Vagrancy .. .. .	43	8	51	4.5
False Pretences .. .. .	54	1	55	4.9
Housebreaking .. .. .	12	..	12	1.1
Breach of Bond .. .. .	17	..	17	1.5
Breach of Traffic Act .. .. .	25	..	25	2.2
Assault .. .. .	60	3	63	5.6
Failure to Pay Fine .. .. .	38	1	39	3.5
Damage to Property .. .. .	16	..	16	1.4
Assaulting Police Officer .. .. .	23	..	23	2.0
Maintenance .. .. .	5	..	5	0.4
Receiving .. .. .	23	..	23	2.0
Indecent Assault .. .. .	6	..	6	0.5
Forgery .. .. .	10	1	11	1.0
Uttering .. .. .	9	..	9	0.8
Resisting Arrest .. .. .	11	..	11	1.0
All Other .. .. .	182	2	184	16.3
Total (a) .. .. .	1,098	30	1,128	100.0

(a) The number of offences exceeds the number of prisoners received since some prisoners were convicted of multiple offences.

The next table classifies convicted prisoners according to the number of their previous convictions:

**Convicted Prisoners Received in H.M. Prison, Risdon, Classified According to Number of Previous Convictions (a), 1965-66**

Particulars	Number of Previous Convictions				Total
	None	One	Two	Three or More	
Prisoners Received .. ..	127	67	62	292	548
Proportion of Total (per cent) ..	23.2	12.2	11.3	53.3	100.0

(a) Previous convictions may not necessarily have involved imprisonment.

*Parole and Remission of Sentences*

Under the *Prison Act*, the Governor of the State may commute the death sentence to a term of imprisonment. The death sentence has not been carried out in Tasmania since 1946.

Good conduct remissions of up to 25 per cent of sentence for prisoners sentenced to over three months may be granted by the Governor of the State on the Controller's recommendation. Prisoners may also be paroled on licence for the balance of their sentences.

The Indeterminate Sentences Board is appointed by the Governor of the State. It reviews the cases of prisoners serving indeterminate sentences. Such prisoners may be released on a two-year licence and are subject to any conditions the Board may recommend, e.g. the supervision of a probation officer.

The following summary table shows the number of prisoners under the supervision of the Indeterminate Sentences Board:

**Prisoners with Indeterminate Sentences at H.M. Prison, Risdon**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Received During Year ..	36	30	25	18	16
Discharged During Year ..	26	38	25	24	13
In Custody at 30 June ..	24	16	16	10	13

*Risdon Gaol*

The Risdon Gaol, with provision for 324 prisoners, was opened in November 1960, when male prisoners were transferred from the old Hobart Gaol. Subsequently, the Female Prison, the first entirely separate gaol for women to be built in the State, was opened in June 1963, also at Risdon. The following table shows the daily average and highest number of prisoners at Risdon Gaol over a five-year period:

**Number of Prisoners at H.M. Prison, Risdon (a)**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Prisoners—					
Maximum Number .. ..	261	265	260	273	276
Daily Average .. ..	246	247	238	236	239

(a) Includes Hayes Prison Farm.

The Risdon Gaol incorporates workshops which serve as a basis for vocational and trade training in such subjects as woodworking, tailoring, sheet metal working, bootmaking and breadmaking. Educational services include instruction during working hours for illiterate and semi-literate prisoners; tuition, on two evenings weekly, in general academic subjects to Secondary Schools Certificate standard; correspondence courses in University, Matriculation, Schools Board and various technical and commercial subjects; tuition in English for migrants; and training three nights weekly in art and allied subjects. A classification committee interviews all prisoners on admission and decides on each individual's training programme.

Groups meet regularly for wood carving, art, pottery, toy making, chess and dramatics. Feature and documentary films are screened monthly, and concert parties visit the prison regularly. A comprehensive sports programme is conducted, including athletics, gymnastics, and competitions in cricket, volley ball and basketball.



The State Library of Tasmania helps with the prison library and library officers advise the prisoners on book selection each weekend; 5,000 volumes are immediately available, and a request programme operates. Over 650 books are borrowed from the library weekly.

Prison industries produce articles for government departments and institutions. The following table shows the receipts for prison industries over a five-year period. The installation of a new laundry in 1963 has increased receipts from sales and services but the amounts are not a true indication of value to the government, as laundry is processed at a nominal figure for hospitals and other government institutions.

**Gaol Suspense Account (Prison Industries)**  
(£)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Receipts (a) .. .. .	33,216	54,431	58,881	66,818	73,246
Paid to Consolidated Revenue..	..	(b) 3,638	6,827	10,944	13,291

(a) Maintenance, material and capital charges are met from receipts, the balance being paid to Consolidated Revenue.

(b) Includes surplus from 1960-61 and 1961-62.

#### *Hayes Prison Farm*

The Prison Farm at Hayes ("Kilderry") is an outstation of the Risdon Prison. It aims to prepare men for a normal way of life through the operation of the honour system. Up to 60 prisoners who are regarded as being worthy of trust, regardless of their age, length of sentence or type of offence, are held here.

The following table shows the receipts from sale of farm produce and the amounts paid to Consolidated Revenue over a five-year period:

**Gaol Farm Suspense Account**  
(£)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Receipts (a) .. .. .	21,839	28,229	34,429	54,742	62,590
Paid to Consolidated Revenue..	..	(b) 6,443	1,385	4,992	4,227

(a) Maintenance, material and capital charges are met from receipts, the balance being paid to Consolidated Revenue.

(b) Includes surplus from 1960-61 and 1961-62.

The 1,400 acre property has been developed into a model farm with a great diversity of farming activities. These include 65 acres for vegetables; a registered stud of Friesian cattle and Herefords; about 2,000 sheep for wool and fat lambs; a registered herd of Berkshire pigs; poultry; cropping of wheat, oats, lucerne and hay; breeding of children's ponies; hot house cultivation; and an experimental shrub and tree nursery, etc. All prison requirements of milk and butter are met and the surplus is supplied to the Lachlan Park Hospital. Building construction activities and machinery maintenance workshops also provide employment, but the range of prison industries is more limited than at Risdon. Similar educational and recreational facilities are provided.

*Adult Probation Service*

The Service deals with the problems of re-settlement and re-employment of discharged prisoners. There is a counselling and guidance service so that ex-prisoners may be placed in occupations suited to their talents.

The Hobart and District Civic Rehabilitation Council, the Prisoners Aid Society, the City Mission, the Society of St Vincent de Paul, chaplains of the various Churches, and other voluntary aid organisations, give material and moral assistance to serving and discharged prisoners.

**The Tasmanian Police Force***History*

The development of an organised Police Force in Tasmania commenced when Governor Collins arrived, bringing with him a body of civilians known as the "Night Watch" which had been formed at the settlement in Port Phillip Bay. On 5 July 1804, Collins instructed that at least two of the Night Watch were to be on duty at night because of the number of robberies being committed. Collins disbanded the Watch two years later, recognising it was necessary to have police able to carry out their duty in a proper manner. At Port Dalrymple, now Launceston, which was then separately administered, Lieutenant-Governor Paterson on 19 November 1804, appointed Thomas Massey as Chief Constable, with three subordinate constables.

Because allowances, which consisted only of rations, clothing and spirits, were not sufficient for the proper support of the first policemen, they were forced to find other means of supplementing their incomes. This led to the force being mediocre at best. Free settlers were not inclined to join the force because of the poor remuneration; recruits were mostly convicts on "ticket of leave".

In 1828, Governor Arthur, who had commented that "there was no Branch of the Public Service more deficient than the Police", divided the State into nine districts, each with a police magistrate who was responsible to a chief police magistrate in Hobart. Writing about the 1820s in Hobart Town, J. E. Calder in an 1879 newspaper article said "drunkenness was 10 times more prevalent than now, and street robbery, burglary and even murder were not rare".

Arthur's organisation remained until soon after the State graduated to responsible government in 1856. In 1857, the *Hobart Town and Launceston Police Act* made the two towns responsible for their police forces. Some other municipalities took control of their own police following the passing of the *Rural Municipalities Act* 1858, and where there was no municipal police force, the Government provided police from a Territorial Force.

The nucleus of the present force was not created until 1898 when the first Commissioner was appointed, all police forces were amalgamated and municipal control terminated.

*The Present Force*

**Organisation:** The Police Department is headed by the Commissioner who is responsible to the Minister for Transport and Police. There are four administrative divisions, i.e. Southern, Northern, North-Western and Central, each under the control of a superintendent; and two branches, the Criminal Investigation Branch and the Traffic Branch, each with a superintendent in charge.

*Recruitment and Training:* Recruits undergo an intensive 12 week course of instruction which aims to present well informed and efficient police officers to the public. Not only must recruits be successful in the initial examinations, but they must also pass a retention exam if they wish to remain in the service. Officers must qualify by examination before promotion to each rank up to inspector. The Department has sponsored some officers' university courses; selected personnel are sent to police officer training colleges in Sydney and Melbourne.

*Criminal Investigation:* The Criminal Investigation Branch employs over 100 detectives and controls the Information Bureau (see *Fingerprinting* and *Laboratory* below) and communications.

*Traffic Duties:* The Department enforces the traffic regulations for the Transport Department. Traffic control occupies a large part of police time.

*Search and Rescue:* A search and rescue squad, based in Hobart, equipped for bush and sea search and rescue, cliff rescue, and resuscitation is ready to leave at short notice. The squad is supported by walking clubs and other people in various parts of the State.

*Other Duties:* Inspection of licensed premises, supervision of gaming, conducting special interviews and inquiries for government departments, and the service of notices and summonses are important police functions.

*Radio:* Radio is used extensively; since 1954 there has been a direct link-up with the continental States. An intrastate system operates between Hobart, Launceston, Burnie, Queenstown, Oatlands and Deloraine. Mobile radio is installed in all police cars and boats. A teleprinter allows direct contact with Interpol, an international police agency, and other States.

*Fingerprinting:* This is an important aid to criminal investigation. Each year some 2,000 sets of prints are received, checked with the Central Fingerprint Bureau in Sydney and classified. Over 100,000 sets are kept on file.

*Laboratory:* A modern laboratory, equipped with a comparison microscope, and other investigation facilities is used by Information Bureau experts for ballistic examination, inspection of documents, file marks, etc. and other evidence of criminal activity. Extensive use is made of photography.

#### *Present Strength of Force*

The following table shows the number of police and expenditure on the Police Department over a five-year period:

**Police Force—Number and Cost**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Police Officers (a) .. (No.)	579	629	598	633	678
Persons Per Police Officer (a) (No.)	614	573	609	581	548
Cost (Total Expenditure of Police Department) .. \$'000	2,156	2,251	2,527	2,675	2,727
Cost Per Head of Mean Population .. .. (\$)	6.11	6.29	6.97	7.30	7.38

(a) At 30 June.

#### *Introduction*

#### **Fire Prevention and Fire Fighting**

The area of Tasmania is 26,383 sq. miles (the same as for a square with 162-mile sides). Seventy percent of the State's population is, in Census terms, *urban*, i.e. living in cities or towns with 1,000 or more inhabitants. The

responsibility for fire prevention and fire fighting in the cities and main towns rests with local fire brigades under the general control of a central body, the Fire Brigades Commission.

The balance of the State's population (30 per cent) is, again in census terms, *rural*, i.e. living in townships with less than 1,000 inhabitants or in isolated locations such as farms, milling and logging settlements, mining camps, etc. This rural population is spread over a large area and the type of fire brigade organisation appropriate to concentrated, urban settlements cannot be employed; factors of distance, time and finance combine to demand a different mode of approach. The Tasmanian answer has been to set up local rural fire organisations and to co-ordinate their activities through a central body, the Rural Fires Board.

A third relevant authority is the Forestry Commission which is responsible for the fire protection of State Forests and other forested Crown land; the Commission also fights fires on private land if their spread endangers the forests on Crown land.

#### *Fire Brigades Commission*

The Commission, established under the *Fire Brigades Act 1945* as amended, is composed of two representatives of the Minister (the Chief Secretary), three representatives of insurance companies and one representative of city and municipal councils. The system of financing the fire brigades is shown below:

**Fire Brigades: Principal Sources of Revenue, 1965-66**

Contributions Received by Fire Brigades Commission	Receipts (\$)	Distribution Made by Fire Brigades Commission	Payments (\$)
From: State Government ..	139,650	To: Fire Brigade Boards ..	558,600
City and Municipal Councils ..	139,650		
Insurance Companies ..	279,300		
Total .. .. .	558,600	Total .. .. .	558,600

The number of contributing local government authorities in 1965-66 was 30, although the number of fire brigade boards was only 23 (some boards take responsibility for areas lying in more than one municipality, e.g. the Hobart Board with sub-stations in Glenorchy, Clarence and Kingborough). The present contribution formula requires 50 per cent from the insurance companies, and 25 per cent each from the Government and the local government authorities; the Commission prepares an annual estimate of expenditure so that the level of contributions may be fixed in advance. The loan debt of all fire brigade boards at 30 June 1966 was \$241,414.

At 30 June 1966, the 23 fire brigade boards maintained 35 stations (including sub-stations) and employed 134 permanent firemen (Hobart 76, Launceston 52, Burnie 3, Devonport 3); other firemen, numbering 366, were paid on a part-time basis. In addition, one Hobart sub-station, Fern Tree, situated in forested mountain country, had a volunteer strength of 70. Including the Fern Tree volunteers, the total firemen (officers and men) in the Brigades numbered 570.

The problem of providing protection with part-time firemen is met in a variety of ways. The Commission's Report for 1965-66 describes the Oatlands system as follows: "The chief and the deputy-chief officers' residences are connected by telephone to the telephone exchange network. All firemen's

residences are connected by electric bells operated from either the chief or deputy-chief officers' residences." Oatland's brigade consisted of 11 part-time firemen, including officers.

### *Rural Fires Board*

Although Tasmania generally does not experience the high temperatures and prolonged droughts associated with some Australian States, a fire danger exists in many rural and forested areas during the warmer months; good rains before summer promote heavy growth of grass and scrub and then even a moderately dry period may encourage the rapid spread of bushfires, given suitable wind and temperature factors. To meet this situation, voluntary organisations have been built up in rural areas.

The Board, established under the *Rural Fires Act* 1950 as amended, is composed of the Chief Forestry Commissioner as chairman and one representative each of farmers' organisations, trade unions concerned with milling, the Municipal Association, sawmilling and paper making employers and the Fire Brigades Commission; the Fire Protection Officer of the Forestry Commission is an *ex officio* member as is the Chief Forestry Commissioner.

The organisation controlled by the Board is necessarily de-centralised as much as possible; the basic geographic unit is a fire warden's district of which there were 720 at 30 June 1966. Where a whole municipality is included in the scheme, fire warden's districts in total form a municipal rural fires district (e.g. 33 in Oatlands), under the control of a chief fire warden. Where parts of municipalities rather than whole municipalities are included in the scheme, the aggregation of fire warden's districts becomes a local rural fires district, also under the control of a chief fire warden. Municipal districts numbered 37 and there were a further 37 local districts. At 30 June 1966, the Board's voluntary field force was composed of 66 chief fire wardens and 713 district fire wardens (some vacancies were unfilled). The duties of the wardens include giving permission for controlled fires in the warmer months and organising local fire-fighting (special restrictions on the lighting of fires in the open during Fire Emergency Periods are proclaimed under the Act each year during the summer months).

A further Board responsibility is the organisation of rural fire brigades formed for the protection of specified localities. The brigades are manned entirely by volunteers and, at 30 June 1966, had a strength of 54 first officers, 137 other officers and 800 registered members. (These brigades are additional to those under the control of the Fire Brigades Commission.)

The expenditure of the Board in 1965-66 was \$26,206; the voluntary nature of the field force accounts for the low figure.

### *Forestry Commission*

The Commission is responsible for the protection of the 2.5m acre State Forests and of other forested Crown land. Close liaison with the Rural Fires Board is maintained, the Chief Forestry Commissioner being its chairman. The expenditure from the Forestry Fund during 1965-66 on fire protection was \$93,153. Further details are given in Chapter 7 under "Forestry".

# Chapter 10

## LABOUR, PRICES AND WAGES

### EMPLOYMENT

#### Historical

Although employment statistics are accepted as a vital economic indicator, Tasmanian records for the first ninety years give no dissection of the population such that the total number of wage and salary earners can be accurately ascertained. The first census to provide the necessary analysis was that of 1891, the categories used on that occasion and in subsequent censuses being broadly comparable. The composition of the work force is shown in the following table for each census from 1901 to 1961:

**Elements of Work Force in Censuses of 1901-1961**

Census Year	Employer	Self-Employed	Employee	Helper not Receiving Wage or Salary	"Not at Work" (a)	Total in Work Force	Total Popula- tion
1901—Males ..	6,213	9,100	36,063	4,098	1,810	57,284	89,624
Females	462	2,434	10,229	2,071	356	15,552	82,851
Persons	6,675	11,534	46,292	6,169	2,166	72,836	172,475
1911—Males ..	8,477	6,742	40,555	3,916	1,492	61,182	97,591
Females	642	1,249	10,715	411	326	13,343	93,620
Persons	9,119	7,991	51,270	4,327	1,818	74,525	191,211
1921—Males ..	4,445	13,309	42,763	1,875	3,606	65,998	107,743
Females	347	1,593	11,484	67	510	14,001	106,037
Persons	4,792	14,902	54,247	1,942	4,116	79,999	213,780
1933—Males ..	7,277	11,887	38,084	1,752	10,226	69,226	115,097
Females	798	1,423	13,082	116	1,442	16,861	112,502
Persons	8,075	13,310	51,166	1,868	11,668	86,087	227,599
1947—Males ..	6,718	12,522	58,097	997	1,867	80,201	129,244
Females	659	1,198	17,693	86	481	20,117	127,834
Persons	7,377	13,720	75,790	1,083	2,348	100,318	257,078
1954—Males ..	6,886	12,616	72,481	778	1,215	93,976	157,129
Females	788	1,329	21,590	246	279	24,232	151,623
Persons	7,674	13,945	94,071	1,024	1,494	118,208	308,752
1961—Males ..	7,108	11,619	78,863	505	3,194	101,289	177,628
Females	1,113	1,572	25,853	194	896	29,628	172,712
Persons	8,221	13,191	104,716	699	4,090	130,917	350,340

(a) Includes those who stated they were usually engaged in work, but were not actively seeking a job at the time of the census by reason of sickness, accident, etc., or because they were on strike, changing jobs, temporarily laid off, etc. It also includes persons able and willing to work but unable to secure employment, as well as casual and seasonal workers not actively engaged in a job at the time of a census.

### Work Force and Employment

It is essential to distinguish between "work force" and "employees" since *employment* statistics in this chapter relate mainly to wage and salary earners. Wage and salary earners, however, are only one component of the *work force* which also comprises employers, self-employed persons, unpaid helpers and unemployed persons. The category "not at work" shown in the preceding table was first established in the 1947 Census and the comparison with earlier years is approximate only. For further details, see subsequent section headed "Unemployment". Data from the 1966 Census could not be included in the table because of a new method of collecting information in that year.

#### Work Force, 1966 Census

In the 1966 Census, a new set of questions (based on activity in the week before the Census) was asked to establish who should be included in the work force. The composition was as follows:

Elements of Work Force, 1966 Census

At 30 June	Employer	Self-Employed	Employee	Unpaid Helper	Un-employed	Total in Work Force	Total Population
Males ..	8,245	9,162	87,567	432	1,146	106,552	187,267
Females ..	1,759	1,644	35,449	940	971	40,763	183,950
Persons ..	10,004	10,806	123,016	1,372	2,117	147,315	371,217

The essential difference between the pre-1966 approach to work force and the 1966 approach was this: in pre-1966 censuses, people were invited to classify themselves (e.g. as unemployed, employee, etc.); in the 1966 Census, people were invited to describe their *activity* in a specific week and the Statistician, using pre-determined definitions, classified them on the basis of their answers.

Briefly, the new questions asked whether the person: (i) Had a job or business of any kind last week (even if temporarily absent from it)? (ii) Did any work at all last week for payment or profit? (Unpaid helpers who worked were to answer *yes*.) (iii) Was temporarily laid off by his employer without pay for the whole of last week? (iv) Looked for work last week? (Ways of "looking for work" were specified on the Census form.)

The 1966 work force includes all persons answering *yes* to any one of these four questions. The effect of the new definition is to include additional persons in the work force. This applies particularly to those working part-time (sometimes for only a few hours a week), some of whom in 1961 may not have considered themselves as "... engaged in an industry, business, profession, trade or service." The main difference in classification between the 1901-1961 table and the 1966 table is the substitution of the category "unemployed" for the former category "not at work".

The total of persons recorded as unemployed in 1966 was compiled from persons answering *no* to questions (i), (ii) and (iii) and *yes* to question (iv).

### Monthly Estimates of Employment

The following table gives some early details of Tasmanian wage and salary earners in employment, the basis of estimation being pay-roll tax returns, government employment returns and the various administrative investigations:

**Wage and Salary Earners in Employment**  
**(Excluding Employees in Rural Industry and Private**  
**Domestic Service, and Defence Forces)**  
**('000)**

Year and Month	Males	Females	Persons
1933—June (a) .. .. .	29.0	9.1	38.1
1939—July .. .. .	37.4	11.6	49.0
1941—July .. .. .	38.6	15.2	53.8
1943—June .. .. .	36.9	16.7	53.6
1945—June .. .. .	39.5	16.7	56.2

(a) From Census of Population, June 1933.

Pre-war Tasmanian monthly employment series were compiled by the Bureau from the State wages tax returns of private employers in respect of their employees and from returns of government authorities, Commonwealth, State and local government (a State wages tax had been imposed as from 1934-35 to help meet the depression emergency). Use was made of a wider concept of employment than is embodied in current series.

Because of war, the Federal Government investigated national manpower (the National Register, July 1939; the Civilian Register, June 1943; the Occupational Survey, June 1945). Federal pay-roll tax was imposed as from July 1941 and this new fiscal requirement was used to produce estimates of employment for all States and for Australia as a whole.

Pay-roll tax returns cover only a small proportion of wage earners on rural holdings and practically no private domestic servants; accordingly, these classes of workers were excluded entirely from the estimates.

### Current Series of Employment Statistics

In this chapter, it is intended to show employment details as from June 1956. The series from this date is based on comprehensive data (referred to as "benchmarks") derived from the Censuses of June 1954 and June 1961. Figures for periods between and subsequent to the two benchmark points of time are estimates obtained from three main sources, namely: (a) current pay-roll tax returns; (b) current returns from government bodies; (c) some other direct current records of employment (e.g. for hospitals). Data from these sources have been supplemented by estimates of the change in the number of wage and salary earners not covered by the foregoing collections. (The pre-1954 series used, as a benchmark, the Census of 1947.)

The benchmark figures are derived from particulars recorded for individuals on population census schedules, whereas the estimated monthly figures are derived mainly from reports supplied by employers, relating to enterprises or establishments. These two sources differ, in some cases, in scope and in reporting of industry; however, the industry dissection of the benchmark total has been adjusted, as nearly as may be, to an enterprise or establishment reporting basis. The industry classification used throughout the series is that of the Census of June 1961.

Pay-roll tax returns are lodged at present by all employers paying more than \$400 a week in wages (other than certain Commonwealth Government bodies, religious and benevolent institutions, public hospitals and other similar organisations specifically exempted under the *Pay-roll Tax Assessment Act* 1941-1967). At 30 June 1954 this Act required employers paying wages of more than \$160 a week to lodge returns. The exemption limit was raised to \$240 a week from 1 September 1954 and to the present level of \$400 a week as from 1 September 1957.



As previously explained, employees in rural industry and in private domestic service are not included in the estimates because of the inadequacy of current data. The terms "Employment", "Number Employed", "Employees" and "Wage Earners" used throughout are synonymous with, and relate to, "Wage and Salary Earners" on pay-rolls or in employment in the latter part of each month, as distinct from numbers of employees actually working on a specific date. They include some persons working part-time.

Figures for current months are subject to revision. As they become available, particulars of employment obtained from other Bureau collections, such as the annual factory census and the censuses and sample surveys of retail establishments, are used to check and, where necessary, to revise estimates in relevant sections. Now the results of the Census of 30 June 1966 are available it will be possible, with 1961 and 1966 benchmarks, to revise the complete series for the inter-censal period, if this should be necessary.

The following table gives estimated totals for employees in Tasmania at June and December of each year:

**Wage and Salary Earners in Civilian Employment, June and December**  
(Excluding Employees in Rural Industry and Private  
Domestic Service, and Defence Forces)  
(<sup>'000</sup>)

Year	June			December		
	Males	Females	Persons	Males	Females	Persons
1956 .. ..	67.6	22.4	90.0	68.6	22.1	90.7
1957 .. ..	68.2	22.2	90.4	69.1	22.3	91.4
1958 .. ..	69.5	22.9	92.4	70.0	22.7	92.7
1959 .. ..	70.4	23.2	93.6	71.8	23.7	95.5
1960 .. ..	72.6	24.5	97.1	74.1	25.1	99.2
1961 .. ..	73.2	24.9	98.1	73.6	24.8	98.4
1962 .. ..	73.6	25.5	99.1	75.0	25.4	100.4
1963 .. ..	74.9	25.5	100.4	76.9	26.7	103.6
1964 .. ..	77.4	27.1	104.5	77.9	27.7	105.6
1965 .. ..	78.4	28.1	106.5	80.4	29.5	109.9
1966 .. ..	81.1	29.8	110.9	82.6	30.8	113.4
1967 .. ..	82.6	30.9	113.5	..	..	..

The detailed study of employment trends requires examination of monthly figures, so the next table has been compiled to show totals of employees for each month:

**Wage and Salary Earners in Civilian Employment, Monthly Estimates**  
(Excluding Employees in Rural Industry and Private Domestic Service, and Defence  
Forces)  
(<sup>'000</sup>)

Month	Males			Females			Persons		
	1964	1965	1966	1964	1965	1966	1964	1965	1966
January ..	77.1	78.1	80.3	26.6	27.6	29.2	103.7	105.7	109.5
February ..	77.8	78.7	80.6	26.9	28.0	29.5	104.7	106.7	110.1
March ..	78.0	79.1	81.2	27.5	28.6	29.9	105.5	107.7	111.1
April ..	77.8	79.2	81.3	27.4	28.6	30.0	105.2	107.8	111.3
May ..	77.8	79.2	81.5	27.2	28.5	30.0	104.9	107.7	111.5
June ..	77.4	78.4	81.1	27.1	28.1	29.8	104.5	106.5	110.9
July ..	77.0	78.3	80.8	26.9	28.1	29.7	103.9	106.4	110.5
August ..	76.3	77.8	81.1	26.8	28.2	29.7	103.1	106.0	110.8
September ..	76.7	78.2	81.0	26.8	28.2	29.6	103.5	106.4	110.6
October ..	76.7	78.4	81.3	26.9	28.4	29.8	103.6	106.8	111.1
November ..	77.1	79.3	82.0	27.0	28.7	29.9	104.1	108.0	111.9
December ..	77.9	80.4	82.6	27.7	29.5	30.8	105.6	109.9	113.4

### Civilian Employees of Government Bodies

In Tasmania, as in other Australian States, a relatively high proportion of wage and salary earners is employed by government bodies operating at four levels: Commonwealth, State, Local and Semi-Government (with the complication that semi-government authorities may have been created by either the Commonwealth or the State). For the purposes of these statistics, government employees include persons working on government services such as railways, tramways, banks, post offices, power and light, air transport, education (including universities), broadcasting, television, police, public works, government factories, departmental hospitals and institutions, etc., as well as those engaged in administrative services.

In comparing the levels of employment in the government and private sectors, account should be taken of the fact that, in Tasmania as in other Australian States, there are many business undertakings under government control and ownership. Thus the government employment figures include not just administrative personnel but also bus drivers, air pilots, postmen, train drivers, engineers, construction workers, architects, carpenters, printers and others in a variety of non-clerical occupations. The employment figures in the private sector do not represent total civilian employment since they exclude workers in rural industry and private domestic service.

The following table shows the number of government employees in Tasmania according to the level of government:

**Civilian Employees of Government Bodies, June 1966**  
(\*000)

Particulars	Level of Government—			Total
	Commonwealth Government (a)	State Government (a)	Local Government	
Males .. ..	4.9	17.9	2.2	25.0
Females .. ..	1.5	4.8	0.2	6.5
Persons .. ..	6.4	22.7	2.4	31.5

(a) Includes semi-government bodies.

The next table shows the number of government employees at annual intervals and also the number of wage and salary earners working for private employers:

**Total Civilian Employees of Private Employers and Government Bodies (a)**  
(\*000)

June	Males Employed By		Females Employed By		Persons Employed By	
	Private Employers	Govt Bodies	Private Employers	Govt Bodies	Private Employers	Govt Bodies
1956 .. ..	47.2	20.4	17.6	4.8	64.8	25.2
1957 .. ..	47.4	20.8	17.3	4.9	64.7	25.7
1958 .. ..	47.4	22.1	17.8	5.1	65.2	27.2
1959 .. ..	48.1	22.3	18.0	5.2	66.1	27.5
1960 .. ..	50.3	22.3	19.1	5.4	69.4	27.7
1961 .. ..	51.3	21.9	19.4	5.5	70.7	27.4
1962 .. ..	51.2	22.4	20.0	5.5	71.2	27.9
1963 .. ..	51.7	23.2	19.6	5.9	71.3	29.1
1964 .. ..	53.6	23.9	21.0	6.0	74.6	29.9
1965 .. ..	54.1	24.4	21.7	6.3	75.8	30.7
1966 .. ..	56.1	25.0	23.3	6.5	79.4	31.5
1967 .. ..	57.3	25.3	24.1	6.8	81.4	32.1

(a) Excludes from (i) Private Sector: employees in rural industry and private domestic service, and from (ii) Government Sector: defence forces; State and local government employees engaged in rural industry, and any employees of government emergency house-keeper services.

### Industrial Classification of Employees

In the following table, wage and salary earners in civilian employment are classified according to industry:

#### Wage and Salary Earners in Civilian Employment: Industry Groups and Sub-Groups, June 1966

(Excluding Employees in Rural Industry and Private Domestic Service, and Defence Forces)  
(‘000)

Industry Group and Sub-Group	Males	Females	Persons
Forestry, Fishing and Trapping .. .. .	1.0	..	1.0
Mining and Quarrying .. .. .	3.1	0.1	3.2
Manufacturing .. .. .	25.5	6.6	32.1
Electricity, Gas, Water and Sanitary Services .. .. .	3.4	0.3	3.7
Building and Construction .. .. .	10.7	0.2	10.9
Transport and Storage—			
Road Transport and Storage.. .. .	2.3	0.2	2.5
Shipping and Stevedoring .. .. .	2.4	0.1	2.5
Rail and Air Transport .. .. .	1.7	0.1	1.8
Total .. .. .	6.4	0.4	6.8
Communication .. .. .	3.0	0.8	3.9
Finance and Property—			
Banking .. .. .	1.3	0.7	2.0
Other .. .. .	1.4	1.0	2.4
Total .. .. .	2.7	1.7	4.4
Commerce—			
Retail Trade .. .. .	6.8	5.7	12.5
Wholesale and Other Commerce .. .. .	5.8	0.9	6.7
Total .. .. .	12.6	6.5	19.1
Public Authority Activities (n.e.i.) .. .. .	4.6	1.5	6.1
Other Industries—			
Health, Hospitals, etc. .. .. .	1.3	4.3	5.5
Education .. .. .	2.5	3.6	6.1
Amusement, Hotels, Personal Service, etc... .. .	2.0	2.7	4.7
Other (a) .. .. .	2.2	1.2	3.4
Total .. .. .	8.0	11.7	19.7
Grand Total .. .. .	81.1	29.8	110.9

(a) Comprises Law, Order and Public Safety; Religion and Social Welfare; Other Community and Business Services.

The analysis of wage and salary earners by industry groups clearly indicates “manufacturing” as the predominant activity. Unfortunately, employees in rural industry are excluded from the series so it is not possible to compare employment in primary, secondary and tertiary industries on the basis of the data appearing in the table. (“Employment on Rural Holdings” is described in Chapter 6 but the seasonal character of this work makes it difficult to estimate the level of rural employment in any given month.) Attention is drawn to the relatively minor level of employment in “Public Authority Activities (n.e.i.)”; the civilian employees of government bodies shown in a previous table have been classified according to their appropriate industry group (e.g. transport, communication, health, education, etc.) and only those not included in a specified group appear in this item.

#### Industrial Classification of the Work Force and of Employees

The Census of 30 June 1966 provides an analysis of the total *work force* (including those engaged in rural industry); the percentage in each broad

category was as follows: *primary production* (fishing, hunting, rural industries, forestry), 11.69; *mining and quarrying*, 2.29; *manufacturing*, 23.05; *electricity, gas, water and sanitary services*, 2.72; *building and construction*, 9.70; *transport and storage*, 6.01; *communication*, 2.64; *finance and property*, 3.10; *commerce* (wholesale and retail), 15.59; *public authority (n.e.i.) and defence services*, 3.73; *community and business services (including professional)* (e.g. schools, hospitals, etc.), 11.87; *amusement, hotels and other accommodation, cafes, personal service, etc.*, 5.62; *industry not stated*, 1.99; *total*, 100.00.

As previously explained, wage and salary earners are only one part of the work force but the analysis in the previous paragraph indicates the importance of tertiary industry in today's community. If the *primary* group is combined with *mining and quarrying*, only 14 per cent of the work force was engaged in the extraction of raw materials; a further 23 per cent was engaged in manufacturing. In other words, less than 40 per cent of the work force was engaged in primary and secondary industries as defined for statistical purposes.

The next table specifies the main industrial groups and shows the industrial classification of *civilian employees* at annual intervals:

**Wage and Salary Earners in Civilian Employment: Main Industry Groups**

(Excluding Employees in Rural Industry and Private Domestic Service, and Defence Forces)  
(‘000)

June	Mining and Quarrying	Manufacturing (a)	Building and Construction	Transport, Storage and Communication	Retail Trade	Wholesale Trade, etc; Finance, Property	Public Authority (n.e.i.); Community Services, etc. (b)	Amusement, Hotels, Personal Service, etc.
MALES								
1962	3.3	23.0	9.6	9.3	6.2	7.7	8.6	1.8
1963	3.2	23.5	9.9	9.1	6.5	7.7	9.2	1.8
1964	3.1	24.1	10.1	9.3	6.8	8.3	9.5	1.9
1965	3.1	24.5	10.1	9.2	6.9	8.3	10.0	1.9
1966	3.1	25.5	10.7	9.4	6.8	8.5	10.6	2.0
1967	3.2	26.2	11.1	9.3	6.6	8.6	10.9	2.1
FEMALES								
1962	0.1	5.6	0.1	1.1	5.0	2.2	8.9	2.2
1963	0.1	5.2	0.1	1.1	5.0	2.2	9.3	2.2
1964	0.1	5.8	0.2	1.1	5.2	2.3	9.6	2.5
1965	0.1	5.9	0.2	1.2	5.4	2.4	10.0	2.6
1966	0.1	6.6	0.2	1.2	5.7	2.6	10.5	2.7
1967	0.1	6.9	0.2	1.2	5.7	2.6	11.0	2.9
PERSONS								
1962	3.4	28.6	9.7	10.4	11.2	9.9	17.5	4.0
1963	3.3	28.7	10.1	10.2	11.5	9.9	18.5	4.0
1964	3.2	29.9	10.3	10.4	12.0	10.6	19.1	4.4
1965	3.2	30.4	10.3	10.4	12.3	10.7	20.0	4.5
1966	3.2	32.1	10.9	10.7	12.5	11.1	21.1	4.7
1967	3.3	33.1	11.3	10.6	12.4	11.1	22.0	5.0

(a) Includes employees engaged in selling and distribution, etc. as well as those occupied directly in manufacturing activities.

(b) Includes Law and Order, Religion and Social Welfare, Health Services, Education and Other Community and Business Services.

## UNEMPLOYMENT

## Historical

The total of persons "unemployed" has been recorded by the Bureau of Census and Statistics at the dates of successive population censuses. The measurement of unemployment is complicated by definitional problems since persons normally in the work force, but not having a job at the time of a census, may be in this position for reasons other than those associated with scarcity of employment. The following table records data from the Censuses of 1921 and 1933:

Work Force and Unemployment, Censuses of 1921 and 1933

Particulars	Census, 4 April 1921			Census, 30 June 1933		
	Males	Females	Persons	Males	Females	Persons
Work Force (a) ..	65,998	14,001	79,999	69,226	16,861	86,087
"Unemployed" ..	3,606	510	4,116	10,226	1,442	(b) 11,668
"Unemployed" as Percentage of Work Force ..	5.5	3.6	5.1	14.8	8.6	13.6

(a) Comprises employers, self-employed, employees, helpers and unemployed.

(b) Excludes 4,944 persons (4,193 males) employed part-time, including those on sustenance or relief work. Such persons were classified as employees.

Those describing themselves as unemployed were further invited to state the cause. The result from the Census of 1933 is quoted below:

Causes of Unemployment, Census of 30 June 1933

Cause of Unemployment	Number			Proportion of Total (Per cent)		
	Males	Females	Persons	Males	Females	Persons
Scarcity of Employment .. ..	8,883	1,002	9,885	86.9	69.5	84.7
All Other Causes (a) ..	1,343	440	1,783	13.1	30.5	15.3
Total ..	10,226	1,442	11,668	100.0	100.0	100.0

(a) Includes sickness, accident, industrial dispute, voluntarily idle and cause not stated.

From the 1947 Census onwards, the enquiry was broadened to include all persons (usually engaged in industry, business, trade, profession or service) who were out of a job and "not at work" at the time of the census for whatever reason, including reasons not normally associated with unemployment.

*"Not at Work"*

In the next table, a summary is made of data from the Censuses of 1947, 1954 and 1961, the principal comparison being the respective levels of the work force and of those classified "Not at Work".

As previously defined, "Not at Work" includes those who stated that they were usually engaged in work but were not actively seeking a job at the time of the census by reason of sickness, accident, etc. or because they were on strike, changing jobs or temporarily laid off, etc. It includes also persons able and

willing to work but unable to secure employment, as well as casual and seasonal workers not actually in a job at the time of the census. The numbers shown as "Not at Work", therefore, do not represent the number of unemployed available for work and unable to obtain it.

The term "Not at Work" does not apply to those who had a job but happened to be absent from it at census date due to sickness or leave.

**Work Force and Persons "Not at Work"**  
**Censuses of 1947, 1954 and 1961**

30 June	Work Force (a)	Persons "Not at Work"	
		Number	Proportion of Work Force (Percent)
1947—Males .. ..	80,201	1,867	2.3
Females .. ..	20,117	481	2.4
Persons .. ..	100,318	2,348	2.3
1954—Males .. ..	93,976	1,215	1.3
Females .. ..	24,232	279	1.2
Persons .. ..	118,208	1,494	1.3
1961—Males .. ..	101,289	3,194	3.2
Females .. ..	29,628	896	3.0
Persons .. ..	130,917	4,090	3.1

(a) Comprises employers, self-employed, employees, helpers and those "not at work".

#### "Unemployed"

In the 1966 Census, the following new question was asked: Did the person look for work last week? Answer *yes* or *no*. (Note: "Looking for work" means (i) being registered with the Commonwealth Employment Service, or (ii) approaching prospective employers, or (iii) placing or answering advertisements, or (iv) writing letters of application, or (v) awaiting the result of recent applications.)

After the exclusion of persons who were already employed, but who were seeking alternative employment, the following data were obtained from this new approach:

**Work Force and Unemployed Persons, 1966 Census**

30 June	Work Force	Unemployed	
		Number	Proportion of Work Force (Percent)
Males .. ..	106,552	1,146	1.1
Females .. ..	40,763	971	2.4
Persons .. ..	147,315	2,117	1.4

It should be noted that "not at work" in the 1947-1961 table is different in concept from the "unemployed" category in the 1966 table.

#### Registrations With Commonwealth Employment Service

The Commonwealth Employment Service (C.E.S.) was established by Federal legislation under Section 47 of the *Re-establishment and Employment Act* 1945, and under the *Social Services Legislation Declaratory Act* 1947. The

principal function of this service is to provide facilities in relation to employment for the benefit of persons seeking to change or obtain employment, or seeking to engage labour, and to provide facilities to assist in bringing about a high and stable level of employment throughout the Commonwealth.

The C.E.S. functions within the Employment Division of the Department of Labour and National Service on a decentralised basis. The central office is in Melbourne and there is a regional office in Hobart with district employment offices in Hobart, Launceston, Devonport and Burnie, and agencies at Smithton and Huonville.

All applicants for unemployment benefits provided under the Commonwealth *Social Services Act 1947-1967* must register at a district employment office or agency of the C.E.S. which is responsible for certifying whether or not suitable employment is available. Claims for unemployment benefits are paid by the Department of Social Services; country residents remote from an employment office or agency may claim by mail.

The establishment of the C.E.S. created two new methods of measuring fluctuations in unemployment:

- (1) the number of persons registered for employment with the C.E.S. at the end of each month; and
- (2) the number of persons receiving unemployment benefit from the Department of Social Services at the end of each month.

#### "Registered for Employment"

In the following table, the persons shown are those who claimed, when registering with the C.E.S., *that they were not employed* and who were recorded on the last Friday in the month as unplaced. The count includes those referred to employers and those who may have obtained employment without notifying the C.E.S.; persons receiving unemployment benefit are included.

**Persons Registered for Employment With Commonwealth Employment Service  
At June and December of Each Year (a)**

Year	On Register, June (a)			On Register, December (a)		
	Males	Females	Persons	Males	Females	Persons
1956 .. ..	359	194	553	494	391	885
1957 .. ..	1,197	388	1,585	1,134	506	1,640
1958 .. ..	1,568	663	2,231	1,086	589	1,675
1959 .. ..	1,373	736	2,109	1,108	726	1,834
1960 .. ..	1,389	815	2,204	1,581	1,371	2,952
1961 .. ..	2,328	885	3,213	3,136	2,150	5,286
1962 .. ..	2,476	1,133	3,609	2,956	2,356	5,312
1963 .. ..	2,112	1,315	3,427	2,713	2,210	4,923
1964 .. ..	1,812	1,156	2,968	1,860	1,598	3,458
1965 .. ..	1,260	975	2,235	1,426	1,350	2,776
1966 .. ..	849	846	1,695	1,447	1,260	2,707
1967 .. ..	1,157	959	2,116	..	..	..

(a) Recorded as unplaced on the Friday nearest the last day of the month.

In interpreting the level of registration, account should be taken of the fact that registration is a *voluntary act*. Thus, whilst an increase in registrations may normally be taken to indicate an increase in unemployment, theoretically, at least, it could merely indicate wider use of the facilities offered by the C.E.S.

The table that follows has been compiled to show the number registered for employment at the end of each month. The monthly figures are subject to pronounced seasonal influences, the most obvious being the effect of school-leavers on registration in December and January.

**Persons Registered for Employment With Commonwealth Employment Service  
At End of Each Month**

Month (a)	1964			1965			1966		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
January ..	2,558	2,115	4,673	1,724	1,507	3,231	1,408	1,356	2,764
February ..	1,908	1,573	3,481	1,317	1,260	2,577	1,004	1,319	2,323
March ..	1,286	1,259	2,545	724	970	1,694	531	851	1,382
April ..	1,334	1,068	2,402	791	919	1,710	628	746	1,374
May ..	1,484	1,058	2,542	995	986	1,981	700	737	1,437
June ..	1,812	1,156	2,968	1,260	975	2,235	849	846	1,695
July ..	2,194	1,249	3,443	1,248	960	2,208	1,018	811	1,829
August ..	1,980	1,167	3,147	1,046	886	1,932	957	762	1,719
September ..	1,819	1,145	2,964	965	859	1,824	871	784	1,655
October ..	1,541	1,085	2,626	862	875	1,737	881	773	1,654
November ..	1,280	1,056	2,336	686	789	1,475	874	783	1,657
December ..	1,860	1,598	3,458	1,426	1,350	2,776	1,447	1,260	2,707

(a) At Friday nearest last day of month.

**Persons Receiving Unemployment Benefit**

It is possible for a person to register as unemployed but make no claim for unemployment benefit. On the other hand, a person claiming unemployment benefit is required to register for employment. The next table gives details of persons receiving unemployment benefit each month:

**Monthly Number of Persons Receiving Unemployment Benefit (a)**

Month (a)	1959	1960	1961	1962	1963	1964	1965	1966
January ..	411	397	291	1,385	1,186	1,191	876	404
February ..	454	371	323	1,225	1,093	1,159	828	312
March ..	398	286	366	913	964	885	542	217
April ..	446	352	689	1,093	1,106	907	538	219
May ..	497	424	998	1,199	1,272	1,171	728	311
June ..	670	500	1,336	1,778	1,777	1,399	926	433
July ..	798	587	1,814	1,937	1,995	1,702	937	512
August ..	932	590	2,023	2,018	1,948	1,732	813	494
September ..	816	596	2,182	1,827	1,939	1,595	763	470
October ..	714	452	1,673	1,588	1,669	1,395	557	453
November ..	600	367	1,575	1,580	1,447	1,115	484	404
December ..	546	319	1,398	1,432	1,173	1,060	465	434

(a) Number at the last Saturday of month. Source, Department of Social Services.

The number of males and females in receipt of unemployment benefit is shown for June of each year:

**Persons Receiving Unemployment Benefit (a) At June.**

Particulars	1959	1960	1961	1962	1963	1964	1965	1966
Males ..	502	371	1,060	1,343	1,123	905	517	224
Females ..	168	129	276	435	654	494	409	209
Persons ..	670	500	1,336	1,778	1,777	1,399	926	433

(a) Number at the last Saturday of June in each year. Source, Department of Social Services.



### Comparison of Unemployment Data

The following table shows those classified as "Not at Work" at the Census of 1961, those unemployed at the Census of 1966 and also other measures of unemployment available from the Commonwealth Employment Service and the Department of Social Services:

Unemployed Persons, Persons Registered for Employment and Persons Receiving Unemployment Benefit, 1961 and 1966						
Particulars	June 1961			June 1966		
	Males	Females	Persons	Males	Females	Persons
CENSUS OF 30 JUNE						
Unable to Secure Employment (a)	2,085	507	2,592	1,146	971	2,117
Temporarily Laid Off .. ..	376	81	457	..	..	..
Illness .. .. .	398	156	554	..	..	..
Accident .. .. .	106	10	116	..	..	..
Industrial Dispute .. ..	4	1	5	..	..	..
Other .. .. .	225	141	366	..	..	..
Total "Not at Work" ..	3,194	896	4,090	..	..	..
DEPARTMENT OF LABOUR AND NATIONAL SERVICE (b)						
Registered for Employment (b) ..	2,328	885	3,213	849	846	1,695
DEPARTMENT OF SOCIAL SERVICES (c)						
Receiving Unemployment Benefit (c) .. .. .	1,060	276	1,336	224	209	433

(a) Figures for 1966 correspond with "unemployed".

(b) At Friday nearest last day of June.

(c) At last Saturday of June.

The comparison for 1954 was as follows: (i) "unable to secure employment" (Census): males, 329; females, 74; (ii) registered for employment: males, 438; females, 117; (iii) receiving unemployment benefit: males, 96; females, 13. Totals for the three categories just listed were: (i) 403 persons; (ii) 555 persons; (iii) 109 persons.

## INDUSTRIAL LEGISLATION AND CONDITIONS

### Apprenticeship

*Apprenticeship Commission:* The Apprenticeship Commission is a statutory authority set up under the *Apprentices Act* 1942. The purpose of the Act is to encourage, regulate and control the employment of apprentices in certain proclaimed trades; to ensure successful trade careers for Tasmanian youths and to provide properly trained craftsmen for industry.

The Commission, which meets each month, consists of two representatives of trades unions, two of employers' organisations, and the President.

Through supervisors who visit employers' establishments and technical colleges, the Commission is able to (i) inquire into any trade to determine which employers have the necessary knowledge and facilities to train appren-

tices, (ii) to generally oversight both theoretical and practical training, and (iii) ensure observance of the terms of apprenticeship contracts. Where, in their role as advisors to both employers and apprentices, the supervisors are unable to solve problems, the matters are referred to the Commission for determination.

*Apprenticeships:* No apprenticeship can commence without the Commission's consent. After a probationary period, indentures confirming the apprenticeships must be signed and registered with the Commission.

The signing of indentures imposes conditions on both parties; the apprenticeship may not be assigned, suspended or terminated without the Commission's authority; any doubts about duties and liabilities, rights or other disputed matters arising from the indentures have to be referred to the Commission for direction.

Employers are required to submit annual reports on the progress of apprentices; technical colleges submit similar terminal reports. All unsatisfactory reports are investigated and appropriate measures taken.

Four bursaries (two \$300, two \$150) are awarded each year to outstanding apprentices, and a fifth bursary (\$450) is awarded to "The Apprentice of the Year". These bursaries are given to assist the most promising apprentices secure wider trade experience with another employer as part of the apprenticeship training, either in Tasmania, or another State. Arrangements are made by the Commission to suit the bursary holders' wishes.

*Numbers of Apprentices:* Approximately 120 trades have been proclaimed as apprenticeship trades in Tasmania. As at 30 June 1966, 3,046 apprentices were employed, 902 of whom were registered during 1965-66; 628 apprenticeships were completed during the same period. (In addition, 466 youths were listed as probationers at 30 June 1966.)

### Industrial Accidents

*Source of Statistics:* Industrial accident statistics in Tasmania are compiled from returns submitted under the *Workers' Compensation Act* by insurance companies, self-insurers and State Government departments. Among workers excluded from coverage are employees of the Commonwealth, police officers and self-employed persons. (See "Workers' Compensation" later in this chapter.)

*Definition:* An industrial accident is defined as a work injury causing either death, or absence of the injured person from work for one day or more. For statistical purposes, an accident causing injury to more than one person is counted as more than one accident.

*Accidents:* In 1965-66, there were 8,148 industrial accidents of which 14 were fatal; 7,586 involved males and 562 involved females. The total time lost from non-fatal accidents amounted to 15,867 weeks of five days (or approximately 324 "worker years").

The most common accident factors in the case of males were: manual handling, 36.8 per cent; persons falling, slipping, stepping or striking against objects, 24.8 per cent; falling objects, earth and flying objects, 12.8 per cent.

*Claims and Premiums:* In 1965-66, insurers under the *Workers' Compensation Act* paid \$2.59m in premiums. Insurance companies paid out \$1.53m in claims.

### Industrial Safety and Accident Prevention

*Responsibility:* The Department of Labour and Industry is concerned with industrial safety and accident prevention, and discharges this function with the knowledge that there are over 8,000 accidents involving lost time each year among the population covered by the *Workers' Compensation Act*.

*Cause of Industrial Accidents:* Two major factors are held to underly most industrial accidents, namely (i) unsafe working conditions; (ii) unsafe actions; in some accidents, both factors may be operative.

*Prevention:* Prevention obviously has a two-fold aspect: (i) inspection programmes aimed at pin-pointing unsafe working conditions; (ii) education and training designed to eliminate unsafe actions.

*Training:* The problem of training is basically one of educating supervisors and foremen since an attitude of "safety consciousness" has to start with management. Formal training in industrial safety and accident prevention can be had at Hobart and Launceston Technical Colleges in two-year four-subject courses. Informal training is arranged by the Department of Labour and Industry, the two-day courses available being based on the concept of "training within industry". Single lectures on industrial and farm safety are also available and the Department makes arrangements to provide lecturers on request.

*Safety Officers:* It is expected that large undertakings will have their own specialists concerned with safety matters. However, government safety officers are available to industries which may use their services for a short period. Their function is purely advisory—they are not inspectors—and they assist organisations which wish to set up safety programmes or to reduce their accident rates.

*Research Facilities:* The Department carries out a safety research programme. A comprehensive classification of safety data and information is maintained from local, interstate and overseas sources.

### Workers' Compensation

*A Bill liberalising workers' compensation was passed by the House of Assembly in September 1967 but had not been dealt with by the Legislative Council when the following text was finalised.*

*Legislation:* Workers' Compensation legislation in Tasmania was first introduced in 1910 but it was not until 1927 that the Parliament introduced the principle of compulsory insurance against the risk of personal injury being caused to workers in the course of their employment. The machinery for compulsory insurance and compensation is embodied in the *Workers' Compensation Act 1927*, as amended.

*Purpose and Limitations:* The principle of the Act is provision for compensation on the death or disablement of a worker, if occasioned by personal injury caused in the course of employment. In 1966, the Act was amended to extend compensation cover for injuries sustained by a worker travelling in either direction between his residence and place of employment. The Act provides that this cover to and from work applies only for reasonably direct journeys, except for breaks or deviations connected with the worker's employment. Self-inflicted injuries are excluded and certain limitations are applied where serious or wilful misconduct is involved.

Monetary benefits have fixed limits. Over and above weekly payments during incapacity and any lump sum entitlement for scheduled injuries, all

reasonable costs of medical, hospital, nursing and ambulance services, and in the event of death, the reasonable costs of burial or cremation, are paid up to a maximum of \$2,500.

*Non-Contributory Basis:* The Act is non-contributory, i.e. the worker does not pay into any fund for the provision of benefits. The employer is obliged to insure with an approved insurance company against the liability to compensation, except in certain cases where he is allowed to carry his own risk.

In any case where an employer has no paid up insurance policy, where the employer cannot be found or where the employer or his insurance company has become insolvent, the worker may claim against a "nominal insurer" as if he were the employer.

Amounts paid by the "nominal insurer" are provided by all insurance companies carrying on Workers' Compensation business in the State. Each company is required to contribute to these types of claim in proportion to the premium income derived from policies effected under the Act during the preceding year.

*Compensation on Death:* Where death results from an injury, the compensation payable to dependants wholly dependent on the worker's earnings is 284 times the current Hobart base rate, plus seven times the current Hobart base rate for each worker's child under 16 years at the date of injury. Partial dependants are entitled to proportionate amounts. ("Current", in this context, means the base rate at the time of injury.)

*Base Rate* means an amount 40 cents below the minimum weekly wage payable to an unskilled adult male employed at Hobart under the Federal Metal Trades Award (in July 1967, the minimum weekly wage under this award was \$38.15).

*Weekly Payments During Incapacity:* When the worker is totally incapacitated, the following weekly payments apply: (i) in respect of the worker—70 per cent of the base rate; (ii) in respect of a dependent wife—17 per cent of the base rate; (iii) in respect of a dependent child under 16 (or a full-time student under 21)—nine per cent of the base rate. The application of these formulae, however, is subject to restrictions set out in the next section headed "Maximum Limits of Weekly Payments".

When a worker is partially incapacitated, he receives the rates appropriate to total incapacity reduced by application of the following factor:

$$\frac{\text{Loss of Weekly Earnings}}{\text{Average Weekly Earnings}}$$
 ("Average weekly earnings", in this context, refers to his earnings before the date when the injury was sustained.)

*Maximum Limits of Weekly Payments:* The worker's average weekly earnings before injury are taken into account in fixing maximum weekly compensation payments, the formulae being as follows (with B as base rate):

- (i) worker's average weekly earnings not greater than  $B \times 1.20$ ; maximum payment not to exceed 85 per cent of his average weekly earnings;
- (ii) worker's average weekly earnings between  $B \times 1.20$  and  $B \times 1.36$ ; maximum payment not to exceed the base rate plus two per cent;
- (iii) worker's average weekly earnings greater than  $B \times 1.36$ ; maximum payment not to exceed 75 per cent of his average weekly earnings.

In cases of the partial or total incapacity of any worker, the total liability of an employer in making weekly compensation payments is limited to 284 times the current Hobart base rate.

*Lump Sum Payments:* In addition to weekly incapacity payments, lump sum payments are made in respect of the loss of members of the body or of bodily powers or functions. In the Act, specific injuries are listed and the single amount payable is related to the current Hobart base rate (specified as B in the following examples): (i) loss of both feet,  $B \times 284$ ; (ii) loss of leg,  $B \times 138$ ; (iii) loss of thumb,  $B \times 51$ ; (iv) loss of great toe,  $B \times 35$ , etc. Where more than one of these injuries are suffered in the same accident, a maximum payment equal to  $B \times 532$  may be paid.

### Factory Legislation and Inspection

*Legislation:* Working conditions in factories in Tasmania are covered under the *Factories, Shops and Offices Act 1965* as amended which makes provision with respect to the health, welfare, safety, and working conditions of persons employed in factories, shops, and offices and the sanitation of factories, shops, and offices, and other incidental matters such as trading hours of shops, etc. Factories are designated in two classes: (a) premises in which four or more persons including the occupier are employed ("occupier" in this context may mean the employer, manager, foreman, agent or other person apparently in charge); (b) a small factory where less than four are employed.

*Registration Fees:* All factories are required to register with the Department of Labour and Industry; fees date from 1 January each year. Fees for registration range from \$2 for small factories, up to \$40 for factories employing one hundred persons, and \$20 for each additional hundred.

*New Factories:* The *Local Government Act* requires that plans and specifications for proposed new factory buildings be submitted to the Department of Labour and Industry before being approved by the local government authority. This ensures compliance of the proposed factory buildings with regulations in regard to natural lighting, ventilation, fire exits, fire protection, stairs, access ladders, platforms, sanitary conveniences, washing facilities, change and meal rooms and general safety.

*Application for Registration:* Following application to the Secretary for Labour for registration of premises to be used as a factory, an inspection is made. If the premises are suitable without alteration, a certificate of registration is issued. If alterations are required, a permit to occupy may be issued for a limited time, whilst renovations, to comply with the Act's requirements, are made. Once the factory is operating, a further inspection is made to study processes and working conditions. Any unsafe situations and practices are drawn to the attention of management.

*Inspection:* After the initial registration, routine inspections are made at least once a year by officers of the Department, to remedy or prevent unsafe conditions or unsafe practices which may have developed. Particular attention is given to overcrowding, ventilation, natural and artificial lighting, conditions of floors, etc. Access ladders and platforms are checked for compliance with prescribed standards. If contamination of the atmosphere by dust or toxic fumes is present, means of removal are studied. Safe handling and storage of dangerous substances; the provision of fire protection, fire exits, escapes and exit drills; adequacy of sanitary conveniences, washing, change and meal rooms; the provision of safety equipment, etc. require periodic checking.

*Accident Reports:* Where accidents involving the use of machinery incapacitate workers for seven days or more, factory management is required to notify the Department. These accidents are investigated in an endeavour to eliminate recurrences. See "Industrial Safety and Accident Prevention" in this chapter.

*Construction Sites:* Regulations also apply to working conditions on construction works and provide for suitable sanitary, washing and general amenities, in addition to general safety precautions. Where persons are required to work on any construction works at a height of not less than 20 feet above the ground or at a depth of not less than five feet below ground level, the provision of safety helmets is compulsory.

### The Inspection of Machinery

*Legislation:* Generally, the *Inspection of Machinery Act* 1960 as amended applies to all machinery of one or more horsepower used in manufacturing or industrial processes. Machines not covered by the Act may be made subject to the Act by proclamation. The Act specifically includes boilers, pressure vessels, lifts and cranes. The Department of Labour and Industry is responsible for application of the Act which is administered by a chief inspector and district inspectors at Hobart, Launceston and Burnie.

*Machinery Inspection:* An owner (defined in the Act as a person, not necessarily the owner, who has the control of or is in charge of machinery) acquiring machinery as defined in the Act is required to notify the nearest district inspector to obtain a certificate of safety. Inspection may reveal the need for additional safeguards before permission can be given to operate the machine; alternatively the owner may be given a set period in which to comply.

All machinery subject to the Act is inspected annually, and all safeguards checked for efficient working and adherence to safety standards. Defects are pointed out to the management and, where necessary, formal notice may be served. If the inspection is satisfactory or, alternatively, when the defects are remedied, the certificate of safety is renewed. In addition to routine inspections, special investigations may arise from accidents, union representations or modifications to machinery already certified.

*Lifts Inspection:* Lifts, cranes and hoists, from an inspection point of view, are treated as machinery but there is the additional requirement that design approval must be obtained before construction begins; tests, including beam deflections under load, are made on completion. The standards set are those specified by the Standards Association of Australia.

*Boilers Inspection:* Before boilers or pressure vessels are installed, the design must be approved by the Chief Inspector and conform with specified Australian or overseas standards. Inspections are made on installation and thereafter annually, unless a special investigation is required arising from plant modification, accidents or from employers' or employees' requests. The operator of pressure plant must hold a certificate of competency.

### Introduction

### Shop Trading Legislation

*In December 1967, Parliament lifted all restrictions on shop trading hours, but continued the rostering of petrol stations. The next section describes the pre-December position.*

The first Tasmanian *Shops Act* was passed in 1911, its objects being to provide fixed closing hours, to introduce a five and a half day shopping week, and to limit working hours for females and children. A year before, Parliament had introduced other types of control over industrial conditions with the *Factories Act* 1910 and the *Wages Board Act* 1910.

A new *Shops Act* became operative in 1925 and amendments made in 1937 had the effect of introducing a five-day shopping week into the City of Hobart and the Municipality of Glenorchy; in the rest of the State, the five and a half day shopping week continued.

*Factories, Shops and Offices Act 1958*

The *Shop Act* provisions were incorporated in the *Factories, Shops and Offices Act 1958* as amended in 1965, and Saturday closing was extended from 1 January 1966, to areas of the municipalities of Clarence and Kingborough within six miles of the Hobart G.P.O. (For convenience, the whole area is called the "Hobart Zone" in the rest of this section.)

*Trading Hours*

Since 1 January 1966, trading has been permitted for shops not subject to special provisions, from 6 am to 6 pm, Mondays to Thursdays, 6 am to 9 pm on Fridays throughout the State, and outside the Hobart zone, on Saturday mornings from 6 am until noon.

In practice, most of the larger establishments are open only 45 hours a week; in Hobart from 9 am to 6 pm five days a week; in Launceston 9 am to 5.30 pm five days a week and from 9 am to 11.30 am on Saturdays. Supermarkets throughout the State tend to remain open until 9 pm on Friday evenings.

Longer hours of trading are permitted for "small shops" and shops selling "exempted goods".

*Small Shops*

A small shop is one in which no more than three persons, including the shopkeeper, work at any time, provided that the shopkeeper is not acting as the agent of another person, and is not employed or engaged in any other business. Small shops, as just defined, may remain open at any time except that they may sell newsvendor goods (other than daily newspapers) only within the hours applying to newsvendors and must observe certain restrictions on petrol sales.

*Sale of Exempted Goods*

Exempted goods are listed under the Act and include a variety of food-stuffs, plants, cigarettes, etc., souvenirs, stationery, cut flowers and photographic films. Shops selling nothing but exempted goods are free to trade without restriction.

*Special Categories of Trading*

In addition to the provisions relating to small shops and the sale of exempted goods, the Act specifies special working hours for certain types of trading.

*Chemists:* In addition to observing a five day week, chemists may stay open from 7.00 pm to 8.30 pm on any Saturday, Sunday or holiday, and may be opened at any time for the purpose of supplying only medicine or surgical requirements.

*Eating Houses:* Places supplying meals and refreshments, and dealing only in exempted goods, may be kept open at any time.

*Newsvendors:* These are allowed 9 pm closing five days a week with provision for morning and evening opening on Saturdays; Sunday opening is permitted subject to certain limitations.

*Butchers:* Butchers in the "Hobart Zone", the City of Launceston and the towns of Burnie, Devonport, Penguin and Ulverstone are restricted to a five day week with 6.00 pm closing; elsewhere normal shop hours (i.e. with Saturday opening) apply.

*Petrol Filling Stations:* Ordinary permitted hours are 6.30 am to 7.30 pm on week days (with an extra two hours on Friday evening) and 12.30 pm closing on Saturdays. However, a system operates to give the public an opportunity to buy petrol outside these hours and on Sundays at rostered filling stations.

## PRICES

### Retail Prices and Price Indexes

#### General

The description of price indexes that follows is, in the main, an abridgement of the text appearing in the *Labour Report* of the Commonwealth Bureau of Census and Statistics; this report is a basic document in any serious study of official price indexes. A full statement appears in the *1967 Year Book*.

#### Collection of Retail Price Information

Retail prices of food and groceries and average rentals of houses for years extending back to the year 1901 were collected by the Commonwealth Statistician. As far back as 1856, the average retail prices of provisions at Hobart were published in the *Statistics of Tasmania*.

Retail prices of a more extensive range of commodities (including clothing) and certain services in common demand have been ascertained at frequent and regular intervals by the Commonwealth Statistician since 1923. Comparable information is available for the month of November in each year from 1914 to 1922 for each of the six capital cities.

#### Retail Price Index Numbers from 1901

The index numbers that follow are presented as a continuous series, but they give only a broad indication of long-term trends in retail price levels. They are derived by linking a number of indexes that differ greatly in scope. The successive indexes used are: 1901-1914, the "A" Series; from 1914 to 1946-47, the "C" Series; from 1946-47 to 1948-49, a composite of Consumer Price Index Housing Group (partly estimated) and "C" Series excluding rent; and from 1948-49, the Consumer Price Index. It should be noted that this long-term series is for the six capital cities combined, *not for Hobart alone*.

**Retail Price Index Numbers from 1901**  
**Six State Capital Cities Combined**  
(Base—Year 1911 = 100)

Year	Index Number	Year	Index Number	Year	Index Number	Year	Index Number
1901 ..	88	1919 (a) ..	170	1935 ..	138	1951 ..	313
1904 ..	86	1920 (a) ..	193	1936 ..	141	1952 ..	367
1905 ..	90	1921 (a) ..	168	1937 ..	145	1953 ..	383
1906 ..	90	1922 (a) ..	162	1938 ..	149	1954 ..	386
1907 ..	90	1923 ..	166	1939 ..	153	1955 ..	394
1908 ..	95	1924 ..	164	1940 ..	159	1956 ..	419
1909 ..	95	1925 ..	165	1941 ..	167	1957 ..	429
1910 ..	97	1926 ..	168	1942 ..	181	1958 ..	435
1911 ..	100	1927 ..	166	1943 ..	188	1959 ..	443
1912 ..	110	1928 ..	167	1944 ..	187	1960 ..	459
1913 ..	110	1929 ..	171	1945 ..	187	1961 ..	471
1914 (a) ..	114	1930 ..	162	1946 ..	190	1962 ..	469
1915 (a) ..	130	1931 ..	145	1947 ..	198	1963 ..	472
1916 (a) ..	132	1932 ..	138	1948 ..	218	1964 ..	483
1917 (a) ..	141	1933 ..	133	1949 ..	240	1965 ..	502
1918 (a) ..	150	1934 ..	136	1950 ..	262	1966 ..	517

(a) November; remaining figures are average for year.



*"C" Series Retail Price Index Numbers for Hobart from 1914*

As previously indicated, the Consumer Price Index is the *current index* produced by the Bureau, the "C" Series Index having been discontinued. The following table shows the "C" Series Retail Price Index Numbers for Hobart from 1914 to 1953; it should be noted that the Consumer Price Index is regarded as being more representative of price variations from 1948-49 onwards; full details of this later index appear in subsequent tables.

**"C" Series Retail Price Index Numbers, All Groups, Hobart**  
(Base—Weighted Average of Six Capital Cities, 1923-1927 = 1,000)

Year	Index	Year	Index	Year	Index
1914 (a) .. ..	687	1928 .. ..	980	1942 .. ..	1,078
1915 (a) .. ..	776	1929 .. ..	1,000	1943 .. ..	1,117
1916 (a) .. ..	783	1930 .. ..	956	1944 .. ..	1,105
1917 (a) .. ..	879	1931 .. ..	875	1945 .. ..	1,107
1918 (a) .. ..	923	1932 .. ..	844	1946 .. ..	1,138
1919 (a) .. ..	1,042	1933 .. ..	825	1947 .. ..	1,178
1920 (a) .. ..	1,213	1934 .. ..	837	1948 (b) ..	1,292
1921 (a) .. ..	1,070	1935 .. ..	849	1949 (b) ..	1,419
1922 (a) .. ..	997	1936 .. ..	860	1950 (b) ..	1,526
1923 .. ..	1,042	1937 .. ..	875	1951 (b) ..	1,861
1924 .. ..	1,051	1938 .. ..	887	1952 (b) ..	2,180
1925 .. ..	1,028	1939 .. ..	908	1953 (b) ..	2,399
1926 .. ..	1,035	1940 .. ..	945		
1927 .. ..	998	1941 .. ..	1,001		

(a) At November; remaining figures are average for year.

(b) See tables that follow for Consumer Price Index from 1948-49; "C" Series Index number for year 1952-53 (Hobart) was 2,287. Consumer Price Index has 1952-53 as base year.

*Consumer Price Index*

*Introduction:* The Consumer Price Index was first compiled in 1960, retrospective to the September quarter 1948. It replaced both the "C" Series Retail Price Index and the Interim Retail Price Index in official statistical publications of the Bureau. The title "Consumer Price Index" is used for purposes of convenience and does not imply that the new index differs in definition or purpose from previous retail price indexes. A longer but more completely descriptive title would be "Consumer Series Retail Price Index Numbers". For practical purposes, the terms "retail prices" and "consumer prices" are synonymous. The Consumer Price Index is designed to measure quarterly variations in retail prices of goods and services representing a high proportion of the expenditure of wage earner households in the aggregate.

Investigations revealed that the incidence and frequency of changes in the pattern of household expenditure since 1950 were such as to render it necessary to construct not one, but a *series of new indexes* introducing additional items and changes in weighting patterns at short intervals between 1949 and 1960. For this period, to obtain a continuously representative measure of retail price change, these now necessarily replace the types of indexes with a constant list of items and a constant set of weights which were kept unchanged for extensive periods. The Consumer Price Index therefore consists of a sequence of short-term retail price indexes chain linked at June quarter 1952, June quarter 1956, March quarter 1960, and December quarter 1963 into one series with reference base year 1952-53 = 100.0.

*Origin:* The list of component items and the weighting pattern of the "C" Series Retail Price Index, first adopted in 1921, were slightly revised by the Statisticians' Conference in 1936, but otherwise continued almost unchanged until the index was discontinued in 1960.

The period 1939 to 1948 was marked by war-time controls, price control, and rationing; with the cessation of these controls, there was a rapid rise in prices and a new sequence of changes in consumption and in the pattern of wage-earner expenditure. Thus, in the immediate post-war period, it was virtually impossible to establish a system of weighting that would adequately reflect the changing pattern of household expenditure, or be more continuously representative of current conditions, than that employed in the existing "C" Series Index. Accordingly, the "C" Series Index continued to be compiled on its pre-war basis without significant change in procedures.

The Interim Index was a transitional index designed to measure retail price variations on the "C" Series model in terms of post-war consumption weights, as emerging in the late 1950s. It embraced a wider range of commodities and services than did the "C" Series Index, but it did not take into account successive major changes in the pattern of expenditure and modes of living that occurred between 1950 and 1960. These changes could not, in fact, be detected and measured promptly, and incorporated into an index concurrently with their happening. In this period, home owning largely replaced house renting, the use of the motor car greatly increased and partly replaced use of public transport, and various items of electrical household equipment and television came into widespread use. The impact of these (and other) changes in usage upon the pattern of household expenditure was heightened by disparate movements in prices. Together they rendered nugatory the attempt to meet the situation by devising a single Interim Retail Price Index. As studies progressed and new data became available, it was clear that no single list of items and no single set of fixed weights would be adequately representative as a basis for measuring retail price changes at all times throughout the post-war period. In consequence, the situation was met by compiling the Consumer Price Index, constructed as a chain of linked indexes with significant changes in composition and weighting effected at short intervals (1952, 1956, 1960, 1963).

*Purpose, Scope and Composition:* The Consumer Price Index is a quarterly measure of variations in retail prices of goods and services representing a high proportion of the expenditure of wage-earner households. The weighting pattern relates to estimated aggregates of wage-earner household expenditures and not to estimated expenditures of an "average" or individual household of specified size, type, or of mode of living. In this way it is possible to give appropriate representation to owner-occupied houses, as well as rented houses, and to include motor cars, television sets and other major expenditures which relate to some households and not to others.

Consumer (retail) price indexes are sometimes loosely called "cost of living indexes" and are thought to measure changes in the "cost of living". Neither the Consumer Price Index, nor any other retail price index, measures changes in the cost of living that result directly from changes in the mode or level of living. Changes of that kind are matters for consideration apart from price indexes. However, the change in prices of goods and services is a very important part of the change in the cost of living and this part is measured by consumer (retail) price indexes.

A comprehensive view of the present composition and weighting of the Consumer Price Index is given in the following table. The weights shown are those comprised in the index for the six State capital cities combined. Broadly, they are in proportion to estimated consumption at or about 1961-62, valued at the relevant prices of December quarter 1963. They indicate the relative influence given to the various components in measuring the degree of price change in the index from December quarter 1963 (i.e. from the beginning of the current linked series).

**Consumer Price Index****Composition and Weighting Pattern as at December Quarter 1963 for the Six  
State Capital Cities Combined**

Group, Section, etc.	Percentage Weight	
	Section, etc.	Group
Food—		32.1
Cereal Products—Bread, flour, biscuits, rice and breakfast foods	4.0	
Dairy Produce—Milk, cheese, butter and eggs .. .. .	7.1	
Potatoes, Onions, Preserved Fruit and Vegetables—Potatoes and onions, canned and dried fruits, and canned and frozen vege- tables .. .. .	1.9	
Soft Drink, Ice Cream and Confectionery .. .. .	4.0	
Other (except Meat)—Sugar, jam, margarine, tea, coffee, baby foods, and sundry canned and other foods .. .. .	4.1	
Meat—Butchers' (Beef, mutton, lamb and pork) .. .. .	9.1	
Processed (Bacon, smallgoods and canned meat) .. .. .	1.9	
		16.9
Clothing and Drapery—		
Men's Clothing .. .. .	4.1	
Women's Clothing .. .. .	6.5	
Boys' Clothing .. .. .	0.6	
Girls' Clothing .. .. .	1.0	
Piecegoods, etc.—Wool, cotton and rayon cloth, nursery squares and knitting wool .. .. .	1.0	
Footwear—Men's, women's and children's .. .. .	2.7	
Household Drapery—Bedclothes, towels, tablecloths, etc. .. .. .	1.0	
		12.6
Housing—		
Rent—Privately owned houses .. .. .	2.8	
Government owned houses .. .. .	0.8	
Home Ownership—House Price .. .. .	5.2	
Rates .. .. .	2.6	
Repairs and Maintenance .. .. .	1.2	
		14.5
Household Supplies and Equipment—		
Fuel and Light—Electricity .. .. .	2.4	
Gas .. .. .	1.3	
Other (Firewood and Kerosene) .. .. .	0.9	
Household Appliances—Refrigerator, washing machine, stove, radio set, television set, vacuum cleaner, electric iron, etc. .. .. .	3.6	
Other Household Articles—		
Furniture and Floor Coverings .. .. .	2.2	
Kitchen and Other Utensils, Gardening and Small Tools .. .. .	0.9	
Household Sundries (Household soaps, etc.) .. .. .	1.0	
Personal Requisites (Toilet soap, cosmetics, etc.) .. .. .	1.1	
Proprietary Medicines .. .. .	1.0	
School Requisites .. .. .	0.1	
		23.9
Miscellaneous—		
Transport—Fares—Train .. .. .	1.2	
Tram and bus .. .. .	1.9	
Private Motoring—Car purchase .. .. .	3.0	
Car operation .. .. .	4.4	
Tobacco and Cigarettes .. .. .	3.9	
Beer .. .. .	3.8	
Services—Hairdressing (Haircut, wave, etc.) .. .. .	0.7	
Drycleaning .. .. .	0.5	
Shoe repairs .. .. .	0.3	
Postal and telephone services .. .. .	0.9	
Other—Radio and television operation .. .. .	1.3	
Cinema admission .. .. .	0.7	
Newspapers and weekly magazines .. .. .	1.3	
Total .. .. .	100.0	100.0

*Six Capital City Index:* The Six Capital City Consumer Price Index is derived as the weighted average of the indexes for the individual cities, the basis of weighting being their populations as recorded at the latest Census (30 June 1954, 1961, 1966 and so on as data become available).

*Comparison of the Five Linked Series:* The Consumer Price Index is a chain of "fixed weight aggregative" indexes, with significant changes in composition and weighting effected at the linking dates; the principal changes were:

- (a) June quarter 1952—introduction of private motoring; changed proportions for modes of house occupancy; change in weights of fuel and fares.
- (b) June quarter 1956—changed proportions in modes of house occupancy; changed weights for fuel, fares and private motoring.
- (c) March quarter 1960—introduction of television.
- (d) December quarter 1963—changed weights for fuel, light, fares and motoring; revised housing weights.

The consumption pattern of the index for the various periods was based broadly as follows: June quarter 1949 to June quarter 1952, on 1948-49 weights; June quarter 1952 to June quarter 1956, on 1952-53 weights; June quarter 1956 to December quarter 1963, on 1956-57 weights; period from December quarter 1963, on 1961-62 weights.

The next table has been compiled to show the percentage contribution to the total index of each of the major groups, first at the beginning of each series, and then at the quarter in which the linking transition was made. The data are for the six capital cities weighted average, and are not completely identical with those employed in calculating the Hobart index; nevertheless the table illustrates the linking mechanism in broad outline:

**Consumer Price Index—Analysis of Weighting in Five Linked Series**

Linked Series	Percentage Contribution to Total Index (Weighted Average, Six Capital Cities)					
	Food Group	Clothing and Drapery Group	Housing Group	Household Supplies and Equipment Group	Miscellaneous Group	Total
First—						
June Qtr 1949 ..	31.3	22.8	11.4	13.1	21.4	100.0
June Qtr 1952 (a)	35.7	23.0	9.2	12.2	19.9	100.0
Second—						
June Qtr 1952 (b)	33.6	21.6	9.4	11.7	23.7	100.0
June Qtr 1956 (a)	34.3	20.0	10.5	10.9	24.3	100.0
Third—						
June Qtr 1956 (b)	33.7	19.7	10.5	11.6	24.5	100.0
March Qtr 1960 (a)	33.0	19.5	11.0	11.5	25.0	100.0
Fourth—						
March Qtr 1960 (b)	32.1	19.0	10.7	13.2	25.0	100.0
Dec. Qtr 1963 (a)	31.6	18.8	12.0	12.6	25.0	100.0
Fifth—						
Dec. Qtr 1963 (b)	32.1	16.9	12.6	14.5	23.9	100.0

(a) Change in proportions due to disparate price movements during short period shown.

(b) Change in proportions due to deliberate changes in composition or weighting.

The sets of weights used for the successive periods covered by the index have been derived from analyses of statistics of production and consumption, the general Censuses of 1947, 1954 and 1961, the Censuses of Retail Establishments of 1948-49, 1952-53, 1956-57 and 1961-62 and the continuing Survey of Retail Establishments, from information supplied by manufacturing, commercial and other relevant sources, and from special surveys.

### *Consumer Price Index, Hobart*

The Consumer Price Index for Hobart is compiled to the base 1952-53 = 100, the number 100 being the base value for each of the five major groups (Food, Clothing and Drapery, Housing, etc.) and also for the "All Group" index.

The following table has been compiled to show group index movements for Hobart on a quarterly basis:

**Consumer Price Index Numbers Each Quarter—Group Indexes, Hobart**  
(Base of Each Index—Year 1952-53 = 100.0 (a))

Quarter	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellan- eous	All Groups
1961-62—Sept. ..	132.9	113.4	160.8	124.9	127.1	129.1
Dec. ..	129.5	114.0	163.7	124.1	127.0	128.3
March ..	127.2	114.2	164.6	123.9	126.8	127.5
June ..	126.5	114.2	166.1	124.2	126.9	127.5
1962-63—Sept. ..	126.6	114.4	166.3	124.2	126.9	127.6
Dec. ..	128.0	114.4	168.7	123.7	126.9	128.2
March ..	127.2	114.4	169.4	123.6	127.1	128.0
June ..	127.0	114.8	170.3	123.8	127.2	128.2
1963-64—Sept. ..	128.7	115.0	170.7	123.4	127.3	128.8
Dec. ..	127.9	114.9	173.6	123.7	127.9	129.0
March ..	129.1	114.9	175.7	123.8	128.7	129.8
June ..	129.5	115.7	175.9	124.1	128.8	130.1
1964-65—Sept. ..	131.6	116.1	176.4	124.4	131.8	131.7
Dec. ..	134.2	116.4	180.9	124.3	133.5	133.4
March ..	135.0	116.9	182.4	124.3	133.9	134.0
June ..	137.2	117.3	183.5	124.9	134.7	135.2
1965-66—Sept. ..	140.9	117.2	184.5	125.6	136.2	137.0
Dec. ..	142.6	117.5	185.9	125.2	141.6	138.8
March ..	140.0	117.9	186.0	125.4	141.5	138.1
June ..	142.2	118.9	187.0	126.7	141.7	139.3
1966-67—Sept. ..	140.9	118.9	187.8	127.0	142.6	139.2
Dec. ..	141.3	120.1	191.0	127.1	143.6	140.1
March ..	144.0	120.4	192.4	127.4	146.9	142.0
June ..	146.0	121.7	194.2	128.5	147.3	143.3
1967-68—Sept. ..	155.3	122.1	194.6	129.0	149.7	147.2

(a) Figures after decimal point have limited significance.

The following table shows the "All Group" index numbers for Hobart quarter by quarter, and also as averages for financial years:

**Consumer Price Index Numbers—All Groups, Hobart**  
(Base of Index—Year 1952-53 = 100.0 (a))

Year	Quarter Ending—				Average for Year
	September	December	March	June	
1949-50 .. ..	63.6	64.3	64.5	66.3	64.7
1950-51 .. ..	68.6	70.5	74.5	79.6	73.3
1951-52 .. ..	84.1	89.3	92.5	95.5	90.4
<b>1952-53 .. ..</b>	<b>98.1</b>	<b>98.8</b>	<b>100.8</b>	<b>102.3</b>	<b>100.0</b>
1953-54 .. ..	105.2	105.5	105.0	104.4	105.0
1954-55 .. ..	104.2	104.1	105.2	105.9	104.9
1955-56 .. ..	107.4	109.1	110.5	113.6	110.2
1956-57 .. ..	116.2	117.2	116.7	117.5	116.9
1957-58 .. ..	116.7	116.9	117.1	117.3	117.0
1958-59 .. ..	117.7	118.7	119.1	119.3	118.7
1959-60 .. ..	119.7	120.1	120.8	122.6	120.8
1960-61 .. ..	125.8	127.1	128.3	128.9	127.5
1961-62 .. ..	129.1	128.3	127.5	127.5	128.1
1962-63 .. ..	127.6	128.2	128.0	128.2	128.0
1963-64 .. ..	128.8	129.0	129.8	130.1	129.4
1964-65 .. ..	131.7	133.4	134.0	135.2	133.6
1965-66 .. ..	137.0	138.8	138.1	139.3	138.3
1966-67 .. ..	139.2	140.1	142.0	143.3	141.2
1967-68 .. ..	147.2	..	..	..	..

(a) Figures appearing after the decimal point possess little significance for general statistical purposes. They are inserted to avoid the distortions that would occur in rounding.

The next table shows, as averages for financial years, the group indexes for Hobart.

**Consumer Price Index Numbers Each Year—Group Indexes, Hobart**  
(Base of Each Index—Year 1952-53 = 100.0 (a))

Year	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellan- eous	All Groups
1949-50 .. ..	59.0	67.8	73.0	70.0	63.5	64.7
1950-51 .. ..	67.3	78.4	79.8	77.2	72.6	73.3
1951-52 .. ..	87.1	94.3	88.3	92.3	91.7	90.4
<b>1952-53 .. ..</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
1953-54 .. ..	107.9	101.8	107.1	103.0	103.9	105.0
1954-55 .. ..	107.1	102.0	110.7	103.7	102.0	104.9
1955-56 .. ..	113.7	103.3	121.9	108.6	106.8	110.2
1956-57 .. ..	118.6	106.1	133.3	115.2	118.5	116.9
1957-58 .. ..	115.1	108.7	137.3	116.0	119.5	117.0
1958-59 .. ..	116.8	109.8	141.3	116.8	121.2	118.7
1959-60 .. ..	118.5	110.7	148.5	118.5	123.3	120.8
1960-61 .. ..	132.1	112.4	156.6	121.1	126.2	127.5
1961-62 .. ..	129.0	114.0	163.8	124.3	127.0	128.1
1962-63 .. ..	127.2	114.5	168.7	123.8	127.0	128.0
1963-64 .. ..	128.8	115.1	174.0	123.8	128.2	129.4
1964-65 .. ..	134.5	116.7	180.8	124.5	133.5	133.6
1965-66 .. ..	141.4	117.9	185.9	125.7	140.3	138.3
1966-67 .. ..	143.1	120.3	191.4	127.5	145.1	141.2

(a) Figures appearing after the decimal point possess little significance for general statistical purposes. They are inserted to avoid the distortions that would occur in rounding off figures to the nearest whole number.

*Average Prices of Foodstuffs, Hobart*

The next table has been compiled to show the average retail price of certain foodstuffs in Hobart since 1950. The list, while representative of foodstuffs commonly consumed, is not exhaustive; for a description of foodstuffs in the Consumer Price Index regimen, see the previous table "Consumer Price Index, Composition and Weighting Pattern".

**Average Retail Prices (a): Hobart**  
**Certain Items of Foodstuffs**  
**(Cents)**

Article	Unit (a)	1950	1955	1960	1965	1966
Bread (delivered) .. .. .	2 lb	6.6	12.0	14.2	15.8	17.1
Flour (plain) .. .. .	"	4.7	9.5	11.8	13.7	14.5
Tea .. .. .	$\frac{1}{2}$ lb	15.2	36.6	34.2	32.9	33.1
Sugar (b) .. .. .	1 lb	4.2	7.5	9.3	9.5	9.5
Jam (plum) .. .. .	$1\frac{1}{2}$ lb	12.0	23.5	28.7	27.3	27.3
Potatoes .. .. .	7 lb	17.7	41.2	34.5	69.2	35.8
Butter (factory) .. .. .	1 lb	22.0	43.4	46.9	49.6	51.4
Eggs (c) .. .. .	doz	33.5	55.8	56.7	61.0	65.0
Bacon (rashers) (d) .. .. .	1 lb	32.6	57.4	68.3	89.2	95.6
Milk, bottled, delivered .. .. .	qt	9.5	16.5	17.3	17.8	18.4
Beef—						
Sirloin .. .. .	1 lb	17.9	33.7	44.3	53.3	57.4
Rump Steak .. .. .	"	22.8	47.4	65.9	79.4	83.1
Corned Silverside .. .. .	"	16.9	34.0	44.2	51.6	56.4
Mutton—						
Leg .. .. .	"	11.8	23.8	24.9	29.8	31.4
Loin Chops .. .. .	"	11.5	18.9	19.0	25.2	26.1
Pork—Leg .. .. .	"	26.9	41.8	53.9	61.8	63.6

(a) The table units are not necessarily those for which the original price data were obtained (see notes (b) and (d)). In such cases, prices have been calculated for the table unit.

(b) Quotes obtained for one pound prior to 1966; for four pound packets in 1966.

(c) "Large" prior to 1964; two ounce eggs from 1964.

(d) Quotes obtained for one pound prior to 1966; for half a pound in 1966.

### Wholesale Price Index

#### *History of Wholesale Price Indexes*

The first wholesale price index compiled by the Bureau was the Melbourne Wholesale Price Index, originally computed in 1912, with weights for basic materials and food appropriate to usage in 1910. After reviewing the list of items and weighting of the Melbourne Wholesale Price Index, the 1930 Statisticians' Conference resolved that a new index of wholesale prices of basic materials and foodstuffs should be compiled. This index—the Wholesale Price (Basic Materials and Foodstuffs) Index—extends back to the year 1928 and is compiled monthly.

The Melbourne Wholesale Price Index—now obsolete—was continued up to the year 1961 and is of historic interest since the series was taken back in time to 1861, but still using the weights appropriate to 1910. Details of this index, from 1861 to 1953, were published in the Bureau's *Labour Report*, No. 49 (1961).

#### *General*

The term "Wholesale Price Index" is currently the short title for "Wholesale Price (Basic Materials and Foodstuffs) Index". While retail price indexes have been compiled for individual capitals and towns, the wholesale price index is derived almost exclusively from Melbourne sources; it follows that

it is impossible to quote specific wholesale index numbers for Hobart. Nevertheless, the series is of value as indicative of the trend of wholesale prices in Australian markets generally.

### Index Numbers

The following table gives the index numbers and shows details for each commodity group. The data have been compiled as averages for financial years but the series is also maintained on a monthly basis.

**Wholesale Price (Basic Materials and Foodstuffs) Index Numbers**  
(Base of Each Index—Average of Three Years Ended June 1939 = 100)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67
Basic Materials—							
Metals and Coal ..	399	392	388	383	391	390	396
Oils, Fats and Waxes ..	222	212	209	207	207	218	219
Textiles ..	387	400	432	484	427	432	419
Chemicals ..	331	333	317	286	286	325	381
Rubber and Hides ..	341	302	262	221	242	306	281
Building Materials ..	439	439	439	473	503	507	511
Total (a) ..	346	340	336	339	345	355	362
Foodstuffs and Tobacco	372	332	342	352	364	385	401
Total All Groups (a)	360	336	340	346	355	371	383
All Groups By Origin—							
Principally Imported(b)	278	270	272	275	277	280	283
Principally Home Produced ..	394	363	368	376	388	409	425

(a) Weighted average.

(b) Represents only such imported commodities as are included in the Wholesale Price Index and does not measure changes in the prices of all imports.

*Definition:* The commodities in the current index are priced in their primary or basic form wherever possible. The prices used have, in the main, been obtained directly from manufacturers and merchants. With a few important exceptions, they are from Melbourne sources. The weighting system adopted is based on estimates of the average annual consumption of the commodities in Australia during the years 1928-29 to 1934-35 inclusive. Work is proceeding on the preparation of new series of wholesale price index numbers but meanwhile the present series continues to be compiled on the existing basis which has been increasingly affected by changes in usage, changes of category as between "imported" and "home-produced" for some commodities, and changes in industrial structure.

## WAGES

### Basic Wage in Tasmania

#### General

The concept of a "basic" or "living" wage was common to rates of wages determined by industrial authorities in Australia before an award of the Commonwealth Conciliation and Arbitration Commission in June 1967 introduced a new industrial concept, *the total wage*. Initially the pre-1967 concept was interpreted as the "minimum" or "basic wage" necessary to maintain an average employee and his family in a reasonable state of comfort. However, it was later generally accepted "that the wage should be fixed at the highest amount which the economy can sustain and that the dominant factor is the capacity of the community to carry the resultant wage levels" (*Commonwealth Arbitration Report*, Vol. 77).



In Tasmania, some workers are members of industrial organisations (trade unions) which have interstate affiliations and which fall within the jurisdiction of the Commonwealth Conciliation and Arbitration Commission; other workers are members of trade unions which are without interstate affiliations and which fall within the jurisdiction of State Wages Boards. Thus, at any point in time, it was possible to have two basic wages operative in Tasmania, one fixed by a Commonwealth authority and the other fixed by a State authority. This, however, is a simplification—in theory, at least, each State Wages Board was at liberty to determine an individual basic wage for the trade covered by its jurisdiction. It follows, again in theory, that there could have been seventy different basic wages in operation since there were approximately seventy active Wages Boards. In actual fact, machinery exists to avoid such a situation arising and the operation of this machinery is described in a subsequent section headed “State Wages Boards”. The pre-1967 situation may be summarised as follows: the basic wage fixed by the Commonwealth Conciliation and Arbitration Commission in the Federal Metal Trades Award had eventual application not only to most Tasmanian workers under Federal awards but also to most workers under the jurisdiction of State Wages Boards.

#### *Commonwealth Basic Wage*

Under the *Commonwealth Conciliation and Arbitration Act* 1904-1964, the Commonwealth Conciliation and Arbitration Commission (previously the Commonwealth Court of Conciliation and Arbitration) could, for the purpose of preventing or settling an industrial dispute extending beyond the limits of any State, make an order or award “altering the basic wage (that is to say, that wage or part of the wage, which is just and reasonable for an adult male [female] without regard to any circumstances pertaining to the work upon which, or the industry in which he [she] is employed) or the principles upon which it is computed”. From this quotation, it may be deduced that margins and other “secondary” components over and above the basic wage were fixed by consideration of “circumstances pertaining to the work upon which, or the industry in which the worker is employed”.

#### *Summary of Commonwealth Judgments*

- 1907 Mr Justice Higgins, President of the Commonwealth Court of Conciliation and Arbitration, defined the standard of a “fair and reasonable” minimum wage for unskilled workers as that standard appropriate to “the normal needs of the average employee, regarded as a human being living in a civilised community”. The rate declared was 70 cents a day or \$4.20 for Melbourne, the amount considered reasonable for “a family of about five”. This was known as the “Harvester” standard since it arose from a tariff application involving the Sunshine Harvester Works.
- 1913 The Court, in its awards, took cognizance of retail price index numbers, covering food and groceries and house rents (“A” Series) in the 30 more important towns in Australia, first published by the Commonwealth Statistician in 1912. Court practice was to equate the retail price index number of 875 for Melbourne for the year 1907 to the “Harvester” rate of \$4.20 per week; by simple proportion, a basic rate of \$4.80 per week was then equated with the base of the index (1,000). Similar principles were followed to vary basic wage rates for individual towns in accordance with their respective retail price index numbers. Adjustments were made irregularly in relation to retail price indexes for the previous calendar year or the year ended with the preceding quarter.

- 1921 A system was introduced of making automatic quarterly adjustments to the basic wage in direct ratio to variations in the retail price index ("A" Series). The new system, at that point in time, would have had the effect of yielding a lower base rate than that calculated by the traditional system; accordingly in 1922 the Court added a 30 cent loading (known as the "Powers three shillings"). The system of automatic quarterly adjustment persisted until September 1953 while the "Powers 3s" was a basic wage component until 1934.
- 1931 The economic depression resulted in a Court decision to reduce all wages under its jurisdiction by 10 per cent.
- 1933 The Court transferred the basis of quarterly adjustments from the "A" Series to the "D" Series Retail Price Index.
- 1934 The Court adopted the "C" Series Retail Price Index as the indicator for quarterly adjustments, equating the index base (1,000) with \$8.10 per week. Basic wages, computed on this relativity, were virtually those which would have been derived under the previous "A" Series without the "Powers 3s" added in, and without the 10 per cent depression reduction.
- 1937 (i) "Prosperity loadings" from 40 cents to 60 cents according to capital city were added as non-adjustable increments, the adjustable part of the basic wage being termed the "needs" portion. (ii) The minimum permissible adjustment of the basic wage was reduced from 20 cents to 10 cents. (iii) The Court evolved a special "Court" Series based on the "C" Series for adjusting the "needs" portion of the basic wage.
- 1941 The Commonwealth *Child Endowment Act* 1941 came into operation; the basic wage, designed to maintain a family, was in effect supplemented for those with families by independent government action.
- 1946 "Needs" portion of basic wage was increased in December by 70 cents per week, and a new "Court" Index ("Second Series") was adopted for purposes of quarterly adjustment. All "loadings" were retained. The 70 cents increase was additional to normal quarterly adjustments made during the year.
- 1950 In October, the Court added \$2 to the basic wage and standardised the varying prosperity loadings at 50 cents. The judgment further provided that the total basic wage should become subject to automatic quarterly adjustment as from the first quarter in 1951. The \$2 increase was additional to normal quarterly adjustments made during the year. The new rate, including the \$2.50, was equated with the "C" Series retail price index number 1,572 for the six capital cities (weighted average) for the September quarter 1950. From this equation was derived a new "Court" index ("Third Series") with \$10.30 equated to 1,000 in the "C" Series Index. (The new six capital cities rate at the time of re-framing the equation was \$16.20 weekly.)
- 1953 In September, the Court ruled automatic quarterly adjustments of the basic wage should cease.
- 1956 In May, the Court rejected the principle of automatic quarterly adjustments but increased the male basic wage by \$1.
- 1957 In April, the Commission again rejected the principle of automatic quarterly adjustment and again increased the male basic wage \$1. It expressed support for the principle of annual reviews of the basic wage.
- 1958 In May, an increase of 50 cents was made but automatic quarterly adjustments were again refused.

- 1959 In June, the Commission, by majority decision, decided on an increase of \$1.50; also, by majority decision, it rejected the principle of automatic quarterly adjustments.
- 1960 In April, the Commission decided to grant no increase.
- 1961 In July, the Commission increased the basic wage by \$1.20, rejecting both employers' claims for a 42 hour week and unions' claims for automatic quarterly adjustment. It also ruled that, in February 1962, "the only issue in regard to the basic wage should be why the money wages fixed as a result of our decision should not be adjusted in accordance with any change in the Consumer Price Index".
- 1962 At the February hearing (as prescribed in the 1961 judgment), the Commission considered the movement in the Consumer Price Index. The index being virtually stationary in the year under review, the Commission granted no increase.
- 1963 In February, the Commission again rejected claims for an increase.
- 1964 In June, the Commission was divided on the amount of the appropriate increase and the award of \$2 was made on the casting vote of the President. It rejected the application of employers for deletion from the Commission's awards, generally, of the basic wage provisions and for the insertion in those awards of a wage expressed as a total wage. The outcome of similar employers' applications made in 1965, 1966 and 1967 is dealt with in a subsequent section headed *Total Wage Concept*.
- 1965 On 29 June, the Commission refused to increase the basic wage but it varied margins by the  $1\frac{1}{2}$  per cent formula, i.e. the total of current *basic wage and margin* was to be increased by  $1\frac{1}{2}$  per cent and the resulting increment credited to the margin.
- 1966 The Commission increased the basic wage \$2 with effect from 11 July.
- 1967 End of basic wage in Commonwealth awards. (See subsequent section headed "*Total Wage Concept*" for details of each case 1964-1967.)

#### *Basic Wage Rates from 1923*

The following table shows the basic weekly wage rates prescribed for adult males under periodical decisions of the Commonwealth Court of Conciliation and Arbitration (and later of the Commonwealth Conciliation and Arbitration Commission).

Although the final year of the table—1967—is noted as "abolition of the basic wage", there is no finality in the matter at the time of going to press. The Commission gave an award in June 1967 and embodied in it the new concept of a total wage. However, the unions took the view that specification of a separate entity, the basic wage, was required by Commonwealth law. Accordingly they took a case to the High Court of Australia in October 1967 and the outcome is not yet known.

The rates of wages shown include the "Powers 3s" (30 cents) or its equivalent, and "Prosperity" loadings, where applicable, and the 10 per cent reduction operative from February 1931 to May 1934. They also include automatic variations in accordance with quarterly changes in retail price index numbers to August 1953. Since then, the rates have been declared as the result of an enquiry. The amount *legally* payable in any specific instance must be determined by reference to the appropriate award.

The rates generally are operative from the first pay-period commencing in the month shown or commencing on or after the date shown, and are those applicable to Hobart.

**Commonwealth Basic Wage Rate From 1923—Hobart  
Adult Males (\$)**

Date Operative	Weekly Rate	Date Operative	Weekly Rate	Date Operative	Weekly Rate
1923—Feb. ..	8.15	1933—Feb. ..	6.34	1947—Feb. ..	10.40
May ..	8.30	May ..	6.48	Aug. ..	10.50
Aug. ..	8.75	Aug. ..	6.38	Nov. ..	10.70
Nov. ..	8.90	Nov. ..	6.39	1948—Feb. ..	11.00
1924—Feb. ..	8.95	1934—Feb. ..	6.48	May ..	11.20
Aug. ..	8.85	May ..	(a) 6.70	Aug. ..	11.50
Nov. ..	8.80	1935—March ..	6.90	Nov. ..	11.80
1925—Feb. ..	8.70	1937—July ..	(a) 7.20	1949—Feb. ..	12.10
Nov. ..	8.55	Sept. ..	7.30	May ..	12.40
1926—Feb. ..	8.60	Oct. ..	(a) 7.50	Aug. ..	12.70
May ..	8.90	1938—March ..	7.60	Nov. ..	12.80
Nov. ..	8.85	1939—June ..	7.70	1950—Feb. ..	13.10
1927—Feb. ..	8.70	1940—Feb. ..	7.80	Aug. ..	13.50
May ..	8.65	Aug. ..	8.00	Nov. ..	13.90
Aug. ..	8.55	Nov. ..	8.10	Dec. ..	(a) 16.00
Nov. ..	8.50	1941—Feb. ..	8.30	1951—Feb. ..	16.50
1928—Feb. ..	8.40	May ..	8.40	May ..	17.30
May ..	8.25	Aug. ..	8.50	Aug. ..	18.70
Aug. ..	8.30	1942—Feb. ..	8.70	Nov. ..	19.90
Nov. ..	8.25	May ..	8.80	1952—Feb. ..	20.80
1929—Feb. ..	8.30	Aug. ..	9.10	May ..	21.40
May ..	8.60	Nov. ..	9.20	Aug. ..	22.20
Aug. ..	8.55	1943—Feb. ..	9.40	Nov. ..	23.00
Nov. ..	8.60	Aug. ..	9.50	1953—Feb. ..	23.20
1930—Feb. ..	8.65	1944—Feb. ..	9.40	May ..	23.90
May ..	8.40	Aug. ..	9.30	Aug. ..	(a) 24.20
Nov. ..	8.20	Nov. ..	9.40	1956—June ..	(a) 25.20
1931—Feb. ..	(a) 7.02	1945—May ..	9.30	1957—15 May	(a) 26.20
May ..	6.88	Nov. ..	9.40	1958—21 May	(a) 26.70
Aug. ..	6.71	1946—Feb. ..	9.50	1959—11 June	(a) 28.20
Nov. ..	6.43	Aug. ..	9.60	1961— 7 July	(a) 29.40
1932—Feb. ..	6.48	Nov. ..	9.70	1964—19 June	(a) 31.40
May ..	6.52	Dec. ..	(a) 10.30	1966—11 July	(a) 33.40
Aug. ..	6.57			1967— 5 June	(b)
Nov. ..	6.43				

(a) Rate declared subsequent to an enquiry.

(b) Abolition of basic wage; see later section headed "Total Wage Concept".

The next table has been compiled to show the Commonwealth basic wage rates operating in Australian capital cities:

**Commonwealth Basic Wage—Weekly Rates, Adult Males  
(\$)**

Date Operative (a)	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Six Capital Cities
August 1953 (b)	24.30	23.50	21.80	23.10	23.60	24.20	23.60
June 1956 ..	25.30	24.50	22.80	24.10	24.60	25.20	24.60
15 May 1957 ..	26.30	25.50	23.80	25.10	25.60	26.20	25.60
21 May 1958 ..	26.80	26.00	24.30	25.60	26.10	26.70	26.10
11 June 1959 ..	28.30	27.50	25.80	27.10	27.60	28.20	27.60
7 July 1961 ..	29.50	28.70	27.00	28.30	28.80	29.40	28.80
19 June 1964 ..	31.50	30.70	29.00	30.30	30.80	31.40	30.80
11 July 1966 ..	33.50	32.70	31.00	32.30	32.80	33.40	32.80
5 June 1967 ..	(c)	(c)	(c)	(c)	(c)	(c)	(c)

(a) Rates operative from the beginning of the first pay-period commencing in the month shown or commencing on or after the date shown.

(b) Automatic adjustments discontinued.

(c) Abolition of basic wage; see later section headed "Total Wage Concept".

*Commonwealth Basic Wage Rates for Females*

The following table summarises the Commonwealth basic wage applicable to females from 1939. Prior to 1950, female basic wage rates had been approximately 54 to 56 per cent of male rates but the Court of Conciliation and Arbitration in its judgment in December of that year fixed the relativity at 75 per cent, and this relationship was still preserved in the latest determinations.

**Commonwealth Basic Wage Rate, Hobart—Adult Females**  
(£)

Date Operative (a)	Weekly Rate	Date Operative (a)	Weekly Rate	Date Operative (a)	Weekly Rate
Sept. 1939 ..	4.20	May 1952 ..	16.05	15 May 1957 ..	19.65
Nov. 1947 ..	5.80	Aug. 1952 ..	16.65	21 May 1958 ..	20.00
Nov. 1948 ..	6.35	Nov. 1952 ..	17.25	11 June 1959 ..	21.15
Nov. 1949 ..	6.90	Feb. 1953 ..	17.40	7 July 1961 ..	22.05
Nov. 1950 ..	7.50	May 1953 ..	17.90	19 June 1964 ..	23.55
Dec. 1950 (b) ..	12.00	Aug. 1953 ..	18.15	11 July 1966 ..	25.05
Nov. 1951 ..	14.90	June 1956 ..	18.90	5 June 1967 ..	(c)

(a) Rates operative from the beginning of the first pay-period commencing in the month shown or commencing on or after the date shown.

(b) Female rate increased to 75 per cent of male rate.

(c) Abolition of basic wage; see later section headed "Equal Pay Legislation".

*State Basic Wage*

It is something of a contradiction to speak of a Tasmanian State basic wage, since no provision exists in industrial legislation for the declaration of a State rate. Prior to February 1956, most Wages Boards adopted Commonwealth basic wage rates. However, from February 1956 to May 1958 there was a divergence between Commonwealth and State rates as shown in the following table:

**Basic Wage, Hobart—Adult Males and Females (Weekly Rates)**  
**Divergence Between Commonwealth and State Awards (1956-1958)**  
(£)

Month of Operation (a)	Commonwealth Awards		State Wages Boards' Awards	
	Males	Females	Males	Females
Aug. 1953 .. ..	24.20	18.15	24.20	18.15
Feb. 1956 .. ..	24.20	18.15	25.90	19.42
May 1956 .. ..	24.20	18.15	26.80	20.10
June 1956 .. ..	25.20	18.90	26.80	20.10
Aug. 1956 .. ..	25.20	18.90	27.20	20.40
May 1957 .. ..	26.20	19.65	27.20	20.40
May 1958 .. ..	26.70	20.00	27.20	20.40
June 1959 .. ..	28.20	21.15	28.20	21.15

(a) Operative as from the beginning of the first pay period in the month shown.

In February, May and August 1956, most State Wages Boards reverted to the system of automatic quarterly adjustments abandoned by the Commonwealth Court in September 1953. In June 1959, most Wages Boards brought their basic wage into line with that awarded by the Commonwealth Commission and have followed its judgments since that date. More detailed reasons for the divergence between Commonwealth and State basic wage rates in this period will be found in the section headed "State Wages Boards".

The next table shows State basic wages in the various States, operative in June 1967 (before the decision of the Commonwealth Commission in that month):

State Basic Wages—Weekly Rates  
(\$)

State or Locality	Date of Operation (a)	June 1967	
		Males	Females
New South Wales .. ..	11 July 1966	33.50	25.10
Victoria .. ..	11 July 1966	32.70	24.50
Queensland (Brisbane) ..	10 Apr. 1967	33.20	24.90
South Australia (Adelaide) ..	11 July 1966	32.30	24.20
Western Australia .. ..	24 Oct. 1966	33.50	25.13
Tasmania (Hobart) .. ..	11 July 1966	(b) 33.40	(b) 25.05

(a) Rates are operative from the beginning of the first pay-period commencing after the date shown, or during the month shown.

(b) Raised \$1 in July 1967 in Electrical Trades test case (State Wages Board decision); see later section headed "Total Wage Concept".

Following the Commonwealth Commission's decision in June 1967 to abolish the basic wage, the State tribunals acted in a variety of ways. Victoria followed the Commonwealth precedent, while S.A. and Tasmania simply increased male and female basic wages by \$1. In N.S.W., award rates were increased by \$1 which was described as the "July 1967 economic loading"; Queensland increased award wages by \$1. In W.A., the Industrial Commission decided that the minimum weekly wage payable to adult male workers under certain awards should be increased from \$36.55 to \$37.55; and workers not receiving the minimum wage should receive an increase of 60 cents per week.

### Wage Margins in Tasmania

#### General

Wage margins have been defined as "minimum amounts awarded above the basic wage to particular classifications of employees for the features attaching to their work which justify payments above the basic wage, whether these features are the skill or experience required for the performance of that work, its particularly laborious nature, or the disabilities attached to its performance" (*Commonwealth Arbitration Report*, Vol. 80).

Marginal rates of wages were determined both by Commonwealth and State industrial tribunals (in Tasmania, by State Wages Boards) before an award of the Commonwealth Conciliation and Arbitration Commission in June 1967 introduced a new industrial concept, *the total wage* in Commonwealth awards. In the Commonwealth jurisdiction, prior to 1954, the Commonwealth Court of Conciliation and Arbitration had not made any general determination in respect of wage margins, but general principles of marginal rate fixation had been enunciated by the Court in the Engineers' Case of 1924, the Merchant Service Guild Case of 1942 and the Printing Trades Case of 1947. Major determinations affecting margins were made in the Commonwealth jurisdiction in 1954, 1959, 1963 and 1965 (the 1965 hearing resulted in a determination affecting margins generally even though conceived originally by the claimant trade unions as concerned purely with basic wage issues). The decisions of the Commonwealth Court (and later of the Commonwealth Conciliation and Arbitration Commission) have generally been followed by State industrial tribunals in the determination of margins in State awards. The Tasmanian State Wages Boards have undoubtedly been influenced in their margins

determinations by those made in the Commonwealth jurisdiction, although an independent policy has sometimes been pursued (e.g. special 15 per cent marginal increases for certain tradesmen in the State sphere in 1963, as opposed to 10 per cent increases granted in the Commonwealth jurisdiction). The extent of this influence is discussed more fully in the subsequent section "Interdependence of Wage-Fixing Authorities" under the general heading "State Wages Boards".

*Summary of Major Judgments (Commonwealth)*

**1954** In November, the Commonwealth Court made an order re-assessing the margin structure in the Metal Trades Award by, in general, raising the current amount of the margin to  $2\frac{1}{2}$  times the amount of the margin that had been current in 1937. However, in cases in which the result of the calculation produced an amount less than the existing margin, the existing margin was to remain unaltered. In effect, this decision increased the margin of a fitter from \$5.20 weekly to \$7.50, increased similarly margins of other skilled occupations, and made no increase in margins of what may generally be described as the unskilled or only slightly skilled occupations under the Metal Trades Award.

The " $2\frac{1}{2}$  times Metal Trades formula" was generally adopted in Commonwealth awards and also became a basis for calculating marginal adjustments for trades within the jurisdiction of State Wages Boards in Tasmania.

**1959** In November, the Commission made an order re-assessing the marginal structure in the Metal Trades Award, Part I, by increasing the existing margins by 28 per cent, the amount of the increase being taken to the nearest 5 cents. The effect of this decision was to increase the margin of the fitter from \$7.50 to \$9.60 per week.

The Commission emphasised that the decision related only to the Metal Trades Award but acknowledged that on occasions in the past, margins fixed in the Metal Trades Award, and in particular the margin of the fitter, had been used as standards for other awards. The use of the 28 per cent formula as a guide in other disputes would be a matter for the parties as far as conciliation was concerned and, if arbitration was necessary, for the Commission itself.

The 28 per cent formula, despite the fact that it had not been designed for general application, was in fact subsequently embodied in most Commonwealth tradesmen's awards and also had wide application in determinations of State Wages Boards in Tasmania.

**1963** In April, the Commission made an order increasing margins for adult males in the Metal Trades Award by ten per cent, operative from the first pay-period commencing on and after 22 April. The Commission emphasised that the decision would relate to the Metal Trades Award only, although it was realised that the margin of the fitter had been used as a standard for other awards. In the present case, the Commission stated it was not intended that the decision should be applied automatically outside the metal trades. The use of any changes in margins granted by the Commission, as a guide in other disputes, would be a matter for the parties as far as conciliation was concerned and, if arbitration was necessary, for the Commission. In Tasmania, the 10 per cent formula had fairly general application in most Federal awards; however, for workers under the jurisdiction of State Wages Boards, the Commonwealth formula was varied, the more highly skilled receiving a 15 per cent increase in margins, the less highly skilled a 10 per cent increase.

- 1965 The Commission, on 29 June, delivered judgment, refusing a basic wage increase but ordering a margin increase based on the  $1\frac{1}{2}$  per cent formula (i.e. total wage to be increased by  $1\frac{1}{2}$  per cent and the increment to be credited to the marginal component).
- 1966 In July, the Commission deferred a decision on margins but ordered a Commissioner to investigate the Metal Trades' marginal structure from the work-value aspect. In December, it delivered judgment on an *interim* margins claim, using incremental formulae based on 1.0, 1.5, 2.0 and 2.5 per cent of total wage.
- 1967 End of margins *as such* in Commonwealth awards. (See *subsequent section headed "Total Wage Concept"* for details of each case 1965-1967.)

### General

### Total Wage Concept

In the period 1953-1963, Metal Trades cases with nation-wide implications came before the Commonwealth Court (later the Commission). These were of two kinds: (i) for basic wage variation (each year from 1956 to 1963); (ii) related to margins (1954, 1959 and 1963). Basic wage increases were granted in 1956, 1957, 1958, 1959 and 1961, but refused in 1960, 1962 and 1963.

- 1964 The employers made a claim for the deletion from the Metal Trades award of the basic wage provisions and for the substitution of a total wage concept. On 9 June, the Commission ruled: "The members of the bench are unanimous in the opinion that the application of the employers for the deletion from the Commission's awards generally of the basic wage provisions and for the insertion in those awards of a wage expressed as a total wage should be rejected". The Commission was divided on the amount of the basic wage increase and awarded \$2 on the casting vote of the President.
- 1965 The Commission considered two claims: (i) from the employers, for the fixation of a total wage, and (ii) from the unions, for an increase in the basic wage. On 29 June, the Commission rejected the claim for acceptance of the total wage principle as such but awarded an increase in margins, such increase to be calculated as follows: 1.5 per cent of total wage (total wage being defined as basic wage plus margin). The increase calculated in accordance with this formula was to be added to the margins component of award wages.
- 1966 (i) The Commission again had a claim from the employers for fixation of a total wage, while the unions presented claims affecting both the basic wage and margins. Without rejecting the concept of a total wage, the Commission increased the basic wage by \$2 with effect from 11 June 1966 but deferred making any decision on margins; instead, it arranged for a Commissioner to make a detailed enquiry into the margins prescribed in the Metal Trades award, the object being to obtain data which would assist in fixation of new rates based on work value considerations. It also ordered that the *minimum wage* paid under the Metal Trades award should include a margin of \$3.75 above the appropriate basic wage (e.g. in Tasmania, basic wage \$33.40 plus \$3.75 giving minimum of \$37.15); the minimum wage in this award was nevertheless expressed as a total wage. (ii) Later in the year, the unions made a claim for an interim margins increase, the investigation by the Commissioner into work value aspects not having been completed. The claim was based on general economic grounds, i.e. erosion of purchasing power and increased productivity. In December, the Commission awarded margin increases in accordance with the following formula:



## Commonwealth Interim Margins Award, 1966

Margins in Current Awards	Percentage Increase Awarded
Under \$5.00 .. .. .	1.0 per cent of total wage
\$5.00 but less than \$7.50 .. .. .	1.5 per cent of total wage
\$7.50 but less than \$11.20 .. .. .	2.0 per cent of total wage
\$11.20 or more .. .. .	2.5 per cent of total wage

The increase, calculated in accordance with the formula in the table, was to be treated in the same manner as the 1965 increase, i.e. added to current margins.

**1967** The Commission heard a claim from the employers for fixation of a total wage, and a claim from the unions for increases in the basic wage and in margins. On 5 June, it gave its decision, and abolished the concept of the basic wage. Part of the finding read:

"The Commission's basic wage has become important in three specific ways. It has guaranteed a minimum wage to workers under its awards, its variation has been the means of giving general wage increases on economic grounds, and the secondary wage structure has been built on it. It has played a significant part in improving wage standards. Since the famous decision of Higgins J. some 60 years ago, the basic wage has served the workers of Australia well. It has been the keystone of our wages sytem and has a special quality."

"But in our view the time has come to overhaul our time-honoured system because a course is now open which is more consonant with modern requirements and which at the same time will give better protection to employees. *We should now express wages as total wages and retain the minimum concept introduced by the Commission in July 1966.*"

The Commission awarded \$1 increases in total wage for both males and females, disregarding the 75 per cent relativity previously maintained in the male and female basic wage. This was a deliberate step, the Commission stressing the need for investigation and debate in the formulation of a policy aimed at gradually adjusting female total wages where adult males and females do equal work.

The Commission said that in future annual reviews, awards could be expressed in any one of four possible ways: (i) a flat amount added to the total wage (as in 1967); (ii) a flat percentage applied to the total wage (as in 1965); (iii) varying percentages applied to varying levels of total wage (as in December 1966); (iv) an entirely new formula. With regard to (iv), the Commission stated: "We will not attempt to tie the hands of future benches in this regard."

To summarise, the 1967 award meant the end of separate awards for the basic wage and for margins; the Commission's annual review, in future, will be concerned with the total wage and the case for an increase in the total wage will be argued on general economic grounds, principally erosion of purchasing power and increased productivity. While margins cases, as such, can no longer be argued, provision still exists in the arbitration system for a re-assessment of work value for individual occupations; however, when rates are revised as a result of work value cases, the new rates will be expressed as total wages and not as margins variations.

In the July 1966 award, the *minimum total wage* for a male adult employed under the Metal Trades award in Hobart was fixed at \$37.15 (i.e. \$3.75 above the Hobart Federal basic wage \$33.40). As a result of the June 1967 determination, this *minimum total wage* rose to \$38.15.

The investigation of the work value aspects of the Metal Trades award by a Commissioner commenced in 1966 after the July determination and was still in progress in October 1967.

#### *Total Wage Concept in Tasmania*

The Commonwealth award of June 1967 was followed by a test case argued before the Chairman of the State Wages Boards. The employers asked for adoption of the total wage concept. The unions opposed this and argued for a \$7.30 increase in the basic wage; if a lesser amount were determined, then a *minimum total wage* of \$40.70 should nevertheless be fixed.

The decision in the test case (Electrical Trades) was that both male and female rates should be increased by \$1; the increase, however, should be regarded as *raising the basic wage* which would be retained for the present in State Wages Board's determinations. It should be noted that some Acts of the State Parliament made reference to the basic wage and its immediate abolition, to conform with the Commonwealth precedent, could have created administrative difficulties and caused legal confusion (e.g. parliamentary pensions were related to the Hobart basic wage, such provision being current at the time of the June 1967 Commonwealth award).

### Equal Pay Legislation

#### *Introduction*

The concept of "equal pay" has achieved partial recognition in some Australian States because there exist occupations in which men and women perform work which is identical (e.g. teaching, medical practice, etc.); such identity has given birth to industrial claims based on the principle of "equal pay for equal work". The logic of such occupational situations was ignored in the past and it was only in 1950 that the Commonwealth Court of Conciliation and Arbitration fixed the female basic wage at 75 per cent of the male rate (it had previously been as low as 54 or 56 per cent). With regard to margins, there has been no universal rule but, in the Commonwealth Public Service, for example, certain female employees received the same margin as males, but only the female basic wage.

#### *N.S.W. Legislation (1959)*

The first acceptance of the principle of equal pay for equal work came in N.S.W. in 1959, the Industrial Arbitration Act being amended to provide equal pay for males and females under certain circumstances. If the Industrial Commission or a Conciliation Committee was satisfied that male and female employees under an award were performing identical work, it was to prescribe the same margin for males and females. The basic wage was to be adjusted to equal the male rate in annual five per cent increments spread over the period 1959-1963.

#### *Tasmanian Legislation (1966)*

The N.S.W. legislation applied to employees in both the private and public sectors (excluding those in Commonwealth employment or under Commonwealth awards). In Tasmania, the approach to the problem was different in that the Parliament in 1966 passed legislation affecting only employees in the public sector. The *Public Service (Equal Pay) Act* 1966 applies

to those employed by the State Government or employed by State authorities, e.g. the teaching service, the police force, the railway service, etc. The Act requires that wage-fixing authorities must first be satisfied in any application, that certain female employees are performing "work of the same or a like nature and of equal value". If this is established, then the authority is required to fix the same margins for all employees, irrespective of sex. This does still not give equal pay due to the lesser female basic wage. Accordingly the Act provides for annual five per cent increments in the female basic wage (80 per cent of the male basic wage from January 1968, 85 per cent from January 1969 and so on with equality reached in 1972).

The wage-fixing authorities specified in the Act include Wages Boards, the Public Service Tribunal, the Public Service Commissioner and any other person or body required to act as such by law. In actual practice, the majority of claims for an award variation will be made to the Public Service Tribunal, the principal wage-fixing authority for employees in the public sector.

#### *National Wage Case, 1967*

In awarding the \$1 increase to both males and females, the Commonwealth Conciliation and Arbitration Commission departed from the principle of maintaining a 75 per cent ratio between the male and female basic wage. This was done deliberately and the Commission's pronouncement in June 1967 referred to the eventual possibility of equal pay for equal work.

Whilst the basic wage continues to be prescribed in Tasmanian State awards, the provisions of the *Public Service (Equal Pay) Act* remain effective. If the total wage concept is adopted in State awards before 1972, it will be necessary to amend the Act and write new provisions so that those entitled to equal pay may receive it in accordance with the original programme.

### **Minimum Weekly Wage Rates in Tasmania**

#### *Definitions*

In this section, "minimum weekly wage rates" is used as a short title for "weighted average minimum weekly rates". The rates are those applicable to adult males and adult females, and are those fixed in *awards*.

The minimum wage is the lowest rate payable for a particular occupation, and for most occupations it comprises the basic wage and "secondary" wage payments, i.e. additional amounts such as margins for skill, etc. and loadings of various kinds. In the majority of cases such rates are prescribed in awards or determinations of Commonwealth or State industrial authorities or in agreements registered with them. Some rates are prescribed in unregistered agreements between employers and employees. The decision of the Arbitration Commission (June 1967) to end the basic wage does not affect the compilation, the basic data being still minimum award wages for individual occupations.

*Weighting:* To arrive at a weighted average rate for a particular field (e.g. rate for occupations in Tasmania covered by Commonwealth awards), certain data are required. The basic initial information is the award rate applying to each occupation and its relative significance (broadly, the numbers in each occupation).

The calculation of average minimum rates is based on the occupational structure existing in 1954. Weights for each industry and each occupation were derived from two sample surveys made by the Bureau in that year. The first was the Survey of Awards in April 1954 which showed the number of employees covered by individual awards, determinations and agreements, and provided employee weights *for each industry* as well as a basis for the Survey of Award

Occupations made in November 1954. This second survey showed the number of employees in each occupation within selected awards, etc. in the various industries, thereby providing weights *for each occupation*.

The individual minimum wage rates combined to give the averages shown in the tables are those for representative occupations within each industry. They have been derived entirely from representative awards, determinations and agreements in force at the end of each period commencing with March 1939 for adult males, and March 1951 for adult females. In Australian figures for adult male rates, 2,313 individual award occupations are included; for adult female rates, 515; a lesser number is used in determining Tasmanian rates. By use of the industry and occupation weights derived from the surveys of 1954, rates for these occupations were combined to give weighted averages for each industry group for each State and for Australia. Because of coverage difficulties, the rural industry is not included.

Since the aim is to measure movements in prescribed minimum rates of "wages" as distinct from "salaries", those awards, etc. which relate solely or mainly to salary-earners are excluded.

Weighted averages of the components of the total minimum weekly wage rate, i.e. basic wage, margin and loading, are calculated separately for adult male employees covered by Commonwealth awards, etc., and for those covered by State awards, etc.

*"Commonwealth Awards, etc."*: These include awards of, or agreements registered with, the Commonwealth Conciliation and Arbitration Commission, and determinations of the Commonwealth Public Service Arbitrator.

*"State Awards, etc."*: These include awards or determinations of, or agreements registered with, State industrial tribunals, together with certain unregistered agreements, where these are dominant in the particular industries to which they refer. (In Tasmania, the principal tribunals are the State Wages Boards.)

*"Basic Wage Rates"*: These are weighted averages of the weekly rates prescribed in awards, etc. for the occupations included in the calculation. For industries other than mining, metropolitan basic wage rates have generally been used. However, there are a number of occupations for which basic wage rates other than the metropolitan rate are prescribed. In all such cases, the basic wage rate actually paid is used in the tables. As a result, the weighted average basic wage shown in this section differs from the Hobart basic wage appearing elsewhere.

*"Margins"*: These are minimum amounts, in addition to the basic wage, awarded to particular classifications of employees for special features such as skill, experience, arduousness or other like factors.

*"Loadings"*: These include industry loadings and other general loadings prescribed in awards, etc. for the occupations included in the calculation. Loadings that are not applicable to all workers in a specified award occupation (for example, those payable because of length of service; working in wet, dirty or confined spaces, etc.) are not included in the calculation.

*Limitation*: The wage rates shown in the tables in this section should not be regarded as actual current averages, but rather as indexes expressed in money terms, indicative of trends. The wage rates do not measure the relative level of minimum wages as between States.

Minimum weekly wage rates for adult males should not be compared with "average weekly earnings per employed male unit" appearing in a later section

of this chapter; the latter includes not only the earnings of adult wage-earners but also those of salaried employees, junior wage-earners and part-time and casual employees.

#### Male and Female Rates

The following table summarises minimum weekly wage rates for adult males and adult females in Tasmania from 1951 onwards. The averages include Commonwealth and State awards, etc. and are for all industry groups combined:

Minimum Weekly Wage Rates (a)  
Adult Males and Adult Females—All Groups  
(\$)

End of—	Adult Rate		End of—	Adult Rate	
	Male	Female		Male	Female
December—1951 ..	23.82	16.56	December—1959 ..	34.71	23.42
1952 ..	27.22	18.92	1960 ..	35.15	23.88
1953 ..	28.33	19.72	1961 ..	36.27	24.82
1954 ..	28.77	19.76	1962 ..	36.48	24.83
1955 ..	29.36	20.00	1963 ..	37.29	25.21
1956 ..	31.39	21.52	1964 ..	39.69	27.04
1957 ..	31.85	21.90	1965 ..	40.71	27.95
1958 ..	32.36	22.12	1966 ..	43.18	29.74

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime), as prescribed in awards, determinations, etc.

#### Rates in Industry Groups

In the next table, details are shown of Tasmanian minimum weekly wage rates in the various industry groups for adult males and adult females; also the same information converted to index numbers with the Australian weighted average weekly wage rate for 1954 equated with 100:

Minimum Weekly Wage Rates and Index Numbers  
Adult Males and Adult Females—Industry Groups, 31 December 1966

Industry Group	Adult Males		Adult Females	
	Rates of Wage (a) (\$)	Index Numbers (b)	Rates of Wage (a) (\$)	Index Numbers (b)
Mining and Quarrying .. .. .	43.92	155.5	..	..
Manufacturing—				
Engineering, Metals, Vehicles, etc. ..	43.75	154.9	29.88	150.0
Textiles, Clothing and Footwear ..	39.73	140.6	27.94	140.3
Food, Drink and Tobacco ..	41.58	147.2	28.29	142.0
Sawmilling, Furniture, etc. ..	41.04	145.3	28.66	143.9
Paper, Printing, etc. ..	43.06	152.4		
Other Manufacturing ..	41.74	147.8		
All Manufacturing Groups ..	42.40	150.1	28.35	142.3
Building and Construction .. .. .	44.03	155.9	..	..
Railway Services .. .. .	43.51	154.0	33.11	166.3
Road and Air Transport .. .. .	43.47	153.9		
Shipping and Stevedoring .. .. .	41.42	146.6		
Communication .. .. .	49.10	173.8	30.50	153.2
Wholesale and Retail Trade .. .. .	43.41	153.7		
Public Authority (n.e.i.) and Community and Business Services .. .. .	44.95	159.1	32.86	165.1
Amusement, Hotels, Personal Service, etc. .	40.23	142.4	29.09	146.1
All Industry Groups .. .. .	43.18	152.9	29.74	149.3

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations, etc.

(b) Base of index numbers: weighted average weekly wage rate, Australia, 1954 = 100.

*Index Numbers*

In the previous table, the minimum weekly wage rates have been expressed as index numbers. It should be emphasised that the rates themselves are not actual current averages but are rather indexes expressed in money terms; as such they are indicative of trends rather than of levels.

The following table shows, in summary form, the index numbers for adult male and adult female minimum weekly wage rates in Tasmania from 1960:

**Minimum Weekly Wage Rates—Index Numbers, All Groups  
Adult Males and Adult Females**

End of—	Index Numbers (a)		End of—	Index Numbers (a)	
	Male	Female		Male	Female
December—1960 ..	124.5	120.0	December—1965 ..	144.2	140.4
1961 ..	128.4	124.7	March —1966 ..	144.6	140.4
1962 ..	129.2	124.7	June —1966 ..	145.2	140.5
1963 ..	132.0	126.6	September—1966 ..	152.8	148.2
1964 ..	140.5	135.8	December—1966 ..	152.9	149.3

(a) Base of index numbers: weighted average weekly wage rate, Australia, 1954 = 100.

*Components of Minimum Wage Rates (Male)*

The next table has been compiled to show the individual wage components i.e. basic wage, margin and loading and also the distinction between Commonwealth and State awards, etc. The two elements, Commonwealth and State, are combined to produce the adult male minimum weekly wage rate for Tasmania:

**Minimum Weekly Wage Rates Each December From 1961 (a)  
Components of Wage Rate, All Groups—Adult Males  
(\$)**

Particulars	1961	1962	1963	1964	1965	1966
Commonwealth Awards, etc.—						
Basic Wage ..	29.37	29.33	29.33	31.21	31.21	33.22
Margin ..	6.24	6.48	7.12	7.37	8.20	8.43
Loading ..	0.20	0.26	0.34	0.56	0.78	1.01
Total ..	35.81	36.07	36.79	39.14	40.19	42.66
State Awards, etc.—						
Basic Wage ..	29.42	29.42	29.48	31.39	31.39	33.39
Margin ..	6.73	6.74	7.64	7.94	8.86	9.00
Loading ..	0.83	0.93	0.96	1.21	1.27	1.61
Total ..	36.98	37.09	38.08	40.54	41.52	44.00
All Awards, etc.—						
Basic Wage ..	29.38	29.37	29.39	31.28	31.28	33.29
Margin ..	6.44	6.58	7.32	7.59	8.46	8.65
Loading ..	0.45	0.53	0.58	0.82	0.97	1.24
Total ..	36.27	36.48	37.29	39.69	40.71	43.18

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations, etc.

The following table shows, for Tasmania, in summary form, male adult minimum weekly wage rates from 1939, in terms of basic wage, margin and loading:

**Minimum Weekly Wage Rates From 1939 (a)**  
**Components of Wage Rate, All Groups—Adult Males**  
**(£)**

End of—	All Awards, etc. (Commonwealth and State)			
	Basic Wage	Margin	Loading	Total
December—1939 ..	7.64	1.51	0.07	9.22
1945 ..	9.39	1.74	0.43	11.56
1950 ..	15.98	3.37	0.45	19.80
1955 ..	24.03	4.81	0.52	29.36
1957 ..	26.47	4.92	0.46	31.85
1958 ..	26.89	5.08	0.39	32.36
1959 ..	28.14	6.15	0.42	34.71
1960 ..	28.38	6.35	0.42	35.15
1961 ..	29.38	6.44	0.45	36.27
1962 ..	29.37	6.58	0.53	36.48
1963 ..	29.39	7.32	0.58	37.29
1964 ..	31.28	7.59	0.82	39.69
1965 ..	31.28	8.46	0.97	40.71
June —1966 ..	31.28	8.52	1.22	41.02
September—1966 ..	33.29	8.62	1.24	43.15
December—1966 ..	33.29	8.65	1.24	43.18

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations, etc.

#### *Australian Rates*

In the next table, rates and index numbers are shown for each Australian State. Neither the wage rates nor the corresponding index numbers measure the relative level of minimum wages as between States. Both measures, i.e. the wage rates and the corresponding index numbers, are indicative of trends but it should be noted that the wage rates are not to be regarded as actual current averages but rather as indexes expressed in money terms.

**Australia—Minimum Weekly Wage Rates—All Groups**  
**Adult Males**

End of—	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Australia
RATES OF WAGE (a) (£)							
December— 1962	37.37	36.37	35.97	35.65	36.57	36.48	36.66
1963	38.28	37.20	37.00	36.40	37.50	37.29	37.55
1964	40.27	39.47	39.22	38.69	38.82	39.69	39.65
1965	41.04	40.34	41.66	39.48	40.49	40.71	40.74
June — 1966	41.08	40.48	42.82	39.57	42.04	41.02	41.08
December— 1966	43.18	42.76	43.53	41.74	43.36	43.18	42.99
INDEX NUMBERS (b)							
December— 1962	132.3	128.8	127.4	126.2	129.5	129.2	129.8
1963	135.5	131.7	131.0	128.9	132.8	132.0	133.0
1964	142.6	139.8	138.9	137.0	137.5	140.5	140.4
1965	145.3	142.8	147.5	139.8	143.4	144.2	144.3
June — 1966	145.5	143.3	151.6	140.1	148.8	145.2	145.4
December— 1966	152.9	151.3	154.1	147.7	153.5	152.9	152.2

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime), as prescribed in awards, determinations, etc.

(b) Base of index numbers: weighted average weekly wage rate, Australia, 1954 = 100.

## Minimum Hourly Wage Rates in Tasmania

### General

Minimum hourly wage rates is the short title for "weighted average minimum hourly rates payable". The concept is completely analogous to that embodied in minimum weekly wage rates and the calculation is similarly based on rates prescribed in awards or determinations of Commonwealth and State industrial authorities or in agreements registered with them.

### Definitions

*Hours of Work:* In the fixation of weekly wage rates, most industrial tribunals prescribe the number of hours constituting a full week's work for the wage rates specified. The hours of work so prescribed form the basis of the compilation of the weighted averages of hourly rates.

Rural industry is excluded from the calculation of minimum weekly wage rates. Rural industry, and in addition the shipping and stevedoring industry, are excluded from the calculation of minimum hourly wage rates; the shipping and stevedoring group is excluded since definite particulars for the computation of hourly wage rates are not available.

The 40-hour week has operated in Australia generally from 1 January 1948 (N.S.W., from 1 July 1947). Nevertheless the number of hours constituting a full week's work (excluding overtime) differs between occupations and/or States. The weighted average standard hours of work (excluding overtime) prescribed in awards, determinations and agreements for a full working week, in respect of adult male workers in all industry groups except rural, and shipping and stevedoring, at 31 December 1965, were: N.S.W., 39.95; Victoria, 39.97; Queensland, 39.98; S.A., 39.96; W.A., 39.89; Tasmania, 39.97; Australia, 39.96. Corresponding figures for adult female workers at 31 December 1965, were: N.S.W., 39.53; Victoria, 39.81; Queensland, 39.70; S.A., 39.77; W.A., 39.78; Tasmania, 39.56; Australia, 39.67.

*Minimum Weekly Wage Rate Definitions:* Apart from exclusion of the shipping and stevedoring industry, the definitions in the section headed "minimum weekly wage rates" apply with equal force to the calculation of minimum hourly wage rates.

### Summary of Details

The following table shows, for Tasmania, minimum hourly wage rates for adult male and adult female workers in all industries (except rural, and shipping and stevedoring) since 1939:

Minimum Hourly Wage Rates, All Groups (a)  
Adult Males and Adult Females

End of—	Males (b)	Females (c)	End of—	Males (b)	Females (c)
RATE OF WAGE (\$)					
December—1939 ..	0.2095	n.a.	December—1963 ..	0.9340	0.6361
1945 ..	0.2642	n.a.	1964 ..	0.9946	0.6822
1950 ..	0.4952	n.a.	1965 ..	1.0207	0.7052
1955 ..	0.7371	0.5056	March —1966 ..	1.0243	0.7052
1960 ..	0.8808	0.6037	June —1966 ..	1.0289	0.7056
1961 ..	0.9086	0.6275	September—1966 ..	1.0822	0.7444
1962 ..	0.9142	0.6277	December—1966 ..	1.0833	0.7504



**Minimum Hourly Wage Rates, All Groups (a)**  
**Adult Males and Adult Females—continued**

End of—	Males (b)	Females (c)	End of—	Males (b)	Females (c)
INDEX NUMBERS (d)					
December—1939 ..	29.6	n.a.	December—1963 ..	132.0	126.8
1945 ..	37.3	n.a.	1964 ..	140.6	136.0
1950 ..	70.0	n.a.	1965 ..	144.3	140.5
1955 ..	104.2	100.8	March —1966 ..	144.8	140.5
1960 ..	124.5	120.3	June —1966 ..	145.4	140.7
1961 ..	128.4	125.1	September—1966 ..	153.0	148.4
1962 ..	129.2	125.1	December—1966 ..	153.1	149.5

(a) Weighted average minimum hourly rates payable.

(b) All industry groups except rural, and shipping and stevedoring.

(c) All industry groups except rural, mining and quarrying, and building and construction.

(d) Base of index numbers: weighted average hourly wage rate, Australia, 1954 = 100.

### Average Weekly Earnings in Tasmania

#### *Source of Data*

The figures in the following section are derived from particulars of employment and of wages and salaries recorded on pay-roll tax returns, from other direct collections and from estimates of the unrecorded balance. (In general, businesses with pay-rolls of less than \$1,734 per month are exempt from pay-roll tax and do not need to supply monthly details of employment and of wages and salaries.) Pay of members of the defence forces is not included.

#### *Definitions*

**"Employed Male Unit":** This is a special unit devised to overcome the difficulty that particulars of wages and salaries are not available separately for males and females. (The basic data available are the number of males, the number of females and the total pay-roll only.) The number of females is converted to a *lesser equivalent number* of males by taking into account the approximate ratio of female to male earnings; a divisor for deriving average "male" earnings is then obtained by adding the actual number of males to the calculated number of "male equivalents". The divisor so obtained consists of "employed male units". As it is not possible to estimate the ratio of male to female earnings in the several States, the same ratio is used for each State. Because the actual ratio may vary between States, precise comparisons between average earnings in different States cannot be made on the basis of the figures.

**Components of Pay-roll:** Pay-roll includes, in addition to wages at award rates, the earnings of salaried employees, over-time earnings, over-award and bonus payments, and payments made in advance or retrospectively, (e.g. advances of annual leave pay). Included also are the wages and salaries, not only of adults, but also of juniors; the earnings may relate to full-time, part-time or casual workers.

**Invalid Comparison:** Average earnings per employed male unit cannot be compared with male minimum weekly wage rates shown in the previous section. Minimum weekly wage rates relate to award rates for adult male wage earners in non-rural industry for a full week's work, at the end of each month or year; the average weekly earnings per employed male unit are derived from the pay-roll concept shown in the previous paragraph, and obviously cover a wider field of earnings and of wage and salary earners.

*Seasonal Influence:* Quarterly figures are affected by seasonal influences. Comparisons as to trends are generally best made by relating complete years or corresponding periods of incomplete years. However, from December quarter 1963, comparisons with corresponding quarters of earlier years are affected by additional prepayments arising from three weeks' leave.

#### *Annual and Quarterly Details*

The following table shows, for Tasmania, average weekly earnings per employed male unit; the figures are arranged both as quarterly and annual averages.

**Average Weekly Earnings Per Employed Male Unit (a)**  
(£)

Year	Average for Quarter Ending—				Average for Year
	September	December	March	June	
1956-57 .. ..	36.40	38.30	37.00	39.20	37.70
1957-58 .. ..	36.70	38.70	37.50	40.20	38.30
1958-59 .. ..	37.90	41.20	37.60	40.30	39.20
1959-60 .. ..	40.20	42.30	40.70	44.50	41.90
1960-61 .. ..	41.90	44.20	42.50	44.70	43.30
1961-62 .. ..	43.00	45.80	44.50	47.80	45.30
1962-63 .. ..	44.90	45.90	44.50	48.30	45.90
1963-64 .. ..	46.40	50.70	46.50	49.90	48.40
1964-65 .. ..	49.60	51.90	49.70	52.70	51.00
1965-66 .. ..	50.50	56.40	53.10	55.20	53.80
1966-67 .. ..	54.90	59.50	55.50	59.50	57.40

(a) For definitions, see earlier section headed "Definitions".

#### *Australian Details*

The next table shows average weekly earnings per employed male unit for each Australian State. The calculation of the number of "employed male units" depends on use of a common ratio of male to female earnings for all States; because the actual ratio may vary between States, *precise* comparisons between average earnings in different States cannot be made on the basis of the figures shown.

**Australia—Average Weekly Earnings Per Employed Male Unit (a)**  
(£)

Period	N.S.W. (b)	Vic.	Qld.	S.A. (c)	W.A.	Tas.	Australia
1955-56 ..	37.90	37.80	33.00	35.90	33.90	35.60	36.70
1960-61 ..	48.10	47.20	41.60	43.40	41.60	43.30	46.00
1965-66 ..	58.60	59.20	52.50	53.80	54.10	53.80	57.00
Sept. Qtr 1965	58.20	59.20	52.60	54.60	53.10	50.50	56.80
Sept. Qtr 1966	61.40	62.50	55.20	56.50	57.90	54.90	60.00
June Qtr 1967	64.20	65.00	56.50	57.90	59.00	59.50	62.30

(a) For definitions, see section headed "Definitions".

(b) Includes the Australian Capital Territory.

(c) Includes the Northern Territory.

#### **Award Wages, Hobart**

The following table shows the award wages prescribed for selected occupations in determinations of State Wages Boards; the rates *exclude* the \$1.00 increase in basic wage made in July 1967:

**Award Wages—Weekly Adult Rates (a)**  
**Hobart, March 1967 (b)**

Occupation	Weekly Wage	Occupation	Weekly Wage
	\$		\$
Baker, operative .. .. .	46.20	Nurse, registered .. .. .	39.17
Boilermaker .. .. .	46.20	Pastrycook .. .. .	44.85
Bricklayer .. .. .	47.30	Patternmaker .. .. .	48.90
Builders' Labourer, unskilled (hourly engagement) .. .. .	44.40	Plumber .. .. .	48.00
Butcher .. .. .	47.30	Quarryman .. .. .	41.05
Carpenter .. .. .	47.30	Sheetmetal Worker .. .. .	46.20
Clerk—third year's experience—		Shop Assistant—third year's experience—	
Male .. .. .	43.60	Male .. .. .	43.60
Female .. .. .	32.70	Female .. .. .	32.70
Driver—Truck (over 3 tons; under 6 tons) .. .. .	45.10	Slaughterman .. .. .	53.75
Fork-lift Truck .. .. .	41.80	Storeman and Packer .. .. .	41.00
Electrical Mechanic "A" Grade .. .. .	49.30	Timber Faller (except pine) .. .. .	42.05
Farm Labourer, experienced .. .. .	37.70	Welder, 1st Class .. .. .	46.20
Fitter .. .. .	47.30		
Hairdresser—Male .. .. .	43.25		
Female .. .. .	32.52		

(a) For a 40-hour week in selected occupations covered by State Wages Boards' Determinations.

(b) Male and female rates increased by \$1.00 in July 1967.

## WAGE-FIXING AUTHORITIES

### Tasmanian Wages Boards

#### *Introduction*

The Tasmanian Wages Board system consists of a large number of autonomous boards set up under an Act of the Tasmanian Parliament to prescribe the minimum rates of wages payable, and conditions of service to be provided, by employers engaged in particular trades.

*Early Legislation:* The first legislation of this kind was passed in 1911 but was superseded by an Act of 1920. The prescriptions of boards are called *determinations*. Those made in the earliest phase of the system reflected the relatively primitive state of industrial development and hence a simpler mode of industrial relations than is general today. Classifications of occupations tended to be few and conditions of employment were not particularised in such detail as they are today. Provision for such amenities as recreation and sick leave, and payment for statutory holidays were not known.

*Recent Legislation:* In more recent times, certain matters which lay within the province of wages boards have been removed by specific legislation providing common conditions for all employees. Minimum standards of sanitary, messing and change-room facilities in work-places are now laid down by regulations made under the *Factories, Shops and Offices Act* 1958 as amended. Long service leave arrangements, which made a brief appearance in some determinations, are now cared for by the Tasmanian *Long Service Leave Act* of 1956. Finally, although wages boards have continued to prescribe the rates of pay of apprentices, authority to determine such rates is now the prerogative of the Apprenticeship Commission, which can displace a board's prescription whenever it so desires. The Commission fully exercises its powers over the indentures and training of apprentices.

### *Powers of Boards*

The powers retained and exercised by wages boards can be distinguished as mandatory and permissive:

*Mandatory:* Every board *must* determine minimum rates of wages, and the ordinary hours of work for persons engaged in the trades in respect of which it is established. It must determine which adult employees are tradesmen, and specify, where the proportion of junior workers is limited, the class of work such workers can do. Each board has the obligation, further, to set the date when its determination will operate (with a 14-day limit on retrospectivity).

*Permissive:* Boards *may* extend their determinations to include any or all of the following additional provisions: penalty rates for overtime, week-end, or holiday work, casual work, and other rates related to time factors; the period of recreational leave; deductions from wages for board and lodgings where the employee is accommodated and/or supplied with meals by the employer; the day of the week and hour at which wages shall be paid; special rates where the type or conditions of work warrant such consideration; the proportion of juniors to adults that may be employed in a particular establishment, or the prohibition of the employment of juniors; weekly wages for any specified class of employee, without relation to the hours worked or to normal overtime entitlement; and the length of notice for termination of the contract of service.

### *Constitution and Mode of Operation of Boards*

*Meaning of Trade:* Tasmanian wages boards are constituted in respect of trades (e.g. Hairdressers, Carpet-makers) or groups of trades having a common link (e.g. Builders and Painters, embracing employers of bricklayers, carpenters, painters, glaziers and builders' labourers; or Automotive Industries which associate automotive engineers, service-station proprietors, motor vehicle builders and repairmen, and sellers of motor vehicle spares). The word 'trade' is given a wide enough connotation to cover professions such as Doctors and Dentists (in their character of employers) and providers of services such as Registered Clubs and Restaurant-Keepers. The constitutional nexus of a board is the trade (or industry, or profession, as noted above) of the employer, *not* the common occupation of the employees.

*Chairman:* Each board, of which there are about seventy at present in active existence, consists of an equal number of representatives of employers and employees and a chairman appointed by the Government. Prior to an amendment of the Act in 1961, each board might legally have had its own separate chairman, though in practice one, and only one, person was appointed to hold this office on every board. The 1961 amendment provided for the appointment of a full-time Chairman of Wages Boards, who united in his person the chairmanship of all boards within the system. An officer of the Department of Labour and Industry is Secretary of each board.

*Members:* Board members are selected and appointed by the responsible Minister (the Chief Secretary) from persons engaged as employers or managing experts in the trade or trades appropriate to the board, and from those who are employees of such persons. Officers of industrial organisations or associations of either employers, or employees, whose members are engaged in a particular trade, are also eligible to sit on the relevant boards, with the limitation that on any board having four or more representative members on each side, not more than two of these may be officers of organisations of this kind, while boards having three or fewer members on each side may have only one such officer. Legal practitioners are disqualified as members of any board except one appointed in respect of persons employed by legal practitioners.

*Size of Boards:* The size of boards varies, the number of representative members being that considered expedient in all the circumstances by the Minister. The largest Board, Electrolytic Zinc, has eight representative members on each side, while the Fuel Merchants Board has one representative each of employers and employees.

*Appointment:* Representative members are appointed to a three-year term of office, but when the expiration of a board's term is imminent the Minister may give notice of his intention to re-appoint the representative members unless valid objection is lodged. If an objection is made, new nominations are called for, and if the number received exceeds the number of positions to be filled, the Minister must make a selection. If objection is again raised, an election is held from the list of nominees, to fill the number of required positions. The roll of electors is compiled in respect of employers' representatives from the names of all persons known to be engaged in the trade, or in respect of employees' representatives, from all persons employed by persons so engaged in the trade. A returning officer is appointed by the Minister, who normally deputes the State Chief Electoral Officer to conduct the ballot. Successful candidates are then formally appointed to the board.

*Conduct of Boards:* The boards are intended to practise conciliation with the Chairman assuming the role of moderator, or conciliator-in-chief. Proposals may come from either side of the table and are voted upon after opportunity for deliberation and the production of evidence, the Chairman exercising a casting vote if the representative members are tied. (A member unable to be present may be represented by a proxy appointed by him, but if either side lacks a representative, it is the custom for the other to grant a "pair". A quorum consists of half the members of each side, together with the Chairman.) The Chairman wields no arbitral power but is enjoined, when there is equal division between the representative members, to do all things ("whether by adjourning... by making suggestions, consulting with members... or otherwise") needful to obtain agreement of the board, before deciding the matter at issue on his casting vote.

*Secret Hearings:* It has become invariable custom not to admit the public or press-reporters to proceedings for at least two considerations; firstly the safeguarding of confidential information, such as trade secrets or the financial standing of persons engaged in the trade, which may be mentioned by board members, and secondly, conciliation works best in the absence of a distracting audience or the fear that published reports of proceedings might be partial.

*Witnesses:* A board, on the other hand, has the power to summon witnesses considered to be able to inform members on particular matters before it. While such witnesses may be required to present their evidence on oath, this practice is frequently waived to ensure an atmosphere of unconstraint and cordiality.

*Determinations:* From the record of decisions made at a board meeting and confirmed by the members after hearing it read, the code of wage-rates, allowances and conditions for the particular trade, known as the determination of the particular wages board, is drafted by the Chairman, and upon its gazettal becomes the law. General review meetings, at which the entire determination is recommitted for consideration, may not be convened more often than once every two years, and in practice tend to be more widely spaced, especially with the less active boards. If the Minister is satisfied, however, that because of changed conditions or the discovery of a significant anomaly in a determination, a board should be reconvened after a shorter interval, he may authorise such a meeting, but its agenda must specify the matters to be considered and no other business may be transacted. Any

decisions of a board resulting from a specially convened meeting are translated into the current determination by means of a notice of variation, and become part of the basic code. A 1966 amendment provides for the variation of any wages board's determination by written application of *all* representative members, if the Chairman approves; this will obviate the need for many formal meetings.

### *The Concept of a Basic Wage*

*Before World War II:* The concept of a basic wage, present almost from the inception of the Federal Arbitration system, was little regarded by Tasmanian Wages Boards until the years immediately preceding, or during, the 1939-45 War. Provision was first inserted in the *Wages Boards Act* 1928 for boards to prescribe an adjustable basic wage, but this was ignored by many boards, which for many years afterwards expressed all wage-rates as an indivisible amount, without distinguishing what were later to be known as basic and marginal components. Trades having some employees subject to Federal awards showed a tendency to adopt a basic wage ahead of others, and in several instances (e.g. Ironmongers), a basic wage was written into a part of the determination applying to Carters and Drivers, as much as ten years before the principle was adopted for the primary classes of employees.

*Lack of Uniformity:* With the general upward movement of living costs generated by the inflationary pressures of the war and its aftermath, most boards came to recognise the expediency of incorporating a basic wage clause applying to all persons covered by determinations, with provision for automatic adjustment in accordance with quarterly movements in the "C" Series Retail Price Index compiled by the Commonwealth Statistician. But, owing to the autonomy of each wages board, no uniform basic wage was adopted. In fact, the existence of separate indexes for Hobart and for four other named Tasmanian towns, another for the weighted average of these five towns, and such "national" weighted averages as those of the "Six Capital Cities" and "30 (Australian) Towns", gave to the boards a range of differing values from which to select one—or more—considered appropriate for the particular trade. Thus boards covering employees dispersed in several centres were inclined to determine separate basic wages for Hobart, Launceston and elsewhere; or regionally-located boards set a basic wage related to the index for a local town, e.g. Devonport or Queenstown. The deciding factor for yet other boards, conscious of the links of their trades with particular Federal awards, was the basic wage prescribed in those awards, commonly based on the "Six Capitals" index. The resulting pattern was a medley of basic wages observed within the State, especially confusing to undertakings which were subject to several determinations and/or awards.

*Suspension of Adjustments:* In 1953, automatic quarterly adjustments were abolished in Federal awards; the Tasmanian re-action was to *suspend*, not to abolish, quarterly adjustments. Adjustments were made again in February, May and August of 1956, and then suspended when the State-fixed male basic wage was \$2 above the Commonwealth rate. The Chairman, at this point, was apprehensive that too large a differential between Commonwealth and State rates might cause the closure or transfer of industries.

*Adoption of Federal Standard:* Fortunately, prices began to stabilise, engendering rather less anxiety about basic wage adjustment. Boards, with few exceptions, deleted reference to the Statistician's index from their determinations and deferred action to vary their basic wage until, by the third of the relatively small increases resulting from annual reviews of the Federal basic wage in 1957, 1958, and 1959, the Federal wage for Hobart attained a level \$1 above the amount which had been operative for Hobart in most

determinations from August 1956 onwards, namely \$27.20. Convened in June 1959, for the first State basic wage revision in those three years, the boards re-established, in respect of the amount determined for the Hobart area, equality with the new Federal basic wage for the area, by prescribing the amount of \$28.20. The next alteration also followed a Federal basic wage increase, in 1961, when the boards raised the local wage by the same amount as that awarded by the Commonwealth tribunal, namely \$1.20. The \$2 adjustments of 1964 and 1966 were also observed in State wages boards' determinations. In July 1967, the same quantum of increase (\$1 male and female) of the Commonwealth June award was adopted but was credited as a basic wage increment. See the previous section headed "Total Wage Concept".

*Rationalisation:* Two significant rationalisations have occurred in recent years. The first, resulting from a broadly-based conference representative of employer and employee organisations, convened by the Minister in December 1960 with the Chairman of Wages Boards presiding, was the adoption of the Hobart Commonwealth basic wage as a standard for the State (departed from only by those Boards which retain a basic wage of "Six Capitals" origin, derived from the existence of a so-called "parent" award in the Federal jurisdiction).

The second, and more important, development was the amendment of the *Wages Boards Act* in 1961, to permit boards to make explicit reference to the basic wage in a particular Federal Award as having application to the employees subject to a determination; also the provision by way of regulation for the Chairman of Wages Boards, in the event of any change made in such Federal basic wage, to prepare a notice advising the actual adjustments of the amount of the basic wage prescribed in the determination, and any amounts directly related to such basic wage. Boards which took advantage of this provision of the Act and inserted an appropriate clause in their determinations thereby divested themselves of the need to meet to deal specifically with basic wage claims in the wake of Federal basic wage increases. Following the appointment in April 1962 of the first permanent Chairman of Wages Boards, every board was convened and all but two re-framed their basic wage clauses in the manner envisaged in the amended Act, in the majority of cases citing the basic wage of the Federal Metal Trades Award as the operative provision. The principle of conformity with appropriate Commonwealth awards had been fully established when the Federal Arbitration Commission abolished the basic wage in June 1967.

*Federal Standard Still Optional:* Adoption of this procedure by the overwhelming number of boards made fully explicit the relationship that existed in fact between the State and the Federal jurisdiction in respect of the basic wage. However, the transmission of changes in the Federal basic wage to State basic wages and related clauses (as, for instance, the prescription of rates for juniors or apprentices, which familiarly are expressed as percentages of the male basic wage) is automatic only so long as a board chooses to retain the existing provision. By formal decision, a board could, at any time it meets for a general or special review, delete this connecting-rod and thus sever its basic wage from the decisions of the Commonwealth Arbitration Commission.

#### *Three Weeks' Annual Leave in Tasmania*

*Two Weeks' Leave:* Prior to an amendment of the *Wages Boards Act* in 1961, the amount of paid annual leave which boards were empowered to determine for employees on day work was two weeks, a maximum which had remained in force for many years, having been set in 1928. Exception to this rule was permitted only in the case of (a) employees on shift work, (b) nurses, and (c) undertakings where a greater period of leave was allowed by

mutual agreement between employer and employees. Beyond this point, but seldom resorted to, was a provision that if employer and employee representatives on a board unanimously so resolved (the Chairman in such event having no vote), the normal limitation on the period of annual leave could be waived.

*Amendment of 1961:* Three weeks' annual leave, however, had for some time been enjoyed by many employees within the State. Apart from the State Public Service and certain classes of employees such as railway workers, who qualified for the longer period by having completed a stipulated number of years of service, three weeks' leave had been allowed to the employees of a number of large industrial undertakings under industrial agreements. In lifting the ceiling formerly imposed by the Act to *three* weeks for day-workers, the State legislature in 1961 was therefore doing no more than providing for the *possibility* of increased leave for employees within the wages boards system. It was not, as had been done by the N.S.W. Parliament in 1958, legislating general entitlement of three weeks' annual leave to have effect as from a certain future date.

*Decision of 1962:* To enable thorough discussion, the Chief Secretary convened a conference of employer and employee interests in the private sector of the State's economy. The major unions and employers' organisations were represented, although, for convenience, the hearing was arranged as a test case for employees under the Ironmongers Board.

The Chairman, at the conclusion of the meeting, reserved his decision and on the resumption of the conference announced that his vote would be cast in favour of three weeks' annual leave for the employees under the Ironmongers Board, and subsequently for all employees within the State system. (The favourable vote of the Chairman meant that the employees' claim must succeed in any wages board hearing.)

*Independence:* Rejecting the doctrine that Tasmania should wait upon the initiative of the Commonwealth Commission, the Chairman's decision contained this passage: "It has never been the intention that the State Wages Boards should consistently follow the patterns set in the Federal jurisdiction, and it is clearly evident that where this State tribunal has seen the necessity to do so, it has quite independently adopted standards at variance with Federal standards on major issues."

#### *Interdependence of Wage-Fixing Authorities*

*Dual Authority:* State wages boards and the Commonwealth Conciliation and Arbitration Commission exercise authority in Tasmania, both frequently exercising their powers within the same industry. Even though the respective tribunals have no official contacts with each other, the circumstance that professionals of the industrial relations field (employers' advocates on the one hand, trade union officials on the other) alternate their participation in wages boards meetings with attendance before proceedings of Federal Conciliation Commissioners, ensures that both tribunals stand on common ground in their sources of information.

*Finding of Precedents:* If wages boards know the content of Federal awards, they do not imitate their provisions closely except in those industries mainly subject to Federal awards where the wages board has been retained as a sort of backstop to deal with new employer-entrants to the industry, or with classes of employees not figuring in the Federal prescription. In many other cases, the boards are quite jealous of their independence and while the incorporation of Federal provisions, to meet new-felt needs, is not an uncommon occurrence, more often than not a precedent will be sought in another wages board



determination. The Chairman, as the one personality linking all boards, bears considerable responsibility for advising members on what provisions existing elsewhere might usefully be adopted or adapted, or alternatively, on what might be called "standards"—in respect of, say, penalty rates, sick leave provision, or wages for juniors.

*Effect of Federal Margins:* In an overall sense, wage-rates for comparable work *tend* to equalise throughout the country, and the wages boards are informed, either by professional members or by the Chairman himself, of what rates have been set in other jurisdictions. Often, however, the evidence—especially where partial—on rates obtaining elsewhere is rejected, and local considerations only are invoked to determine the particular issue. General movements in wage-margins, like the basic wage itself, are a special case, and certainly the boards cannot insulate themselves from major decisions of the Commonwealth Commission. The imminence of a Federal decision has some restraining effect on the variation of margins in State determinations. Also, after each of the major Metal Trades decisions in the Federal sphere in the past decade, there has been an ensuing wave of marginal adjustments made by State wages boards.

*Tradesman's Margin:* The influence of successive chairmen has been exerted against slavish adherence to Federal prescriptions. This was illustrated by the 1963 decision on margins in the Tasmanian jurisdiction. Once again the Chairman's decision followed a general conference of representatives of management and labour in the private sector of the State economy. It paralleled the Federal precedent insofar as the generality of employees, the semi-skilled or unskilled, were granted a *ten* per cent increase in margins; but for tradesmen, a *fifteen* per cent increase was determined.

Tasmanian wages boards showed independence also in prescribing more favourable rates for unapprenticed juniors than was usual in other States, and in more liberal provisions for sick leave accumulation.

### *Conciliation in Industrial Disputes*

*Compulsory Conference:* Post-war expansion of industry and the restlessness of wage-earners which was a phenomenon of those years led to the insertion in the *Wages Boards Act* in 1950 of a Section (No. 77) providing for the summoning by the Minister of compulsory conferences for the purpose of preventing or settling industrial disputes. A compulsory conference is, however, restricted in its scope to matters that are within the powers of wages boards and one additional matter, namely the demarcation of functions of employees or classes of employees. It cannot deal with matters that are not directly concerned with the relations of employers and employees as such.

*Convening of Conference:* The compulsory conference is presided over by a person directed by the Minister to undertake such duty. In practice, the Chairman of Wages Boards is awarded this assignment if his other duties permit. This likelihood is enhanced by a sub-section which provides that either in addition to or in lieu of convening a conference, the Minister may, if it appears to him necessary for settling a dispute, convene a meeting of a wages board. In the latter event the normal minimum notice of seven days given to members may be reduced to 48 hours and may be given by any means considered expedient by the Minister. Persons summoned to attend a conference may be summoned telegraphically or in writing over the Minister's signature and are obliged to attend and remain at the conference until released by the person presiding at the conference.

*Participants:* Persons who may be summoned to a conference include not only the direct participants in a dispute, but also persons concerned in

industrial matters which bear on a dispute, and—even more broadly—persons, whether connected with the dispute or not, whose attendance would, in the Minister's opinion, lead to the prevention or settlement of a dispute.

*President's Powers:* Section 78, inserted in the Act in 1960, further defined the action which the president of a compulsory conference might take. It provides that, if after considering the views expressed at the conference, he is of the opinion that certain action should be taken to effect the aim of the conference, then he may, by written order, direct such action be taken. An order of this nature is effective only to the extent that it does not require any person to contravene any wages board determination or place himself in legal jeopardy in any way. Persons given directions by the order must be served with a copy of it, either to them in person, or by its being left at their place of work or residence, or by post, and the recipient is bound to comply with the terms of the order under penalty of a fine of \$200.

*Major Issues:* Although primarily intended as machinery to avert or quickly bring to an end threatened or actual industrial disputes, the device of a compulsory conference was early and usefully applied to the situation of general industrial issues potentially affecting all boards, e.g. general margin claims; claims for increased leave; or the question of whether cost-of-living adjustments should continue to be made to the basic wage.

### The Tasmanian Public Service Tribunal

*Establishment:* The *Public Service Tribunal Act* 1958, together with the regulations made thereunder came into operation on 1 December 1959, and by this Act provision was made for the setting up of a single wage-fixing authority for the employees of government and semi-government instrumentalities.

*Function:* Briefly, the Act provides for the establishment of the Public Service Tribunal, and vests in it the power and functions of making principal awards for the purpose of determining the salaries and specified conditions of service of employees in the public service, the teaching service, the police force, public hospitals, and in various statutory authorities and State instrumentalities as prescribed. These functions include the making of determinations in respect of hours of work, qualifications required for advancement to higher grades, and rates of relieving, travelling, mileage, proficiency, lodging and meal allowances.

*Members:* The Tribunal is composed of a full-time chairman, and four part-time members, one being the Government nominee, and the others being the elected representatives of the police force, the teaching service and the general service respectively. For each hearing the Tribunal consists of the Chairman, the Government nominee, and the appropriate elected member, according to the group affected by the claim being heard.

*"Authorities" and "Organisations":* The Act provides for employer authorities and for the formation of employee organisations, known respectively as "Controlling Authorities" and "Service Organisations". These, together with the Chief Secretary as Minister administering the Act on behalf of the Government, constitute the parties entitled to be represented and appear before the Tribunal in its proceedings. At present, there are six controlling authorities prescribed, and twenty-three service organisations registered under the Act, and since the individual employee has no right to instigate proceedings, all approaches to the Tribunal must be through his controlling authority or service organisation.

*Lodging of Claims:* Awards of the Tribunal are current for a statutory period of three years, and thereafter continue in force until revoked by a subsequent principal award. However, claims to amend an award may be made within this term on the several grounds prescribed by the Act, which include the correction of defects or anomalies, and variations in the basic wage or in awards of wage-fixing authorities in other States. In this way, a considerable degree of flexibility is introduced and parties are allowed access to the Tribunal in the event of changed circumstances during the term of an award.

*Obligation Imposed on Tribunal:* In the exercise of its functions, the Tribunal is required to have regard to: (a) the necessity for promoting the efficiency of employees in the public service; (b) the latest awards of the Commonwealth Conciliation and Arbitration Commission; (c) the rates of remuneration, direct and indirect, and the working conditions generally, prevailing in industry; (d) any changes in the cost of living; and (e) awards affecting the public services of other Australian States and the Commonwealth, if the Tribunal considers them relevant.

*Classification:* In making awards, the Tribunal is empowered to determine, "... scales of salaries for grades, divisions and occupational groups of employees, and for sub-divisions of those grades, divisions and occupational groups", but the power to classify employees within these scales remains with the controlling authorities. Within two months of such a classification being made, a service organisation, any member of which is affected thereby, may apply to the Tribunal to have the classification varied or disallowed, and in dealing with such an application, the Tribunal may, if it so determines, classify or grade the holder of an individual position within the terms of the appropriate award. It has no power, except where a new position is created, or where an appeal against a classification by a controlling authority is upheld, to determine the salary to be paid the holder of a particular office, or to make a classification or grading in respect thereof.

*Total Wage Decision, 1967:* The total wage decision of the Commonwealth Conciliation and Arbitration Commission in June was followed shortly afterwards by an award of the Tribunal. The same quantum of increase (\$1 male and female) was adopted but the concept of the basic wage was not abolished; service salaries therefore had three components: (i) basic wage; (ii) margin; (iii) a \$1 loading.

### Industrial Disputes

The following table measures the effect of industrial disputes on the Tasmanian economy in terms of working days lost and the estimated loss in wages. The disputes described are those involving a stoppage of 10 *man-days* or more (80 men stopping for one hour is the equivalent of 10 *man-days*).

Industrial Disputes (a)

Year	Number of Disputes	Workers Involved	Working Days Lost	Estimated Loss in Wages (\$)
1960 .. .. .	40	9,142	6,991	55,200
1961 .. .. .	14	4,661	4,622	38,200
1962 .. .. .	18	5,126	3,993	35,000
1963 .. .. .	11	5,019	2,933	27,000
1964 .. .. .	8	1,898	1,939	18,000
1965 .. .. .	17	5,131	3,894	41,400
1966 .. .. .	14	2,541	3,119	(b) 34,800

(a) Involving a stoppage of ten *man-days* or more.

(b) The estimated Tasmanian loss was 0.48 per cent of the Australian total in 1966.

# Chapter 11

## FINANCE

### PUBLIC FINANCE

#### Commonwealth and State

##### *Change in Relationship*

Before Tasmania became an original State of the Commonwealth, the responsibility for raising revenue and borrowing loan moneys had rested with the Tasmanian Government. Due to developments since Federation, the present reality is that Tasmania, in common with other Australian States, has limited ability to raise the money required for revenue and capital purposes; the Commonwealth Government, in the same period, has become almost the exclusive channel for loan funds for State purposes, and supplements State revenue by massive grants from its own funds. The emergence of the Commonwealth as the dominating influence in the financial transactions of the State Governments can be traced to three events:

- (1) under the Constitution, the States surrendered the right to levy customs and excise duties, such revenue sources passing exclusively to the Commonwealth;
- (2) under the *Financial Agreement Act* 1927, the Commonwealth became the borrowing agent for the States;
- (3) during World War II, under the Uniform Tax Scheme, the Commonwealth became the sole authority levying taxes upon the income of persons and companies, a war-time measure which has continued to this day.

The result of these changed relationships can be summarised as follows:  
(i) the Commonwealth Government, as the channel for loan funds for State purposes, exercises a substantial degree of control over public investment;  
(ii) to carry out functions for which their revenue is entirely inadequate, the States have become heavily dependent on the Commonwealth Government for general and specific grants; the Commonwealth Government is therefore placed in a position to exercise a substantial degree of control over the ordinary public expenditure of the States.

##### *Principal Activities of the States*

The Federal Constitution lists the matters regarding which the Commonwealth Parliament has power to legislate. Some of these powers are given exclusively to the Commonwealth (e.g. defence, customs and excise) but, in many matters, the Commonwealth and State Governments have concurrent powers, Commonwealth law prevailing where there is conflict. Matters other than those listed in the Constitution remain the concern of the States. Principal government activity at State level embraces education, health and welfare services, the development of internal resources, land settlement, soil conservation, maintenance of law and order and the provision of public utility services such as roads, electricity, public transport and water supply. Such

activities are either undertaken by State Departments or by statutory and local government bodies created under State legislation. The most obvious form of revenue for the discharge of these functions is State taxation but the Commonwealth exercises a practical monopoly over the more lucrative tax sources (e.g. customs and excise, income tax, sales tax, pay-roll tax, etc.). A responsibility therefore rests on the Commonwealth to supplement State revenues and the principal forms of assistance are described in the sections that follow.

#### *Financial Assistance Grants*

The (Federal) *States Grants (Income Tax Reimbursement) Act* 1942 provided for grants to the States as compensation for vacating the field of income tax. Similar grants, referred to as Tax Reimbursement Grants, continued until 1958-59 but the passage of the (Federal) *States Grants Act* 1959 resulted in a changed formula for calculation of the grant. The essential features of the formula were as follows:

- (i) The base year grant (1959-60) for Tasmania was fixed at \$21,826,000.
- (ii) The grant for following years was calculated by applying three factors: (i) percentage increase in State population; (ii) percentage variation in Australian average wages per person employed; (iii) a constant betterment factor of 1.1 applied to the percentage wage variation.

As from 1965-66, a new formula was announced for application over a five-year period. The betterment factor was raised to 1.2 per cent and was to become a *direct multiplier* (previously the betterment factor had been applied to the percentage wage variation).

The calculation of the grant for 1965-66 illustrates the application of the new formula: (i) grant (1964-65), \$29,297,286; (ii) percentage increase in Tasmanian population in year 1965, 1.0230; (iii) percentage increase in average wages per Australian employed (1964-65 over 1963-64), 7.2731660 per cent; (iv) betterment factor, 1.2 per cent.

Calculated grant (1965-66) =

$$\$29,297,286 \times 1.010230 \times 1.072731660 \times 1.012$$

= \$32,130,632 and this becomes the base for

calculating the 1966-67 grant.

The following shows the amounts received as Financial Assistance Grants since 1948-49:

**Financial Assistance Grants (a)—Receipts by Tasmania**  
(£)

Year	Amount	Year	Amount	Year	Amount
	\$		\$		\$
1948-49 ..	3,334,042	1954-55 ..	10,152,662	1960-61 ..	23,960,360
1949-50 ..	4,445,148	1955-56 ..	10,704,450	1961-62 ..	25,671,238
1950-51 ..	5,217,170	1956-57 ..	12,048,712	1962-63 ..	26,616,104
1951-52 ..	7,999,974	1957-58 ..	13,435,384	1963-64 ..	27,626,296
1952-53 ..	9,069,516	1958-59 ..	14,539,428	1964-65 ..	29,297,286
1953-54 ..	9,663,204	1959-60 ..	21,826,000	1965-66 ..	32,130,632

(a) Referred to as Tax Reimbursement Grants from 1942-43 to 1958-59. (Formula grants plus supplementary grants.)

The introduction of the new financial assistance grant formula in 1959 had one notable effect—it allowed S.A. to cease being a claimant State for annual allocations of the Special Grant (*Section 96*) and resulted in the claimant States being reduced to two, Tasmania and W.A. The operation of Special Grants and their allocation is discussed in the next section.

*Special Grants (Section 96 of the Constitution)*

Section 96 of the Constitution reads: "During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit". Prior to 1933, there was no set method of arriving at the grant although on some occasions the applications for assistance were examined by the Public Accounts Committee of the Federal Parliament.

The Commonwealth Grants Commission was established in 1933 and consists of three members on a part-time basis assisted by a full-time staff. Initially, the Commission considered "compensation for disabilities arising from federation" as a possible basis for its recommendations. In its third report (1936) it fixed upon the principle of financial need, which was expressed in the following terms: "Special grants are justified when a State through financial stress from any cause is unable efficiently to discharge its functions as a member of the federation and should be determined by the amount of help found necessary to make it possible for that State by reasonable effort to function at a standard not appreciably below that of other States". In arriving at its recommendations, the Commission each year makes a detailed comparison of the budget results of the claimant States with those of the non-claimant States.

Prior to the passage of the (Federal) *States Grants Act* 1959, the claimant States had been Tasmania, W.A. and S.A., so the Commission had used the budgetary experience of the non-claimant States (N.S.W., Victoria and Queensland) as the basis for comparison. The new formula evolved under the *States Grants Act* 1959 had been devised partly in reaction to a claim by Victoria and Queensland to be also considered as claimant States; in effect, the new scale of increased grants under this legislation resulted in the number of claimant States falling to two, W.A. and Tasmania. The Grants Commission could then have used the accounts of the four non-claimant States to reach a basis for comparison; it finally decided to adopt a two-State standard, based on the budgets of N.S.W. and Victoria. The following table shows Tasmanian receipts:

Special Grant (Section 96)—Receipts by Tasmania  
(\$'000)

Year	Advance Grant	Adjustment Assessed (a)	Adjustment Applied (b)	Actual Receipt (c)
1955-56 ..	8,768	— 1,632	— 368	8,400
1956-57 ..	7,314	— 28	— 314	7,000
1957-58 ..	8,932	+ 1,606	— 1,632	7,300
1958-59 ..	8,828	+ 1,818	— 28	8,800
1959-60 ..	5,194	+ 1,950	+ 1,606	6,800
1960-61 ..	6,800	+ 282	+ 1,818	8,618
1961-62 ..	8,200	+ 556	+ 1,950	10,150
1962-63 ..	9,800	+ 982	+ 282	10,082
1963-64 ..	10,200	+ 1,332	+ 556	10,756
1964-65 ..	13,618	..	+ 982	14,600
1965-66 ..	16,400	..	+ 1,332	17,732

(a) The assessment is shown against the actual year for which accounts have been examined by the Grants Commission, although its effect does not become apparent until two years later.

(b) The two-year delay in application is due to the Grants Commission's obligation to perform a minute analysis of the accounts of claimant and non-claimant States before announcing the adjustments.

(c) "Advance grant" plus or minus the "adjustment applied".

Since 1949-50, the Special Grant has been in two parts. One part is in the nature of an advance grant to meet the estimated financial needs of the State during the current financial year. The other part is an adjustment (positive or negative), the magnitude of which will depend on whether the advance grant made two years earlier proved greater or less than the amount of financial assistance deemed justified by the Grants Commission. The Special Grant for 1965-66 was \$16,400,000 subject to a positive adjustment of \$1,332,000 on 1963-64 accounts.

The positive adjustment applied in 1965-66 meant that the Grants Commission considered its 1963-64 advance grant too low in the light of its critical examination, not only of the 1963-64 accounts of Tasmania, but also those of the standard States (N.S.W. and Victoria). The accounting principles followed by the Grants Commission are necessarily complicated and can be examined in the Annual Reports of that authority. It is sufficient to say that the existence of the Special Grant has exercised considerable influence on the financial policy of successive Tasmanian Governments. Two principles employed by the Grants Commission will serve to illustrate the nature of this influence:

- (1) if State taxation in a claimant State is below average rates and average exemption scales in the standard States, an unfavourable adjustment will result;
- (2) if State social service expenditure in a claimant State is above comparable per-capita expenditure in the standard States (after allowing for certain difficulties encountered in the claimant State), an unfavourable adjustment will result.

Claimant States must endeavour to raise revenue from taxation at least at the rates and exemption scales adopted by the standard States and must not exceed the per capita expenditure of the standard States in certain fields. Departure from these standards can result in adverse Grant adjustments.

The treatment of Special Grant adjustments in Tasmanian accounts is as follows:

- (1) if a favourable adjustment is made, an equal amount is paid into a suspense account (Accumulated Revenue Account) and the Consolidated Revenue Fund records only the advance grant;
- (2) if an unfavourable adjustment is made, an equal amount is transferred from the suspense account (Accumulated Revenue Account) to the Consolidated Revenue Fund. Thus the Consolidated Revenue Fund again shows as a receipt the amount of the advance grant and not, as might be expected, the advance grant *less* the unfavourable adjustment.

In effect, the State Treasury carries forward in the Accumulated Revenue Account unadjusted budget surpluses and deficits until the Grants Commission announces a favourable or unfavourable adjustment; action can then be taken to charge the net adjusted deficit against the Loan Fund.

#### *Payments Under the Financial Agreement (1927)*

Under the Financial Agreement which was entered into by the Commonwealth and the States in 1927, the Commonwealth contributes towards interest and sinking fund payments in respect of States' debts existing at 30 June 1927, and towards sinking fund payments in respect of States' debts incurred after that date for purposes other than the funding of revenue deficits.

The Commonwealth contribution towards payment of interest on the Tasmanian State debt is a constant annual sum of \$533,718 and will be continued until 1985.

The sinking fund contributions made by the Commonwealth under the Agreement in respect of States' debts vary according to the date and nature of the borrowings. On States' debts existing at 30 June 1927 the Commonwealth is making sinking fund contributions at the rate of \$0.25 per cent per annum until 1985 and in respect of cash loans raised for the States since that date, the Commonwealth makes sinking fund payments for 53 years at the rate of \$0.50 per cent per annum. Each State is obliged to make sinking fund payments for corresponding periods at the rate of \$0.50 per cent per annum of its debt, regardless of the date on which the debt was incurred. The only exception is in relation to debt incurred for the purpose of funding revenue deficits. In these instances, the Commonwealth makes no sinking fund contributions and the States are obliged to make contributions to the sinking fund of not less than four per cent per annum. However, in respect of Treasury Bills issued to cover State revenue deficits accruing between July 1927 and June 1935, special arrangements were made under which the Commonwealth contributes \$0.50 per cent per annum until June 1983, on the amount outstanding.

Recent Commonwealth sinking fund contributions in respect of the Tasmanian public debt are as follows: 1953-54, \$396,874; 1954-55, \$479,234; 1955-56, \$540,572; 1956-57, \$593,684; 1957-58, \$654,010; 1958-59, \$699,718; 1959-60, \$776,022; 1960-61, \$828,754; 1961-62, \$896,130; 1962-63, \$971,608; 1963-64, \$1,061,736; 1964-65, \$1,129,472; 1965-66, \$1,211,657.

The acceptance of some Commonwealth liability for interest and sinking fund payments on States' debts was only one part of a more extensive agreement setting up an Australian Loan Council and a National Debt Sinking Fund. The raising of loan money for the States under the Agreement is described later in this chapter.

#### *Commonwealth Aid for Roads*

The Federal *Main Roads Development Act* 1923 provided for annual Commonwealth contributions to the States, the basis of distribution being a formula weighted 40 per cent according to State area and 60 per cent according to State population. This basis was explicitly expressed in the *Federal Aid Roads Act* 1926 and continued to operate until 1959-60.

A new formula for distribution was embodied in the *Commonwealth Aid Roads Act* 1959 when the Commonwealth undertook to provide a total sum of \$500,000,000 over a five year period. Of this amount, \$440,000,000 represented basic grants, and the remaining sum of up to \$60,000,000 was subject to certain annual limits, payable to the States on the basis of \$1 for each \$1 allocated by the State Governments from their own resources for expenditure on roads over and above the amounts allocated by them for roads expenditure in 1958-59.

The amounts being made available by the Commonwealth were distributed between the States in each year in the proportion of *five per cent of the total* for Tasmania, and the balance shared between the other five States on the basis of one third according to Census population, one third according to area and one third according to vehicles registered at 31 December preceding the year concerned. It will be observed that Tasmania, with less than one per cent of the area of the Commonwealth, was specifically exempted from the operation of the formula applied to the other States.

The *Commonwealth Aid Roads Act* 1964 contained provision for a second five-year plan based on a total distribution over this period of \$750,000,000.

Details of Tasmanian receipts of Commonwealth contributions in respect of road expenditure are shown in the following table:



**Commonwealth Aid for Roads—Receipts by Tasmania  
(\$'000)**

Year	Amount	Year	Amount	Year	Amount
1948-49 ..	710	1954-55 ..	2,334	1960-61 ..	4,600
1949-50 ..	876	1955-56 ..	2,652	1961-62 ..	5,000
1950-51 ..	1,356	1956-57 ..	3,126	1962-63 ..	5,400
1951-52 ..	1,466	1957-58 ..	3,466	1963-64 ..	5,800
1952-53 ..	1,510	1958-59 ..	3,624	1964-65 ..	6,500
1953-54 ..	1,646	1959-60 ..	(a) 4,366	1965-66 ..	7,000

(a) Payment under the *Commonwealth Aid Roads Act* was \$4,200,000 and the balance represents a final adjustment of Commonwealth commitments under previous legislation.

*Summary of Commonwealth Payments*

In the previous sections, the main forms of Commonwealth assistance have been described; the following table shows the total payments to Tasmania from the Commonwealth Consolidated Revenue Fund:

**Commonwealth Consolidated Revenue Fund—Payments To or For The State of  
Tasmania  
(\$'000)**

Item	1963-64	1964-65	1965-66
Financial Assistance Grants .. .. .	27,626	29,298	32,131
Special Grants (Section 96) .. .. .	10,756	14,600	17,732
Employment Stimulation Grants .. .. .	2,816	..	..
Financial Agreement Payments—			
Interest on State Debts .. .. .	534	534	534
Sinking Fund on State Debts .. .. .	1,062	1,129	1,212
Grant to University (Capital and Maintenance) ..	1,056	1,342	1,171
Farming Extension Services .. .. .	70	74	74
Commonwealth Aid for Roads .. .. .	5,800	6,500	7,000
Tuberculosis Hospitals—Maintenance Grant ..	362	362	338
Tuberculosis Hospitals—Capital Grant .. .. .	40	6	12
Science Laboratories .. .. .	..	332	331
Technical Training .. .. .	..	334	334
Mental Health Institutions .. .. .	..	198	529
Gordon River Road .. .. .	270	1,094	1,840
Miscellaneous .. .. .	28	24	(a) 119
Total (b) .. .. .	50,420	55,828	63,357

(a) Items include research grants of \$77,000.

(b) This total cannot be identified *as such* in State accounts since part is taken into Consolidated Revenue, part into Loan Fund, and the balance into Trust and Special Funds.

*Uniform Income Taxation*

In December 1955, the Victorian Government took out a writ in the High Court challenging the validity of the uniform tax legislation, the Commonwealth having been the sole collector of income tax since World War II. In particular, Victoria disputed: (i) the power of the Commonwealth to make tax reimbursement grants conditional upon the States' not levying income tax; (ii) the Commonwealth's power to provide an absolute priority for payment of Commonwealth income tax over income taxes levied by the States. In November 1956, the New South Wales Government intervened to support Victoria's challenge.

In August 1957, the High Court ruled: (i) unanimously, that the condition attaching to the tax reimbursement grants, that the State should not levy income tax, was valid; (ii) by four to three, that the prohibition against a taxpayer paying State income tax until Commonwealth income tax was paid,

was invalid. This meant that any State wishing to levy income tax would be obliged to negotiate a special agreement with the Commonwealth; to tax on incomes without such agreement would place the State's tax reimbursement grant in jeopardy. In 1964, the Victorian Premier proposed a *State* income tax which would be collected with existing Commonwealth machinery; the Commonwealth was not willing to provide these facilities. To date, no special arrangement has been negotiated by any State.

*Financial Agreement Between Commonwealth and States*

The original Financial Agreement was made on 12 December 1927, but Tasmania did not become a party to it until 1 July 1928. The basic intention of the agreement was a co-ordinated approach to the loan market, the establishment of sound sinking fund arrangements and the sharing of State debt charges by the Commonwealth. The main provisions are summarised as follows:

- (1) The Commonwealth assumed certain liabilities in respect of the States' debts (see previous section on interest and sinking fund payments made by the Commonwealth in respect of Tasmanian State Debt—"Payments under the Financial Agreement").
- (2) The Australian Loan Council was set up to co-ordinate the public borrowings of the Commonwealth and the States. It consists of the Prime Minister (or his nominee) as Chairman, and the State Premiers (or their nominees). Each financial year, the Commonwealth and the States submit, to the Loan Council, programmes setting out the amounts they desire to raise by loan during the next year. Revenue deficits to be funded are included in the borrowing programmes but borrowing by the Commonwealth for defence purposes is excluded from the terms of the agreement.

If the Loan Council decides that the total amount of the loan programmes for the year cannot be borrowed at reasonable rates and conditions, it then decides the amount which shall be borrowed and may, by unanimous decision, allocate that amount between the Commonwealth and the States. In default of a unanimous decision, the Commonwealth is entitled to one-fifth of the total amount to be borrowed and each State to a proportion of the remainder equal to the ratio of its net loan expenditure in the preceding five years to the net loan expenditure of all States during the same period.

Subject to the decisions of the Loan Council, the Commonwealth arranges all borrowings, including those for conversions, renewals and redemptions. However, the Commonwealth or a State may borrow for "temporary purposes" by way of overdraft or fixed deposit, subject to limits fixed by the Loan Council. In addition, the Commonwealth may borrow within the Commonwealth, or a State within its own territory, from authorities, bodies, institutions, or from the public by counter sales of securities, subject to Loan Council approval. Commonwealth securities are issued for money borrowed in this way and amounts so borrowed are treated as part of the borrowing programme for the year.

- (3) The Agreement involved setting up a National Debt Commission to administer one consolidated sinking fund in respect of the debt of the Commonwealth and the States. Sinking fund moneys are used to redeem unconverted securities at maturity, and to re-purchase securities on the stock market.

- (4) It was realised at the inception of the Loan Council that, in the interests of co-ordinated borrowing, the Council should be advised of borrowings of large amounts by semi-government authorities (such loan raisings do not form part of State or Commonwealth debt and therefore are not within the scope of the original agreement). A set of rules evolved in 1936 is regarded as the "Gentlemen's Agreement" and makes provision for the submission to the Council of annual loan programmes in respect of semi-government authorities (in conjunction with the loan programmes of the Governments concerned) and for the fixing of the terms of individual semi-government loans coming within the scope of the annual programme. (For 1966-67, borrowings approved by the Loan Council for Tasmanian semi-government and local government authorities amounted to \$8,550,000.)

In 1951-52 the Commonwealth, for the first time, provided assistance from its own resources to supplement the amounts raised on the market for the State Governments. It was clear that the amount of the approved Loan Council programme for that year could not be borrowed on reasonable terms and conditions, and the Commonwealth therefore offered to provide special assistance from its own resources to enable the borrowing programme to be completed. Similar assistance has been provided in subsequent years, the proportion of Commonwealth assistance to the total programme rising as high as 69 per cent in 1952-53. The main source of Commonwealth assistance has been the Australian currency proceeds of overseas loans and, more important, budget surpluses; funds have been made available through the issue of special loans subscribed to by the Commonwealth at the end of each financial year, on terms and conditions similar to those prevailing for public loans raised by the Commonwealth.

Money made available from the Commonwealth Loan Fund to the State of Tasmania is recorded in two State funds, namely:

- (i) the Loan Fund, to which are paid the receipts of new cash borrowings but not allocations under the Commonwealth and State Housing Agreement;
- (ii) the Trust and Special Funds, to which are paid the allocations for housing made under the Agreement.

The following table shows Loan Council borrowing programmes undertaken on behalf of the State of Tasmania:

**Tasmania—New Cash Borrowings Authorised by Australian Loan Council (a)**  
(\$'000)

Year	Amount	Year	Amount	Year	Amount
1949-50 ..	10,718	1955-56 ..	26,800	1961-62 ..	28,996
1950-51 ..	29,382	1956-57 ..	22,800	1962-63 ..	30,708
1951-52 ..	30,200	1957-58 ..	24,200	1963-64 ..	32,020
1952-53 ..	26,124	1958-59 ..	25,180	1964-65 ..	34,136
1953-54 ..	28,900	1959-60 ..	27,080	1965-66 ..	34,834
1954-55 ..	25,920	1960-61 ..	28,388	1966-67 ..	37,580

(a) For State works programmes; amounts credited to State Loan Fund.

The above table does not include allocations under the Commonwealth and State Housing Agreements, such borrowings being also part of the Loan Council's programme. The following table shows allocations to Tasmania for housing purposes:

**Tasmania—Allocations Under Commonwealth and State Housing Agreements (a)**  
(*\$'000*)

Year	Amount	Year	Amount	Year	Amount
1949-50 ..	2,200	1955-56 ..	(b)	1961-62 ..	5,856
1950-51 ..	200	1956-57 ..	4,000	1962-63 ..	5,200
1951-52 ..	(b)	1957-58 ..	4,000	1963-64 ..	6,000
1952-53 ..	(b)	1958-59 ..	4,400	1964-65 ..	6,400
1953-54 ..	(b)	1959-60 ..	3,900	1965-66 ..	7,448
1954-55 ..	(b)	1960-61 ..	4,000	1966-67 ..	7,500

(a) For housing; credited to State Trust Funds.

(b) Tasmania withdrew from the Commonwealth and State Housing Agreement in 1950-51 and repaid all principal owing out of loan money allocated by the Loan Council to the State in that year. Tasmania's housing requirements in this period were financed from the State Loan Fund.

**Tasmanian Public Account**

The State Public Account includes the Consolidated Revenue Fund, the Trust and Special Funds, and the Loan Fund. Ordinary revenues from taxation and other sources are paid into the Consolidated Revenue Fund from which the main expenditures are for public debt charges, education, development of State resources, health and hospitals, general administration, subsidies to State business undertakings, law and order, and certain welfare activities. The Trust and Special Funds cover special transactions outside the ordinary operations of departmental expenditure, such as funds from the Commonwealth for specific purposes and moneys held for expenditure by the State at some future time. The Loan Fund receives its funds from public borrowings and the main expenditure is on State public works and on advances to State business undertakings.

A summary of transactions on the Tasmanian Public Account for a three-year period is given in the following table:

**Public Account—Summary of Transactions**  
(*\$'000*)

Particulars	1963-64	1964-65	1965-66
Cash and Investments, Beginning of Year	5,292	4,593	4,390
Receipts—			
Consolidated Revenue Fund ..	67,836	74,846	83,564
Special Grant Adjustment .. ..	556	982	1,332
Loan Raisings .. ..	32,150	34,172	34,879
Other Payments to Loan Fund ..	2,449	2,458	2,837
Net Increase, Trust and Special Funds	520	— 387	463
Capital Appreciation on Bond Redemption .. ..	3	6	..
Total .. ..	103,513	112,077	123,076
Expenditure—			
Consolidated Revenue Fund .. ..	69,020	76,465	85,585
Loan Fund—Public Works and Purposes .. ..	35,062	35,780	39,346
Discount .. ..	130	36	45
Total .. ..	104,212	112,281	124,977
Cash and Investments, End of Year ..	4,593	4,390	2,490

In the following table are shown the balances credited to each fund constituting the Public Account and the form in which the balances are held:

**Public Account—Summary of Balances**  
(\$'000)

As at 30 June	Balance				Location			
	Accumulated Revenue Account	Loan Fund	Trust and Special Funds	Total	Cash in Treasury or Bank	Advanced to Departments	Govt and Other Securities (a)	Total
1963..	Dr 1,700	3,360	3,632	5,292	3,598	728	966	5,292
1964..	Dr 2,168	2,609	4,152	4,593	3,132	729	732	4,593
1965..	Dr 2,804	3,429	3,765	4,390	3,133	747	510	4,390
1966..	Dr 3,493	1,755	4,228	2,490	1,213	738	538	2,490

(a) Includes fixed deposits.

In the previous table, the "Accumulated Revenue Account" is a suspense account recording accumulated surpluses and deficits in the Consolidated Revenue Fund and also the funding of deficits. Details of the account are as follows:

**Accumulated Revenue Account—Summary of Transactions**  
(\$'000)

Year	Opening Balance	Transactions			Closing Balance
		Budget Result, Consolidated Revenue	Special Grant Adjustment (a)	Deficits Charged to Loan Fund	
1962-63	Dr 1,112	— 984	+ 282	+ 112	Dr 1,700
1963-64	Dr 1,700	— 1,185	+ 556	+ 161	Dr 2,168
1964-65	Dr 2,168	— 1,618	+ 982	..	Dr 2,804
1965-66	Dr 2,804	— 2,021	+ 1,332	..	Dr 3,493

(a) It is Tasmanian Treasury practice to record Special Grant adjustments in the Accumulated Revenue Account and to include, in published Consolidated Revenue receipts, only the advance grant.

In the following section dealing with Consolidated Revenue, Treasury practice has been followed in eliminating Special Grant adjustments from Consolidated Revenue total receipts.

### Consolidated Revenue Fund

#### General

The financial transactions of the State of Tasmania are recorded under (a) Consolidated Revenue, (b) Trust Funds, and (c) Loan Fund.

Payments from Consolidated Revenue are made only on the basis of authority found in: (i) the annual Appropriation Act of the Parliament; (ii) Acts of the Parliament made in previous years and under which certain annual payments are classified as "reserved by law"; (iii) the *Public Account Act* 1957 (as amended in 1962) and the *Audit Act* 1918.

The third category of authority listed above is designed to give the Treasurer and the Government some flexibility in public expenditure since the Appropriation Act cannot be expected to anticipate, to the nearest dollar,

the expenses that are likely to be incurred for each and every item. The relevant sections of the amended *Public Account Act* are 5A and 5B which provide that, in relation to Consolidated Revenue, the Treasurer may authorise transfers between votes within certain subdivisions of the appropriation and, on the authority of the Governor, supplement certain appropriations and provide funds to meet expenditure for which no other provision exists. Transfers, as described under 5A, are a matter for the Treasurer but additional expenditure, as described under 5B, needs ratification by Parliament before the close of the following financial year. Regulations 20 and 21 of the second schedule of the *Audit Act* provide for expenditure by the Treasurer to meet emergencies for which no vote exists; the Governor must first authorise such expenditure and the Auditor General investigate the circumstances before payment can be made.

#### *Exclusions from Consolidated Revenue*

It should be observed that the Consolidated Revenue Fund does not include the complete revenue and expenditure in respect of all activities undertaken or authorised by the State Government: (i) some moneys are paid into State Trust Funds and some payments are made from such funds, e.g. the Commonwealth Aid Roads Grant is paid into the State Highway Trust Fund; (ii) the gross receipts and payments of a number of State business undertakings and State authorities are excluded from the Consolidated Revenue Fund, their relation to the fund being as follows:

- (a) In Tasmania, the railways (in common with Government shipping and road transport services) are administered by the Transport Commission and, since 1939-40, only the *net* losses of this authority have been met from the Consolidated Revenue Fund to which is credited the Commission's annual payment of debt charges (interest and redemption) on advances made by the Government.
- (b) Omnibus services in Hobart, Launceston and Burnie are operated by the Metropolitan Transport Trust. The *net* annual loss of the authority is a charge against Consolidated Revenue which is credited with annual payment of debt charges made by the Trust on Government advances.
- (c) The gross receipts and expenditure of the Hydro-Electric Commission are excluded from the Consolidated Revenue Fund which is credited with annual payment of debt charges by the Commission. Net profit or loss on the Commission's activities is carried forward in the authority's own suspense account *and has no effect on Consolidated Revenue*.
- (d) Also excluded from the Consolidated Revenue Fund are the gross receipts and payments of: regional water supplies, Government Printing Office, Government Insurance Office, Public Trustee, State housing authorities, Closer Settlement, Rural Credits and other activities of the Agricultural Bank, etc.; in accordance with various Acts, it is usual for the net profits or losses of the previous year to be paid to or from the Consolidated Revenue Fund for the current year.

#### *Consolidated Revenue Fund, Summary*

The following table shows the Consolidated Revenue and Expenditure of Tasmania, the surplus or deficit, and the aggregate deficit at the end of each year. It also calls attention to the Special Grant adjustments and shows how these Commonwealth payments modify the original budget result.

**Consolidated Revenue Fund—Surpluses and Deficits  
(\$'000)**

Year	Revenue			Expenditure	Budget Result		Aggregate Net Deficit at End of Year
	Before Adjustment	Special Grant Adjustment	After Adjustment		Before Adjustment	After Adjustment	
At 30/6/55							8,032
1955-56	36,022	— 1,632	34,390	35,792	+ 230	— 1,402	9,434
1956-57	37,916	— 28	37,888	39,544	— 1,628	— 1,656	11,090
1957-58	41,604	+ 1,606	43,210	43,228	— 1,624	— 18	11,108
1958-59	43,702	+ 1,818	45,520	45,518	— 1,816	+ 2	11,106
1959-60	48,592	+ 1,950	50,542	50,656	— 2,064	— 114	11,220
1960-61	53,772	+ 282	54,054	54,166	— 394	— 112	11,332
1961-62	60,636	+ 556	61,192	61,352	— 716	— 160	11,492
1962-63	63,036	+ 982	64,018	64,020	— 983	— 1	11,493
1963-64	67,836	+ 1,332	69,167	69,020	— 1,185	+ 147	11,346
1964-65	74,846	(a)	74,846	76,465	— 1,618	(a)	(a) 12,964
1965-66	83,564	(b)	83,564	85,585	— 2,021	(b)	(b) 14,985

(a) Adjustment will be taken into account in 1966-67.

(b) Adjustment will be taken into account in 1967-68.

### *Deficit Funding*

In the previous table, the original budget result is treated as provisional because the Grant Commission's adjustment is used to amend the original surplus or deficit and also the aggregate deficit. The Tasmanian Government refrains from immediately charging revenue deficits against the Loan Fund since the precise amount of the final deficit is not known until the Commission's adjustment is taken into account two years later. Whilst the aggregate of all deficits at 30 June 1966 was \$14,985,000, the sum of \$11,493,000 has been charged against the loan fund as "revenue deficits funded"; thus the *unfunded* aggregate deficit is only \$3,493,000 carried as a *debit* balance in the accumulated revenue account.

The implications of deficit funding are that loan moneys have to be diverted from their proper purpose, which is broadly providing capital for State business undertakings, making loans to semi-government authorities and financing State public works; when used in any of these ways, loan money is productive and results in the creation of new capital assets, e.g. power stations, water pipe lines, roads, bridges, schools, hospitals, etc. Some of these assets are revenue-producing and capable of re-imbursing the State for annual debt charges which it has incurred; others, e.g. roads, schools, lead to no reimbursement of this kind but do at least represent something to be enjoyed or used by citizens over a long period of time.

In the case of deficit funding, however, the facts are that current expenditure has exceeded current income and the deficiency has eventually to be met by appropriating loan moneys. Loan fund expenditure of this type is not associated with the creation of new capital assets.

### *Consolidated Revenue—Receipts*

The principal sources of revenue in this fund, in order of importance, are the grants and other financial assistance received from the Commonwealth Government; debt charges received from semi-government authorities in respect of State advances; and State taxation.

The following table shows Tasmanian Consolidated Revenue receipts for a three-year period:

**Consolidated Revenue Fund—Receipts**  
**(\$'000)**

Item	1963-64	1964-65	1965-66
Commonwealth Grants—			
Financial Agreement .. .. .	534	534	534
Financial Assistance .. .. .	27,626	29,297	32,131
Special .. .. .	10,756	14,600	17,732
Employment Stimulation .. .. .	900	..	..
Total .. .. .	39,816	44,431	50,396
Debt Charge Recoveries (a)—			
Interest .. .. .	11,914	12,752	13,854
Sinking Fund .. .. .	1,558	1,673	1,828
Total .. .. .	13,472	14,425	15,683
State Taxation .. .. .	10,066	10,677	11,934
Lands and Forests—			
Forestry .. .. .	1,212	1,499	1,500
Other Rents, Sales, etc. .. .. .	158	216	259
Total .. .. .	1,370	1,715	1,759
Business Undertakings .. .. .	236	262	290
Departmental Revenue, Fees, Rents, etc.	2,622	3,174	3,401
Victorian Lotteries Agreement .. .. .	146	147	152
Commonwealth National Welfare Fund ..	664	998	1,281
Actual Receipts .. .. .	68,392	75,828	84,896
Transfer, Accumulated Revenue Account(b)	— 556	— 982	— 1,332
Grand Total .. .. .	67,836	74,846	83,564

(a) Mainly on advances made to semi-government bodies.

(b) Special Grant adjustments.

The relative importance of the various components of the Consolidated Revenue Fund can be assessed by expressing them on a per capita basis, using the State mean population for the relevant financial year:

**Consolidated Revenue Fund—Receipts Per Head of Population**  
**(£)**

Item	1963-64	1964-65	1965-66
Commonwealth Grants .. .. .	109.79	121.33	136.43
Debt Charge Recoveries .. .. .	37.15	39.39	42.46
State Taxation .. .. .	27.76	29.16	32.31
Lands and Forests .. .. .	3.78	4.68	4.76
Business Undertakings .. .. .	0.65	0.72	0.79
Departmental Revenue, Fees, Rents, etc.	7.23	8.67	9.21
Victorian Lotteries Agreement .. .. .	0.40	0.40	0.41
Commonwealth National Welfare Fund ..	1.83	2.73	3.47
Transfer, Accumulated Revenue Account	— 1.53	— 2.68	— 3.61
Total .. .. .	187.05	204.38	226.21



*Debt Charge Recoveries*

After Commonwealth Grants, debt charge recoveries is the next important item in Consolidated Revenue. The following table shows details of the payments of interest and sinking fund made by various authorities on advances which have been made to them by the State Government; since the advances have been made primarily from State loan borrowings, the Government has accepted an annual liability for debt charges (in respect of these authorities) approximately equal to the recoveries shown.

**Debt Charge Recoveries—Consolidated Revenue Fund  
(\$'000)**

Source of Recovery	Interest			Sinking Fund Contributions		
	1963-64	1964-65	1965-66	1963-64	1964-65	1965-66
Transport Commission .. ..	893	908	953	140	143	150
Metropolitan Transport Trust ..	117	119	127	17	19	19
Hydro-Electric Commission ..	8,785	9,504	10,436	1,210	1,307	1,437
Regional Water Supplies ..	500	564	639	64	73	85
Government Printing Office ..	20	20	19	3	3	3
King Island Abattoirs ..	16	16	17	2	3	3
Tasmanian Grain Elevators ..	40	38	42	8	8	8
Aluminium Industry Agreement	106	130	131	..	..	..
Closer Settlement .. ..	56	63	69	..	..	..
Returned Soldiers Settlement }	69	66	65	..	..	..
Homes Act Advances .. ..	..	..	..	..	..	..
Homes Construction (Housing	..	..	..	..	..	..
Department) .. ..	861	843	835	114	118	122
State Advances, Primary Producers	129	145	173	..	..	..
Loans to Local Bodies .. ..	64	70	57	..	..	..
Tourist Accommodation Loans ..	51	56	63	..	..	..
Loans to Industry .. ..	127	116	131	..	..	..
Other .. ..	80	95	98	..	..	..
Total .. ..	11,914	12,752	13,854	1,558	1,673	1,828

*State Taxation*

In Tasmania, the chief State taxes, in order of importance, are Motor Tax; Stamp Duties (on cheques, legal documents, etc.); Land Tax; and Probate and Succession Duties.

The following table gives a summary of State taxation taken into Consolidated Revenue for a three-year period:

**State Taxation Collections Paid Into Consolidated Revenue  
(\$'000)**

Tax or Licence	1963-64	1964-65	1965-66
Probate and Succession Duties .. ..	2,135	2,006	2,005
Stamp Duties (excluding Bookmakers' Tickets) .. ..	2,190	2,629	3,078
Land Tax .. ..	1,554	1,678	2,029
Liquor Tax and Licences .. ..	591	630	739
Racing Taxes (including Bookmakers' Tickets) .. ..	497	557	633
Motor Taxes .. ..	3,019	3,153	3,425
Entertainment Tax .. ..	(a) 53	(a)	(a)
Other Licences .. ..	27	24	26
Total (b) .. ..	10,066	10,677	11,934

(a) Levying of this tax ceased on 28 September 1963.

(b) Excluded are the following amounts received from the Victorian Government under the Victorian Lotteries Agreement: 1963-64, \$145,394; 1964-65, \$146,500; 1965-66, \$152,338.

Not all State taxation is paid into the Consolidated Revenue Fund, some portion of total Motor Taxes and total Racing Taxes being reserved for special purposes as shown in the following table:

**State Taxation Collections Paid to Special Funds**  
(*\$'000*)

Particulars	1963-64	1964-65	1965-66
Motor Taxation— Retained by Transport Commission..	686	784	808
Racing Taxation— Paid to Racing Clubs and Racing Commission .. .. .	358	458	408
Total .. .. .	1,044	1,241	1,217

The following summarises total taxation collected by the State:

**Total State Taxation Collections (a)**  
(*\$'000*)

Particulars	1963-64	1964-65	1965-66
Paid into Consolidated Revenue .. ..	10,066	10,677	11,934
Paid into Special Funds .. .. .	1,044	1,241	1,217
Total .. .. .	11,110	11,918	13,150

(a) Taxation is described in fuller detail in a subsequent section, "Taxation in Tasmania".

*Consolidated Revenue Fund—Expenditure*

In the following table, a summary is given of Consolidated Revenue Fund expenditure classified according to function. Group totals only are shown and these are arranged in descending order of magnitude:

**Consolidated Revenue Fund—Summary of Expenditure**

Classification by Function	Amount ( <i>\$'000</i> )			Per Head of Population ( <i>\$</i> )		
	1963-64	1964-65	1965-66	1963-64	1964-65	1965-66
Public Debt Charges .. .. .	22,317	24,081	26,307	61.54	65.76	71.22
Education, Science, Art and Research .. .. .	15,676	17,734	18,967	43.23	48.43	51.35
Development and Maintenance of State Resources .. .. .	8,349	9,566	12,460	23.02	26.12	33.73
Promotion of Public Health and Recreation .. .. .	7,658	8,711	10,027	21.12	23.79	27.14
Legislature and General Administration .. .. .	5,019	5,802	6,526	13.84	15.84	17.67
Business Undertakings .. .. .	3,860	3,984	4,693	10.64	10.88	12.70
Maintenance of Law, Order and Public Safety .. .. .	4,043	4,296	4,470	11.15	11.73	12.10
Welfare .. .. .	1,769	1,952	1,783	4.88	5.33	4.83
Regulation of Trade and Industry .. .. .	330	338	351	0.91	0.92	0.95
Total .. .. .	69,020	76,465	85,585	190.33	208.80	231.69

The principal items of expenditure on which the previous statistical classification is based are shown below:

**Consolidated Revenue Fund—Expenditure**  
(\$'000)

Classification by Function	1963-64	1964-65	1965-66
<b>Public Debt Charges—</b>			
Interest .. .. .	18,934	20,525	22,360
National Debt Sinking Fund .. .. .	3,124	3,394	3,649
State Sinking Fund .. .. .	7	7	4
Other (Loan Management Charges, etc.) .. .. .	252	155	294
<b>Total .. .. .</b>	<b>22,317</b>	<b>24,081</b>	<b>26,307</b>
<b>Education, Science, Art and Research—</b>			
Primary, Secondary and Technical Education .. .. .	14,109	15,622	16,854
University .. .. .	925	1,360	1,332
Other Education (including Adult Education) .. .. .	150	145	134
Libraries, Museums, Art Galleries, Orchestras, etc. .. .. .	493	606	647
<b>Total .. .. .</b>	<b>15,676</b>	<b>17,734</b>	<b>18,967</b>
<b>Development and Maintenance of State Resources—</b>			
Land Settlement and Survey .. .. .	683	1,134	2,714
Agricultural and Pastoral .. .. .	2,291	2,618	3,346
Mining .. .. .	381	444	467
Forestry .. .. .	1,089	1,211	1,525
Fisheries and Game .. .. .	64	183	110
Roads and Bridges .. .. .	3,077	3,201	3,446
Shipping Services .. .. .	73	67	73
Tourist Activities .. .. .	546	560	602
Other .. .. .	145	149	178
<b>Total .. .. .</b>	<b>8,349</b>	<b>9,566</b>	<b>12,460</b>
<b>Promotion of Public Health and Recreation—</b>			
Mental Hospitals .. .. .	1,416	1,603	1,690
Other Hospitals .. .. .	4,616	5,282	5,854
Baby Health Centres .. .. .	184	198	204
Medical Inspection, School Children .. .. .	211	239	347
Public Health Administration and Services .. .. .	1,089	1,194	1,759
Gardens, Parks, Sporting Clubs, etc. .. .. .	141	196	174
<b>Total .. .. .</b>	<b>7,658</b>	<b>8,711</b>	<b>10,027</b>
<b>Legislature and General Administration—</b>			
<b>Legislature—</b>			
Governor .. .. .	93	115	127
Parliament and Ministers .. .. .	495	575	601
Electoral .. .. .	89	60	57
<b>Financial Administration—</b>			
Treasury .. .. .	424	452	508
Pensions and Superannuation .. .. .	856	936	1,070
Auditor General .. .. .	233	249	267
Administration and Services, n.e.i. .. .. .	2,831	3,416	3,895
<b>Total .. .. .</b>	<b>5,019</b>	<b>5,802</b>	<b>6,526</b>
<b>Business Undertakings—</b>			
Transport Commission—Losses, Subsidies .. .. .	2,395	2,490	3,156
Metropolitan Transport Trust—Subsidy .. .. .	680	760	760
Water Supplies—Subsidy and Administration .. .. .	610	560	617
Electricity—Subsidies .. .. .	28	6	11
Housing—Subsidies and Losses .. .. .	46	46	49
Other .. .. .	100	122	100
<b>Total .. .. .</b>	<b>3,860</b>	<b>3,984</b>	<b>4,693</b>

**Consolidated Revenue Fund—Expenditure—continued**  
(\\$'000)

Classification by Function	1963-64	1964-65	1965-66
Maintenance of Law, Order and Public Safety—			
Administration of Justice, Courts, etc. ..	729	796	856
Police .. .. .	2,527	2,675	2,727
Prisons .. .. .	500	539	588
Reformatories .. .. .	105	105	108
Public Safety (Fire Brigades, etc.) .. .. .	182	182	192
Total .. .. .	4,043	4,296	4,470
Welfare—			
Relief of Destitute, Aged and Incapacitated ..	1,400	1,550	1,376
Child Welfare (Children of the State, etc.) ..	149	172	158
Other Services and Administration .. .. .	220	230	249
Total .. .. .	1,769	1,952	1,783
Regulation of Trade and Industry—			
Factories, Shops and Labour Legislation, etc. ..	330	338	351
Grand Total .. .. .	69,020	76,465	85,585

*Source of Data*

The classification of expenditure by function is derived from an analysis of published accounts. In some cases, the functional analysis simply repeats a total specified in the Treasurer's Financial Statement, (e.g. Auditor General's Department, Mines Department, Police Department, etc.). In other cases, individual minor items have been classified to function and then combined to produce the sub-group totals.

*Public Debt Charges*

This is the largest item of expenditure but a high proportion is recovered from semi-government authorities. The effect of these recoveries is illustrated in the following table:

**Net Burden on Consolidated Revenue—Public Debt Charges**  
(\\$'000)

Particulars	Interest			Sinking Fund Contribution		
	1963-64	1964-65	1965-66	1963-64	1964-65	1965-66
Public Debt Charges—						
Expenditure, Con-						
solidated Revenue	(a) 19,186	(a) 20,680	(a) 22,654	(b) 3,124	(b) 3,394	(b) 3,649
Recovered from						
Semi-Government						
Bodies, etc. ..	11,914	12,752	13,854	1,558	1,673	1,828
Net Burden on Con-						
solidated Revenue(c)	7,272	7,928	8,799	1,567	1,721	1,821

(a) Includes loan management charges.

(b) Contribution payable under the Financial Agreement to the National Debt Sinking Fund.

(c) In respect of non-revenue producing assets such as schools, roads, etc.

*Administration and Services, n.e.i.*

The salaries and expenses of departments not associated with any listed function have been included in the item "Administration and Services, n.e.i." (e.g. Public Service Commissioner's Department, Public Works Department, Premier and Chief Secretary's Department, etc.). Also included in this item are the upkeep of public buildings and other expenditure which cannot be allocated to a listed function.

*Business Undertakings*

Unlike the Consolidated Revenue Funds of some Australian States, the Tasmanian Fund excludes the gross receipts and expenditure of State business undertakings such as railways, bus services, water supply, etc. The principal charges in 1965-66 under this item were incurred in respect of the Transport Commission and consisted of: (i) re-imbursement of net loss 1964-65, (\$1,127,459) and (ii) proceeds of State Land Tax paid to Commission (\$2,028,625). Another major item was a contribution of \$760,000 to the Metropolitan Transport Trust which experienced a net trading loss of \$754,376 in 1965-66.

*Roads and Bridges*

The chief expenditure under this item in 1965-66 was a transfer of \$3,425,146 to the State Highway Trust Fund, such sum representing revenue received from motor tax, vehicle registrations, drivers' licences and public vehicle fees and charges, less \$808,253 retained by the Transport Commission to meet the cost of vehicle registration and traffic control.

**State Trust and Special Funds**

Revenues of the State are payable to Consolidated Revenue with the exception of certain revenues which have been set aside by various Acts of Parliament for specific purposes and which are payable into special funds or accounts at the State Treasury. The volume of these transactions is high, \$84,497,562 being received in 1965-66, \$84,034,162 being expended and the balance in the funds changing from \$3,764,907 (1 July 1965) to \$4,228,307 (30 June 1966).

It should be noted that many accounts in the Trust and Special Funds indicate Treasury transactions which are merely supplementary to those recorded under Consolidated Revenue and Loan Funds; examples are given below:

**State Trust and Special Funds—Selected Accounts, 1965-66**  
( '\$000)

Account	Receipts	Expenditure
Commonwealth Tax Deductions Suspense Account (a)	4,189.5	4,189.5
Pay-roll Tax Suspense (b) .. .. .	825.1	825.1
Hydro-Electric Commission Suspense Account (c) ..	1,202.4	1,791.9

- (a) Wages and salaries included under Consolidated Revenue and Loan Fund expenditure are shown at gross value; however, the deductions applicable to wage and salary earners on Government pay-rolls are passed, via this account, to the Commonwealth.
- (b) Expenditure under Consolidated Revenue and Loan Fund includes pay-roll tax; however, pay-roll tax applicable to Government pay-rolls is passed, via this account, to the Commonwealth.
- (c) The Treasury acts as agent for meeting overseas liabilities incurred by the Hydro-Electric Commission; these liabilities, being mainly incurred in the acquisition of plant and equipment, are largely accounted for in Loan Fund expenditure.

Many accounts are concerned with Government activities financed by the Commonwealth, the State acting as trustee or agent in the transactions; examples are given:

**State Trust and Special Funds—Selected Accounts, 1965-66**  
( \$'000)

Account	Receipts	Expenditure
Tasmanian University (Commonwealth Grants) Account (a) .. .. .	941.8	941.8
Commonwealth Free Milk Scheme Account (b) .. .. .	407.7	431.9
Home Builders Fund (c) .. .. .	3,162.3	3,138.7

(a) Treasury passes Commonwealth grants to University of Tasmania.

(b) Education Department administers free milk scheme for school children on behalf of Commonwealth.

(c) Agricultural Bank administers loans to home builders, the source of funds being the Commonwealth.

In the case of some accounts, there is provision for crediting the Trust and Special Funds with contributions from Consolidated Revenue, an important example being the State Highways Trust Fund:

**State Trust and Special Funds—State Highways Trust Fund, 1965-66**  
( \$'000)

Item	Receipts	Expenditure
Commonwealth Contribution .. .. .	7,000.0	..
Grant from Consolidated Revenue .. .. .	3,425.1	..
Roads Expenditure .. .. .	180.9	10,617.7
Self-Balancing Entries (Contra) .. .. .	3,073.6	3,073.6
Fund Entries .. .. .	13,679.6	13,691.3

The Forestry Fund Account records transactions under legislation requiring revenue from forestry to be paid to Consolidated Revenue, and for Consolidated Revenue to expend an equal amount on forestry in the following year:

**State Trust and Special Funds—Forestry Fund Account, 1965-66**  
( \$'000)

Item	Receipts	Expenditure
Grant from Consolidated Revenue (a) .. .. .	1,498.5	..
Expenditure on Forestry .. .. .	..	1,472.8
Self-Balancing Entries (Contra) .. .. .	143.5	143.5
Fund Entries .. .. .	1,642.0	1,616.3

(a) Consolidated Revenue recorded Forestry receipts of \$1,498,528 in 1964-65; this sum therefore became the 1965-66 contribution from Consolidated Revenue.

Some of the funds held in trust are not owned by the State Government, examples being: Prisoners' Earnings Deposit Account; Tasmanian Sanatorium Donations Account; St John's Park Inmates Trust Account. Other funds are held on behalf of semi-government authorities, such as the Hydro-Electric Commission, the Agricultural Bank, the Transport Commission, etc.

Since the number of individual accounts in the State Trust and Special Funds approaches 130, a description or analysis of each account is beyond the scope of the Year Book. The annual report of the Auditor-General is a useful source in any investigations of transactions in the Trust and Special Funds.

### State Loan Fund

The *Public Account Act* 1962 has, *inter alia*, the following provisions relating to the Loan Fund: (i) the Governor, on Treasury advice, may make transfers between block votes as long as the total authorised amount is not exceeded; (ii) a sum of up to \$400,000 may be spent for purposes not previously authorised; (iii) for purposes previously authorised, an additional sum of up to \$1,000,000 may be spent; (iv) in instances of expenditure outside the provisions of a specific Loan Fund Appropriation Act, the ratification of such action is to be sought from Parliament before the close of the following financial year. The Act also provides that the unexpended balances of votes at the close of the financial year lapse (in contrast with previous practice when such balances were carried forward from year to year).

Expenditure from the Loan Fund is devoted to two main purposes: (i) the making of advances to State semi-government authorities; (ii) the carrying out of the State's own works programme. Such funds, whether lent to other authorities for their works programmes or spent directly by the State, result in the creation of new capital assets, a large proportion of which are revenue earning and therefore capable of re-imbursing the State for the debt charges which it has incurred. (The previous section on Consolidated Revenue Expenditure shows the *gross* and *net* expenditure on annual debt charges.)

In addition to money from loan raisings, the Loan Fund records other receipts such as repayment of advances and Commonwealth capital grants; it is usual, therefore, to record loan expenditure on both gross and net bases. The annual net loan expenditure is, in effect, the disbursement of the new borrowings for the year, augmented or diminished by the net movement in the Loan Fund balance. The following table shows the calculation of net loan expenditure from two viewpoints: (i) as a residue from gross loan expenditure; (ii) as the algebraic sum of new loan raisings and the net movement in the Loan Fund balance:

State Loan Fund—Calculation of Net Loan Expenditure  
(\$'000)

Particulars	1963-64	1964-65	1965-66
(i) Gross Loan Expenditure ..	35,354	35,816	39,411
Less Repayments .. ..	2,028	1,943	2,092
Less Commonwealth Grants ..	421	521	745
Net Loan Expenditure ..	32,905	33,352	36,573
(ii) New Borrowings .. ..	32,150	34,172	34,899
Decrease, Loan Fund Balance ..	751	— 820	1,675
Other (a) .. ..	4	..	..
Net Loan Expenditure ..	32,905	33,352	36,573

(a) Discount and capital appreciation items.

The following table shows gross and net loan expenditure annually:

**Loan Fund—Gross and Net Loan Expenditure**  
( '\$000 )

Year	Loan Expenditure		Year	Loan Expenditure	
	Gross	Net		Gross	Net
1948-49 .. ..	11,050	9,012	1957-58 ..	23,390	21,666
1949-50 .. ..	11,742	9,884	1958-59 ..	27,610	25,112
1950-51 .. ..	30,802	27,464	1959-60 ..	29,130	26,442
1951-52 .. ..	34,048	30,298	1960-61 ..	33,866	30,612
1952-53 .. ..	40,152	26,136	1961-62 ..	32,520	30,088
1953-54 .. ..	31,816	27,544	1962-63 ..	33,332	30,510
1954-55 .. ..	35,310	29,378	1963-64 ..	35,354	32,905
1955-56 .. ..	35,212	27,048	1964-65 ..	35,816	33,352
1956-57 .. ..	23,544	22,038	1965-66 ..	39,411	36,573

In the remainder of this section, tables will deal with *net* loan expenditure only since this is directly related to aggregate net loan expenditure and to the State Public Debt.

In 1965-66, the principal items of loan fund expenditure were: (i) hydro-electric works; (ii) hospitals; (iii) education buildings; (iv) roads and bridges; (v) forestry. The following table shows *net* loan expenditure according to purpose for three years and the aggregate net loan expenditure to 30 June 1966:

**Loan Fund—Net Loan Expenditure, Annual and Aggregate**  
( '\$000 )

Purpose	Annual Net Expenditure			Aggregate Net Expenditure to 30 June 1966
	1963-64	1964-65	1965-66	
Capital for State Business Undertakings—				
Hydro-Electric Development	14,200	16,514	16,500	255,919
Railways, Bus Services and Transport .. ..	434	574	805	35,789
Water Supply Schemes ..	1,336	1,784	1,036	15,460
Other .. ..	48	138	224	2,588
Total .. ..	16,018	19,010	18,564	309,756
Loans and Advances—				
Aluminium Industry Agreements .. ..	533	Cr 67	Cr 167	5,495
Assistance to Industries ..	Cr 55	312	343	2,996
Tourist Accommodation Loans	70	166	199	1,595
Loans to Local Bodies ..	118	Cr 42	119	1,606
Housing—Advances and Construction (a) .. ..	Cr 412	Cr 333	Cr 274	27,970
Primary Producers (including Land Settlement) (b) ..	286	749	563	5,914
Total .. ..	540	785	783	45,576



**Loan Fund—Net Loan Expenditure, Annual and Aggregate—continued**  
( \$'000 )

Purpose	Annual Net Expenditure			Aggregate Net Expenditure to 30 June 1966
	1963-64	1964-65	1965-66	
State Works and Purposes—				
Roads, Bridges and Harbours	4,761	3,468	4,422	55,593
School Buildings and University	4,293	4,053	4,438	46,832
Hospital Buildings .. ..	3,805	3,861	5,153	35,164
Other Public Buildings .. ..	610	878	415	13,071
Forestry .. ..	1,285	1,701	1,322	14,248
Other Public Works and Purposes .. ..	1,400	Cr 450	1,468	15,566
Total .. ..	16,154	13,511	17,217	180,475
Financial—				
Loan Flotation and Conversion Expenses .. ..	32	46	9	5,167
Capital Losses Funded .. ..	..	..	..	2,961
Revenue Deficits Funded .. ..	161	..	..	11,493
Total .. ..	193	46	9	19,621
Grand Total .. ..	32,905	33,352	36,573	555,428

- (a) Expenditure under the second Commonwealth-State Housing agreement is excluded. Net advances under the agreement were \$7,153,749 in 1965-66 and net aggregate advances to 30 June 1966 were \$50,105,476.
- (b) Expenditure for War Service Land Settlement from Commonwealth funds is excluded. Net advances amounted to \$778,848 in 1965-66 and net aggregate advances to 30 June 1966 were \$42,365,492.

The headings in the previous table have the following significance: expenditure classified under "Business Undertakings" and "Loans and Advances" is, in effect, a form of investment by the State. Such investment has two effects: (i) the *net* burden on Consolidated Revenue in respect of annual debt charges is not increased, since the Treasury obtains interest and sinking fund payments from the various authorities and enterprises to which money has been advanced; (ii) in some cases, the advances are recoverable and are credited to the Loan Fund as repayments (e.g. Assistance to Industries). Expenditure under "State Works and Purposes" results in the creation of physical assets (e.g. bridges, schools, etc.) but the associated annual debt charges are not recovered directly and lead to an increase in the net burden on Consolidated Revenue. Expenditure under "Financial" is not associated with the creation of any assets but it too increases the net burden on Consolidated Revenue in respect of annual debt charges. In each of the last three years, more than half of the annual net loan expenditure has been invested by the State in loans to other authorities and enterprises.

In the case of some State business undertakings, the capital indebtedness of the authority may not correspond closely with the associated aggregate net expenditure recorded in the Loan Fund, the principal example being the Transport Commission; the capital indebtedness of the railways was reduced by \$8,756,000 as from 1 July 1936 by transfer of the annual debt charges on this sum as a burden on Consolidated Revenue. Under the heading "Financial" appears an item "Capital Losses Funded"; the principal component of the aggregate to 30 June 1966 was \$2,357,954 representing losses on returned soldiers' settlement schemes initiated after the First World War.

Aggregate net loan expenditure records the expenditure of loan borrowings from the commencement of the State Public Debt and the table indicates that the main liability is now for the following purposes (in descending order of magnitude): (i) hydro-electric development; (ii) roads, bridges and harbours; (iii) education buildings; (iv) railways, bus services, etc.; (v) hospitals; (vi) housing.

The relationship between aggregate net loan expenditure, total loans raised and the State Public Debt is established in the following table:

**Aggregate Net Loan Expenditure and State Public Debt (a) at 30 June (\$'000)**

Particulars	1964	1965	1966
Aggregate Net Loan Expenditure ..	485,508	518,866	556,307
Unexpended Balance, Loan Fund ..	2,609	3,429	1,755
Grand Total Loans Raised ..	488,117	522,295	558,061
Less Aggregate Redemptions From Sinking Funds .. ..	47,714	51,901	56,388
Less Liability for Exchange on Overseas Redemption .. ..	8,092	8,092	10,015
State Public Debt (a) .. ..	432,311	462,302	491,658

(a) Overseas component at exchange rates prevailing on 1 July 1927.

### State Public Debt

The State Public Debt is calculated on two bases: (i) With overseas debt calculated at "mint par of exchange", i.e. at the exchange rates prevailing on 1 July 1927. "Mint par debt" is the official debt for the purpose of determining sinking fund contributions payable under the Financial Agreement, 1927. (ii) With overseas debt calculated at current rates of exchange. The following table shows the State Public Debt calculated on both bases:

**State Public Debt at 30 June 1966—At Mint Par of Exchange and at Current Rates of Exchange**

Place in Which Debt Repayable	\$ Aust. at Mint Par of Exchange		\$ Aust. at Current Rates of Exch.	
	Conversion Rate of \$A (a)	Debt (\$'000)	Conversion Rate of \$A	Debt (\$'000)
Australia .. ..	..	471,045	..	471,045
London .. ..	£0.5 sterling	13,733	£0.4 sterling	17,166
New York .. ..	U.S. \$2.43325	5,743	U.S. \$1.1200	12,478
Canada .. ..	C. \$2.43325	444	C. \$1.2108	892
Switzerland .. ..	S. Francs 12.61965	293	S. Francs 4.8978	756
Netherlands .. ..	Guilders 6.053925	399	Guilders 4.0544	596
Total .. ..	..	491,658	..	502,933

(a) Exchange rates at 1 July 1927 (rates for £A 0.5).

The principal changes between the 1927 rates of exchange and those current today occurred in two stages: (i) 1930, when the Australian pound was devalued 20 per cent in relation to sterling; (ii) 1949, when the Australian pound was devalued by 30.5 per cent parallel to a similar devaluation in sterling.

The growth of the public debt, expressed at mint par of exchange, is shown in the following table:

**State Public Debt—Place of Flotation and Nominal Interest Payable (\$'000)**

At 30 June	Debt Redeemable In—						Total	Nominal Interest (a)
	London	New York	Switzer- land	Canada	Nether- lands	Australia		
1956..	13,984	628	..	..	..	229,834	244,446	9,150
1957..	12,972	692	..	..	..	251,504	265,168	10,430
1958..	12,932	1,308	..	..	..	271,882	286,122	11,504
1959..	14,732	1,918	..	..	..	291,000	307,650	12,540
1960..	14,682	2,482	..	..	..	313,880	331,044	13,806
1961..	14,662	3,056	293	505	..	336,042	354,559	15,362
1962..	14,652	3,572	293	505	399	359,830	379,252	16,658
1963..	16,092	4,846	293	505	399	382,458	404,594	18,012
1964..	17,724	4,684	293	486	399	408,724	432,311	19,259
1965..	17,544	4,430	293	473	399	439,163	462,302	21,707
1966..	13,733	5,743	293	444	399	471,045	491,658	23,987

(a) Interest has been calculated on the face value of individual loans outstanding at 30 June; no allowance has been made for variations in exchange rates since 1 July 1927.

A notable feature of the public debt of the State is that approximately 95 per cent of indebtedness is now domiciled in Australia. There has been a gradual change from the situation which existed a century ago when nearly all loans were financed in London. In 1870, the State's public debt (\$2,537,400) was wholly redeemable in London and even in 1900, less than 10 per cent of the State debt was redeemable in Australia.

#### *Public Debt Transactions*

The following table shows particulars of loans raised and redeemed during a three-year period (expressed at mint par of exchange). It will be observed that redemption of loans falling due in any particular year is achieved, in the main, by conversion (i.e. by renewal of the original loans on new terms and conditions):

**State Public Debt—Conversion and Redemption (a)  
(\$'000)**

Particulars	1963-64	1964-65	1965-66
<b>Loans Raised—</b>			
For Additional Borrowings .. ..	31,728	34,178	33,020
For Conversion Purposes .. ..	18,832	35,890	53,214
For Redemption, Maturing Loans .. ..	568	1,560	9,472
<b>Total Raisings .. ..</b>	<b>51,128</b>	<b>71,628</b>	<b>95,707</b>
<b>Deduct—</b>			
<b>Loans Redeemed—</b>			
By Conversion .. ..	18,832	35,890	53,214
From New Cash Raisings .. ..	567	1,560	8,649
From National Debt Sinking Fund .. ..	4,012	4,187	4,487
<b>Net Increase in Public Debt ..</b>	<b>27,717</b>	<b>29,991</b>	<b>29,355</b>
<b>Debt at End of Year .. ..</b>	<b>432,311</b>	<b>462,302</b>	<b>491,658</b>

(a) At exchange rates at 1 July 1927.

The following table shows the due dates of loans outstanding *at current exchange rates* (i.e. at the rates prevailing at 30 June 1966) and also the country in which the loans will fall due.

**Due Dates of Loans at 30 June 1966**  
(£'000)

Maturing During	Amount Maturing				Total
	In Australia	In London	In New York	Elsewhere Overseas	
1966-67 .. ..	45,998	..	418	..	46,416
1967-68 .. ..	55,359	6,602	..	..	61,961
1968-69 .. ..	38,169	..	..	..	38,169
1969-70 .. ..	27,228	1,506	..	..	28,734
1970-71 .. ..	19,142	..	283	..	19,425
1971-72 .. ..	23,943	..	441	..	24,384
1972-73 .. ..	30,704	..	1,015	..	31,719
1973-74 .. ..	11,451	..	..	..	11,451
1974-75 .. ..	23,201	2,478	..	..	25,679
1975-76 .. ..	27,226	210	..	756	28,192
1976-77 .. ..	996	..	..	..	996
After 30 June 1977 (a) .. ..	167,629	6,370	10,321	1,488	185,808
Total .. ..	471,045	17,166	12,478	2,244	502,933

(a) Falling due in financial years 1977-78 to 1987-88.

The following table shows the rates of interest which were payable on the State Debt and the portions of the debt at each rate in Australia, London, New York and elsewhere overseas respectively (*at current exchange rates*):

**Rates of Interest on Public Debt at 30 June 1966**  
(£'000)

Rate of Interest (Per Cent)	Amount Maturing				Total
	In Australia	In London	In New York	Elsewhere Overseas	
1.0 .. ..	567	..	..	..	567
3.0 .. ..	..	1,877	..	..	1,877
3.25 .. ..	..	3,985	..	..	3,985
3.5 .. ..	..	..	418	..	418
3.75 .. ..	14,012	..	..	..	14,012
4.0 .. ..	4,622	4,724	..	..	9,346
4.125 .. ..	16,320	..	..	..	16,320
4.1875 .. ..	1,812	..	..	..	1,812
4.25 .. ..	37,189	..	..	..	37,189
4.3125 .. ..	850	..	..	..	850
4.4375 .. ..	2,092	..	..	..	2,092
4.5 .. ..	94,841	..	283	756	95,880
4.625 .. ..	2,954	..	..	..	2,954
4.75 .. ..	42,458	..	1,015	..	43,473
5.0 .. ..	179,775	..	1,311	596	181,682
5.25 .. ..	56,191	..	2,151	..	58,342
5.375 .. ..	17,362	..	..	..	17,362
5.5 .. ..	..	6,173	3,768	892	10,833
5.75 .. ..	..	..	3,533	..	3,533
6.0 .. ..	..	408	..	..	408
Total .. ..	471,045	17,166	12,478	2,244	502,933

The next table summarises the transactions of the National Debt Commission in relation to the Tasmanian Public Debt:

**National Debt Commission—Transactions in Respect of Tasmanian Public Debt (\$'000)**

Particulars	1963-64	1964-65	1965-66
Balance at Beginning of Period .. .. .	374	337	330
Contributions—			
From Commonwealth Government ..	1,062	1,129	1,212
From State Government .. .. .	3,122	3,392	3,641
Interest Received (Net) .. .. .	10	Cr 1	6
Funds Available .. .. .	4,568	4,857	5,189
Deduct			
Redemptions and Re-purchases (a)—			
At Mint Par of Exchange .. ..	4,012	4,187	4,487
Exchange Adjustment .. .. .	218	340	543
Balance at End of Period .. .. .	337	330	159

(a) The sum of the two specified items represents the cost at current rates of exchange.

### Taxation in Tasmania

#### Introduction

As citizens of the Commonwealth, Tasmanians are subject to taxes levied both by the State and the Commonwealth. The relative magnitude and severity of the two forms of taxation are compared in the following table:

**Taxation, State of Tasmania and Commonwealth, 1965-66 (a)**

Tax	Amount (\$'000)		Per Head of Population (\$)	
	Tasmania (b)	Common- wealth (c)	Tasmania (d)	Common- wealth (d)
Income and Social Services Con- tribution .. .. .	..	2,549,882	..	222.81
Customs and Excise .. .. .	..	1,022,970	..	89.39
Sales .. .. .	..	370,049	..	32.34
Pay-roll .. .. .	..	161,943	..	14.15
Probate and Succession Duties ..	2,005	36,124	5.43	3.16
Motor .. .. .	4,233	..	11.47	..
Stamp Duties .. .. .	3,078	..	8.33	..
Land .. .. .	2,029	..	5.49	..
Racing .. .. .	1,041	..	2.82	..
Liquor .. .. .	739	..	2.00	..
Entertainment .. .. .	..	..	..	..
All Other .. .. .	26	44,562	0.07	3.89
Total .. .. .	13,150	4,185,531	35.60	365.73

(a) Collections from all sources of taxation, including amounts paid to special funds.

(b) State taxation collected by Tasmanian Government.

(c) Commonwealth Government taxation for Australia.

(d) Based on respective *mean* populations.

Assuming that Tasmanians contributed to Commonwealth taxation in strict proportion to the relative mean populations of the State and the Commonwealth, it would be theoretically correct to add the two per capita figures (\$35.60 and \$365.73) and arrive at a figure of \$401.33 as the total per capita taxation of the Tasmanian and Commonwealth Governments within the State.

An alternative way of examining the problem is to refer to total Commonwealth taxes collected in Tasmania but this measure is unsatisfactory for a number of reasons, the chief defects being:

- (i) Commonwealth income tax and estate duty are recorded not only in the six States but also in a *Central Office* collecting from individuals and companies with specified interstate income or assets. Central Office collections of income tax amount to approximately one-third of the Australian total and, to this extent, reduce the collections credited to the six States.
- (ii) Goods shipped to Tasmania will, in some cases, already have been taxed in another State in respect of customs, excise or sales taxes. Even though other States are credited with the collection of these three taxes, the fact remains that Tasmanians bear their incidence in the form of increased commodity prices. The amount of tax collected in other Australian States on goods shipped to Tasmania is not known.

### *Estimated Incidence*

The following table shows actual collections of Commonwealth taxes in the State and also their estimated incidence:

**Taxation—Collected by Commonwealth in Tasmania and  
Estimated Incidence in Tasmania  
(\$'000)**

Tax	1963-64	1964-65	1965-66
Collected in Tasmania—			
Income Tax (a) .. .. .	37,935	44,958	53,189
Estate Duty (a) .. .. .	702	638	682
Wool Tax .. .. .	121	321	395
Export Charges .. .. .	220	187	174
Pay-roll Tax .. .. .	3,733	3,807	4,182
Gift Duty .. .. .	146	137	122
Stevedoring Industry Charge .. .. .	691	567	465
Butter Fat Levy .. .. .	..	..	122
Other Levies .. .. .	2	2	47
Sales Tax .. .. .	7,048	7,950	7,839
Customs .. .. .	2,764	1,801	2,413
Excise .. .. .	14,939	16,466	19,139
Total Collected in Tasmania .. ..	68,300	76,834	88,768
Collected Elsewhere in Australia (b)—			
Sales Tax .. .. .	(r) 3,022	3,176	3,391
Customs .. .. .	(r) 4,436	6,433	5,809
Excise .. .. .	(r) 3,094	2,890	3,678
Estimated Incidence (a) .. ..	(r)78,852	89,333	101,645

(a) Excludes Central Office collections.

(b) Estimated; goods on which these taxes were paid are assumed to have been sold in Tasmania.

(r) Revised.

In estimating the collection, in other Australian States, of the main taxes affecting Tasmanians, account was taken of the latest retail sales figures which show Tasmanian *per head* sales to be 94 per cent of the corresponding Australian figure. Accordingly the *per head* incidence of customs, excise and sales taxes in Tasmania was taken to be 94 per cent of the Australian *per head* collection

figure for each tax. It will be apparent that the estimated incidence still falls far short of a realistic figure due to the unknown Tasmanian contribution to Central Office collections of income tax and estate duty.

*Commonwealth Income Tax and Social Services Contribution*

Uniform taxation on incomes throughout Australia was adopted in 1942 when the Commonwealth Government became the sole authority levying this tax.

With the introduction of Social Services Contribution from 1 July 1946, the levy of taxation on the incomes of individuals was divided into two separate taxes: (i) Income Tax; (ii) Social Services Contribution. Both taxes were based upon the same definitions of assessable income and both were assessed and collected concurrently. Company income was not subject to Social Services Contribution except with regard to the undistributed income of private companies. The two taxes have since been merged into a single levy known as "Income Tax and Social Services Contribution" and this title now refers to the tax imposed on the incomes of both individuals and companies. It first applied to the tax imposed on incomes derived by individuals during the year ended 30 June 1951, and by companies during the year ended 30 June 1950.

Certain types of income are exempt from tax in Australia. These include income from gold and uranium mining; war, invalid, age, and widows' pensions; child endowment; and unemployment and sickness benefits.

Expenses incurred in earning income and losses incurred in previous years are allowable deductions in calculating taxable income.

For the income year 1966-67, Income Tax and Social Services Contribution was payable on the incomes of individuals and commenced at a taxable income of \$417. However, certain limitations applied to the tax payable by aged persons, over 65 years of age in the case of a male and over 60 years in the case of a female. Concessional deductions were allowed to taxpayers on account of dependants, certain medical and dental expenses, life insurance premiums, superannuation contributions, medical or hospital benefits fund payments, education expenses, etc. and were subtracted from income to calculate taxable income. Dependants included spouse, parents, parents-in-law, children under sixteen years of age, student children under 21 years of age, invalid child, brother or sister over 16 years of age, or daughter-housekeeper for widow or widower. A concessional deduction might be allowed for a housekeeper having the care of children under 16 years of age or of an invalid relative where the taxpayer did not contribute to the maintenance of a spouse or daughter-housekeeper. The amount of concessional deduction allowable in respect of each type of dependant and housekeeper was:

spouse, \$286; parent or parent-in-law, \$286; children under 16 years: one child, \$182, other children, \$130 each; student child, 16 to 21 years, \$182 each; invalid relative not less than 16 years, \$182 each; housekeeper or daughter-housekeeper, \$286.

*In the August 1967 Federal budget, concessional deductions were increased \$26, e.g. spouse from \$286 to \$312; first child from \$182 to \$208, etc. The aged persons' tax liability was further reduced.*

In the matter of education expenses, payments actually made for recognised school uniforms, fees, books, fares, etc. were allowed as deductions up to a maximum of \$300 per child or dependant.

The following table shows the rates of Income Tax and Social Services Contribution for individuals for the income year 1966-67:

**Australia—Rates of Income Tax and Social Services  
Contribution for Individuals, Income Year 1966-67**

(\$)

Selected Total Taxable Income (a)			Tax and Contribution Payable		
Selected Total Taxable Income (a)			Tax and Contribution Payable		
417	..	..	0.51	3,200	.. .. 518.34
500	..	..	9.63	3,400	.. .. 579.02
600	..	..	15.88	3,600	.. .. 639.70
700	..	..	24.29	3,800	.. .. 705.50
800	..	..	32.69	4,000	.. .. 771.31
1,000	..	..	54.83	4,800	.. .. 1,061.59
1,200	..	..	80.46	5,600	.. .. 1,375.65
1,400	..	..	109.57	6,400	.. .. 1,671.70
1,600	..	..	142.16	7,200	.. .. 2,022.10
1,800	..	..	178.24	8,000	.. .. 2,392.50
2,000	..	..	217.81	8,800	.. .. 2,782.10
2,200	..	..	262.09	10,000	.. .. 3,402.50
2,400	..	..	306.37	12,000	.. .. 4,502.50
2,600	..	..	356.80	16,000	.. .. 6,818.50
2,800	..	..	407.23	20,000	.. .. 9,234.50
3,000	..	..	462.78	32,000	.. .. 16,830.50

(a) The tax on incomes unspecified in this table may be calculated by simple proportion, e.g. tax on \$1,700 equals \$142.16 *plus* 100/200 (\$178.24 *less* \$142.16). Incomes in excess of \$32,000 were further taxed at the rate of 66.7 cents.

There has been little variation in the rates of income tax on individuals since 1954-55, the chief change relating to a general five per cent rebate of tax operative in the years 1959-60, 1961-62, 1962-63 and 1963-64. For the year 1964-65, the rebate was withdrawn and, for 1965-66 and 1966-67, a 2½ per cent levy was added. The other major change was the lift in the minimum taxable income from the previous \$210 to \$417 in 1963-64. In general then, the rates of income tax for the 1966-67 income year are those for 1954-55 increased by only 2½ per cent. The yield from income tax in this period has shown steep annual increases, not because of rate variations, but because taxable incomes have also been rising.

A system operates whereby the majority of taxpayers have regular deductions made from their salaries or wages, i.e. the "pay-as-you-earn" principle. The amounts deducted are regulated so that the employee will have paid the approximate amount of his taxation by the end of the income year. At the end of the income year, the employee makes a return in which he may claim the refund of any overpayment of taxation instalments.

The following table shows the number of taxpayers, taxable income, and Income Tax and Social Services Contribution assessed during the year 1965-66 (based on incomes received during the year 1964-65).

The following definitions apply to the table:

- (i) Actual Income: Gross income *including exempt income* less expenses incurred in earning that income.
- (ii) Individuals: *Excluding companies*. Residents assessed both in Tasmania and at Central Office, also non-residents assessed in Tasmania.
- (iii) Taxable Income: Actual income *less* exempt income and *less* allowable deductions.



**Tasmania, Income Tax and Social Services Contribution—Income Year 1964-65**  
**Individuals—Residents and Non-Residents**

Grade of Actual Income	Taxpayers	Taxable Income			Net Income Tax and Social Services Contribution Assessed
		Salaries and Wages	Other	Total	
\$	No.	\$'000	\$'000	\$'000	\$'000
417- 599 ..	4,496	1,908	298	2,206	41
600- 799 ..	5,743	3,186	550	3,737	117
800- 999 ..	7,011	4,973	784	5,757	247
1,000- 1,199 ..	7,670	6,370	1,193	7,563	406
1,200- 1,399 ..	7,452	7,062	1,496	8,558	546
1,400- 1,599 ..	8,391	9,128	1,808	10,936	796
1,600- 1,799 ..	7,799	9,138	2,053	11,192	898
1,800- 1,999 ..	8,675	11,152	2,126	13,277	1,136
2,000- 2,199 ..	9,550	13,275	2,422	15,697	1,437
2,200- 2,399 ..	10,214	15,390	2,510	17,900	1,748
2,400- 2,599 ..	9,982	16,168	2,523	18,692	1,931
2,600- 2,799 ..	8,441	14,321	2,346	16,667	1,804
2,800- 2,999 ..	7,423	13,203	2,521	15,724	1,792
3,000- 3,999 ..	20,511	41,477	10,144	51,622	6,770
4,000- 5,999 ..	10,386	24,456	12,632	37,088	6,293
6,000- 7,999 ..	2,397	6,243	6,812	13,055	2,929
8,000- 9,999 ..	929	2,361	4,388	6,750	1,811
10,000-19,999 ..	981	2,370	8,537	10,907	3,910
20,000-29,999 ..	86	167	1,601	1,768	822
30,000 and over	26	127	815	942	508
Total ..	138,163	202,478	67,558	270,035	35,941

*Companies (Income Tax and Social Services Contribution)*

The tax payable by companies for the financial year 1965-66 is based on income derived during the year ended 30 June 1965 or substituted accounting period. (In the case of tax on individuals, however, financial year and income year are usually synonymous.)

The following table shows the rates of tax and contribution payable by companies for the financial years 1965-66 and 1966-67:

**Rates of Income Tax and Social Services Contribution**  
**Companies—Financial Year 1966-67**

Scale			Taxable Income	
			Up to \$10,000	Balance
			cents per \$	cents per \$
A	..	..	27.5	37.5
B	..	..	32.5	42.5
C	..	..	37.5	42.5
D	..	..	32.5	32.5

The following shows the application of the above scales to the various types of company:

*Private:* (A) except that 50 cents in the \$ was payable on the undistributed amount.

*Co-operative:* (B).

**Life Assurance:** If purely mutual (A). Other Life Assurance (if resident), mutual income (A); other income (C) except that maximum other income subject to 37.5 cent rate is \$10,000 less mutual income; if non-resident, mutual income (A), dividend income (B), other income (C) except that maximum dividend income subject to 32.5 cent rate is \$10,000 less mutual income, and maximum other income subject to 37.5 cent rate is \$10,000 less the sum of dividend and mutual income.

**Non-Profit:** Friendly Society Dispensary (D); other (B).

**Other Companies:** Resident (C); non-resident—dividend income (B), other income (C) except that maximum other income subject to 37.5 cent rate is \$10,000 less dividend income.

Certain types of interest payments were also subject to a tax of 42.5 cents in the \$.

### State Taxation

In the section on Consolidated Revenue, taxes collected by the Tasmanian Government were shown in summarised form.

The next table gives full details of State taxation. It should be noted that certain taxes are reserved for special purposes. Examples are: (i) Land Tax—although this item is recorded as a Consolidated Revenue receipt, it is passed to the Transport Commission; (ii) Motor Taxation—the component specified as “for Consolidated Revenue” is passed to the State Highway Trust Fund; (iii) Racing and Gaming Taxes—the second component is passed to the racing clubs.

**Tax Collections by the Tasmanian Government (a)**  
(£'000)

Tax	1963-64	1964-65	1965-66
Deceased Persons' Estates Duties .. .. .	2,135	2,006	2,005
Entertainments Tax .. .. .	(b) 53	..	..
Stamp Duties (excluding Bookmakers' Tickets)—			
Cheques .. .. .	258	284	509
Bills of Exchange .. .. .	1	1	3
Bills of Lading .. .. .	1	1	1
Hire-Purchase Agreements .. .. .	345	402	413
Legal Documents, etc. .. .. .	819	998	978
Adhesive Revenue Stamps .. .. .	339	400	392
Insurances .. .. .	427	543	782
Racing and Gaming Taxes—			
For Consolidated Revenue .. .. .	497	557	633
For Other Funds .. .. .	358	458	408
Land Tax .. .. .	1,554	1,678	2,029
Motor Taxation—			
For Consolidated Revenue .. .. .	3,019	3,153	3,425
For Other Funds .. .. .	686	784	808
Liquor Tax and Related Licences—			
Tax .. .. .	509	547	638
Publicans' Licences, etc. .. .. .	31	32	30
Wholesale Licences .. .. .	46	46	67
Registration of Clubs .. .. .	5	5	4
Sundry Licences—			
Animals' and Birds' Protection Act .. .. .	15	13	14
Auctioneers and Estate Agents .. .. .	7	7	7
Other .. .. .	5	5	5
<b>Total .. .. .</b>	<b>11,110</b>	<b>11,918</b>	<b>13,150</b>

(a) Collections from all sources of taxation, including amounts paid to special funds.

(b) Collected until September 1963.

*State Land Tax*

The rates of land tax assessed on urban unimproved land values for the year 1965-66 are shown in the following table:

**Rates of State Land Tax—Urban Land, 1965-66**  
(£)

Taxable Value (Selected Values) (a)	Tax Payable	Taxable Value (Selected Values) (a)	Tax Payable
500	1	15,000	105
1,000	2	25,000	225
2,000	5	50,000	575
4,000	13	100,000	1,575
6,000	23	150,000	2,825
10,000	55	..	..

(a) Tax on intermediate values can be calculated by simple proportion, e.g. tax on \$5,000 equals \$13 *plus* 1,000/2,000 (\$23 *less* \$13). Land values exceeding \$150,000 were further taxed at 3 cents in the \$ on the excess.

The rates of land tax assessed on rural land values for the year 1965-66 are shown in the following table:

**Rates of State Land Tax—Rural Land, 1965-66**

Unimproved Value (£)	Taxable Value	Tax Rate
1-10,000 .. ..	Nil	Nil
10,001-15,000 .. ..	Three times the unimproved value less \$30,000	As for Urban land
15,001 and over .. ..	Unimproved value	As for Urban land

The following table summarises the value of urban, rural and composite properties and the tax assessed on each:

**State Land Tax—Value of Properties and Tax Assessed**  
(£'000)

Year	Gross Unimproved Value				Tax Assessed			
	Urban	Rural	Compo- site (a)	Total	Urban	Rural	Compo- site (a)	Total
1961-62	119,566	59,346	14,612	193,524	820	122	164	1,106
1962-63	134,012	65,976	16,020	216,008	958	126	182	1,266
1963-64	174,826	80,092	16,712	271,630	1,319	113	178	1,610
1964-65	182,497	90,412	17,612	290,520	1,367	118	188	1,672
1965-66	200,514	99,253	17,969	317,735	1,686	142	214	2,043

(a) Properties made up of both urban and rural land.

*Deceased Persons' Estates Duties*

The legislation dealing with State Deceased Persons' Estates Duties is contained in Acts No. 42 of 1957 and No. 62 of 1962. The following table gives details of assessments for 1965-66:

**State Deceased Persons' Estates Duties**  
**Number of Estates, Net Value and Tax Assessed, 1965-66**

Net Value of Estate	Estates		Net Value as Assessed	Total Duty Assessed (a)	Average Duty	
	Number Examined	Number Taxable			Per Estate Examined	Per Taxable Estate
\$	No.	No.	\$'000	\$'000	\$	\$
1- 500 ..	136	96	30	3	18.5	26.2
501- 1,000 ..	78	44	60	4	52.4	93.0
1,001- 1,500 ..	100	49	125	6	56.0	114.2
1,501- 2,000 ..	77	34	135	5	61.4	139.1
2,001- 3,000 ..	174	67	435	18	101.1	262.6
3,001- 4,000 ..	128	41	450	12	96.2	300.2
4,001- 5,000 ..	145	83	649	19	130.9	228.7
5,001- 6,000 ..	127	66	698	19	147.4	283.7
6,001- 8,000 ..	215	122	1,511	49	228.6	402.9
8,001- 10,000 ..	147	85	1,313	48	324.2	560.7
10,001- 15,000 ..	220	136	2,669	102	462.2	747.7
15,001- 20,000 ..	99	76	1,705	73	734.1	956.3
20,001- 30,000 ..	137	125	3,356	216	1,576.9	1,728.3
30,001- 40,000 ..	46	46	1,550	120	2,609.6	2,609.6
40,001- 50,000 ..	40	40	1,811	175	4,379.5	4,379.5
50,001-100,000 ..	56	56	3,754	455	8,123.8	8,123.8
100,001 and over ..	21	21	3,438	492	23,437.0	23,437.0
Adjustments ..	..	..	..	5	..	..
Total ..	1,946	1,187	23,687	1,819	..	..

(a) Rates of duty and levels of exemption vary according to the class of beneficiary and the type of asset contained in the estate.

### Motor Taxation

The chief components of motor taxation are: (i) vehicle registration fees; (ii) motor tax assessed on a power-weight formula; (iii) drivers' and riders' licences; (iv) other registration fees mainly related to public vehicles.

Details of motor taxation collections are shown in the following table:

**State Motor Taxation**  
**(\$'000)**

Particulars	1963-64	1964-65	1965-66
Vehicle Registration Fees .. .. .	454	481	504
Motor Tax .. .. .	2,662	2,837	2,990
Licences—Drivers and Riders .. .. .	246	271	381
Other Registration Fees .. .. .	343	348	358
Total .. .. .	3,705	3,937	4,233

### Racing Taxation

Under the *Racing and Gaming Act* 1952, licensed bookmakers pay a turnover commission of  $2\frac{1}{2}$  per cent if fielding at a Tasmanian course or taking bets on Tasmanian events at off-course premises. Such commissions are payable, through the Racing Commission, to the racing club concerned. Bets on other Australian races at Tasmanian off-course premises require payment of  $2\frac{1}{2}$  per cent commission, the State receiving  $2\frac{1}{4}$  per cent and the racing clubs  $\frac{1}{4}$  per cent.

Totalisator tax at five per cent (city area) and  $2\frac{1}{2}$  per cent (country) is payable to the State. Moneys payable to the State bear the administrative costs of the Racing Commission before passing to Consolidated Revenue. Details of Racing Taxation are as follows:

**State Racing Taxation—Collection and Distribution  
(\$'000)**

Particulars	1963-64	1964-65	1965-66
Totalisator Tax .. .. .	60	61	55
Bookmakers' Commission and Licences .. ..	648	791	820
Stamp Duty on Bookmakers' Tickets .. ..	147	163	166
<b>Total .. .. .</b>	<b>855</b>	<b>1,014</b>	<b>1,041</b>
Paid into Consolidated Revenue .. .. .	497	557	633
Racing Commission's Expenses .. .. .	34	34	34
Stipendiary Stewards' Expenses .. .. .	11	11	12
Racing Clubs' Commission .. .. .	313	412	362

The turnovers on which commissions were levied are as follows:

**Betting—Bookmakers' Turnover and Totalisator Turnover  
(\$'000)**

Particulars	1963-64	1964-65	1965-66
Licensed Bookmakers' Turnover .. ..	28,439	32,612	32,137
Totalisator Turnover .. .. .	1,260	1,274	1,149

*State Taxation on Lotteries*

From 1942 (when the Commonwealth Government became the sole collector of income tax), lotteries conducted from Hobart by Tattersalls (George Adams Estate) were Tasmania's chief source of revenue from State taxation. On 14 July 1954, the promoters transferred their operations to Victoria. A new organisation—Tasmanian Lotteries—was granted a licence and operated until 30 September 1961, when the proprietor surrendered the licence. No operator is now licensed.

The following records the contributions made to Consolidated Revenue by lotteries taxation from 1949-50:

**Taxation and Stamp Duties Imposed on Lotteries—Paid to Consolidated Revenue  
(\$'000)**

Year	Taxation and Stamp Duties	Year	Taxation and Stamp Duties	Year	Taxation and Stamp Duties
1949-50 ..	2,152	1953-54 ..	3,032	1957-58 ..	740
1950-51 ..	2,430	1954-55 ..	1,152	1958-59 ..	432
1951-52 ..	2,634	1955-56 ..	2,114	1959-60 ..	278
1952-53 ..	2,952	1956-57 ..	1,930	1960-61 ..	60

In September 1960 the *Racing and Gaming Act* 1952 was amended to permit agreements with other States for the sale of their lottery tickets in Tasmania. Under an agreement with the Victorian Government, Tattersalls were allowed to sell tickets through accredited Tasmanian representatives; the Victorian Government was to pay quarterly to the Tasmanian Government 15½ per cent of the value of subscriptions made as a result of this concession. The amounts received under the agreement have been: 1960-61, \$84,876; 1961-62, \$137,914; 1962-63, \$134,476; 1963-64, \$145,394; 1964-65, \$146,500; 1965-66, \$152,338. For the purpose of Public Finance Statistics, these amounts are classified not as "taxation" but as "payments from other States".

The high level of tax yield up to 1953-54 was largely attributable to the receipt, in Tasmania, of lottery subscriptions from other Australian States and from overseas, a major contributor being New Zealand. The later decline in tax yield was attributable to the competition of Government lotteries in N.S.W., Queensland and Western Australia, and Tattersalls operating under government licence in Victoria.

### Public Finance—Appendix

In general, the previous sections of Public Finance have been written to end with 1965-66 transactions, or with balances and aggregates at 30 June 1966. The main statistics for 1966-67 were as follows (in \$'000): Consolidated Revenue, receipts, 92,676; expenditure, 93,248; Net Loan Expenditure, 36,636; Aggregate Net Loan Expenditure to 30 June, 592,064; State Public Debt (at 1927 exchange rates), 514,918. Principal items of Consolidated Revenue receipts were (\$'000): Commonwealth grants, 54,807; State taxation, 13,289; debt charge recoveries, 17,456.

## PRIVATE FINANCE

### Decimal Currency

#### *Early Currency*

In N.S.W. in 1800, Governor King issued a proclamation relating to the official value of the many forms of currency in circulation in the colony and attached to it a "table of specie" as follows:

Governor King's Table of Specie, 1800

Currency Unit	Sterling Equivalent	Currency Unit	Sterling Equivalent
	£ s. d.		£ s. d.
A Guinea .. .. .	1 2 0	A Spanish Dollar .. .. .	0 5 0
A Johanna .. .. .	4 0 0	A Rupee .. .. .	0 2 6
An Half Johanna .. .. .	2 0 0	A Dutch Guilder .. .. .	0 2 0
A Ducat .. .. .	0 9 6	An English Shilling .. .. .	0 1 1
A Gold Mohur .. .. .	1 17 6	A Copper Coin of One Ounce	0 0 2
A Pagoda .. .. .	0 8 0		

Since Van Diemen's Land was colonised three years later as an extension of N.S.W., it followed that the same diverse forms of currency were soon in circulation in the Derwent and Tamar settlements. In 1813 in Sydney, Governor Macquarie, by proclamation, originated the "holey dollar" and the "dump"; the former, a silver dollar with the centre struck out, was officially valued at five shillings; the latter, being the struck out portion, was valued at fifteen pence. By 1822, full value dollars (i.e. without extraction of the dump) were being used extensively for cash transactions and there was considerable local agitation for the adoption of the dollar as the official currency.

In 1825, the British Government issued an Order-in-Council with the object of bringing the dual-currency to an end and insisting on the sole use of English currency in the Australian colonies. The adoption of sterling nomenclature and of English coins proceeded gradually and special efforts were made to assure an adequate supply of the official coins. These were imported in sufficient quantity to have displaced dollars and other foreign coins by the 1830s in N.S.W., and by the 1840s in Tasmania; from then on, English gold, silver and bronze coins, including gold sovereigns and half-sovereigns minted in Australia after 1855, were in use as the official currency until early in the present century.

After Federation in 1901, the only coins which were legal tender within Australia until 1909 were English coins. Subsequently, coins produced for the Commonwealth Treasury under the *Coinage Act*, and carrying Australian identification, were ordered, in the main, from the Royal Mint, London and its branches in Melbourne, Sydney and Perth, although some orders were filled by mints in the U.S.A. and India. In connection with the making of these Australian coins, the Commonwealth Government was simply a commercial customer concerned with the quality and cost of its orders, and it exercised no control over the operations of British mints established on Australian soil (at Sydney in 1855, Melbourne 1872, and Perth 1899).

The construction of the Royal Australian Mint in Canberra provided the Commonwealth Government for the first time with facilities for minting its own coinage; the Mint was opened by H.R.H. the Duke of Edinburgh on 22 February 1965. The first task of the new establishment was to produce coins for issue on the changeover to decimal currency in February 1966.

#### *Changeover to Decimal Coinage*

On 14 February 1966 the following £-s.-d. coins were in circulation: 2s., 1s., 6d., 3d., 1d. and  $\frac{1}{2}$ d. On this date, the following new coins were put into circulation: 50 cents (equal to 5s.), 20 cents (2s.), 10 cents (1s.), 5 cents (6d.), 2 cents (2.4d.) and 1 cent (1.2d.). It was provided that coins, both "new" and "old", might circulate side by side for a period of two years, the plan being to withdraw "old" coins through the banks.

#### *Changeover to Decimal Notes*

Notes in circulation in Australia are issued by the Reserve Bank through the Note Issue Department. The Bank had authority to issue Australian notes in denominations of 5s., 10s., £1, £5, £10 and any multiple of £10. The Reserve Bank is not required to hold a specific reserve in gold against the note issue, but the assets of the Note Issue Department must be held or invested in gold, on deposit with any bank, or in securities of the Government of the U.K., the Commonwealth, or a State. Under the *Reserve Bank Act* 1959, the profits of the Note Issue Department are paid to the Commonwealth.

Australian notes are legal tender to any amount within Australia and have been issued in denominations of 10s., £1, £5, £10, £20, £50, £100, and £1,000. Notes of denominations higher than £10 had not been issued to the public after 1945.

On 14 February 1966, the following notes were in general circulation: 10s., £1, £5 and £10. On this date, the following new notes were put into circulation: \$1 (equal to 10s.), \$2 (£1), \$10 (£5) and \$20 (£10). Although the decimal notes were completely new in design, the colours were arranged to establish at a glance the relationship between new and old (brown \$1; green \$2; blue \$10; red \$20). No issue was made of a \$5 note at this point in time since there was no single note equivalent (£2-10s.) in the £-s.-d. system; however, a \$5 note, purple in colour, was issued in May 1967. It was provided that notes, both "old" and "new", might circulate side by side for a period of two years, the plan being to withdraw "old" notes through the banks.

#### *Changeover Progress*

The changeover to decimal currency, including machine conversion, was accomplished with greater ease than originally expected; so much so, that in June 1967 the Commonwealth Government issued a proclamation under the *Federal Currency Act* 1965 bringing to an end the dual-currency interim period. With effect from 1 August, business in Australia was to be solely in \$ currency;

this included all contracts and agreements, payments, sales and other monetary transactions. The £-s.-d. currency lost its legal standing and contracts made out in £-s.-d. currency after 1 August 1967 were not enforceable.

The proclamation did not amend the legal tender provisions, i.e. payment could still be made in coins or notes of the old currency but the transaction was to be recorded as if made in \$ currency. By the time of the proclamation, \$ currency was virtually universal and very few units of the old currency were in circulation.

### *Types of Bank*

### **Banking in Tasmania**

Banks in Tasmania can be classified by ownership as follows: (i) Government—the Reserve Bank of Australia, the Commonwealth Development Bank of Australia, the Commonwealth Trading Bank of Australia, and the Commonwealth Savings Bank; (ii) Private—the private trading banks and the private savings banks; (iii) Trustee—the Hobart and the Launceston Savings Banks. The Agricultural Bank is *not* a bank for the purpose of these statistics.

For statistical purposes, such a classification is not helpful since banks, both government and private, may be engaged in the same type of activity. Hence, the classification in actual use is one which groups banks according to their type of activity, not according to their ownership. The major banking statistics for the State are presented in two distinct series under the following headings: (i) all cheque-paying banks; (ii) all savings banks.

### *Cheque-Paying Banks*

The following institutions in Tasmania are classified as "cheque-paying banks": Commonwealth Trading Bank of Australia; Australia and New Zealand Bank Ltd; Bank of New South Wales; Commercial Bank of Australia Ltd; Commercial Banking Company of Sydney Ltd; English, Scottish and Australian Bank Ltd; and National Bank of Australasia Ltd. (This does not exhaust the list of cheque-paying banks operating in Australia but only these seven enterprises maintain branches in Tasmania.)

### *Savings Banks*

In the 1950s, only three savings banks operated branches in Tasmania: Hobart Savings Bank, Launceston Savings Bank and Commonwealth Savings Bank. (The trustee savings banks date from early colonial days, that at Launceston opening in 1835, and at Hobart in 1845.) In recent years, a number of private trading banks have opened savings bank subsidiaries in the State, the relevant dates being A.N.Z., September 1959; Bank of N.S.W., September 1961; E. S. & A., October 1961; National, May 1962; Commercial (of Australia), July 1962; Commercial (of Sydney), March 1963. In effect, all those banks which previously operated in Tasmania purely as cheque-paying banks now make available facilities for savings depositors. It follows that there are nine separate enterprises operating branches within the State.

### *Banking Legislation*

Under Section 51 of the Commonwealth Constitution, 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 Commonwealth Acts at present in force relating to banking are as follows:

*The Reserve Bank Act 1959:* Provision for the constitution and management of the Reserve Bank of Australia and the management of the Australian note issue. (Central banking functions had previously been vested in the Commonwealth Bank of Australia.)



*The Banking Act 1959:* Objects are (i) to provide a legal framework uniform throughout Australia for regulating the banking system; (ii) to safeguard depositors of the banks from loss; (iii) to provide for the co-ordination of banking policy under the direction of the Reserve Bank; (iv) to control the volume of credit in circulation and bank interest rates; (v) to mobilise and to provide machinery for the control of foreign exchange and the gold resources of the Australian economy.

*The Commonwealth Bank Acts 1959-1961:* These Acts created the Commonwealth Banking Corporation as the controlling body for the newly-constituted Commonwealth Trading Bank of Australia, Commonwealth Savings Bank of Australia and Commonwealth Development Bank of Australia. The Corporation and its constituent banks are subject to the same banking controls as are the private trading banks. (The Commonwealth Bank, established in 1911, had performed a number of diverse roles, e.g. as a trading bank, a savings bank and a central bank. The effect of the new legislation was to isolate the individual functions and to constitute a separate establishment for each.)

### *Transactions of Cheque-Paying Banks*

The accompanying table summarises the principal statistics relating to all cheque-paying banks in Tasmania for a five-year period. The following definitions apply:

- (i) Deposits—an item among banks' liabilities. The figure is the average, for the year, of *balances* read at weekly intervals.
- (ii) Loans, Advances and Bills Discounted, etc.—an item among banks' assets. The figure is the average, for the year, of *balances* read at weekly intervals.
- (iii) Debits to Customers' Accounts—in general, mainly the total of all cheques drawn by customers during a given period. The figure is the weekly average of such entries for the year.

**All Cheque-Paying Banks**  
(Including Commonwealth Trading Bank)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Branches in Tasmania, End of Period .. .. .	No. 94	No. 95	No. 98	No. 101	No. 100
Weekly Averages—	\$'000	\$'000	\$'000	\$'000	\$'000
Deposits—					
Commonwealth and State Governments .. ..	520	510	492	580	754
Other—					
Fixed .. .. .	20,768	23,074	24,046	29,483	34,970
Current—Interest Bearing	4,314	4,725	4,966	5,481	5,919
Current—Not Bearing Interest .. .. .	53,492	54,875	56,710	59,059	60,867
Total .. .. .	79,094	83,184	86,214	94,603	102,507
Loans, Advances and Bills Discounted (a) .. ..	49,334	53,186	55,106	54,124	55,214
Debits to Customers' Accounts (b) .. .. .	32,080	35,068	37,062	41,340	43,105

(a) Excludes loans to authorised dealers in the short-term money market.

(b) Excludes debits to Australian Governments' accounts at Hobart branches. In addition to the seven cheque-paying banks' transactions, those of the Rural Credits Department of the Reserve Bank and the Commonwealth Development Bank are included in this item.

*Fixed Deposit Rates*

The next table shows the interest rates received by customers of cheque-paying banks in respect of money lodged on fixed deposit for specified periods:

**Cheque-Paying Banks—Fixed Deposit Rates**  
(Per Cent Per Annum)

Date From Which Operative	Deposits for		
	Three Months and Under Twelve	Twelve Months to Eighteen Months	Over Eighteen Months to Twenty-four Months
17 November 1960 .. .. .	4.00	(a) 4.50	(a)
1 July 1961 .. .. .	4.00	(a) 4.25	(a)
13 April 1962 .. .. .	3.75	(a) 4.00	(a)
1 April 1963 .. .. .	3.25	(b) 3.50	(b)
8 April 1964 .. .. .	(c) 3.75	(b) 4.00	(b)
29 September 1964 .. .. .	(c) 3.75	4.00	4.25
10 March 1965 .. .. .	(c) 4.25	4.50	4.50
17 August 1966 .. .. .	(c) 4.00	4.25	4.50

(a) The maximum period for fixed deposits was 12 months.

(b) From 10 September 1962, deposits could be accepted for up to 15 months.

(c) From 8 April 1964, fixed deposits exceeding \$100,000 for periods from one to three months could be accepted at the rates shown.

The above rates (as from 17 August 1966) were still in force in September 1967.

*Transactions of Savings Banks*

The following table summarises the principal statistics relating to savings banks in Tasmania. Deposits are compiled on a basis different from that used in the case of cheque-paying banks. "Deposits lodged" is the total inflow of deposits during the year, and "depositors' balances" is a single liability reading taken at the end of the year.

**All Savings Banks**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Number at End of Period—	No.	No.	No.	No.	No.
Branches in Tasmania ..	110	135	141	147	147
Operative Accounts ..	331,847	349,676	362,999	379,243	394,664
Deposits Lodged during Year ..	\$'000 96,566	\$'000 109,688	\$'000 125,316	\$'000 142,382	\$'000 153,444
Interest Added during Year ..	3,316	3,638	3,530	4,108	4,710
Excess of Deposits over With- drawals .. .. .	4,368	6,758	8,384	6,858	7,955
Depositors' Balances—End of Year .. .. .	102,460	112,856	124,770	135,736	148,401
Per Head of Population—	\$	\$	\$	\$	\$
Depositors' Balances—End of Year .. .. .	288	313	343	369	400

*Savings Bank Interest Rates*

The next table shows rates of interest applying to operations of the Hobart Savings Bank, firstly as received by depositors, and secondly, as charged to borrowers with home mortgages.

**Hobart Savings Bank—Interest Rates  
(Per Cent Per Annum)**

Date of Change in Rate	Interest Rate—Maximum Upon Deposits (a)	Mortgage Rate on Advances for Homes	Date of Change in Rate	Interest Rate—Maximum Upon Deposits (a)	Mortgage Rate on Advances for Homes
1 March 1956	3.00	5.00	1 Aug. 1962	3.75	6.00
1 April 1957	3.00	5.25	1 April 1963	3.25	6.00
1 Nov. 1957	3.00	5.50	1 May 1963	3.25	5.50
1 Nov. 1958	3.25	5.50	1 June 1964	3.50	5.50
1 Jan. 1961	3.50	5.75	1 April 1965	3.75	5.75
1 July 1961	3.75	5.75	1 June 1966	3.75	6.00

(a) Deposits held in savings accounts; interest on fixed deposits is as for cheque-paying banks.

The rates effective from 1 June 1966 were still in operation in September 1967.

### Insurance in Tasmania

#### *Definitions*

The data on insurance that follow are divided into two parts: (i) life insurance; (ii) insurance other than life, i.e. fire, marine and general insurance. No distinction is made between insurance and assurance, the former term being used in all contexts.

#### *Legislation*

Section 51 of the Commonwealth Constitution confers the necessary powers on the Commonwealth Parliament to legislate with respect to "insurance other than State insurance; also State insurance extending beyond the limits of the State concerned." The principal Commonwealth legislation affecting current insurance business is as follows:

*Insurance Act 1932-1960:* Insurance businesses are required to lodge a deposit with the Commonwealth Treasurer, interest on the invested deposit being paid to the depositor. Deposits remain as a security against liability to policy holders, and are available to satisfy judgments obtained in respect of policies. The following insurance business is exempted from these provisions: staff superannuation schemes; schemes of religious organisations purely for insurance of their property; friendly society, union and association schemes involving superannuation or insurance benefits to employees. Deposits with a State made prior to the legislation could remain with the State and reduce the amount needed for deposit with the Commonwealth. The passing of the *Life Insurance Act 1945-1961* had the effect of adding life insurance business to the list of activities exempted from the provisions of the *Insurance Act 1932-1960*.

*Life Insurance Act 1945-1961:* Objects are (i) to replace all State legislation on the subject of life insurance, except that relating to operations of a State insurance office within a specific State, and to provide uniform legislation for the whole of Australia; (ii) to appoint an Insurance Commissioner to exercise active supervision of the activities of life insurance companies, with a view to securing the greatest possible protection of policy holders; (iii) to set up adequate machinery for dealing with any company that fails to maintain a required minimum standard of solvency.

#### *Life Insurance*

Since 1947, returns lodged under the *Life Insurance Act 1945-1961* have been used to compile life insurance statistics. In Tasmania, the Government Insurance Office does not transact life business so the tables that follow refer

to the operations of enterprises exclusively in the private sector. The transactions in the next table are concerned with Tasmania as the State of issue of the policies, not necessarily as the State of risk. The following summarises the principal statistics relating to life insurance business carried on in Tasmania:

## Life Insurance Transactions

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
ORDINARY BUSINESS (a) (b)					
New Policies Issued—					
Policies .. (No.)	14,216	14,444	15,845	14,611	14,588
Sum Insured .. (\$'000)	50,322	55,602	64,588	65,584	71,868
Annual Premiums .. (\$'000)	n.a.	1,363	1,474	1,633	1,815
Policies Discontinued or Reduced—					
Policies .. (No.)	11,673	11,494	12,775	13,192	11,594
Sum Insured .. (\$'000)	23,719	25,748	30,030	30,537	31,533
Annual Premiums .. (\$'000)	n.a.	699	764	815	814
INDUSTRIAL BUSINESS (b) (c)					
New Policies Issued—					
Policies .. (No.)	3,309	3,272	3,538	3,077	3,058
Sum Insured .. (\$'000)	1,902	2,464	2,794	2,682	2,800
Annual Premiums .. (\$'000)	n.a.	102	106	103	110
Policies Discontinued or Reduced—					
Policies .. (No.)	7,917	7,261	6,513	6,530	6,733
Sum Insured .. (\$'000)	1,873	1,960	2,010	1,959	2,135
Annual Premiums .. (\$'000)	n.a.	92	89	91	95
NEW LOANS GRANTED (d)					
On Mortgage of Real Estate (\$'000)	3,204	2,720	3,024	3,132	3,782
On Companies' Policies (\$'000)	814	862	922	930	990
On Other Securities .. (\$'000)	24	112	4	12	9
Total Loans Granted (\$'000)	4,042	3,694	3,950	4,074	4,781

(a) Includes superannuation business and "group insurance".

(b) Excludes annuities.

(c) Industrial business refers, in the main, to policies on which the premiums are collected as regular instalments by agents on commission.

(d) Excludes advances of premiums.

The next table shows, for Tasmania, the number of policies in force and the amount of the sum insured:

## Life Insurance—Policies in Force (a)

Particulars	1962	1963	1964	1965	1966
Policies in Force (a) .. (No.)	214,612	214,646	213,462	213,016	212,761
Sum Insured .. (\$'000)	332,092	360,388	396,251	430,664	477,648
Premiums Paid (b) .. (\$'000)	9,628	10,308	11,162	12,025	13,222
Claims, Surrenders, etc. (b) (\$'000)	4,120	4,482	5,036	5,412	(c)

(a) At close of financial years, observed by individual companies, which end within the calendar year shown; 1966 figure is total in December.

(b) During financial years, observed by individual companies, which end within the calendar year shown; 1966 figure is for calendar year.

(c) Not yet available.

*Fire, Marine and General Insurance*

*Definitions:* The following statistics, which are in respect of the business of companies operating in Tasmania, and of the State Government Insurance Office, conform to these definitions:

- (i) 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 during the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts differ from "earned premium income" appropriate to the year. When business is increasing, as shown in the statistics, premiums receivable are greater than "earned premium income" appropriate to the year. The converse applies when business is declining.
- (ii) Claims or losses include provision for outstanding claims and represent claims or losses incurred in the year. Salvage and other amounts recoverable have been deducted.
- (iii) Contributions to fire brigades, commission and agents' charges, and expenses of management represent mainly charges paid during the year.
- (iv) Taxation represents mainly payments made during the year, and includes income tax, pay-roll tax, licence fees, stamp duty (where paid by the Company), etc. Income tax paid during the year is based on the income of earlier years.

The figures relate to selected items of statistics and are not construable as "Profit and Loss" statements or "Revenue Accounts". In cases where the business is underwritten in one State and the risk is situated in another, the business is included in the State in which the policy was issued.

**Fire, Marine and General Insurance**  
( '\$000 )

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Premiums (Less Returns, Rebates and Bonuses) .. ..	10,212	11,428	12,248	13,567	14,703
Interest, Dividends, Rents .. ..	106	162	230	264	309
Total Revenue .. ..	10,318	11,590	12,478	13,831	15,011
Claims (Less Amounts Recoverable) .. ..	5,494	5,950	6,664	7,854	9,153
Other Expenditure .. ..	4,082	4,412	4,610	5,185	(a) 5,331
Total Expenditure .. ..	9,576	10,362	11,274	13,039	14,484

(a) Contribution to Fire Brigades, \$250,150; commission and agents' charges, \$1,617,355; expenses of management, \$2,839,761; taxation, \$623,264.

The effect of the 1967 February fires is suggested below:

"The total amount of claims lodged with the tariff insurance companies as a result of the Tasmanian bush fires in February exceed \$10 million". This was stated later by a spokesman at a shareholders' meeting; he went on to say that \$5 million of the claims represented the loss of private dwellings and contents.

Most fire insurance is in the hands of tariff companies but non-tariff companies also conduct this type of business; it follows that the figures in the previous paragraph are not a complete record of claims.

*Types of Insurance:* The next table shows premiums and claims according to the class of insurance business transacted in 1965-66. ("Premiums" and "claims" have been compiled in accordance with the definitions introducing the section.)

**Premiums and Claims for Each Type of Insurance, 1965-66**  
(£'000)

Class of Business	Premiums	Claims	Class of Business	Premiums	Claims
Fire .. .. .	2,639	961	Public Risk, Third Party .. .. .	213	90
Householders' Comprehensive .. .. .	1,010	256	General Property .. .. .	58	23
Sprinkler Leakage .. .. .	3	(a)	Plate Glass .. .. .	74	42
Loss of Profits .. .. .	248	87	Boiler .. .. .	10	3
Hailstone .. .. .	(b)	(b)	Livestock .. .. .	26	13
Marine .. .. .	608	273	Burglary .. .. .	194	106
Motor Vehicles .. .. .	4,881	3,064	Guarantee .. .. .	25	8
Motor Cycles .. .. .	2	1	"Pluvius" .. .. .	16	2
Compulsory Third Party (Road Accidents) .. .. .	1,362	1,294	Aviation .. .. .	15	59
Workers' Compensation .. .. .	2,585	1,529	All Risks .. .. .	76	41
Seamen's Compensation .. .. .	(b)	(b)	Television .. .. .	9	2
Personal Accident .. .. .	439	200	Other .. .. .	207	1,101
			Total .. .. .	14,703	9,153

(a) Under \$500.

(b) Not available for publication. Listed in "Other".

*Ratio of Claims to Gross Premiums:* The following table shows, as a percentage, the ratio of claims to premiums for the more important classes of business over a five-year period:

**Fire, Marine and General Insurance**  
**Ratio of Claims to Premiums (a)**  
(Per Cent)

Class of Business	1961-62	1962-63	1963-64	1964-65	1965-66
Fire .. .. .	29.5	34.0	30.6	33.1	36.4
Householders' Comprehensive .. .. .	24.6	23.3	21.5	25.4	25.3
Loss of Profits .. .. .	29.3	33.9	(b) 1.7	31.4	35.0
Marine .. .. .	59.9	60.4	66.0	41.3	44.8
Motor Vehicles (Excluding Motor Cycles) .. .. .	59.5	64.0	72.3	68.4	62.8
Compulsory Third Party (Road Accidents) .. .. .	65.9	58.7	75.1	85.3	95.0
Workers' Compensation .. .. .	60.1	52.6	49.2	53.7	59.1
Personal Accident .. .. .	51.7	45.7	48.1	44.2	45.6
Public Risk, Third Party .. .. .	58.9	20.8	38.2	67.7	42.4
Plate Glass .. .. .	78.7	48.1	50.9	57.2	56.1
Burglary .. .. .	59.4	54.1	70.7	65.2	54.7
All Classes .. .. .	53.8	52.1	54.4	57.9	62.3

(a) See beginning of section for definition of claims and premiums.

(b) Lower claims experienced and substantial recoveries made during this accounting period.

### Instalment Credit for Retail Sales in Tasmania

#### General

Information relating to instalment credit for retail sales in Tasmania is given in the following tables. Monthly and quarterly statistics as well as annual series are prepared from returns collected both from retail businesses and non-retail finance businesses.

The statistics cover operations of all types of instalment credit schemes which relate primarily to the financing of retail sales of goods, whether the credit is advanced by a retail business or by a non-retail finance business. In general, the term "instalment credit" is defined as relating to schemes in which repayment is made by regular pre-determined instalments. Types of schemes covered include hire purchase, time payment, budget account, and personal loan schemes which relate primarily to financing of retail sales of goods. In these statistics, the term "retail sales" relates not only to retail sales by retail establishments coming within the scope of the Censuses of Retail Establishments conducted periodically by the Bureau, but includes also other sales of goods to final purchasers (e.g. plant and machinery).

Figures for amounts financed *exclude* interest, hiring charges, insurance, etc. Figures for balances outstanding and collections *include* interest, hiring charges, insurance, etc. Details are not available of these charges or of other items (e.g. rebates allowed for early payment, late payment charges, bad debts written off) which affect the reconciliation of the three main instalment credit series—amounts financed, collections and balances outstanding.

**Instalment Credit for Retail Sales (a)**  
**(Hire Purchase and Other Instalment Credit)**  
**(\$'000)**

Particulars	1961-62	1962-63	1963-64	1964-65 (r)	1965-66
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FINANCED BY RETAIL BUSINESSES

Amount Financed During Period (b)—					
Motor Vehicles—New (c)	190	342	376	363	349
Used (c)	170	206	238	218	141
Total Vehicles ..	360	548	614	581	490
Plant and Machinery ..	28	38	54	32	51
Household and Personal Goods .. .. .	5,650	5,812	5,288	5,075	4,744
Total All Goods ..	6,038	6,398	5,956	5,687	5,285
Balances Outstanding at End of Period (d) .. .	8,826	9,732	9,260	8,573	7,739

FINANCED BY NON-RETAIL FINANCE BUSINESSES

Amount Financed During Period (b)—					
Motor Vehicles—New (c)	5,322	6,672	7,776	8,198	8,516
Used (c)	7,336	8,852	9,580	9,268	9,499
Total Vehicles ..	12,658	15,524	17,356	17,466	18,015
Plant and Machinery ..	1,296	1,468	1,326	2,232	2,686
Household and Personal Goods .. .	3,992	4,830	3,750	3,956	3,633
Total All Goods ..	17,946	21,822	22,432	23,654	24,334
Balances Outstanding at End of Period (d) .. .	26,854	30,718	33,048	35,722	37,564

**Instalment Credit for Retail Sales (a)**  
**(Hire Purchase and Other Instalment Credit)—continued**  
**(\$'000)**

Particulars	1961-62	1962-63	1963-64	1964-65 (r)	1965-66
FINANCED BY ALL BUSINESSES					
Amount Financed During Period (b)—					
Motor Vehicles—New (c)	5,512	7,014	8,152	8,561	8,865
Used (c)	7,506	9,058	9,818	9,486	9,640
Total Vehicles ..	13,018	16,072	17,970	18,047	18,505
Plant and Machinery ..	1,324	1,506	1,380	2,263	2,737
Household and Personal Goods .. .. .	9,642	10,642	9,038	9,031	8,377
Total All Goods ..	23,984	28,220	28,388	29,341	29,619
Balances Outstanding at End of Period (d)—					
Hire Purchase .. ..	27,500	31,800	34,422	36,586	38,078
Other Instalment Credit ..	8,180	8,650	7,886	7,709	7,225
Total .. .. .	35,680	40,450	42,308	44,295	45,303

(a) Includes time payment, budget account and personal loan schemes associated primarily with financing of retail sales of goods.

(b) Excludes hiring charges, interest and insurance.

(c) Includes tractors.

(d) Includes hiring charges, interest and insurance.

(r) Revised.

### Friendly Societies

#### *Scope*

The details that follow refer to "Ordinary" Societies, not to "Special" Societies. Ordinary Societies are those which provide customary sick and funeral benefits and are subject to actuarial valuation. Special Societies restrict their membership to employees of industrial parent organisations and are not subject to actuarial valuation.

#### *Membership*

Friendly Societies were a form of social organisation to help members meet the costs of sickness, burial, etc. at a time when government social services were either meagre or non-existent. Membership reached a maximum (over 20,000 in male lodges) in the pre-depression years but has since steadily declined. From the 1950s, there has been rapid development of various Government-encouraged insurance schemes to protect families against the incidence of costs associated with sickness and hospitalization; such schemes have evolved, in general, outside the framework of the Friendly Society movement.

The principal benefits provided by Friendly Societies include sick pay, medical attendance and medicine, and sums payable on death; the total membership of Friendly Societies in Tasmania is under 6,000 but as certain benefits are granted to members' families as well as to members themselves, this figure must be more than doubled to arrive at an estimate of the number of persons who may receive some direct benefit, even when due allowance is made for young and unmarried members.



The most striking long-term characteristics of Friendly Societies in Tasmania are the decline in their membership and the increase in the average age of members. The following table shows the percentage age distribution since 1920:

**Friendly Societies—Percentage Distribution, in Age Groups, of Members of Male Lodges**

Age Group in Years	Percentage of Total Membership in Each Age Group					
	1920	1930	1940	1950	1960	1965
16-19 .. ..	7.79	6.60	2.87	1.48	0.15	0.22
20-29 .. ..	26.42	23.08	16.87	10.29	1.89	0.93
30-49 .. ..	47.85	43.37	39.71	37.73	26.11	18.09
50-69 .. ..	16.54	23.56	32.91	38.28	47.76	52.60
70 and over ..	1.40	3.39	7.64	12.22	24.09	28.16
Total ..	100.00	100.00	100.00	100.00	100.00	100.00

The next table gives details of total membership and average age:

**Friendly Societies—Total Membership and Average Age of Members of Male Lodges**

Particulars	1920	1930	1940	1950	1960	1965
Total Members (No.)	20,605	22,168	18,854	14,677	7,571	5,374
Average Age (Years)	36.7	40.5	45.3	49.8	58.0	60.5

### *Revenue and Expenditure*

The following table shows the net revenue and expenditure of Friendly Societies for the year 1965:

**Friendly Societies—Net Revenue and Expenditure, 1965 (a)**  
(£)

Revenue			Expenditure		
Particulars	Total	Per Financial Member	Particulars	Total	Per Financial Member
Members' Contributions (b) ..	37,051	6.76	Medical Attendance and Medicine ..	3,929	0.72
Interest, Rent and Dividends ..	76,027	13.87	Sick Pay .. ..	18,306	3.34
All Other Income ..	14,072	2.57	Funeral Benefits—Members .. ..	44,252	} 8.42
			Registered Wives ..	1,886	
			Administration ..	29,398	
			Other .. ..	27,490	
Total ..	127,150	23.20	Total ..	125,261	22.85

(a) Excludes inter-fund transfers and transfers between districts and lodges.

(b) Includes levies.

In this table, transactions involving Friendly Societies as agents for Hospital or Medical Benefits Insurance Schemes are eliminated.

### *Accumulated Capital*

Accumulated capital of ordinary societies by the end of 1965 amounted to \$1,374,201 and the capital per financial member was \$250.72. The rate of interest earned by the funds was 5.54 per cent for 1965. The following table shows the growth of the capital of Friendly Societies since 1920, together with the capital per financial member:

**Friendly Societies' Accumulated Capital  
(\$)**

At 31 December	Capital		At 31 December	Capital	
	Total	Per Financial Member		Total	Per Financial Member
1920 .. ..	549,194	26.23	1950 .. ..	1,231,486	82.41
1930 .. ..	819,372	36.62	1960 .. ..	1,390,122	182.62
1940 .. ..	989,328	50.91	1965 .. ..	1,374,201	250.72

**Registered Building Societies**

*Types of Registered Society*

There are two distinct types of building society registered under Tasmanian law, specifically (i) permanent, and (ii) terminating (or co-operative).

*Permanent Societies:* These societies are both savings and deposit receiving institutions which advance funds for home building against the security of first mortgages. Those who invest by taking shares or by making deposits are in a separate category from those who borrow to build a home—in other words, applicants for loans need not be members of, or depositors with, the society.

The following summarises the transactions of the permanent building societies in Tasmania:

**Permanent Building Societies**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
	No.	No.	No.	No.	No.
Operative Societies .. ..	5	5	5	5	4
Shareholders .. ..	9,862	10,372	10,927	11,751	(a)
Borrowers .. ..	3,754	3,839	4,206	4,647	4,705
	\$'000	\$'000	\$'000	\$'000	\$'000
Advances during Year .. ..	2,033	2,834	4,758	5,640	4,323
Redemption of Loans in Year ..	1,565	1,668	2,192	2,556	2,647
Deposits during Year .. ..	5,633	4,720	7,068	7,113	(b) 7,800
Deposits withdrawn during Year	4,866	3,771	4,791	6,031	7,014
<b>Liabilities—</b>					
Paid-up Capital and Subscrip- tions .. ..	4,438	4,988	5,838	6,668	7,722
Accumulated Profits, Reserves	632	669	696	771	869
Deposits .. ..	5,088	6,037	8,314	9,396	10,168
Other .. ..	562	280	182	937	756
<b>Total .. ..</b>	<b>10,720</b>	<b>11,974</b>	<b>15,030</b>	<b>17,772</b>	<b>19,514</b>
<b>Assets—</b>					
Advances on Mortgage .. ..	9,690	10,871	13,425	16,489	18,157
Other .. ..	1,030	1,103	1,606	1,283	1,357
<b>Total .. ..</b>	<b>10,720</b>	<b>11,974</b>	<b>15,030</b>	<b>17,772</b>	<b>19,514</b>

(a) Not available.

(b) Includes interest credited to depositors' accounts, \$504,116.

*Terminating Societies:* These societies are those which, by their rules, are to terminate at a fixed date, or when a result specified in their rules is attained. Societies issue members one class of share, and require equated monthly instalments towards share capital from members; when a member borrows to

build (and only a member may borrow), he is required to pay additional equated monthly instalments, such addition constituting interest only. The regular instalments in respect of share capital are calculated to amount, with interest, to the nominal amount of the member's shares over the life of the society (say 26 or 30 years). If the member takes out shares with a nominal value of \$6,000, then his borrowing ceiling is set at \$6,000—in other words, the member takes out, in nominal share capital, the amount which he wishes to borrow for home-building. In effect, the member is contributing to a sinking fund for the liquidation of his loan. The terminating societies are termed "co-operative".

The next table summarises the transactions of the co-operative housing societies in Tasmania:

#### Co-operative Housing Societies

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
	No.	No.	No.	No.	No.
Operative Societies .. ..	32	37	42	49	53
Shareholders .. ..	732	857	1,011	1,182	1,281
Borrowers .. ..	612	746	868	948	1,059
	\$'000	\$'000	\$'000	\$'000	\$'000
Advances during Year .. ..	1,197	1,238	963	805	1,102
Redemption of Loans .. ..	21	75	92	143	251
Advances from Government ..	624	678	611	378	799
Repayment to Government ..	30	60	103	130	215
Liabilities—					
Share Subscriptions .. ..	118	188	263	342	433
Reserves .. ..	21	37	66	98	150
Loans due to Government ..	1,816	2,436	2,957	3,204	3,856
Loans due to Other Lenders ..	(a) 771	(a) 1,238	(a) 1,514	(a) 1,838	1,892
Other .. ..	12	15	11	20	(a) 58
Total .. ..	2,739	3,914	4,810	5,502	6,390
Assets—					
Advances on Mortgage .. ..	2,659	3,818	4,703	5,364	6,201
Other .. ..	79	95	108	138	189
Total .. ..	2,739	3,914	4,810	5,502	6,390

(a) Includes bank overdrafts for day to day running of societies.

In the previous table, "Advances from Government" and "Loans Due to Government" refer principally to loan money made available under the Commonwealth-State Housing Agreement. Such funds are advanced to the societies through the Agricultural Bank which acts as agent for the Commonwealth Government in this field.

#### Co-operative Societies

The next table summarises the financial transactions of societies registered under Tasmanian law as co-operative industrial societies; excluded are co-operative credit societies which are dealt with in a subsequent section.

##### *Types of Registered Society*

The co-operative societies in Tasmania embrace several types of business, examples being: (i) fish marketing; (ii) butter factory; (iii) auctioneers and general merchants; (iv) fruit pulping; (v) wholesale grocers; (vi) meat marketing; (vii) hire car base radio service. The table which summarises their opera-

tions uses the term "operating" to describe transactions concerned with the processing and sale of goods, and "non-operating" to describe earnings from commissions, discounts, services, etc.

#### Co-operative Societies

Particulars	1960-61	1961-62	1962-63	1963-64	1965-66
	No.	No.	No.	No.	No.
Societies .. .. .	17	17	15	14	14
Members .. .. .	5,044	4,944	4,616	4,269	4,399
	\$'000	\$'000	\$'000	\$'000	\$'000
Sales .. .. .	7,363	7,712	7,077	6,538	6,980
Less Cost of Goods .. .. .	5,618	6,006	6,001	5,516	5,885
Gross Surplus .. .. .	1,745	1,706	1,076	1,022	1,096
Less Operating Expenses .. .. .	1,144	1,134	506	433	440
Operating Surplus .. .. .	601	572	570	589	656
Add Non-Operating Receipts .. .. .	558	662	836	906	907
Less Non-Operating Expenses—					
Interest .. .. .	103	110	88	92	104
Salaries, Administration, etc. .. .. .	340	366	340	334	353
Other .. .. .	631	723	893	888	922
Net Surplus .. .. .	85	35	85	181	184
Dividends Paid .. .. .	9	11	85	47	44

The next table gives a statement of the assets and liabilities of the co-operative societies:

#### Co-operative Societies—Assets and Liabilities (\$'000)

Particulars	1961-62	1962-63 (r)	1963-64 (r)	1964-65 (r)	1965-66
Assets (End of Period)—					
Fixed .. .. .	1,513	1,568	1,389	1,410	1,541
Current .. .. .	2,781	2,986	2,802	2,962	3,376
Total Assets .. .. .	4,294	4,553	4,191	4,371	4,917
Liabilities (End of Period)—					
Paid-up Capital .. .. .	1,252	1,262	1,129	1,107	1,119
Accumulated Profits .. .. .	194	165	147	306	458
Reserve Funds .. .. .	115	124	163	167	352
Other Liabilities .. .. .	2,733	3,002	2,752	2,791	2,988
Total Liabilities .. .. .	4,294	4,553	4,191	4,371	4,917

(r) Revised.

#### Co-operative Credit Societies

##### Description

The co-operative credit societies are commonly referred to as "credit unions" and are registered under the *Co-operative Industrial Societies Act 1928* as amended. In Tasmania, most credit unions have been established by trade unions (e.g. those serving teachers, State and Commonwealth public servants,

hospital employees, etc.) and by members of church groups. Members contribute capital by taking out shares and making deposits; loans are made to members, repayment being by regular instalments. Rules of individual societies vary but, in one example, members pay \$1 for share capital and provide all other capital by making interest-bearing deposits.

### Transactions

The following table shows the societies' annual transactions and also their assets and liabilities:

#### Co-operative Credit Societies

Particulars	1961-62	1962-63	1963-64	1964-65(r)	1965-66
	No.	No.	No.	No.	No.
Societies .. .. .	7	8	12	13	13
Shareholders .. .. .	1,403	1,740	2,715	3,631	4,622
Shares .. .. .	9,565	12,248	16,559	21,889	24,502
	\$'000	\$'000	\$'000	\$'000	\$'000
Advances Made .. .. .	201	306	598	1,026	1,068
Advances Repaid .. .. .	94	184	320	630	761
Deposits Lodged (a) .. .. .	163	252	452	767	994
Deposits Withdrawn .. .. .	60	114	180	409	660
Assets (At End of Period)—					
Loans to Members .. .. .	188	310	587	983	1,290
Other .. .. .	11	43	57	45	124
Total Assets .. .. .	199	353	644	1,028	1,414
Liabilities (At End of Period)—					
Paid-up Capital and Subscriptions .. .. .	15	19	25	30	40
Deposits .. .. .	172	311	582	941	1,274
Other .. .. .	12	23	37	57	100
Total Liabilities .. .. .	199	353	644	1,028	1,414

(a) Includes interest credited.

(r) Revised.

### Pensions and Superannuation Schemes

#### Private Schemes

Surveys on an Australia-wide basis have revealed superannuation and/or retiring allowance schemes for employees in the private sector as follows: (i) schemes operated through life insurance offices, friendly societies and other organisations such as unit trusts; (ii) superannuation, pension and retiring allowance funds constituted by businesses; (iii) direct payments of pensions and/or retiring allowances by the employer.

Because of the restricted nature of the surveys, details are not available on a State basis. Australian totals, however, revealed that businesses whose monthly pay-roll exceeded \$1,720 in 1962-63, had 242,000 employees covered by schemes operated through life insurance offices, and 297,000 employees covered by superannuation, pension and retiring allowance funds. Only one per cent of businesses surveyed in that year made direct pension or retiring allowance payments and no information is available on the number of persons covered by such schemes. It was also found that 52 per cent of all businesses operated pension or retiring allowance schemes of one or more of the types described in the previous paragraph.

*Government, Local Government and Semi-Government Schemes*

The levels of government operating in Tasmania are: (i) Commonwealth; (ii) State; (iii) Local; (iv) Semi-government authority. In the section that follows, any pension or superannuation scheme affecting employees of the Commonwealth Government or its instrumentalities is excluded; the principal fund so excluded is the Commonwealth Superannuation Fund for which State details are not available.

The inclusion of government superannuation and pension schemes as part of "Private Finance" derives its logic from the fact that the funds involved do not belong to any government but are actually trust moneys held on behalf of contributors. Employees of the State Government contribute to separately constituted funds to which the State Government also makes contributions. Employees of local government and semi-government authorities are covered either by separately constituted funds or through schemes operated through life insurance offices.

*Separately Constituted Funds:* In the table that follows, the operations of the following schemes have been combined and summarised: (i) State Superannuation Fund; (ii) State Teachers' Superannuation Fund; (iii) Police Provident Fund; (iv) Metropolitan Transport Trust—Retiring Allowance and Staff Pension Funds; (v) Marine Boards' independent schemes; (vi) University of Tasmania—Staff Superannuation, Invalidity Pension and Supplementary Pension Schemes.

**Government, Local Government and Semi-Government Pension and Superannuation Schemes Operated Through Separately Constituted Funds**

Particulars	1961-62	1962-63 (r)	1963-64 (r)	1964-65 (r)	1965-66
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees .. ..	1,252	1,281	1,461	1,418	1,481
Employing Authorities	1,134	1,182	1,278	1,474	1,597
Interest, Dividends and Rent	646	769	867	958	1,072
Other Income .. ..	11	184	32	56	21
Total .. ..	3,043	3,416	3,639	3,906	4,172
Expenditure—					
Pensions .. ..	1,210	1,293	1,423	1,611	1,946
Lump Sum Payments—					
On Retirement ..	71	103	115	81	125
On Resignation ..	167	229	281	299	384
Other Expenditure ..	40	11	14	13	19
Total .. ..	1,488	1,635	1,832	2,004	2,473
Total Assets (At End of Period)	13,320	15,320	16,789	18,680	20,384
Contributors (At End of Period)	No. 9,964	No. 10,322	No. 10,701	No. 10,914	No. 11,393

(r) Revised.

*State Superannuation Fund:* In the previous table, the principal fund included is the State Superannuation Fund to which contribute all permanent full-time employees of the Public Service, Teaching Service, Transport Commission, Hydro-Electric Commission and all hospitals subsidised by the State Government. (The Teachers' Superannuation Fund is now almost wound up and teachers contribute to the State Superannuation Fund.) At 30 June 1965

there were 10,027 contributors to the State Superannuation Fund, the number of pensioners being 2,240. At 30 June 1966, the corresponding figures were 10,238 contributors and 2,346 pensioners. Assets of the State Superannuation Fund exceeded \$17,000,000 at 30 June 1966.

*Police Provident Fund:* The Police Provident Fund, also included in the previous table, had assets exceeding \$2,000,000 at 30 June 1966. This is now a *closed fund*. By an amendment of the *Superannuation Act* 1938 made in 1963, it was provided that police officers appointed after 31 December 1963 were required to become contributors to the State Superannuation Fund. Police officers appointed prior to 1 January 1964 could continue as contributors to the Police Provident Fund or exercise an option, prior to 1 April 1964, to become contributors to the State Superannuation Fund.

*Schemes Operated Through Life Insurance Offices:* A number of local government and semi-government authorities in Tasmania operate pension and superannuation schemes for their employees, not through separately constituted funds, but through life insurance offices. The next table combines and summarises the operations of such schemes, the following being the main authorities concerned: (i) Semi-government—marine boards, fire brigades, Metropolitan Transport Trust (Launceston and Burnie), University of Tasmania, ambulances, Society for Blind and Deaf, Museum and Art Gallery, Botanical Gardens; (ii) Local Government—the cities and municipalities. It will be observed that some authorities e.g. University, Metropolitan Transport Trust, etc. operate schemes on both bases, i.e. some through separately constituted funds, and others through life insurance offices.

**Local and Semi-Government Pension and Superannuation Schemes Operated Through Life Insurance Offices**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees .. .. .	176	183	216	238	227
Employing Authorities	254	243	303	339	356
Surrenders .. .. .	50	50	57	70	64
Death Claims .. .. .	15	28	27	41	23
Matured Policies .. .. .	24	49	61	48	35
Other Income .. .. .	19	22	31	32	31
Total .. .. .	538	575	695	768	736
Expenditure—					
Premiums paid to Insurance Companies .. .. .	362	367	448	514	521
Benefits—					
On Death or Retirement	14	61	114	116	76
On Resignation or Dismissal .. .. .	63	48	54	75	64
Other Expenditure .. .. .	45	7	7	13	12
Total .. .. .	484	483	623	718	673
Contributors (At End of Period)	No. 1,402	No. 1,495	No. 1,766	No. 1,825	No. 2,157

*Miners' Pension Fund*

The Fund was established to provide for pensions to miners upon retirement or when incapacitated by injury, etc. and, in certain circumstances, to widows and dependants. Contributions to the fund are made by the State Government, mine owners and miners. Details are as follows:

## Miners' Pension Fund

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees .. ..	9	8	5	4	2
State Government ..	27	24	30	30	30
Mine Owners ..	27	24	19	14	9
Interest, Dividends and Rent	15	16	16	15	14
Other Income .. ..	..	1	..	1	..
Total .. ..	78	73	70	64	55
Expenditure—					
Pensions .. ..	64	74	72	73	71
Lump Sum Payments ..	..	..	19	..	..
Other Expenditure ..	2	7	2	11	5
Total .. ..	66	81	93	84	76
Assets (At End of Period) ..	317	309	292	270	243
Contributors (At End of Period)	No. 222	No. 160	No. 110	No. 55	No. 61

Until 1962-63, the State Government contributed an amount to match that of the mine owners, the employers' share being related to coal production. After actuarial investigation, it was decided to strengthen the Fund and an amount of \$30,000 was stipulated in amending legislation as the Government's maximum annual contribution. The maximum has since been paid.

*The Parliamentary Pension and Superannuation Scheme*

The Tasmanian Parliament, in common with the parliaments of the other States and the Commonwealth, operates a superannuation scheme for the benefit of members who retire or are defeated after having served a minimum qualifying period. Basic rate pensions for Tasmanian members are payable after 15 years' service, lesser rate pensions being calculated pro-rata to length of service expressed as a fraction of 15 years; if the fraction is less than  $\frac{8}{15}$  (i.e. service less than eight years) then the member merely receives a refund of his contributions. The basic rate of full pension is the Hobart basic wage (as varied from time to time), but a member, by increasing his subscription from \$312 per annum to \$624, may contract to receive double the basic rate; provision also exists for subscription scales yielding  $1\frac{1}{3}$  and  $1\frac{2}{3}$  of the Hobart basic wage. (These provisions, written into the *Parliamentary Retiring Allowances Act* 1955 as amended, were current in July 1967.)

The abolition of the basic wage in June 1967 by the Commonwealth Conciliation and Arbitration Commission was not allowed to interfere with the scheme just described; the Tasmanian Parliament met this situation by making an Act to define what the basic wage should be for 1967-68 in any interpretation of the *Parliamentary Retiring Allowances Act*.

The Parliamentary Salaries Tribunal, reporting in 1967, said "members generally seem satisfied with the present provisions of the Act. There is, however, one matter on which practically all are agreed. That is where a member is defeated in his electorate before the effluxion of time for him to qualify for a pension, the amount he has contributed to the fund, instead of being returned to him *simpliciter*, should have added to it an amount equal to savings bank interest on the amounts from time to time standing to his



credit in the fund. But should he be re-elected to Parliament, he should refund the total amount paid to him on his defeat". The Tribunal made no recommendation but simply drew attention to this opinion.

Transactions of the fund (Parliamentary Retiring Allowances Trust) are shown in the following table:

**State Parliamentary Pension and Superannuation Scheme**  
(\$'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Income—					
Members' Contribution (a)	25	33	33	34	35
Government Contribution	3	3	4	3	3
Interest .. .. .	2	2	3	4	4
Total .. .. .	30	38	40	41	41
Expenditure—Pension Payments					
(b) .. .. .	21	25	35	44	45
Total Assets (At End of Period)	52	64	72	69	63

(a) Number of contributors throughout period, 54 (House of Assembly, 35; Legislative Council, 19). Contribution for basic rate pension compulsory.

(b) Number of pensioners at 30 June 1966: ex-members, 15; widows of ex-members, 6.

## Chapter 12

### TRADE, TRANSPORT AND COMMUNICATIONS

#### OVERSEAS AND INTERSTATE TRADE

#### Historical

The *Statistical Returns of Van Diemen's Land, From 1824 to 1839* contain an import-export table for the period 1824-1838; the following is an extract:

**"Value of Imports into, and Exports from, Van Diemen's Land  
During the Years 1824 and 1825"**  
(£) (a)

Country	Imports		Exports	
	1824	1825	1824	1825
Great Britain .. .. .	50,000	59,935	10,000	9,224
British Colonies .. .. .	10,000	18,416	4,500	14,613
Foreign States .. .. .	2,000	9,810	..	..
Total .. .. .	62,000	88,161	14,500	23,837

(a) Unit is sterling currency.

There is, in fact, a continuous series of total trade statistics dating from 1824 to 1909. Until the foundation of the Commonwealth in 1901, trade with other parts of Australia was recorded as originating from or being destined for "British Colonies"; in other words, all Tasmanian sea trade was regarded as overseas. From Federation to 1909, statistics were collected and compiled by the newly formed Commonwealth Customs Department for *all* sea trade, but since 1910 only direct *overseas* trade has been recorded by the Customs. In an island State, it became apparent that statistics of overseas trade alone were inadequate to record economic activity and, from 1922-23, the Government Statistician collected and published details of interstate trade; the collection of these data, now undertaken by the State Office of the Bureau of Census and Statistics, is carried out independently of the Customs Department and depends primarily on documents made available by Tasmanian Marine Boards and Harbour Trusts. To summarise, there is a *total* trade series from 1824 to 1909, an *overseas* trade series from 1910 to 1921-22 and a *total* trade series from 1922-23 to the present day.

In the immediate post-war period, there was a marked expansion of commercial aviation; the freight being carried was a component of interstate trade and steps were taken to record it, the first published figures appearing for 1949-50. Thus, the total trade of Tasmania is now recorded in three sections: (1) By Sea, Overseas; (2) By Sea, Interstate; (3) By Air, Interstate.

#### Value of Trade from 1824

Due to considerable and persistent changes in the purchasing power of money, it is extremely difficult to satisfactorily interpret any long-term statistical series expressed in money terms. The following table is therefore of

interest historically but subject to all the disabilities associated with long-term money series (including devaluations of Australian currency in 1930 and 1949):

**Total Value of Trade by Sea and Air—Historical Summary  
(\$'000)**

Year	Value of Imports				Value of Exports			
	By Sea		By Air	Total	By Sea		By Air	Total
	Overseas	Interstate	Interstate		Overseas	Interstate	Interstate	
1824 ..	(a)	(a)	..	124	(a)	(a)	..	30
1860 ..	1,686	450	..	2,136	1,544	380	..	1,924
1880 ..	738	2,000	..	2,738	1,568	1,456	..	3,024
1900 ..	1,402	2,746	..	4,148	3,078	2,144	..	5,222
1910 ..	1,662	(b)	..	(a)	1,040	(b)	..	(a)
1919-20	1,626	(b)	..	(a)	4,022	(b)	..	(a)
1929-30	3,668	16,028	..	19,696	4,978	13,198	..	18,176
1939-40	3,188	21,780	..	24,968	4,852	20,954	..	25,806
1949-50	18,704	51,218	(c) 10,670	80,592	29,936	42,672	(c) 3,996	76,604
1959-60	27,606	130,014	19,210	176,830	47,730	137,530	20,818	206,078
1965-66	43,585	192,732	21,123	257,441	92,007	212,785	25,575	330,367

(a) Not available.

(b) Collection discontinued for period 1910 to 1921-22.

(c) First collected in 1949-50.

*Note on Currency*

The pre-Federation details were recorded in sterling; subsequent details were recorded in £A which had parity with sterling until 1930 when devaluation made £A1.25 equal to the £ sterling. In 1949, the £ sterling was devalued by 30.5 per cent and the £A was correspondingly devalued to preserve the 1930-1949 relativity. In 1966, Australia changed to dollar currency, with \$A equal to 0.5 £A. In the tables in this section, recorded figures have been converted to \$A by simply doubling the originals, irrespective of their year of occurrence and no account has been taken of changes in exchange rates.

**Definition of Overseas and Interstate**

Tasmanian goods destined for other countries may pass from Tasmanian ports direct or by transshipment through other Australian ports. Similarly, overseas goods may reach Tasmania direct or by transshipment through other Australian ports. The following sets out the classifications used in describing direct shipments and transshipments:

**Classification of Imports and Exports**

Particulars	Route of Goods to and from Other Countries	Classification of Transaction	Classification by Place of Origin or Destination
Tasmanian Exports ..	(1) Shipped Direct from Tasmanian ports	Overseas	Country of Destination
	(2) Discharged in other Australian ports before shipment overseas	Interstate	Australian State where discharged
Tasmanian Imports ..	(1) Shipped Direct to Tasmanian Ports	Overseas	Country of Origin
	(2) Discharged in other Australian ports before shipment to Tasmania	Interstate	Australian State from which shipment made

By way of example, a new Japanese car transhipped in Melbourne and discharged in Tasmania is classified as an item of interstate trade and Victoria, not Japan, is classified as the place of origin. (Victorian overseas imports will include the entry of the vehicle from Japan.)

#### *Effect of Motor Vehicles on Total Value of Imports and Exports*

Import and export details of motor cars and commercial vehicles include tourists' vehicles entering and leaving the State. The inauguration of the vehicular ferry service by the *Princess of Tasmania* in October 1959 resulted in a sharp increase in the transport of vehicles as suggested in the following table:

**Motor Cars and Commercial Vehicles (a)—Value of Imports and Exports (\$'000)**

Particulars	1958-59	1959-60	1962-63	1963-64	1964-65	1965-66
Imports .. ..	19,258	29,148	36,202	39,496	38,699	42,179
Exports .. ..	3,654	13,100	16,288	17,050	18,299	19,753

(a) As well as new and used vehicles, includes business and tourists' vehicles moving to and from the State.

Since Tasmanians do not carry out motor vehicle assembly on any extensive scale (and certainly not for export), it follows that total import and export values for 1965-66 are both inflated by approximately \$19.5m worth of vehicles, principally tourist, which entered and left the State. If vehicle exports are offset against imports, the net import figure will still include some used as well as new vehicles.

#### **Source of Trade Statistics**

*Overseas* trade statistics are compiled from documents obtained under the *Customs Act* 1901-1967 and are supplied to the Commonwealth Bureau of Census and Statistics by the Department of Customs and Excise. *Interstate sea* trade statistics are compiled from trade warrants required under the authority of the *Marine Act* 1921 and made available to the Tasmanian branch of the Bureau by the various Marine Boards and Harbour Trusts. Statistics of *inter-state air* trade are compiled from returns furnished direct to the Tasmanian Office of the Bureau by all those who use this medium for the transportation of goods in commercial or industrial operations.

#### *Values*

The cost of importing goods into any country will theoretically contain four elements:

- (1) The "original" price at door of factory, warehouse, etc.
- (2) The cost of delivering goods to the ship "free on board".
- (3) Sea freight and associated charges between ports.
- (4) Delivery cost from port to buyer.

Trade statistics base values on the first two elements but exclude the third and fourth, as set out in the following definitions:

The basis of value for overseas imports is "transaction value, actual (*f.o.b.*)" or "domestic value (*f.o.b.*)" if higher. Overseas exports are valued *f.o.b.* at the Australian port of shipment as follows: (i) for goods sold before export—the price at which the goods were sold, or (ii) for goods shipped on consignment—the current price offering for similar goods of Australian origin in the principal markets of the country to which the goods were despatched. Interstate imports and exports are valued *f.o.b.* at the port of shipment.

*Tasmanian Ports*

Although there are nine port authorities (known as marine boards or harbour trusts) in Tasmania, overseas trade is restricted to the ports of Hobart, Launceston, Burnie and Devonport. The names of ports in subsequent tables refer to the towns in which the controlling marine boards are located. Thus "Hobart" includes Port Huon; "Launceston" includes Bell Bay and Beauty Point, etc. On 1 January 1963, the port of Ulverstone came under the control of the Marine Board of Devonport.

**Total Trade of Tasmania**

The following table shows Tasmanian total trade and its components in recent years:

**Total Trade  
(\$'000)**

Year	Imports				Exports			
	By Sea		By Air	Total Imports	By Sea		By Air	Total Exports
	Overseas	Interstate	Interstate		Overseas	Interstate	Interstate	
1955-56	24,884	99,608	21,166	145,658	40,608	100,630	18,762	160,000
1956-57	27,764	105,788	20,020	153,572	45,004	108,654	18,112	171,770
1957-58	25,466	113,636	19,122	158,224	44,506	109,652	18,354	172,512
1958-59	26,374	121,138	19,718	167,230	43,932	114,424	17,584	175,940
1959-60	27,606	130,014	19,210	176,830	47,730	137,530	20,818	206,078
1960-61	37,208	141,086	19,356	197,650	42,588	143,036	21,944	207,568
1961-62	26,788	141,776	18,000	186,564	57,196	140,794	23,298	221,288
1962-63	35,746	150,620	18,158	204,524	66,792	146,454	21,602	234,848
1963-64	35,032	167,964	19,840	222,836	78,318	173,590	23,424	275,332
1964-65 <sup>r</sup>	35,717	170,963	20,819	227,499	87,315	193,371	25,770	306,456
1965-66	43,585	192,732	21,123	257,441	92,007	212,785	25,575	330,367

(<sup>r</sup>) Revised.

It will be observed that interstate trade is the major element both in imports and exports. The next table shows the balance of trade (excess of exports over imports):

**Balance of Trade (Sea and Air)**

Year	Balance of Trade (Excess of Exports)		Year	Balance of Trade (Excess of Exports)	
	Total (\$'000)	Per Head of Mean Population (\$)		Total (\$'000)	Per Head of Mean Population (\$)
1954-55 .. ..	- 1,970	- 6.30	1960-61 ..	9,918	28.33
1955-56 .. ..	14,342	45.06	1961-62 ..	34,724	98.33
1956-57 .. ..	18,198	56.05	1962-63 ..	30,324	84.68
1957-58 .. ..	14,288	43.03	1963-64 ..	52,496	144.76
1958-59 .. ..	8,710	25.72	1964-65 <sup>r</sup> ..	78,957	215.61
1959-60 .. ..	29,248	85.00	1965-66 ..	72,926	197.42

Note: Minus sign (—) means excess of imports.

(<sup>r</sup>) Revised.

**Overseas Trade by Sea**

From the earliest days, the United Kingdom was Tasmania's main overseas market and source of overseas imports; even today, the United Kingdom is the principal country in the State's overseas trade. In the last decade, however, trade with foreign countries has begun to assume greater importance, as shown in the following table:

**Total Value of Trade by Sea With Overseas Countries**  
(\$'000)

Year	Value of Imports From—				Value of Exports To—			
	United Kingdom	United States of America	Japan	Other Overseas Countries	United Kingdom	United States of America	Japan	Other Overseas Countries
1955-56	10,978	1,840	674	11,393	18,110	4,373	1,218	16,908
1956-57	11,368	2,498	416	13,482	17,780	5,871	2,018	19,335
1957-58	10,779	1,638	532	12,517	18,688	3,988	2,796	19,034
1958-59	8,686	1,626	512	15,550	20,090	4,018	2,102	17,722
1959-60	8,272	2,520	382	16,432	19,880	4,106	2,694	21,050
1960-61	12,960	4,252	1,150	18,846	14,422	3,850	3,344	20,972
1961-62	8,998	2,548	784	14,458	20,536	5,600	4,372	26,688
1962-63	8,840	5,708	1,604	19,594	22,590	6,910	3,968	33,324
1963-64	7,738	5,932	2,770	18,592	25,816	8,498	4,786	39,218
1964-65	7,777	7,954	3,593	16,393	30,872	12,707	4,760	38,976
1965-66	9,935	8,014	5,673	19,963	26,067	14,398	7,970	43,572

*Principal Overseas Exports*

Certain Tasmanian commodities are of great importance in the State's overseas trade. Examples are given below:

**Tasmanian Overseas Exports of Selected Commodities**  
(\$'000)

Country of Consignment	1961-62	1962-63	1963-64	1964-65	1965-66
<b>APPLES (FRESH OR PRESERVED BY COLD PROCESS)</b>					
Belgium-Luxembourg .. ..	104	176	216	75	206
Finland .. ..	70	102	98	103	259
West Germany .. ..	3,138	3,878	4,812	2,564	5,367
Hong Kong .. ..	380	470	396	558	441
Malaysia .. ..	344	368	440	444	249
Netherlands .. ..	516	586	1,302	233	901
Philippines .. ..	100	204	214	218	260
Singapore .. ..	256	294	322	(a)	242
Sweden .. ..	798	1,014	1,030	718	1,239
United Kingdom .. ..	7,644	8,448	8,368	7,549	8,764
Other Countries.. ..	176	170	216	301	728
"For Orders" (b) .. ..	4	..	136	..	41
Total .. ..	13,530	15,710	17,550	12,763	18,697

**REFINED ZINC**

Belgium-Luxembourg .. ..	188	1,512	1,906	603	886
China (Formosa) .. ..	314	354	492	247	410
Hong Kong .. ..	634	528	928	746	669
India .. ..	2,522	2,258	2,542	6,837	2,488
Italy .. ..	436	996	1,224	707	750
Netherlands .. ..	916	1,614	152	223	1,445
Philippines .. ..	760	640	908	1,225	1,486
Singapore .. ..	..	..	..	(a)	407
Thailand .. ..	626	1,156	1,658	2,087	1,877
United Kingdom .. ..	2,788	3,470	4,488	7,800	5,758
U.S.A. .. ..	456	..	108	273	3,375
Other Countries.. ..	2,618	1,546	968	1,233	790
Total .. ..	12,258	14,074	15,374	21,981	20,341

(a) Included with Malaysia from 1 July 1964 to 30 Sept. 1965.

(b) Country of consignment not determined at time of export.

*Trade with Selected Countries*

The principal countries of origin for overseas imports shipped direct to Tasmania in 1965-66 are shown, followed by the value in \$ million: U.K., 9.9; U.S.A., 8.0; Japan, 5.7; N.Z., 3.1; Canada, 2.2; West Germany, 2.0. The principal countries of destination for overseas exports shipped direct from Tasmania (value in \$ million) were: U.K., 26.1; U.S.A., 14.4; Japan, 8.0; West Germany, 6.6; France, 3.9; Thailand, 3.8; Italy, 3.2; Netherlands, 2.7.

The next table shows the trade of Tasmania with selected overseas countries; countries selected are those for which imports or exports approached or exceeded \$500,000 in any one of the three years under review. It should be noted that some goods are received from, or sent to, overseas countries by transshipment through other Australian States; no data are available on such transactions.

**Trade With Overseas Countries**  
(\$'000)

Country of Origin or Destination	Imports			Exports		
	1963-64	1964-65	1965-66	1963-64	1964-65	1965-66
Belgium-Luxembourg	380	178	291	2,810	1,211	1,402
Burma .. ..	..	..	..	30	160	400
Canada .. ..	1,364	1,703	2,227	230	93	177
China—Formosa ..	26	3	4	498	252	495
Mainland ..	462	372	579	204	290	386
Czechoslovakia ..	42	42	36	22	394	432
Finland .. ..	492	475	758	100	104	264
France .. ..	422	222	376	4,278	3,375	3,904
Germany, West ..	1,716	1,252	2,008	6,522	3,360	6,644
Ghana .. ..	(a)	(a)	(a)	20	..	22
Hong Kong .. ..	194	451	337	1,818	2,980	2,384
India .. ..	194	250	213	3,358	7,691	2,581
Iran .. ..	624	44	709	..	..	..
Italy .. ..	504	690	679	4,250	2,301	3,187
Japan .. ..	2,770	3,593	5,673	4,786	4,760	7,970
Kenya .. ..	14	10	7	162	136	310
Malaysia (b) ..	186	189	4	3,140	3,895	2,680
Mexico .. ..	..	1	..	772	757	582
Netherlands ..	904	788	631	1,568	789	2,721
New Hebrides ..	..	191	489	..	..	..
New Zealand ..	2,846	3,071	3,125	1,158	2,034	1,795
Norway .. ..	196	350	599	82	31	150
Papua and New Guinea ..	(a)	(a)	(a)	60	160	195
Philippines ..	..	..	12	1,286	2,092	2,238
Poland .. ..	6	3	16	174	46	1,137
Singapore .. ..	(c)	(c)	(d)	(c)	(c)	(d) 1,857
South Africa ..	984	852	444	124	164	102
Sweden .. ..	2,048	1,839	1,968	1,072	782	1,300
Switzerland ..	314	763	452	10	4	52
Thailand .. ..	..	1	11	2,716	3,994	3,844
United Kingdom ..	7,738	7,777	9,935	25,816	30,872	26,067
U.S.A. .. ..	5,932	7,954	8,014	8,498	12,707	14,398
Yugoslavia ..	..	..	..	632	494	509
Other .. ..	4,674	2,653	3,988	1,632	1,285	1,718
"For Orders" (e) ..	..	..	..	490	102	104
Total .. ..	35,032	35,717	43,585	78,318	87,315	92,007

(a) Not available for publication; included in "other".

(b) Includes Singapore to 30 September 1965.

(c) Included in Malaysia.

(d) Recorded separately from 1 October 1965; previously included in Malaysia.

(e) Country of consignment not determined at the time of export.

### Tasmanian and Australian Overseas Trade

Before comparing the values of the overseas trade of Tasmania and Australia, it is necessary to take into account the value of outside packages, containers, crates, etc. in which goods are ordinarily imported from overseas. Such values have been omitted from all import tables in this chapter (except in the following comparative table), but they are normally included in trade statistics published by the Commonwealth Statistician. Export values in this chapter include the value of outside packages.

The following table compares the value of the overseas trade of Tasmania and Australia:

Value of Overseas Trade—Tasmania and Australia

Particulars		1961-62	1962-63	1963-64	1964-65	1965-66
IMPORTS						
Australia—	Total ..(\$'000)	1,769,492	2,162,670	2,372,658	2,904,703	2,939,492
	Per Head (\$)	166.89	200.23	215.50	258.75	256.85
Tasmania (a)—	Total ..(\$'000)	27,248	36,364	35,513	36,138	44,112
	Per Head (\$)	77.16	101.54	97.93	98.68	119.42
EXPORTS						
Australia—	Total ..(\$'000)	2,154,568	2,151,812	2,782,460	2,651,449	2,720,953
	Per Head (\$)	203.21	199.22	252.72	236.19	237.76
Tasmania—	Total ..(\$'000)	57,196	66,792	78,318	87,315	92,007
	Per Head (\$)	161.96	186.51	215.96	238.43	249.07

(a) Value of outside packages included: 1961-62, \$459,700; 1962-63, \$618,420; 1963-64, \$481,324; 1964-65, \$420,762; 1965-66, \$527,261.

The relatively low value of overseas imports per head of Tasmanian population is due in part to the transshipment of goods in other Australian ports. An additional factor appears to be the dependence of most of the State's major industries on raw materials produced within Australia. Allowing for the fact that some goods go overseas from Tasmania by transshipment through other Australian States, and are therefore *not* recorded as Tasmanian overseas exports, the export comparison *per head* of Australian and Tasmanian populations for 1964-65 and 1965-66 suggests that the smallest State is playing an important role as an earner of export income.

### Interstate Trade by Air

No data are compiled to show State of origin or State of destination for trade by air; most planes carrying commercial freights in connection with Tasmanian trade take off from or land in Victoria.

The value of interstate trade by air, since 1963-64, has been as follows:  
*Imports:* 1963-64, \$19,840,000; 1964-65, \$20,819,000; 1965-66, \$21,123,000;  
*Exports:* 1963-64, \$23,424,000; 1964-65, \$25,770,000; 1965-66, \$25,575,000.

### Interstate Trade by Sea

As might be expected with Melbourne the major port closest to Tasmania, the bulk of the island's interstate trade is transacted with Victoria. In 1965-66, Victoria was the source of 66 per cent of Tasmania's interstate sea imports and



the destination of 46 per cent of its interstate sea exports. The next table shows the value of interstate sea trade with the Australian States. Imports include the value of goods imported into other States from overseas and transhipped to Tasmania; exports include the value of goods exported to other States for transshipment overseas.

**Value of Interstate Sea Trade  
(\$'000)**

Australian State of Origin or Destination	Imports			Exports		
	1963-64	1964-65	1965-66	1963-64	1964-65	1965-66
N.S.W. .. ..	35,226	35,377	38,935	73,415	82,114	89,631
Victoria .. ..	111,781	116,506	126,580	77,237	86,321	97,393
Queensland .. ..	1,985	3,204	3,931	9,386	8,865	9,858
S.A. ... ..	16,609	13,726	20,182	9,391	11,045	11,441
W.A. ... ..	2,363	2,150	3,104	4,161	5,026	4,462
Total .. ..	167,964	170,963	192,732	173,590	193,371	212,785

### Sea Trade of Tasmanian Ports

In the following table, the value of total imports and exports by sea is shown for each port:

**Total Value of Sea Trade Classified According to Port  
(\$'000)**

Port	Imports		Exports		Total Sea Trade	
	1964-65	1965-66	1964-65	1965-66	1964-65	1965-66
Burnie .. ..	33,810	43,942	49,013	53,764	82,824	97,706
Devonport .. ..	51,691	54,103	50,694	52,695	102,386	106,798
Hobart .. ..	62,276	76,464	111,490	119,227	173,767	195,691
Currie .. ..	1,116	1,783	2,540	3,829	3,657	5,612
Launceston .. ..	56,669	58,686	55,162	62,501	111,831	121,187
Smithton .. ..	...	...	...	...	...	...
Stanley .. ..	143	219	1,562	1,145	1,705	1,364
Strahan .. ..	973	1,120	10,223	11,630	11,196	12,750
Total .. ..	206,680	236,318	280,686	304,792	487,366	541,110

The next table compares the proportion of total sea trade values attributed to each port:

**Total Value of Sea Trade—Port Proportions  
(Per Cent)**

Port	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Burnie .. ..	15.4	15.2	15.8	16.6	17.0	18.0
Devonport .. ..	20.0	19.6	19.4	19.4	21.0	19.7
Hobart .. ..	45.1	41.4	39.2	36.6	35.7	36.2
Currie .. ..	0.9	0.9	0.8	0.8	0.8	1.0
Launceston .. ..	15.6	20.2	22.3	23.8	22.9	22.4
Smithton .. ..	0.0	0.0	0.0	0.0	0.0	0.0
Stanley .. ..	0.8	0.3	0.4	0.3	0.3	0.3
Strahan .. ..	1.8	2.4	2.1	2.5	2.3	2.4
Ulverstone .. ..	0.4	0.0	(a)	(a)	(a)	(a)
Total .. ..	100.0	100.0	100.0	100.0	100.0	100.0

(a) Incorporated in Devonport figures from 1 January 1963.

The drop in the proportion of sea trade attributed to Hobart is related to the increasing use of "sea-road" facilities available through the ports of Devonport, Launceston and Burnie. The vessels involved in the "sea-road" service to northern and north-western ports are the *Princess of Tasmania* and the *Bass Trader*. As from June 1964 similar facilities became available at Hobart when the *Seaway Queen* began a "sea-road" service to Melbourne, followed by the *Seaway King* operating a Sydney service from September 1964; the *Empress of Australia* began a Sydney service in January 1965.

### Air Trade of Tasmanian Airports

Although Tasmania has a number of airports, only six are used on a regular basis for interstate trade; four are located near Hobart, Launceston, Burnie and Devonport respectively and the remaining two on King and Flinders Islands respectively.

The following table shows the value of interstate air trade passing through Tasmanian air-ports:

**Total Value of Interstate Air Trade Classified According to Airport  
(\$'000)**

Airport	Imports		Exports		Total Air Trade	
	1964-65	1965-66	1964-65	1965-66	1964-65	1965-66
Hobart .. ..	10,474	10,675	3,385	4,013	13,859	14,688
Launceston ..	6,442	6,296	21,027	20,373	27,469	26,669
Devonport ..	1,446	1,465	203	196	1,647	1,661
Wynyard (a) ..	1,635	1,776	211	246	1,846	2,022
King Island ..	574	602	820	576	1,394	1,178
Flinders Island ..	250	308	124	171	374	479
Total .. ..	20,819	21,123	25,770	25,575	46,589	46,698

(a) Including Smithton.

The percentage of the total value of air trade passing through each Tasmanian airport in 1965-66 was: Hobart, 31.5; Launceston, 57.1; Devonport, 3.6; Wynyard, 4.3; King Island, 2.5; Flinders Island, 1.0.

### Commodities Carried by Air

It will be observed that the value of trade by air approaches 8 per cent of the value of total trade by sea and air combined. With regard to exports by air (valued at \$25,575,000 in 1965-66), the major group was "Woollen Manufactures and Other Textiles" valued at \$23,929,000; exports of all food-stuffs (meat, crayfish, fruit, etc.) accounted for a further \$996,000. For imports, there is a much greater range of commodities involved, the chief group being "Clothing and Footwear" valued at \$11,457,000.

The value of imports by air has shown only a slow increase (from \$19.2m to \$21.1m, 1959-60 and 1965-66); the increase in the value of air exports has also been relatively slow (from \$20.8m to \$25.6m, 1959-60 and 1965-66). A possible explanation is the improvement in sea carriage techniques (roll-on roll-off vessels, container vessels, etc.) and shipping schedules.

### Imports of Principal Commodities

The next table shows the value of the principal commodities imported into Tasmania by sea and air:

**Imports of Principal Commodities by Sea and Air—Values**  
(**\$'000**)

Commodity	1963-64	1964-65	1965-66
Beer, Wine and Spirits .. .. .	2,740	2,821	3,368
Aluminium Oxide .. .. .	2,452	3,547	3,085
Clothing and Accessories .. .. .	13,125	14,046	13,566
Cocoa Beans and Cocoa Butter .. .. .	(a)	(a)	(a)
Footwear .. .. .	2,600	2,860	2,879
Machinery—Electrical .. .. .	10,502	8,897	11,605
Other .. .. .	12,603	14,762	20,342
Metal Manufactures .. .. .	7,277	6,679	7,073
Metals .. .. .	12,034	12,624	14,247
Motor Vehicles—New .. .. .	22,228	21,402	22,813
Other (b) .. .. .	17,268	17,297	19,365
Ores and Concentrates—Zinc .. .. .	6,624	4,917	7,220
Other .. .. .	1,758	2,698	3,080
Paper and Paper Manufactures .. .. .	5,801	6,830	8,276
Petroleum Products—Motor Spirit .. .. .	6,233	6,881	7,180
Fuel Oils .. .. .	5,556	6,370	7,538
Other .. .. .	2,121	1,924	4,482
Pulp for Paper Making .. .. .	4,470	6,266	6,843
Rubber Manufactures .. .. .	3,526	3,975	4,330
Sugar, Refined .. .. .	4,154	4,260	4,331
Textile Yarn and Fabrics .. .. .	8,721	9,471	9,997
Tobacco and Cigarettes .. .. .	11,980	12,037	12,771
Wheat .. .. .	2,418	2,381	2,757
Wool, Greasy .. .. .	4,299	3,932	3,684
Other .. .. .	52,347	50,622	56,609
<b>Total Imports .. .. .</b>	<b>222,836</b>	<b>227,499</b>	<b>257,441</b>

(a) Not available for publication; included in "other".

(b) Mainly tourists' and other motor vehicles imported as passengers' personal effects.

The table that follows shows the quantities of the principal commodities imported and has been compiled, as far as this is practicable, to match the preceding table of values.

**Imports of Principal Commodities by Sea and Air—Quantities**

Commodity	Unit of Quantity	1963-64	1964-65	1965-66
Alcoholic Beverages—				
Ale, Beer and Stout .. .. .	gal	315,713	272,360	356,032
Wine .. .. .	gal	382,298	424,537	497,506
Spirits and Liqueurs—Overseas .. .. .	pf gal	18,188	26,226	20,227
Interstate .. .. .	gal	138,892	150,761	173,891
Aluminium Oxide .. .. .	cwt	740,376	1,064,257	965,608
Cocoa Beans and Cocoa Butter .. .. .	(a)	(a)	(a)	(a)
Iron and Steel .. .. .	ton	74,891	81,104	97,978
Motor Vehicles—New .. .. .	no.	12,770	12,865	13,113
Other (b) .. .. .	no.	10,564	10,895	12,252
Ores and Concentrates—Zinc .. .. .	ton	247,763	184,796	260,025
Other .. .. .	ton	123,404	213,619	225,743
Paper and Paper Manufactures .. .. .	cwt	257,777	312,019	411,263
Petroleum Products—Motor Spirit .. .. .	'000 gal	55,892	61,455	63,422
Fuel Oils .. .. .	'000 gal	58,031	64,973	76,380
Pulp for Paper-making .. .. .	ton	41,319	55,003	59,601
Sugar, Refined .. .. .	ton	23,226	24,058	23,988
Tobacco and Cigarettes .. .. .	'000 lb	2,292	2,310	2,339
Wheat .. .. .	ton	41,304	43,778	49,185
Wool, Greasy .. .. .	'000 lb	6,132	5,828	5,700

(a) Not available for publication.

(b) Mainly tourists' and other motor vehicles imported as passengers' personal effects.

## Exports of Principal Commodities

The following table shows the value of the principal commodities exported from Tasmania by sea and air. The largest item listed—"Commodities Not Available for Publication"—comprises the total export value of aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, stationery, hardboard and plywood.

Exports of Principal Commodities by Sea and Air—Values  
(\$'000)

Commodity	1963-64	1964-65	1965-66
Butter .. .. .	4,371	5,914	5,214
Fish (including Crayfish) .. .. .	1,488	1,753	2,687
Fruit—Apples (Fresh) .. .. .	18,040	13,208	19,096
Pears (Fresh) .. .. .	1,414	1,051	1,554
Processed .. .. .	2,079	1,632	2,031
Hops .. .. .	1,357	1,166	1,677
Meat—Beef .. .. .	3,364	4,137	3,909
Lamb and Mutton .. .. .	1,225	1,434	2,185
Other .. .. .	1,089	1,201	1,188
Potatoes (Fresh) .. .. .	1,539	3,230	2,767
Preserved Vegetables (including Dried) .. .. .	8,190	15,068	15,360
Other Food and Drink (including Confectionery) .. .. .	21,770	22,598	23,995
Fertilisers .. .. .	2,138	3,360	3,811
Hides and Skins .. .. .	3,461	2,691	3,163
Metal Manufactures (including Machinery) .. .. .	8,572	7,602	6,302
Metals, Refined—Cadmium .. .. .	1,669	1,396	1,265
Copper .. .. .	9,451	9,541	10,725
Zinc .. .. .	27,909	37,327	38,331
Ores and Concentrates—Lead .. .. .	4,302	4,443	5,352
Tin .. .. .	2,585	2,573	3,060
Other .. .. .	2,215	2,555	2,891
Motor Cars and Commercial Vehicles (a) .. .. .	17,050	18,299	19,753
Pigments, Paints and Varnishes .. .. .	7,675	7,873	8,399
Timber—Dressed .. .. .	3,348	3,492	3,410
Undressed .. .. .	7,827	9,318	8,735
Wool, Greasy .. .. .	17,605	16,593	20,155
Woollen Manufactures .. .. .	21,918	24,139	24,077
Commodities Not Available for Publication (b) .. .. .	67,951	76,625	80,918
Not Elsewhere Included .. .. .	3,730	6,237	8,357
Total Exports .. .. .	275,332	306,456	330,367

(a) Mainly tourists' and other motor vehicles exported as passengers' personal effects.

(b) Commodities comprising this item are: aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, stationery, hardboard, and plywood.

The next table shows the quantities of the principal commodities exported and has been compiled, as far as this is practicable, to match the table of values.

Exports of Principal Commodities by Sea and Air—Quantities

Commodity (a)	Unit of Quantity	1963-64	1964-65	1965-66
Butter .. .. .	cwt	163,676	204,200	174,765
Fish—Crayfish .. .. .	cwt	16,837	14,187	20,322
Other .. .. .	cwt	22,180	18,439	20,175
Fruit—Apples .. .. .	'000 bush	6,569	4,839	6,504
Pears .. .. .	'000 bush	493	354	518
Preserved in Liquid .. .. .	'000 lb	12,950	10,436	10,479
Pulped .. .. .	'000 lb	4,226	2,757	3,256
Dried .. .. .	'000 lb	475	258	752
Hops .. .. .	'000 lb	2,025	1,716	2,568

Exports of Principal Commodities by Sea and Air—Quantities—*continued*

Commodity (a)	Unit of Quantity	1963-64	1964-65	1965-66
Meat—Beef .. .. .	cwt	118,181	147,909	121,545
Lamb and Mutton .. .. .	cwt	67,305	71,387	100,358
Pork .. .. .	cwt	20,368	20,815	15,336
Potatoes (Fresh) .. .. .	ton	33,515	27,699	28,758
Preserved Vegetables (including Dried) ..	'000 lb	52,765	81,256	79,624
Fertilisers .. .. .	ton	34,218	48,507	62,733
Sheepskins—with Wool .. .. .	'000 lb	7,218	5,821	7,203
without Wool .. .. .	'000 lb	187	78	2
Other Hides and Skins (excluding Furred) ..	'000 lb	3,518	4,564	3,663
Metals, Refined—Cadmium .. .. .	ton	350	270	308
Copper .. .. .	ton	15,131	14,741	13,923
Zinc .. .. .	ton	132,081	139,032	135,089
Ores and Concentrates—Lead .. .. .	ton	28,757	24,084	27,311
Tin .. .. .	ton	1,943	1,722	1,801
Motor Cars and Commercial Vehicles (b) ..	no.	10,693	11,554	12,424
Timber—Dressed .. .. .	'000 sup ft	14,736	15,012	14,375
Undressed .. .. .	'000 sup ft	56,662	65,435	59,488
Wool, Greasy .. .. .	'000 lb	25,086	30,329	34,376

(a) Principal commodities not available for publication comprise aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, stationery, hardboard, plywood, and confectionery.

(b) Mainly tourists' and other motor vehicles exported as passengers' personal effects.

## Exports of Selected Commodities

The following table shows, in summary form, total exports of selected commodities since 1939-40:

## Exports of Selected Commodities by Sea and Air

Commodity	Unit of Quantity	1939-40	1949-50	1959-60	1965-66
QUANTITY					
Butter .. .. .	cwt	55,428	42,886	154,789	174,765
Fresh Fruit .. .. .	'000 bush	3,910	2,963	4,210	7,022
Potatoes .. .. .	ton	117,700	84,896	44,001	28,758
Hops .. .. .	'000 lb	1,584	1,767	2,955	2,568
Wool, Greasy .. .. .	'000 lb	9,092	9,101	27,977	34,376
Sheepskins (with Wool) .. .. .	'000 lb	2,285	3,307	7,090	7,203
Refined Copper .. .. .	ton	11,738	4,253	7,624	13,923
Refined Zinc .. .. .	ton	70,909	80,704	113,853	135,089
Timber (Dressed and Undressed) ..	'000 sup ft	50,858	62,136	75,403	73,863
VALUE (\$'000)					
Butter .. .. .	..	742	1,278	5,390	5,214
Fresh Fruit .. .. .	..	2,270	4,348	9,490	20,651
Potatoes .. .. .	..	1,558	3,302	1,656	2,767
Hops .. .. .	..	236	610	1,928	1,677
Wool, Greasy .. .. .	..	1,376	6,202	15,254	20,155
Sheepskins (with Wool) .. .. .	..	186	816	2,078	2,465
Woollen Manufactures .. .. .	..	2,674	5,540	17,524	24,077
Refined Copper .. .. .	..	1,416	1,478	5,022	10,725
Refined Zinc .. .. .	..	2,856	9,964	22,922	38,331
Ores and Concentrates .. .. .	..	2,144	4,076	5,952	11,303
Timber (Dressed and Undressed) ..	..	1,238	2,930	8,952	12,145

### Further Information on Trade Statistics

In this chapter, it is only possible to give a broad outline of Tasmania's trade. The following cover the subject in greater detail:

*The Trade and Shipping* bulletin: this annual publication of the Tasmanian Office of the Bureau of Census and Statistics deals in detail with the State's interstate trade and includes an integration of interstate and overseas trade.

*Overseas Trade*: this annual publication of the Commonwealth Statistician gives considerable detail on the State's overseas trade.

## RETAIL TRADE IN TASMANIA

### Introduction

The statistics in this section have been obtained from the Australian Census of Retail Establishments (last conducted in 1961-62) and, for non-Census years, from the quarterly Australian Survey of Retail Establishments.

#### *Census of Retail Establishments*

Retail censuses were taken in respect of the years ended 30 June 1948, 1949, 1953, 1957 and 1962. The information collected in each census is extensive and provides details of retail trading in local government areas, in statistical divisions, and in special "statistical retail" areas. The census information is also used as a bench-mark for designing a sample representative of all retail establishments.

#### *Survey of Retail Establishments*

Quarterly estimates of the value of retail sales have been calculated from the September quarter 1950, inclusive, by means of sample surveys. The information collected quarterly in each survey is much less detailed than in the censuses and provides estimates only for the State as a whole.

### Census of Retail Establishments, 1961-62

#### *Sales by Type of Business*

There are two ways in which the value of retail sales may be presented: either as totals for particular commodity groups, or as totals for particular types of business. For example, information from the retail census provides a total of the value of all *groceries* sold by all types of retail business, and also a total of the value of all commodity groups sold by *grocers*; the two totals will normally differ since the classification *grocer* is applied to an establishment in which *groceries* are the principal but not necessarily the only line of sale (e.g. a country *grocer* may also sell commodities such as petrol).

#### *Types of Business, 1961-62*

The following table shows the number of retail establishments recorded at the Census of 1961-62; they are classified according to the type of business (determined by the value of the principal line, or lines, of goods sold). Also shown are the total retail sales during 1961-62, for the various types of business. Comparative figures are given of the results of the Census of 1956-57. In the table, the item "Grocers" is concerned with *grocers'* total sales of all commodity groups; in more general terms, the turnover figures relate to total sales by each type of business, and give no precise indication of total sales of any particular commodity group.

**Number of Retail Establishments and Value of Retail Sales of Goods by  
Type of Business, 1956-57 and 1961-62**

Type of Business	Number of Retail Establishments		Value of Retail Sales	
	1956-57	1961-62	1956-57	1961-62
	No.	No.	\$'000	\$'000
Food Stores—				
Grocers .. .. .	1,100	1,046	33,998	42,190
Butchers .. .. .	295	357	11,280	13,742
Fruiterers .. .. .	90	93	2,476	2,966
Bakers .. .. .	151	158	3,434	4,364
Confectioners and Milk Bars .. .. .	208	307	3,454	5,872
Cafes .. .. .	20	59	152	564
Fishmongers and Poulterers .. .. .	32	44	542	880
Other Food Stores .. .. .	30	53	806	1,404
Hotels, Tobacconists, etc.—				
Hotels, Wine Saloons, etc. .. .. .	308	311	15,622	18,382
Tobacconists .. .. .	23	21	762	456
Tobacconists and Hairdressers .. .. .	64	51	430	328
Department Stores, Clothiers, Drapers, etc.—				
Department Stores .. .. .	6	6	7,322	11,964
Clothiers and Drapers .. .. .	304	336	23,850	24,768
Footwear Stores .. .. .	61	78	2,980	3,712
Hardware, Electrical Goods, Furniture Stores, etc.—				
Domestic Hardware Stores .. .. .	57	43	2,284	2,328
Electrical Goods, Radios and Musical Instruments Stores .. .. .	130	157	5,416	8,976
Furniture and Floor Coverings Stores .. .. .	77	80	5,008	6,594
Other Goods Stores—				
Chemists .. .. .	96	124	3,398	5,894
Newsagents and Booksellers .. .. .	99	121	3,780	5,018
Sports Goods Stores .. .. .	20	23	640	984
Watchmakers and Jewellers .. .. .	56	54	1,182	1,252
Cycle Stores .. .. .	11	8	114	100
Florists and Nurserymen .. .. .	33	44	422	410
Other Types of Business .. .. .	77	120	1,742	2,770
Total (excluding Motor Vehicle Dealers, Garages and Service Stations, etc.) .. .. .	3,348	3,694	131,094	165,918
Motor Vehicle Dealers, Garages and Service Stations, etc.—				
New Motor Vehicle Dealers, Garages and Service Stations .. .. .	414	476	38,034	40,096
Used Motor Vehicle Dealers .. .. .	25	48	4,442	11,912
Motor Parts and Tyre Dealers .. .. .	36	52	1,510	2,006
Total Motor Vehicle Dealers, Garages and Service Stations, etc.	475	576	43,986	54,014
Grand Total .. .. .	3,823	4,270	175,080	219,932

*Sales of Commodities in Statistical Divisions*

The next table gives details of retail sales in each statistical division and in the auxiliary groupings, Hobart and Suburbs and Launceston and Suburbs. A further dissection is provided for a special area of Hobart, designated the "inner city" for the purpose of the Census, and defined as the blocks bounded by Campbell, Brisbane, Barrack and Macquarie Streets. In this table, the value totals for each area are based on commodity totals, i.e. the column for the motor vehicle commodity group relates exclusively to sales of motor vehicles, motor

parts, tyres, petrols, lubricants and other "motor commodities", irrespective of the type of business making the sale. This contrasts with the presentation in the previous table, where the turnover figures for the motor vehicle group of establishments related to their sales of *all* commodities, including soft drinks, cigarettes, detergents and other "non-motor commodities".

**Value of Retail Sales of Goods in Each Statistical Division and in City and Suburban Districts, 1961-62**

Area	Total Number of Retail Establish- ments	Value of Retail Sales (\$'000)		
		All Commodities Excluding Motor Vehicles, etc. (a)	Motor Vehicles, etc. (a)	All Commodities
STATISTICAL DIVISIONS				
South Central—				
Hobart—Inner City Area ..	425	36,070	10,310	46,380
Remainder of South Central ..	779	26,266	12,798	39,064
Total .. .. .	1,204	62,336	23,108	85,444
North Central .. .. .	728	34,592	14,494	49,086
North Western .. .. .	995	33,676	11,804	45,480
North Eastern .. .. .	344	7,790	1,082	8,872
North Midland .. .. .	160	3,668	542	4,210
Midland .. .. .	131	3,098	404	3,502
South Eastern .. .. .	246	6,398	888	7,286
Southern .. .. .	336	9,464	1,076	10,540
Western .. .. .	126	5,038	474	5,512
Total Tasmania ..	4,270	166,060	53,872	219,932
CITY AND SUBURBAN DISTRICTS				
Hobart and Suburbs—				
Hobart—Inner City Area ..	425	36,070	10,310	46,380
Remainder, Hobart and Suburbs ..	928	30,720	13,374	44,094
Total Hobart and Suburbs ..	1,353	66,790	23,684	90,474
Launceston and Suburbs .. ..	805	36,274	14,814	51,088
Remainder of State .. .. .	2,112	62,996	15,374	78,370
Total Tasmania .. ..	4,270	166,060	53,872	219,932

(a) Sales as commodity group totals; "motor vehicles, etc." includes petrol, lubricants, parts, tyres, etc. as well as new and used vehicles.

### Quarterly Retail Sales Estimates

Each quarter, returns of retail sales are collected from a fraction (or sample) of all the retail businesses recorded in the most recent census of retail establishments, the fraction being selected to represent the field covered by the census. This sample is varied from time to time to make provision for "new" establishments opening up, "old" establishments closing down and "old" establishments changing type ("old", in this context, relates to businesses as recorded at the most recent census of retail establishments). From the returns made by the sample establishments, estimates are calculated quarterly of the total volume of retail sales, and also the total sales of broad groups of commodities. The following table presents, as annual totals, the results of the quarterly surveys for a five-year period:



**Estimated Value of Retail Sales of Goods by Commodity Groups (a)**  
**(\$'000)**

Commodity Group	1961-62	1962-63 (r)	1963-64 (r)	1964-65 (r)	1965-66
Groceries .. .. .	28,550	29,260	31,380	33,380	35,050
Butchers' Meat .. .. .	13,860	14,970	15,190	16,560	17,130
Other Food .. .. .	20,050	21,450	21,070	22,710	23,800
Beer, Wine, Spirits .. .. .	16,980	16,880	18,380	18,950	20,350
Clothing, Drapery, Piece Goods	30,120	30,680	32,490	34,370	34,830
Footwear .. .. .	5,250	5,360	5,710	5,760	6,000
Domestic Hardware .. .. .	4,080	4,420	4,370	4,400	4,590
Electrical Goods .. .. .	10,650	11,740	11,360	11,200	11,030
Furniture, Floor Coverings .. .. .	7,220	7,860	8,200	8,920	9,360
Chemists' Goods .. .. .	7,480	7,680	8,320	9,480	10,030
Newspapers, Periodicals, etc. .. .. .	5,490	5,520	5,940	6,380	6,740
Other Goods (b) .. .. .	16,330	17,250	17,510	19,150	19,960
Total (excluding Motor Vehicles, etc.) .. .. .	166,060	173,070	179,920	191,260	198,870
Motor Vehicles, Parts, Petrol, etc.	53,872	63,210	70,350	75,270	77,100

(a) Survey results for all years except 1961-62, the year of the most recent census of retail establishments.

(b) Includes sports goods, jewellery, cycles, flowers, plants, etc.

(r) Revised.

## MARINE BOARDS AND HARBOUR TRUSTS

### Introduction

Tasmania has a number of ports for handling overseas vessels; they are sited on the Derwent and Huon rivers in the south (Hobart and Port Huon); on the Tamar in the north (Beauty Point, Inspection Head and Bell Bay); on the Mersey (Devonport), in Emu Bay (Burnie), and at Port Latta, all in the north-west. All overseas ports provide approximately 30 feet or more of water at berths; the wooden Ocean Pier in Hobart gave an extreme depth of 63 feet but the structure was destroyed by fire in 1948 and has since been replaced by concrete berths giving maximum depths up to 39 feet. Port Latta provides a depth of 52 feet nearly a mile off-shore.

Interstate and intrastate trade passes through the main ports and is carried on as well through ports at Launceston, Strahan, Stanley, Smithton, Ulverstone, Currie (on King Island) and Lady Barron (on Flinders Island).

This section deals primarily with the Marine Boards which control the harbours but a brief description is given of the main ports.

Tasmania's two oldest ports date, in embryo at least, from 1804 when Lieutenant-Colonel Collins chose Sullivan's cove as the site for the Derwent settlement and, later in the same year, when Lieutenant-Colonel Paterson disembarked near George Town on the Tamar.

### Port of Hobart

#### *Location*

The approach to the Derwent and the Port of Hobart is made through a very wide strait between Cape Queen Elizabeth (Bruny Island) and Cape Raoul (Tasman Peninsula), approximately 30 miles south-east from the city. The mouth of the Derwent, three and a half miles wide, lies 12 miles south-

east of the port which is built upstream on the western bank in a U-shaped cove; the opposite bank lies one and a half miles away to the east at this point. The shores of the Derwent and the arms of the cove act as natural breakwaters.

### *Description*

The present main port of Hobart is extremely compact, being U-shaped and with only 2,000 feet or less separating the two arms. The southern arm is devoted to Princes Wharf with berths numbered one to four; the centre contains Kings and Queens Piers while the northern arm is made up of the Macquarie wharves with berths one to four and a special tanker berth. It is literally true that the port and the city are one, the principal buildings such as Parliament House, the Town Hall and the General Post Office all being only a stone's throw from the harbour; in fact, the Parliament assembles one hundred yards from the sea in what used to be the Customs House of an earlier era. Shoreward from the central piers are Victoria and Constitution Docks, enclosed harbours for smaller vessels; annually competitors in the Sydney-Hobart Yacht Race moor in Constitution Dock within a few hundred yards of the finishing line.

Most wharves and sheds in the main port are of concrete construction, the first step in this direction being the rebuilding of Elizabeth St Pier in 1934, followed by the three-stage conversion of Princes Wharf. The urgency of this type of modernisation was emphasised in 1948 when fire destroyed the wooden Ocean Pier No. 2 shed and the outer 80 feet of berth.

The main recent development has been connected with roll-on roll-off type vessels for which special provision has had to be made. Princes Wharf No. 1 berth was converted into a specialised terminal with drive-on ramp and vehicle marshalling area, the *Seaway Queen* and *Seaway King* first berthing there in June and August 1964, respectively. To accommodate the new Sydney-Hobart roll-on roll-off vessel *Empress of Australia*, extensive land reclamation was carried out to the south of Princes Wharf No. 3 berth and the new facility, named No. 4 berth, involved a further wharf, a drive-on ramp, an extensive marshalling area and a terminal building. The *Empress* began the new service in January 1965.

The most striking feature of the Port of Hobart is the ease with which large vessels can be brought to berth. Tides present no problem, the rise and fall being four feet six inches average, and no dredging of approach channels has ever been necessary.

### *Subsidiary Ports*

In addition to the main port in the heart of the city, there are a number of subsidiary outlets serving the south of the State. Near Snug, on D'Entrecasteaux channel, is the wharf of the Electrona carbide works. On the west bank of the Huon River near Geeveston is Port Huon wharf, located in the centre of the principal orcharding area and used mainly for fruit exports. Also based on the Huon River (for export of paper pulp) is the A.P.M. Ltd wharf at Hospital Bay. In the Derwent itself, two and a half miles upstream from the main port, is a tanker berth at Sells Point where bulk petrol and oil are stored; tankers pass under the 150 feet high navigation span of the Tasman Bridge on their way. A mile upstream from Sells Point is the private wharf of the Electrolytic Zinc Company Ltd at Risdon. Nearly twenty miles upstream from the main port is the plant of Australian Newsprint Mills Ltd at Boyer from which newsprint rolls are carried downstream by barge and tug.

The authority controlling the main port and Port Huon is the Hobart Marine Board.

### *Works Programme*

Main development in 1967 has been the building of cold storage facilities at Kings Pier, Princes No. 2 and at Port Huon. Queens Pier underwent demolition and the Board is carrying out extensive investigations to determine the best site for new berths within Sullivans Cove.

## **Port of Launceston**

### *Location*

Launceston lies nearly forty miles upstream at the headwaters of the Tamar which discharges into Bass Strait between Low and West Heads; although the mouth of the Tamar is four miles wide, the river follows a sinuous course marked by many bends, and narrows to less than 300 yards in some stretches near the city. Tides are large, the rise and fall being from 10 feet to 12 feet according to location and silting occurs in the upper reaches which receive the discharge of the South Esk and North Esk Rivers.

Because of the limitations of the upper Tamar near Launceston, development of the port shows a pattern different from that of Hobart where all interstate and overseas berths are concentrated in the one area. In Launceston, the possibilities of the Tamar have been exploited by decentralisation, the present main outlets being:

- (i) Kings Wharf; interstate berths in Launceston itself immediately downstream from the junction of the North Esk and Tamar Rivers; facilities include a graving dock for small ship repair.
- (ii) Beauty Point Wharf; overseas berths on the western bank approximately eight miles upstream from the mouth of the Tamar;
- (iii) Inspection Head Wharf; overseas berths on the western bank approximately half a mile downstream from Beauty Point Wharf;
- (iv) Bell Bay Wharves; these include a tanker berth, a general cargo and passenger berth and the special cargo wharf serving Comalco Aluminium Ltd, operator of a nearby refinery. The Bell Bay site is on the eastern shore opposite Beauty Point.

The port has also had to make provision for the operation of roll-on roll-off ferry services and Bell Bay is the chosen terminal, the *Empress of Australia* making alternate Sydney-Tasmania voyages to Hobart and Bell Bay.

### *Description*

Virtually all berths in the lower reaches of the port have been constructed since 1951; they are first class modern concrete structures especially designed to employ the Board's mechanical handling equipment.

Channel and lighting improvements have allowed vessels of deeper draft to enter and, more importantly, have permitted navigation of large vessels to be extended into the hours of darkness. The growing industrial complex at Bell Bay demands fast turn-rounds and works programmes have been designed to make them possible.

### *Works Programme*

Main development in 1967 has been a major extension of the vehicle marshalling yard at Bell Bay, an extension of cold storage facilities at Inspection Head, and channel improvements aimed at accommodating the increasing drafts of the big tankers and bulk carriers now visiting the port.

The isolation of the east bank wharves from those on the west bank will be ended soon when the Batman bridge is completed in 1968.

*Location***Port of Devonport**

The Port of Devonport lies close inside the mouth of the Mersey River which, unlike the Derwent and the Tamar, is navigable for only a short distance. The Mersey has a rise and fall of tide approximating nine feet and recent hydrographic survey indicated a maximum tidal flow of 2.1 knots. The river was always a natural harbour for small craft but its development as an overseas port has required extensive dredging and engineering works, including elimination of the tidal bar.

*Description*

The original river mouth was approximately three-quarters of a mile wide but this has been narrowed to just over 400 yards by an anti-silting barrier thrown out into the sea from the eastern bank. The overseas berths are located on the western bank about a mile upstream from the river's artificial mouth while the special terminal for the roll-on roll-off vessel *Princess of Tasmania* lies opposite on the eastern bank. The *Princess* has maintained a Bass Strait service based on Devonport since 1959 and its berth includes a wharf, a stern-loading drive-on ramp, an extensive vehicle marshalling area and a capacious terminal building. Thousands of tourists and their vehicles pass through this terminal each year. The *Bass Trader* also maintains a weekly ferry service to the port.

The possibility of further development has not been exhausted; while the main berths have been made along the western bank, there is nearly a mile reserved on the opposite bank for the construction of future wharves.

*Works Programme*

In 1967, development has concentrated on an east bank wharf as an outlet for A.P.P.M. Ltd's paper industry at Wesley Vale, and further extensions have been made on the same bank to accommodate sea road ferries. On the west bank, a three-acre area is being prepared for cargo assembly.

*Location***The Port of Burnie**

The ports of Hobart, Launceston and Devonport all lie within the shelter of rivers but the Port of Burnie, on Emu Bay, was built out into the open sea in the lee of Blackmans Point; immediately to the west of the point is a beach on which breaks the short surf of Bass Strait which can produce very rough seas, the nearest land being the Victorian coast 200 miles to the north.

*Description*

The shelter necessary for all-weather use of the port was provided by a 1,250 foot breakwater anchored to Blackmans Point, and running out to sea with a south-east orientation. The wharves are thus protected by the point and by the breakwater from swells coming in from the west or north, the only two quarters from which heavy seas are feared. Ocean Wharf is constructed immediately in the lee of the breakwater, the two structures appearing as one, and other berths are provided by piers parallel to the breakwater and lying further south.

Future development of the port could not be undertaken without the provision of further protection, and an island breakwater sited north-east from the end of Ocean Wharf has now been constructed. The breakwater, consisting of concrete caissons 1,600 feet long, is oriented south-east and is calculated to give ample protection for up to 2,000 feet of berthage south of existing piers. One interesting feature is the use of the lee of the island breakwater for a tanker berth, the fuel being pumped to land along a submarine pipeline.

In 1961, special facilities were provided to handle the roll-on roll-off vessel *Bass Trader* and the port is also used by the *Empress of Australia* which makes a return voyage to Sydney via Bell Bay and Burnie. (The alternate route worked by the *Empress* is Sydney-Hobart.)

#### *Works Programme*

Work in 1967 is concentrated on dredging south of the existing port, the aim being to provide a second roll-on roll-off berth; this will be closely integrated with the railway yards as part of the rail ferry service. A marshalling area capable of handling 25-ton wheel loadings is being prepared.

#### **Port Latta**

Construction work on the Savage River iron ore project began in early 1966 and is programmed for completion in 1968. Work is proceeding simultaneously at two centres: (i) development of the mines at the Savage River; (ii) development of Port Latta at Brickmakers Bay. The main construction programme requires a concentrating plant at the mines, a 5.1-mile pipeline to pump the watered concentrate to the coast, a pellet-making plant at Port Latta and an offshore terminal in deep water for exporting the pellets. The whole project will require an outlay of \$62m.

Cargo of this nature (pellets) is not loaded into small ships and provision had to be made for bulk ore carriers of 60,000 to 90,000 tons capacity; hence deep water is a major consideration. Starting in 1968 about 2.25m tons will be shipped annually.

The loading facility consists of a four-foot wide conveyor belt which carries pellets to two swivel loaders located a mile offshore; here vessels moored in 52 feet of water take on pellets, the system having a discharge capacity of about 3,000 tons per hour.

The port is extremely specialised and designed primarily for export of pellets. Some of the raw materials for use by the Port Latta plant will be imported through the adjacent port of Stanley.

#### **Constitution of Marine Boards and Harbour Trusts**

##### *Introduction*

Relatively early in Tasmania's history, it was decided that the control and operation of any port was best put in the hands of citizens who had a personal interest in its proper management, and, to this end, port administration was deliberately decentralised; the State Government, by legislation, defined the powers and duties of the new authorities it created but the detailed administration, including financial management, was then very much left to the boards and trusts. This is still the position today, government control relating mainly to the approval of borrowing programmes.

##### *Establishment of Boards*

Operation of Tasmania's chief ports ceased to be a direct function of the government of the colony in 1857 when legislation was passed to set up the marine boards of Hobart and Launceston. Each board consisted of five wardens; the mayor and the collector of customs were *ex officio* wardens, the remaining three members being appointed as nominees of the respective Chambers of Commerce. In 1867, the Governor was empowered to create other boards, such bodies to consist of three wardens appointed by the Governor; within a year, boards had been constituted under the titles Mersey, Circular Head and Table Cape.

*Boards of Hobart and Launceston*

The *Marine Boards Act* 1889 created a special electorate for the Hobart and Launceston boards, the nine wardens for each to be elected by ship-owners, importers and exporters. The respective collectors of customs were required to compile annually rolls of these users of the ports and the number of votes each elector could exercise was proportional to his financial interest; for example, an exporter of goods valued \$400 to \$3,999 had one vote, of \$4,000 to \$9,999 two votes, and of over \$10,000, three votes. Importers received similar voting powers in proportion to the wharfage paid while ship owners' votes were proportional to tonnage of their vessels. It was further provided that three wardens should retire annually and the master warden be elected by board members. By an amending Act in 1895, the voting powers of importers were placed on the same basis as those exercised by exporters and were divorced from wharfage paid.

The special electorate just described is still in existence today and continues to elect the wardens of the Hobart Marine Board; the scale of values affecting the number of votes to be exercised by importers and exporters remains unchanged also. However, in the case of Launceston Marine Board, the system of the special electorate was abolished in 1902 and all Launceston citizens on the rolls for the House of Assembly became eligible to cast single votes, a right extended in 1910 to citizens in the other municipalities bordering the Tamar. In 1916, with the adoption of the Hunter scheme for improvements affecting the whole length of the river, changes were made to increase the number of wardens by representatives from the bordering municipalities but the *Marine Act* 1921 reduced the number of wardens to five, restricted eligibility for standing as warden to citizens of Launceston and changed the voting qualification so that marine board electors had to be those qualified to vote at an election of aldermen for the City of Launceston. This system still operates today.

*Constitution of Boards*

The present system of appointing or electing wardens is summarised as follows:

**Election or Appointment of Port Authorities**

Authority	Number of Wardens	System of Election or Appointment of Wardens
Hobart Marine Board .. ..	9	Special electorate of ship-owners, importers and exporters
Launceston Marine Board ..	5	Electors of City of Launceston as for election of aldermen
Burnie Marine Board .. ..	8	} Municipal electors within proclaimed areas
Devonport Marine Board ..	11	
Circular Head Marine Board ..	5	
King Island Marine Board ..	5	} Nominees of the Governor
Flinders Island Marine Board ..	3	
Strahan Marine Board .. ..	3	} Municipal electors within proclaimed areas
Smithton Harbour Trust ..	5	

**Finances of Marine Boards and Harbour Trusts**

The principal sources of revenue of the port authorities are shipping tonnage rates and import and export wharfage rates; other sources are charges for pilotage services and the hiring of equipment. Expenditure is summarised under the heading "works and services" which includes the provision of ordinary port services (e.g. pilotage, tug assistance, etc.), the maintenance of the port (e.g. dredging, etc.) and the improvement of the port (e.g. new wharfs,

new berths, etc.). To the degree that insufficient revenue is available to finance port improvements, the authorities borrow money subject to State Treasury approval, the Treasury acting on behalf of the Australian Loan Council and implementing its annual agreement as to the approved level of new semi-government authority loans.

The following table shows the combined revenue and loan account transactions for each authority:

**Marine Boards and Harbour Trusts**  
**Receipts and Expenditure—All Funds, 1965-66**  
**(\$'000)**

Particulars	Authority—									Total
	Hobart	Launceston	Devonport	Burnie	Circular Head	King Island	Strahan	Flinders Island	Smithton	
Opening Balance	1,565	612	621	1,381	4	21	18	13	8	4,240
Receipts—										
Revenue Account—										
Wharfage Charges	806	630	526	626	11	35	25	15	..	2,674
Hire of Plant and Equipment ..	321	261	26	157	..	1	1	..	..	767
Rents ..	6	96	79	61	2	..	..	..	1	245
Other Charges for Services (a) ..	162	109	100	129	2	5	5	2	..	515
Government Subsidy ..	30	..	..	..	12	..	..	..	..	43
Other Receipts (b)	235	685	92	269	..	13	4	..	..	1,298
Total ..	1,560	1,781	823	1,241	28	54	36	17	1	5,542
Loan Account—										
Loan Raisings ..	..	200	400	1,400	37	18	..	..	..	2,055
Other Receipts ..	9	28	..	..	..	..	..	..	..	37
Total ..	9	228	400	1,400	37	18	..	..	..	2,092
Total Receipts	1,569	2,008	1,223	2,641	65	72	36	17	1	7,633
Expenditure—										
Revenue Account—										
Works and Services ..	510	1,003	404	605	2	8	23	2	1	2,557
Interest ..	139	151	210	414	7	4	3	..	..	928
Redemption and Sinking Fund	187	91	144	136	12	3	1	2	..	576
Administration ..	160	94	97	72	9	14	15	3	1	465
Other (c) ..	172	294	78	58	1	14	5	1	..	622
Total ..	1,168	1,632	932	1,284	32	43	47	8	2	5,148
Loan Account—										
Capital Works ..	199	201	424	991	23	8	..	..	..	1,846
Total Expenditure	1,367	1,833	1,356	2,275	54	51	47	8	2	6,994
Closing Balance ..	1,767	787	488	1,747	14	42	7	21	6	4,880

(a) Includes dues, tonnage rates, pilotage, mooring and slipway fees, weighbridge revenue and charges for light, power, telephone, water, storage and cleaning.

(b) Includes receipts from sales of assets, interest on investments, and the net receipts of deposit, stores and superannuation accounts.

(c) Includes expenditure on insurance, workers' compensation, superannuation contributions, payroll tax, rents and rates.

The next table summarises the transactions of all Marine Boards and Harbour Trusts:

**Marine Boards and Harbour Trusts**  
**Receipts and Expenditure—All Funds**  
**(\$'000)**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Opening Balance .. ..	2,440	3,868	5,485	(r) 4,538	4,240
Receipts—					
Revenue Account .. ..	3,694	4,469	5,046	5,060	5,542
Loan Account—					
Loan Raisings .. ..	1,930	2,167	2,631	2,842	2,055
Other Receipts .. ..	9	6	11	104	37
Total Receipts .. ..	5,633	6,642	7,688	8,006	7,633
Expenditure—					
Revenue Account—					
Works and Services .. ..	1,492	1,485	1,294	2,255	2,557
Interest .. ..	810	939	655	792	928
Redemption & Sinking Fund } .. ..	352	365	590	509	576
Administration .. ..	427	777	400	408	465
Other .. ..			1,311	1,050	622
Total .. ..	3,081	3,566	4,250	5,014	5,148
Loan Account—					
Capital Works .. ..	1,124	1,459	4,364	3,290	1,846
Total Expenditure .. ..	4,205	5,025	8,614	8,304	6,994
Closing Balance .. ..	3,868	5,485	4,559	4,240	4,880

(r) Revised.

*Loan Debt and Borrowing*

The loan debt of the Marine Boards and Harbour Trusts has increased substantially in recent years. The following table shows the growth of this debt in total and gives individual details for the four principal authorities:

**Marine Boards and Harbour Trusts**  
**Loan Debt of Principal Authorities At End of Year**  
**(\$'000)**

Authority	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Hobart .. ..	2,534	2,404	2,768	2,866	2,700	2,527
Launceston .. ..	1,232	1,583	1,684	2,215	2,783	2,888
Devonport .. ..	2,403	2,625	(a) 2,928	(a) 3,415	(a) 3,886	(a) 4,142
Burnie .. ..	2,802	3,955	5,050	5,984	7,473	8,766
Other .. ..	327	326	241	257	260	295
State Total .. ..	9,298	10,893	12,671	14,737	17,102	18,617

(a) Includes debt of Ulverstone Harbour Trust, the port having been taken over by Devonport Marine Board from 1 January 1963.

At 30 June 1966, the loan debt of each authority was: Hobart, \$2,526,900; Launceston, \$2,888,000; Devonport, \$4,141,900; Burnie, \$8,765,900; Circular Head, \$168,100; King Island, \$95,600; Strahan, \$27,500; Flinders, \$2,600. Smithton Harbour Trust had no debt.



The next table shows a summary of annual borrowings and analyses the aggregate debt according to creditor; it will be observed that all debt to the State Government has now been redeemed.

**Marine Boards and Harbour Trusts**  
**Loan Raisings, Loan Debt and Sinking Funds**  
**(\$'000)**

Year	Loan Raisings During Financial Year			Loan Debt at End of Financial Year			Total of Sinking Funds at End of Financial Year (a)
	From State Govt	From Other Sources	Total	To State Govt	To Other Creditors	Total	
1955-56 ..	..	516	516	108	5,029	5,137	..
1956-57 ..	..	524	524	87	5,334	5,421	28
1957-58 ..	..	648	648	68	5,806	5,874	27
1958-59 ..	..	1,125	1,125	22	6,723	6,745	..
1959-60 ..	..	1,552	1,552	20	8,019	8,039	..
1960-61 ..	..	1,560	1,560	18	9,280	9,298	..
1961-62 ..	..	1,930	1,930	16	10,877	10,893	7
1962-63 ..	..	2,167	2,167	..	12,671	12,671	24
1963-64 ..	..	2,631	2,631	..	14,737	14,737	53
1964-65 ..	..	2,842	2,842	..	17,102	17,102	85
1965-66 ..	..	2,055	2,055	..	18,617	18,617	124

(a) Sinking funds maintained by boards and trusts for debt redemption purposes.

## SHIPPING AT TASMANIAN PORTS

### System of Record

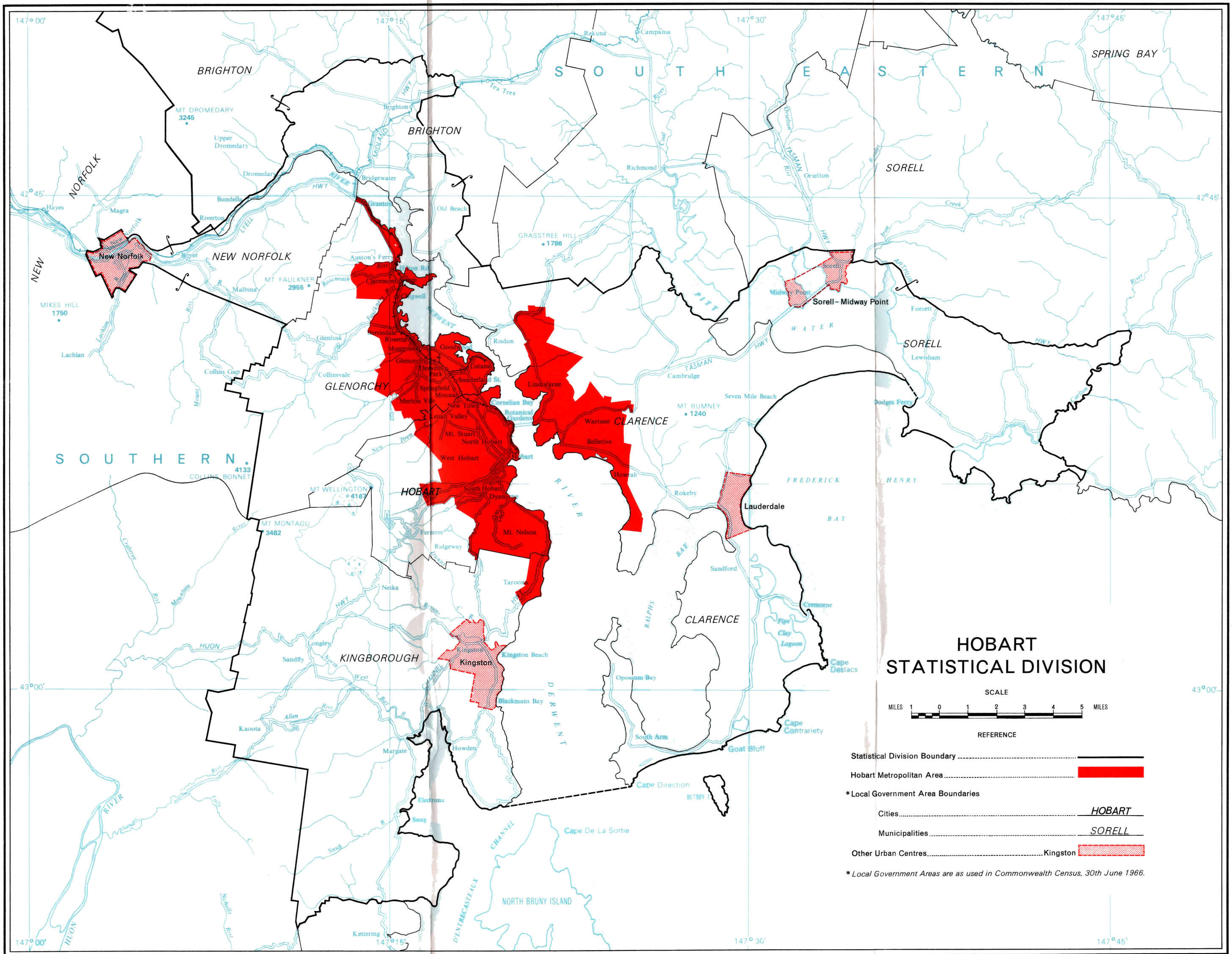
Vessels using Tasmanian ports can be thought of as overseas, interstate or intra-state but their inward and outward movement, in the tables that follow, is classified according to *the type of voyage* and not according to the type of vessel. The following shows the manner in which voyages are described (both arrivals, "entries", and departures, "clearances"):

#### Type of Voyage

Overseas Vessels	Interstate Vessels	Intra-state Vessels
(i) Overseas Direct		
(ii) Overseas via Other State (a)		
(iii) Overseas via Ports in same State		
(iv) Interstate Direct (a)	(iv) Interstate Direct	
(v) Interstate via Ports in same State	(v) Interstate via Ports in same State	
(vi) Intra-state	(vi) Intra-state	(vi) Intra-state

(a) For definition of this term, see the table that follows.

To show the total entries and clearances for any individual port, it is necessary to add all categories from (i) to (vi) inclusive for each type of vessel. However, to show the total entries and clearances for a State, and for the result to reflect the volume of the State's shipping relations with other States and overseas countries, it is necessary to add only categories (i), (ii) and (iv) for overseas and interstate vessels. Finally, to show the entries and clearances affecting Australia's shipping relations with other countries, only category (i) should be taken into account.



In the tables that follow, the term "Overseas and Interstate" is used to indicate that the movements described are restricted to categories (i), (ii) and (iv) for overseas and interstate vessels. The classifications are applied in such a way that, in terms of categories (i), (ii) and (iv), ships are included as arrivals at the *first* Tasmanian port of call only, and departures only at the *last* port of call in Tasmania, i.e. the coastal movement of shipping is excluded.

### Categories Illustrated

The term 'interstate direct' is applied to the movements of overseas vessels in certain circumstances and the next table illustrates the system of classification, a hypothetical vessel being engaged on a London-Sydney-London voyage:

Itinerary of an Overseas Vessel on the Australian Coast

Particulars of London-Sydney-London Voyage	Recorded as—		
	For State and for Australia (a)	For the States (a)	
Vessel with Sydney as final port of call—	Overseas direct (V)	Interstate direct (V)	Overseas via other States (T)
Enters Melbourne from U.K.			
Clears Melbourne for Hobart		Interstate direct (T)	Overseas via other States (N.S.W.)
Enters Hobart from Melbourne			
Clears Hobart for Sydney	Overseas direct (V)	Interstate direct (T)	Overseas via other States (N.S.W.)
Enters Sydney from Hobart			
Same vessel returning to U.K.—		Interstate direct (T)	Overseas via other States (N.S.W.)
Clears Sydney for Hobart			
Enters Hobart from Sydney		Interstate direct (V)	Overseas via other States (T)
Clears Hobart for Melbourne			
Enters Melbourne from Hobart	Overseas direct (V)		
Clears Melbourne for U.K.			

(a) Letters in brackets indicate the State recording the entry or clearance.

In the case of an interstate ship making a round voyage, Melbourne-Hobart-Launceston-Devonport-Melbourne, only the entrance into Hobart and the departure from Devonport would be classified in Tasmanian records as "Interstate Direct", the remaining movements being classified as "Interstate via Ports in same State".

### Tonnage of Vessels

The size of a vessel may be expressed as: (i) gross tonnage, i.e. the total volume of enclosed space converted at one ton per 100 cubic feet; (ii) net tonnage, i.e. the enclosed volume of cargo or passenger space similarly converted at 100 cubic feet per ton; (iii) deadweight tonnage, i.e. the weight the vessel can carry, including bunkers and stores, expressed in tons of 2,240 lb (or, more technically, the difference from the displacement light to the displacement when loaded to the summer deadline). *Net tonnage* is the concept generally used in the tables in this section, but since it can give a misleading

impression of the size of ships which have a function other than carrying passengers and cargo (e.g. a tug has no net tonnage), some figures are given for deadweight tons and tons gross also.

### Overseas and Interstate Shipping

The following table shows the total annual number of vessels entering Tasmanian ports, and their net tonnage. The figures are restricted to entries classified as "overseas and interstate" and exclude coastal movements.

**Shipping—Overseas and Interstate (a)**  
**Total Vessels Entering Tasmanian Ports**

Year	Vessels Entered		Year	Vessels Entered	
	Number	Net Tons		Number	Net Tons
1954-55 ..	1,081	1,619,692	1960-61 ..	1,354	2,546,476
1955-56 ..	1,030	1,585,547	1961-62 ..	1,533	3,042,052
1956-57 ..	1,161	1,737,334	1962-63 ..	1,614	3,473,984
1957-58 ..	1,241	1,872,012	1963-64 ..	1,508	3,346,157
1958-59 ..	1,257	1,966,301	1964-65 ..	1,472	3,411,793
1959-60 ..	1,308	2,287,182	1965-66 ..	1,645	3,886,522

(a) For definition, see "System of Record" at the beginning of this section.

In the introduction, "System of Record", it was indicated that overseas and interstate shipping included three categories of voyages, namely overseas direct, overseas via other Australian States and interstate direct. The next table shows entries and clearances in terms of these three categories. Examination of the figures shows that very few vessels from overseas make Tasmania their first Australian State to visit.

**Shipping—Overseas and Interstate**  
**Total Vessels Entering and Clearing Tasmanian Ports**

Classification of Entry	1961-62	1962-63	1963-64	1964-65	1965-66
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#### ENTERED—NUMBER

Overseas Direct .. ..	72	83	81	83	123
Overseas via Other Australian States .. ..	238	331	296	238	264
Interstate Direct (a) .. ..	1,223	1,200	1,131	1,151	1,258
Total .. ..	1,533	1,614	1,508	1,472	1,645

#### ENTERED—NET TONS ('000)

Overseas Direct .. ..	268	288	275	281	331
Overseas via Other Australian States .. ..	1,099	1,447	1,352	994	1,092
Interstate Direct (a) .. ..	1,675	1,739	1,719	2,137	2,464
Total .. ..	3,042	3,474	3,346	3,412	3,887

**Shipping—Overseas and Interstate  
Total Vessels Entering and Clearing Tasmanian Ports—continued**

Classification of Entry	1961-62	1962-63	1963-64	1964-65	1965-66
CLEARED—NUMBER					
Overseas Direct .. ..	28	49	44	58	101
Overseas via Other Australian States .. ..	247	314	295	271	311
Interstate Direct (a) .. ..	1,278	1,260	1,148	1,174	1,263
Total .. ..	1,553	1,623	1,487	1,503	1,675
CLEARED—NET TONS ('000)					
Overseas Direct .. ..	135	199	189	237	296
Overseas via Other Australian States .. ..	1,101	1,341	1,294	1,066	1,252
Interstate Direct (a) .. ..	1,781	1,906	1,782	2,169	2,570
Total .. ..	3,017	3,446	3,265	3,472	4,118

(a) Includes both overseas and interstate vessels proceeding "interstate direct".

The next table has been compiled to show the dissection of the previous arrivals according to individual Tasmanian ports. The figures for the ports do not include all arrivals but only such as are included in the categories appropriate to "overseas and interstate".

**Shipping—Overseas and Interstate  
Vessels Entering Each Tasmanian Port**

Port (a)	1961-62		1962-63		1963-64		1964-65		1965-66	
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
Hobart .. ..	494	1,331	475	1,215	454	1,172	438	1,122	460	1,259
Launceston .. ..	307	583	368	786	307	762	321	869	350	1,060
Burnie .. ..	206	484	244	759	282	749	266	746	362	822
Currie .. ..	101	18	103	26	66	10	67	10	100	21
Devonport .. ..	330	572	327	631	316	598	312	613	322	686
Smithton .. ..	8	1	6	1	7	1	..	..	..	..
Stanley .. ..	13	9	22	12	19	11	23	17	15	11
Strahan .. ..	54	42	55	42	56	43	45	34	36	28
Ulverstone (b) .. ..	19	2	13	2	..	..	..	..	..	..
Lady Barron .. ..	1	(c)	1	(c)	1	(c)	..	..	..	..
Total .. ..	1,533	3,042	1,614	3,474	1,508	3,346	1,472	3,412	1,645	3,887

(a) The names of the ports refer to the towns in which the controlling Marine Boards and Harbour Trusts were located.

(b) As from January 1963, the port of Ulverstone came under control of Devonport Marine Board but its shipping was recorded separately for 1962-63.

(c) Under 500 tons.

The shipping movements shown in the previous table do not represent the total shipping entering each port; to obtain this total it is necessary to add in

the movement of vessels engaged in coastal and in purely intra-state voyages. The following table, compiled on this expanded basis, shows total shipping entering each Tasmanian port for a five-year period:

**Shipping—Overseas, Interstate and Intra-State  
Vessels Entering Each Tasmanian Port**

Port (a)	1961-62		1962-63		1963-64		1964-65		1965-66	
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
Hobart ..	577	1,520	591	1,382	546	1,362	535	1,325	547	1,449
Launceston ..	604	796	580	987	512	904	532	1,009	548	1,194
Burnie ..	365	686	393	980	402	929	402	1,054	491	1,294
Currie ..	214	25	185	32	134	21	138	24	149	31
Devonport ..	428	668	403	720	401	688	407	701	388	768
Smithton ..	10	1	10	1	14	1	..	..	..	..
Stanley ..	94	50	106	44	81	36	46	27	26	18
Strahan ..	57	43	60	46	62	48	57	43	47	36
Ulverstone (b) ..	61	6	57	5	..	..	..	..	..	..
Lady Barron ..	123	8	150	13	146	15	118	11	145	15

(a) Location of controlling Marine Board or Harbour Trust.

(b) As from January 1963, the port of Ulverstone came under control of Devonport Marine Board but its shipping was recorded separately for 1962-63.

### Cargo Shipped and Discharged

Most of the cargo handled in the ports is recorded in terms of tons of 2,240 lb. However, some additional cargo, mainly bulky commodities, is shipped and recorded on the basis of each 40 cubic feet of space used representing one ton measurement. As totals derived from conversion to a common weight, or alternatively, to a common volume, would not be accurate, entries in each of the two units are recorded and published separately.

The following table gives a summary of cargo discharged and shipped in overseas and interstate trade:

**Cargo Shipped and Discharged  
All Tasmanian Ports—Overseas and Interstate Shipping**

Year	Discharged				Shipped			
	Overseas		Interstate		Overseas		Interstate	
	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)
1960-61 ..	367	26	769	501	105	138	383	569
1961-62 ..	252	29	721	511	163	180	401	466
1962-63 ..	301	46	1,015	439	204	141	583	468
1963-64 ..	326	43	1,033	449	154	253	630	384
1964-65 ..	389	72	1,015	597	195	198	662	518
1965-66 ..	336	35	1,097	709	203	216	637	530

In the next table, details are shown of the cargo handled at the individual ports. The classification "overseas" and "interstate" relates either to the origin or destination of the cargo.

**Cargo Shipped and Discharged**  
**Individual Tasmanian Ports—Overseas and Interstate Shipping, 1965-66**

Port	Overseas		Interstate		Total	
	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)
DISCHARGED						
Hobart .. ..	148	24	243	228	391	252
Launceston ..	128	9	384	150	512	159
Burnie .. ..	55	1	325	18	380	19
Currie .. ..	..	..	21	..	21	..
Devonport ..	4	..	105	313	109	313
Smithton .. ..	..	..	..	..	..	..
Stanley .. ..	..	..	5	..	5	..
Strahan .. ..	..	..	14	..	14	..
Total .. ..	336	35	1,097	709	1,432	743
SHIPPED						
Hobart .. ..	122	163	181	115	303	278
Launceston ..	37	14	129	90	166	104
Burnie .. ..	39	21	184	47	223	68
Currie .. ..	..	..	10	..	10	..
Devonport ..	4	18	69	278	73	296
Smithton .. ..	..	..	..	..	..	..
Stanley .. ..	..	..	10	..	10	..
Strahan .. ..	..	..	55	..	55	..
Total .. ..	203	216	637	530	840	746

**Vessels on Tasmanian Registers**

The *Merchant Shipping Act* (Federal) under which vessels are registered in Australia, does not make it compulsory to register vessels under 15 tons burden if engaged in river or coastal trade.

The following table shows the number and tonnage of Tasmanian vessels on register:

**Total Vessels on Registers—Tasmania**

Year Ended 31 December			Steam		Motor (including Auxiliary)		Sailing		Dredges and Hulks, etc., Not Self-Propelled		Total	
			No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons
1961 .. ..	23	2,122	135	14,004	42	693	3	690	203	17,509		
1962 .. ..	23	2,122	138	14,037	42	693	3	690	206	17,542		
1963 .. ..	23	2,122	143	14,329	42	693	3	690	211	17,834		
1964 .. ..	23	2,122	152	16,682	42	510	3	690	220	20,004		
1965 .. ..	21	2,060	154	16,724	41	507	3	690	219	19,981		
1966 .. ..	21	2,060	159	16,838	41	507	3	690	224	20,095		



## Registration of Shipping

The following table shows the country of registration of the vessels entering all Tasmanian ports:

Country of Registration of Shipping  
Vessels Entering All Tasmanian Ports—Overseas and Interstate

Vessels Registered At Ports In—	1961-62		1962-63		1963-64		1964-65		1965-66	
	No.	Net Tons (‘000)	No.	Net Tons (‘000)	No.	Net Tons (‘000)	No.	Net Tons (‘000)	No.	Net Tons (‘000)
Australia ..	1,122	1,177	1,097	1,235	1,051	1,287	1,039	1,632	1,191	2,157
Belgium-Lux. ..	..	..	..	..	..	..	1	5	..	..
Denmark ..	18	75	23	113	12	41	9	31	7	16
France ..	1	4	1	4	2	7	..	..	..	..
Germany, West ..	24	78	33	97	16	58	22	84	16	59
Greece ..	1	3	2	10	5	28	3	10	7	46
Hong Kong ..	8	30	9	39	4	18	8	29	1	4
India ..	4	17	6	19	3	11	6	19	4	15
Italy ..	4	24	2	15	3	39	1	6	1	4
Japan ..	4	18	12	16	13	14	8	22	52	76
Liberia ..	1	8	11	68	2	13	8	52	5	20
Malaysia ..	4	12	3	10	2	5	3	7	1	3
Netherlands ..	34	106	47	120	51	147	57	142	58	145
New Zealand ..	18	26	22	36	29	56	25	46	24	39
Norway ..	44	198	54	255	34	170	36	169	32	129
Panama ..	11	70	4	22	3	21	2	9	9	26
Philippines ..	..	..	1	5	1	5	1	5	..	..
Poland ..	..	..	..	..	..	..	..	..	1	4
Sweden ..	35	128	42	166	35	141	30	118	39	143
United Kingdom	187	1,005	221	1,168	231	1,227	197	953	183	937
U.S.A. ..	10	49	22	71	10	52	11	53	11	53
U.S.S.R. ..	..	..	..	..	..	..	2	5	..	..
Other Countries ..	3	14	2	5	1	6	3	15	3	11
Total ..	1,533	3,042	1,614	3,474	1,508	3,346	1,472	3,412	1,645	3,887

## TRANSPORT COMMISSION

## Origin of Commission

The State railways were operating at a considerable loss in the period following World War I and this difficulty was accentuated by the increasing use of commercial road transport. The 1938 report of the Commonwealth Grants Commission contained the following comment: "A large State may conceivably stand the cost of duplicated transport, but it is obvious that Tasmania cannot. We believe that the Tasmanian Government appreciates this position and it can only be met by initiative and decision". At the time of this report, railways were controlled by a Minister, motor vehicle registration and licensing of drivers were Police Department functions and public vehicle licensing was administered by a Transport Committee drawn from several departments.

Following an enquiry, Parliament passed the *Transport Act 1938* establishing a new authority headed by a Commissioner and two Associate Commissioners, the associates now being the General Manager of the Railways and the Administrator of Road Transport. This Act and subsequent amending legislation had the effect of creating an administrative authority unique in Australia because the management and control of all public transport, with minor exceptions, became the responsibility of one central authority (govern-



ment omnibus services in Hobart, Launceston and Burnie and the privately-owned Emu Bay Railway are the exceptions). The functions of the Commission are as follows:

- (i) the control and management of the Government railways;
- (ii) the regulation and licensing of commercial road transport (i.e. of "public vehicles");
- (iii) the registration and taxation of motor vehicles and the licensing of drivers;
- (iv) the control and operation of Government intra-state ferries and shipping services;
- (v) the control and operation of its own road transport services (passengers);
- (vi) the administration of regulations under the *Traffic Act* concerning road traffic control;
- (vii) the administration and control of State aerodromes;
- (viii) traffic engineering associated with the control of traffic.

In brief, the Transport Commission emerges as a *taxing authority*, an *administrative body* and a *business undertaking*.

### Control of Commission

The Commission, by Section 6 (2) of the Act, is free from political control but provision exists for the Minister for Transport to appeal to the Governor if dissatisfied with decisions of the Commission. Section 34 allows the Governor, as a form of assistance to industry in certain cases, to direct the Commission to reduce freights but, to the extent that such direction causes a revenue loss, the Treasurer is obliged to re-imburse the Commission; the formula for re-imbursement requires either acceptance of the Commission's original charges as the economic cost of the service or substitution of the Auditor General's calculation of the economic cost, should the level of the Commissioner's original charges be a matter of dispute.

### Commission's Financial Operations

The revenue of the Commission comes from three main sources:

- (1) own business undertakings—railways, road transport services, shipping services and an engineering plant ("tool annexe");
- (2) taxation and licensing receipts—motor vehicle taxation and registration, drivers' licence fees and fees related to public vehicles control;
- (3) grants from Consolidated Revenue, including proceeds of State land tax.

The financial transactions of the Commission are summarised in the tables that follow. For simplicity of presentation, the transactions are arranged in two sets of accounts, firstly Trading and Profit and Loss, secondly Taxation, Licensing, etc. It should be noted that the net loss in the trading and profit and loss account for any year becomes a charge on Consolidated Revenue in the following year; also, that most of the proceeds from motor taxation, registration, licensing, etc. are passed to Consolidated Revenue, the Commission retaining only the costs of collecting such revenues and the costs and expenses incurred in connection with the control of, and the provision of facilities for, motor traffic. A distinction is drawn, however, between public vehicle fees and public vehicle licensing; the latter charges are taken into the profit and loss account as an offset against net trading loss.

The amounts paid into Consolidated Revenue by the Commission are transferred by the Treasurer into the State Highway Trust Fund, thereby providing that taxes and charges levied on motorists and commercial road transport shall be devoted to road construction and road maintenance.

**Transport Commission—Trading and Profit and Loss Account**  
( \$'000)

Particulars	1963-64	1964-65	1965-66
REVENUE			
Railways .. .. .	5,918	5,752	6,175
Road Transport Services .. .. .	426	441	416
Marine Services .. .. .	165	152	167
Tool Annexe .. .. .	232	217	252
Land Tax .. .. .	1,554	1,678	2,029
Public Vehicle Licensing (by Transfer) .. .. .	90	85	76
Other Revenue .. .. .	84	78	77
Net Loss (a) .. .. .	812	1,127	751
Total .. .. .	9,282	9,530	9,943
EXPENDITURE (b)			
Railways .. .. .	7,190	7,404	7,752
Road Transport Services .. .. .	394	408	415
Marine Services .. .. .	204	222	183
Tool Annexe .. .. .	218	203	228
General, including Administration .. .. .	286	276	299
Interest .. .. .	990	1,018	1,067
Total .. .. .	9,282	9,530	9,943

(a) To be charged against Consolidated Revenue in following year.

(b) Provisions for depreciation included in each item (excluding interest).

The remaining transactions can be summarised as follows (road safety accounts are excluded):

**Transport Commission—Motor Taxation Collection, Licensing, etc.**  
( \$'000)

Particulars	1963-64	1964-65	1965-66
REVENUE			
Motor Tax .. .. .	2,662	2,837	2,991
Public Vehicle Licensing, Fees, etc. .. .. .	344	347	359
Registrations, Licences, etc. .. .. .	723	780	910
Refunds .. .. .	— 24	— 27	— 27
Total .. .. .	3,705	3,937	4,233
EXPENDITURE			
Profit and Loss Account (Transfer) (a) .. .. .	90	85	76
Paid to Consolidated Revenue (b) .. .. .	3,019	3,153	3,425
Administration, Traffic Control, etc. .. .. .	596	699	732
Total .. .. .	3,705	3,937	4,233

(a) Receipts from public vehicle licensing paid into profit and loss account.

(b) For payment to State Highway Trust Fund.

### Annual Loss

In the profit and loss account, State land tax is taken as a revenue item, thus reducing the net loss. In effect, the Commission receives annually two grants from the State, firstly all collections of land tax and secondly, reimbursement of the previous year's net loss. The actual burden on Consolidated Revenue, over the last three years on this basis, has been: 1963-64, \$2,395,008; 1964-65, \$2,489,587; 1965-66, \$3,156,084. The accounts reveal that the loss occurs principally in respect of railways but the case for continued subsidisation is argued on a number of grounds:

- (1) abandonment of all railway operations would still leave the State with liability for annual debt charges exceeding \$1,000,000;
- (2) heavy bulk freights now carried by rail would rapidly break up present road surfaces if they were transferred to road haulage; all the money saved by closing the railways and possibly other funds as well would have to be spent in increased road maintenance or road improvements;
- (3) for certain types of freight, rail transport is still considered more economical than road haulage; closing the railways might add appreciably to the costs of many primary and secondary producers.

Economic operation of the State railways in Tasmania is difficult for the following reasons: (i) low density of traffic; (ii) difficult physical conditions, due to hilly and mountainous country; (iii) small population; (iv) short hauls; (v) lack of rich hinterland, and the situation of most towns and large scale industries on the sea coast; (vi) general small scale production and diversity of products; (vii) high shipping and other marketing costs borne by Tasmanian industries, which limit the ability of the Commission to pass on increased railway costs to users; (viii) numerous ports and short distance between ports.

### Public Vehicle Licensing

The following types of licence are issued by the Commission to operators of public vehicles:

- Aircraft:* for aircraft used as public vehicles on intra-state journeys.
- Coach:* for vehicles used for the carriage of passengers and goods between places along a specified route.
- Omnibus:* for vehicles seating more than eight passengers and operating within a specified area.
- Cab:* for vehicles seating eight or less passengers and operating within a specified area (i.e. plying or standing for hire).
- Hire-Car:* for vehicles seating eight or less passengers and operating between any places in the State; also for the same vehicles standing or plying for hire within a specified area.
- Carrier:* for vehicles engaged in carriage of goods between places on a specified route.
- Cart:* for vehicles engaged in the carriage of goods within a specified area. (Despite the word "cart", the licence applies to motor driven vehicles.)
- Ancillary:* for vehicles engaged in the carriage of goods in the course of the trade or business of the owner (excluding farmers, general "carters" and "carriers"). Such licences apply to operation within a specified area.

Licences are issued for three-year periods for all public vehicles except those classed as ancillary or hire-car, in which case annual renewal is required.

The decision of the Commission to grant or refuse a licence, or to impose conditions or restrictions on a licence, is subject to appeal to the Public Vehicle Licensing Appeal Tribunal. The factors considered by the Commission in issuing a licence include:

- (1) suitability of the routes over which the applicant proposes to provide the service;
- (2) the extent to which the needs of the proposed routes, traffic areas, or districts, are already adequately served;
- (3) the extent to which the proposed service is necessary or desirable in the public interest;
- (4) the traffic needs of the district or traffic area, including provision of adequate and efficient services, the elimination of unnecessary and unremunerative services, and the co-ordination of all forms of transport with rail;
- (5) the condition of the roads over which the proposed service is to be provided;
- (6) the fitness of the applicant to hold the licence.

### **Public Vehicle Control**

For the purposes of transport control, Tasmania is divided into eight traffic areas so designed that competitive operations of vehicles licensed for one area only are confined to short hauls. From the earlier section on licensing, the following classification emerges:

- (1) licensed for one traffic area only: cabs, omnibuses, 'carts' and ancillary vehicles;
- (2) licensed for specified routes: coaches and carriers;
- (3) licensed for whole State: hire-cars.

Vehicles licensed for a specific traffic area cannot be used outside it without first obtaining a permit for which out-of-area fees are payable as determined by the Commission. The *Traffic Act* provides for maximum permit fees, in relation to goods vehicles, of 0.4c per cwt of unladen weight for each mile over which the goods are carried. However, the maximum charge determined by the Commission is 0.3333c per cwt. Thus, for a vehicle of an unladen weight of three tons engaged on an out-of-area journey of 120 miles, the permit fee would be \$24 (i.e.  $0.3333c \times 60 \times 120$ ). If goods are carried on the return journey, a further permit fee is payable. In the example quoted, the permit fee at 20 cents per mile virtually doubles the cost of operating the vehicle; it is sufficiently high to prevent most licence holders from travelling outside their area in competition with the railways or with licensed carrier services.

### *Rebates*

In actual fact, it is not always necessary for operators to pay full permit fees as described in the previous paragraph since percentage rebates on full fees may be claimed. Such rebates have relation to the suitability of the goods for transport by rail or licensed carrier and are greatest for certain perishable goods; in general, the shorter the journey, the greater the rebate percentage.

### *Nominal Fees*

The policy of the Commission is to avoid unnecessary duplication of transport, and full fees are charged if the goods in question can be handled as conveniently and efficiently by rail or by an existing licensed carrier service. The Commission grants permits at nominal fees of \$1.00 per trip up to 50

miles and \$2.00 per trip over 50 miles if it is satisfied that road transport is more suitable for any of the following reasons: (1) the dimensions of the load are outside railway clearance; (2) the perishable nature of the goods makes them unsuitable for rail transport; (3) time element; (4) shortage of rail waggons; (5) unreasonably high cost of rail transport compared with road transport, because of extra handling or other reasons; (6) special circumstances.

It is estimated that less than a third of out-of-area trips are at full fees, the balance being for nominal fees or at rebates from 30 to 80 per cent of the full fee.

#### *Ancillary Vehicles*

In particular circumstances and where small vehicles frequently travel beyond their licensed areas, an annual fee is charged, the fee being determined in accordance with the degree of competition with rail and licensed carrier services. In all other cases, vehicles licensed as an "ancillary" are required to obtain out-of-area permits for each loaded journey undertaken beyond the limits of the licensed area.

#### *Passenger Vehicles*

Commercial passenger vehicles operating out-of-area may be competing with existing rail or licensed coach services, in which case they can be charged fees at a maximum of 0.5c per passenger seat per mile. If no such competition exists, out-of-area fees are charged at \$0.50 for each 25 miles; in the case of round trips, the mileage is halved in applying the charge formula.

#### *Percentage Fees—Coaches and Carriers*

Coaches and carriers receiving licences to operate over routes which extend beyond one traffic area are required to pay a percentage tax on annual revenue, the extent of the tax being proportional to the assessed competition with rail services. The Commission's own road passenger services, by the provisions of the Act, are required to pay the same tax as any private operator on the same route.

### **Transport Commission Road Transport Services**

The Commission operates road passenger and road freight services, on which it is obliged to make a profit. Should the Auditor General indicate that these services have been carried on at a loss in the previous financial year, the Act provides that parliamentary approval must be obtained for the Commission to continue the services. The Commission is also obliged to obtain parliamentary approval before initiating new services.

In 1965-66, the Commission's passenger bus services operated over 742 route miles, not only linking the principal towns but also providing inter-urban and special services for workers. The Commission's coaches ran more than one million vehicle-miles.

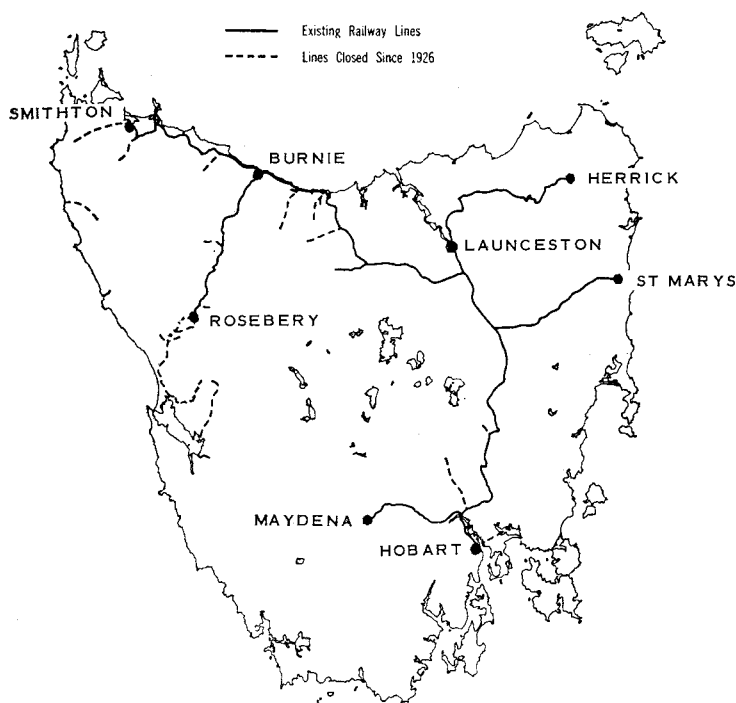
## **RAILWAYS**

### **Introduction**

Tasmania has a three foot six inch gauge Government railway system based on a route mileage of a little under 500 miles. The capital indebtedness of the system at 30 June 1966 was \$21,522,000 but this understates the position since the debt, in 1936-37, was written down by \$9,476,000; the annual debt charges associated with this latter amount were made a charge on Consolidated Revenue. The last year in which earnings exceeded working expenses was 1933-34 and this did not indicate profitable running since interest charges

exceeded the small operational surplus. The peak year of operational loss was 1956-57 when working expenses, *excluding* interest and depreciation, exceeded earnings by \$1,365,000. In 1965-66, the operational loss had been reduced to \$965,000 but interest and depreciation provisions together imposed an additional burden of \$1,566,000.

The Tasmanian experience of a government railway system heavily dependent on State grants for its continued existence is by no means unique in Australia today. In 1964-65, all State systems received government grants to offset their operating losses or to enable them to meet depreciation, interest and sinking fund obligations; in terms of accepted accounting, the State systems have generally not been a source of profit for many years.



Railway Systems in 1926 and 1966

The railway system in Tasmania is frequently criticised for its failure to "pay its way". It can be established, however, that railway development, before the days of mechanised road transport, was an essential pioneering activity; without such development, the State would not have had a railway debt but neither would it have had many of its present farms and factories or even its present level of population.

### Historical

The first railway in Tasmania was opened for traffic in 1871 (construction having begun three years earlier on a 45-mile line from Deloraine to Launceston). It is significant that only one-ninth of the original capital was subscribed by the shareholders of the Launceston and Western Railway Company, the remainder, \$800,000, having been raised by the Government. The line was laid in broad gauge (five foot three inch) without regard for the fact that

narrower gauge might be needed in the more mountainous parts of the island. Within a year of opening, the company was in financial difficulties and the line was taken over by the Government. At the date of starting construction, the island's population had not passed 100,000.

The second line was a more ambitious undertaking—123 miles of three foot six inch track from Hobart to Western Junction, linking there with the five foot three inch line—and involved considerable problems of contour survey because of the high plateau lying across the route. The Tasmanian Main Line Railway Company opened the line for traffic in 1876. The problem of differing gauges on the two systems was overcome by laying a third rail on the ten miles of the five foot three inch track from Western Junction to Launceston, the Main Line Company having running rights over this stretch. In 1890, the Government purchased the line for \$2,213,000.

The next line to open for traffic (1884) was owned by the Emu Bay and Mount Bischoff Railway Company which converted an existing horse-tramway to three foot six inch gauge; the 48 mile line connected Waratah to the port of Burnie, the primary objective being to ship out freight from the rich Mount Bischoff tin mines.

By 1890, the essential framework of the present railway system on three foot six inch gauge had been laid, and future growth involved track extensions mainly in directions already determined in the first twenty years of rapid construction. The following table shows the pattern of development in 1890 and compares it with that of the present system. Under "route" is shown firstly the terminals of individual tracks in 1890 and secondly, the present extent of the same tracks. Only construction dates before 1890 have been quoted since later extension of track was carried out in several stages.

Government and Private Railways  
Route Mileage of Lines Open—1890 and 1966

Route	Area Served	Year Open For Traffic	Mileage of Lines Open	
			1 Jan. 1890	30 June 1966
Launceston to Devonport ..	North West	1885	(a) 82	..
Launceston to Smithton ..	" "	..	..	(a) 179
Hobart to Western Junction ..	North-South link	1876	(b) 123	(a) 123
Burnie to Waratah .. ..	West Coast	1884	(b) 48	..
Burnie to Rosebery .. ..	" "	..	..	(b) 71
Conara to St. Marys .. ..	Fingal Valley	1886	(a) 46	(a) 46
Bridgewater to Glenora ..	Derwent Valley	1888	(a) 24	..
Bridgewater to Maydena ..	" "	..	..	(a) 44
Launceston to Scottsdale ..	North East	1889	(a) 47	..
Launceston to Herrick ..	" "	..	..	(a) 85
Other Branches .. ..	..	..	(a) 4	(a) 23
Total Route Miles Open	..	..	374	571
Government .. ..	..	..	203	500
Private .. ..	..	..	171	71

(a) Government.

(b) Private.

### Growth and Decline

The main task of developing and maintaining railways fell to the Tasmanian Government after it purchased the Hobart-Western Junction line in October 1890. The following table shows the mileage of Government-owned railways from 1895 to the present:

Government Railways—Route Mileage of Lines Open

Year (a)	Route Miles Open	Year (a)	Route Miles Open	Year (a)	Route Miles Open
1895 ..	420	1925 ..	673	1950 ..	613
1905 ..	463	1930 ..	679	1955 ..	605
1910 ..	470	1935 ..	645	1960 ..	538
1915 ..	533	1940 ..	644	1965 ..	500
1920 ..	629	1945 ..	642	1966 ..	500

(a) 31 December 1895; 30 June for subsequent years.

The peak of development was reached in 1930 when 679 miles were open for traffic; since then, many branch lines have been closed down, the competition of road transport making their operation uneconomic. Route mileage has actually declined to what it was fifty years ago at the outbreak of World War I. Examples of lines now closed down are: Brighton to Apsley, 27 miles; Bellerive to Sorell, 15 miles; Zeehan to Strahan, 29 miles.

### Recent Developments

The long-term problem of the State railways has been to reduce the annual operational loss and, in this connection, three major trends have become apparent in recent years:

#### *Introduction of Diesel Locomotives*

The elimination of steam locomotives from the system has been almost completed; in 1965-66, for example, steam locomotive engine miles were less than 0.3 per cent of total engine miles. Three types of diesel are in operation: mechanical, hydraulic and electric but the bulk of running falls on the diesel electric locomotives. At 30 June 1966, the system had in service the following locomotives: steam 20, diesel mechanical 18, diesel hydraulic 2, diesel electric 37, total 77. In addition, services were maintained using 15 self-contained railcars.

#### *Reduction in Passenger Services*

The peak of the system's effectiveness in carrying passengers was reached in 1945-46 when 3.4 million passenger journeys were made. Of recent years, a deliberate policy of eliminating uneconomic services has been pursued and passenger journeys in 1965-66 had fallen to 1.3 million.

#### *Rail Ferry Service*

This service is somewhat ambiguously titled since, in other parts of the world, there are railway ferries actually moving rolling stock across water barriers. In the Tasmanian situation, there are roll-on roll-off ferries and container vessels, but there is no means of transferring rolling stock to the continental railways; in any case, the different gauges (three foot six inch as against four foot 8½ inch) present a major difficulty. The introduction of roll-on roll-off ferries and container vessels to the Bass Strait trade, commencing in 1959, was nevertheless accepted by the State railways as an opportunity to extend their existing freight services; the new facility was named "rail ferry service".



In essence, the rail ferry service aims at giving door to door transport between Tasmania and the continental States. At the Tasmanian end, transport to and from the sea terminals is handled by the railways and by local carriers commissioned by the railways. At the Victorian sea terminals, carriage is arranged through a road transport agency which acts in co-operation with the Tasmanian railways.

The service began with the evolution of the "railroader" container, a cargo-carrying unit which is adaptable to the carriage of almost any type of freight. The sides and ends of the "railroader" are removable for the carriage of long articles (e.g. packed timber), or for the nesting of the pallet-like trays, to enable their movement in parcels of up to six within the space of a single unit. Because these containers are of open design, the charges for cargo are based on actual cargo measurement only and the consignor is therefore not responsible for the cost of lost space, as would be the case with an enclosed type of container. In addition to the general purpose "railroader", specialised types of container have been evolved, e.g. for heated liquid chocolate, and specially built fibreglass refrigerated containers for substantial quantities of frozen vegetables, etc. Rail ferry service traffic from Tasmania consists chiefly of potatoes, timber, confectionery, tin, electrodes, canned and frozen vegetables, and liquid chocolate, whilst from Melbourne the traffic consists mainly of general cargo, including food stuffs, plastics, footwear, steel, etc. The tonnage carried in containers in this service is now well in excess of 100,000 annually and is still expanding.

Considerable ingenuity has gone into the design of the rail ferry service containers which need fittings to allow handling by fork-lift truck, railway gantry and ship's crane, as well as anchorages for securing to rolling stock on both Tasmanian and continental railways. The containers on a typical rail ferry service journey may cross Bass Strait in any of three ways: (1) on a road trailer; (2) on the upper deck of a combined trailer-container ship; (3) in the holds of converted container ships. The ports through which the service operates are Burnie, Bell Bay, Devonport and Hobart.

The rail ferry service is now the largest single operator between Melbourne and northern Tasmanian ports and provides an interesting example of co-operation between State and private enterprise.

The Auditor-General's report for 1966-67 gives a dissection of the total freights earned by the rail ferry service in that year; the allocation was as follows: Australian National Line, \$1,033,134; Union Steamship Company, \$1,057; Brambles Transport Pty Ltd, \$18,995; Fleetways Transport and Agency Ltd, \$312,352; Tasmanian Government Railways, \$725,253; total freight earnings, \$2,090,791.

#### *Enlargement of Main Line Tunnel*

A major project was completed in 1965, when the existing tunnel at Rhyndaston on the mainline between Hobart and Launceston was enlarged with a Robbins boring machine, known as "the mole", originally imported by the Hydro Electric Commission from the U.S.A. for hydro-electric power schemes.

Until this three-quarter mile tunnel was enlarged, its limited size prevented the conveyance of "out-of-gauge" loads of all descriptions, particularly in recent years with standard commercial containers (8 feet to 8 feet 4 inches high), large earth moving machines, electric transformers, etc. Now with the height and width of the tunnel extended by some 5 feet and 6 feet respectively the "out-of-gauge" traffic problem on the mainline has been resolved with fruitful revenue results.

### Operating Statistics

The next table shows the principal operating statistics for the Tasmanian system:

**Tasmanian Government Railways  
Operating Statistics**

Year	Route-Mileage Open (a) (Miles)	Revenue Train-Mileage ( <sup>'000</sup> Miles)	Passenger- Journeys ( <sup>'000</sup> )	Goods and Livestock Carried ( <sup>'000</sup> Tons)
1955-56.. ..	585	2,105	2,977	1,075
1961-62.. ..	516	1,415	1,816	1,096
1962-63.. ..	516	1,322	1,558	1,165
1963-64.. ..	500	1,322	1,426	1,155
1964-65.. ..	500	1,272	1,340	1,091
1965-66.. ..	500	1,283	1,304	1,072

(a) At end of period.

### Financial Operations

The following table gives details of gross earnings and working expenses:

**Tasmanian Government Railways  
Financial Operations**

Year	Gross Earnings		Working Expenses (a)		Net Earnings (b)	
	Total	Per Revenue Train Mile	Total	Per Revenue Train Mile	Total	Per Revenue Train Mile
	<sup>\$</sup> '000	\$	<sup>\$</sup> '000	\$	<sup>\$</sup> '000	\$
1955-56 ..	5,070	2.41	6,524	3.10	— 1,454	— 0.69
1961-62 ..	5,406	3.82	6,878	4.86	— 1,472	— 1.04
1962-63 ..	5,598	4.23	6,670	5.04	— 1,072	— 0.81
1963-64 ..	5,668	4.29	6,940	5.24	— 1,272	— 0.95
1964-65 ..	5,581	4.39	7,233	5.68	— 1,652	— 1.30
1965-66 ..	5,985	4.66	7,563	5.89	— 1,578	— 1.23

(a) Includes provision for depreciation but excludes interest.

(b) Excess of gross earnings over working expenses.

### Employment and Wages

In the table that follows, details are given of the number of employees, and of wages and salaries paid:

**Tasmanian Government Railways  
Number of Employees and Wages and Salaries Paid**

Year	Average Number of Employees (a)		Salaries and Wages Paid ( <sup>\$</sup> '000)	Year	Average Number of Employees (a)		Salaries and Wages Paid ( <sup>\$</sup> '000)
	Salaried	On Wages			Salaried	On Wages	
1955-56	375	2,251	4,790	1961-62	354	1,994	4,990
				1962-63	357	1,891	4,868
1957-58	353	2,081	4,612	1963-64	366	1,895	5,220
1958-59	351	2,066	4,660	1964-65	377	1,837	5,355
1959-60	366	2,028	4,932	1965-66	379	1,781	5,651
1960-61	367	2,052	5,136				

(a) Excludes construction staff.

### Comparison with Other Australian Systems

The Tasmanian system of government railways is the smallest in Australia and the following table, showing principal operational details, allows a comparison to be made:

**Australia—Government Railway Systems, 1965-66**  
**Operating Statistics**

System	Average Route Mileage (Miles)	Revenue Train-Mileage ( <sup>0</sup> 000 Miles)	Passenger- Journeys ( <sup>0</sup> 000)	Goods and Live- stock Carried ( <sup>0</sup> 000 Tons)
N.S.W. .. .. .	6,055	37,694	257,568	26,917
Victoria .. .. .	4,188	20,145	149,125	12,156
Queensland (a) .. .. .	5,785	17,640	25,979	10,049
S.A. .. .. .	2,478	6,492	15,511	4,789
W.A. .. .. .	3,747	8,043	10,168	6,384
<b>Tasmania</b> .. .. .	<b>500</b>	<b>1,283</b>	<b>1,304</b>	<b>1,072</b>
Commonwealth .. .. .	2,252	2,955	342	2,976
Total Australia .. .. .	25,005	94,252	459,997	64,343

(a) Includes Queensland portion of Uniform Gauge Railway.

### Financial Comparison

In comparing the financial results of the Tasmanian system with those of other authorities, certain difficulties arise from the treatment of depreciation. In the table that follows, working expenses for the systems in Tasmania, S.A. and W.A. include provision of reserves for depreciation. A further complication arises from the fact that interest is not charged against the railways accounts of the Commonwealth system, and, in the Victorian system, only in respect of loan expenditure incurred since 1 July 1960.

To the extent that there is differing treatment of interest and of depreciation provisions in the various systems, the "net profit or loss" shown in the next table is not a good basis for making comparisons; however, if due allowance is made for interest charges in the case of the Victorian and the Commonwealth systems, it will be seen that loss, rather than profit, is characteristic of most Australian systems.

**Australia—Government Railways, 1964-65**  
**Financial Operations**  
**(\$ million) (a)**

System	Gross Earnings (a)	Working Expenses (b)	Net Earnings	Interest (Including Exchange) on Loan Expenditure	Net Profit or Loss
N.S.W. .. .. .	213.3	187.2	26.0	23.5	2.5
Victoria .. .. .	100.2	99.3	0.9	(c) 3.0	— 2.1
Queensland .. .. .	81.3	80.5	0.8	(d) 13.9	— 13.1
S.A. .. .. .	29.8	31.7	— 1.9	5.0	— 6.9
W.A. .. .. .	35.7	36.5	— 0.8	6.2	— 7.0
<b>Tasmania</b> .. .. .	<b>5.6</b>	<b>7.2</b>	<b>— 1.6</b>	<b>0.9</b>	<b>— 2.5</b>
Commonwealth .. .. .	17.4	16.0	1.5	(e)	1.5
Total Australia	483.3	458.5	24.8	52.6	— 27.8

(a) Excludes Government grants, e.g. N.S.W., \$3,200,000; S.A., \$8,000,000, etc.

(b) Includes provision for depreciation in S.A., W.A., and Tasmania.

(c) Payments required only in respect of loan expenditure incurred since 1 July 1960.

(d) Includes interest and redemption, Mt Isa Project Fund, \$3,500,000.

(e) Interest not charged against railway accounts.

## GOVERNMENT TRAMWAY, TROLLEY-BUS AND OMNIBUS SERVICES

### Scope

The details that follow refer to services provided by the Metropolitan Transport Trust and by the Tasmanian Transport Commission. At 30 June 1966, the Metropolitan Transport Trust was operating omnibus services in Hobart, Launceston and Burnie; in Hobart and Launceston, it was also operating on some routes with trolley-buses. The Transport Commission was operating omnibuses on long-distance intra-state routes.

### Metropolitan Transport Trust

Until 1955, tramway, trolley-bus and omnibus services were operated in Hobart and Launceston by the municipal authority in each city. The Hobart system had operated without subsidy but the Launceston system received, as one item of revenue, the annual proceeds from a special tramways rate.

The *Metropolitan Transport Act* 1954 empowered the State to enter into agreements for the acquisition of the two systems and to vest them in the newly constituted semi-government authority named in the Act. After negotiation with the two municipal authorities, the Trust arranged to take over the Hobart system from 28 February 1955, and the Launceston system from 1 July 1955. It was part of the agreement that the Trust should re-imburse to the municipal authorities the annual charges relating to the loan debt of each system. Future capital requirements were to be met by advances from the State loan fund.

During 1959-60, the Trust commenced the operation of omnibus services in Burnie. In October 1960, trams ceased running in Hobart, the system now relying entirely on omnibuses and trolley-buses (the Launceston system had dispensed with trams before it was taken over by the Trust).

### *Financial Operations of Trust*

The following table shows the income and expenditure of the Metropolitan Transport Trust:

**Metropolitan Transport Trust**  
**Income and Expenditure**  
**(\$'000)**

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Income—					
Traffic Operations .. ..	1,922	1,876	1,855	1,798	1,962
Other Earnings .. ..	33	29	27	31	32
Subsidy—State Government	720	600	680	760	760
Total .. .. .	2,675	2,505	2,562	2,589	2,754
Expenditure—					
Traffic Operations .. ..	1,220	1,157	1,221	1,269	1,357
Maintenance .. .. .	412	418	433	450	468
Power and Fuel .. .. .	212	208	211	186	197
Workshop and Stores ..	71	53	34	34	34
Administration and General	313	322	306	295	308
Debt Charges .. .. .	214	186	172	167	169
Depreciation Charges ..	187	193	207	205	215
Total .. .. .	2,629	2,537	2,584	2,606	2,749

*Loan Debt of Trust*

The loan debt of the Trust is partly in respect of debentures and inscribed stock originally issued by Hobart and Launceston Corporations. At 30 June 1966, loans of this nature stood at \$170,000; net advances from the State loan fund stood at \$2,745,000.

**Transport Commission—Omnibus Services**

The financial operations of the Transport Commission are described in the section of this chapter headed "Transport Commission"; omnibus services are included in the financial details of this authority under "road transport services".

**Operating Statistics**

The tables that follow combine the operations of the Metropolitan Transport Trust and of the omnibus services provided by the Transport Commission.

**Government Tramway, Trolley-bus and Omnibus Services**  
**Operating Statistics (a)**

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Route-miles (b)—						
Tramway ..	27	28	28	28	28	28
Trolley-bus ..	813	813	808	910	911	923
Omnibus ..						
Vehicle-miles—('000)						
Tramway ..	83					
Trolley-bus ..	1,550	1,397	1,353	1,340	1,226	1,119
Omnibus ..	4,707	4,946	4,863	5,094	5,180	5,175
Passenger-journeys(c) (‘000)	26,256	25,576	25,145	24,756	23,955	22,750

(a) Operation of fleets owned by Metropolitan Transport Trust and Transport Commission.

(b) At end of period.

(c) Passenger-journeys on trams, trolley-buses and omnibuses.

**Financial Details**

The following table shows the gross revenue (excluding Government grants) and the working expenses associated with the transport systems of the two authorities:

**Government Tramway, Trolley-bus and Omnibus Services**  
**Gross Revenue and Working Expenses (a)**  
**(\$'000)**

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Gross Revenue (b)	2,402	2,356	2,302	2,278	2,246	2,387
Working Expenses (c)	2,832	2,858	2,760	2,824	2,862	3,008
Net Revenue ..	— 430	— 502	— 458	— 546	— 616	— 621

(a) Operation of fleets owned by Metropolitan Transport Trust and Transport Commission.

(b) Excludes government grants.

(c) Includes depreciation.

*Comparison with Other States*

The services under the two authorities, when their financial details are combined, obviously run at a loss; the losses are met, in the main, from State Government grants. The necessity for subsidising similar government transport systems in other parts of Australia is suggested by the following table:

**Australia—Government and Municipal Tramway, Trolley-bus and Omnibus Services,  
1965-66  
Net Revenue**

State	Total	Per Passenger- Journey	Per Route- Mile	Per Vehicle- Mile
	\$'000	cents	\$	cents
N.S.W. . . . .	— 3,882	— 1.52	— 6,546	— 8.67
Victoria . . . .	— 1,173	— 0.69	— 4,204	— 4.85
Queensland . . .	— 302	— 0.33	— 776	— 2.17
S.A. . . . .	243	0.46	1,631	2.14
W.A. . . . .	— 813	— 1.53	— 187	— 4.04
Tasmania . . . .	— 621	— 2.73	— 653	— 9.86
Total (a) . . .	— 6,744	— 1.52	— 989	— 5.47

(a) Includes Northern Territory and the Australian Capital Territory not specified above.

The previous table dealing with net revenue in all States is not a complete account of the losses since interest has not been taken into the calculation. In 1965-66, interest payments were as follows (in \$'000): N.S.W., 1,495; Victoria, 1,034; Queensland, 446; S.A., 518; W.A., 408; Tasmania, 154.

## ROADS AND BRIDGES IN TASMANIA

### Scope

The details in the following section refer to: (i) "classified" roads; (ii) roads of local government authorities; (iii) roads of other government authorities. A further qualification is that the roads are those normally open to traffic.

### Definitions and Mileages

(i) *Classified Roads*: These are roads for which the State Government accepts direct responsibility, the construction and maintenance authority being the Public Works Department. The mileage of classified (or State) roads at 30 June 1966 was as follows: State highways, 1,205 miles; main roads, 662 miles; secondary roads, 196 miles; tourist roads, 47 miles; and other roads, 135 miles; total State roads, 2,246 miles.

(ii) *Roads of Local Government Authorities*: The roads for which the local government authorities accepted responsibility at 30 June 1966, included: town and city streets, 1,522 miles; other municipal roads, 7,205 miles; total, 8,727 miles.

(iii) *Roads of Other Government Authorities*: The roads for which other government authorities accepted responsibility at 30 June 1966, included: roads of the Hydro-Electric Commission, 160 miles, Forestry Commission, 1,694 miles; total, 1,854 miles. The Hydro-Electric Commission mileage (160) excludes the new road built from Maydena to the Gordon-Serpentine junction; this 53-mile route into the south-west was opened for public use in June 1967 but permits have to be obtained from the controlling authority.

## Surface of Roads

The following table shows mileages of all roads normally open to traffic, classified according to road surface, and according to the level of government which accepts responsibility for construction and maintenance. The most striking feature is the increase, over the last ten years, in the percentage of State (or classified) roads with sealed surfaces; as the table indicates, the sealed surface mileage has increased from 38.4 per cent (30 June 1956) to 66.4 per cent (30 June 1966).

Length of Roads According to Nature of Surface at 30 June

Type of Surface	1956	1962	1963	1964	1965	1966
CLASSIFIED ROADS						
Sealed (a) ..(miles)	839	1,177	1,266	1,336	1,435	1,492
Unsealed (b) (miles)	1,349	1,024	947	874	809	754
Total ..(miles)	2,188	2,201	2,213	2,210	2,244	2,246
Sealed Ratio (c) (%)	38.4	53.5	57.2	60.5	63.9	66.4
ROADS OF LOCAL GOVERNMENT AUTHORITIES						
Sealed (a) ..(miles)	(d)	848	967	1,072	1,184	1,354
Unsealed (b) (miles)	(d)	6,126	6,086	6,168	6,124	6,109
Formed or Cleared Only ..(miles)	(d)	1,495	1,488	1,342	1,314	1,264
Total ..(miles)	(d)	8,469	8,541	8,582	8,622	8,727
Sealed Ratio (c) (%)	(d)	12.2	13.7	14.8	16.2	18.1
ROADS OF OTHER GOVERNMENT AUTHORITIES						
Sealed (a) ..(miles)	(d)	27	27	27	47	47
Unsealed (b) (miles)	(d)	1,196	1,259	1,442	1,625	1,807
Total ..(miles)	(d)	1,223	1,286	1,469	1,672	1,854
Sealed Ratio (c) (%)	(d)	2.2	2.1	1.8	2.8	2.6
ALL ROADS						
Sealed (a) ..(miles)	(d)	2,052	2,260	2,435	2,666	2,893
Unsealed (b) (miles)	(d)	8,346	8,292	8,484	8,558	8,670
Formed or Cleared Only ..(miles)	(d)	1,495	1,488	1,342	1,314	1,264
Total ..(miles)	(d)	11,893	12,040	12,261	12,538	12,827
Sealed Ratio (c) (%)	(d)	19.7	21.4	22.4	23.8	25.0

(a) Bitumen or concrete.

(b) Gravel or stone.

(c) Sealed as a proportion of sealed and unsealed (excluding formed and cleared only).

(d) Not available on comparable basis.

## Classified (or State) Roads

The next table analyses the mileage of classified roads according to their description, and also according to their surface. The principal State highways include the following: (i) *Arthur* (46 miles), from Sorell to Port Arthur; (ii) *Bass* (177 miles), from Launceston to Marrawah in the north-west; (iii) *Channel* (59 miles), from Hobart to Huonville, via D'Entrecasteaux area; (iv) *East Tamar* (27 miles), from Launceston to Bell Bay; (v) *Huon* (59 miles), from Hobart to Hythe via Dover; (vi) *Lake* (93 miles), from Deloraine via Great Lake to Melton Mowbray; (vii) *Lyell* (171 miles), from Granton, near Hobart, to Strahan; (viii) *Marlborough* (20 miles), from Bronte to Lake Highway near Miena; (ix) *Midland* (114 miles), from Glenorchy to Launceston; (x) *Murchison* (48 miles), from Zeehan highway to Waratah area; (xi) *Tasman* (263 miles), from Hobart to Launceston, via East Coast and St Helens; (xii) *Waratah* (44 miles), from Somerset to Waratah area; (xiii) *West Tamar* (28 miles), from Launceston to Inspection Head.

Classified (or State) Roads  
Description and Length at 30 June 1966  
(Miles)

Description	Nature of Surface		Total
	Scaled (a)	Unsealed (b)	
Highways .. .. .	955	250	1,205
Main Roads .. .. .	441	221	662
Secondary Roads .. .. .	80	115	196
Tourist Roads .. .. .	4	43	47
Subsidised Roads .. .. .	10	123	133
Developmental Roads .. .. .	1	2	2
Total .. .. .	1,492	754	2,246

(a) Bitumen or concrete.

(b) Gravel or stone.

## Expenditure on Roads

As indicated in the preface to this section, the responsibility for road construction and maintenance is placed upon the State Government, and upon local government and semi-government authorities. The financial details which follow relate only to funds available to the State Government.

The following table shows, for a five-year period, details of the main source of funds available to the State Government for road construction and maintenance:

Principal Funds Available to State Government for Roads  
(\$'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Motor Vehicle Registration, Taxation, Licences, Fines, etc.	2,509	2,833	3,019	3,153	3,425
Commonwealth Aid Roads Grants .. .. .	5,000	5,400	5,800	6,500	7,000
State Loan Fund .. .. .	4,125	3,854	3,165	3,468	4,446

## Receipts and Expenditure, 1965-66

The next table gives a detailed analysis of funds available to the State Government and their expenditure:



## State Road Funds (Combined Funds), 1965-66

Particulars	\$'000
Receipts—	
State—	
Motor Vehicle Registration, Taxation, Licences, Renewal Fees, Fines, etc. . . . .	3,425
Consolidated Revenue, n.e.i. . . . .	6
Loan Fund . . . . .	4,446
Commonwealth—	
Commonwealth Aid Roads Act Grants . . . . .	7,000
Local Government—	
Repayment of Advances . . . . .	19
Miscellaneous—	
Sale of Plant and Materials . . . . .	50
Other . . . . .	164
Total . . . . .	15,109
Expenditure—	
Construction and Reconstruction, Roads and Bridges . . . . .	11,591
Maintenance, Roads and Bridges . . . . .	3,141
Purchase of Road Construction Plant and Similar Assets . . . . .	572
Hire and Maintenance of Road Plant (Net) (a) . . . . .	—554
Purchase of Materials . . . . .	18
Other Works connected with Commonwealth Aid Roads Act . . . . .	62
Grants in Aid to Local Government Authorities . . . . .	35
Other Expenditure . . . . .	282
Total . . . . .	15,148

(a) Hire of plant and workshop charges (\$3,732,000) less maintenance and operation of road construction plant (\$3,179,000).

*Receipts and Expenditure, Local Government Authorities*

Some of the expenditure appearing in the previous table consists of grants from the State Government to local government authorities, although such grants are not specifically dissected. In Chapter 4, "Local Government", details will be found of: (i) grants from the State to local government authorities for road purposes; (ii) road rates collected by local government authorities; (iii) expenditure on road construction and maintenance by local government authorities from revenue, and from loan funds.

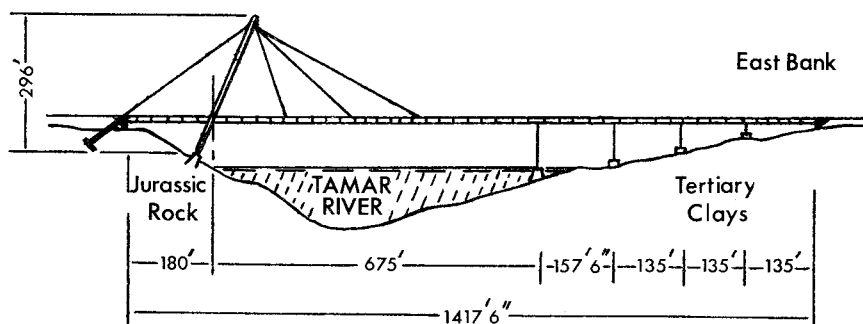
*Introduction***Bridging the Tamar**

Before the advent of the motor vehicle, the Tamar River served Launceston well; it provided a 40-mile navigable highway between the city and Bass Strait, and acted as a link between the scattered settlements along its banks. For anything on wheels, however, the river has been an inconvenient obstacle, requiring a journey almost to the heart of the city to use a bridge constructed in 1863, just below the discharge of the South Esk through Cataract Gorge. Thus, a drive from Bell Bay to Beauty Point, neighbouring overseas ports on opposite banks of the Tamar, involved 50 or 60 miles of road travel. Development of George Town and Bell Bay as industrial areas has served to emphasise the isolation of the coastal north-east from the coastal north-west, with the nearest link situated upstream in Launceston. A solution to these difficulties has been the provision of the high-level Batman Bridge some 25 miles downstream from the city.

*Choice of Site*

Upstream six miles from Bell Bay, the Tamar contracts to about 700 feet at Whirlpool Reach (half a mile south-east from Sidmouth); this is the narrowest stretch in the lower reaches. Location of the bridge at this site avoided the

problems associated with overseas shipping using the Bell Bay, Beauty Point and Inspection Head berths; clearance had only to be planned for the passage of interstate vessels proceeding south of the main port. The west bank, at this site, consists of Jurassic bedrock, somewhat broken and weathered in the upper 20 feet but generally presenting an excellent foundation. If the east bank had had similar characteristics, then the Batman Bridge might have been constructed along conventional lines.



BATMAN BRIDGE

#### *The A-Tower Design*

The east bank, at the chosen site, consists of soft tertiary clays with some basalt intrusions. The design required a *single* span to cross nearly 700 feet of water and to give a minimum clearance of 94 feet above high water for shipping. Given such marked geological differentiation between the two banks, it was realised that the weight of this span could not be shared and must, in fact, be supported almost wholly from the west bank. To accomplish this, the designers conceived the idea of an enormous A-tower erected on the west bank, the single river span to be supported by cables passing back to abutment anchorages through the apex of the A-tower. Conventional suspension bridges are based on twin towers but the Batman depends on one.

The bridge is one of the world's first cable-stayed truss structures and is dominated by the 315 feet long steel A-tower, which leans 100 feet out across the river, at an angle of  $20^\circ$  to the vertical. The bridge passes from the west abutment over the bar of the A, crosses the river to a pier on the east bank, and reaches the east abutment via three other piers.

#### *Dimensions*

The following table describes the Batman Bridge:

Dimensions of Batman Bridge

Bridge Section	Description	Length (feet)
Side span .. ..	From <i>west</i> abutment to bar of A-tower .. ..	180
River span .. ..	From bar of A-tower to first east pier .. ..	675
First aqueduct span..	From first east pier to second pier .. ..	157½
Three aqueduct spans	From second pier over third and fourth piers to <i>east</i> abutment .. ..	(a) 405
Total length between abutments .. ..		1,417½

(a) Three spans of 135 feet each.

The dimensions table throws some light on the erection technique which is based on truss sections fabricated, in the main, in 45 foot lengths. Thus the side span is made up of four truss sections, the river span of 15, the first aqueduct span of 3.5 and the remaining aqueduct spans of three each. The basic unit in design was 11.25 feet and the dimensions in the table will be found to be multiples of this, e.g. A-tower, 28 such units; first aqueduct span, 14 units, etc. The expansion joint where east and west truss projections were finally linked over the river was 5 basic units out from the first east pier (i.e. 56.25 feet).

#### *Suspension of the River Span*

The weight of the 675 foot river span is almost entirely carried by the A-tower, being supported both vertically and laterally by the bar of the A, and also at intervals by three pairs of forestay cables suspended from the apex. Since the supporting cables are inclined from the vertical, their effect is not just to support the span but also to induce a large thrust towards the west abutment. The A-tower is in turn restrained at 20° from the vertical by a pair of backstay cables running from the apex into the west abutment. Further high tensile steel cables extend through this abutment to two chambers formed in the bed rock 70 feet underground and filled with concrete. These anchorage chambers are each 18 feet by 10 feet by 6 feet and hewn out of solid rock, access for construction having been obtained through a vertical shaft. Through 10 inclined holes connecting each chamber to the west abutment, the high tensile steel cables were passed; each cable consisting of 42 wires of 0.276 inches diameter. In effect, the ultimate anchor on the west bank is the immense mass of dolerite in which the cable ends are embedded.

#### *The East Piers*

The east approach spans are supported on four slender steel piers which are pinned at top and bottom to allow longitudinal movement of the superstructure. Two piers are supported on octagonal steel piles up to 70 feet long, driven into the clays, filled with reinforced concrete and capped with reinforced concrete footings. The inner two piers and the east abutment are all founded on spread footings in the clay. A considerable allowance has been made in the design of the continuous trusses over these piers for differential settlement.

Construction on the east bank moved from the east abutment over piers four, three and two to pier one; from pier one, the truss structure was projected out over the river to a length of 56.25 feet. This was the point where an expansion joint was located and where the truss structure built out from the west bank would join the eastern projection.

#### *Superstructure*

The main superstructure consists of a pair of steel trusses 12.75 feet deep at 29.75 feet centres with the main members of welded construction. The orthotropic steel plate deck lies on the two trusses and is supported on the top chord members on rubber pads. (The deck is to provide a two-lane carriageway 24 feet wide with four foot walkways on either side.)

Most previous cable-stayed bridges have been of box girder construction but a truss design was chosen for the Batman Bridge, mainly for aerodynamic reasons. A truss was found to be more stable in high winds for this crossing when compared with alternative plate or box girders. A scale model (one in 20) was tested early in the design stage in a wind tunnel, and results suggest that the bridge will be quite free from serious resonant oscillations at unprecedented wind-speeds of 140 mph.

*The Erection Schedule*

Once such a bridge has been built, some users may wonder how it was done, particularly how masses of steel were suspended over water with one end apparently unsupported. The erection programme, after the concreting of the abutments, followed this pattern: (i) erecting the truss from the west abutment to the bar of the A-tower; (ii) erecting the truss westwards from the east abutment to an expansion joint 56.25 feet out from pier one; (iii) simultaneously erecting the A-tower on the other bank to its full height and installing the permanent backstays; (iv) continuing the truss from the bar of the A-tower *across the river* to the expansion joint; (v) erecting and welding deck, working from both abutments.

The implication of (iv) in the programme is that 618.75 feet of steel truss had to be projected over the river with only the west end supported by the bar of the A-tower; the balance of the truss projection had to be held up by permanent and temporary forestays from the A-tower top.

*The West Bank Projection*

Once the A-tower was held by the backstays, complete 45 foot truss sections were assembled on the west bank, lowered on a trolley to the river's edge and lifted onto a monorail attached to the underside of the existing bridge above. The bridge sections were taken to the construction front on this monorail and then raised into position by the erection gantry; the gantry ran on temporary rails laid on the top chords of previously erected sections.

The bridge sections were cantilevered out for 90 feet. A temporary forestay from the A-tower was attached and the level of the leading end of the truss jacked up to a predetermined level. Then a further two sections were cantilevered out, a permanent forestay was attached and tension applied preparatory to moving forward the next two sections. Temporary forestays were attached at three points midway between the permanent forestays, until finally the construction front reached the east bank projection.

As the truss members were very sensitive to small changes of load in the forestays, a careful check had to be maintained of the load in each forestay throughout the erection. Being a continuous structure with elastic supports, the projection was liable to experience considerable effect from a change of load at any point. Photo elastic load cells were installed at each forestay position to ensure an accurate measure of load in the cables.

*Final Adjustment*

After decking, placing of all handrails and final asphalt road surfacing, the tension in each of the forestays, and the loads at the expansion joint and the bar of the A-tower, had each to be measured and then carefully adjusted to obtain the planned distribution of load. The Batman Bridge was opened for traffic in 1968.

## MOTOR VEHICLE REGISTRATIONS

### General

Statistics in this section deal with: (i) motor vehicles "on the register" at specific dates; (ii) new motor vehicles registered within a specified period, e.g. a year.

### Definitions

*Register:* To be allowed on the public roads, motor vehicles, except those owned by the Commonwealth Government, are required to be registered with the State Transport Commission; State Government vehicles, as well as private-

ly-owned vehicles, are registered with this authority. Commonwealth Government-owned vehicles, except those belonging to the defence services, are recorded on a separate Commonwealth register. "On the register", in this section, refers to both the State and Commonwealth registration records, and to all motor vehicles except those of the defence services. Statistics of new motor vehicle registrations comply with the same definition.

*Vehicles Included:* The statistics cover cars, station wagons, motor cycles and commercial vehicles. Commercial vehicles as defined include utilities, panel vans, trucks and omnibuses. Tractors, trailers, and mobile plant and equipment are excluded.

### Vehicles on Register

The following table has been compiled to show, in summary form, the increase in motor vehicles on the register since 1910. To give a convenient measure of this growth, vehicles on the register have been related to the population (vehicles per 1,000 persons), and increases have also been expressed as annual averages for each decade.

Motor Vehicles on Register from 1910

At 30 June	Cars and Station Wagons	Commercial Vehicles	Motor Cycles	All Vehicles		
				Total	Per 1,000 of Population	Average Annual Increase (b)
1910 .. ..	210	(a)	223	433	2	..
1920 .. ..	2,404	(a)	1,699	4,103	20	367
1930 .. ..	12,533	2,198	4,814	19,545	89	1,544
1940 .. ..	17,598	5,235	3,351	26,184	109	664
1950 .. ..	25,291	12,928	4,941	43,160	156	1,698
1960 .. ..	63,748	26,352	3,098	93,198	271	5,004
1966 .. ..	97,080	30,648	1,495	129,223	348	(c) 6,004

(a) Included with cars and station wagons.

(b) For decade ending in year shown.

(c) For six years ended 30 June 1966.

The next table gives details of motor vehicles on the register for recent years; annual increases are shown to allow comparison with the average annual rates for each decade appearing in the previous historical table.

Motor Vehicles on Register

At 31 December	Cars and Station Wagons	Commercial Vehicles	Motor Cycles	All Vehicles		
				Total	Per 1,000 of Population	Annual Increase
1961 .. ..	70,350	27,177	2,537	100,064	275	4,494
1962 .. ..	75,697	27,275	2,101	105,073	293	5,009
1963 .. ..	81,642	28,125	1,856	111,623	308	6,550
1964 .. ..	88,084	29,005	1,586	118,675	324	7,052
1965 .. ..	94,039	29,823	1,441	125,303	339	6,628
1966 .. ..	99,947	31,184	1,562	132,693	355	7,390

### Motor Vehicles on Register in Australia

Whilst different concepts of what constitutes a "motor vehicle on register" at a particular point in time may be appropriate for different purposes, to obtain uniform statistics for all States and Territories it is necessary to adopt a common

definition of *motor vehicles on register* at a particular date. In the table that follows, the concept of *motor vehicles on register* at a particular date, say 30 June is as follows:

- (i) vehicles with fees paid up for any period including 30th June;
- (ii) vehicles for which fees were retrospectively paid for any period including 30th June.

This concept excludes vehicles for which payments were not subsequently made in respect of a period including 30 June, even though at that date their registrations may not have been formally terminated.

The table that follows shows details of motor vehicles on the register for all States and Territories:

**Australia—Motor Vehicles on Register, 30 June 1966**

State or Territory	Cars and Station Wagons	Commercial Vehicles	Motor Cycles	All Vehicles	
				Total	Per 1,000 of Population
	'000	'000	'000	'000	No.
N.S.W. . . . .	1,059	290	20	1,369	324
Victoria . . . . .	860	221	12	1,093	340
Queensland . . . . .	397	155	12	565	340
S.A. . . . .	299	84	12	395	362
W.A. . . . .	220	84	9	313	375
Tasmania . . . . .	97	31	1	129	348
N.T. . . . .	9	6	(a)	16	431
A.C.T. . . . .	31	5	(a)	36	375
Total . . . . .	2,972	876	68	3,916	339

(a) Under 500.

### Registration of New Motor Vehicles

In the next table, details are shown of new motor vehicles registered in Tasmania over a five-year period:

**Annual Registrations of New Motor Vehicles**

Particulars	1962	1963	1964	1965	1966
Cars . . . . .	6,837	7,470	7,919	8,507	8,595
Station Wagons . . . . .	1,934	2,012	2,204	1,936	1,709
Utilities . . . . .	983	1,103	1,191	1,170	1,308
Panel Vans . . . . .	367	372	382	424	500
Trucks . . . . .	544	717	787	864	789
Motor Cycles . . . . .	49	62	45	122	272
Other (a) . . . . .	50	79	66	106	109
Total . . . . .	10,764	11,815	12,594	13,129	13,282

(a) Includes omnibuses, ambulances and hearses.

### New Registrations According to Make

The table that follows analyses Tasmanian registrations of new cars and new station wagons according to the make, and illustrates the present popularity of Holden, Ford, Morris, Chrysler, Toyota and Volkswagen.

**Registrations of New Cars and New Station Wagons, 1966**  
**Classified to Predominant Make**

Make	Cars		Station Wagons	
	Number	Proportion of Total Cars (Per Cent)	Number	Proportion of Total Station Wagons (Per Cent)
Austin .. .. .	333	3.9	..	..
Chrysler .. .. .	790	9.2	207	12.1
Datsun (Nissan) .. .. .	124	1.4	26	1.5
Dodge .. .. .	22	0.3	..	..
Fiat .. .. .	37	0.4	..	..
Ford .. .. .	1,537	17.9	363	21.3
Hillman .. .. .	161	1.9	20	1.2
Holden .. .. .	2,835	33.0	942	55.1
Humber .. .. .	26	0.3	..	..
Isuzu .. .. .	217	2.5	..	..
M.G. .. .. .	24	0.3	..	..
Mazda .. .. .	16	0.2	15	0.9
Mercedes Benz .. .. .	44	0.5	..	..
Mitsubishi .. .. .	34	0.4	..	..
Morris .. .. .	1,023	11.9	..	..
Peugeot .. .. .	53	0.6	9	0.5
Rambler .. .. .	34	0.4	2	0.1
Renault .. .. .	33	0.4	..	..
Toyota .. .. .	480	5.6	92	5.4
Vauxhall .. .. .	197	2.3	2	0.1
Volkswagen .. .. .	433	5.0	26	1.5
Other .. .. .	142	1.6	5	0.3
Total .. .. .	8,595	100.0	1,709	100.0

**"Scrapping" of Motor Vehicles**

Apart from the few "veteran" cars owned by enthusiasts, most vehicles are eventually scrapped. No information is collected on the number scrapped each year but the following table contains information from which some inferences may be drawn:

**New Motor Vehicles Registered and Annual Increase in Motor Vehicles on Register**

Particulars	1962	1963	1964	1965	1966
New Motor Vehicles Registered (a) .. .. .	10,764	11,815	12,594	13,129	13,282
Annual Increase, Motor Vehicles on Register (b) .. .. .	5,009	6,550	7,052	6,628	7,390

(a) During year ended 31 December.

(b) Annual increase measured at 31 December.

In comparing the two sets of figures in the previous table, it would be wrong to assume that the difference in each year represented purely scrapped vehicles; exceptions would include vehicles transferred interstate and vehicles "on blocks"—the fact that an owner has let a registration expire does not necessarily mean that he intends to scrap his vehicle. Subject to these and similar difficulties of interpretation, it would appear that between five thousand and six thousand motor vehicles may have been scrapped annually since 1962.

## ROAD TRAFFIC ACCIDENTS IN TASMANIA

### Scope of Statistics

With the rapid development of road transport, there has come an increase in the number of road traffic accidents; some merely involve damage to vehicles, but others result in injury or death. To evolve meaningful statistics describing these events, it has been found necessary to narrow the field of observation to those road traffic accidents which involve casualties, since some accidents resulting only in vehicle damage are not reported to the police (the drivers might merely exchange names and report to their respective insurance companies). Further, there is the difficulty of fixing, in monetary terms, some valid standard for determining what degree of vehicle damage warrants inclusion of an accident in a long-term statistical series—obviously \$20 or \$50 for repairs in 1950 is not comparable with \$20 or \$50 for repairs now.

For these and other reasons, the statistics in this section are restricted to details of those road traffic accidents which were recorded by the police and which involved casualties requiring medical or surgical treatment, or caused death.

### Source of Data

Details of each road traffic accident reported to the police, or investigated by the police, are recorded on a standard form and copies are made available to the Transport Commission and to the Bureau of Census and Statistics; at the Bureau, monthly statistics are compiled only from those reports describing accidents involving casualties. The Transport Commission employs the reports it receives in connection with road engineering, the location of traffic signs and signals, the pin-pointing of dangerous locations, traffic engineering, and accident prevention in general.

### Responsibility for, and Cause of, Accidents

For the purposes of the statistics in this section, the police officer reporting the accident determines, on the basis of the evidence available, the road user or agency responsible, and also the cause of the accident. The fact that civil or criminal courts may later make different decisions on these matters is disregarded in these statistics; nor is any attempt made to distinguish between accidents giving rise to subsequent legal action and those not doing so.

### *Causes of Accidents*

Causes of accidents in Australian States are classified, for statistical purposes, in accordance with a standard list of 76 prime causes (although, in this section, only the most frequent causes will be shown). Contributory causes and conflicting or incomplete evidence make precise classification difficult. No provision is made to record and classify such antecedent causes as fatigue, the influence of intoxicating liquor, discourtesy, impatience or other driving faults (e.g. "intoxication" is listed as a possible prime cause but where evidence of intoxication is inconclusive, the reporting police officer usually shows some more immediately apparent cause).

### Road Traffic Accident Statistics

The following table summarises the principal statistics of road traffic accidents involving casualties from 1949-50:



## Road Traffic Accidents Involving Casualties from 1949-50

Period	Accidents		Persons			
	Number	Per 10,000 Vehicles Registered (a)	Killed		Injured	
			Number	Per 10,000 Vehicles Registered (a)	Number	Per 10,000 Vehicles Registered (a)
1949-50 .. ..	969	242	64	16.0	1,154	288
1954-55 .. ..	864	127	57	8.3	1,111	163
1959-60 .. ..	743	82	79	8.7	1,004	111
1962-63 .. ..	919	87	67	6.4	1,354	129
1963-64 .. ..	1,118	101	80	7.2	1,656	149
1964-65 .. ..	1,180	99	97	8.2	1,692	142
1965-66 .. ..	1,291	97	88	7.0	1,955	155
1966 (b) .. ..	1,377	106	104	8.0	2,092	162

(a) Based on average number of motor vehicles on register during period. "Vehicles on register" is defined in earlier section headed "Motor Vehicle Registrations".

(b) Year ended 31 December 1966.

The immediate inference to be drawn from the above table is that the annual totals of accidents involving casualties, and of persons killed and injured, have increased at a much slower rate than have motor vehicles on the register. In 1950, there were 43,160 motor vehicles on the register at 30 June, the corresponding figure for 1966 being 129,223; in the period covered by the table, the registration figure has almost tripled, whereas accidents and casualties have not doubled, and the *rates* per 10,000 vehicles are much lower.

*Location of Accidents*

The first table shows the location of accidents in the State, dissected between Hobart, Hobart Suburbs and the remainder of Tasmania:

## Road Traffic Accidents and Casualties by Location, 1965-66

Particulars	City of Hobart	Suburbs of Hobart	Remainder of State	Whole State
Accidents Involving Casualties ..	231	248	812	1,291
Persons Killed .. ..	12	6	70	88
Persons Injured .. ..	315	357	1,283	1,955

*Types of Road Users Killed or Injured*

The following table analyses casualties to show the types and sex of road user killed or injured:

## Type of Road User Killed or Injured, 1965-66

Type of Road User Involved	Killed			Injured		
	Males	Females	Persons	Males	Females	Persons
Drivers of Motor Vehicles .. ..	30	3	33	650	131	781
Motor Cyclists ..	1	..	1	27	5	32
Pedal Cyclists ..	6	..	6	62	1	63
Passengers (all types)	24	9	33	420	425	845
Pedestrians .. ..	11	4	15	157	77	234
Other Classes ..	..	..	..	..	..	..
Total .. ..	72	16	88	1,316	639	1,955

*Responsibility for Road Accidents*

The next table shows the agency or type of road user believed responsible:

**Responsibility for Road Traffic Accidents, 1965-66**

Responsibility Attributed to—	Accidents Involving Casualties	Persons Killed	Persons Injured
Drivers of Motor Vehicles ..	900	64	1,496
Riders of Motor Cycles ..	14	..	15
Pedal Cyclists .. ..	40	5	35
Pedestrians .. ..	194	11	192
Passengers .. ..	9	..	9
Motor Vehicle Defects ..	32	1	48
Motor Cycle Defects ..	..	..	..
Pedal Cycle Defects ..	8	..	12
Animals .. ..	8	..	14
Road Conditions .. ..	51	4	79
Weather .. ..	11	1	18
Parties not Involved (a) ..	23	1	35
Other Causes .. ..	1	1	2
Total .. ..	1,291	88	1,955

(a) e.g. a car collides with another, after swerving to avoid a pedestrian who is not struck.

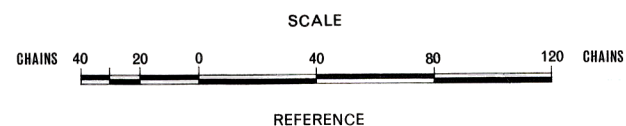
*Cause of Accidents (Drivers of Motor Vehicles Responsible)*

The next table analyses accidents for which drivers of motor vehicles were believed responsible:

**Road Traffic Accidents, Drivers of Motor Vehicles Responsible, 1965-66**  
**Classification According to Cause**

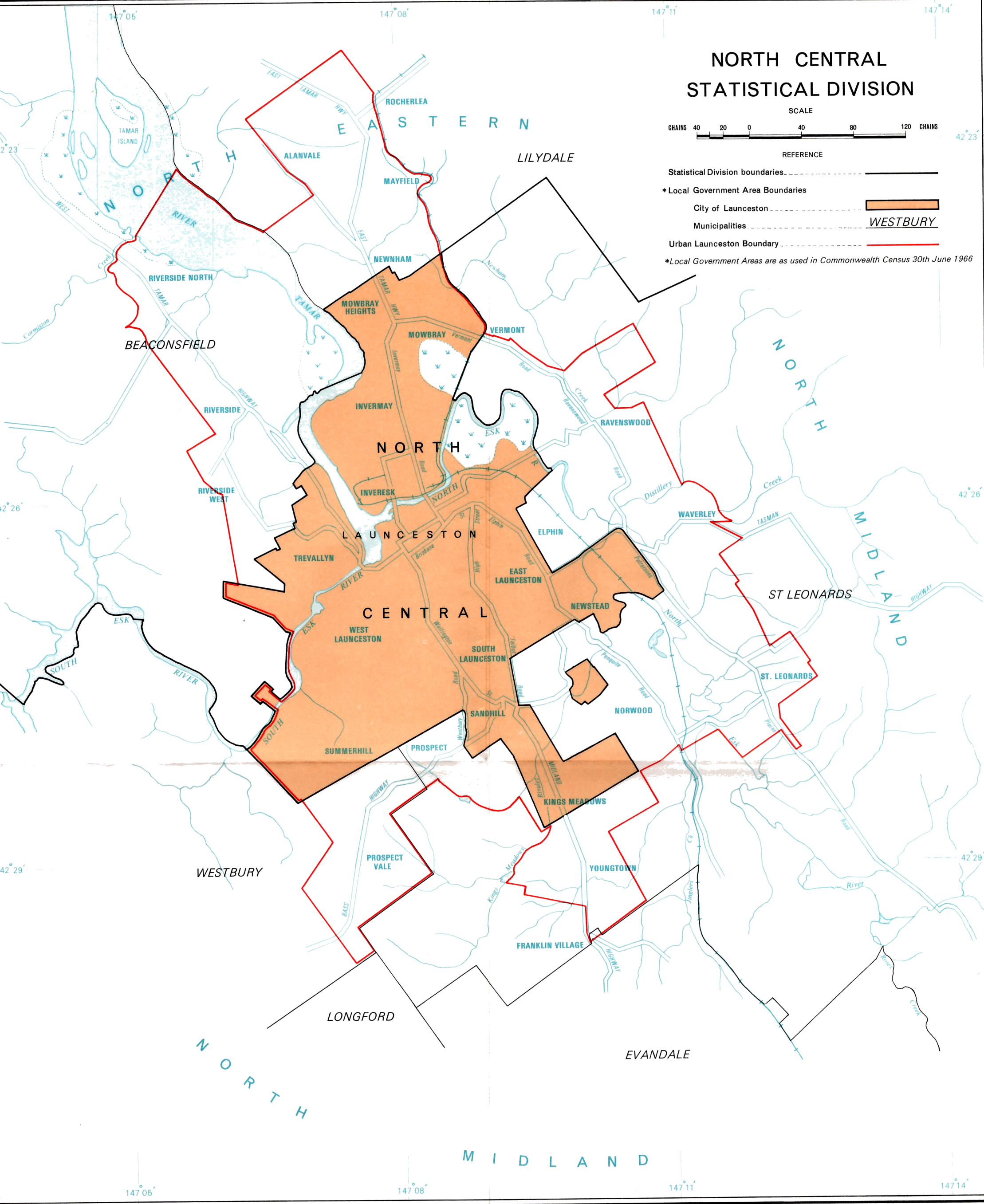
Principal Causes of Accidents for which Drivers of Motor Vehicles (excluding Motor Cycles) were Responsible	Accidents Involving Casualties	Persons Killed	Persons Injured
Excessive speed having regard to conditions ..	186	33	322
Not keeping to the left .. ..	99	8	195
Not giving right of way to other vehicles at intersection	200	5	322
Failing to make right-hand turn at intersection with due care .. ..	49	1	88
Intoxicated .. ..	27	1	38
Inexperienced, including inexperience with type of vehicle in use at time of accident .. ..	26	4	37
Inattentive driving .. ..	173	6	276
Reversing without care .. ..	12	..	14
Overtaking on near-side or in the face of oncoming vehicle(s) or without enough clearance ..	23	3	42
Following other vehicle too closely .. ..	21	..	37
Infirmity of driver .. ..	2	..	4
Driver asleep or drowsy .. ..	24	..	42
Dazzled by lights of an approaching vehicle ..	8	..	11
Failing to signal intention of turning or stopping, or giving incorrect signal .. ..	5	..	9
Pulling or swinging out from kerb suddenly or without warning .. ..	2	..	2
Disregarding, misunderstanding or failing to observe traffic sign or signal of other driver .. ..	22	..	32
Crossing railway level crossing without due care ..	10	2	14
Hit-run drivers (n.e.i.) .. ..	10	1	10
Other causes .. ..	1	..	1
Total .. ..	900	64	1,496

# NORTH CENTRAL STATISTICAL DIVISION



- Statistical Division boundaries ————
- \* Local Government Area Boundaries
- City of Launceston ————
- Municipalities ———— **WESTBURY**
- Urban Launceston Boundary ————

\* Local Government Areas are as used in Commonwealth Census 30th June 1966



*Causes of Accidents (Pedestrians Responsible)*

The table that follows analyses road traffic accidents for which pedestrians were held responsible, in terms of the standard list of causes (after drivers of motor vehicles, pedestrians were considered responsible for the next most numerous group of accidents):

**Road Traffic Accidents, Pedestrians Responsible, 1965-66**  
**Classification According to Cause**

Principal Causes of Accidents for which Pedestrians were Responsible	Accidents Involving Casualties	Persons Killed	Persons Injured
Walking across roadway without due care .. ..	77	6	73
Running across roadway .. .. .	40	..	43
Passing behind or in front of moving or stationary vehicle or object .. .. .	10	1	10
Stepping off kerb without due care .. .. .	9	1	9
Intoxicated .. .. .	10	..	12
Children under 7 years of age not under, or breaking away from, the supervision of an older person ..	42	1	41
Other causes .. .. .	6	2	4
Total .. .. .	194	11	192

*Road Features and Accidents*

The next table analyses all accidents according to location and shows the road features at the site. Most accidents occur on *straight roads*, a fact which is now becoming more widely known.

**Features of Roadways on Which Accidents Occurred, 1965-66**

Features of Roadways	Accidents Involving Casualties	Persons Killed	Persons Injured
At Intersections—Controlled .. .. .	56	..	83
Uncontrolled .. .. .	385	14	595
Other than at Intersections—			
Straight Road .. .. .	465	31	617
Bend or Curve.. .. .	321	34	561
Bridge, Culvert or Causeway .. .. .	19	3	32
Steep Hill .. .. .	13	2	22
Top of Hill .. .. .	10	2	18
Railway Level Crossing .. .. .	10	2	14
Other Locations .. .. .	12	..	13
Total .. .. .	1,291	88	1,955

*Times of Day and Accidents*

There is a definite correlation between time of day and frequency of accidents. Maximum frequency is usually recorded between 4 pm and 6 pm and minimum frequency between 4 am and 6 am. This was certainly the Tasmanian experience during 1965-66 and 1966-67.

*Accidents and Holidays*

The behaviour of traffic on the roads can be related to public holidays, and to holiday weekends. The next table analyses accidents in terms of this relationship (and calls attention, by an "annual equivalent" column, to the difference in apparent risk associated with holidays):

**Road Traffic Accidents, 1965-66**  
**Accidents in Relation to Holidays**

Day of Occurrence	Days in 1965-66	Accidents Involving Casualties	Persons Killed		Persons Injured	
			Number	Annual Equivalent (a)	Number	Annual Equivalent (a)
Public Holidays (not Saturdays or Sundays) . . . .	12	34	2	61	65	1,977
Days during Holiday Week-ends (Saturdays and Sundays Only) . . . .	14	75	8	209	126	3,285
Days before Holidays (or Holiday Week-ends) . . . .	10	41	4	146	53	1,935
Days after Holidays (or Holiday Week-ends) . . . .	10	34	3	110	48	1,752
Other Days . . . .	319	1,107	71	81	1,663	1,903
Total . . . .	365	1,291	88	88	1,955	1,955

(a) The daily average rate has been assumed to persist for a year.

*Age and Responsibility*

As shown in a previous table, drivers of motor vehicles (excluding motor cycles) were believed responsible for 900 out of the 1,291 accidents involving casualties which were reported to the police during 1965-66. The following table analyses the age and sex of the drivers responsible for these 900 accidents, and also shows the casualties associated with the accidents.

**Road Traffic Accidents, 1965-66**  
**Age and Sex of Drivers of Motor Vehicles Responsible**

Age Group of Drivers Responsible (in Years)	Male Driver			Female Driver		
	Accidents Involving Casualties	Persons Killed (a)	Persons Injured (a)	Accidents Involving Casualties	Persons Killed (a)	Persons Injured (a)
Under 21 . . . .	236	25	420	16	1	29
21-29 . . . .	242	16	409	25	1	46
30-39 . . . .	98	6	153	15	1	27
40-49 . . . .	80	6	127	14	..	19
50-59 . . . .	59	6	87	13	..	21
60 and over . . . .	36	..	59	7	..	9
Not Stated . . . .	56	2	86	3	..	4
Total . . . .	807	61	1,341	93	3	155

(a) The age groups relate to the driver, not to those killed or injured.

*Days of the Week on Which Accidents Occurred*

The following table shows the day of the week on which accidents and casualties occurred:

**Road Traffic Accidents, 1965-66**  
**Day of Week of Occurrence**

Day of the Week	Accidents Involving Casualties	Persons Killed	Persons Injured
Monday .. .. .	133	5	206
Tuesday .. .. .	134	8	185
Wednesday .. .. .	125	9	180
Thursday .. .. .	170	12	220
Friday .. .. .	223	14	338
Saturday .. .. .	299	16	476
Sunday .. .. .	207	24	350
Total .. .. .	1,291	88	1,955

*Age and Sex of Road Users Killed*

The next table shows the age and sex of the various types of road user killed:

**Road Traffic Accidents, 1965-66**  
**Age and Sex of Road Users Killed**

Age Group (in Years)	Type of Road User Killed					All Road Users
	Drivers of Motor Vehicles	Motor Cyclists	Pedal Cyclists	Passengers (All Types)	Pedestrians	
MALES						
Under 7 .. ..	..	..	..	3	1	4
7-16 .. ..	1	..	3	6	3	13
17-20 .. ..	6	1	..	7	..	14
21-29 .. ..	9	..	1	3	..	13
30-39 .. ..	3	..	..	1	2	6
40-49 .. ..	4	..	..	2	..	6
50-59 .. ..	5	..	..	..	2	7
60 and over .. ..	1	..	2	1	2	6
Not Stated .. ..	1	..	..	1	1	3
Total .. ..	30	1	6	24	11	72
FEMALES						
Under 7 .. ..	..	..	..	1	..	1
7-16 .. ..	..	..	..	1	1	2
17-20 .. ..	1	..	..	1	..	2
21-29 .. ..	..	..	..	1	..	1
30-39 .. ..	1	..	..	..	..	1
40-49 .. ..	1	..	..	..	..	1
50-59 .. ..	..	..	..	3	1	4
60 and over .. ..	..	..	..	2	1	3
Not Stated .. ..	..	..	..	..	1	1
Total .. ..	3	..	..	9	4	16

## CIVIL AVIATION IN TASMANIA

### Introduction

#### *Early Flights*

A significant event in the history of aviation in Tasmania occurred on 16 December 1919 when Lt Arthur Long of the Army Flying Corps crossed Bass Strait to Melbourne, taking six hours and making an emergency landing at Torquay on the way. Today's pure jets make the trip in under an hour. Shortly afterwards he started an aerial newspaper-carrying business between Hobart and Launceston.

In 1932, Mr L. Johnson began a Launceston-Flinders Is. service using a Desoutter and, in the same year, Victor and Ivan Holyman began a similar service with a De Havilland Fox Moth.

#### *Pioneering of Melbourne Service*

The Holyman brothers entered into partnership with Johnson to form Tasmanian Aerial Services Pty Ltd and, by 1933, the company was serving Smithton and King Is. By 1934, the company had become Holyman Airways Pty Ltd and was operating a Bass Strait service to Melbourne with DH 86 Dragon aircraft. Two aircraft were lost including the "Miss Hobart" flown by Victor Holyman. In 1936, the "Bungana", a DC2, was purchased and the era of reliable services across Bass Strait began.

#### *Formation of Ansett-A.N.A.*

In 1936, Holyman Airways and Adelaide Airways Ltd merged to become Australian National Airways Ltd and the new company operated services between all States. Thus, a Tasmanian service had expanded to develop into an all-Australian service. In 1957, A.N.A. and Ansett amalgamated to form Ansett-A.N.A.

#### *Interstate Services*

Tasmania's interstate services are provided by Ansett-A.N.A. and by T.A.A. (the Australian government airline formed in 1946). Services to and from Melbourne are provided from Hobart, Launceston, Devonport, Wynyard, Flinders Is. and King Is.

#### *Intra-State Services*

Supplementary intra-state services using Beechcraft twin engine planes were commenced in May 1964 by T.A.A. As a result, regular air service connections link Hobart, Launceston, Devonport, Wynyard, Queenstown and Strahan.

### Administration of The Air Navigation Act and Regulations in Tasmania

The *Air Navigation Act* 1920-60 (Federal) and associated regulations are administered for Tasmania by the Regional Director, Victoria-Tasmania region; the authority is the Civil Aviation Department. The department's more important functions include the provision and maintenance of government aerodromes, the licensing of aircraft and pilots, and a responsibility for supervising all aspects of air safety.

#### *Classification of Flying Activities*

Flying activities are classified by regulation into the following well defined categories:

(a) *Private Operations*: Private use of aircraft may be gauged by the fact that there were 157 licensed *private* pilots in the State in 1966.

(b) *Aerial Work Operations*: These operations refer to aircraft used for aerial survey; spotting; agriculture; advertising; flying training; ambulance service; police or customs work; or for the carriage of goods owned by the pilot, the owner or the hirer for purposes of trade. Within Tasmania, there were four licensed flying training organisations and three aerial agricultural organisations carrying out most of the aerial work activities in 1966.

(c) *Charter Operations*: These refer to aircraft hired for passenger or freight movement, but not according to fixed schedules, or to and from fixed terminals. There were seven licensed charter operators based in Tasmania in 1966.

(d) *Regular Public Transport*: This refers to aircraft carrying freight and passengers according to fixed schedule, and operating on specified routes. All services of this kind are provided in Tasmania by T.A.A. and Ansett-A.N.A.

### Tasmanian Aerodromes

The major aerodromes in Tasmania are owned and operated by the Commonwealth Government. The following describes both Commonwealth-owned and other aerodromes in use at 31 December 1966.

#### *Hobart*

Hobart airport, Commonwealth-owned, is eleven miles east of the city and ranks seventh in the volume of passengers handled at Australian terminals. It was completed in 1956 and then consisted of a sealed runway 5,800 feet by 200 feet. Extension and strengthening of the runway, taxiway and aprons to take Electra, DC9 and Boeing 727 aircraft at full weight was completed in 1966 (727s now operate pure jet services to Hobart). The airport is equipped with complex aviation and navigation aids.

#### *Launceston*

This Commonwealth-owned airport, 10 miles south-east of Launceston, ranks next after Hobart in passenger volume but handles considerably more freight. Improvements include a lengthening of the runway and the completion of a new terminal building and maintenance depot. This was the drome from which Holyman and Johnson flew their Bass Strait services in the early 1930s and which the R.A.A.F. used for training in World War II.

The area control centre provides air traffic control for the whole of Tasmania via repeater stations, south on Mt Wellington and north on Mt Barrow. The airport also is used for flying training and other light aircraft charter and aerial work operations; a grassed area is available for these activities.

#### *Devonport*

The Devonport Commonwealth-owned aerodrome was originally constructed in the early 1930s. In 1950 it was developed to handle DC3, DC4 and Viscount type aircraft and is now active with regular public transport, aerial work, charter, flying training and private operations. The aerodrome is equipped with night lighting, a non-directional beacon, a visual-aural range and distance measuring equipment.

#### *Wynyard*

The Wynyard Commonwealth-owned aerodrome has one sealed runway 4,400 feet and one 3,900 feet long for regular public transport operations, charter, aerial work and private operations. The aerodrome has radio navigation equipment and night lighting.



*King Island*

King Island airport is a Commonwealth-owned aerodrome situated four miles north-east of Currie. It has three gravel runways, night lighting, and radio navigational equipment.

*Flinders Island*

Flinders Island Commonwealth-owned aerodrome is situated three miles north of Whitemark. It has three grassed landing strips strengthened with some gravel and is equipped with aircraft navigation aids and radio.

*Smithton*

Situated two miles west of Smithton, this licensed aerodrome, owned by the Transport Commission, was originally developed in the 1930s for Bass Strait services. It has a sealed gravel runway 5,300 feet long and 150 feet wide and is used for itinerant charter and private flights. Smithton is not equipped with radio navigation aids or aircraft communications facilities.

*Bridport*

The Bridport licensed aerodrome was developed for the purpose of air-freighting local produce, mainly fish, direct to Victoria. The landing strip consists of a grassed area 4,000 feet long by 400 feet wide. It is owned by the North Eastern Aerodrome Company Pty Ltd and currently serves itinerant charter, aerial work and private operations.

*St. Helens*

St Helens is a licensed aerodrome owned and operated by the Municipality of Portland. It was the first aerodrome constructed in Tasmania under the Commonwealth Aerodrome Local Ownership Plan and was officially opened in April 1963. A grassed strip 3,900 feet long and 300 feet wide is of sufficient dimension to permit operations by DC3 and F27 type aircraft. The aerodrome currently serves the charter, aerial work and private operation requirements for the area and has a non-directional beacon for instrument navigation.

*Queenstown*

The Municipality of Queenstown provided an authorised landing area for light aircraft in 1937. In 1963, work was commenced on the construction of a runway suitable for the operation of DC3 type aircraft at Queenstown under the Local Ownership Plan. With the completion of this aerodrome, Queenstown was included in the intra-state services provided by T.A.A. Beechcraft aircraft.

*Strahan*

The port of Strahan serves the West Coast of Tasmania and, in particular, the Queenstown and Zeehan areas. The aerodrome at Strahan was constructed under the Commonwealth Aerodrome Local Ownership Plan and is owned by the Municipality of Strahan. It was opened for regular public transport operations in 1964, has a non-directional beacon, and is included on the T.A.A. Beechcraft route.

*Cambridge*

This government aerodrome was constructed during the early days of aviation and comprised four runways. After World War II, it was used extensively for DC3, DC4 and Convair regular passenger services. However, with hills in the near vicinity the site could not be developed and, following construction of the new Hobart Airport, it was retained for flying training activities and light aircraft operations.

### Passenger, Freight and Aircraft Movements

The following table has been compiled to show the volume of activity at the State's principal airports; the following definitions apply:

*Passengers:* The figures for fare-paying passengers at each airport are the sum of embarkations and disembarkations.

*Freight:* The figures are the sum (in tons of 2,000 lb) of freight (including mail) loaded and unloaded at each airport.

*Aircraft Movements:* A take-off is one movement, a landing another.

**Principal Airports**  
**Passengers, Freight and Aircraft Movements (a)**

Year	Hobart	Launceston	Devonport	Wynyard	King Is.	Flinders Is.
PASSENGERS ('000)						
1963-64 .. ..	143	142	39	32	15	9
1964-65 .. ..	158	152	45	35	15	11
1965-66 .. ..	167	155	48	41	15	11
FREIGHT (SHORT TONS)						
1963-64 .. ..	4,996	7,934	532	532	422	921
1964-65 .. ..	5,800	8,486	734	601	446	784
1965-66 .. ..	5,753	8,676	772	681	460	595
AIRCRAFT MOVEMENTS						
1963-64 .. ..	7,366	11,536	2,774	2,580	1,422	932
1964-65 .. ..	8,303	12,600	3,436	3,627	1,384	1,060
1965-66 .. ..	7,747	11,780	3,452	3,295	1,371	1,019

(a) See definitions prefacing table.

### Comparison with Principal Australian Airports

The next table shows the volume of activity at the principal Australian airports in terms of the number of passengers, freight and aircraft movements. Details of international services have been excluded so that comparisons are purely in terms of domestic traffic (international services are centred on Melbourne, Sydney, Brisbane and Perth).

**Australia—Principal Airports**  
**Passengers, Freight and Aircraft Movements (a), 1965-66**

Airport	Passengers	Freight (Short Tons)	Aircraft Movements
Sydney .. ..	2,244,000	33,683	61,517
Essendon (b) .. ..	1,748,000	39,783	48,221
Brisbane .. ..	814,000	15,314	25,893
Adelaide .. ..	738,000	11,748	19,933
Perth .. ..	257,000	6,294	7,997
Canberra .. ..	331,000	2,509	14,860
Hobart .. ..	167,000	5,753	7,747
Launceston .. ..	155,000	8,676	11,780

(a) See definitions prefacing this section.

(b) Airport for Melbourne. The airport name "Melbourne" is reserved for the new international airport now being constructed.

## POSTAL AND TELECOMMUNICATION SERVICES

## Development of Communication Services

*General*

The Commonwealth Post Master General's Department provides and controls postal facilities and telecommunication services in Tasmania. Basically the Australian Post Office consists of two services, *postal* and *telecommunications*, supported by engineering, stores, accounts, personnel and administration establishments.

*The Postal Service*

In 1816, the first long-distance mail service in Australia was started between Hobart and Launceston, the carrier walking both ways and taking a fortnight for the round trip. Today, all forms of transport are used to convey the mails, the number of individual postal articles handled in Tasmania in 1965-66 amounting to 63 million.

All letter class mail to and from Tasmania is carried by air, whilst the bulk of "Other Article" mail is received and despatched on a near daily basis on the ships "Princess of Tasmania" and "Bass Trader". In the year ended June 1966, 52 million items of letter class mail were carried by air across Bass Strait and 10 million postal articles were transported by ship. Within the State, mail is distributed daily to 487 post offices.

*Telecommunications*

Hobart and Launceston were linked by a telegraph line in 1857 and two years later a Bass Strait cable was in operation, only to fail in 1861. By 1869 a second cable was laid and communication with overseas countries became possible in 1872 when the Overland Telegraph was established between Adelaide and Darwin.

The first telephone line in Tasmania linked Hobart and Mt Nelson signal station in 1880, both Hobart and Launceston having exchanges by 1883. However, no link with Victoria or overseas countries was provided until 1936.

*Telephones:* The Post Office is working towards a highly automated telephone system so that subscribers may make direct long-distance calls anywhere in Australia by simply dialling the required number. This system is called *Subscriber Trunk Dialling* (S.T.D.); it avoids the delays associated with manually-operated exchanges and charges are based on actual time used, not on multiples of three minutes as at present. In December 1967, S.T.D. operated between Hobart, Launceston, Melbourne and some country areas.

*Telegraph:* Telegrams are sent by teleprinter over the same routes as telephone calls. TRESS, the automatic telegraph switching system, eliminated the traditional morse key operations in 1959. The teleprinter exchange (TELEX) had only one Tasmanian subscriber in 1957 but 76 were connected by 30 June 1966. In the same month, the TELEX service became fully automatic and subscribers can now contact each other without an exchange operator's assistance.

*Construction:* To achieve the highly sophisticated service provided and planned, the Post Office has had to install high capacity trunk routes and embark on an ambitious expansion plan. These great new trunk systems, known to the Post Office as the Broadband Network, are marked only by isolated repeater or booster stations along highways or on mountain tops. They carry previously unthought of volumes of traffic, including telephone calls, telegraph and telex messages, picturegrams and radio and television programmes. This huge national network already covers 6,700 miles and by

1971, the main routes will be Cairns-Brisbane-Sydney-Canberra-Melbourne-Hobart and Melbourne-Adelaide-Perth-Port Headland (W.A.). Spurs will lead out to virtually every major centre in all States and there will be links with the *Seacom* and *Compac* cables connecting Australia with overseas countries.

Tasmania has been joined to the Broadband Network by a micro-wave radio link terminating in Hobart. This link forms part of Tasmania's internal communication system which is being developed for S.T.D. Burnie and Launceston have been linked by a co-axial cable. Radio links will be provided with other centres to extend the S.T.D. facility. In recent years, the Post Office in Tasmania has had a policy of installing underground cables which have higher traffic densities. This policy is illustrated by the following table:

Cable and Aerial Wire Mileages at 30 June

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
Aerial Wire, Single Wire Mileage	61,473	60,970	60,186	58,480	57,046
Conductors in Cable, Single Wire Mileage (a) .. ..	290,403	346,951	392,821	438,012	518,003
Co-axial Cable, Tube Miles (a) ..	..	..	..	..	366

(a) Laid underground.

### Employment

The next table analyses the total number employed by the Department in Tasmania. Employment categories are:

*Temporary Staff:* These are engaged by the Public Service Board and their employment beyond one year requires the Board's further approval.

*Exempt Staff:* These are persons exempt from the provisions of the *Public Service Act*. The Department is not required to obtain the approval of the Commonwealth Public Service Board before employing them, or to seek Board approval to continue their employment beyond one year. The Public Service Board's approval for the creation of positions is, of course, still necessary (the Board approves the "offices" but the Department engages the "officers").

*Permanent Staff:* These are members of the Commonwealth Public Service.

Postmaster-General's Department—Persons Employed

Particulars	Number at 30 June 1966	Year	Total Number at 30 June
Full-time Employees (a)—		1955 ..	3,677
Permanent Officers .. ..	2,601	1956 ..	3,783
Temporary and Exempt Officers (b) ..	847	1957 ..	3,942
		1958 ..	3,957
Total .. .. .	3,448	1959 ..	4,012
		1960 ..	3,995
Others—		1961 ..	4,066
Non-official Postmasters and Staff ..	467	1962 ..	4,077
Telephone Office Keepers .. ..	17	1963 ..	4,144
Mail Contractors (c) .. .. .	204	1964 ..	4,184
Part-time Employees .. .. .	118	1965 ..	4,169
		1966 ..	4,254
Total .. .. .	806		
Grand Total .. .. .	4,254		

(a) Full-time employees are those directly under the control of the Department. The remainder shown as "Others" provide services, which may or may not occupy their full time, under contract or in return for payments appropriate to work performed.

(b) Exempt staff are persons exempt from the provisions of the *Public Service Act* (Federal).

(c) Includes persons employed to drive vehicles.

### Revenue and Expenditure

The table that follows gives details of the financial operations of the Department in Tasmania. Three points of explanation are necessary: (i) financial statistics are compiled with a dissection between operations in the six States and in the central office (located in Melbourne); an adequate picture of the financial results of a year's trading can be obtained only from the combined Australian accounts of the Department; (ii) in the expenditure table appear items of a capital nature but the source of funds for this work is not included in the revenue table; (iii) the Department is administered as a business undertaking and pays interest to the Commonwealth Treasury on all capital; interest is not brought to account in the table.

#### Postmaster-General's Department—Financial Operations in Tasmania (\$'000)

Particulars	1961-62	1962-63	1963-64	1964-65	1965-66
REVENUE					
Postal .. .. .	2,198	2,342	2,466	2,603	2,685
Telegraph .. .. .	370	362	388	415	471
Telephone .. .. .	4,806	5,210	5,688	6,709	7,209
Other .. .. .	10	14	24	13	9
Total .. .. .	7,384	7,928	8,566	9,740	10,374
EXPENDITURE					
From Ordinary Votes—					
Salaries and Payments in Nature of Salary .. .. .	3,538	3,606	3,718	3,957	4,181
Administration .. .. .	412	382	492	525	578
Stores and Material .. .. .	208	134	112	124	158
Mail Services .. .. .	264	266	266	264	271
Engineering Services (Other than Capital Works) .. .. .	3,132	2,570	2,896	3,173	3,303
Total .. .. .	7,554	6,958	7,484	8,044	8,491
Rent, Repairs and Maintenance	126	118	92	126	131
Capital Works and Services (a) .. .. .	3,600	4,628	5,084	6,225	7,629
Other .. .. .	4	..	..	..	16
Grand Total .. .. .	11,284	11,704	12,660	14,395	16,267

(a) Source of funds for this expenditure not shown under "Revenue".

### Operations of the Department

Apart from its obvious role of providing communication facilities through various media, the Department provides a money order and postal order service and also acts as an agent for a number of other instrumentalities in transactions which include: savings bank deposits and withdrawals; payment of pensions and allowances; War Service Homes repayments; sale of State duty stamps, etc.

The next section deals with the principal activities of the Department in Tasmania.

*Postal Services*

The following table shows the volume of mail handled in Tasmania, and also monetary transactions carried out through use of Post Office *money orders* and *postal orders*.

*Money Orders:* An order may be obtained for sums up to \$80 on a single order. Orders for overseas are limited to \$20, and a remitter may send only one such order in any week.

*Postal Orders:* Until 30 May 1966, *postal notes* could be purchased in denominations up to \$2; the notes could not be traced if lost and provided no protection against theft, since any post office would cash them. On 1 June 1966, *postal orders* with denominations up to \$4 were introduced; the orders offer improved security, can be traced and can be "crossed" like a bank cheque. Duplicates can be issued in certain circumstances.

**Postal Services**

Particulars	Unit	1961-62	1962-63	1963-64	1964-65	1965-66
Post Offices—Official .. ..	No.	53	54	54	54	54
Non-official .. ..	No.	453	448	446	440	433
Postal Traffic (a)—						
Letters, Postcards, etc. . .	'000	42,603	45,203	47,452	49,108	51,710
Newspapers, Books, etc. . .	'000	9,714	9,182	9,340	9,549	10,309
Parcels .. ..	'000	242	237	232	263	288
Registered Articles .. ..	'000	390	379	371	371	375
Money Orders—						
Issued—No. .. ..	'000	284	307	342	366	353
Value .. ..	\$'000	6,796	7,932	8,548	9,356	11,576
Paid —No. .. ..	'000	221	242	253	263	274
Value .. ..	\$'000	6,160	7,266	7,852	8,768	10,902
Postal Orders (b)—						
Issued—No. .. ..	'000	390	394	388	368	356
Value .. ..	\$'000	376	384	390	378	384
Paid —No. .. ..	'000	218	247	208	206	206
Value .. ..	\$'000	216	240	212	212	213

(a) Number of distinct articles handled.

(b) Prior to 1 June 1966, the figures refer to a similar system using *postal notes*.

*Telephone and Telegraph Services*

The next table gives details of telephone services in Tasmania and also an indication of the volume of telegraph traffic:

**Telecommunications**

Particulars	Unit	1964-65	1965-66
Telephone—			
Automatic Service Subscribers .. ..	'000	47	50
Manual Service Subscribers .. ..	'000	13	12
Subscribers with access to S.T.D. .. ..	'000	6	6
Automatic Exchanges .. ..	No.	131	137
Manual Exchanges .. ..	No.	234	212
Value of Calls Made—			
Local (including S.T.D.) .. ..	\$'000	1,539	1,632
Trunk .. ..	\$'000	2,229	2,388
Telegraph—			
Phonograms Lodged .. ..	'000	288	317
All Telegrams Lodged (a) .. ..	'000	572	610

(a) Includes telegrams lodged by telephone (i.e. phonograms).

*Telephones:* The following table further analyses the telephone services in Tasmania, showing the dissection between *business* and *residential*:

**Telephone Services at 30 June: Operating Services**

Particulars	Unit	1961-62	1962-63	1963-64	1964-65	1965-66
Services in Operation—						
Business .. ..	'000	28.6	29.7	29.9	30.6	31.4
Residential .. ..	'000	21.5	23.3	26.3	27.4	29.5
Public Telephones ..	'000	1.0	1.0	1.1	1.1	1.1
Instruments in Operation .. ..	'000	70.5	74.8	78.0	82.4	86.1

## RADIOCOMMUNICATION

### Stations in Tasmania

The section which follows relates to radiocommunication (radio telegraph and radio telephone) stations only; particulars of broadcasting stations and of broadcast listeners' licences are specifically excluded and are dealt with in a subsequent section.

The following table shows the number of radiocommunication stations and their categories over a number of years:

**Number of Authorised Radiocommunication Stations at 30 June  
(Two-way Services)**

Particulars	1962	1963	1964	1965	1966
Fixed Stations (a)—					
Aeronautical .. ..	7	7	9	9	8
Outpost (b) .. ..	13	16	15	17	16
Other .. ..	27	30	36	38	42
Total .. ..	47	53	60	64	66
Land Stations (c)—					
Aeronautical .. ..	7	7	8	8	7
Base Stations for—					
Land Mobile Services ..	146	164	202	243	266
Harbour Mobile Services ..	7	9	5	6	13
Coast (d) .. ..	20	21	21	21	22
Special Experimental ..	11	11	12	16	14
Total .. ..	191	212	248	294	322
Mobile Stations—					
Aeronautical .. ..	26	28	29	32	24
Land Mobile Services ..	800	1,037	1,404	1,650	1,945
Harbour Mobile Services ..	16	38	41	50	59
Outpost .. ..	34	37	45	35	58
Ships .. ..	176	210	240	279	303
Total .. ..	1,052	1,350	1,759	2,046	2,389
Amateur Stations .. ..	149	152	160	170	174
Grand Total .. ..	1,439	1,767	2,227	2,574	2,951

(a) For exchange of radio messages with other similar stations.

(b) Stations established in remote localities for communication with control stations, e.g. the lighthouse service.

(c) For exchange of radio messages with mobile stations.

(d) Land stations for communication with ocean-going vessels.

To operate a radio transmitter as previously described, it is necessary to obtain a licence from the Radio Branch of the Postmaster General's Department which is responsible for frequency allocation and for certain inspectorial functions. In the previous table, the term "authorised" refers to equipment licensed by this authority.

Some examples of the use to which this form of communication is put, include (i) the police networks for intra-state signals and for link with police cars; (ii) coastal radio service to ships at sea (the same service provides links with outpost transmitters in the State's remote areas, e.g. Port Davey); (iii) army network with direct link to Melbourne; (iv) fire brigade network operating in the area controlled by each authority; (v) fishermen's network with base stations at Triabunna, Dunalley, Bichenor, St Helens, Lady Barron, Currie, Stanley and Strahan; (vi) lighthouse network (the source of weather reports at remote coastal stations); (vii) special purpose networks of various authorities, e.g. Hydro-Electric Commission, Forestry Commission, ambulance services, etc; (viii) marine boards' V.H.F. networks (on single international frequency) for ship-to-shore link with overseas vessels; (ix) the "mutton birders" network—operating from Whitemark on Flinders Island when the "birders", in the season, inhabit the otherwise deserted Bass Strait islands; (x) mine networks, e.g. central control linked to outposts engaged in blasting; (xi) freighting services and taxi networks, etc.

## BROADCASTING AND TELEVISION

### General

In Australia, broadcasting and television services are provided both from commercial and Commonwealth Government transmitters; the Federal *Broadcasting and Television Act 1942-67* governs the operation of services designated the National Broadcasting Service, the National Television Service, the Commercial Broadcasting Service and the Commercial Television Service.

### The National Services

The national services (both broadcasting and television) are provided by the Australian Broadcasting Commission which has sole responsibility for programme material; the actual transmitters are operated by the Postmaster-General's Department. Owners of broadcast and television receivers are required to pay annual licence fees to the Postmaster-General's Department, and this revenue is used to help pay the cost of operating the national services.

### The Commercial Services

The commercial services (both broadcasting and television) are operated under licences granted by the Postmaster General, who, in exercising his licensing powers, takes into consideration recommendations made by the Australian Broadcasting Control Board. The revenue of the commercial services is obtained from advertising. Licence fees, payable to the Postmaster General's Department, are charged on a sliding scale from 1 per cent to 4 per cent of gross advertising revenue.

#### *The Australian Broadcasting Control Board*

Although the commercial services are operated as private enterprise undertakings, the Board exercises control in certain fields, by prescribing programme standards, laying down rules for advertising time and advertising



content, determining hours of operation, and by establishing and supervising operational standards. The Board allocates frequencies for transmission and investigates applications for the establishment of stations. In all these functions, it works under the ministerial jurisdiction of the Postmaster General.

#### *Hours of Transmission*

At 30 June 1966, eight commercial broadcasting stations in Tasmania were operating; two in the Hobart area averaging 131 hours weekly; six elsewhere in the State averaging 118 hours weekly. The corresponding figures for the two commercial television stations were 60.75 hours weekly in the Hobart area, and 61.00 hours in the Launceston area.

### **Programme Standards, Commercial Stations**

#### *Broadcasting Standards*

Licenses are required to provide programmes in accordance with standards determined by the Australian Broadcasting Control Board. These standards contain special provisions dealing with the timing of family and children's programmes, and the number, duration and suitability of advertisements, e.g. in a sponsored programme, advertising per 15 minutes of programme is limited to 2.5 minutes.

Also under the *Broadcasting and Television Act* 1942-67, licensees are required to broadcast religious services, or other matter of a religious nature during such periods as the Board determines. The minimum time set by the Board is one hour per week but stations are providing, free of charge, as much as two hours weekly for religious broadcasts. The Act also provides that licensees shall, as far as possible, use the services of Australians in the production and presentation of programmes, and that not less than five per cent of the time occupied by the programmes of stations in the broadcasting of music shall be devoted to works of Australian composers.

#### *Television Standards and Australian Content*

The Board has prescribed standards for commercial television and these relate to programme content; timing of programmes (e.g. content when children are most likely to be watching); the number, content and duration of advertisements. Officers of the Board monitor programmes and investigate viewers' complaints with regard to programme content.

Since July 1967, all metropolitan commercial stations (and all country commercial stations operational for three years) have been required to transmit Australian-originated programmes for 50 per cent of transmission time. This Australian material must be featured in peak viewing time (7.00 pm to 9.30 pm) for at least 12 hours in each four weeks; it must appear for at least two hours per week between 7.00 pm and 9.00 pm. Australian drama must be featured for at least two hours per week. Special credit is given in calculating Australian programme percentages for drama written by Australians; local production of overseas dramas; Australian-designed children's programmes. Limited "Australian credit" is allowed for programmes produced in the British Commonwealth.

#### *Category of Television Programmes*

The following table shows, as varying proportions of transmission time, the types of programme televised in the Hobart area:

**Category of Television Programmes—Hobart, 1965-66 (a)**  
**Proportion of Transmission Time**

Programme Category	Hobart Commercial Programmes	Hobart National and Commercial Programmes Combined
	per cent	per cent
Drama .. .. .	44.2	37.7
Light Entertainment .. .. .	19.0	14.1
Sport .. .. .	7.9	9.7
News .. .. .	4.7	6.1
"Family" .. .. .	14.0	9.4
Information .. .. .	1.9	3.6
Current Affairs .. .. .	4.9	7.1
The Arts .. .. .	0.3	2.2
Education .. .. .	3.1	10.1
Total .. .. .	100.0	100.0

(a) Source: Australian Broadcasting Control Board.

*Film Classification*

Films imported for televising are classified as suitable for unrestricted viewing (G), not suitable for children (A) and suitable for adults only (AO). Classifications are advertised before showing.

**Television Stations in Operation**

The next table gives details of the television stations in operation:

**Television Stations in Operation, 30 June 1966**

Call Sign and Channel	Area	Transmitter Location	Height Above Sea Level—Top of Aerial (ft)	Hours of Service (Weekly)
NATIONAL				
ABT 2 .. ..	Hobart	Mt Wellington	4,410	72.00
ABNT 3 (a) ..	NE. Tasmania	Mt Barrow	4,780	72.00
COMMERCIAL				
TVT 6 .. ..	Hobart	Mt Wellington	4,340	60.75
TNT 9 .. ..	NE. Tasmania	Mt Barrow	4,654	61.00

(a) Transmits programmes originating from ABT2.

*Relay of Television Programmes from Other States*

Viewers in Tasmania do not normally see events in other Australian States as they happen; usually the event is filmed, and the film then flown across Bass Strait. Until late 1966, special events or programmes outside Tasmania which were seen simultaneously in Tasmania, were transmitted through a special relay station on Flinders Island. In 1967 a direct television programme from Canada, "Expo 67", was beamed via a satellite to Australia and relayed across Bass Strait on the new broadband radio link from Victoria. The link has provision for the direct transmission of television programmes in either

direction. The chain of communication involved is Victoria-Flinders Is.-Waterhouse-Mt Dismal-Launceston-Cleveland-Mt Seymour-Chimney Pot Hill (in Hobart).

#### *Microwave Links and Intra-State Relays*

The prime sources of programmes in Hobart are the commercial and national studios which are linked to their Mt Wellington transmitters (TVT6 and ABT<sub>2</sub>) by micro-wave links; the commercial studio in Launceston feeds programmes to its Mt Barrow transmitter (TNT<sub>9</sub>) by the same method. As there is no national studio at Launceston, the transmitter on Mt Barrow (ABNT<sub>3</sub>) relays the Hobart national programmes through the broadband radio link. This service is also available to commercial stations.

#### *Television Translator Stations*

Tasmania, due to its terrain, has areas where television reception direct from the Mt Wellington or Mt Barrow transmitters is either difficult or impossible. To provide good reception in such areas, translator stations have been installed as follows:

**Television Translator Stations—Progress of Installation, June 1967**

Area Served	Parent Station		Local Channel	
	National	Commercial	National	Commercial
Queenstown-Zeehan .. ..	ABT2	TVT6	4	8
Rosebery-Renison Bell .. ..	ABT2	TVT6	1	10
Taroona .. ..	..	TVT6	..	8
Swansea-Bicheno .. ..	..	TVT6	..	8
Smithton-Stanley .. ..	ABNT3	TNT9	1	6
Gowrie Park .. ..	..	TNT9	..	1
South Launceston .. ..	ABNT3	TNT9	1	11

In the above table, ABNT<sub>3</sub>, transmitting from Mt Barrow, has been excluded although it receives its programmes by broad band link from ABT<sub>2</sub>. The northern transmitter is high-powered and serves a large region whereas the translator stations listed in the table are low-powered and designed to serve small areas. A St Marys-Fingal Valley translator station for TNT<sub>9</sub> operating on channel 9 is due to start operating in 1968.

#### *De-icing*

In view of the temperature and weather conditions existing at Mt Wellington and Mt Barrow, precautions have been necessary to prevent the formation of ice on the aerial elements and the resultant danger of damage from falling ice.

In the case of the aerial at the Hobart national station ABT<sub>2</sub> (Mt Wellington), the aerial elements are heated by mains power which is switched on automatically by means of a thermostat when the temperature falls below freezing point. In the case of the Hobart commercial station (TVT6, Mt Wellington), the junctions between the coaxial feeder lines and the aerial elements are protected by small plastic covers. In the case of the Launceston (Mt Barrow) commercial station TNT<sub>9</sub> and national station ABNT<sub>3</sub>, the whole of the aerial is covered by a plastic cylinder. The lower part of the ABNT<sub>3</sub> mast is metal-sheathed for 190 feet to ward off ice which falls from the plastic cylinder and which could damage the mast.

### Broadcasting Stations in Operation

The following table gives details of the broadcasting stations in operation:

**Broadcasting Stations in Operation at 30 June 1966**

Call Sign	Classification	Location	Hours of Service (weekly)
7ZL .. ..	National	Hobart	126.25
7ZR .. ..	National	Hobart	125.50
7NT (a) .. ..	National	Launceston	126.25
7QN (a) .. ..	National	Queenstown	126.25
7HO .. ..	Commercial	Hobart	133.00
7HT .. ..	Commercial	Hobart	129.50
7AD .. ..	Commercial	Devonport	111.50
7BU .. ..	Commercial	Burnie	113.50
7EX .. ..	Commercial	Launceston	163.00
7LA .. ..	Commercial	Launceston	126.00
7QT .. ..	Commercial	Queenstown	91.50
7SD .. ..	Commercial	Scottsdale	100.25

(a) Transmits, in the main, programmes originating from 7ZL and 7ZR.

### Listeners' and Viewers' Licences

#### Revenue from Licences

The revenue from licensing is shown in couplets with listeners' fees first and viewers' fees second (in \$'000): 1961-62, 370 and 276; 1962-63, 358 and 426; 1963-64, 356 and 510. The combined revenue from both types of licence and from combined licences in 1964-65 was \$1,005,000, and in 1965-66, \$1,046,951.

#### Details of Rates

In general, all persons owning a radio or television set (or both) are required to pay an annual licence fee. Terms used in the next table are defined as follows:

**Pensioner Rate:** While concession rates apply to certain classes of pensioners, licences free of charge may be granted to blind persons over 16 years of age, or to a school.

**Hirer's Licence:** Each broadcast or television receiver let out on hire, except those under hire purchase contracts, must be covered by a hirer's licence held by the person or firm from whom the receiver is hired.

**Lodging House Licence:** Owners of hotels, motels, guest houses, furnished premises, etc. are required to hold a licence for every broadcast or television receiver provided for the use of guests, lodgers and tenants.

The schedule of fees is as follows:

**Broadcast Listeners' and Television Viewers' Licences—Rates at December 1967**

Licence	Ordinary Rate (\$)	Pensioner Rate (\$)
FOR BROADCAST RECEIVER		
Listener's or Hirer's Licence .. ..	5.50	1.00
Lodging House Licence .. ..	5.50	..

**Broadcast Listeners' and Television Viewers' Licences—Rates at December 1967—cont.**

Licence	Ordinary Rate (\$)	Pensioner Rate (\$)
FOR TELEVISION RECEIVER		
Viewer's or Hirer's Licence .. .. .	12.00	3.00
Lodging House Licence .. .. .	12.00	..
COMBINED LICENCE (FOR BROADCAST AND TELEVISION RECEIVER)		
Combined Receiving Licence .. .. .	17.00	4.00

*Licences in Force*

The following table shows the number of listeners' and viewers' licences in force in Tasmania from 1925:

**Licences in Force—Listeners' and Viewers' Licences from 1925**

Date	Broadcast Listeners'	Television Viewers'	Combined (a)
30 June 1925 ..	567	..	..
1930 ..	6,048	..	..
1940 ..	42,191	..	..
1950 ..	64,369	..	..
1960 ..	78,900	4,662	..
1964 ..	74,159	55,305	..
1965 (a) ..	62,299	47,779	10,718
1966 (a) ..	28,733	6,283	56,050
1967 (a) ..	21,917	7,240	60,405

(a) The combined receiving licence was introduced in April 1965, to be held by those persons owning both a broadcast and a television receiver at the same address. Separate licences are still available for persons owning only one type of receiver.

*Licences and Receivers*

The number of receivers in use, both for broadcasting and television, exceeds the number of licences, since the householder or members of his family may operate any number of receivers normally kept at the address shown on the licence. (This concession does not apply to those required to hold lodging house licences.)

Although television transmission did not begin in Tasmania before the first half of 1960 (with ABT2 and TVT6 in Hobart), a few licences were held in the northern areas of the State as early as 1957; the owners of these receivers were able to tune to programmes originating in Victoria but the quality of reception was very variable due to the distance.

## Appendix A

### PUBLICATION OF TASMANIAN STATISTICS

#### HOW TO OBTAIN CURRENT PUBLICATIONS

##### General

The Tasmanian Office of the Commonwealth Bureau of Census and Statistics is located on the fourth floor of the *T. and G. Building, Collins Street, Hobart*. Requests for statistical publications can be made by calling at this address; by phoning *Hobart 22741*; or by writing to the *Deputy Commonwealth Statistician, Box 66A, G.P.O., Hobart*.

Service to the public is not restricted to the distribution of publications. If no publication adequately covers the subject matter of the enquiry, then a special extraction of the data required may be undertaken if they are available from the basic records held in the office.

##### Historical

The first Government Statistician in Tasmania was E. C. Nowell who took up duty in 1867. Before this appointment, statistics had been published in the official "Blue Books" compiled by the Colonial Secretary during the period 1822-1855, and in volumes entitled *Statistics of Tasmania* after self-government was granted.

By the *Commonwealth and State Statistical Agreement Act 1924*, the Tasmanian Parliament ratified an agreement for the establishment of an office of the Commonwealth Bureau of Census and Statistics, such office to meet the statistical needs of the State Government; provision was made for the Deputy Commonwealth Statistician, a Commonwealth officer, to hold at the discretion of the State Government, the title of State Statistician. The first officer appointed in this way was L. F. Giblin, M.C., D.S.O., who had previously been the State Government Statistician. (It was not till the late 1950s that similar arrangements were made in the other Australian States.)

##### *Statistics from 1804*

In the Archives Office of Tasmania, the following series are available:

- (i) Official "Blue Books" for period 1822-1855.
- (ii) *Statistical Account of Van Diemen's Land or Tasmania, 1804 to 1854* compiled by Hugh M. Hull (Office of the Colonial Secretary).
- (iii) *Statistics of Tasmania*—annual publications from 1856 to 1922-23.

- (iv) *Statistics of the State of Tasmania*—annual publications commencing 1923-24 and still being produced annually. (Copies of these volumes are held at the University Library, the State Library in Hobart and the Public Library in Launceston; volumes covering 1963-64 or 1964-65 can be purchased from the Tasmanian Office of the Commonwealth Bureau of Census and Statistics.) The 1965-66 volume will be available by June 1968.

Copies of publications listed from (ii) to (iv) inclusive are available for inspection at the Tasmanian Office of the Bureau.

### Current Publications of the Tasmanian Office

The Tasmanian Office of the Commonwealth Bureau of Census and Statistics is engaged in a continuous publication programme, the statistics appearing in either printed or mimeographed form.

In general, the mimeographed publications (which are obtainable free of charge) have been compiled to make information available at the earliest possible moment. Printed publications contain information in very much greater detail but, because of the inevitable delay imposed by manuscript preparation and the printing process, may be issued a year later than the period to which they refer. (The printed *Monthly Summary of Statistics* is an exception and the "lag" is no more than about two months.)

#### Printed Publications

The following table sets out details of all printed publications issued by the Tasmanian Office:

Printed Publications Issued by the Tasmanian Office

Title	Frequency	For issue in 1967-68	Price	
			Excluding Postage (\$)	Including Postage (\$)
Tasmanian Year Book .. ..	Annual	1968	1.00	1.45
Monthly Summary of Statistics .. ..	Monthly	(a)	0.15	0.20
Pocket Year Book of Tasmania .. ..	Annual	1968	0.15	0.24
Statistics of the State of Tasmania—				
Demography .. ..	Annual	1966	0.60	0.73
Trade and Shipping .. ..	Annual	1965-66	0.40	0.49
Primary Industries and Meteorology .. ..	Annual	1965-66	0.70	0.83
Secondary Industries and Building .. ..	Annual	1965-66	0.60	0.73
Finance (b) .. ..	Annual	1965-66	0.60	0.73
Social .. ..	Annual	1966	0.20	0.29
Statistical Summary .. ..	Irregular	(c)	0.40	0.49
Bound Volume of all above Bulletins .. ..	Annual	1965-66	2.50	2.83

(a) Published one to two months after the most recent month for which figures are available.

(b) Incorporates Public Finance, Local Government Finance and *new section*, Private Finance.

(c) Irregular; last in 1962-63.

The next table gives details of all mimeographs produced by the Tasmanian Office:

Subject Matter	Title of Publication	Frequency
Alcoholic Liquor	Wholesale Sales and Stocks of Wine and Spirits; Consumption of Alcoholic Liquor	Annual
Building	Building Approvals .. .. . Building Statistics .. .. .	Monthly Quarterly
Insurance	Fire, Marine and General Insurance .. ..	Annual
Population	Population in Local Government Areas .. Vital and Population Statistics .. ..	Annual Quarterly
Production (General)	Production Statistics .. .. . Meat Production .. .. .	Monthly Annual
Production (Primary)	Apple Production .. .. . Crops .. .. . Dairy Industry .. .. . Hop Production .. .. . Livestock .. .. . Livestock and Wool Production (Preliminary Figures) .. .. . Number of Farms, Farm Population, Employment, Irrigation and Machinery Used .. Potato Production .. .. . Poultry Slaughtering and Chicken Hatching.. Tractors on Rural Holdings .. .. . Value of Production (Primary) .. .. . Wool Production Statistics .. .. .	Annual Annual Annual Annual Annual Annual Annual Annual Annual Triennial Annual Annual
Production (Secondary)	Factory Production .. .. . Sawmill and Plywood Mill Statistics .. ..	Annual Monthly
Statistics of Individual Municipalities	Compendium of Municipal Statistics ..	Irregular (Last Issue, 1964)
Trade	Trade (Overseas) .. .. . Trade (Overseas and Interstate) by Sea and by Air .. .. .	Annual Annual
Transport and Traffic	Motor Vehicle Registrations .. .. . Road Traffic Accidents.. .. .	Monthly Monthly

## General

Although publications of the Tasmanian Office of the Bureau of Census and Statistics make available statistics on many aspects of the State, there are some fields in which additional or more frequent information is available in publications of the Central Office.



### How to Obtain Central Office Publications

Central Office printed publications may be *bought* direct from the Government Printer, Canberra and from the Tasmanian Office of the Bureau of Census and Statistics; they may also be ordered from leading booksellers in the principal centres. A standing order may be placed with the Government Printer, Canberra, with whom a credit account may be arranged.

In addition to printed publications for which a charge is made, there are other Central Office publications (mimeographed, etc.) which may be obtained free of charge from the Commonwealth Statistician, Canberra.

### Subject Matter of Central Office Publications

The fields of statistical enquiry covered in Central Office publications are very wide and the best way to obtain a guide to the material available is to write to: *The Commonwealth Statistician, Canberra* and ask for *Publications of the Commonwealth Bureau of Census and Statistics*. Copies of this guide are also available at the Tasmanian Office of the Bureau. This free 40-page guide lists the publications of the Central Office and of the State Offices; in addition, it contains a subject index.

Readers with interest in a particular field are invited to call at, or write to, the Tasmanian Office which is in a position to give advice on what publications are available.

Listing of all Central Office publications is beyond the scope of this Appendix but attention is called to the *Population Census* (1961 and 1966 Census information); the *Official Year Book of the Commonwealth of Australia*; *Secondary Industries Bulletin*; *Demography Bulletin*; *Finance Bulletin*; *Labour Report*; *National Income and Expenditure*; *Overseas Trade Bulletin*; *Primary Industries Bulletins*; *Transport and Communication Bulletin*. In addition to annual publications, there is a very wide range of information released monthly, quarterly and half-yearly.

## Appendix B

### CHRONOLOGY AND THE FIRE DISASTER

#### CHRONOLOGY

##### Events to October 1967

Thirty-foot sloop *Cadence* won Sydney-Hobart race. Sewerage extension contract let at Burnie for \$110,000. Longford abattoirs to start \$0.5m expansion. Air Vice-Marshall Ky of S. Vietnam visited Australia. Aldermen prosecuted for failure to list Hobart election expenses. Damage in south with gusts to 81 mph. Board of Inquiry suggested more liberal Sunday observance legislation. *Bush fire disaster of 7 February* (see report at end of this chronology). Electrona carbide makers announced plan to rebuild gutted premises and keep all workers in employment. Men and equipment arrived from N.S.W. and Victoria to help restore electricity power lines. Tasmanian bale of wool brought record price of 760 cents per lb. Acute water shortage at Oatlands. Fire looter gaoled for six months. Power restored to 95 per cent of stricken area by 23 February. First rebuilt home occupied 18 days after its destruction. Prisoners' effort as fire-fighters rewarded by remission of sentences. H.R.H. the Duke of Edinburgh visited disaster areas. Breathalyser tests measuring drivers' blood alcohol content introduced. Destroyed telephone lines replaced by underground cable. False claim as fire victim brought 12 months' gaol sentence. Fur seals reported to be increasing on south coast. Pardoe Beach at Devonport mass grave for 150 sperm whales. Overseas shipping allocation cut because apple crop affected by drought and fires. Smithton additional base for Flying Doctor service. Part of Risdon gaol destroyed by fire. Tunbridge water-supply failed. Chief Guide, Lady Baden-Powell, visited State. Lambs killed in devastated areas for want of fodder. Four months to April driest in Hobart since 1840. Senate rejected Federal Government's attempt to raise postal charges. Housing grants to fire victims liberalised by Federal Government. Chief Justice of Tasmania appointed to head second *Voyager* Royal Commission (Federal matter). Many objections by conservationists and a petition presented against a proposal to flood Lake Pedder as part of Gordon hydro-electric scheme; plan for thermal station at Bell Bay also announced. Federal referendum held on two proposals: (i) to break 2:1 ratio between House of Representatives and Senate; (ii) to remove constitutional impediments to Aboriginal welfare; first proposal defeated, second proposal carried. Federal Arbitration Commission abolished basic wage concept, substituted total wage concept and awarded \$1.00 increase to males and females. Israel defeated Arab nations; closure of Suez Canal trapped some Tasmanian apple shipments. Hayes Gaol Farm damaged in two separate fires. Luina, new 61-home township near Waratah, finished to house workers for Mt Cleveland tin mines. Drought broken with good rains in July. State Wages Board in test case gave \$1.00 increase to males and females but retained basic wage concept for the present. Scallop beds in D'Entrecasteaux Channel opened for one month's trial. £-s-d currency no longer legal for making contracts, etc. Hydro-electric water reserves down to 16 per cent due to sustained drought in catchment areas. Cabinet decided to introduce daylight saving legislation to conserve power. Warning of industrial power rationing to operate from 1 October.

Contract for \$0.9m off-street parking station let in Hobart. Federal Government to erect 50 migrant reception flats in main centres. Legislative Council consented to bill authorising Gordon River hydro-electric scheme and Bell Bay thermal station. Mt Lyell Co. purchased three oil-fired generators for emergency power production. Liberalised Licensing Act proclaimed, lowering drinking age to 20 years, licensing restaurants and taverns, extending hours on Fridays and Saturdays, etc. Daylight saving legislation to operate from 1 October. No tax increases in State budget. Higher electricity charges introduced. Federal budget increased postal charges. State football premiership undecided because crowd dropped goal posts.

## FIRE DISASTER OF 7 FEBRUARY 1967

### Source of Data

The main references are: (i) *The Bush Fire Disaster of 7th February, 1967* by the Solicitor General and the Master and Registrar of the Supreme Court; (ii) *Preliminary Report on the Southern Tasmanian Fires of 7th February, 1967* by A. G. McArthur and N. P. Cheney, Forest Research Institute, Forestry and Timber Bureau, Canberra, A.C.T.; (iii) *Fire Damage Relief*, a guide authorised by the Premier for the information of fire victims.

### Extent of the Disaster

On Tuesday, 7 February 1967, bush fires in Southern Tasmania caused 53 deaths and contributed to a further 9 deaths; destroyed tangible property conservatively valued at \$25m and left thousands of people homeless; devastated 653,000 acres of farm land, forest and bush in 14 municipalities causing severe stock and fodder losses; and brought about an almost complete break-down in communications. (Subsequent information suggests that \$25m is very much an under-estimate.)

"In many places the people of Hobart and other seaside towns survived a fire situation which few other people in the world have ever experienced". (McArthur and Cheney.)

### Prelude to the Disaster

#### *Weather*

Conditions during the preceding three months had been warm and dry but earlier good spring rains had brought on heavy growth; consequently grass and litter were abundant and tinder dry. The four days before the disaster had been characterised by rising temperatures, freshening hot northerly winds and falling relative humidities; warnings of very high to extreme fire danger had been given in meteorology bulletins each day and featured by press, radio and television. The maximum fire danger index for the actual disaster day was 96, one of the highest readings in recent Australian records (the index integrates in one figure four factors: (i) temperature; (ii) relative humidity; (iii) wind velocity; (iv) a drought measure). Fortunately the night of 6 February was associated with high humidity which increased the moisture content of potential fuels; as a result, critical conditions of fuel dryness were not reached till noon the next day when spot fires became a major factor in spreading the conflagration (a spot fire is caused by air-borne burning debris falling in advance of the main fire front).

The weather conditions in Southern Tasmania on 7 February 1967 were not unique. Similar dangerous combinations of high temperature, low relative humidity, high wind velocity and accumulated drought effect seem to have

occurred in 1898, 1912, 1914, 1927, 1934 and 1940 while heavy fires in areas adjoining Hobart, and including Mt Wellington, are recorded for 1898, 1914, 1927, 1934, 1946 and 1961. It is worth emphasising that even in periods of extreme fire danger, spontaneous combustion does not occur—the fire must have an external cause, and usually the agent is man.

#### *Fires Before the Disaster*

Many fires had been burning in the three weeks preceding the disaster day, but were regarded as “under control” or not of any immediate danger; there were two fires at least a week old near the Hobart City boundary. Later an investigation was made to trace individual fires which had contributed to the catastrophe and no less than 110 were isolated within a 35-mile radius of Hobart, of which 89 had been alight before 7 February. An attempt was made to analyse the cause of these 110 fires with the following results:

**Cause of Fires Contributing to Disaster (a)**

Probable Cause	Fires Alight before 7 February	Fires Lit on 7 February	Total
Illegal burning-off .. .. .	43	1	44
Suspected illegal burning-off .. .. .	28	..	28
Spot fires .. .. .	..	8	8
Children suspected .. .. .	4	1	5
Deliberate incendiarism .. .. .	3	..	3
Accidental escape (incinerators, etc.) ..	5	4	9
Other causes .. .. .	3	2	5
Cause unknown .. .. .	3	5	8
Total .. .. .	89	21	110

(a) Compiled from McArthur and Cheney report; in a few cases, two possible causes were specified and an arbitrary classification has had to be made for the purpose of the table.

The implications of the previous table are re-inforced by the following quotation from the Solicitor General's report. “The practice had grown up over the years of permitting fires in bush and scrub country to “burn free” so long as they were not menacing lives or property. In normal circumstances, it was not considered economic or necessary to move the necessary resources into the area to combat such fires. However, under the extreme conditions of the morning of 7 February, most of the free burning fires spread rapidly and could not be controlled by the time they were threatening properties and the fires which were thought to be under control flared up again and became conflagrations before any resources could combat them.”

#### *Municipal Precautions*

Action taken before 7 February by municipal authorities to reduce potential fire hazards was limited in scope. Four local authorities had served notices on property owners; two of these authorities had made some fire breaks on council reserves and other land. In addition, the Hobart Fire Brigade had served notices to some property owners within its area of responsibility. Events were later to show dangerous accumulations of potential fuel existed not only in rural areas but also in urban zones.

#### *State Emergency Committee*

A non-statutory body with the above title was established in 1963, with the Chief Secretary as chairman and the Commissioner of Police as co-ordinator of emergency services; authorities represented included Civil Defence, Hydro-

Electric Commission, Public Works, Forestry, Rural Fires Board, Fire Brigades, Marine Boards, Medical Services, Postmaster General, and Army, Navy and Air Force. Meetings of the main body and of sub-committees had been held although no detailed blueprint existed to cope with a general disaster, or more specifically with a fire disaster. On 7 February, the Governor proclaimed a state of emergency and directed the Commissioner of Police to act as co-ordinator of all services; this came into force by 2.45 pm and was not terminated until 3 March 1967. In actual fact, the proclamation had been anticipated and most authorities which could assist had already been contacted.

## **Fire-Fighting Organisations**

### *General*

The fires of 7 February, despite their penetration of urban areas, were clearly *bush fires*. Fire brigades and the various municipalities' fire-fighting facilities were not adequate to deal with high-intensity breakaway fires originating in rural areas and burning into urban areas (high-intensity fires are defined in "Fire and the Tasmanian Flora", Chapter 2). The organisations were intended and equipped to deal with urban generated fires or with low to medium intensity bush and grass fires in rural areas. Because of the severe intensity and wide coverage of the fires in rural areas, aggressive fire-fighting with existing resources was impossible on the day of the disaster.

### *The Hobart Fire Brigade*

This is the biggest brigade in the State, maintaining stations in the city, Claremont, Clarence, Fern Tree, Kingston and Moonah, and servicing a large area from Blackmans Bay in the south to Granton in the north; Fern Tree on Mt Wellington is within its area of responsibility, as well as the eastern shore suburbs. At the time of the disaster, the brigade had a strength of approximately 90 officers and men, not counting 70 volunteers based on the Fern Tree sub-station. Fire-fighting equipment included 15 vehicles, made up of 4 fire engines which relied on water in the mains, 5 fire engines with pumps, a tanker and a utility with pumps, and 4 miscellaneous vehicles; in addition, 6 trailer pumps and 2 portable pumps were available.

In relation to the Hobart Brigade, and to brigades generally, the relevant Act makes it permissible but not obligatory for a brigade to assist in fire-fighting outside its own area; normally out-of-area fires are not attended unless they appear a likely menace to lives or property in the brigade's own area.

### *The Hobart City Council*

Since 1946, it was customary for the Council to maintain a fire watch on the Mt Wellington Reserve in the period October-March, control being exercised by the Mountain Superintendent (a Rural Fire Warden). In times of danger, the Council liaised with other fire-fighting organisations and sent men to fight fires outside its borders if they were considered a danger to its own area. The watch itself consisted of two five-man gangs equipped with vehicles and bush fire fighting gear. Other men and equipment could be made available.

### *Other Local Government Areas*

The reports reveal considerable diversity in the degree of preparations made, precautions taken and provision of equipment. Resources and arrangements prior to 7 February are summarised as follows (the organisation of Fire Brigades, etc. is detailed in Chapter 9, "Social Conditions"):

## Resources for Fire-fighting in Affected Local Government Areas, February 1967

Local Government Area	Council (1)	Fire Brigade (2)	Rural Fires Board (a) (3)
Clarence ..	Men and equipment, including water tankers, provided to support (2) and (3).	Suburbs served by Hobart Brigade (sub-station).	Rural Brigades at Seven Mile Beach and Lauderdale with municipal fire tenders. Fire wardens in other areas.
Sorell .. ..	Men and truck, with tank and pump; three other trucks with 44 gallon drums of water; one grader.	None.	Sorell and Midway Point served by volunteers using water mains. Light equipment on issue to whole district.
Brighton ..	One truck with 700 gallon water tank.	None.	Twenty-nine volunteers with light equipment for 58.
Green Ponds ..	One truck with 600 gallon water tank.	None.	Light equipment for 18 fire fighters plus motor pump with 150-yard hose.
New Norfolk ..	No equipment—relied on brigade.	Fully equipped brigade at New Norfolk.	Twenty-two volunteers with light equipment for 132.
Kingborough ..	Entire work force and equipment available to support (2) and (3).	Southern suburbs to Blackmans Bay served by Hobart Brigade (sub-station).	Nineteen rural fire districts each with a fire warden with light equipment for at least three volunteers.
Glenorchy ..	Truck radio-controlled, truck with water tanks and knapsack pumps, five radio-controlled vehicles with bush fire gear.	Served by Hobart Brigade (sub-stations at Moonah and Claremont).	Light equipment allocated to Chief Fire Wardens for districts of Glenorchy and Collinsvale.
Esperance ..	No specific equipment.	A brigade at Geeveston only. Other townships without protection.	No organisation in municipality. Forestry Commission, with extensive forests in area, exercised control.
Port Cygnet ..	Water tanker, some equipment.	A brigade at Cygnet only.	Twenty two fire wardens each with light equipment for two volunteers. Effective equipment, e.g. orchard power sprays, privately owned.
Richmond ..	Truck with 1,000 gallon water tank.	None.	Rural brigade at Richmond with truck and 1,000 gallon water tank. Fire hydrant and hose at Campania.
Huon .. ..	Two portable pumps, one water tank, and some light equipment.	A brigade at Huonville only.	Twenty-two wardens with light equipment for volunteers. The Forestry Commission also had men available and equipment for 100 volunteers.

(a) *Light equipment* includes pack sprays, beaters, rakes, etc.

*Rural Fires Board*

As detailed in Chapter 9, "Social Conditions", the Board has a limited budget, exercises control through numerous districts and depends almost exclusively on volunteers. "Some of the rural fire brigades were well equipped with the co-operative use of farm tankers or brigade pumps and hoses, but none was fully equipped and even the water tankers were smaller than desirable". (Solicitor General's report.)

*Forestry Commission*

The Commission had 71 fire fighters deployed in the disaster area at dawn on 7 February; its first responsibility is the protection of State forests and timbered Crown land. In fighting forest fires, it could mobilise heavy machinery, bulldozers, etc. and its experience in this field was extensive and professional. "This was very evident on 7 February 1967, when the Commission was really the only organisation making a determined attempt to control or keep under control, the multitude of fires burning in Southern Tasmania. However their resources were spread so thinly that most of their efforts were in vain". (McArthur and Cheney.)

**Description of the Fire***General*

The fires were described as "wild fires" of high intensity. In some cases, especially in hilly or mountainous areas, they raged so fiercely that the rising hot air set up fire whirlwinds which caused severe mechanical damage to trees by tearing large limbs off, and which sent flames hundreds of feet into the sky. Spot fires, caused by wind-blown embers, sprang up ahead of the main fire bodies and were particularly troublesome in the open forest and grassland around the outer Hobart area. Many people reported that houses exploded but these reports could not be substantiated. In the general noise, smoke-induced darkness and confusion, sometimes the first outside indication that houses were on fire was given when roofs fell in and walls collapsed.

*Fire Areas and Rate of Spread*

Although the continuous burnt area extended from Bothwell in the southern midlands to Gordon on D'Entrecasteaux Channel (over 60 miles), this devastation was the result of many separate fires, all of which pursued a general SE. direction before joining with others or ending their advance on the edge of areas already burnt.

The Colebrook fire was the largest, burning an area of 37,800 acres. Twenty individual fires burnt areas in excess of 10,000 acres each and between them accounted for 376,600 acres, or 58 per cent of the total of 653,000 acres. The following shows the size distribution of the 110 fires identified:

**Size Classification of Fires on 7 February 1967**

Particulars	Size of Areas Burnt (Acres)						Total
	0-1,000	1,001-5,000	5,001-10,000	10,001-20,000	20,001-30,000	Over 30,000	
Fires .. .. (No.)	24	43	23	13	6	1	110
Area Burnt .. (acres)	7,900	112,300	156,200	184,800	154,000	37,800	653,000

The twenty largest fires were later carefully investigated to establish their hourly rate of spread. On the basis of this information, and assuming the remaining fires followed a similar pattern, a calculation was then possible to establish the hourly rate of spread of all the fires; these data are shown in the next table:

Calculated Area Burnt Each Hour, All Fires (a)  
(Square Miles)

Particulars	Up to 10 am	10 to 11 am	11 to 12 noon	12 to 1 pm	1 to 2 pm	2 to 3 pm	3 to 4 pm	After 4 pm	Total
Area Burnt— Each Hour..	6	8	41	135	234	287	170	139	1,020
Accumulated	6	14	55	190	424	711	881	1,020	..

(a) Spread pattern of 20 largest fires assumed to hold true for remaining 90 smaller fires.

The rate of hourly burn reached a maximum between 2 to 3 pm with a figure of 287 square miles (equivalent to a square with 17-mile sides). The total area burnt, 1,020 square miles, is equivalent to a square with 32-mile sides.

### *The Hobart Fire*

To describe each fire in detail is beyond the scope of this article, but the Hobart disaster is worthy of mention since it involved the penetration of a capital city by a bush fire. Other fires were, of course, just as severe; for example, at Snug on D'Entrecasteaux Channel, 80 out of 120 houses were destroyed.

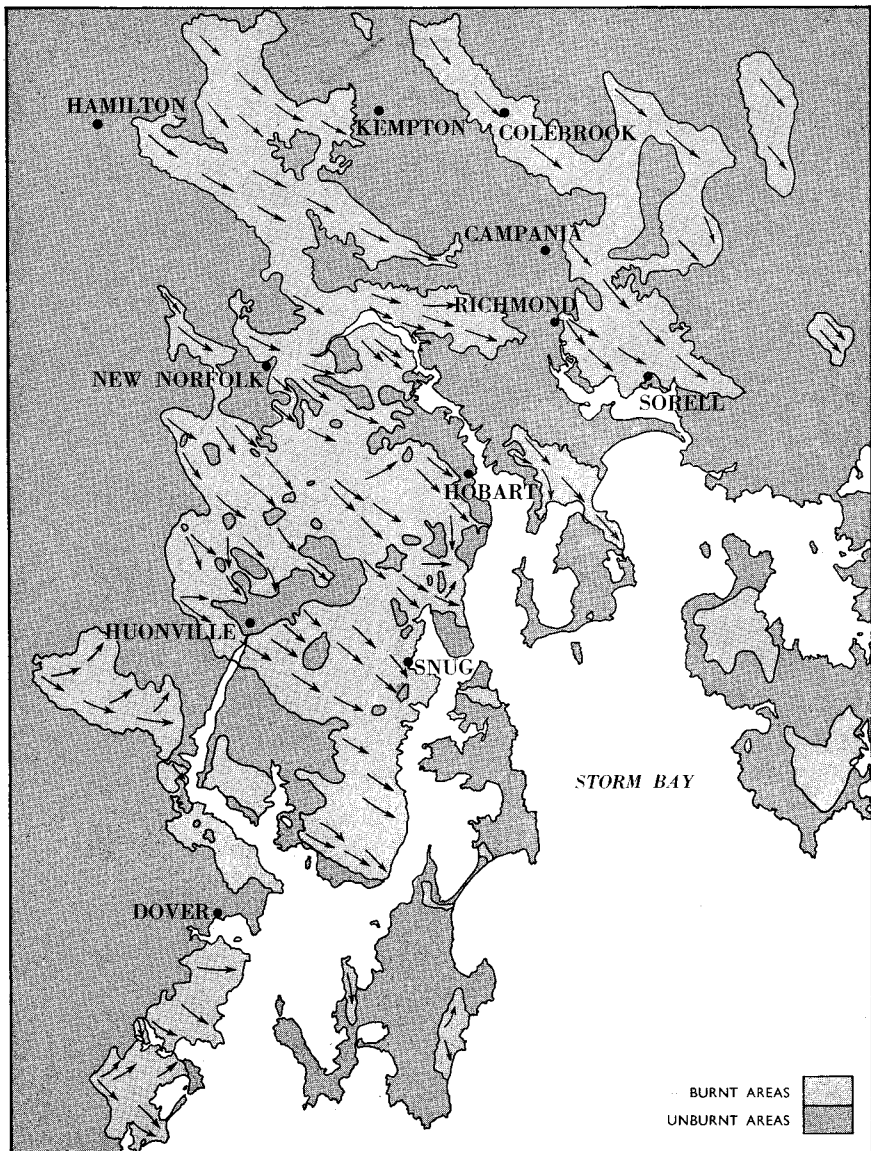
The Hobart fire has been traced back to an outbreak in Limekiln Gully in the hills above Glenorchy; its cause may have been illegal burning-off or deliberate incendiarism, and it was first reported at 8 am on the disaster day. The area in which it occurred had been burnt about two years before and consequently its initial progress was extremely slow; it was not until about noon that it penetrated heavy fuel areas. Although it then went on to cause tremendous damage, to burn 16,500 acres and to take many lives, its disastrous consequences may have been more extreme but for the check imposed by the low fuel content of its startpoint. On the other hand, its slow initial progress was deceptive and lulled early observers into thinking that it presented no immediate danger. 'The decision made by the gang which inspected this fire early in the morning of 7th February, when the group "considered the position to be such that its location did not warrant immediate action" was probably one of the most costly decisions ever made in the history of fire control. It provides a costly monument to the fact that *no* fire, however small or slow burning, can be allowed to burn without vigorous suppression action on a day of extreme fire danger'. (McArthur and Cheney.)

The spread of the Hobart fire can be summarised as follows:

- 12 noon: Rapid SE. spread started in heavy fuel areas.
- 12.45 pm: Houses threatened in Kangaroo Valley Road (end of Lenah Valley Road).
- 1.00 pm: Top of Brushy Hill reached.
- 1.15 pm: Ridge directly north of Old Farm Road reached.
- 1.30 pm: Spot fires at lower end of Old Farm Road and on ridge north of Marlyn Avenue.



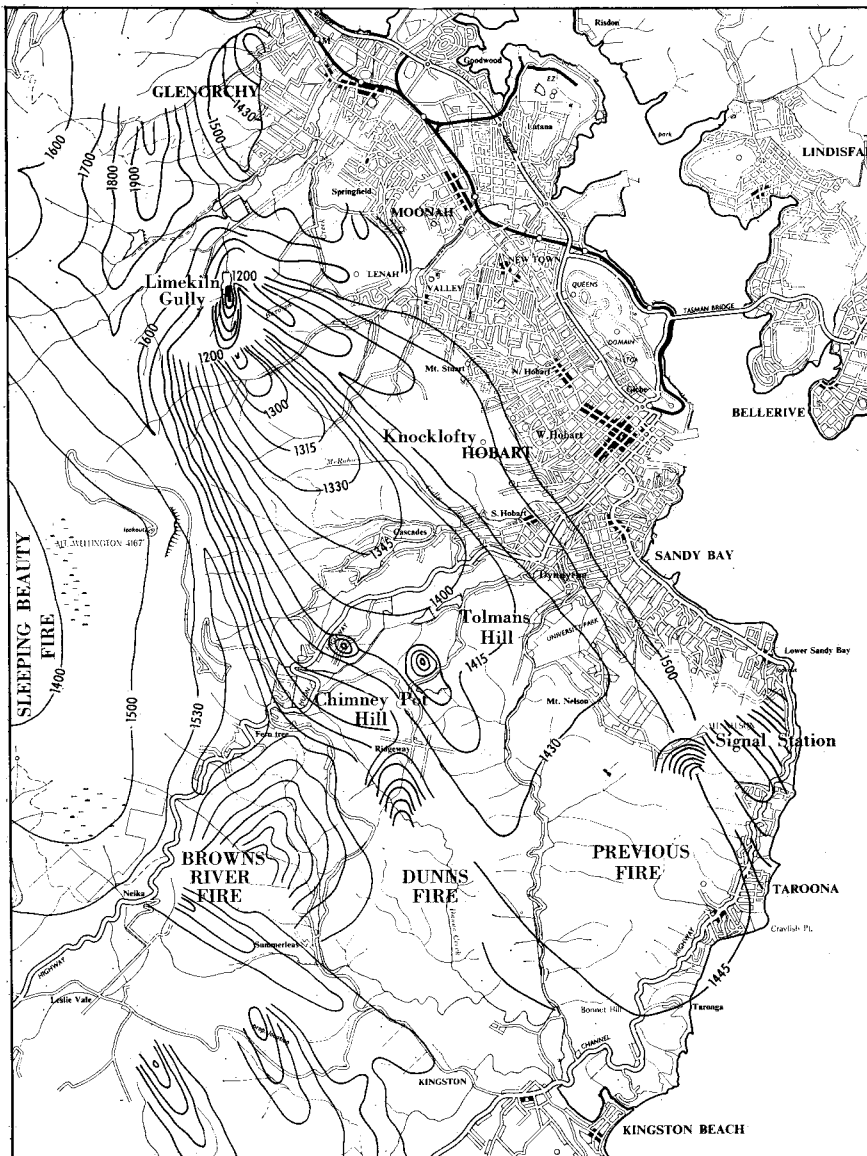
- 1.45 pm: Marlyn Avenue area alight and fire reached Strickland Avenue.
- 2.00 pm: Cascade Brewery showered with masses of burning embers; Huon Road crossed and the fire now had a 1.5 mile front. Loss of homes in Strickland Avenue, Hillborough Road, Marlyn Avenue and Jubilee Road totalled 110, or 25 per cent of loss in Hobart City. Rate of advance now 3 mph.
- 2.15 pm: Eastern edge of fire in upper Waterworks Road and western edge nearing the Huon Road-Strickland Avenue junction. Firestorm created in upper Waterworks Road area when spot and main fires joined forces; 25 out of 31 houses in this area burnt.



At this point in time, the Hobart fire had joined those starting at Ridgeway Reservoir, Dunns Creek and the Turnip Fields.

2.30 pm: Main headfire moving along Proctors Road towards Kingston; western headfire  $2\frac{1}{2}$  miles north of Kingston; eastern headfire moving to junction of Mt Nelson and Rialannah Roads. Nearer the city, the fire had extended down to Wentworth and Wellesley Streets and houses were alight at the junction of Waterworks Road and Romilly Street; further north houses were burning in McRobies and Cascade Roads; fire was now running up the northern slopes of Knocklofty, and burning down into Lenah Valley. Spot fires thrown 2.75 miles from Tolmans Hill into Taronga.

("Contours" in map are time lines using 24-hour notation.)



- 2.45 pm: The Ridgeway and eastern front of the Hobart fire was checked in frontal movement by reaching previously burnt country north of Kingston Golf Club; lateral spread continued. On west side, fire only 10 chains from Bracken Lane (Ferntree) and an off-shoot only 1.5 miles from Kingston. On east side, houses burning in Taronga, and southern Taroona on fire; fires at northern Taroona originated by escaped back burn from Mt Nelson Signal Station where women and children were sheltering. Knocklofty swept by fires on two fronts and embers from their junction lit houses in Forest Road, Liverpool Crescent, Lynton Avenue, Greenlands Street and the lower end of Waterworks Road, causing heavy damage. (The loss in lower Waterworks Road was aggravated by a cut-off water supply.)
- 3.00 pm: Communication system in Hobart chaotic, but the climax of the Hobart fire had been reached. On Mt Wellington, however, the western front entered Bracken Lane and was at the edge of Summerleas Road. People sheltering at the Fern Tree Hotel were menaced by the likely conjunction of three fires: (i) the Browns River fire from the south; (ii) the Sleeping Beauty fire from the west; (iii) the Hobart fire moving up the mountain side.
- The position was now extremely confused, with fire a mile north of Kingston, in Taronga, Taroona, the Mt Nelson area, Forest Road, West Hobart and Mt Stuart; houses were continuing to catch alight in South Hobart and Dynnyrne.
- 3.30 pm: Wind changed to the west and the Sleeping Beauty fire raced down the mountain from the gutted Springs Hotel.
- 3.45 pm: People sheltering in Fern Tree Hotel area taken out by bus and shortly afterwards all three major fires joined in the evacuated zone.
- 4.00 pm: Severe fires in upper Tolosa Street, Glenorchy, very close to site of the initial fire in Limestone Gully. Isolated areas elsewhere still experiencing spread and isolated cases of houses continuing to light well into the night.

It should be emphasised that the Hobart fire was only one of many and the following sections, dealing with deaths and property losses, refer to Southern Tasmania as a whole.

### *Deaths*

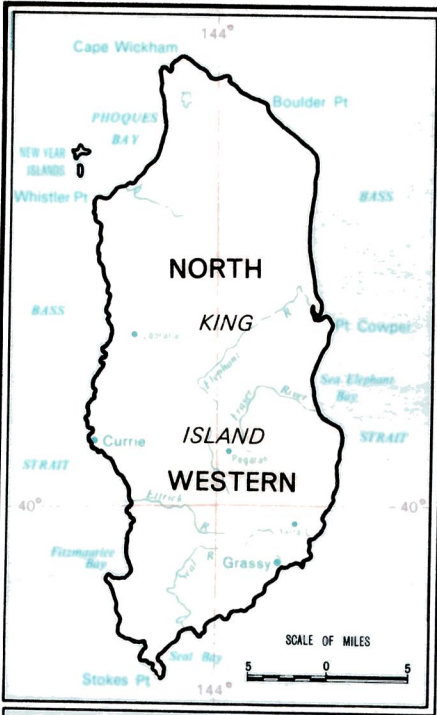
In Victoria in 1939, bush fires claimed 71 lives but this loss occurred over a period of several days. In the Tasmanian disaster, 62 people lost their lives on the one day as a result of the fire; 53 (average age 61 years) died in the blaze while a further nine died from heat exhaustion, heart failure, etc. directly associated with the fire. The worst losses were at Hobart, 20; Snug, 11; Richmond-Campania, 8; and Kettering-Oyster Cove, 5.

### *Property Losses*

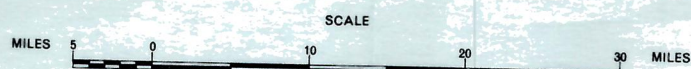
A precise assessment of the value of destroyed property and other losses is impossible; the total tangible loss was estimated at \$25m by McArthur and Cheney but subsequent information suggests that this is considerably lower than actual.

In addition to buildings, other losses included an estimated 2,700 miles of fencing; 80,000 stock (mainly sheep); 150 motor vehicles; 100,000 acres of pasture; destruction of telephone and electricity transmission lines and equipment; 104 bridges; damage to apple and hop crops; 30,000 acres of young regrowth forest. The factories in the next table include sawmills, whilst the retail establishments include service stations.



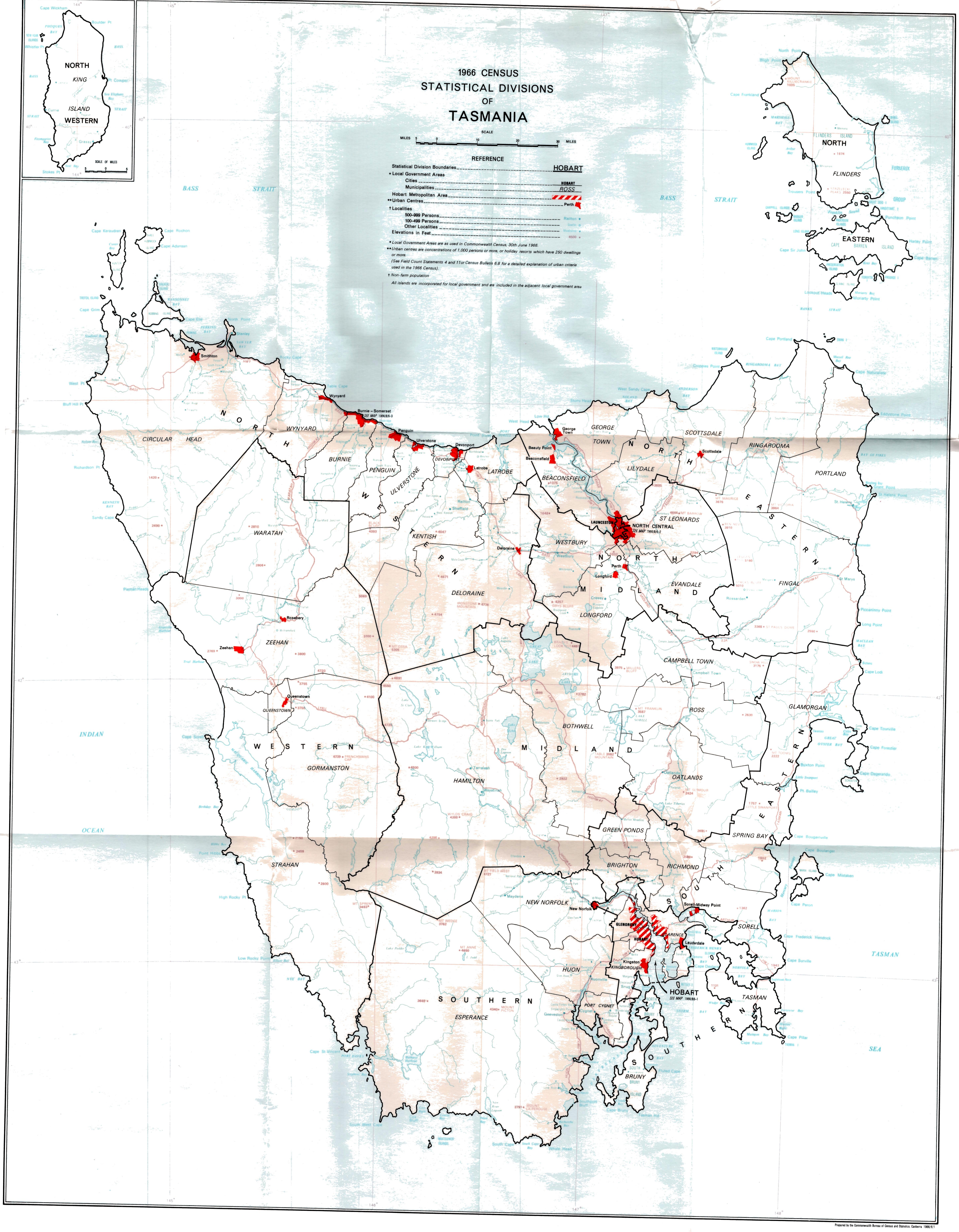


# 1966 CENSUS STATISTICAL DIVISIONS OF TASMANIA



- Statistical Division Boundaries.....**HOBART**
- Local Government Areas.....**HOBART**
- Cities.....**ROSS**
- Municipalities.....**ROSS**
- Hobart Metropolitan Area.....**ROSS**
- Urban Centres.....**Perth**
- Localities.....**Perth**
- 500-999 Persons.....**Perth**
- 100-499 Persons.....**Perth**
- Other Localities.....**Perth**
- Elevations in Feet.....**Perth**

\* Local Government Areas as used in Commonwealth Census, 30th June 1966.  
\*\* Urban centres are concentrations of 1,000 persons or more, or holiday resorts which have 250 dwellings or more.  
(See Field Count Statements 4 and 11 or Census Bulletin 6.8 for a detailed explanation of urban criteria used in the 1966 Census.)  
† Non-farm population  
All islands are incorporated for local government and are included in the adjacent local government area





The loss of buildings and houses is shown in the following table:

**Housing and Building Losses, 7 February 1967 (a)**

Local Government Area	Houses	Cottages and Shacks	Farm Buildings	Factories	Retail Establishments	Churches and Halls
Hobart .. ..	(b) 433	45	15	8	3	5
Brighton .. ..	31	5	6	1	1	3
Bruny .. ..	2	1	1	1	..	..
Clarence .. ..	24	16	4	..	..	2
Esperance .. ..	31	38	2	3	..	2
Glenorchy .. ..	58	15	..	..	2	1
Green Ponds .. ..	1	..	2	2	..	..
Huon .. ..	50	8	20	16	1	3
Kingborough .. ..	303	96	2	9	12	13
New Norfolk .. ..	42	8	2	3	..	2
Oatlands .. ..	2	..	(c)	..	1	..
Port Cygnet .. ..	42	2	..	4	1	1
Richmond .. ..	18	3	(c)	..	3	..
Sorell .. ..	35	12	(c)	2	..	..
Total .. ..	1,072	249	(c)	49	24	32

(a) McArthur and Cheney report gives these provisional figures apart from "Factories" and "Retail Establishments" which are compiled from Bureau records.

(b) Includes 15 flats.

(c) Numerous; no accurate count.

### Reconstruction and Rehabilitation

#### General

To many fire victims and their relatives, the fire of 7 February seemed an overwhelming tragedy but help was soon generously offered, the Governor's Fire Relief Fund rapidly building to \$5m with donations from Australians and overseas sympathisers; in addition, after consultation with the State Government, the Commonwealth Government undertook to provide up to \$14.5m for various forms of re-establishment. Acknowledging that the disaster had been a personal tragedy for the victims, the Premier, as Treasurer, nevertheless gave this economic analysis of the aftermath of the fires (in *The Tasmanian Economy* presented in September 1967 on the occasion of the Budget):

"The most significant single event affecting the Tasmanian Economy during 1966-67 was the bush fires which swept through Southern Tasmania on 7th February, 1967 . . . Statements to the effect that development of the State would be retarded and that it would be ten years or more before full recovery was effected were not uncommon.

A considered appraisal of the effects of the fires suggests that the spontaneous predictions made at that time cannot be sustained. There is every indication that the process of recovery will be extremely rapid. In fact, if it were possible to overlook the tragic loss of life and property and personal hardship suffered by individuals, it could be said that the long-term effects will not be detrimental.

As a direct result of the fires, substantial amounts of cash have flowed into Tasmania. This has taken three main forms. First, donations to the Bush Fire Appeal will be in excess of \$5,000,000. By far the greater part of this total has come from donors outside Tasmania. Secondly, the payment of insurance claims has been very substantial. Most of these funds will come from other States and overseas. No accurate information as to the amount involved

is available, but earlier estimates have placed the figure as high as \$13,000,000. Thirdly, the Commonwealth Government has undertaken to provide financial assistance towards the cost of re-establishment up to an amount of \$14,500,000.

Thus, as a result of the fires, at least \$33,000,000 will be injected into the Tasmanian Economy in a comparatively short time. The greater part of this will be used for the restoration of capital assets and most of the balance for the purchase of consumer goods, largely durable. Having regard to the size of the Tasmanian Economy, the expenditure of these amounts, which would not normally have occurred, must have a stimulating effect."

#### *Forms of Assistance*

*Governor's Fire Relief Fund:* The disbursement of this \$5m fund was planned in three main divisions: (i) immediate cash relief in necessitous cases; (ii) interim payments to those with no means of acquiring basic furniture, kitchen or other essential utensils; grants to primary producers for boundary fencing and tools of trade for self-employed persons; subsistence for primary producers and other self-employed persons who had lost their means of income; (iii) main distribution of fund.

The main distribution was to compensate for the loss of furniture, normal household contents and reasonable personal effects. In fixing individual payments, the Committee took account of the amount of insurance recovered and the extent of the loss; if the assets were fully insured, no payment was made by the Committee.

In broad terms, the Fund was available for the purpose of making any payments that could reasonably be said to be necessary in the relief of hardship and distress suffered by a fire victim or his dependants, and in assisting towards his re-establishment. Nevertheless, it was impossible to meet all legitimate claims *in full* and the task of the Committee was to ensure as just a distribution as possible. A final responsibility was to make some provision for dependants of deceased fire victims.

*Housing:* The extent of the immediate housing problem can be gathered from the opening up of Brighton Army Camp as an emergency accommodation centre for fire victims. At Snug, a caravan township was set up to encourage the work force to stay in the area. The long-term problem was that of rebuilding and the various forms of government assistance are described in the following text. The grants for housing, mainly financed by the Commonwealth Government, embodied principles more liberal than those applied in any other Australian disaster, and this generosity was, in itself, some indication of the nation's deep concern.

The principal assistance was provided in four possible ways: (i) by the erection by the Housing Department of a dwelling-house to a standard design; (ii) by a grant of money by the Agricultural Bank to enable an owner to rehouse himself; (iii) by a loan by the Agricultural Bank to enable an owner to rehouse himself or a tenant; (iv) by the letting by the Housing Department of a dwelling-house to a homeless person. In all cases, insurance recovered was to be taken into account in determining the amount of assistance to be made available.

Where a *grant* of money was involved, the maximum was \$8,000 (three bedroom house) or \$7,450 (two bedroom house), according to need, with \$300 additional for construction in a compulsory brick area. These amounts were set as the money equivalents of "standard Housing Department homes". In addition, an even smaller unit might be considered the standard for certain victims without dependants. The grant could be used by the recipient to

build on his own land, to buy land and build on it, or to buy an existing dwelling. The scheme took account of the fact that some owners had uninsured houses and these persons could still receive the maximum grant.

Only two types of occupier-owner were excluded from applying: (i) those with homes insured for more than \$17,000; (ii) those with homes *fully insured* for more than the appropriate standard (i.e. \$8,000 or \$7,450). Where the insurance recovered fell short of these restrictions, a grant could be made in accordance with a rather complex formula. The following table is based on a home valued at \$12,000 and illustrates the application of the formula, insurance cover being assumed to range from nil to \$12,000:

Calculation of Grant (a) on Destroyed Home Valued at \$12,000  
(\$)

Insurance Received	Basis of Calculation		Components of Grant	Grant
12,000 ..				Nil
11,000 ..	0.6 uninsured value	11,001-12,000 = 600	600	600
10,000 ..	0.7 " "	10,001-11,000 = 700	600+700	1,300
9,000 ..	0.8 " "	9,001-10,000 = 800	600+700+800	2,100
8,000 ..	0.9 " "	8,001-9,000 = 900	600+700+800+900	3,000
	Total .. 3,000			
7,000 ..	All uninsured value	7,001-8,000 = 1,000	1,000+3,000	4,000
6,000 ..	" " "	6,001-8,000 = 2,000	2,000+3,000	5,000
5,000 ..	" " "	5,001-8,000 = 3,000	3,000+3,000	6,000
4,000 ..	" " "	4,001-8,000 = 4,000	4,000+3,000	7,000
3,000 ..	" " "	3,001-8,000 = 5,000	5,000+3,000	8,000
2,000 ..	Maximum grant is 8,000			8,000
1,000 ..	" " "			8,000
Nil ..	" " "			8,000

(a) For three bedroom standard home (\$8,000).

The sliding scale illustrated in the previous table was extended to higher uninsured values as follows: \$12,001-\$13,000, 0.5; \$13,001-\$14,000, 0.4; \$14,001-\$15,000, 0.3; \$15,001-\$16,000, 0.2; \$16,001-\$17,000, 0.1. Tables embodying the same principles as the \$12,000 example were constructed for house values up to \$17,000, but the same limitation as to maximum grant applied.

If the allowable grant plus insurance was insufficient to meet the full cost of rebuilding, the Agricultural Bank was authorised to make a loan for the balance up to a total house cost of \$15,000; if no grant was payable, because of insurance, the Bank was authorised to lend but at a lower rate of interest. Grants were not paid to owners of tenanted properties but the Bank was authorised to make them a loan, if they were unable to raise their own finances.

*Primary Producers:* The relief available to primary producers from the Governor's Fire Relief Fund is specified in the previous section. Where farmers incurred debts before 7 February for the supply of farm requisites in anticipation of a normal season's income, cash grants could be made. The rebuilding of farmers' houses was subject to the same assistance by grant, or grant and loan, as described in the previous section, "Housing". However destroyed employees' dwellings and pickers' and shearers' quarters did not entitle the farmer to a grant and he was required to apply for a loan to rebuild them; any other re-construction or rehabilitation of farming properties was also to be carried out from loans, the authority advancing money being the Agricultural Bank if

financial assistance was not reasonably available from private sources. The terms of Government loans varied according to circumstance, with 15 years as the maximum, whilst interest could be anything from nil to  $5\frac{3}{4}$  per cent in the initial stages, depending on estimated farm income. Interest free loans, where granted, were for periods of up to five years.

*Businesses:* Financial assistance was provided by the Directorate of Industrial Development and Trade. The aim of the assistance was to re-establish businesses as they were immediately before the fire, but account was to be taken of financial resources not invested in the business at the time of the fire, and also of insurance recoveries. Owners were required to make every endeavour to raise money from normal sources but Government loans were made available to finance the balance of the replacement cost. Each loan was made according to individual circumstances; 15 years was the normal repayment period, with provision for three years' delay.

*Motor Vehicles:* Motor vehicles, tractors and earth-moving equipment were destroyed as a result of fighting fires, carrying fire-fighters, evacuating people, clearing fire-breaks, etc. In these cases, the Minister for Transport was authorised to provide financial assistance for the purchase of a replacement, to the extent that insurance was inadequate. Vehicles lost by primary producers or by businesses, in circumstances other than those just specified, were regarded simply as farm or business assets; loan assistance to these sectors of the community is covered in the previous two sections.

*Non-Profit Organisations:* Buildings owned by religious, charitable and sporting bodies were destroyed; these bodies were assisted by grants up to the pre-fire value of the building less insurance recoveries. Where rebuilding might require more capital, there was authority to increase the grant with this limitation, that it should not exceed half the difference between the cost of rebuilding to the same standard as before and the pre-fire value.

#### *Trust and Special Accounts*

It is impossible to describe the financial transactions relating to the previous sections in any conclusive way, since the 1966-67 transactions terminate at 30 June 1967 and therefore cover only the five months after the fire. The following extract is taken from the Treasurer's *Financial Statement*:

#### **Fire Relief Accounts (Treasury Trust and Special Accounts), 1966-67 (\$'000)**

Name of Account	Receipts	Expenditure
A/c No. 1—The Governor's Bush Fire Relief Fund (a) .. .. .	4,921	3,770
A/c No. 2—The Fire Relief Account 1967 (b) .. .. .	1,550	387
Fire Relief—Motor Vehicle Losses Account .. .. .	..	29
Non-profit Organisations Account .. .. .	..	238
Emergency Expenditure Account .. .. .	601	628
Primary Producers Losses Account .. .. .	150	28
Primary Industry Working Account .. .. .	363	366
Business Re-Financing Account .. .. .	151	175
Home Financing Account .. .. .	350	254
Home Financing Working Account .. .. .	255	257
Housing Account .. .. .	627	411
Special Housing Account .. .. .	15	12
Public Authority Capital Expenditure Account .. .. .	250	1
Total .. .. .	9,233	6,556

(a) Completely distributed by September 1967, final totals being \$5,024,456.

(b) Matching contributions from the Commonwealth and State Governments.



## Appendix C

### CENSUS OF 30 JUNE 1966

#### POPULATION AND DWELLINGS

##### Introduction

In Chapters 5 and 9, and in other contexts generally, figures are quoted from the Census of 30 June 1966; the data were obtained from the preliminary field count and were *subject to revision*. The next section gives these revisions, amends Tasmanian totals and provides the simpler classifications of population and dwellings.

##### (i) Classification of Tasmanian Population, Census of 30 June 1966

Particulars	Males	Females	Persons
<b>Population of Tasmania: Total</b> .. .. .	<b>187,380</b>	<b>184,036</b>	<b>371,416</b>
<b>By Age—</b>			
Age Group in Years—			
0-4 .. .. .	20,494	19,609	40,103
5-9 .. .. .	21,337	20,348	41,685
10-14 .. .. .	19,561	18,807	38,368
15-19 .. .. .	17,672	17,210	34,882
20-24 .. .. .	12,957	12,703	25,660
25-29 .. .. .	11,980	11,304	23,284
30-34 .. .. .	10,936	10,223	21,159
35-39 .. .. .	11,984	10,983	22,967
40-44 .. .. .	12,000	11,522	23,522
45-49 .. .. .	10,661	10,323	20,984
50-54 .. .. .	10,321	9,777	20,098
55-59 .. .. .	8,543	8,003	16,546
60-64 .. .. .	6,571	6,513	13,084
65-69 .. .. .	4,759	5,616	10,375
70-74 .. .. .	3,329	4,704	8,033
75-79 .. .. .	2,404	3,439	5,843
80-84 .. .. .	1,235	1,875	3,110
85-89 .. .. .	489	797	1,286
90-94 .. .. .	123	228	351
95-99 .. .. .	21	47	68
100 and Over .. .. .	3	5	8
<b>By Marital Status—</b>			
Never Married .. .. .	98,467	86,050	184,517
Married .. .. .	81,808	81,317	163,125
Permanently Separated .. .. .	2,090	2,200	4,290
Widowed .. .. .	3,782	13,176	16,958
Divorced .. .. .	1,233	1,293	2,526
<b>By Race—</b>			
European .. .. .	186,790	183,784	370,574
Chinese .. .. .	347	106	453
Other .. .. .	243	146	389

(i) Classification of Tasmanian Population, Census of 30 June 1966—*continued*

Particulars	Males	Females	Persons
<b>Population of Tasmania: Total</b> .. .. .	<b>187,380</b>	<b>184,036</b>	<b>371,416</b>
<b>By Place of Birth—</b>			
Tasmania .. .. .	151,374	151,561	302,935
Other Australian States and Territories .. .. .	16,188	16,530	32,718
New Zealand .. .. .	617	620	1,237
United Kingdom .. .. .	9,595	8,956	18,551
Eire and Ireland (undefined) .. .. .	316	234	550
Sub-total (A/sia and British Isles) .. .. .	<b>178,090</b>	<b>177,901</b>	<b>355,991</b>
Netherlands .. .. .	1,809	1,558	3,367
Germany .. .. .	1,137	879	2,016
Poland .. .. .	1,064	503	1,567
Italy .. .. .	918	530	1,448
Yugoslavia .. .. .	588	233	821
Greece .. .. .	451	304	755
Baltic States (now in U.S.S.R.) .. .. .	329	202	531
Austria .. .. .	290	167	457
U.S.S.R. .. .. .	233	158	391
Hungary .. .. .	245	118	363
Czechoslovakia .. .. .	169	75	244
Other European Birthplace .. .. .	576	328	904
Sub-total (Europe excl. British Isles) .. .. .	<b>7,809</b>	<b>5,055</b>	<b>12,864</b>
India .. .. .	137	168	305
China .. .. .	197	86	283
Malaysia .. .. .	139	65	204
Other Asian Birthplace .. .. .	348	218	566
Sub-total (Asia) .. .. .	<b>821</b>	<b>537</b>	<b>1,358</b>
African Birthplace .. .. .	292	284	576
American Birthplace .. .. .	310	195	505
Pacific Islands Birthplace .. .. .	57	57	114
Born at Sea .. .. .	1	7	8
<b>By Nationality—</b>			
British (includes Australian Citizen) .. .. .	183,866	181,837	365,703
Dutch .. .. .	685	580	1,265
Italian .. .. .	550	363	913
German .. .. .	467	325	792
Greek .. .. .	325	231	556
Polish .. .. .	257	160	417
Yugoslavian .. .. .	270	108	378
American (U.S.A.) .. .. .	143	78	221
Austrian .. .. .	152	66	218
Stateless .. .. .	97	41	138
Chinese .. .. .	100	21	121
Russian (U.S.S.R.) .. .. .	59	31	90
Hungarian .. .. .	48	23	71
Finnish .. .. .	27	30	57
Swiss .. .. .	35	20	55
Other Nationality .. .. .	299	122	421
<b>By Period of Residence in Australia—</b>			
Born in Australia (excl. Ext. Territories) .. .. .	<b>167,521</b>	<b>168,042</b>	<b>335,563</b>
Not Born in Australia—			
Resident in Australia—			
Under 1 Year .. .. .	1,488	1,078	2,566
1 Year and under 2 .. .. .	965	873	1,838
2 Years „ „ 3 .. .. .	782	712	1,494
3 „ „ „ 4 .. .. .	526	494	1,020
4 „ „ „ 5 .. .. .	505	488	993
5 „ „ and over .. .. .	15,095	11,983	27,078
Not Stated .. .. .	498	366	864
Sub-total (Not Aust.-born) .. .. .	<b>19,859</b>	<b>15,994</b>	<b>35,853</b>

## (i) Classification of Tasmanian Population, Census of 30 June 1966—continued

Particulars	Males	Females	Persons
<b>Population of Tasmania: Total</b> .. .. .	<b>187,380</b>	<b>184,036</b>	<b>371,416</b>
<b>By Occupational Status—</b>			
<b>In Work Force—</b>			
Employer .. .. .	8,245	1,759	10,004
Worker on Own Account .. .. .	9,162	1,644	10,806
Wage Earner .. .. .	87,567	35,450	123,017
Unpaid Helper .. .. .	432	940	1,372
Unemployed .. .. .	1,146	971	2,117
Sub-total (Work Force) .. .. .	<b>106,552</b>	<b>40,764</b>	<b>147,316</b>
<b>Not in Work Force—</b>			
Child not at School .. .. .	22,542	21,473	44,015
Full-time Student .. .. .	44,322	42,100	86,422
Pensioner or Annuitant .. .. .	9,310	13,550	22,860
Independent Means .. .. .	1,287	1,540	2,827
Household Duties .. .. .	..	61,111	61,111
Institution Inmate .. .. .	1,248	1,594	2,842
Others not in Work Force .. .. .	2,119	1,904	4,023
Sub-total (Not in Work Force) .. .. .	<b>80,828</b>	<b>143,272</b>	<b>224,100</b>
<b>By Industry—</b>			
<b>Primary Production—</b>			
Fishing .. .. .	552	31	583
Hunting and Trapping .. .. .	20	2	22
Rural Industries .. .. .	13,285	2,098	15,383
Forestry .. .. .	1,196	30	1,226
Sub-total (Primary) .. .. .	<b>15,053</b>	<b>2,161</b>	<b>17,214</b>
Mining and Quarrying .. .. .	3,245	128	3,373
Manufacturing .. .. .	27,107	6,850	33,957
Electricity, Gas, Water and Sanitary Services (Production, Supply and Maintenance) .. .. .	3,743	258	4,001
Building and Construction .. .. .	13,956	333	14,289
Transport and Storage .. .. .	8,294	566	8,860
Communication .. .. .	2,907	984	3,891
Finance and Property .. .. .	2,846	1,719	4,565
<b>Commerce—</b>			
Wholesale Trade .. .. .	4,850	1,162	6,012
Livestock and Produce Dealing, etc. .. .. .	962	167	1,129
Retail Trade .. .. .	8,381	7,448	15,829
Sub-total (Commerce) .. .. .	<b>14,193</b>	<b>8,777</b>	<b>22,970</b>
<b>Public Authority (n.e.i.) and Defence Services—</b>			
Public Authority Activities (n.e.i.) .. .. .	3,523	1,497	5,020
Defence, Enlisted and Civilian Personnel .. .. .	418	59	477
Sub-total (Public Authority, etc.) .. .. .	<b>3,941</b>	<b>1,556</b>	<b>5,497</b>
<b>Community and Business Services (incl. Professional)—</b>			
Law, Order and Public Safety .. .. .	1,321	493	1,814
Health, Hospitals, etc. .. .. .	1,717	4,703	6,420
Education .. .. .	2,587	4,119	6,706
Other .. .. .	1,308	1,240	2,548
Sub-total (Community, etc.) .. .. .	<b>6,933</b>	<b>10,555</b>	<b>17,488</b>
<b>Amusement, Hotels and Other Accommodation, Cafes, Personal Service, etc. .. .. .</b>	<b>3,241</b>	<b>5,037</b>	<b>8,278</b>
Other and Not Stated .. .. .	1,093	1,840	2,933
<b>Total in Work Force</b> .. .. .	<b>106,552</b>	<b>40,764</b>	<b>147,316</b>
<b>Total Not in Work Force</b> .. .. .	<b>80,828</b>	<b>143,272</b>	<b>224,100</b>

## (i) Classification of Tasmanian Population, Census of 30 June 1966—continued

Particulars	Males	Females	Persons
<b>Population of Tasmania: Total</b> .. .. .	<b>187,380</b>	<b>184,036</b>	<b>371,416</b>
<b>By Religion (Optional Question)—</b>			
Baptist .. .. .	3,719	4,040	7,759
Brethren .. .. .	1,508	1,554	3,062
Catholic .. .. .	36,056	35,029	71,085
Churches of Christ .. .. .	1,328	1,373	2,701
Church of England .. .. .	83,094	82,920	166,014
Congregational .. .. .	2,145	2,385	4,530
Greek Orthodox .. .. .	880	634	1,514
Lutheran .. .. .	922	820	1,742
Methodist .. .. .	20,994	22,090	43,084
Presbyterian .. .. .	8,648	8,850	17,498
Salvation Army .. .. .	1,288	1,373	2,661
Seventh Day Adventist .. .. .	663	834	1,497
Protestant (undefined) .. .. .	980	944	1,924
Other Christian .. .. .	2,584	2,659	5,243
Sub-total (Christian) .. .. .	<b>164,809</b>	<b>165,505</b>	<b>330,314</b>
Hebrew .. .. .	119	88	207
Other non-Christian .. .. .	199	79	278
Sub-total (Other Religion) .. .. .	<b>318</b>	<b>167</b>	<b>485</b>
Indefinite .. .. .	1,212	1,063	2,275
No Religion .. .. .	1,345	675	2,020
No Reply .. .. .	19,696	16,626	36,322

(See next page for Occupied Dwellings)

## (ii) Classification of Occupied Dwellings, Census of 30 June 1966

Particulars	Number	Particulars	Number
<b>Classification of Occupied Dwellings—</b>		<b>Occupied Dwellings by Number of Rooms—</b>	
Private Dwellings—		With 1 Room .. .. .	1,000
Private House .. .. .	88,776	2 Rooms .. .. .	2,020
Shed, Hut, etc. .. .. .	882	3 " .. .. .	4,122
Share of Private House .. .. .	469	4 " .. .. .	13,341
Self-contained Flat .. .. .	7,036	5 " .. .. .	40,900
Share of Self-contained Flat .. .. .	22	6 " .. .. .	22,803
Other Private Dwelling .. .. .	1,093	7 " .. .. .	8,986
Sub-total .. .. .	98,278	8 " .. .. .	3,216
Dwellings other than Private—		9 " .. .. .	1,216
Hotel, Motel .. .. .	296	10 " .. .. .	581
Boarding House .. .. .	346	11 " .. .. .	252
Educational, Charitable and .. .. .		12 " .. .. .	193
Religious Institutions .. .. .	88	13 " .. .. .	88
Hospitals .. .. .	48	14 " .. .. .	95
Staff Quarters, Barracks, etc. .. .. .	247	15 " .. .. .	59
Other .. .. .	170	16 " .. .. .	48
Sub-total .. .. .	1,195	17 Rooms and Over .. .. .	553
Total .. .. .	99,473	Total .. .. .	99,473
<b>By Material of Outer Walls—</b>		<b>Private Occupied Dwellings Associated with Motor Vehicles (a)—</b>	
Brick .. .. .	14,654	No Vehicle .. .. .	19,833
Brick Veneer .. .. .	9,491	1 " .. .. .	52,696
Stone .. .. .	1,294	2 Vehicles .. .. .	18,556
Concrete .. .. .	3,586	3 " .. .. .	3,854
Wood .. .. .	64,910	4 " .. .. .	863
Iron .. .. .	713	5 " .. .. .	252
Fibro-Cement .. .. .	3,444	6 " .. .. .	79
Canvas .. .. .	6	7 " .. .. .	29
Other .. .. .	180	8 Vehicles and Over .. .. .	32
Not Stated .. .. .	1,195	Not Stated .. .. .	2,084
Total .. .. .	99,473	Total .. .. .	98,278

(a) "State the number of motor vehicles (excluding motor cycles and scooters) used by members of this household that were garaged or parked near this dwelling for the night of Thursday, 30 June," was the question asked on Census schedules.

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