

## CHAPTER VII.

### TRANSPORT AND COMMUNICATION.

#### A. SHIPPING.

##### § 1. System of Record.

So far as oversea vessels are concerned the system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each voyage, without regard to the number of States visited.

On the arrival at, or departure from, a port in Australia, whether from or for an oversea country or from another port in Australia, the master or agent must "enter" the vessel with the Customs authorities at the port, and supply certain prescribed information in regard to the ship, passengers, and cargo. At the end of each month the information so obtained is entered on forms which are forwarded to the Commonwealth Bureau of Census and Statistics. These forms, which collectively provide a complete record of the movements of every vessel in Australian waters, furnish the material for the compilation of the Shipping and Migration Returns. The arrangement referred to has been in operation since the 1st July, 1924.

From the 1st July, 1914, the statistical year for the record of Trade and Shipping of Australia was altered from the calendar year to the fiscal year ending 30th June.

In all instances the tonnage quoted is net tonnage.

##### § 2. Oversea Shipping.

1. Total Movement.—The following table gives the number and tonnage of oversea steam and sailing vessels entering Australian ports during the years 1924–25 to 1928–29:—

##### TOTAL OVERSEA SHIPPING, ENTERED.—AUSTRALIA, 1924–25 TO 1928–29.

Year.	Steam.		Sailing.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
1924–25 .. ..	1,675	5,535,871	51	60,529	1,726	5,596,400
1925–26 .. ..	1,537	5,245,222	46	58,583	1,583	5,303,805
1926–27 .. ..	1,598	5,512,840	26	46,030	1,624	5,558,870
1927–28 .. ..	1,544	5,373,485	33	45,560	1,577	5,419,045
1928–29 .. ..	1,564	5,521,725	18	29,858	1,582	5,551,583

The average tonnage of vessels entered has risen from 3,242 tons per vessel in 1924–25 to 3,509 tons in 1928–29.

Particulars regarding the total oversea movement of shipping for each year from 1822 to 1920–21 will be found in Official Year Book No. 15, p. 507.

2. Shipping Communication with various Countries.—In view of the defects in records purporting to show vessels and tonnage for particular countries (as pointed out on p. 265 of Official Year Book No. 17) it has been decided to restrict the statistics relating to the direction of shipping to and from Australia to the following tables in which countries situated on the main trade routes have been grouped. The grouping into larger geographical divisions to some extent avoids the limitations referred to, except in the case of Africa owing to its geographical situation as a place of call for vessels proceeding to or from other ports.

OVERSEA SHIPPING, AUSTRALIA.—DIRECTION, 1924-25 TO 1928-29.

Countries.	Cargo and Ballast.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
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TONNAGE ENTERED.

United Kingdom and European Countries	Cargo	1,797,322	1,815,268	1,834,752	1,039,468	1,759,576
	Ballast	186,256	21,444	31,267	3,950	35,563
New Zealand .. .. .	Cargo	459,252	507,238	474,639	453,965	476,987
	Ballast	393,706	256,003	212,953	170,086	147,819
Asiatic Countries and Islands in the Pacific .. .. .	Cargo	1,002,634	1,090,062	1,217,572	1,187,969	1,372,717
	Ballast	390,300	210,196	288,287	190,883	353,350
Africa .. .. .	Cargo	26,709	23,070	16,540	34,325	57,453
	Ballast	145,216	66,494	91,582	55,595	75,807
North and Central America	Cargo	1,138,091	1,283,073	1,353,526	1,366,499	1,254,911
	Ballast	17,235	..	27,228	5,566	11,480
South America .. .. .	Cargo	13,895	10,373	1,840	10,739	5,920
	Ballast	25,784	20,584	8,684	..	..
	Cargo	4,437,903	4,729,084	4,898,869	4,992,965	4,927,564
	Ballast	1,158,497	574,721	660,001	426,080	624,019
Total .. .. .		5,596,400	5,303,805	5,558,870	5,419,045	5,551,583

TONNAGE CLEARED.

United Kingdom and European Countries	Cargo	2,786,002	2,344,201	2,543,362	2,416,656	2,313,817
	Ballast	8,097	17,590	15,224	..	..
New Zealand .. .. .	Cargo	788,625	678,616	627,538	601,802	514,588
	Ballast	59,349	57,710	41,020	23,518	29,189
Asiatic Countries and Islands in the Pacific .. .. .	Cargo	1,033,553	1,120,019	1,181,485	1,104,361	1,390,401
	Ballast	224,522	273,054	298,862	453,271	444,169
Africa .. .. .	Cargo	174,697	154,250	155,300	159,238	122,965
	Ballast	14,020	3,418	16,425	2,722	672
North and Central America	Cargo	408,476	492,088	445,835	474,279	536,134
	Ballast	58,762	162,008	199,209	238,166	164,290
South America .. .. .	Cargo	64,433	58,090	74,531	28,643	29,356
	Ballast	3,583	3,840	6,309	3,597	..
	Cargo	5,235,786	4,847,264	5,028,051	4,784,979	4,907,261
	Ballast	368,333	517,620	577,049	721,274	638,320
Total .. .. .		5,604,119	5,364,884	5,605,100	5,506,253	5,545,581

3. Nationality of Oversea Shipping.—(i) *General.* The greater part of the shipping visiting Australia is of British nationality, though in 1927-28 the proportion of British tonnage, 73.39 per cent., was the lowest recorded since 1920-21, in which year the percentage was 69.69 per cent.

Particulars of the nationality of oversea shipping for the last five years are given in the following table:—

OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF VESSELS ENTERED,  
1924-25 TO 1928-29.

Nationality.	Tonnage.				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
<b>BRITISH—</b>					
Australian .. ..	424,634	381,178	405,968	395,680	206,188
United Kingdom .. ..	3,209,865	2,967,317	3,097,888	3,011,435	3,286,445
Canadian .. ..	70,165	68,091	86,701	72,079	77,907
New Zealand .. ..	488,481	492,255	458,716	403,176	415,517
Other British .. ..	62,772	76,226	102,201	94,863	120,580
Cargo.. ..	3,418,124	3,549,627	3,704,196	3,637,889	3,703,435
Ballast .. ..	837,793	435,440	447,278	339,344	403,202
Total British .. ..	4,255,917	3,985,067	4,151,474	3,977,233	4,106,637
Per cent. on total .. ..	76.05	75.14	74.68	73.39	73.97
<b>FOREIGN—</b>					
Danish .. ..	43,311	85,152	61,376	61,311	34,016
Dutch .. ..	162,385	124,824	115,363	130,500	147,843
French .. ..	104,312	109,417	99,832	97,596	118,842
German .. ..	81,213	76,650	140,810	157,381	137,766
Italian .. ..	115,931	62,046	61,583	76,921	54,716
Japanese .. ..	297,657	246,193	210,486	168,323	286,607
Norwegian .. ..	219,258	264,037	302,958	284,036	255,270
Swedish .. ..	86,704	96,625	111,920	106,159	92,397
United States .. ..	186,089	205,391	231,468	341,263	289,228
Other Foreign .. ..	43,623	48,403	71,600	18,322	28,261
Cargo.. ..	1,019,779	1,179,457	1,194,673	1,355,076	1,224,129
Ballast .. ..	320,704	139,281	212,723	86,736	220,817
Total Foreign .. ..	1,340,483	1,318,738	1,407,396	1,441,812	1,444,946
Per cent. on total .. ..	23.95	24.86	25.32	26.61	26.03
Cargo.. ..	4,437,903	4,729,084	4,898,869	4,992,965	4,927,564
Per cent. on total .. ..	79.30	89.16	88.13	92.14	89.76
Ballast .. ..	1,158,497	574,721	660,001	426,080	624,019
Per cent. on total .. ..	20.70	10.84	11.87	7.86	11.24
Grand Total .. ..	5,596,400	5,303,805	5,558,870	5,419,045	5,551,583

The Australian tonnage which entered Australia from overseas during the year 1928-29 represented 3.71 per cent. of the total tonnage entered. This figure was less than the average for the quinquennium, which was 6.61 per cent., the decrease being due mainly to the disposal of vessels owned by the Commonwealth Government to foreign or other Australian owners, and the sale effected in April, 1928, of the five Bay liners and the freighters *Fordsdale* and *Ferndale* to the White Star Line.

(ii) *Proportion of British and Foreign with Cargo.* (a) *Tonnage of Vessels.* The relative proportions of British and foreign tonnage which entered Australia with cargo during the last five years are given in the next table. These figures may be considered to indicate more accurately the proportion of the actual carrying trade done than does the total tonnage.

**OVERSEA SHIPPING, AUSTRALIA.—PERCENTAGE BRITISH AND FOREIGN  
ENTERED WITH CARGO, 1924-25 TO 1928-29.**

Nationality.			1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
British	..	..	77.02	75.06	75.61	72.86	75.16
Foreign	..	..	22.98	24.94	24.39	27.14	24.84
Total	..	..	100.00	100.00	100.00	100.00	100.00

During the period under review the average annual proportion of foreign tonnage entering with cargo was 24.90 per cent.

(b) *Tonnage of Cargo.* In Transport and Communication Bulletin, No. 21 (p. 37) published by this Bureau, a statement is given of the tonnage of oversea cargo discharged and shipped during the year 1928-29 according to the nationalities of the vessels engaged in the carrying trade.

While the tonnage of British vessels entering with cargo represented 75.16 per cent. of the total, the amount of cargo discharged from such vessels was 65.06 per cent. The foreign country which had the largest amount of shipping tonnage engaged with Australia during the year 1928-29 was United States of America, its vessels contributing 5.38 per cent. of the total tonnage entered with cargo and 6.74 per cent. of the total cargo discharged and 3.33 per cent. of the cargo shipped.

(iii) *Principal Foreign Countries Engaged.* The following table shows the tonnage entered and cleared in connexion with the principal foreign countries engaged in the oversea carrying trade of Australia :—

**OVERSEA SHIPPING, AUSTRALIA.—FOREIGN TONNAGE, 1928-29.**

Countries.	Nationality.							
	United States.		Norwegian.		Japanese.		German.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
<b>EUROPEAN COUNTRIES—</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>
United Kingdom .. ..	..	..	8,543	18,631	..	4,293	..	..
Germany .. ..	..	..	..	28,488	..	..	70,910	110,795
Norway .. ..	..	..	28,123	50,135	..	..	21,323	..
Other European Countries ..	..	..	33,722	6,619	..	..	32,821	10,277
<b>ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC</b>								
Netherlands East Indies ..	4,574	..	58,727	56,478	..	..	9,556	10,543
Japan .. ..	..	3,494	..	2,337	237,032	194,468	..	..
Straits Settlements .. ..	4,960	..	7,799	..	3,386	..	..	..
Other Asiatic Countries ..	24,909	38,063	14,400	18,480	12,759	79,969	..	..
New Zealand .. ..	..	4,555	3,481	9,666	1,221	..	..	..
Other Pacific Islands .. ..	..	12,667	28,660	17,287	11,967	5,028	..	..
<b>AFRICAN COUNTRIES</b> .. ..	..	..	..	3,000	..	..	..	..
<b>NORTH AMERICAN COUNTRIES—</b>								
United States .. ..	254,785	222,716	69,946	30,944	20,242	..	3,156	3,637
Canada .. ..	..	..	1,869	..	..	..	..	..
<b>SOUTH AMERICAN COUNTRIES</b> .. ..	..	..	..	1,869	..	3,389	..	..
With Cargo .. ..	265,106	252,048	223,409	165,253	176,065	282,119	137,766	130,421
In Ballast .. ..	24,122	28,547	31,861	78,681	110,542	5,026	..	10,831
Total .. ..	289,228	281,495	255,270	243,934	286,607	287,145	137,766	141,252

(iv) *Nationality of Steam and Sailing Tonnage.* A further analysis is appended distinguishing between steam and sailing vessels of British and foreign nationality which entered Australia during the years 1924-25 to 1928-29.

**OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF STEAM AND SAILING VESSELS ENTERED, 1924-25 TO 1928-29.**

Description and Nationality of Vessels.	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.	
	Ton-nage.	Per-cent-age.								
Steam—										
British ..	4,242,511	77	3,972,307	76	4,146,144	75	3,972,733	74	4,103,691	74
Foreign ..	1,293,360	23	1,272,915	24	1,366,696	25	1,400,752	26	1,418,034	26
Total Steam ..	5,535,871	100	5,245,222	100	5,512,840	100	5,373,485	100	5,521,725	100
Sailing—										
British ..	13,406	22	12,760	22	5,330	12	4,500	10	2,946	10
Foreign ..	47,123	78	45,823	78	40,700	88	41,060	90	20,912	90
Total Sailing ..	60,529	100	58,583	100	46,030	100	45,560	100	29,858	100
Steam and Sailing—										
British ..	4,255,917	76	3,985,067	75	4,151,474	75	3,977,233	73	4,106,637	74
Foreign ..	1,340,483	24	1,318,738	25	1,407,396	25	1,441,812	27	1,444,946	26
Total ..	5,596,400	100	5,303,805	100	5,558,870	100	5,419,045	100	5,551,583	100

As would naturally be expected, there was a considerable decline in the figures for sailing tonnage during the period under review.

4. *Tonnage in Ballast.*—(i) *Total and Percentage by Nationality.* The following table shows the tonnage according to nationality of oversea vessels which entered and cleared Australia in ballast during the years 1924-25 to 1928-29:—

**OVERSEA SHIPPING, AUSTRALIA.—TONNAGE IN BALLAST, 1924-25 TO 1928-29.**

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
<b>TOTAL TONNAGE.</b>						
1924-25 ..	837,793	320,704	1,158,497	164,972	203,361	368,333
1925-26 ..	435,440	139,281	574,721	309,398	208,222	517,620
1926-27 ..	447,278	212,723	660,001	415,806	161,243	577,049
1927-28 ..	339,344	86,736	426,080	482,617	238,657	721,274
1928-29 ..	403,202	220,817	624,019	481,796	156,524	638,320
<b>PERCENTAGE.</b>						
1924-25 ..	19.68	23.92	20.70	4.41	10.93	6.57
1925-26 ..	9.15	10.56	10.84	7.63	3.88	9.64
1926-27 ..	10.77	15.11	11.87	10.04	11.03	10.29
1927-28 ..	8.53	6.02	7.86	11.87	16.57	13.10
1928-29 ..	9.82	15.28	11.24	11.68	11.02	11.51

(ii) *Tonnage entered in Ballast—States.* The tonnage which entered each State in ballast during 1928–29 was as follows :—

OVERSEA TONNAGE IN BALLAST ENTERING STATES, 1928–29.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Tonnage ..	204,719	85,455	17,960	88,908	204,671	6,056	16,250	624,019
Percentage on total ..	32·81	13·69	2·88	14·25	32·80	0·97	2·60	100·00

In normal times the large exports of coal from New South Wales afford special inducements to vessels in search of freights. The tonnage in ballast into New South Wales is mainly for coal cargo, into Victoria for wheat, into South Australia for wheat and ores and into Western Australia for timber and wheat.

### § 3. Shipping of Ports.

The total shipping tonnage—oversea, interstate, and coastwise—which entered the more important ports of Australia during the year 1928–29, together with similar information in regard to some of the ports of New Zealand for the year 1928 and of Great Britain for the year 1928, will be found in the next table :—

SHIPPING OF PORTS, AUSTRALIA, NEW ZEALAND, AND THE UNITED KINGDOM.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
<b>AUSTRALIA—</b>		<b>ENGLAND AND WALES—</b>	
Sydney .. .. .	9,060,153	London .. .. .	27,741,734
Melbourne .. .. .	6,883,317	Liverpool (inc. Birkenhead)	16,342,617
Adelaide .. .. .	4,509,470	Southampton .. .. .	12,112,339
Newcastle .. .. .	3,714,670	Tyne Ports .. .. .	10,236,924
Brisbane .. .. .	3,407,525	Cardiff .. .. .	8,754,975
Fremantle .. .. .	3,387,758	Plymouth .. .. .	6,971,539
Townsville .. .. .	1,068,551	Hull .. .. .	5,813,903
Kembla .. .. .	834,739	Manchester (inc. Runcorn)	4,030,082
Hobart .. .. .	742,378	Swansea .. .. .	3,735,244
Geelong .. .. .	729,567	Sunderland .. .. .	3,294,683
Pirie .. .. .	655,470	Bristol .. .. .	3,305,286
Cairns .. .. .	603,811	Newport .. .. .	3,235,768
Albany .. .. .	570,980	Middlesbrough .. .. .	3,167,509
Mackay .. .. .	495,650	Blyth .. .. .	2,201,162
Burnie .. .. .	368,735	Grimsby (inc. Immingham)	2,124,926
Whyalla .. .. .	366,434	Beaumaris (inc. Holyhead)	2,101,751
Launceston .. .. .	360,336	Dover .. .. .	1,824,956
Thursday Island .. .. .	343,597	Falmouth .. .. .	1,603,905
Bowen .. .. .	328,451		
Bunbury .. .. .	302,619	<b>SCOTLAND—</b>	
Rockhampton .. .. .	297,915	Glasgow .. .. .	6,053,733
Devonport .. .. .	277,639	Leith .. .. .	2,143,330
<b>NEW ZEALAND—</b>			
Wellington .. .. .	3,477,149	<b>NORTHERN IRELAND—</b>	
Auckland .. .. .	2,401,911	Belfast .. .. .	5,220,175
Lyttelton .. .. .	1,900,483		
Otago .. .. .	993,298		

Transport and Communication Bulletin No. 21 gives more detailed information regarding the shipping entered at Australian ports.

### § 4. Vessels Built and Registered.

1. **Vessels Built.**—The following table shows the number and tonnage of vessels built in Australia during each of the calendar years 1925 to 1929, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, does not, however, make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers are the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

#### VESSELS BUILT IN AUSTRALIA, 1925 TO 1929.

##### NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Com- posite.	Total.				
1925 ..	..	..	6	..	6	23	1	..	30
1926 ..	1	..	..	..	1	9	..	..	10
1927 ..	..	..	1	..	1	5	1	..	7
1928 ..	1	..	..	..	1	12	4	..	17
1929 ..	..	..	..	..	..	7	2	..	9

##### TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1925 ..	4,074	1,478	329	258	13	13	..	..	4,416	1,749
1926 ..	36	27	144	91	..	..	..	..	180	118
1927 ..	6	5	86	56	3	3	..	..	95	64
1928 ..	8	10	174	141	46	44	..	..	228	195
1929 ..	..	..	207	172	17	14	..	..	224	186

2. **Vessels Registered.**—The following table shows the number and net tonnage of steam, sailing, and other vessels on the registers of the States and of the Northern Territory on the 31st December, 1929:—

#### VESSELS ON THE STATE REGISTERS, 31st DECEMBER, 1929.

States and Territory.	Steam.				Sailing.				Barges, Hulks, Dredges, etc., not Self-Propelled.	Total.		
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.					
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.				
New South Wales ..	55	1,635	410	76,139	253	3,417	231	11,087	49	12,741	998	105,019
Victoria ..	41	4,475	142	155,366	50	2,645	45	803	68	29,255	346	192,544
Queensland ..	19	2,750	50	5,327	40	574	98	1,477	32	4,405	239	14,533
South Australia ..	16	527	80	19,653	50	3,178	31	649	46	7,462	223	31,467
Western Australia	9	173	28	6,412	19	428	305	4,605	22	5,899	383	17,517
Tasmania ..	6	478	45	3,594	65	1,074	68	2,591	2	563	186	8,900
Northern Territory	..	..	..	..	1	17	19	189	..	..	20	206
Total ..	146	10,038	755	266,491	478	11,931	797	21,401	219	60,325	2,395	370,186

Particulars of the number of vessels on the registers classified according to tonnage will be found in the Transport and Communication Bulletin issued by this Bureau.

### § 5. Interstate Shipping.

1. **System of Record.**—*Interstate Shipping* comprises two elements, viz.:—(a) Vessels engaged solely in interstate trade; and (b) Vessels trading between Australia and oversea countries and in the course of their voyage proceeding from one State to another. (It should be mentioned that these vessels, except under special circumstances, do not now engage in interstate carrying.) A detailed explanation of the methods adopted in dealing with the returns under each heading will be found on page 272 of Official Year Book No. 17, but limitation of space precludes its repetition in the present volume.

2. **Vessels and Tonnage Entered.**—The following table gives the number and tonnage of vessels recorded as having entered each State from any other State during each of the years 1924–25 to 1928–29. The shipping on the Murray River, between the States of New South Wales, Victoria, and South Australia is not included.

#### INTERSTATE SHIPPING.—NUMBER AND TONNAGE OF VESSELS ENTERED, 1924–25 TO 1928–29.

States and Territory.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
<b>NUMBER.</b>					
New South Wales ..	1,902	1,759	2,022	1,856	1,723
Victoria .. ..	1,815	1,743	1,870	1,815	1,704
Queensland .. ..	460	452	487	463	455
South Australia ..	798	838	949	852	730
Western Australia ..	421	337	366	382	339
Tasmania .. ..	1,091	1,024	1,014	1,052	950
Northern Territory ..	24	20	24	29	33
<b>Total .. ..</b>	<b>6,511</b>	<b>6,173</b>	<b>6,732</b>	<b>6,449</b>	<b>5,934</b>
<b>TONNAGE.</b>					
New South Wales ..	4,581,395	4,244,524	4,626,263	4,204,347	4,103,542
Victoria .. ..	3,593,320	3,394,123	3,787,217	3,511,614	3,416,924
Queensland .. ..	1,041,754	1,011,106	1,056,045	1,074,291	1,106,905
South Australia ..	2,348,566	2,391,535	2,725,309	2,462,588	2,238,706
Western Australia ..	1,900,077	1,648,977	1,778,919	1,879,446	1,663,818
Tasmania .. ..	1,098,556	1,161,672	1,171,857	1,242,260	853,982
Northern Territory ..	57,658	51,760	62,663	61,746	59,048
<b>Total .. ..</b>	<b>14,621,326</b>	<b>13,903,697</b>	<b>15,208,273</b>	<b>14,436,292</b>	<b>13,442,925</b>

3. **Oversea Vessels Moving Interstate.**—To ascertain the aggregate movement of shipping between the States during the year 1928–29, including the total interstate movements of oversea vessels, the figures in the following table, which give the number

and tonnage of vessels entered from or cleared for oversea countries via other Australian States, must be added to those in the table preceding:—

**SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER AUSTRALIAN STATES, 1928-29.**

States and Territory.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ..	579	2,728,625	492	2,419,839	1,071	5,148,464
Victoria ..	563	2,672,741	483	2,325,628	1,046	4,998,369
Queensland ..	235	1,247,337	225	1,221,908	460	2,469,245
South Australia ..	363	1,897,678	280	1,510,098	643	3,407,776
Western Australia ..	88	311,057	9	27,980	97	339,037
Tasmania ..	61	348,593	72	424,575	133	773,168
Northern Territory ..	..	..	..	..	..	..
<b>Total ..</b>	<b>1,889</b>	<b>9,206,031</b>	<b>1,561</b>	<b>7,930,028</b>	<b>3,450</b>	<b>17,136,059</b>

Oversea vessels moving interstate are with few exceptions not engaged in the active interstate trade of Australia, but are merely proceeding to the several States in continuation of their oversea voyage.

4. Vessels engaged Solely in Interstate Trade.—Eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade for Australia as a whole during the years 1924-25 to 1928-29 were as follows:—

**NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1924-25 TO 1928-29.**

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1924-25 .. .. .	4,909	6,960,923	4,906	6,953,546
1925-26 .. .. .	4,690	6,677,578	4,628	6,622,175
1926-27 .. .. .	5,129	7,303,603	5,146	7,422,571
1927-28 .. .. .	4,824	6,316,106	4,865	6,447,495
1928-29 .. .. .	4,373	5,512,897	4,383	5,611,354

5. Total Interstate Movement of Shipping.—(i) *Australia.* The appended table shows the total inward interstate movement of shipping for each of the years 1924-25 to 1928-29:—

**TOTAL INWARD INTERSTATE MOVEMENT OF SHIPPING, 1924-25 TO 1928-29.**

Vessels.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate ..	15,856,487	15,001,432	16,777,917	17,079,249	17,136,059
Vessels solely interstate	6,960,923	6,677,578	7,422,571	6,447,495	5,611,354
<b>Total ..</b>	<b>22,817,410</b>	<b>21,679,010</b>	<b>24,200,488</b>	<b>23,526,744</b>	<b>22,747,413</b>

(ii) *States.* The following table shows the number and tonnage of vessels which entered and cleared each State during 1928-29, including the coastal movements of oversea vessels:—

**INTERSTATE SHIPPING OF EACH STATE, 1928-29.**

States and Territory.	Entered.		Cleared.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales .. .. .	2,302	6,832,167	2,275	6,823,778
Victoria .. .. .	2,267	6,089,665	2,300	6,245,652
Queensland .. .. .	690	2,354,242	720	2,468,666
South Australia .. .. .	1,093	4,136,384	1,152	4,259,122
Western Australia .. .. .	427	1,974,875	356	1,693,237
Tasmania .. .. .	1,011	1,202,575	1,009	1,198,426
Northern Territory .. .. .	33	59,048	21	58,532
<b>Total, Australia .. .. .</b>	<b>7,823</b>	<b>22,648,956</b>	<b>7,833</b>	<b>22,747,413</b>

6. *Interstate and Coastal Services.*—The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1925 to 1929:—

**AUSTRALIAN INTERSTATE AND COASTAL STEAMSHIP SERVICES, 1925 TO 1929.**

Particulars.	1925.	1926.	1927.	1928.	1929.
Number of companies making returns .. .. .	41	44	40	38	29
Number of steamships .. .. .	209	216	212	201	181
Tonnage { Gross .. .. .	384,004	375,893	398,894	371,142	360,459
{ Net .. .. .	216,390	214,028	214,703	208,083	202,749
Horse-power (Nominal) .. .. .	38,750	37,129	39,545	37,980	37,911
Number of 1st class passengers for which licensed .. .. .	9,110	8,686	7,909	7,686	7,983
2nd class and steerage .. .. .	4,204	3,650	3,438	3,240	1,755
Complement of Crew { Masters and officers .. .. .	684	691	698	638	588
{ Engineers .. .. .	645	642	662	630	598
{ Crew .. .. .	5,190	5,102	5,176	4,922	4,710

**§ 6. Tonnage of Cargo.**

The table hereunder shows the aggregate tonnage of oversea cargo discharged and shipped in Australian ports, and the tonnage of interstate cargo shipped in all ports for the years 1925-26 to 1928-29. Cargo which was stated in cubic feet has been converted to weight on the basis of 40 cubic feet to the ton.

**AUSTRALIAN SHIPPING.—CARGO MOVEMENT, 1925-26 TO 1928-29.**

Year.	Oversea Cargo.				Interstate Cargo.	
	Discharged.		Shipped.		Shipped.	
	Tons Weight.	Tons Meas.	Tons Weight.	Tons Meas.	Tons Weight.	Tons Meas.
1925-26 .. .. .	2,730,700	2,611,921	4,281,068	888,339	5,006,918	729,055
1926-27 .. .. .	3,097,467	2,857,745	4,313,286	932,855	5,764,631	1,031,525
1927-28 .. .. .	3,346,604	2,542,523	3,739,525	946,781	5,090,116	1,134,972
1928-29 .. .. .	3,596,936	2,470,493	4,529,232	759,813	4,381,692	1,168,601

More detailed information regarding the volume of trade at each of the principal ports is contained in Transport and Communication Bulletin No. 21 issued by this Bureau.

§ 7. World's Shipping Tonnage.

The table hereunder shows the number and gross tonnage of steam and motor, and of sailing vessels owned by the most important maritime countries, together with the proportion of the grand total owned by each country :—

WORLD'S SHIPPING TONNAGE, 1st JULY, 1929.

Nationality.	Steam and Motor.		Sailing.		Total.		Percentage on Total.	
	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.
Great Britain and Nthn. Ireland	7,783	20,046,270	389	120,061	8,172	20,166,331	25.71	80.92
Australia and New Zealand	603	668,753	16	9,729	619	678,482	1.95	1.04
Canada(a) ..	614	932,328	194	88,243	808	1,020,571	2.54	1.56
Other British ..	748	886,847	217	49,819	965	936,666	3.03	1.44
<b>Total, British Empire ..</b>	<b>9,748</b>	<b>22,534,198</b>	<b>816</b>	<b>267,852</b>	<b>10,564</b>	<b>22,802,050</b>	<b>33.23</b>	<b>34.96</b>
Belgium ..	240	522,618	4	6,425	244	529,043	0.77	0.81
Denmark ..	623	1,032,744	78	23,123	701	1,055,867	2.20	1.62
France ..	1,478	3,302,684	184	75,979	1,662	3,378,663	5.23	5.18
Germany ..	2,105	4,057,657	22	34,895	2,127	4,092,552	6.69	6.28
Greece ..	516	1,266,685	..	..	516	1,266,685	1.62	1.94
Holland ..	1,320	2,932,420	19	6,647	1,339	2,939,067	4.21	4.51
Italy ..	1,105	3,215,327	275	69,333	1,380	3,284,660	4.34	5.04
Japan ..	2,059	4,186,652	..	..	2,059	4,186,652	6.48	6.42
Norway ..	1,792	3,217,795	15	6,698	1,807	3,224,493	5.68	4.94
Spain ..	782	1,136,326	95	25,265	877	1,161,591	2.76	1.78
Sweden ..	1,259	1,480,189	126	29,936	1,385	1,510,125	4.36	2.31
United States of America(a) (b)	3,089	11,141,148	718	798,936	3,807	11,940,084	11.98	18.81
Other Foreign Countries ..	2,838	3,622,854	485	223,891	3,323	3,846,745	10.45	5.90
<b>Total, Foreign Countries ..</b>	<b>19,206</b>	<b>41,115,099</b>	<b>2,021</b>	<b>1,801,128</b>	<b>21,227</b>	<b>42,416,227</b>	<b>66.77</b>	<b>65.04</b>
<b>Grand Total ..</b>	<b>28,954</b>	<b>63,649,297</b>	<b>2,837</b>	<b>1,568,980</b>	<b>31,791</b>	<b>65,218,277</b>	<b>100.00</b>	<b>100.00</b>

(a) Sea-going.

(b) Including Philippine Islands.

The foregoing figures have been compiled from Lloyd's Register of Shipping, and vessels of 100 tons or upwards only have been included.

§ 8. Ferries.

1. New South Wales.—The ferry services in Port Jackson are under the control of three companies, which during the year 1929 had 65 vessels in commission, 62 of which were double-ended screw steamers, the remaining three being motor driven. It is claimed for the steamers that they are superior in size and equipment to boats employed on similar service in any other part of the world.

2. Victoria.—The Williamstown City Council owns one steamer which is engaged in the transport of passengers between Port Melbourne and Williamstown. There are several other steamers which are engaged during the summer season in the carriage of passengers and goods to the several seaside resorts. Particulars of these services, however, are not included in the table in sub-par. 6 following.

3. Queensland.—The Brisbane City Council and the Balmoral Shire Council control the ferry services in the Metropolitan area, but such ferries are really substitutes for bridges and have therefore not been included in the table hereunder.

4. **Western Australia.**—The ferries plying on the Swan River during 1929 were operated by a private company, and consisted of 9 petrol-driven vessels. At South Perth the Western Australian Government employed 3 vessels, 1 of which was a steamer.

5. **Tasmania.**—In and around Hobart there were in 1929, 4 ferry services, 2 being controlled by private companies which had 3 steamers in commission, 1 by the Public Works Department with 2 motor-propelled vessels, and 1 by the Railway Department with 1 steamer.

6. **Particulars of Working.**—The subjoined table shows for the year 1929, so far as returns are available, the most important items in connexion with the operation of the ferry services in the several States:—

#### FERRIES.—PARTICULARS OF WORKING, 1929.

Particulars.	New South Wales.	Victoria.	Western Australia.	Tasmania.	Total.
<b>Boats in Service—</b>					
Steam .. No.	62	1	1	4	68
Other .. No.	3	..	11	2	16
Total .. No.	65	1	12	6	84
<b>Number of passengers which boats are licensed to carry .. No.</b>	46,631	342	1,688	1,431	50,092
<b>Revenue .. £</b>	833,669	3,573	17,527	19,806	874,575
<b>Working Expenses .. £</b>	638,000	7,838	15,938	24,382	686,158
<b>Passengers carried<sup>(b)</sup> (No.)</b>	49,534,261	190,000	1,456,452	1,047,321	52,228,034
<b>Mileage of Boats miles</b>	(c)	9,100	95,596	104,494	(c)209,190
<b>Accidents—</b>					
Killed .. No.	..	..	..	..	..
Injured .. No.	131	..	..	..	131
<b>Employees—</b>					
Salaried Staff No.	89	..	3	8	100
Wages Staff No.	1,050	10	29	36	1,125

(a) Not Available.

(b) Approximate.

(c) Incomplete.

7. **Other Services.**—In addition to the foregoing there are throughout the several States a number of row-boat ferry services, and on many of the principal inland rivers punts are in operation.

### § 9. Miscellaneous.

1. **Lighthouses.**—Transport and Communication Bulletin No. 14, published by this Bureau, contains a list of the principal lighthouses on the coast of Australia, giving details of the location, number, colour, character, period, candle-power, and visibility of each light so far as particulars are available.

2. **Distances by Sea.**—A statement giving the distances by sea between the ports of the capital cities of Australia and the most important ports in other countries which trade with Australia was also included in Transport and Communication Bulletin No. 14.

3. **Shipping Freight Rates.**—The Quarterly Summary of Australian Statistics gives a list of the ruling freight rates for general merchandise both in respect of oversea and interstate shipments. The latest figures available, which give the rates current at 30th June, 1930, show that the rate for general merchandise from Australia to United Kingdom and Continent was 63s. per ton weight or measurement, as compared with 55s. per ton in 1915.

4. **Depth of Water at Main Ports.**—A table compiled from information supplied by the Director of Navigation showing the depth of water at the main ports of Australia at 1st January, 1930, has been included in the Transport and Communication Bulletin No. 21, published by this Bureau.

5. **Shipping Casualties.**—Courts of Marine Inquiry are constituted by a Magistrate assisted by skilled assessors, and when necessary are held at the principal port in each State and at Launceston (Tasmania). Such courts have power to deal with the

certificates of officers found to be at fault. Particulars of shipping casualties reported on or near the coast during the year 1928-29 are shown in the Transport and Communication Bulletin No. 21. This information has also been furnished by the Director of Navigation.

**6. Commonwealth Navigation and Shipping Legislation.**—(i) *General.*—An account in some detail, of the Commonwealth Navigation and Shipping Legislation was published in Official Year Book No. 17 (pp. 1053-5), but considerations of space preclude its repetition in the present volume.

(ii) *Amending Acts.* Under the provisions of the Navigation Act 1926 (March, 1926) permission may be granted by the Governor-General in Council in certain specified circumstances to unlicensed British ships to engage in passenger tourist traffic between any specified Commonwealth ports. Certain vessels were granted permission to engage in the carriage of passengers between the port of Hobart and the ports of Brisbane, Sydney, and Melbourne during the period 6th March, 1926, to 31st May, 1926, and between the 1st January, 1927, and 31st May, 1927. This permission may be renewed from time to time as occasion demands. The Navigation Act 1925 (July, 1925), conferred authority for the suspension, for any specified time, if in the opinion of the Governor-General in Council such is expedient in the public interest, of the operation of the provisions of that part of the principal Act relating to the engagement of ships in the coasting trade by exempting under certain circumstances any ship or class of ships from compliance with any specified provision or provisions of the Act.

**7. Ports and Harbours.**—A report in two volumes on *Transport in Australia*, with special reference to Ports and Harbours facilities, has been submitted to the Commonwealth Government by Sir George Buchanan, and published as a Parliamentary Paper, but the subject-matter is too voluminous to be dealt with in this present volume.

## B. RAILWAYS.

### § 1. General.

**1. Introduction.**—In the following pages statistics relating to State-owned lines are, in the main, dealt with separately from those under the control of the Commonwealth Government. The State railways are referred to throughout as "State" and the Commonwealth railways as "Federal" railways.

**2. Improvement of Railway Statistics.**—Earlier issues of the Year Book contain a condensation of the report issued in 1909 by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia* (see Year Book No. 7, page 598).

Considerable improvement, both as regards the volume of information and the mode of presentation thereof in the statistical tables appearing in the reports of the several Railways Commissioners, has been made during recent years.

**3. Railway Communication in Australia.**—An account of the progress of railway construction in Australia since the opening of the first line in 1854 will be found in Year Book No. 6, p. 681. Further information regarding railway communication in Australia and proposals for unification of gauge in the various systems are given in Year Book No. 22, pp. 259 to 261, but considerations of space preclude its repetition in the present issue.

**4. Mileage Open for Traffic, all Lines.**—(i) *General.* In all the States the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of Australia, lines have been constructed and managed by private companies, but at the present time nearly the whole of the railway traffic

is in the hands of the State or Commonwealth Governments. A large proportion of the private lines has been laid down for the purpose of opening up forest lands, mining districts, or sugar areas, and these lines are not generally used for the conveyance of passengers or the public conveyance of goods.

The subjoined table shows the route mileage of Federal, State, and private lines open for general traffic (exclusive of sidings and cross-overs) in each State for each of the years 1924-25 to 1928-29. The railway mileage given for each State includes both Federal, State, and private railways in that State :—

**RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE OPEN, 1925 TO 1929.**

State or Territory.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales .. ..	5,799.65	5,883.85	5,892.07	6,008.99	6,082.25
Victoria .. ..	4,508.56	4,652.21	4,659.16	4,721.69	4,723.95
Queensland .. ..	6,404.39	6,542.39	6,603.59	6,619.14	6,720.91
South Australia .. ..	3,560.91	3,608.31	3,637.01	3,636.42	3,821.29
Western Australia .. ..	4,463.65	4,595.37	4,649.04	4,707.62	4,809.47
Tasmania .. ..	864.56	865.00	845.86	841.06	827.26
Federal Capital Territory .. ..	4.94	4.94	4.94	4.94	4.94
Northern Territory .. ..	198.68	198.68	198.68	198.68	264.84
<b>Australia .. ..</b>	<b>25,805.34</b>	<b>26,350.75</b>	<b>26,490.35</b>	<b>26,738.54</b>	<b>27,254.91</b>

In previous issues of the Year Book particulars were given for different periods from 1855 onwards. (See No. 15, p. 537.)

(ii) *Government and Private Lines Separately.* The next table shows for each State (a) the length of lines owned by the State Government, and by the Commonwealth Government in that State, all of which lines are open for general use by the public and (b) the length of private lines available for general use by the public. The mileages specified in the case of Government and private lines are to the 30th June, 1929 :—

**RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE CLASSIFIED, 1928-29.**

State or Territory.	Government Lines—		Private Lines available for General Traffic.	Total Open for General Traffic.
	State.	Federal.		
	Miles.	Miles.	Miles.	Miles.
New South Wales .. ..	5,940.22	..	142.03	6,082.25
Victoria .. ..	4,699.01	..	24.94	4,723.95
Queensland .. ..	6,447.18	..	273.73	6,720.91
South Australia .. ..	2,541.63	1,245.86	33.80	3,821.29
Western Australia .. ..	4,078.48	453.99	277.00	4,809.47
Tasmania .. ..	653.45	..	173.81	827.26
Federal Capital Territory .. ..	..	4.94	..	4.94
Northern Territory .. ..	..	264.84	..	264.84
<b>Australia .. ..</b>	<b>24,359.97</b>	<b>1,969.63</b>	<b>925.31</b>	<b>27,254.91</b>

5. Comparative Railway Facilities.—The mileage of line open to the public for general traffic (including both Government and private lines) is shown in the subjoined statement in relation to population and area respectively :—

## RAILWAYS.—GOVERNMENT AND PRIVATE.—COMPARISON OF FACILITIES, 1929.

Particulars.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Fed. Cap. Ter.	Nor. Ter.	Aust.
Mileage of Railway— Per 1,000 of population ..	2.47	2.67	7.25	6.60	11.68	3.89	0.59	63.51	4.28
Per 1,000 sq. miles of Territory ..	19.66	53.75	10.02	10.05	4.93	31.56	5.26	0.51	9.16

6. Classification of Lines according to Gauge, 1928–29.—The next table gives<sup>1</sup> a classification, according to gauge, of the total mileage, exclusive of sidings and crossovers of (i) Federal railways, given in the State or Territory in which situated; (ii) State railways; and (iii) Private railways open to the public for general traffic. Particulars of Government railways are up to the 30th June, 1929, and of private railways open for general traffic to the 31st December, 1928, as nearly as possible.

## RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1928–29.

State or Territory in which situated.	Route mileage having a gauge of—						Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	3 ft. 0 in.	2 ft. 6 in.	2 ft. 0 in.	

## FEDERAL RAILWAYS.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
South Australia .. ..	..	597.86	648.00	..	..	..	1,245.86
Western Australia .. ..	..	453.99	..	..	..	..	453.99
Federal Capital Territory ..	..	4.94	..	..	..	..	4.94
Northern Territory .. ..	..	..	264.84	..	..	..	264.84
Total .. ..	..	1,056.79	912.84	..	..	..	1,969.63

## STATE RAILWAYS.

		Miles.	Miles.			Miles.	Miles.
New South Wales .. ..	..	..	5,900.71	39.51	..	..	5,940.22
Victoria .. ..	..	4,577.24	..	..	121.77	..	4,699.01
Queensland .. ..	..	..	..	6,416.92	..	30.26	6,447.18
South Australia .. ..	..	1,463.63	..	1,078.00	..	..	2,541.63
Western Australia .. ..	..	..	..	4,078.48	..	..	4,078.48
Tasmania .. ..	..	..	..	628.62	..	24.83	653.45
Total .. ..	..	6,040.87	5,900.71	12,241.53	..	121.77	24,359.97

## PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.

			Miles.	Miles.		Miles.	Miles.
New South Wales .. ..	..	..	78.97	36.73	..	..	142.03
Victoria .. ..	..	13.94	..	..	11.00	..	24.94
Queensland .. ..	..	..	..	101.43	..	7.00	273.73
South Australia .. ..	..	..	..	33.80	..	..	33.80
Western Australia .. ..	..	..	..	277.00	..	..	277.00
Tasmania .. ..	..	..	..	157.32	..	16.49	173.81
Total .. ..	..	13.94	78.97	606.28	11.00	7.00	925.31

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1928-29—*continued.*

State or Territory in which situated.	Route mileage having a gauge of—						Total.	
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	3 ft. 0 in.	2 ft. 6 in.	2 ft. 0 in.		
<b>ALL RAILWAYS OPEN FOR GENERAL TRAFFIC.</b>								
New South Wales .. .. .	..	..	5,979.68	76.24	..	..	26.33	6,082.25
Victoria .. .. .	..	4,591.18	..	..	11.00	121.77	..	4,723.95
Queensland .. .. .	..	..	..	6,518.35	..	7.00	195.56	6,720.91
South Australia .. .. .	..	1,463.63	597.86	1,759.80	..	..	..	3,821.29
Western Australia .. .. .	..	..	453.99	4,355.48	..	..	..	4,809.47
Tasmania .. .. .	..	..	..	785.94	..	..	41.32	827.26
Federal Capital Territory .. .. .	..	..	4.94	..	..	..	..	4.94
Northern Territory .. .. .	..	..	..	264.84	..	..	..	264.84
<b>GRAND TOTAL .. .. .</b>	<b>..</b>	<b>6,054.81</b>	<b>7,036.47</b>	<b>13,760.65</b>	<b>11.00</b>	<b>128.77</b>	<b>263.21</b>	<b>27,254.91</b>

7. **Track Mileage—Government Railways.**—The following table gives the track mileages of all Government railways and sidings, exclusive of Tasmania, for the years ended 30th June, 1926 to 1929, classified according to gauge, together with the percentages on the total:—

## RAILWAYS, FEDERAL AND STATE.—TRACK MILEAGE(a), 1926 TO 1929.

Gauge.	At 30th June—							
	1926.		1927.		1928.		1929.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	7,427.27	25.05	7,465.59	24.95	7,812.26	25.77	7,847.13	25.41
4 ft. 8½ in. ..	8,710.62	29.37	8,749.82	29.24	8,896.10	29.34	8,998.12	29.14
3 ft. 6 in. ..	13,353.87	45.03	13,543.00	45.26	13,445.80	44.35	13,865.95	44.91
2 ft. 6 in. ..	131.56	0.44	131.56	0.44	131.87	0.43	131.87	0.43
2 ft. 0 in. ..	33.00	0.11	33.00	0.11	33.00	0.11	33.00	0.11
<b>Total .. .. .</b>	<b>29,656.32</b>	<b>100.00</b>	<b>29,922.97</b>	<b>100.00</b>	<b>30,319.03</b>	<b>100.00</b>	<b>30,876.07</b>	<b>100.00</b>

(a) Exclusive of Tasmania.

## § 2. Federal Railways.

1. **General.**—On the 1st January, 1911, the Commonwealth Government took over the Northern Territory from the South Australian Government, and at the same time the railways from Darwin to Pine Creek in the Northern Territory, and from Port Augusta to Oodnadatta in South Australia, came under its control. Subsequently the construction of a transcontinental line from Port Augusta in South Australia to Kalgoorlie in Western Australia was undertaken by the Commonwealth Government, while a line has been constructed in the Federal Capital Territory, connecting Canberra with the New South Wales railway system at Queanbeyan. In 1917 an Act was passed by which all the Federal railways were vested in a Commonwealth Railways Commissioner.

2. **North Australia Railway.**—(i) *Darwin to Katherine.* On the 1st January, 1911, the line from Darwin to Pine Creek came under the jurisdiction of the then Department of External Affairs, and was worked under the Administrator of the Northern Territory. As mentioned above, the management of this railway is now vested in the Commonwealth Railways Commissioner.

In the Northern Territory Acceptance Act the construction of a transcontinental line from South Australia is provided for. The extension of the line from Pine Creek to Katherine River was completed, and the first train ran through to Emungalan (Katherine River) on 13th May, 1917.

(ii) *Proposed Extension.* The recommendations of the Parliamentary Standing Committee on Public Works in connexion with the North-South line were indicated in a previous issue of this work. (See Year Book No. 18, p. 278.)

(iii) *Line Authorized for Construction.* The Northern Territory Railway Extension Act 1923 provides for the construction of a 3 ft. 6 in. gauge line from the present terminus at Emungalan to Daly Waters, a distance of approximately 160 miles. The estimated cost of this line is £1,545,000, including the cost of a bridge over the Katherine River which was completed in May, 1926, although the first train crossed on 21st January, 1926. The terminus of the line was moved to the new station at Katherine River on 14th December, 1926. Tenders were then called for the construction of the line from Katherine River to Daly Waters, but, as no satisfactory tender was received, it was decided to do the work by day labour. Under this system, construction proceeded rapidly until December, 1927, when, owing to a reduction in the amount of money to be made available for construction during the year 1927-28, a drastic curtailment of operations was made. The work then proceeded at a limited rate, and, on 1st July, 1928, a further section, to Mataranka (264 miles 67 chains from Darwin) was opened for public traffic. Owing to the need for the curtailment of loan expenditure, the Government then decided not to proceed with construction work beyond Birdum (316 miles 20 chains from Darwin), and at 30th June, 1929, this section was nearing completion.

3. *Central Australia Railway.*—(i) *General.* This line was taken over by the South Australian Government until 31st December, 1913. From the 1st January, 1914, the line was worked under agreement by the South Australian Government for and on behalf of the Commonwealth, but from 1st January, 1926, the management devolved upon the Commonwealth Railways Commissioner.

(ii) *Extension Authorized.* The Railways (South Australia) Agreement Act 1926, assented to by the Commonwealth Parliament in February, 1926, ratified the agreement between the Commonwealth and South Australian Governments for the construction of a 3 ft. 6 in. gauge line between Port Augusta and Alice Springs. This involves the construction of an extension to Alice Springs of the existing 3 ft. 6 in. gauge line from Port Augusta to Oodnadatta. The estimated cost, exclusive of rolling stock, of the proposed extension, which comprises 292 miles is £1,700,000. The first section 21¼ miles from Oodnadatta was completed on the 29th August, 1927. The contract for the construction of the balance of 270¾ miles to Alice Springs was signed on the 11th August, 1927. The contract provided for the completion of the railway to Alice Springs by the 30th June, 1929, but it was not until 2nd August, 1929, that the completed line was taken over for public traffic.

4. *Federal Capital Territory Railway.*—Queanbeyan-Canberra.—This line was built by the Railway Construction Branch of the Public Works Department, New South Wales, and, when completed, was taken over by the Chief Commissioner of Railways for that State, who worked the line for and on behalf of the Commonwealth Government until 1st July 1928, on which date the management was taken over by the Commonwealth Railways Commissioner. The line was opened for departmental goods traffic on 25th May, 1914. It connects with the New South Wales railway system at Queanbeyan, is 4.94 miles in length, and has sidings of an aggregate length of 2.00 miles.

5. *Trans-Australian Railway (Kalgoorlie to Port Augusta).*—In the issue of the Year Book for 1918 (No. 11, pp. 663 to 666 and p. 1213), a short history of the construction of the Trans-Australian line is given, also a description of the country through which the line passes between Kalgoorlie and Port Augusta.

On the 22nd October, 1917, the first through train left Port Augusta with an official party on board for Kalgoorlie. It should be mentioned that owing to deviations from the original route, the length of this line was reduced from 1,063.39 miles to 1,051.85 miles, a saving of 11.54 miles.

6. Lines Open, Surveyed, etc.—The following table shows the lines open for traffic under the control of the Commonwealth Government at 30th June, 1929, together with the lines which have been or are being surveyed :—

## RAILWAYS, FEDERAL, 30th JUNE, 1929.

Terminals.	Miles.
OPEN FOR TRAFFIC.	
Trans-Australian—Port Augusta (South Australia) to Kalgoorlie (Western Australia) .. .. .	1,051.85
Central Australia Railway—Port Augusta (South Australia) to Rumbalara (Central Australia) .. .. .	648.00
Queanbeyan to Canberra (Federal Capital Territory) .. .. .	4.94
North Australia Railway—Darwin to Mataranka .. .. .	264.84
Total opened for traffic .. .. .	1,969.63
SURVEYED OR BEING SURVEYED.	
Mataranka to Daly Waters (Northern Territory) .. .. .	95.00
Kingoonya to Boorthanna (South Australia) .. .. .	178.44
Oodnadatta to Alice Springs .. .. .	115.00
Canberra to Jervis Bay (Federal Capital Territory) .. .. .	140.22
Canberra (Federal Capital Territory) to Federal Capital Territory Border in the direction of Yass (New South Wales) .. .. .	11.67
Daly Waters (Northern Territory) to Alice Springs (South Australia) .. .. .	559.50
Port Augusta to Crystal Brook (South Australia) .. .. .	69.25
Port Augusta—Red Hill—Adelaide .. .. .	188.98
Total surveyed or being surveyed .. .. .	1,356.06

In addition the following trial surveys were undertaken on behalf of the North Australia Commission, viz. :—

(i) From the proposed deep water port at Rocky Island (Gulf of Carpentaria) to Borroloola; (2) From Borroloola to near Anthony's Lagoon; (3) From Daly Waters to a point on the Queensland Border about 44 miles south of Camooweal; and (3) From a point on the Daly Waters—Queensland Border survey 45 miles south of Daly Waters, and near Newcastle Waters to the border of Western Australia.

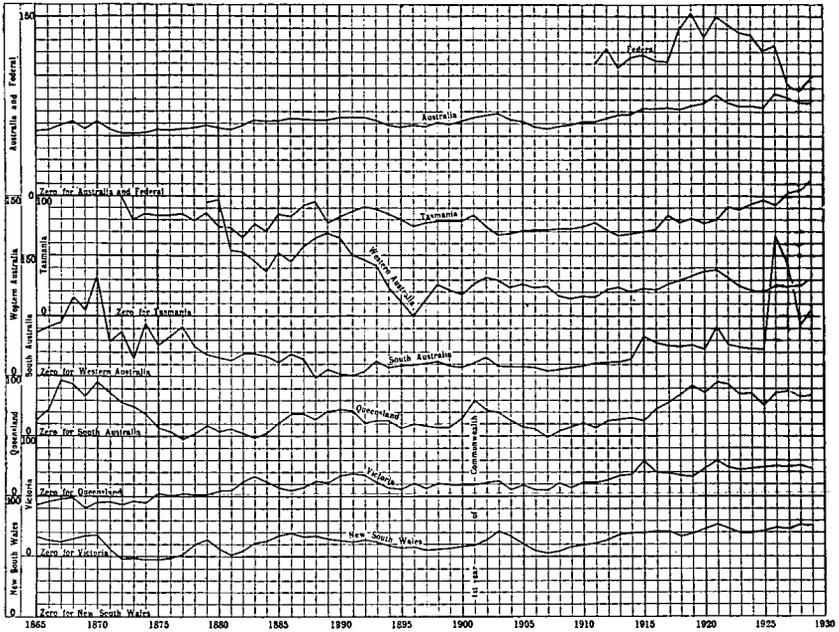
7. Mileage open, worked, and Train miles run.—The next table shows the length of the Federal railways open for traffic, average miles worked, and the train miles run in the years 1925 to 1929 :—

## RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES, 1925 TO 1929.

## MILES OPEN FOR TRAFFIC.

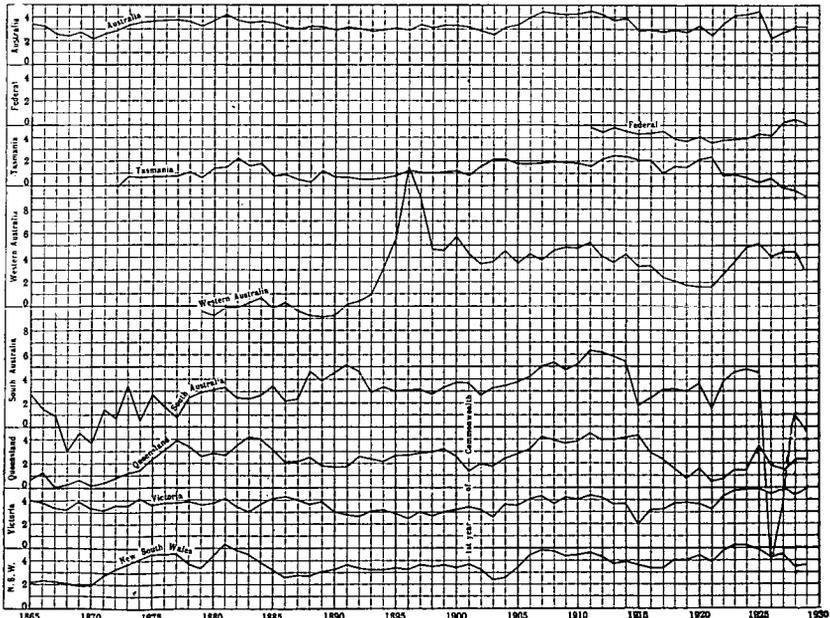
Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
	Miles.	Miles.	Miles.	Miles.	Miles.
1925 .. .. .	1,051	478	5	199	1,733
1926 .. .. .	1,051	478	5	199	1,733
1927 .. .. .	1,051	478	5	199	1,733
1928 .. .. .	1,051	478	5	199	1,733
1929 .. .. .	1,052	648	5	265	1,970

PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE OF GOVERNMENT RAILWAYS, 1865 TO 1929.



EXPLANATION.—The base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and Australia, with, however, the exceptions that the zero lines for Australia and Federal are identical.

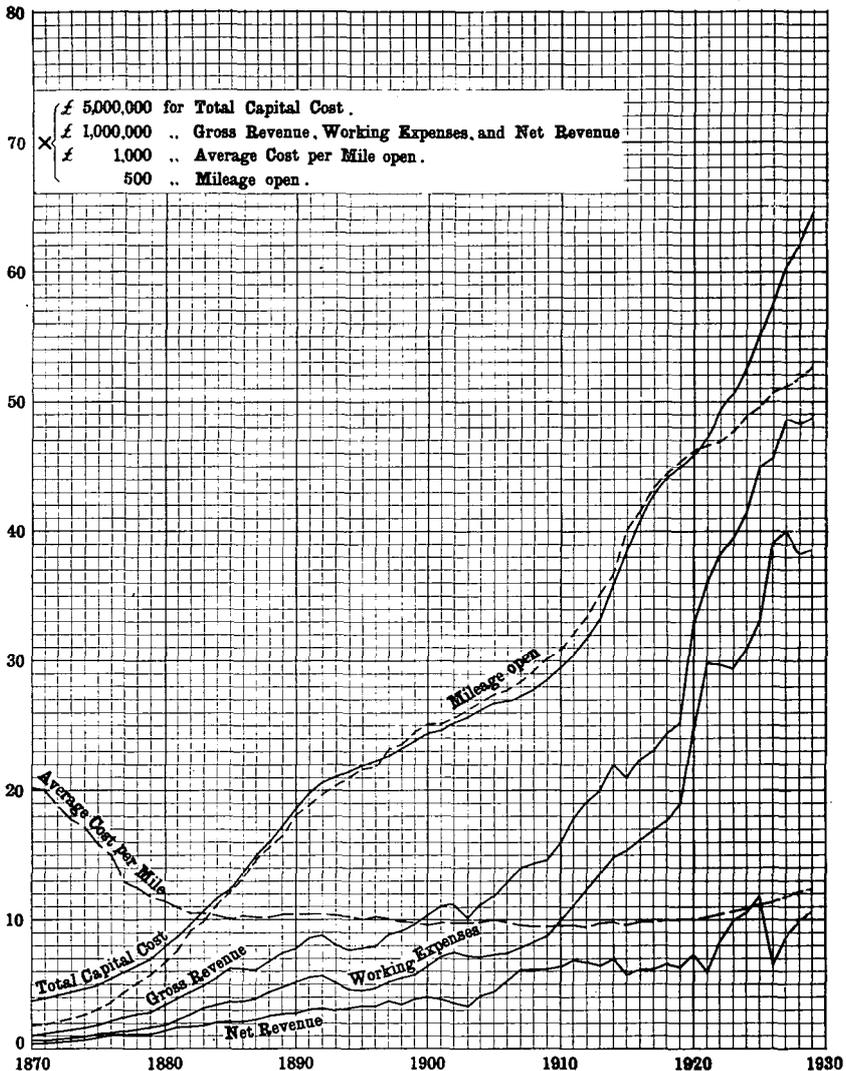
PERCENTAGES OF NET REVENUE ON CAPITAL COST OF GOVERNMENT RAILWAYS, 1865 TO 1929.



EXPLANATION.—The base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and Australia being different, but the zero line for Federal is the same as that for Australia.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

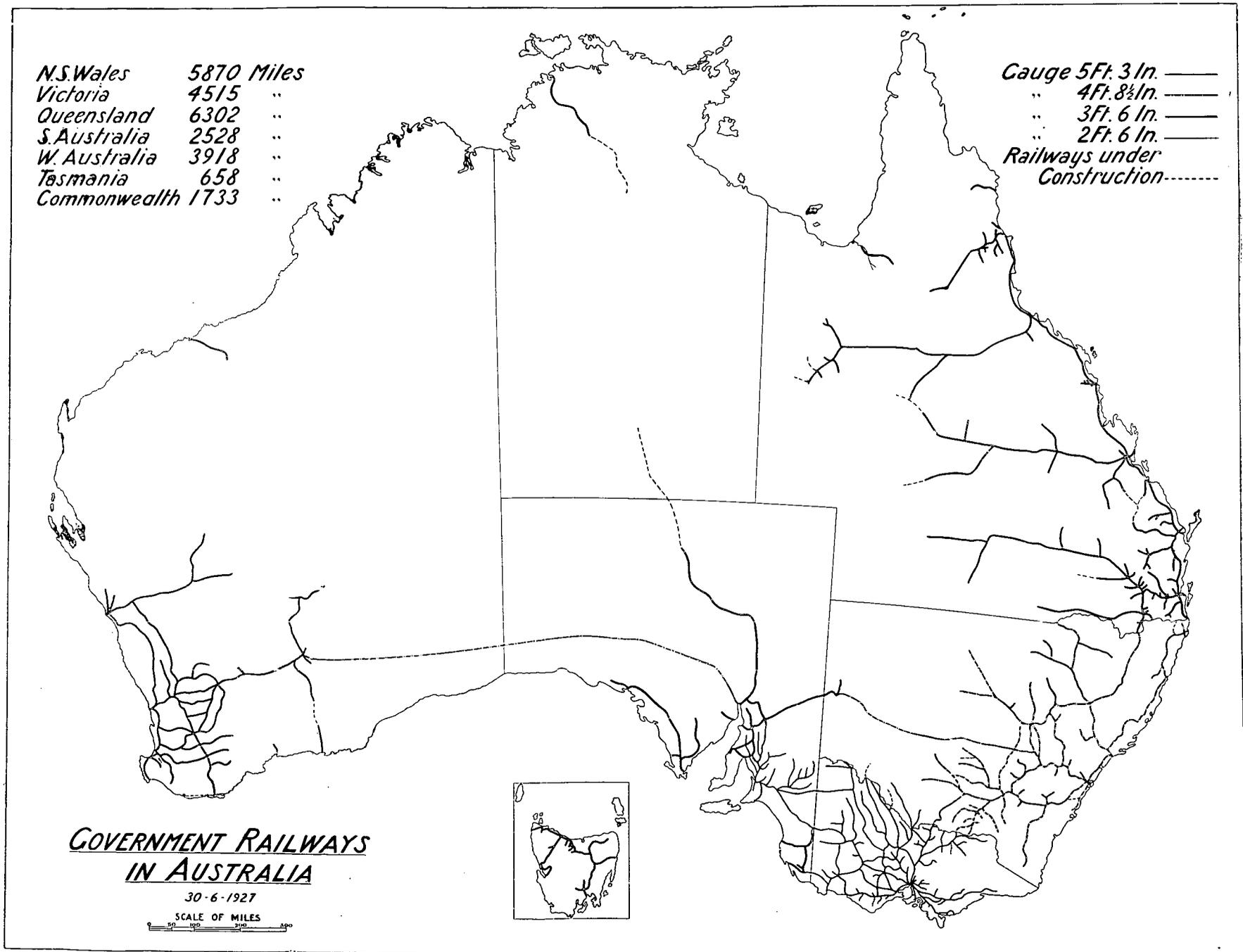
## FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1870 TO 1929.



EXPLANATION.—The base of each small square represents throughout one year. The significance of the vertical height of each square varies according to the nature of the several curves.

In the curve for the total capital cost, the vertical side of each square represents £5,000,000.

In the curves for (i) gross revenue, (ii) working expenses, and (iii) net revenue, the vertical side of each small square represents £1,000,000. For the curve of average cost per mile open, the vertical side of each small square represents £1,000. The mileage open is shown by a dotted curve, the vertical side of each small square representing 500 miles.



RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES  
1925 TO 1929—*continued.*

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
<b>AVERAGE MILES WORKED.</b>					
	Miles.	Miles.	Miles.	Miles.	Miles.
1925 .. ..	1,051	478	5	199	1,733
1926 .. ..	1,051	478	5	199	1,733
1927 .. ..	1,051	478	5	199	1,733
1928 .. ..	1,051	478	5	199	1,733
1929 .. ..	1,052	566	5	265	1,888

<b>TRAIN MILES RUN.(a)</b>					
1925 .. ..	472,459	283,762	5,999	51,279	813,499
1926 .. ..	471,322	192,773	7,123	60,641	731,859
1927 .. ..	487,160	263,227	12,402	69,872	832,661
1928 .. ..	485,848	359,160	15,632	105,042	965,682
1929 .. ..	500,402	408,970	12,915	82,861	1,005,148

(a) Traffic Train Mileage (exclusive of "Assistant" and "Light" mileages).

8. Cost of Construction and Equipment.—In the following table particulars are given of the cost of construction and equipment for traffic of the undermentioned railways for each of the years 1925 to 1929:—

RAILWAYS, FEDERAL.—CAPITAL COST, 1925 TO 1929.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Central Australia.	Federal Capital Territory.(b)	North Australia.	
<b>TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.</b>					
	£	£	£	£	£
1925 .. ..	7,435,771	2,554,068	50,720	1,727,412	11,767,971
1926 .. ..	7,515,553	2,663,099	50,974	1,736,360	11,965,986
1927 .. ..	7,614,277	2,854,801	82,945	1,750,772	12,302,795
1928 .. ..	7,682,126	2,908,644	87,369	1,760,756	12,438,895
1929 .. ..	7,736,355	3,882,006	83,888	2,431,964	14,134,213

<b>COST PER MILE OPEN.</b>					
1925 .. ..	7,072	5,345	10,267	8,694	6,790
1926 .. ..	7,148	5,572	10,318	8,739	6,905
1927 .. ..	7,242	5,973	13,964	8,812	7,099
1928 .. ..	7,306	6,086	17,686	8,863	7,178
1929 .. ..	7,355	5,991	16,981	9,183	7,176

(a) Exclusive of Rolling Stock the property of South Australian Government Railways.

(b) Exclusive of Rolling Stock the property of New South Wales Government Railways.

The sum of £1,527,251, of which £110,986 was for surveys, etc., has been provided from revenue for capital purposes to 30th June, 1929, and has been included in the total shown above.

9. *Gross Revenue.*—(i) *Total, per average mile worked, and per train mile run.* The following table shows the total revenue from all sources, the revenue per average mile worked, and the revenue per train mile run for each of the undermentioned railways for the financial years 1925 to 1929 inclusive :—

**RAILWAYS, FEDERAL.—GROSS REVENUE, TOTAL, ETC., 1925 TO 1929.**

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	

**TOTAL GROSS REVENUE.**

	£	£	£	£	£
1925 .. ..	256,647	110,256	7,029	35,180	409,112
1926 .. ..	276,430	82,649	11,665	41,347	412,091
1927 .. ..	303,212	125,039	14,739	55,718	498,708
1928 .. ..	333,608	188,143	9,044	69,054	599,849
1929 .. ..	332,199	184,046	6,824	46,156	569,225

**GROSS REVENUE PER AVERAGE MILE WORKED.**

1925 .. ..	244	231	1,423	177	236
1926 .. ..	263	173	2,362	208	238
1927 .. ..	288	262	2,984	280	288
1928 .. ..	317	394	1,831	348	346
1929 .. ..	316	325	1,381	174	302

**GROSS REVENUE PER TRAIN-MILE RUN.**

	d.	d.	d.	d.	d.
1925 .. ..	130.37	93.25	281.20	164.65	120.69
1926 .. ..	140.67	101.68	383.98	160.57	134.41
1927 .. ..	149.36	114.00	285.22	191.38	143.73
1928 .. ..	164.80	125.72	138.85	157.77	149.08
1929 .. ..	159.32	108.00	126.81	133.69	135.92

(ii) *Classification and Percentages.* During the year 1928–29 receipts from coaching traffic and goods and live stock represented 61 per cent. and 19 per cent. of the total gross revenue of the Trans-Australian line, similar percentages for the remaining lines being :—Central Australian line 14 per cent. and 84 per cent., Federal Capital Territory line 47 per cent. and 52 per cent., and North Australia line 11 per cent. and 55 per cent. coaching and goods and live stock revenue respectively.

The miscellaneous receipts for the year 1928–29 include an amount of £33,683, revenue from dining cars and refreshment services on the Trans-Australian Railway. A sum of £32,595 was received from this source during the previous year.

10. *Working Expenses.*—(i) *Total.* The following table shows the total working expenses, and the percentages on the corresponding gross revenues of each railway for each year from 1925 to 1929.

Details of the annual expenditure on (a) maintenance of ways, works and buildings, (b) locomotives, carriages and wagons repairs and renewals, (c) traffic expenses, and (d) compensation, general and miscellaneous charges, are given in (iii) following.

**RAILWAYS, FEDERAL.—WORKING EXPENSES, TOTAL, ETC., 1925 TO 1929.**

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
<b>TOTAL WORKING EXPENSES.</b>					
	£	£	£	£	£
1925 .. ..	294,164	158,009	4,882	40,015	497,070
1926 .. ..	282,999	187,835	6,946	43,240	521,020
1927 .. ..	271,886	131,613	10,036	57,960	471,495
1928 .. ..	287,942	170,285	11,234	67,991	537,452
1929 .. ..	300,270	196,329	10,331	56,862	563,792

**PERCENTAGE OF WORKING EXPENSES ON REVENUE.**

	%	%	%	%	%
1925 .. ..	114.61	143.31	69.45	113.75	134.45
1926 .. ..	102.38	227.27	59.55	104.58	126.43
1927 .. ..	89.67	105.25	68.09	104.02	94.53
1928 .. ..	86.30	90.50	124.21	98.46	89.59
1929 .. ..	90.39	106.67	151.39	123.20	99.05

Compared with results for the previous year, the percentage of working expenses on revenue show increases for each of the four railways. There was a decrease of earnings on each of the railways, due mainly to (a) decreases in live stock and wool traffic on the Trans-Australian and Central Australian lines owing to drought conditions; (b) reduction of amount of railway construction material transported for the North Australian railway extension; and (c) decrease in goods traffic on the Federal Capital Territory line owing to the curtailment of building operations at Canberra. The increases in working expenses on the Trans-Australian and Central Australian lines were due mainly to heavy costs of repairs and overhauls to locomotives and rolling stock during the year.

(ii) *Averages.* The next table gives the working expenses per average mile worked, and per train-mile run for each railway for the years 1925 to 1929 :—

**RAILWAYS, FEDERAL.—WORKING EXPENSES, AVERAGES, 1925 TO 1929.**

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
<b>WORKING EXPENSES PER AVERAGE MILE WORKED.</b>					
	£	£	£	£	£
1925 .. ..	280	331	988	201	287
1926 .. ..	269	393	1,406	218	301
1927 .. ..	254	275	2,032	292	272
1928 .. ..	274	356	2,274	342	310
1929 .. ..	286	347	2,091	215	299

**WORKING EXPENSES PER TRAIN-MILE RUN.**

	d.	d.	d.	d.	d.
1925 .. ..	149.43	133.64	195.31	187.29	146.65
1926 .. ..	144.10	233.85	234.04	171.13	170.86
1927 .. ..	133.95	120.00	194.21	199.08	135.90
1928 .. ..	142.24	113.79	172.47	155.34	133.57
1929 .. ..	144.01	115.21	191.98	164.70	134.62

(iii) *Classification and Percentages.* Of the total working expenses of the Federal Railways during the year 1928–29, maintenance expenses represented 30 per cent., locomotive, carriage and wagon charges 46 per cent. and traffic expenses 16 per cent. Details for each line were as follows:—Trans-Australian line 25 per cent., 48 per cent. and 15 per cent.; Central Australia line 37 per cent., 47 per cent. and 13 per cent.; Federal Capital Territory line 10 per cent., 41 per cent. and 41 per cent.; and North Australia line 34 per cent., 36 per cent. and 25 per cent. respectively.

11. *Passenger Journeys, and Tonnage of Goods and Live Stock.*—(i) *General.* In the next table particulars are given of the passenger journeys and tonnage of goods and live stock carried on the Federal railways during the years 1925 to 1929:—

## RAILWAYS, FEDERAL.—TRAFFIC, 1925 TO 1929.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
1925 .. .. .	32,362	65,322	110,499	3,798	211,981
1926 .. .. .	34,512	65,250	138,923	5,293	243,978
1927 .. .. .	34,779	55,284	125,605	5,716	221,384
1928 .. .. .	36,212	60,410	53,255	5,899	155,776
1929 .. .. .	36,030	57,993	47,470	5,135	146,628

## PASSENGER JOURNEYS.

	No.	No.	No.	No.	No.
1925 .. .. .	32,362	65,322	110,499	3,798	211,981
1926 .. .. .	34,512	65,250	138,923	5,293	243,978
1927 .. .. .	34,779	55,284	125,605	5,716	221,384
1928 .. .. .	36,212	60,410	53,255	5,899	155,776
1929 .. .. .	36,030	57,993	47,470	5,135	146,628

## TONNAGE OF GOODS AND LIVE STOCK CARRIED.

	tons.	tons.	tons.	tons.	tons.
1925 .. .. .	42,225	63,622	25,405	15,259	146,511
1926 .. .. .	37,848	46,870	45,933	15,275	145,926
1927 .. .. .	43,503	81,048	84,450	15,612	224,613
1928 .. .. .	45,087	96,799	41,848	22,628	206,362
1929 .. .. .	40,750	90,734	23,196	14,919	169,599

(ii) *Passenger-Mileage Summary.* The appended table gives particulars of "Passenger-Mileage" on each of the Federal railways for the year 1928–29:—

## RAILWAYS, FEDERAL.—PASSENGER-MILES SUMMARY, 1928–29.

Railway.	Passenger Train Mileage.	Number of Passenger Journeys.	Total "Passenger-Miles."	Amount Received from Passengers.	Average Number of Passengers carried per Train Mile.	Average Mileage per Passenger Journey.	Average Earnings per "Passenger-Mile."	Average Fare per Passenger Journey.	Density of Traffic, per Average Mile Worked.
			,000 omitted.	£			Miles.		
Trans-Australian ..	361,457	36,030	33,376	155,949	92	926	1.12	4 6 7	31,731
Central Australia ..	34,752	57,993	3,442	20,232	99	59	1.41	7 0 0	6,074
Federal Capital Territory ..	9,991	47,470	236	2,014	23	5	2.05	0 0 10½	47,710
North Australia ..	9,846	5,135	575	4,583	58	112	1.91	0 17 10	2,171

(iii) *Ton-Mileage Summary.* Particulars of ton-mileage are shown hereunder in respect of each of the Federal railways for the year 1928-29:—

**RAILWAYS, FEDERAL.—“TON-MILEAGE” SUMMARY, 1928-29.**

Railway.	Goods Train Mileage.	Total Tons Carried.	Total “Ton-Miles.”	Goods Earnings.	Average Freight-paying Load per Train Mile.	Average Haul per ton.	Earnings per “Ton-Mile.”	Density of Traffic per Average Mile Worked.
					Tons.			
Trans-Australian ..	138,945	40,750	10,786	64,251	(a)78	265	1.43	10,254
Central Australia ..	374,218	90,734	26,674	153,699	(a)71	294	1.38	47,080
Federal Capital Territory ..	2,924	23,196	116	3,565	38	5	7.38	23,490
North Australia ..	73,015	14,919	2,431	25,320	(a)33	163	2.50	9,179

(a) Approximate.

12. *Passenger Fares, Goods Rates, and Parcel Rates.*—In previous issues of the Year Book particulars were included of Passenger Fares, Goods Rates (Ordinary Goods and Agricultural Produce), and Parcels Rates, but it is not proposed to republish this information herein.

13. *Rolling Stock, 1929.*—The following table shows the numbers of locomotives and rolling stock in use on the Federal railways, classified according to gauge:—

**RAILWAYS, FEDERAL.—LOCOMOTIVES AND ROLLING STOCK, 1929.**

Railway.	Gauge.		Total.	Gauge.		Total.	Gauge.		Total.
	4 ft. 8½ in.	3 ft. 6 in.		4 ft. 8½ in.	3 ft. 6 in.		4 ft. 8½ in.	3 ft. 6 in.	
	LOCOMOTIVES.			COACHING STOCK.			STOCK OTHER THAN COACHING.		
Trans-Australian	68	..	68	51	..	51	728	..	728
Central Australia	..	24	24	..	18	18	..	313	313
North Australia	..	13	13	..	12	12	..	312	312
Total ..	68	37	105	51	30	81	728	625	1,353

The Federal Capital Territory Railway was worked by the New South Wales Government Railway Department, using its own rolling stock.

14. *Employees.*—(i) *General.* The following table shows the number of employees on the Federal railways at 30th June in each year from 1925 to 1929 inclusive, classified according to salaried and wages staffs:—

**RAILWAYS, FEDERAL.—EMPLOYEES, 1925 TO 1929.**

Railway.	30th June—									
	1925.		1926.		1927.		1928.		1929.	
	Salaried Staff.	Wages Staff.								
Trans-Australian	No. 173	No. 906	} 218	No. 370	No. 132	No. 811	No. 126	No. 756	No. 128	No. 776
Central Australia ..	(a) 17	(a) 147		No. 345	No. 66	No. 523	No. 69	No. 492	No. 68	No. 539
North Australia ..	..	..		No. 184	No. 29	No. 648	No. 24	No. 320	No. 22	No. 178
Federal Capital Territory (b) ..	..	..	..	..	..	..	..	..	5	8
Total ..	190	1,053	218	1,399	227	1,982	219	1,568	223	1,501

(a) Worked by South Australian Government Railways.

(b) Worked by New South Wales Government Railways until 1st July, 1928.

Of the 223 salaried staff employed, 17 were engaged in the Construction Branch (2 on the Trans-Australian Line, 9 on the Central Australia Line, and 6 on the North Australia Line), the corresponding particulars for the wages staff being:—Trans-Australian Line 155, Central Australia Line 143, and North Australia Line 80, a total of 378 persons.

(ii) *Average Employed throughout Year.* The average number of employees throughout the year 1928–29 was 226 salaried staff (21 of whom were on construction work) and 1,395 wages staff (Construction, 298).

15. *Accidents.*—(i) *Classification.* The table hereunder furnishes a classification of accidents on the Federal railways during the year 1928–29:—

**RAILWAYS, FEDERAL.—ACCIDENTS, 1928–29.**

Classification.	Trans-Australian.		Central Australia.		Federal Capital Territory.		North Australia.		All Federal Railways.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Train Accidents—										
Passengers .. ..	..	..	..	..	..	..	..	..	..	..
Employees .. ..	..	1	..	2	..	..	..	..	..	3
Accidents on line (other than train accidents)—										
Passengers .. ..	..	..	..	2	..	..	..	..	..	2
Employees .. ..	..	..	..	..	..	..	3	..	..	3
Other Persons .. ..	..	..	..	..	..	..	..	..	..	..
Shunting Accidents—										
Passengers .. ..	..	..	..	..	..	..	..	..	..	..
Employees .. ..	..	1	..	3	..	..	..	1	..	5
Other Persons .. ..	..	1	..	..	..	..	..	..	..	1
Employees proceeding to or from duty within the Railway boundary .. ..	..	..	..	..	..	..	..	..	..	..
Persons killed or injured at crossings .. ..	..	..	..	..	..	..	..	..	..	..
Trespassers .. ..	..	..	..	..	..	..	..	..	..	..
Miscellaneous .. ..	..	..	..	..	..	..	..	..	..	..
<b>Total .. ..</b>	..	3	..	7	..	..	..	4	..	14

(ii) *Particulars for Quinquennium 1925–29.* The following table shows the number of accidents in each of the years 1925 to 1929:—

**RAILWAYS, FEDERAL.—ACCIDENTS, 1925 TO 1929.**

Railway.	Number of Persons.									
	Killed.					Injured.				
	1925.	1926.	1927.	1928.	1929.	1925.	1926.	1927.	1928.	1929.
Trans - Australian	..	..	..	3	..	6	6	12	3	3
Central Australia	2	1	1	2	..	3	18	5	7	7
Federal Capital Territory	..	..	1	..	..	..	..	..	1	..
North Australia ..	..	..	..	2	..	4	..	5	9	4
<b>Total .. ..</b>	2	1	2	7	..	13	24	22	20	14

### § 3. State Railways.

1. **Administration and Control of State Railways.**—The policy of Government control of the railways has been adopted in each State, and earlier issues of the Year Book (see No. 6, p. 693) contain a description of the methods adopted by the various State Governments in the control and management of their railways.

2. **Mileage Open, 1925 to 1929.**—(i) *General.* The following table shows the length of State railways open for traffic on the 30th June in the years 1925 to 1929 :—

#### RAILWAYS, STATE.—MILEAGE OPEN FOR TRAFFIC, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1925 .. .. .	5,656	4,483	6,114	2,452	3,733	673	23,111
1926 .. .. .	5,742	4,627	6,240	2,499	3,864	673	23,645
1927 .. .. .	5,750	4,634	6,302	2,528	3,918	658	23,790
1928 .. .. .	5,867	4,697	6,345	2,527	3,977	658	24,071
1929 .. .. .	5,940	4,699	6,447	2,542	4,079	653	24,360

A graph indicating the mileage open in Australia at the end of each of the years 1870 to 1929 accompanies this chapter.

The appended statement shows the actual mileage opened for traffic in the year 1929, also the annual average increase in mileage opened since 1919 in each State :—

#### RAILWAYS, STATE.—MILEAGE OPENED ANNUALLY.

Mileage.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
Mileage opened during 1928-29 .. .. .	73.26	2.26	102.43	14.42	101.85	-4.80(a)	289.42
Average annual mileage increase for 10 years to 30th June, 1929 ..	111.56	50.95	97.77	25.16	54.03	5.19	344.66

(a) Due to the closing of the Palooana to Barrington line. No new lines were opened during the year.

(ii) *New South Wales.* During the year ended 30th June, 1929, the following new lines were opened for traffic, viz. :—Bankstown to Sefton Park (2.27 miles), Uranquinty to Galore (28.60 miles), Ungarie to Naradhan (37.56 miles), and Galore to Kywong (4.90 miles), making a total of 73.33 miles. Adjustments reduced the length of existing lines by 0.07 miles, the total increase for the year being therefore 73.26 miles.

(iii) *Victoria.* During the year ended 30th June, 1929, the following new lines were opened for traffic, viz. :—South Kensington to West Footsray (2.44 miles) and Darling to East Malvern (0.82 miles), while the line from Black Diamond Junction to Strzelecki (1.00 miles) was dismantled, the total increase for the year being 2.26 miles.

(iv) *Queensland.* During 1928-29, 102.32 miles of new lines were opened for traffic, viz. :—Mulgouldie to Monto (7.92 miles), Chorregon to Winton (40.45 miles), and Duchess to Mt. Isa (53.95 miles); increases in the mileage of existing lines (0.11 miles) make the total increase for the year 102.43 miles.

(v) *South Australia.* The new railway from Renmark to Baramera (20.59 miles of 5' 3" gauge) was opened on 1st August, 1928, while the line from South Terrace to Glenelg (6.17 miles of 5' 3" gauge) was closed and sold on 2nd April, 1929. The net increase for the year 1928-29 was therefore 14.42 miles.

(vi) *Western Australia.* The following new mileage was opened for traffic during the year :—Amery to Kalannie (60.85 miles), Burakin to Kulja (8 miles) and Denmark to Frankland River (33 miles), a total of 101.85 miles.

(vii) *Tasmania.* No new extensions were opened during the year. The line from Palooa to Barrington (4.80 miles) was closed on 17th August, 1928.

3. Length and Gauge of Railway Systems in each State.—In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions or systems. A summary showing concisely the gauge and length of the main and branch lines included in each division or system in the different States for the year ended 30th June, 1929, is given in the Transport and Communication Bulletin No. 21 issued by this Bureau.

4. Average Mileage Worked and Train-Miles Run.—The total mileage open for traffic at the end of each financial year has been given previously, but, in considering the returns relating to revenue and expenditure and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shows the average number of miles worked and the total number of train-miles run by the Government railways of each State during the years 1925 to 1929 inclusive :—

**RAILWAYS, STATE.—MILEAGE WORKED AND MILES RUN, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AVERAGE MILEAGE WORKED.							
1925 ..	5,571	4,448	6,078	2,452	3,669	673	22,891
1926 ..	5,722	4,526	6,145	2,491	3,837	673	23,394
1927 ..	5,747	4,627	6,259	2,523	3,906	658	23,720
1928 ..	5,826	4,661	6,340	2,528	3,971	658	23,984
1929 ..	5,903	4,698	6,387	2,545	3,993	654	24,180

**TRAIN-MILES RUN. (a)**

1925 ..	23,304,916	17,482,006	12,107,995	6,653,248	4,843,304	1,358,980	65,750,449
1926 ..	24,624,995	17,575,547	12,866,323	6,846,149	4,862,505	1,342,475	68,117,994
1927 ..	26,325,847	18,030,749	11,905,663	6,959,734	5,273,894	1,303,023	69,798,910
1928 ..	26,896,530	17,694,928	11,655,122	6,503,474	5,729,735	1,416,741	69,896,580
1929 ..	27,332,124	17,979,219	11,893,147	5,765,366	5,829,465	1,405,929	70,255,250

(a) Traffic Train Miles (exclusive of "Assistant" and "Light" mileages).

5. Lines under Construction, and Lines Authorized, 1929.—(i) *General.* The following statement gives particulars up to the 30th June, 1929, of the mileage of State railways (a) under construction, and (b) authorized for construction but not commenced :—

**RAILWAYS, STATE.—MILEAGE UNDER CONSTRUCTION AND AUTHORIZED,  
30th JUNE, 1929.**

Particulars.	N.S.W.	Vic. (a)	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction .. ..	364·17	117·50	6121·00	..	263·25	..	865·92
Mileage authorized but not commenced .. ..	295·50	37·50	1,130·00	26·25	372·50	..	1,861·75

(a) See sub-section (b) below.

(b) Exclusive of 200 miles on which work has been suspended.

(ii) *Lines under Construction.* In spite of the great extensions of State railways since the year 1875, there are still, in some of the States, immense areas of country which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished. The general policy of the States is to extend the existing lines inland in the form of light railways as settlement increases, and while it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view.

(a) *New South Wales.* The total mileage under construction was 364.17 miles, consisting of the following lines:—Booyong to Ballina (12.63 miles); Kyogle to Richmond Gap (26.66 miles); Moss Vale to Unanderra (38.08 miles); Grafton to South Grafton (1.79 miles); Camurra to Boggabilla (73.73 miles); Wyalong to Euglo (33.40 miles); Tempe to East Hills (10.30 miles); Hillston to Roto (29.71 miles); Guyra to Dorrigo (89 miles); Casino to Bonalbo (37.78 miles); and City and Suburban Railway (11.09 miles).

(b) *Victoria.* In this State 49.25 miles of 5 ft. 3 in. gauge lines are being constructed, viz.:—Albion to Broadmeadows (8.50 miles); Darling to Glen Waverley (5.75 miles); and Nowingi to Millewa South (35 miles). Under the provisions of the Border Railways Act 1922 (Vic. 3194) the following lines are under construction in New South Wales territory, viz.:—Euston to Letta (30.25 miles); and Yarrawonga to Oaklands (38 miles). On completion these lines, which are of 5 ft. 3 in. gauge, will be taken over and operated by the Victorian Railways Commissioners.

(c) *Queensland.* In previous issues of the Year Book details were given of the scheme of railway construction under the provisions of the North Coast Railway Act 1910 (see Year Book No. 15, p. 551). On the 30th June, 1929, the following lines, of an aggregate length of 121 miles, were under construction:—Southern Division—4 ft. 8½ in. gauge—South Richmond to Richmond Gap (68 miles); 3 ft. 6 in. gauge—Inglewood to Texas (35 miles) and Kalpowar to 88½ miles (18 miles). The following lines are partially constructed, but work thereon is temporarily suspended:—Goondoon to Kalliva Creek (18 miles); Yaraka to Powell's Creek (27 miles); Dajarra to Moonah Creek (41 miles); Rannes to Monto (63 miles); Tara towards Surat (14 miles); 88½-Mile to Monto (8 miles); and Winton to 37-Mile (37 miles); a total of 208 miles.

(d) *South Australia.* At 30th June, 1929, no railway construction work was in progress.

(e) *Western Australia.* The following lines were in course of construction by the Public Works Department on the 30th June, 1929:—Lake Brown to Bullfinch (50.25 miles); Pemberton to Westcliffe (28 miles); Meekatharra to Wiluna (111 miles); and Kulja eastward (74 miles); a total of 263.25 miles.

(f) *Tasmania.* At 30th June, 1929, no railway construction work was in progress.

(iii) *Lines Authorized for Construction.* (a) *New South Wales.* At the 30th June, 1929, the following lines had been authorized for construction but not commenced:—Gilgandra to Collie (21.51 miles); Jerilderie towards Deniliquin (25.00 miles); Rand to Bull Plain (27.55 miles); Canowindra to Gregra (33.87 miles); St. Leonards to Eastwood (9.07 miles); Sandy Hollow via Gulgong to Maryvale (146.5 miles); and Inverell to Ashford (32 miles); a total distance of 295.50 miles.

(b) *Victoria.* The following lines were authorized, but construction had not been commenced up to the end of June, 1929:—5 ft. 3 in. gauge: La La Siding to Big Pat's Creek (2.50 miles); Casterton to Nangeela (9 miles); and Orbost to Brodribb (6 miles); Under the Border Railways Act 1922, the following line has been authorized for construction in New South Wales Territory:—Extension from Mildura or vicinity (Victoria) to 20 miles north (New South Wales); an aggregate distance of 37.50 miles.

(c) *Queensland.* In addition to the new lines upon which work has been commenced, Parliament has authorized the construction of the following parts of the Great Western Railway—Section A, from Quilpie to Eromanga (120 miles); Section B, from Powell's Creek (224 miles); Section C, from 37-Mile to Springvale (324 miles); and Section D,

from Moonah Creek (216 miles). The following lines were also authorized for construction:—Texas to Silverspur (9 miles); Mount Edwards to Maryvale (28 miles); Lanefield to Rosevale (17 miles); Gatton to Mount Sylvia (11 miles); Wandooan to Taroom (42 miles); Dirranbandi extension (52 miles); Yarraman to Nanango (16 miles); Brooloo to Kenilworth (10 miles); Dobbryn to Myally Creek (50 miles); and Peeramom towards Boongee (11 miles); a total of 1,130 miles.

(d) *South Australia.* Parliament has authorized the construction of a line on the 3 ft. 6 in. gauge from Keilpa to Mangalo Hall (26.25 miles).

(e) *Western Australia.* The following lines were authorized for construction up to the 30th June, 1929:—Yarramony eastwards (85 miles); Brookton to Dale River (27 miles); Boyup Brook to Cranbrook (95 miles); Manjimup to Mount Barker (107 miles); Leighton to Robb's Jetty (4.50 miles); and Lake Grace to Kalgarin (54 miles); a total distance of 372.50 miles.

(f) *Tasmania.* There were no new railways authorized on which work had not been commenced at 30th June, 1929.

6. **Cost of Construction and Equipment.**—(i) *General.* The total cost of construction and equipment of the State railways as distinct from those owned by the Commonwealth Government at the 30th June, 1929, amounted to £309,636,337, representing an average cost of £48.58 per head of population. If the cost of railways owned by the Commonwealth Government is included, the total capital cost (£323,770,550) is equivalent to an amount of £50.80 per head of the population of the Commonwealth, while the total mileage open (26,329.60 miles) per 1,000 of population is 4.13. Particulars of the capital expenditure incurred on lines open for traffic are given in the following table:—

#### RAILWAYS, STATE.—MILEAGE AND COST TO 30th JUNE, 1929.

State.	Length of Line Open (Route).	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.	Mileage per 1,000 of Population at 30th June, 1929.
	Miles.	£	£	£	Miles.
New South Wales (a) ..	5,940.22	122,566,422	20,633	49.61	2.40
Victoria .. ..	4,699.01	73,061,522	15,548	41.34	2.66
Queensland .. ..	6,447.18	58,251,561	9,035	62.83	6.95
South Australia (a) ..	2,541.63	26,835,717	10,558	45.98	4.36
Western Australia (a) ..	4,078.48	22,427,112	5,498	54.47	9.91
Tasmania .. ..	653.45	6,494,003	9,945	30.56	3.07
All States .. ..	24,359.97	309,636,337	12,711	48.58	3.82

(a) Exclusive of Federal railways.

The lowest average cost (£5,498) per mile open is in Western Australia, and the highest (£20,633) in New South Wales, as compared with an average of £12,711 for all States. There were few costly engineering difficulties in Western Australia, and the fact that contractors were permitted to carry traffic during the term of their contracts considerably reduced expenditure, particularly in respect of all goldfield contracts.

In the table above the figures relating to cost of construction and equipment do not include the discounts and flotation charges on loans allocated to the railways. This will explain the differences between the amounts shown therein for Queensland, South Australia, and Western Australia, and those shown in the Railway Reports for these States.

(ii) *Capital Cost, All Lines. (a) Total.* The increase in the total capital cost of construction and equipment of Government railways for each year from 1925 to 1929 is shown in the following table :—

**RAILWAYS, STATE.—CAPITAL COST OF LINES OPEN, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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**TOTAL COST OF LINES OPEN.**

	£	£	£	£	£	£	£
1925 ..	98,060,216	67,136,069	49,453,595	23,637,283	19,643,517	6,416,194	264,346,874
1926 ..	103,674,668	68,888,145	51,555,649	25,529,866	20,327,456	6,450,185	276,425,969
1927 ..	111,226,149	70,298,673	54,496,012	28,120,046	20,855,604	6,486,109	291,482,593
1928 ..	116,221,374	72,282,201	56,281,445	26,021,454	21,403,256	6,483,281	298,693,011
1929 ..	122,566,422	73,061,522	58,251,561	26,835,717	22,427,112	6,494,003	309,636,337

**COST PER MILE OPEN.**

1925 ..	17,338	14,974	8,088	9,641	5,263	9,535	11,435
1926 ..	18,056	14,887	8,262	10,216	5,260	9,586	11,690
1927 ..	19,344	15,169	8,648	11,124	5,322	9,854	12,252
1928 ..	19,809	15,390	8,871	10,297	5,382	9,849	12,409
1929 ..	20,633	15,548	9,035	10,553	5,498	9,945	12,711

(b) *From Consolidated Revenue.* The following table shows the amounts provided from Consolidated Revenue for construction and equipment to 30th June, 1929 :—

**RAILWAYS, STATE.—EXPENDITURE FROM CONSOLIDATED REVENUE FOR CONSTRUCTION AND EQUIPMENT TO 30th JUNE, 1929.**

To 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1929 ..	659,930	4,278,489	..	..	643,943	16,935	5,599,297

(iii) *Loan Expenditure.* The subjoined table shows the total loan expenditure on Government railways (including lines both open and unopen) in each State, except Tasmania, and on Government railways and tramways in the latter State for the years 1925 to 1929 :—

**RAILWAYS, STATE.—LOAN EXPENDITURE, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	All States.
	£	£	£	£	£	£	£
1925 ..	4,246,963	1,483,720	1,741,805	2,151,329	534,103	28,638	10,186,558
1926 ..	6,060,259	1,489,285	2,826,188	2,764,511	642,854	17,255	13,800,352
1927 ..	6,229,347	1,821,005	2,470,083	2,460,555	642,225	29,824	13,653,039
1928 ..	8,172,114	1,651,884	1,646,982	555,798	806,895	37,196	12,870,869
1929 ..	6,356,971	1,249,409	1,212,131	706,144	835,051	Cr. 11,684	10,348,022

(a) Including tramways.

The following statement shows the total loan expenditure on railways to the 30th June, 1929:—

**RAILWAYS, STATE.—TOTAL LOAN EXPENDITURE TO 30th JUNE, 1929.**

State ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. a	All States.
Expenditure	£ 142,255,901	£ 72,357,133	£ 60,204,291	£ 31,819,982	£ 23,500,540	£ 6,947,918	£ 337,085,765

(a) Including tramways.

7. **Gross Revenue.**—(i) *General.* The total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run during each financial year from 1925 to 1929 inclusive were as follows:—

**RAILWAYS, STATE.—GROSS REVENUE, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>TOTAL GROSS REVENUE.</b>							
1925 .. ..	£ 16,769,452	£ 12,759,197	£ 7,109,210	£ 4,012,736	£ 3,359,501	£ 548,256	£ 44,558,352
1926 .. ..	16,939,032	12,671,061	7,437,090	4,237,718	3,337,292	545,191	45,167,384
1927 .. ..	18,906,543	13,652,434	7,325,677	4,062,133	3,607,989	539,352	43,094,128
1928 .. ..	19,029,512	12,821,059	7,381,532	3,941,276	3,858,051	554,743	47,586,173
1929 .. ..	19,615,616	13,164,973	7,568,647	3,593,646	3,799,764	503,855	48,246,501

**GROSS REVENUE PER AVERAGE MILE WORKED.**

1925 .. ..	£ 3,010	£ 2,869	£ 1,170	£ 1,937	£ 916	£ 815	£ 1,947
1926 .. ..	2,960	2,798	1,210	1,701	870	810	1,930
1927 .. ..	3,290	2,951	1,170	1,610	924	819	2,023
1928 .. ..	3,266	2,751	1,164	1,559	972	843	1,984
1929 .. ..	3,323	2,802	1,185	1,412	951	771	1,995

**GROSS REVENUE PER TRAIN-MILE RUN.**

1925 .. ..	d. 172.70	d. 175.16	d. 140.92	d. 144.75	d. 166.47	d. 96.82	d. 162.64
1926 .. ..	165.09	173.03	138.73	143.56	164.72	97.47	159.14
1927 .. ..	172.36	181.72	147.67	140.08	164.19	99.34	165.37
1928 .. ..	169.80	173.89	152.00	145.44	161.60	93.98	163.39
1929 .. ..	171.93	175.74	152.73	149.60	156.43	86.01	164.81

The amounts of revenue earned per average mile worked and per train-mile run in respect of (a) coaching and (b) goods and live stock traffic, separately, are given later.

(ii) *Coaching, Goods, and Miscellaneous Receipts.* (a) *Totals.* The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock; and (c) rents and miscellaneous items. The subjoined table shows the gross revenue for 1925 to 1929, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph.

## RAILWAYS, STATE.—COACHING, GOODS, ETC., RECEIPTS, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>COACHING TRAFFIC RECEIPTS.</b>							
	£	£	£	£	£	£	£
1925 ..	6,942,093	5,981,437	2,482,026	1,317,102	971,323	221,668	17,915,649
1926 ..	7,101,229	6,070,555	2,454,689	1,277,463	969,160	206,728	18,079,824
1927 ..	7,473,545	6,304,382	2,516,476	1,221,106	980,762	201,048	18,697,319
1928 ..	7,851,512	6,015,383	2,410,293	1,120,094	1,028,656	199,865	18,625,803
1929 ..	8,124,716	5,871,037	2,444,697	1,013,296	979,999	180,295	18,614,040

## GOODS AND LIVE STOCK TRAFFIC RECEIPTS.

1925 ..	9,010,929	5,775,522	4,477,985	2,607,628	2,198,322	312,706	24,383,092
1926 ..	8,941,123	5,565,451	4,817,222	2,578,700	2,174,895	320,748	24,398,139
1927 ..	10,490,593	6,344,096	4,629,103	2,662,866	2,413,852	319,276	26,859,786
1928 ..	10,228,586	5,763,701	4,824,885	2,616,503	2,619,816	335,431	26,388,922
1929 ..	10,379,192	6,251,682	4,949,614	2,358,579	2,610,193	305,287	26,854,647

## MISCELLANEOUS RECEIPTS.

1925 ..	816,430	1,002,238	149,199	88,006	189,856	13,882	2,259,611
1926 ..	896,680	1,035,055	165,179	381,555	193,237	17,715	2,689,421
1927 ..	942,405	1,003,956	180,098	178,161	213,375	19,028	2,537,023
1928 ..	949,414	1,041,975	146,354	204,679	209,579	19,447	2,571,448
1929 ..	1,111,708	1,042,254	174,336	221,771	209,572	18,273	2,777,914

The increase in miscellaneous receipts in the State of South Australia during 1925-26 was due to the inclusion of £225,242 on account of Border Railway adjustments with the State of Victoria, and £78,619 earned from bookstalls and refreshment rooms, which were operated departmentally for the first time.

(b) *Percentages.* The following table shows for the two years 1927-28 and 1928-29 the percentage which each class of receipts bears to the total gross revenue:—

## RAILWAYS, STATE.—PERCENTAGES OF RECEIPTS, 1928 AND 1929.

State.	1928.			1929.		
	Coaching.	Goods and Live Stock.	Miscellaneous.	Coaching.	Goods and Live Stock.	Miscellaneous.
	%	%	%	%	%	%
New South Wales ..	41.26	53.75	4.99	41.42	52.91	5.67
Victoria ..	46.92	44.95	8.13	44.59	47.49	7.92
Queensland ..	32.65	65.37	1.98	32.30	65.40	2.30
South Australia ..	28.42	66.39	5.19	28.20	65.63	6.17
Western Australia ..	26.66	67.91	5.43	25.79	68.69	5.52
Tasmania ..	36.03	60.47	3.50	35.78	60.59	3.63
All States ..	39.14	55.46	5.40	38.58	55.66	5.76

(c) *Averages for Coaching Traffic Receipts.* The subjoined table shows the receipts from coaching traffic per average mile of line worked and per passenger-train-mile in each State for the year ended the 30th June, 1929 :—

**RAILWAYS, STATE.—COACHING TRAFFIC RECEIPTS, AVERAGES, 1929.**

State.	Number of Passenger-Train-Miles.	Coaching Traffic Receipts.		
		Gross.	Per Average Mile Worked.	Per Passenger-Train-Mile.
	No.	£	£	d.
New South Wales .. ..	16,780,177	8,124,716	1,376	116.20
Victoria .. ..	11,740,834	5,871,037	1,250	120.01
Queensland .. ..	4,487,776	2,444,697	383	130.74
South Australia .. ..	3,578,690	1,013,296	398	67.95
Western Australia .. ..	2,168,764	979,999	245	108.45
Tasmania .. ..	582,613	180,295	276	74.27
All States .. ..	39,338,854	18,614,040	770	113.56

(d) *Averages for Goods and Live Stock Traffic.* The gross receipts from goods and live stock traffic per average mile worked, per goods-train-mile, and per ton carried, for the year ended the 30th June, 1929, are given below :—

**RAILWAYS, STATE.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS, AVERAGES, 1929.**

State.	Number of Goods-Train-Miles.	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train-Mile.	Per Ton Carried.
	No.	Tons.	£	£	d.	d.
New South Wales .. ..	10,601,947	14,516,643	10,379,192	1,758	234.96	171.60
Victoria .. ..	6,238,385	8,187,088	6,251,682	1,331	240.51	183.26
Queensland .. ..	7,405,371	4,558,099	4,949,614	775	160.41	260.61
South Australia .. ..	2,186,676	2,748,423	2,358,579	927	258.87	205.96
Western Australia .. ..	3,660,701	3,670,147	2,610,193	654	171.13	170.69
Tasmania .. ..	823,316	660,523	305,287	467	88.99	110.93
All States .. ..	30,916,396	34,340,923	26,854,547	1,111	208.47	187.68

8. *Working Expenses.*—(i) *General.* In order to make an adequate comparison of the working expenses, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—i.e., a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back loading.

The following table shows the total annual expenditure and the percentage thereof on gross revenue in each State for the years 1925 to 1929 :—

## RAILWAYS, STATE.—WORKING EXPENSES, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States
<b>TOTAL WORKING EXPENSES.</b>							
	£	£	£	£	£	£	£
1925 .. ..	11,939,686	9,429,728	5,425,167	2,935,755	2,355,087	531,590	32,617,013
1926 .. ..	12,519,993	9,548,147	6,459,792	a7,081,130	2,509,049	504,038	38,622,149
1927 .. ..	13,795,853	10,193,581	6,495,322	a5,797,751	2,685,693	551,192	39,519,392
1928 .. ..	14,756,327	9,812,749	6,106,140	3,660,740	2,910,811	573,885	37,820,652
1929 .. ..	14,978,050	9,530,263	6,202,801	3,622,567	3,055,446	563,652	37,952,779

(a) See (ii) below.

## PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.

	%	%	%	%	%	%	%
1925 .. ..	71.20	73.90	76.31	73.16	70.10	96.96	73.20
1926 .. ..	73.91	75.35	86.86	167.10	75.18	92.45	85.51
1927 .. ..	72.97	74.66	86.67	142.73	74.44	102.20	82.17
1928 .. ..	77.54	76.54	82.72	93.20	75.45	103.45	79.48
1929 .. ..	76.36	72.39	81.95	100.80	80.41	111.88	78.66

The variation in the percentage of working expenses on the gross revenue in each State for the years 1865 to 1929 is illustrated in the graph which accompanies this chapter.

(ii) *Special Expenditure.* The large increases in the working expenses in South Australia during the years 1925–26 and 1926–27 are due to amounts of £3,932,314 and £1,962,079 on account of accumulated and deferred charges being debited against the revenues for those years. This expenditure has been shown in this way in deference to the wishes of the South Australian railway authorities. Eliminating these amounts, the percentage of working expenses on gross revenue for South Australia during 1925–26 and 1926–27 would have been 73.12 per cent. and 94.43 per cent., and for all States 76.70 per cent. and 78.09 per cent., respectively.

(iii) *Averages.* The next table shows the working expenses per average mile worked and per train-mile run in each State for the years 1925 to 1929 :—

## RAILWAYS, STATE.—WORKING EXPENSES, AVERAGES, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>WORKING EXPENSES PER AVERAGE MILE WORKED.</b>							
	£	£	£	£	£	£	£
1925 .. ..	2,143	2,120	893	1,197	642	799	1,425
1926 .. ..	2,188	2,108	1,051	a2,843	654	749	1,651
1927 .. ..	2,401	2,203	1,038	a2,298	688	837	1,666
1928 .. ..	2,533	2,105	963	1,448	733	872	1,577
1929 .. ..	2,537	2,028	971	1,423	765	862	1,569
<b>WORKING EXPENSES PER TRAIN-MILE RUN.</b>							
	d.	d.	d.	d.	d.	d.	d.
1925 .. ..	122.96	129.45	107.54	105.90	116.70	93.87	119.05
1926 .. ..	122.02	130.38	120.50	a248.24	123.84	90.11	136.08
1927 .. ..	125.77	135.68	130.93	a199.93	122.22	101.52	135.89
1928 .. ..	131.67	133.09	125.74	135.09	121.92	97.22	129.86
1929 .. ..	131.28	127.22	125.17	150.80	125.79	96.22	129.65

(a) See sub-section (ii) above.

(iv) *Distribution.* The subjoined table shows the distribution of working expenses, under four chief heads of expenditure, for the years 1925 to 1929 :—

**RAILWAYS, STATE.—DISTRIBUTION OF WORKING EXPENSES, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>MAINTENANCE.</b>							
	£	£	£	£	£	£	£
1925 .. ..	2,176,435	1,963,960	1,280,190	501,800	527,493	144,612	6,594,490
1926 .. ..	2,001,724	1,928,597	1,513,583	2,407,266	596,046	134,835	8,582,056
1927 .. ..	2,154,931	2,276,601	1,576,325	2,027,057	636,466	134,291	7,805,671
1928 .. ..	2,596,755	2,109,404	1,539,177	584,350	731,860	140,989	7,762,535
1929 .. ..	2,576,847	1,917,936	1,608,978	653,941	748,123	158,302	7,669,127
<b>LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.</b>							
1925 .. ..	5,772,631	3,501,911	2,459,370	1,560,923	1,124,157	223,302	14,642,294
1926 .. ..	6,107,302	3,592,490	2,973,033	2,361,130	1,157,230	218,326	17,659,511
1927 .. ..	6,823,914	3,746,921	2,924,903	2,365,050	1,244,941	222,477	18,616,206
1928 .. ..	7,158,605	3,659,881	2,657,598	2,002,377	1,306,504	233,670	17,018,633
1929 .. ..	7,253,076	3,578,165	2,719,211	1,899,717	1,381,160	235,641	17,066,970
<b>TRAFFIC EXPENSES.</b>							
1925 .. ..	3,121,001	3,223,961	1,593,347	792,762	639,193	122,374	9,497,638
1926 .. ..	3,391,092	2,701,124	1,859,375	2,868,171	685,898	117,246	9,622,906
1927 .. ..	3,733,225	2,822,524	1,844,066	2,898,459	728,466	118,987	10,145,727
1928 .. ..	3,877,254	2,673,513	1,709,518	823,189	773,806	124,845	9,982,130
1929 .. ..	3,853,223	2,604,729	1,721,355	764,203	803,016	130,068	9,876,594
<b>OTHER CHARGES.</b>							
1925 .. ..	869,619	734,896	92,260	80,270	64,244	41,302	1,882,591
1926 .. ..	1,019,875	1,325,936	113,796	104,563	69,575	33,631	2,757,676
1927 .. ..	1,033,783	1,347,535	150,023	219,185	75,820	75,437	2,951,788
1928 .. ..	1,123,713	1,369,946	149,840	250,824	98,641	74,381	3,067,354
1929 .. ..	1,294,904	1,429,433	153,257	299,706	123,147	89,641	3,340,088

(a) See sub-section (ii), page 191.

In New South Wales and Victoria the expenditure in connexion with refreshment rooms is included in " Other Charges."

9. *Salaries and Wages.*—The following table shows the total amount paid in salaries and wages, also the amount per average mile worked and per train-mile run in each State during the years 1925 to 1929 :—

**RAILWAYS, STATE.—SALARIES AND WAGES PAID AND AVERAGES, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States..
<b>TOTAL SALARIES AND WAGES PAID.</b>							
	£	£	£	£	£	£	£
1925 .. ..	9,834,596	6,969,519	4,199,965	2,689,517	1,909,995	364,771	26,018,363
1926 .. ..	11,192,851	7,273,485	5,011,678	3,456,996	2,073,207	346,832	29,355,049
1927 .. ..	12,509,021	7,792,554	5,062,347	3,596,092	2,279,878	336,287	31,576,179
1928 .. ..	12,693,706	7,725,183	4,751,885	2,915,912	2,442,997	345,803	30,875,491
1929 .. ..	12,422,298	7,436,531	4,505,836	2,499,872	2,551,056	374,107	30,089,700
<b>SALARIES AND WAGES PER AVERAGE MILE WORKED.</b>							
	£	£	£	£	£	£	£
1925 .. ..	1,774	1,567	691	1,097	621	542	1,137
1926 .. ..	1,956	1,907	816	1,388	540	515	1,255
1927 .. ..	2,177	1,684	809	1,425	554	511	1,331
1928 .. ..	2,179	1,657	750	1,154	615	525	1,287
1929 .. ..	2,104	1,583	752	982	639	572	1,244
<b>SALARIES AND WAGES PER TRAIN MILE RUN.</b>							
	d.	d.	d.	d.	d.	d.	d.
1925 .. ..	101.79	95.68	83.25	97.01	64.64	64.41	94.97
1926 .. ..	109.08	99.32	93.48	121.18	102.32	62.00	103.42
1927 .. ..	114.03	103.72	102.04	124.00	103.75	61.93	108.57
1928 .. ..	113.26	104.77	97.84	107.60	102.32	58.58	106.01
1929 .. ..	103.88	99.27	96.98	104.06	105.03	63.86	102.79

10. Net Revenue.—(i) *Net Revenue and Percentage on Capital Cost.* The following table shows the net sums available to meet interest charges, also the percentage of such sums upon the capital cost of construction and equipment of lines open for traffic in each State for the years 1925 to 1929 :—

**RAILWAYS, STATE.—NET REVENUE AND PERCENTAGE THEREOF ON CAPITAL COST OF LINES OPEN, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>NET REVENUE.</b>							
	£	£	£	£	£	£	£
1925 .. ..	4,829,766	3,329,469	1,684,043	1,076,981	1,004,414	16,666	11,941,339
1926 .. ..	4,419,039	3,122,914	977,298	a-2,843,412	828,243	41,153	6,545,235
1927 .. ..	5,110,690	3,453,853	830,355	a-1,735,618	922,296	-11,840	8,574,736
1928 .. ..	4,273,185	3,008,310	1,275,392	280,536	947,240	-19,142	9,765,521
1929 .. ..	4,637,566	3,634,710	1,365,846	- 28,921	744,318	-59,797	10,293,722

**PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.**

	%	%	%	%	%	%	%
1925 .. ..	4.93	4.96	3.41	4.56	5.11	0.26	4.51
1926 .. ..	4.26	4.54	1.90	a-11.14	4.07	0.63	2.37
1927 .. ..	4.59	4.92	1.52	a- 6.17	4.42	-0.18	2.94
1928 .. ..	3.68	4.16	2.27	1.08	4.43	-0.29	3.27
1929 .. ..	3.78	4.97	2.34	- 0.11	3.32	-0.92	3.32

(a) See sub-section (ii), page 191.

These figures are also represented in the graphs which accompany this chapter.

The percentage of net revenue on capital expenditure for all States during the past five years reached its maximum during the year 1924-25, with a return of 4.51 per cent. The very low returns for 1925-26 and 1926-27 are due, in a large measure, to the unusual loading of the working expenses of those years in South Australia, which was alluded to in paragraph 8. But for this circumstance the percentages of net revenue on capital would have been 4.46 per cent. and 0.81 per cent. for South Australia and 3.81 per cent. and 3.61 per cent. respectively for the average of all States. Even these larger returns, however, would be insufficient to meet interest charges, for which particulars are included in the following sub-section.

(ii) *Net Revenue, Averages.* Tables showing the gross earnings and the working expenses per average mile worked and per train-mile run have been given previously. The net earnings, *i.e.*, the excess of gross earnings over working expenses per average mile worked and per train-mile run are shown in the following table :—

**RAILWAYS, STATE.—NET REVENUE, AVERAGES, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>NET REVENUE PER AVERAGE MILE WORKED.</b>							
	£	£	£	£	£	£	£
1925 .. ..	867	749	277	429	273	25	522
1926 .. ..	772	690	159	a- 1,142	216	61	279
1927 .. ..	889	748	133	a- 688	236	- 18	361
1928 .. ..	733	645	201	111	239	- 29	407
1929 .. ..	786	774	214	- 11	186	- 91	426

**NET REVENUE PER TRAIN-MILE RUN.**

	d.	d.	d.	d.	d.	d.	d.
1925 .. ..	49.74	45.71	33.38	38.85	49.77	2.95	43.58
1926 .. ..	43.07	42.65	18.23	a-99.68	40.88	7.36	23.06
1927 .. ..	46.59	46.04	16.74	a-59.85	41.97	- 2.18	29.48
1928 .. ..	38.13	40.80	26.26	10.35	39.68	- 3.24	33.53
1929 .. ..	40.65	48.52	27.56	- 1.20	30.64	-10.21	35.16

(a) See sub-section (ii), page 191.

11. **Interest.** The amount of interest payable on expenditure from loans on the construction and equipment of the railways, the amount of interest per average mile worked and per train-mile run in each State during the years ended 30th June 1925 to 1929 were as follows :—

**RAILWAYS, STATE.—AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>AMOUNT OF INTEREST PAYABLE.</b>							
	£	£	£	£	£	£	£
1925 .. ..	4,796,829	3,085,648	2,419,503	1,018,117	813,849	279,832	12,413,778
1926 .. ..	5,249,710	3,077,905	2,564,181	1,195,108	860,225	283,799	13,230,928
1927 .. ..	5,562,308	3,271,374	2,720,717	1,321,515	887,740	285,255	14,059,909
1928 .. ..	5,882,452	3,324,270	2,827,223	1,271,686	920,569	284,076	14,510,276
1929 .. ..	6,150,000	3,475,313	2,902,710	1,366,807	923,017	283,554	15,101,401

**INTEREST PER AVERAGE MILE WORKED.**

	£	£	£	£	£	£	£
1925 .. ..	861	694	398	415	222	416	542
1926 .. ..	917	680	417	480	224	422	566
1927 .. ..	968	707	435	528	227	433	593
1928 .. ..	1,010	713	446	503	232	432	605
1929 .. ..	1,042	740	454	537	231	434	625

**INTEREST PER TRAIN-MILE RUN.**

	d.						
1925 .. ..	49.39	42.36	47.95	36.72	40.32	49.42	45.31
1926 .. ..	51.16	42.03	47.83	41.89	42.45	45.89	46.61
1927 .. ..	50.70	43.54	54.84	45.95	40.39	52.53	48.34
1928 .. ..	52.48	45.03	58.21	46.92	38.55	48.12	49.82
1929 .. ..	53.80	46.39	58.58	51.90	38.00	48.40	51.59

Interest charges in 1928–29, viz., £15,101,401, show an increase of £2,687,623 over the amount payable in 1924–25. The interest payable on the cost of construction and equipment, exclusive of expenditure from Consolidated Revenue (£5,599,297) for that purpose, was at the rate of 4.97 per cent. in 1928–29. If the abnormal charges to working expenses in South Australia be eliminated, the loss in that State for 1926–27 would be 3.93 per cent., and for all States, 1.21 per cent.

12. **Profit or Loss.**—The following table shows the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment for the last five years :—

**RAILWAYS, STATE.—PROFIT OR LOSS, 1925 TO 1929.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.</b>							
	£	£	£	£	£	£	£
1925 .. ..	+ 32,937	+ 243,821	- 735,460	+ 58,864	+ 190,565	- 263,166	- 472,439
1926 .. ..	- 830,671	+ 45,009	- 1,586,383	a-4,038,520	- 31,982	- 242,646	- 6,685,693
1927 .. ..	- 451,618	+ 187,479	- 1,890,362	a-3,068,133	+ 34,556	- 297,095	- 5,485,173
1928 .. ..	- 1,609,287	- 315,960	- 1,551,831	- 991,150	+ 26,671	- 303,218	- 4,744,755
1929 .. ..	- 1,512,434	+ 159,397	- 1,536,864	- 1,395,728	- 178,699	- 343,351	- 4,807,679

**PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.**

	%	%	%	%	%	%	%
1925 .. ..	+0.03	+0.36	-1.49	+0.25	+0.97	-4.10	-0.18
1926 .. ..	-0.80	+0.06	-3.08	a-15.82	-0.16	-3.76	-2.42
1927 .. ..	-0.41	+0.27	-3.47	a-10.91	+0.17	-4.58	-1.88
1928 .. ..	-1.38	-0.44	-2.76	-3.81	+0.12	-4.63	-1.59
1929 .. ..	-1.23	+0.22	-2.64	-5.20	-0.80	-5.29	-1.55

(a) See sub-section (ii), page 191.

13. Traffic.—(i) *General.* Reference has already been made to the difference in the traffic conditions on many of the lines. These conditions differ not only in the several States, but also on different lines in the same States, and apply to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the interior traffic is light, as the density of population diminishes rapidly as the coastal regions are left behind, with a consequent diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back loading.

The following table gives particulars for the years 1925 to 1929 :—

## RAILWAYS, STATE.—TRAFFIC, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>NUMBER OF PASSENGER JOURNEYS.</b>							
1925 ..	128,532,038	166,444,142	29,657,832	25,647,487	17,196,672	2,656,018	370,134,189
1926 ..	130,725,681	168,054,308	28,384,302	25,343,319	16,457,719	2,455,824	371,421,053
1927 ..	141,615,806	169,237,648	26,812,693	23,366,760	15,737,570	2,328,970	379,099,747
1928 ..	143,046,881	164,574,870	24,300,934	19,539,347	16,032,536	2,322,410	375,316,978
1929 ..	151,116,086	161,002,267	24,738,327	17,829,946	14,904,917	2,212,817	371,804,360
<b>PER 100 OF MEAN POPULATION.</b>							
1925 ..	5,652	9,959	3,433	4,715	4,670	1,244	6,249
1926 ..	5,687	9,979	3,296	4,594	4,422	1,132	6,206
1927 ..	6,032	9,886	3,039	4,126	4,155	1,084	6,213
1928 ..	6,168	9,451	2,758	3,394	4,087	1,076	6,029
1929 ..	6,160	9,143	2,699	3,057	3,672	1,022	5,867
<b>PER AVERAGE MILE OF LINE WORKED.</b>							
1925 ..	23,071	37,424	4,879	10,461	4,687	3,947	16,170
1926 ..	22,845	37,111	4,619	10,213	4,289	3,650	15,876
1927 ..	24,642	36,579	4,284	9,262	4,029	3,538	15,982
1928 ..	25,412	35,307	3,912	7,730	4,037	3,528	15,649
1929 ..	25,598	34,272	3,873	7,007	3,732	3,384	15,377
<b>TONNAGE OF GOODS AND LIVE STOCK CARRIED.</b>							
1925 ..	16,208,476	8,959,556	5,083,658	3,611,313	3,284,915	690,561	37,838,479
1926 ..	15,032,811	8,728,496	5,106,386	3,562,245	3,237,496	694,194	36,361,628
1927 ..	17,224,894	9,234,923	4,315,513	3,671,686	3,438,587	730,273	38,615,876
1928 ..	15,433,083	8,117,961	4,670,447	3,401,901	3,697,648	715,387	36,036,427
1929 ..	14,516,643	8,187,088	4,558,099	2,748,423	3,670,147	660,523	34,340,923
<b>PER 100 OF MEAN POPULATION.</b>							
1925 ..	719	536	597	664	892	323	645
1926 ..	654	518	593	646	870	320	608
1927 ..	734	539	489	648	908	340	633
1928 ..	643	466	519	591	943	331	579
1929 ..	592	465	497	471	904	305	542
<b>PER AVERAGE MILE OF LINE WORKED.</b>							
1925 ..	2,909	2,014	836	1,473	895	1,026	1,652
1926 ..	2,627	1,928	831	1,430	844	1,032	1,554
1927 ..	2,997	1,996	689	1,455	880	1,109	1,628
1928 ..	2,649	1,741	737	1,346	931	1,087	1,503
1929 ..	2,459	1,743	714	1,080	919	1,010	1,420

(ii) *Metropolitan and Country Passenger Traffic and Revenue.* A further indication of the difference in passenger traffic conditions is obtained from a comparison of the volume of metropolitan and suburban, and country traffic in each State. This is shown below for the year 1928-29 :—

**RAILWAYS, STATE.—METROPOLITAN AND SUBURBAN, AND COUNTRY  
PASSENGER TRAFFIC AND RECEIPTS, 1928-29.**

Particulars.	Passenger Journeys.			Revenue.		
	Metropolitan and Suburban.	Country.	Total.	Metropolitan and Suburban.	Country.	Total.
	No.	No.	No.	£	£	£
N.S.W. ..	a140,158,238	10,957,848	151,116,086	3,026,019	4,212,310	7,238,329
Victoria ..	b152,840,373	8,161,894	161,002,267	2,768,624	2,453,600	5,222,224
Queensland ..	19,209,663	5,528,664	24,738,327	358,220	1,547,065	1,905,285
S. Australia ..	c 16,456,676	1,373,270	17,829,946	295,364	537,331	832,695
W. Australia	12,885,383	2,019,534	14,904,917	214,428	559,797	774,225
Tasmania ..	(d)	(d)	2,212,817	(d)	(d)	149,792
<b>Total ..</b>	<b>(e)</b>	<b>(e)</b>	<b>371,804,360</b>	<b>(e)</b>	<b>(e)</b>	<b>16,122,550</b>

(a) Within 34 miles of Sydney and Newcastle, including the Richmond line. (b) Within 20 miles of Melbourne. (c) Within 25 miles of Adelaide. (d) Not available. (e) Incomplete.

Although the number of passenger journeys recorded in the metropolitan area in Victoria is considerably greater than in New South Wales, it must be borne in mind that in the latter State other transport facilities, viz., tramways, motor-omnibuses, and ferries, are more extensively used.

A more detailed analysis of the passenger traffic for the years ended 30th June, 1928 and 1929, is contained in the Transport and Communication Bulletin No. 21 issued by this Bureau.

(iii) *Electrification of Suburban and Country Railways.* Reference to the electrification of the Melbourne and Sydney suburban railways will be found in Year Book No. 22, p. 285.

(iv) *Goods Traffic. (a) Classification.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried, and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried are available for all the States, and the following table shows the number of tons of various representative commodities carried, with the percentage of each class on the total for the financial year 1928-29 :—

## RAILWAYS, STATE.—CLASSIFICATION OF COMMODITIES CARRIED, 1928–29.

State.	Coal, Coke, and Shale.	Other Minerals.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
TONS CARRIED.								
New South Wales	5,801,880	2,405,723	1,767,585	285,097	179,960	729,581	3,346,817	14,516,643
Victoria ..	467,362	1,283,407	1,425,793	251,701	105,255	607,323	4,046,247	8,187,088
Queensland ..	645,236	457,307	1,884,080 <sup>a</sup>	b	68,191	416,239	1,287,087	4,558,099
South Australia	194,265	655,104	537,080	69,964	37,585	144,291	1,110,134	2,748,423
Western Australia	252,063	688,233	1,010,622	73,011	22,433	107,932	1,514,953	3,670,147
Tasmania ..	294,179	c	75,267	29,244	3,641	24,926	233,266	660,523
All States ..	7,655,885	5,489,774	6,500,386	709,017	417,065	2,030,292	11,538,504	34,340,923

## PERCENTAGE OF TOTAL TONNAGE CARRIED.

	%	%	%	%	%	%	%	%
New South Wales	39.97	16.57	12.18	1.96	1.24	5.03	23.05	100.00
Victoria ..	5.71	15.67	17.42	3.07	1.29	7.42	49.42	100.00
Queensland ..	14.15	10.03	36.95 <sup>a</sup>	b	1.50	9.13	28.24	100.00
South Australia	7.07	23.84	19.54	2.54	1.37	5.25	40.39	100.00
Western Australia	6.89	18.75	27.54	1.99	0.61	2.94	41.28	100.00
Tasmania ..	44.54	c	11.39	4.43	0.55	3.77	35.32	100.00
All States ..	22.29	15.99	18.93	2.07	1.21	5.91	33.60	100.00

(a) Agricultural produce.

(b) Included with "All other Commodities."

(c) Included with

coal, coke, and shale.

(b) Revenue. The following table shows the revenue derived from goods and live stock traffic during 1928–29 according to a classification which has been adopted by all States:—

## RAILWAYS, STATE.—GOODS, ETC., TRAFFIC—REVENUE, 1928–29.

Class.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	£	£	£	£	£	£	£
General merchandise	6,196,543	4,061,959	3,204,885	1,233,006	1,563,830	208,508	16,518,731
Wheat ..	a	750,102	a	240,641	531,317	a	d1,522,060
Wool ..	804,064	287,650	499,990	72,494	84,408	4,872	1,753,478
Live stock	1,315,552	664,729	792,301	211,676	137,422	21,880	3,143,560
Minerals—							
Coal, coke, and shale	1,426,780	159,132	243,555	113,779	136,587	633,442	2,113,275
Others	636,253	328,110	208,883	436,983	156,629	c36,585	1,803,443
Total ..	10,379,192	6,251,682	4,949,614	2,358,579	2,610,193	305,287	26,854,547

(a) Included with General Merchandise.

(b) Native coal.

(c) Minerals other than native coal.

(d) Incomplete.

In Victoria electric motor coaches are used for the transfer of parcels from the central stations to suburban stations, and to convey luggage and parcels between the two main terminal stations.

14. Passenger-Mileage and Ton-Mileage.—(i) *Passenger-Miles.* The subjoined table gives particulars of passenger-mileage in respect of the States of New South Wales, Victoria, South Australia, and Tasmania for the years 1924–25 to 1928–29.

## RAILWAYS, STATE.—SUMMARY OF "PASSENGER-MILES," 1925 TO 1929.

Year ended 30th June—	Passenger-Train-Mileage.	Number of Passenger Journeys.	Total Passenger-Miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger Journey.	Average Earnings per Passenger-Mile.	Average Fare per Passenger Journey.	Density of Traffic per Average Mile Worked.
	Miles. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	No.	Miles.	d.	d.	No.

## NEW SOUTH WALES.

1925	12,616	128,532	1,637,381	6,186,368	130	12.74	0.91	11.55	293,907
1926	14,038	130,726	1,675,091	6,311,690	119	12.81	0.90	11.59	292,732
1927	15,044	141,616	1,765,378	6,643,337	117	12.47	0.90	11.26	307,184
1928	16,036	148,047	1,809,307	6,998,147	113	12.22	0.93	11.34	310,569
1929	16,738	151,116	1,820,701	7,238,329	108	12.05	0.95	11.50	308,409

## VICTORIA.

1925	11,602	166,444	1,426,411	5,380,887	123	8.57	0.91	7.76	320,718
1926	11,768	168,054	1,460,343	5,425,804	125	8.69	0.82	7.75	322,487
1927	11,846	169,238	1,476,307	5,641,032	125	8.72	0.92	8.00	319,064
1928	11,915	164,575	1,416,970	5,358,775	119	8.61	0.91	7.81	303,985
1929	12,104	161,002	1,420,570	5,222,224	117	8.82	0.88	7.78	302,392

## SOUTH AUSTRALIA.

1925	3,460	25,647	302,185	1,114,558	97	11.78	0.89	10.43	123,255
1926	3,662	25,343	300,950	1,075,082	82	11.87	0.86	10.18	120,836
1927	4,002	23,367	280,082	1,005,624	70	11.99	0.86	10.33	111,022
1928	3,729	19,539	242,308	927,520	65	12.40	0.92	11.39	95,861
1929	3,563	17,830	219,857	815,323	62	12.33	0.89	10.98	86,403

## TASMANIA.

1925	654	2,656	45,126	187,701	69	16.99	0.99	16.96	67,061
1926	596	2,456	39,342	173,488	66	16.02	1.06	15.67	58,466
1927	575	2,329	41,432	168,837	72	17.79	0.97	17.40	62,943
1928	615	2,322	37,971	167,234	62	16.35	1.05	17.28	57,685
1929	627	2,213	35,751	149,792	57	16.15	1.05	16.25	54,674

(ii) *Ton-Miles.* Particulars regarding total "ton-miles" are given in the following table for each of the years 1924-25 to 1928-29 in respect of all States with the exception of Queensland:—

## RAILWAYS, STATE.—SUMMARY OF "TON-MILES," 1925 TO 1929.

Year ended the 30th June	Goods-Train-Mileage.	Total Tons Carried.	Total "Ton-miles."	Earnings.	Average Freight-paying Load Carried per "Train."	Average Haul per Ton.	Earnings per "Ton-mile."	Density of Traffic per Average Mile Worked.
	No. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	Tons.	Miles.	d.	Tons.
NEW SOUTH WALES.								
1925	10,689	16,027	1,647,448	9,010,929	177	102.80	1.29	295,718
1926	10,587	14,809	1,509,555	8,941,123	165	101.93	1.39	263,802
1927	11,282	16,864	1,654,815	10,490,593	165	98.13	1.50	287,994
1928	10,861	15,223	1,550,375	10,228,586	158	101.84	1.56	266,408
1929	10,645	14,307	1,690,560	10,379,192	183	118.16	1.45	286,376
VICTORIA.								
1925	5,880	8,960	847,202	5,775,522	176	94.56	1.64	190,468
1926	5,808	8,728	776,251	5,565,451	166	88.93	1.72	171,434
1927	6,184	9,235	882,918	6,344,096	173	95.61	1.72	190,819
1928	5,780	8,118	737,856	5,763,701	164	90.89	1.87	158,304
1929	5,876	8,187	834,605	6,251,682	173	101.94	1.80	177,651
QUEENSLAND.(c)								
1928	7,734	4,670	552,442	4,824,885	71	120.67	2.09	89,872
1929	7,751	4,558	553,816	4,949,614	71	124.03	2.14	88,572
SOUTH AUSTRALIA.								
1925	3,193	3,611	3,393,649	2,607,628	134	109.00	1.59	160,559
1926	3,184	3,563	3,387,317	2,579,365	134	108.70	1.60	155,518
1927	2,957	3,672	3,389,443	2,662,866	141	105.66	1.65	154,451
1928	2,774	3,402	3,395,919	2,616,503	147	116.38	1.57	156,731
1929	2,202	2,748	3,337,639	2,358,579	156	122.91	1.66	132,694
WESTERN AUSTRALIA.								
1925	3,053	3,285	277,190	2,198,322	104	84.38	1.90	75,553
1926	2,976	3,237	272,611	2,174,895	106	84.20	1.91	71,048
1927	63,359	3,439	317,845	2,413,852	110	92.43	1.82	81,373
1928	63,723	3,698	357,966	2,619,816	111	96.81	1.76	90,145
1929	63,773	3,670	367,032	2,610,193	113	100.00	1.71	91,919
TASMANIA.								
1925	726	668	29,697	292,004	41	44.45	2.36	44,133
1926	762	669	32,000	298,078	42	47.82	2.23	47,556
1927	742	707	31,564	296,354	43	44.63	2.25	47,955
1928	814	690	34,180	310,348	42	49.54	2.17	51,926
1929	787	636	31,140	281,577	40	48.99	2.17	47,623

(a) Based on 10 months actual and 2 months estimated.

(b) Includes "Assistant" and

"Light" mileage.

(c) Particulars for years prior to 1927-28 are not available.

In New South Wales the tonnage carried is exclusive of coal on which shunting and haulage charges only have been collected, and terminal charges have also been disregarded, but in the cases of South Australia and Tasmania such charges are included. Particulars for the latter State do not include live stock.

15. **Passenger Fares and Goods Rates.**—Fares and rates are changed from time to time to suit the varying necessities of the railways, and when drought conditions prevail special concessions are made in the rates for the carriage of fodder and water and for the transfer of stock to other areas.

An earlier issue of this work (No. 18, pp. 305-6) gives detailed information as at 30th June, 1924, in regard to the following rates :—(a) Ordinary Passenger Mileage rates ; (b) Highest and Lowest Class Freight rates ; (c) Rates for agricultural produce. Owing to limitations of space, however, it is not proposed to republish such information.

16. **Rolling Stock, 1929.**—The following table shows the rolling stock in use at the 30th June, 1929, classified according to gauge :—

**RAILWAYS, STATE.—ROLLING STOCK, 1929.**

State.	Gauge.					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2ft. 6in.	2ft. 0 in.	
<b>LOCOMOTIVES.</b>						
New South Wales	..	1,425	..	..	..	1,425
Victoria ..	636	..	..	17	..	653
Queensland ..	..	..	770	..	10	780
South Australia	247	..	205	..	..	452
Western Australia	..	..	404	..	..	404
Tasmania ..	..	..	83	..	6	89
All States ..	883	1,425	1,462	17	16	3,803

**COACHING STOCK.**

	Ordinary.	With Motors.	Ordinary.	With Motors.	Ordinary.	With Motors.	Ordinary.	Ordinary.	Ordinary.	With Motors.
New South Wales	..	..	2,745	32	..	..	..	..	2,745	32
Victoria ..	2,229	442	..	..	..	..	55	..	2,284	442
Queensland ..	..	..	..	..	1,251	34	..	11	1,262	34
South Australia	456	32	..	..	209	5	..	..	665	37
Western Australia	..	..	..	..	490	2	..	..	490	2
Tasmania ..	..	..	..	..	211	11	..	6	217	11
All States ..	2,685	474	2,745	32	2,161	52	55	17	7,663	558

**STOCK OTHER THAN COACHING.**

New South Wales	..	24,287	..	..	..	24,287
Victoria ..	20,509	..	..	243	..	20,752
Queensland ..	..	..	19,068	..	170	19,238
South Australia	3,810	..	5,601	..	..	9,411
Western Australia	..	..	11,014	..	..	11,014
Tasmania ..	..	..	1,806	..	77	1,883
All States ..	24,319	24,287	37,489	243	247	86,585

Prior to the issue of Year Book No. 16 (1921-22) the particulars of rolling stock were classified under the headings of "Locomotives," "Passenger Vehicles," and "Vehicles other than Passenger." The present classification has now been adopted by all States.

17. **Employees.**—(i) *At 30th June.* The following table gives the number of railway employees in each year from 1925 to 1929 inclusive, classified according to (a) salaried staff, and (b) wages staff :—

## RAILWAYS, STATE.—EMPLOYEES, 1925 TO 1929.

State.	At 30th June—									
	1925.		1926.		1927.		1928.		1929.	
	Salaried Staff.	Wages Staff.								
New South Wales	5,672	36,455	5,794	38,263	6,004	39,488	6,052	38,053	5,995	37,535
Victoria ..	4,153	24,857	4,323	24,465	4,245	25,072	4,363	23,613	4,291	23,025
Queensland ..	3,362	16,522	3,617	18,419	3,565	16,105	3,478	16,146	3,403	15,467
South Australia ..	1,316	11,519	1,362	9,801	1,438	8,998	1,295	7,353	1,312	7,401
Western Australia	1,282	6,334	1,318	6,697	1,362	7,471	1,412	7,565	1,418	7,770
Tasmania ..	169	1,297	185	1,219	187	1,232	212	1,369	219	1,376
All States ..	15,954	96,984	16,599	98,864	16,801	98,366	16,812	94,101	16,642	92,574

In the period under review the totals of salaried and wages staffs decreased from 112,938 in 1925 to 109,216 in 1929, a decrease of 3·3 per cent.

(ii) *Average staff employed, 1928-29.* The number of employees at one point of time does not afford the best index of employment in railway work. It is considered that the following statement of the average number employed throughout the year indicates more accurately the labour requirements of the railways.

## AVERAGE STAFF EMPLOYED, 1928-29.

State.	Operating Staff.		Construction Staff.		All Employees—Staff.	
	Salaried.	Wages.	Salaried.	Wages.	Salaried.	Wages.
New South Wales ..	6,011	37,961	164	3,268	6,175	41,229
Victoria ..	4,440	23,332	..	..	4,440	23,332
Queensland ..	3,473	15,106	80	2,092	3,553	17,198
South Australia ..	1,301	7,374	7	374	1,308	7,748
Western Australia ..	1,420	8,193	..	..	1,420	8,193
Tasmania ..	219	1,376	..	..	219	1,376
All States ..	16,864	93,342	251	5,734	17,115	99,076

In the States of Victoria, Western Australia, and Tasmania, railway construction work is not under the control of the Railways Commissioners.

18. *Accidents.*—(i) *Classification.* The following classification of accidents which occurred through the movement of rolling stock was adopted by each State in 1924-25. Particulars for 1928-29 are as under :—

## RAILWAYS, STATE.—ACCIDENTS, 1929.

Particulars.	N.S.W.		Vic.		Q'land.		S. Aust.		W. Aust.		Tas.		All States.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Train accidents—														
Passengers ..	..	7	..	53	..	..	..	6	1	8	..	2	1	76
Employees ..	..	15	..	..	..	..	4	1	33	..	12	1	64	
Accidents on line (other than train accidents)—														
Passengers ..	9	165	4	139	1	15	1	36	1	31	..	..	16	386
Employees ..	14	117	5	17	2	10	..	35	2	150	..	21	23	350
Others ..	16	67	..	..	..	2	1	1	..	..	..	2	17	72
Shunting accidents—														
Passengers ..	..	4	..	..	..	2	..	..	1	..	..	..	..	7
Employees ..	5	166	4	28	1	71	2	40	..	96	..	11	12	412
Other persons ..	..	5	2	2	1	1	1	2	..	..	..	..	4	10
Employees proceeding to or from their duty within railway boundaries	1	..	..	2	..	..	..	..	2	..	..	..	1	4
Persons killed or injured at crossings	7	15	18	35	4	14	9	30	5	20	2	7	45	121
Trepassers ..	9	4	13	4	10	3	6	2	5	2	..	..	43	15
Miscellaneous ..	..	..	..	1	..	7	..	..	..	11	..	..	16	35
Total ..	61	565	46	281	19	125	20	156	15	354	2	71	163	1,552

(ii) *Particulars for Quinquennium.* The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for each of the years 1925 to 1929 inclusive :—

## RAILWAYS, STATE.—ACCIDENTS, 1925 TO 1929.

State.	In year ended 30th June—									
	1925.		1926.		1927.		1928.		1929.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	69	597	72	594	123	687	77	629	61	565
Victoria ..	47	298	78	498	53	292	60	238	46	281
Queensland ..	45	233	25	212	26	167	20	163	19	125
South Australia ..	26	203	22	329	22	263	23	255	20	156
Western Australia	16	208	12	341	17	365	16	351	15	354
Tasmania ..	2	17	4	39	..	44	1	18	2	71
All States ..	205	1,606	213	2,013	241	1,818	197	1,654	163	1,552

19. *Consumption of Oil and Fuel.*—The appended table shows the quantity and value of oil and fuel consumed by the various Government Railway Departments during the year 1928-29 :—

## GOVERNMENT RAILWAYS.—CONSUMPTION AND VALUE OF OIL AND FUEL, 1928-29.

Government Railways.	Oil.						Coal.		
	Lubricating.			Fuel.			Tons.	Value.	Average Cost per Ton.
	Gallons.	Value.	Average Cost per Gallon.	Gallons.	Value.	Average Cost per Gallon.			
		£	s. d.		£	s. d.	£	£	s. d.
New South Wales	494,490	52,852	2 1.05	969,050	45,072	0 11.16	1,656,933	1,610,554	0 19 5.28
Victoria ..	198,000	23,800	2 4.85	1,078,200	44,920	0 10.00	701,309	945,085	1 6 11.42
Queensland ..	233,198	20,869	1 9.48	184,336	12,912	1 4.81	445,217	448,903	1 0 1.98
South Australia	a 126,422	13,488	2 1.61	(b)	(b)	(b)	202,382	433,349	2 2 9.90
Western Australia	61,404	5,910	1 11.10	430,502	23,077	1 0.87	324,112	320,086	0 19 9.02
Tasmania ..	33,334	3,831	2 3.58	10,903	755	1 4.62	51,893	69,288	1 6 8.45
Total States	1,146,848	120,750	2 1.27	2,672,991	126,736	0 11.38	3,381,846	3,827,265	1 2 7.61
Federal ..	25,385	3,163	2 5.90	100,860	9,260	1 10.03	33,132	73,167	2 2 2.00
Grand Total, Australia ..	1,172,233	123,913	2 1.37	c2,773,851	c135,996	c0 11.77	3,414,978	3,900,432	1 2 10.12

(a) Lubricating oil used on loco. cars and wagons only.

(b) Not available.

(c) Exclusive of South Australia.

(d) Railways and Tramways.

The range in the average cost per ton of coal from 19s. 5d. in New South Wales to £2 2s. 10d. per ton for coal used on the South Australian Railways is attributable to the comparatively low haulage expenses incurred in the coal-producing States. The average cost of coal and oil during 1928-29 varied very little from that of 1927-28.

### § 4. Private Railways.

1. **Total Mileage Open, 1928-29.**—The bulk of the private railways in Australia have been laid down for the purpose of hauling timber, firewood, sugar-cane, coal, or other minerals, and they are not generally used for the conveyance of passengers or for public traffic. In many cases the lines are practically unballasted and easily removable.

The railways referred to in this section include only lines open to the public for general passenger and goods traffic. In previous issues of the Year Book particulars of lines used for special purposes only have also been shown, but, as complete figures for the year 1928-29 are not available, they have been omitted from this issue.

2. **Lines Open for General Traffic.**—The following statement gives a summary of the operations of private railways open for general traffic for the year 1929. More detailed information regarding these lines will be found in "Transport and Communication Bulletin No. 21" published by this Bureau.

#### RAILWAYS, PRIVATE.—SUMMARY, 1928-29.

State.	Companies from which returns were received.	Miles Open (Route).	Capital Cost.	Gross Revenue.	Working Expenses.	Train-Miles.	Passenger Journeys.	Tonnage of Goods, etc.	No. of Employees.	Rolling Stock.		
										Locos.	Coaches.	Other Vehicles
	No.	Miles.	£	£	£	Miles.	No.	Tons.	No.	No.	No.	No.
New South Wales ..	9	142.03	2,543,040	243,664	188,103	348,642	514,324	847,014	216	49	37	772
Victoria ..	2	24.94	92,887	13,539	10,248	27,146	21,058	50,423	21	5	4	42
Queensland	16	273.73	468,702	39,150	36,181	73,208	21,396	325,562	73	21	19	392
South Australia ..	1	33.80	(a)	(a)	(a)	70,075	830	794,897	40	8	1	196
Western Australia	1	277.00	2,180,322	240,237	104,555	330,295	54,010	182,545	267	20	23	478
Tasmania	5	173.81	963,944	118,209	94,972	266,892	51,398	81,121	265	24	20	426
All States(b)	34	925.31	6,248,895	654,799	434,059	1,116,258	963,016	2,282,162	882	127	104	2,306

(a) Not available.

(b) Incomplete.

The particulars given in the table are incomplete in respect of the States of New South Wales, Queensland, South Australia, and Tasmania. In New South Wales and Queensland several of these lines, although owned by private companies, are operated by the Government Railway Departments, and Government rolling stock is used thereon.

### C. TRAMWAYS.

1. **Systems in Operation.**—(i) *General.* Tramway systems are in operation in all the States, and in recent years considerable extension has been made in the use of electrical traction, the benefit of which is now enjoyed by a number of the larger towns.

In many parts of Australia private lines used for special purposes in connexion with the timber, mining, sugar, or other industries are often called tramways, but they are more properly railways, and the traffic on them has nothing in common with that of the street tramways for the conveyance of passengers, which are dealt with in the present paragraph.

(ii) *Total Mileage Open and Classification of Lines.* The following tables show the total mileage of tramway lines open for general passenger traffic for the year 1928–29, also in Australia as a whole for the years 1924–25 to 1928–29, classified (a) according to the nature of the authority by which the lines are controlled; (b) according to the motive power utilized, and (c) according to gauge :—

**TRAMWAYS.—ROUTE MILEAGE OPEN, 1928–29.**

Nature of Motive Power, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Total, Australia.
<b>GOVERNMENT.</b>							
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric .. ..	186.65	118.54	..	..	39.83	..	345.02
Steam .. ..	23.78	..	..	..	6.26	..	30.04
Cable .. ..	..	30.60	..	..	..	..	30.60
Horse .. ..	..	..	..	..	1.50	..	1.50
<b>Total .. ..</b>	<b>210.43</b>	<b>149.14</b>	<b>..</b>	<b>..</b>	<b>47.59</b>	<b>..</b>	<b>407.16</b>
<b>MUNICIPAL.</b>							
Electric .. ..	..	..	55.73	75.79	8.61	30.23	170.36
Steam .. ..	..	..	6.65	..	..	..	6.65
<b>Total .. ..</b>	<b>..</b>	<b>..</b>	<b>62.38</b>	<b>75.79</b>	<b>8.61</b>	<b>30.23</b>	<b>177.01</b>
<b>PRIVATE.</b>							
Electric .. ..	..	31.05	..	..	11.56	..	42.61
Steam .. ..	3.50	..	..	..	..	..	3.50
<b>Total .. ..</b>	<b>3.50</b>	<b>31.05</b>	<b>..</b>	<b>..</b>	<b>11.56</b>	<b>..</b>	<b>46.11</b>
<b>ALL CONTROLLING AUTHORITIES.</b>							
Electric .. ..	186.65	149.59	55.73	75.79	60.00	30.23	557.99
Steam .. ..	27.28	..	6.65	..	6.26	..	40.19
Cable .. ..	..	30.60	..	..	..	..	30.60
Horse .. ..	..	..	..	..	1.50	..	1.50
<b>Total .. ..</b>	<b>213.93</b>	<b>180.19</b>	<b>62.38</b>	<b>75.79</b>	<b>67.76</b>	<b>30.23</b>	<b>630.28</b>
<b>ACCORDING TO GAUGE.</b>							
Gauge—							
5 ft. 3 in. ..	..	5.18	..	..	..	..	5.18
4 ft. 8½ in. ..	213.93	175.01	55.73	75.79	..	..	520.46
3 ft. 6 in. ..	..	..	6.65	..	67.76	30.23	104.64
<b>Total .. ..</b>	<b>213.93</b>	<b>180.19</b>	<b>62.38</b>	<b>75.79</b>	<b>67.76</b>	<b>30.23</b>	<b>630.28</b>

## TRAMWAYS.—ROUTE MILEAGE OPEN, AUSTRALIA, 1924-25 TO 1928-29.

Nature of Motive Power, Controlling Authority, and Gauge.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
<b>ACCORDING TO MOTIVE POWER.</b>					
	Miles.	Miles.	Miles.	Miles.	Miles.
Electric .. ..	502.66	519.06	538.42	555.33	557.99
Steam .. ..	79.23	75.46	70.55	39.18	40.19
Cable .. ..	45.58	38.58	33.68	30.00	30.60
Horse .. ..	7.39	1.50	2.51	2.51	1.50
Total .. ..	634.86	634.60	645.16	627.08	630.28
<b>ACCORDING TO CONTROLLING AUTHORITY.</b>					
Government .. ..	423.56	421.42	431.05	405.21	407.16
Municipal .. ..	165.54	167.42	168.70	173.60	177.01
Private .. ..	45.76	45.76	45.41	48.27	46.11
Total .. ..	634.86	634.60	645.16	627.08	630.28
<b>ACCORDING TO GAUGE.</b>					
Gauge—					
5 ft. 3 in. .. ..	5.18	5.18	5.18	5.18	5.18
4 ft. 8½ in. .. ..	512.59	517.92	526.61	516.80	520.46
3 ft. 6 in. .. ..	99.71	99.00	100.87	105.10	104.64
2 ft. 0 in. .. ..	17.38	12.50	12.50	..	..
Total .. ..	634.86	634.60	645.16	627.08	630.28

The mileage of electric tramways has steadily increased during the period dealt with above, due principally to the conversion of the Newcastle steam tramways and the Melbourne cable systems to electrical traction. The decrease in the Government-controlled tramways in 1925 was in some measure due to the transfer of the Brisbane tramways from the Brisbane Tramway Trust to the Brisbane City Council.

(iii) *Cost of Construction and Equipment.* The table hereunder shows, as far as information is available, the total cost of construction and equipment of all tramways to the 30th June, 1929, classified according to the nature of the motive power and the controlling authority.

## TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1928-29.

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
<b>GOVERNMENT.</b>							
	£	£	£	£	£	£	£
Electric	11,029,890	5,903,993	..	..	1,069,352	..	18,003,235
Steam ..	426,299	..	..	..	63,052	..	489,351
Cable ..	..	1,560,788	..	..	..	..	1,560,788
Horse ..	..	..	..	..	10,296	..	10,296
Total ..	11,456,189	7,464,781	..	..	1,142,700	..	20,063,670
<b>MUNICIPAL.</b>							
Electric	..	..	2,214,637	3,527,710	157,978	567,841	6,468,166
Steam ..	..	..	53,235	..	..	..	53,235
Total ..	..	..	2,267,872	3,527,710	157,978	567,841	6,521,401

TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1928-29—*continued.*

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
PRIVATE.							
Electric	£ ..	£ 478,601	£ ..	£ ..	£ 452,821	£ ..	£ 931,422
Steam ..	(a)	..	..	..	..	..	..
Total ..	(a)	478,601	..	..	452,821	..	931,422

## ALL CONTROLLING AUTHORITIES.

Electric	11,029,890	6,382,594	2,214,637	3,527,710	1,680,151	567,841	25,402,823
Steam ..	(b) 426,299	..	53,235	..	63,052	..	542,586
Cable ..	..	1,560,788	..	..	..	..	1,560,788
Horse ..	..	..	..	..	10,296	..	10,296
Total ..	11,456,189 (b)	7,943,382	2,267,872	3,527,710	1,753,499	567,841	27,516,493

(a) Not available. (b) Incomplete.

2. New South Wales.—(i) *Government Tramways.*—(a) *General.* The tramways, with some comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners. In Sydney and suburbs the Government tramways are divided into seven distinct systems, five of which are operated by electricity and two by steam. The conversion of the Newcastle system from steam to electric traction has been undertaken, and at 30th June, 1929, 23.74 miles (route) were completed and opened for traffic.

(b) *Particulars of Working.* The subjoined statement gives particulars of the working of the electric and steam tramways under Government control in 1928-29 :—

## GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—RETURNS FOR 1928-29.

Line.	Mileage Open for Traffic.		Total Cost of Construction and Equipment. (a)	Gross Revenue.	Working Expenses.	Net Earnings.	Interest.	Profit or Loss.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Route.	Track.								
	Miles.	Miles.								
Electric	186.65	333.32	11,029,890	4,402,045	3,751,930	650,115	592,807	57,308	85.23	5.89
Steam	23.78	25.21	426,299	55,845	82,009	26,164	23,190	-49,354	146.85	6.14
Total	210.43	358.53	11,456,189	4,457,890	3,833,939	623,951	615,997	7,954	86.00	5.45

(a) Exclusive of Stores Advance Account (£237,000).

(c) *Capital Cost.* The capital cost shown in the preceding table was made up as follows:—

**GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—CAPITAL COST, 1929.**

Permanent Way.	Rolling Stock.	Power-houses, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£ 5,774,433	£ 2,525,358	£ 2,627,403	£ 265,300	£ 261,303	£ 2,392	£ 11,456,189

The average cost per mile open was £27,439 for permanent way, and £26,998 for all other charges, making a total of £54,437 per route mile.

(d) *Summary, Government Tramways.* The following table gives a summary of the operations of all Government tramways for the years 1925 to 1929:—

**GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—SUMMARY, 1925 TO 1929.**

Year ended 30th June—	Mileage Open for Traffic. (Route.)	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.	Passengers carried.	Persons employed.
	Miles.	£	£	£	£	£	%	%	No. '000	No.
1925 ..	228.46	10,844,454a	3,619,272	3,174,862	444,410	546,489	87.72	4.10	339,577	11,633
1926 ..	228.55	11,147,523a	3,619,496	3,319,996	299,500	563,137	91.73	2.69	339,412	11,459
1927 ..	228.50	11,299,050a	3,806,098	3,487,834	318,264	573,453	91.64	2.82	347,231	11,697
1928 ..	209.58	11,322,078a	4,556,561	3,937,356	619,205	576,702	86.41	5.47	346,014	11,031
1929 ..	210.43	11,456,189a	4,457,890	3,833,939	623,951	615,997	86.00	5.45	333,476	11,082

(a) £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The cost of construction and equipment is exclusive of the amount of the Stores Advance Account (£287,000).

(e) *Sydney Tramways.* Official Year Book No. 15, p. 589, gave a short account of the progress of the Sydney Tramway System. Owing to limitations of space this information cannot be repeated, but the subjoined table shows certain important particulars for the years 1925 to 1929 inclusive.

**ELECTRIC TRAMWAYS.—SYDNEY.—SUMMARY 1925 TO 1929.**

Particulars.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
Mileage open for traffic—					
Route miles ..	161.24	161.83	162.11	162.05	162.66
Track miles ..	287.52	288.85	289.19	289.50	291.66
Total cost of construction and equipment ..	£ 9,168,939	£ 9,473,497	£ 9,889,857b	£ 9,976,761b	£ 10,060,822b
Current used for traction purposes					
kilowatt hours	118,031,086a	109,131,602a	123,197,596a	127,168,518a	125,995,725a
Tram-miles run ..	No. 31,238,517	No. 31,087,894	No. 31,086,469	No. 31,511,169	No. 31,258,936
Passengers carried ..	No. 314,563,586	No. 313,216,842	No. 320,903,528	No. 322,025,235	No. 312,032,460
Gross revenue ..	£ 3,331,701	£ 3,316,312	£ 3,462,806	£ 4,135,337	£ 4,061,459
Working expenses ..	£ 2,823,510	£ 2,878,855	£ 3,066,254	£ 3,485,020	£ 3,471,394
Net revenue ..	£ 508,191	£ 437,457	£ 396,552	£ 669,417	£ 590,065
Percentage of working expenses on gross revenue ..	% 84.75	% 86.81	% 88.55	% 83.81	% 85.47
Cars in use ..	1,562a	1,567a	1,594a	1,578a	1,703a
Persons employed ..	10,255a	11,130a	11,512a	10,911a	10,968a

(a) Includes portion of Newcastle line in process of electrification. (b) Includes Stores Advance account.

(ii) *Private Tramways.* A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of  $3\frac{1}{2}$  miles, where it connects with the Parramatta River steamers which convey passengers and goods to and from Sydney. This line, which has a gauge of 4 ft.  $8\frac{1}{2}$  in., was opened for traffic in 1883. In 1929 the number of tram-miles run was 20,440, and the number of passengers conveyed 138,968.

3. *Victoria.*—(i) *General.* In Melbourne there are several tramway systems carried on under the control of various authorities, the most important being the cable and electric systems worked by the Melbourne and Metropolitan Tramways Board, to which reference will be made further on. There were also, at 30th June, 1929, two lines of electric tramways, viz. :—(a) St. Kilda to Brighton, and (b) Sandringham to Beaumaris, both of which belong to and are operated by the Railways Commissioners. In addition there are systems of electric tramways at Ballarat, Bendigo, and Geelong, constructed and run by private companies.

Numerous tramways have been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. These, however, are of the nature of the private railways referred to previously.

(ii) *Melbourne and Metropolitan Tramways Board.* (a) *General.* A short account of the formation of the Melbourne Tramway and Omnibus Company, and of the Tramways Board, will be found in earlier issues of this work.

(b) *Cable Tramways.* (1) *Services.* The complete system consists of 30.60 miles of double track of 4-ft.  $8\frac{1}{2}$  in. gauge connecting the city of Melbourne with the nearer suburbs.

(2) *Particulars of Working.* A summary for the years 1925 to 1929 is given hereunder :—

CABLE TRAMWAYS.—MELBOURNE.—SUMMARY, 1925 TO 1929.

Year ended 30th June—	Mileage Open (Route).	Tram Miles run during Year.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Revenue.	Number of Employees at end Year.
	Miles.	Miles.	No.	£	£	%	No.
1925 ..	45.58	15,285,913	148,316,398	1,192,103	1,011,630	84.86	3,186
1926 ..	38.58	12,393,911	127,882,115	1,048,414	847,102	80.79	2,520
1927 ..	33.68	9,817,468	99,978,416	1,012,946	702,749	69.38	2,014
1928 ..	30.06	8,410,528	83,004,750	843,800	608,061	72.06	1,872
1929 ..	30.60	8,151,392	77,930,235	793,122	596,872	75.26	1,771

The reduction of the operating results in recent years is due partly to the progress made in the scheme of conversion to electrical traction.

(c) *Electric Tramways.* (1) *Services Operated.* The system controlled by the Melbourne and Metropolitan Tramways Board at 30th June, 1929, consisted of the six services taken over from the various controlling authorities at the date of the formation of the Board, viz. (a) The Prahran and Malvern Tramways; (b) The Hawthorn Tramways; (c) The Melbourne, Brunswick and Coburg Tramways; (d) The Fitzroy, Northcote, and Preston Tramways; (e) The Footscray Tramways; and (f) the North Melbourne-Essendon Tramway, which, together with various extensions and conversions from cable to electric traction on the St. Kilda, Brighton Road, Prahran and Toorak and Richmond lines, make an aggregate route mileage of 103.75 miles, all of 4 ft.  $8\frac{1}{2}$  in. gauge.

(2) *Particulars of Working.* A summary of operations for the last five years is given hereunder:—

**MELBOURNE TRAMWAYS BOARD.—ELECTRIC SERVICES.—OPERATIONS, 1925 TO 1929.**

Year ended 30th June—	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment	Current used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	£	£
1925 ..	82.50	3,242,485	20,297,259	8,426,519	80,435,680	756,163	649,644	79,482	27,037
1926 ..	91.98	4,040,492	27,041,867	10,657,728	99,017,938	1,007,210	816,178	147,997	43,035
1927 ..	102.14	4,647,497	34,393,346	13,387,869	118,858,967	1,429,015	963,558	240,922	224,535
1928 ..	108.74	5,221,586	45,086,642	15,215,696	132,805,672	1,602,068	1,057,066	654,175	-109,178
1929 ..	108.75	5,568,006	44,347,542	15,640,465	133,831,902	1,629,470	1,086,948	693,676	-151,154

(-) Indicates loss.

(iii) *Other Government Tramways.* The Victorian Railway Department owns and operates two lines of electric street railways, viz., St. Kilda to Brighton (5.18 miles of 5-ft. 3-in. gauge) and Sandringham to Beaumaris (4.61 miles of 4-ft. 8½-in. gauge), a total route mileage of 9.79 miles.

Particulars of the operations of these tramways for the years 1924-25 to 1928-29 are contained in the tables hereunder.

**ELECTRIC TRAMWAY.—ST. KILDA-BRIGHTON.—1925 TO 1929.**

Year ended 30th June—	Total Cost of Construction and Equipment.	Current used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss.
	£	Kilowatt-hours.	No.	No.	£	£	£	£
1925 ..	193,316	1,524,151	562,220	5,737,101	58,038	48,942	8,911	185
1926 ..	193,607	1,580,283	564,085	5,910,741	56,533	48,534	9,277	- 1,278
1927 ..	195,403	1,640,932	568,184	5,856,796	55,594	48,079	9,347	- 1,832
1928 ..	202,182	1,677,880	566,243	5,561,610	55,202	46,661	9,525	- 984
1929 ..	201,908	1,734,426	561,598	5,380,698	56,513	49,728	9,644	- 2,859

(-) Indicates loss.

**ELECTRIC TRAMWAY.—SANDRINGHAM-BEAUMARIS (a).—1925 TO 1929.**

Year ended 30th June—	Total Cost of Construction.	Current used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss.
	£	Kilowatt-hours.	No.	No.	£	£	£	£
1925 ..	101,417	335,140	127,962	1,475,261	13,048	10,699	5,326	- 2,977
1926 ..	99,677	330,390	127,368	1,371,558	12,061	13,233	5,514	- 6,686
1927 ..	134,024	464,356	182,331	1,809,880	15,209	15,193	6,556	- 6,545
1928 ..	134,033	473,968	189,785	1,716,524	15,076	14,834	6,817	- 6,575
1929 ..	134,079	475,582	188,366	1,606,685	16,987	13,102	6,800	- 2,915

(-) Indicates loss.

(a) The extension from Black Rock to Beaumaris, 2.20 miles in length, was opened for traffic on 1st September, 1926.

(iv) *Private Tramways.* Two systems of tramways are owned and operated by private companies, viz., Ballarat and Bendigo (21.25 miles) and Geelong (9.80 miles); giving a total route mileage of 31.05 miles. Electrical traction is used on each of these lines which are constructed to the 4-ft. 8½-in. gauge.

(v) *Summary for all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1925 to 1929 inclusive :—

**ELECTRIC TRAMWAYS.—VICTORIA.—SUMMARY, 1925 TO 1929.**

Year ended 30th June—	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	117.69	3,913,353	24,114,494	10,472,995	95,808,588	910,601	785,175	421	3,003
1926	127.17	4,716,775	31,020,604	12,709,671	114,692,993	1,159,557	960,485	492	3,607
1927	139.53	5,389,654	38,582,105	15,504,164	135,153,262	1,583,838	1,108,664	530	4,087
1928	149.26	6,016,926	49,649,967	17,461,458	149,372,032	1,762,079	1,209,175	596	4,018
1929	149.59	6,382,594	49,186,768	17,968,152	150,377,655	1,793,541	1,249,582	622	3,942

4. *Queensland.*—(i) *General.* The electric tramways in the city and suburbs of Brisbane were controlled by a private company, with head office in London, until the 31st December, 1922, on which date they were purchased by the Queensland Government which, under the provisions of the Brisbane Tramway Trust Act 1922, appointed a Trust to control and operate the system until 1st December, 1925, on which date the control passed to the Brisbane City Council. Under the provisions of the Brisbane City Council Act, 1925, the Council took over the liabilities of the Tramway Trust to the extent of £2,000,000 which had been incurred in London, and assumed complete control of the system. The total length of the Brisbane tramways was 55.73 route miles at 31st December, 1929. A steam tramway having a length of 6.65 route miles is in operation at Rockhampton.

(ii) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. Cost of construction and equipment to the end of the year 1929 was £2,214,637, the gauge of line being 4-ft. 8½-in. The following table gives a summary for the calendar years 1925 to 1929 :—

**ELECTRIC TRAMWAYS.—BRISBANE.—SUMMARY, 1925 TO 1929.**

Year ended 31st Dec.—	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	50.33	1,846,029	14,800,083	5,915,844	82,514,979	707,500	564,584	225	1,837
1926	52.25	2,053,318	15,683,288	6,301,126	81,802,945	767,708	588,262	248	1,821
1927	53.53	2,050,155	17,409,241	6,535,833	78,057,620	814,312	613,285	260	1,659
1928	55.41	2,195,340	19,992,514	6,570,228	77,703,264	810,954	594,126	275	1,611
1929	55.73	2,214,637	19,723,299	6,616,426	76,117,048	794,470	584,390	275	1,552

(a) Includes motor omnibuses.

(iii) *Rockhampton Municipal Tramway.* This tramway was opened for traffic in 1909, the motive power being steam. The length of line is 6.65 route miles, and the gauge 3 ft. 6 in. The capital cost to 31st December, 1929, was £53,235. During the year 1929, 1,673,957 passengers were carried, the revenue being £15,678 and working expenses £16,177. The number of the staff at the end of the year was 42.

(iv) *Sugar-Mill Tramways.* In various parts of Queensland there are tramways used in connexion with the sugar-milling industry, chiefly for the purpose of hauling cane. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms.

5. South Australia.—(i) *Electric Tramways.* The tramways in Adelaide and suburbs are controlled by a Municipal Tramways Trust created in 1907. Prior to this year, the system was run with horse-traction by several private companies. Electric traction was inaugurated in 1909, and at the 31st July, 1929, the Tramways Trust operated a total route mileage of 75.79 miles of 4-ft. 8½-in. gauge. A summary for the years 1925 to 1929 is given in the subjoined table :—

ELECTRIC TRAMWAYS.—ADELAIDE.—SUMMARY, 1925 TO 1929.

Year ended 31st July—	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Em-ployed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	72.20	2,874,037	18,456,574	7,222,292	63,152,810	640,335	467,751	249	1,563
1926	73.05	2,997,976	19,303,228	7,393,122	66,207,356	661,058	472,412	255	1,566
1927	73.05	3,073,359	19,956,323	7,386,620	67,569,749	674,884	483,939	259	1,690
1928	74.17	3,176,738	20,327,743	7,440,540	68,546,189	695,649	496,194	260	1,781
1929	75.79	3,527,710	20,814,717	7,416,441	66,577,704	677,513	501,362	282	1,982

(ii) *Horse Tramways.* There are also 19.86 miles of Government horse-tramways in country districts, worked in connexion with the railway system, of which 17.36 miles are used for passenger service, and 2.50 miles for special purposes.

6. Western Australia.—(i) *Government Tramways.* (a) *General.* Apart from the electric tramways, there are several Government tramways, with a total length of 7.76 miles of 3 ft. 6 in. gauge. The lines are under the control of the Department of Works and Labour, and the total mileage of 7.76 miles is made up of several short lengths worked by steam or horses in connexion with the jetties at certain ports, and providing communication between the jetties and the goods sheds or warehouses.

(b) *Steam and Horse Tramways.* The capital cost of the Government steam or horse tramways up to the 30th June, 1929, was £73,348, the gross revenue for 1928–29 being £3,856, and the working expenses £1,736. These amounts are in some instances inclusive of revenue from jetty charges and of working expenses in connexion with such services.

(c) *Perth Electric Tramways.* These tramways were opened for traffic by a private company on the 24th September, 1899, and the system was subsequently extended to many of the suburbs. Control was taken over by the Government on the 1st July, 1913, and the tramways are now worked in conjunction with the Government railways. The gauge of line is 3 ft. 6 in. The following table shows particulars of working for the years ended 30th June, 1925 to 1929 :—

ELECTRIC TRAMWAYS.—PERTH.—1924–25 TO 1928–29.

Year ended 30th June—	Mileage open for Traffic.	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Em-ployed.
		£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925 ..	34.28	899,741	8,296,746	3,040,505	28,894,525	281,612	236,008	113	566
1926 ..	34.34	949,929	8,246,630	3,010,253	29,599,785	286,707	240,953	113	536
1927 ..	36.68	983,140	8,371,890	2,995,769	30,541,079	294,068	241,280	113	725
1928 ..	39.28	1,060,247	9,002,600	3,188,087	32,657,626	318,957	259,677	123	724
1929 ..	39.83	1,069,352	9,538,040	3,345,929	35,031,734	342,788	281,257	123	634

(ii) *Private Tramways.* Electric Tramways with a route mileage at 31st August, 1929, of 8.61 miles, and controlled by the municipal authorities, are in operation in Fremantle. In Kalgoorlie and Boulder a private company controls the electric tramways, of which at the end of 1929 the length of line was 11.56 miles (route). All the foregoing lines are of 3-ft. 6-in. gauge.

(iii) *Summary, all Electric Tramways.* The subjoined table gives a summary for all electric tramway systems in the State for the years 1925 to 1929 :—

**ELECTRIC TRAMWAYS.—WESTERN AUSTRALIA.—SUMMARY, 1925 TO 1929.**

Year.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	57.55	1,604,845	10,389,250	3,975,699	37,237,791	365,156	306,378	173	751
1926	57.61	1,559,483	10,311,919	3,940,741	37,841,434	368,290	311,772	173	709
1927	59.60	1,599,105	10,237,513	3,939,061	38,924,077	376,578	310,967	173	891
1928	61.93	1,669,242	10,969,904	4,141,242	41,040,909	403,845	330,705	183	897
1929	60.00	1,680,151	11,763,248	4,303,871	43,198,615	423,368	353,224	183	816

7. *Tasmania.*—(i) *Electric Tramways.* In Hobart there is a system of electric tramways consisting of 18.50 route miles of 3-ft. 6-in. gauge controlled by the Hobart Municipal Council. The Launceston City Council operates tramways in Launceston having a length of 11.73 miles of 3-ft. 6-in. gauge.

The following table gives a summary of the working of the two systems for the years 1925 to 1929 :—

**ELECTRIC TRAMWAYS.—TASMANIA.—SUMMARY, 1925 TO 1929.**

Year.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1925	26.75	566,717	3,510,994	1,886,231	17,725,007	180,345	137,002	90	399
1926	26.86	542,309	3,310,493	1,776,052	16,972,174	178,191	142,141	89	385
1927	26.86	561,857	3,332,102	1,791,276	17,009,211	181,445	140,386	89	367
1928	28.76	558,323	3,623,468	1,805,339	17,206,196	182,769	132,813	90	377
1929	30.23	567,841	4,030,802	1,818,460	17,334,091	171,664	138,808	90	387

(ii) *Other Tramways.* There are several lines of privately-owned steam tramways. These are dealt with in § 4, Private Railways, as they do not come within the category of street tramways for the conveyance of passengers.

8. *Electric Tramways, Australia.*—(i) *Summary for 1929.* The subjoined table gives details regarding all electric tramways in Australia. The returns for tramways in Ballarat and Bendigo, in Brisbane, in Kalgoorlie, and in Hobart are for the calendar year 1929; for other tramways they refer generally to the financial year 1928-29.

**ELECTRIC TRAMWAYS.—AUSTRALIA.—SUMMARY, 1928-29.**

State.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current used for Traction purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue	Cars, Motors and Trailers.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	%	No.	No.
N.S.W. . .	186.65	11,029,890	125,995,725	33,639,480	328,819,612	4,402,045	3,751,930	85.23	1,703	10,968
Victoria . .	149.59	6,382,594	49,186,768	17,968,152	150,377,655	1,793,541	1,249,582	69.67	622	3,942
Q'land . . .	55.73	2,214,837	19,723,299	6,616,426	76,117,048	794,470	584,390	73.56	275	1,552
S. Aust. . .	75.79	3,527,710	20,814,717	7,416,441	66,577,704	677,513	501,362	74.00	282	1,682
W. Aust. . .	60.00	1,680,151	11,763,248	4,303,871	43,193,615	423,368	353,224	83.43	183	816
Tasmania . .	30.23	567,841	4,030,802	1,818,460	17,334,091	171,664	138,808	80.86	90	387
All States	557.99	25,402,823	231,514,559	71,762,830	682,424,725	8,262,601	6,579,296	79.63	3,155	19,647

(ii) *Summary for Years 1925 to 1929.* The following table gives particulars of the operations of electric tramways in Australia for the years 1925 to 1929 :—

## ELECTRIC TRAMWAYS.—AUSTRALIA.—1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
Mileage open for Traffic (Route) Miles	502.66	519.06	538.42	555.33	557.90
Total Cost of Construction and Equipment	£ 21,007,915	22,444,569	23,453,826	24,511,459	25,402,823
Current used for Traction Purposes	Kil. hrs. 189,302,481	188,761,134	212,714,880	231,752,114	231,514,559
Tram-miles run	No. 61,941,856	65,302,995	68,726,257	71,449,202	71,762,830
Passengers carried	" 621,691,985	647,351,333	677,716,965	695,233,793	682,424,725
Gross Revenue	" 6,248,686	6,633,563	7,364,964	8,350,389	8,262,601
Working Expenses	£ 5,170,814	5,510,118	5,941,835	6,603,562	6,570,296
Percentage of Working Expenses on Gross Revenue	% 82.75	83.06	80.68	79.08	79.63
Cars, Motors and Trainers	No. 2,720	2,824	2,905	2,982	3,155
Persons Employed	" 17,808	19,208	20,206	19,595	19,647

## D. AIRCRAFT.

1. *Historical.*—A short review of the progress of civil aviation in Australia up to the date of foundation of the Department of Civil Aviation was given in Official Year Book No. 16, pp. 334–5, but limitations of space preclude its repetition in the present volume.

2. *Foundation of Civil Aviation Department.*—(i) *Creation.* A brief account of the foundation and the objects of this Department will be found in Official Year Book No. 19, p. 299.

(ii) *Accidents Investigation Committee.* Under powers conferred by the *Air Navigation Act 1920*, a committee consisting of engineering and aircraft experts was appointed early in 1927 to inquire into and report upon accidents which occur to service and civil aircraft, and on 13th October, 1927, the *Air Navigation (Investigation of Accidents) Regulations* were promulgated.

3. *Activities of Civil Aviation Department.*—(i) *Aerodromes and Landing Grounds.* Amongst the various activities have been the acquisition and preparation of civil aviation landing grounds, which have now been established over the following approved routes :— (a) Perth to Derby (1,467 miles); (b) Derby to Wyndham (610 miles); (c) Perth to Adelaide (1,453 miles); (d) Adelaide to Sydney (790 miles); (e) Sydney to Brisbane (550 miles); (f) Brisbane to Charleville (444 miles); (g) Charleville to Camooweal (825 miles); (h) Camooweal to Daly Waters (475 miles); (i) Daly Waters to Birdum Creek (50 miles); (j) Cloncurry to Normanton (215 miles); (k) Melbourne to Hay (233 miles); (l) Mildura to Broken Hill (189 miles); and (m) Melbourne to Charleville via Cootamundra (900 miles).

Preliminary surveys of various additional routes also have been made, but no expenditure has yet been incurred in the preparation of landing grounds in connexion therewith. The most important of these new routes is that from Melbourne to Launceston via (1) Flinders Island and North-East coast of Tasmania (293 nautical miles), and (2) via King Island and North-West coast (299 nautical miles).

Up to the 31st May, 1930, 178 landing grounds have been acquired or leased by the Government and prepared for civil aviation purposes. There were also 37 Public Aerodrome Licences in force.

(ii) *Aerial Services.* (a) *General.* In addition to providing a regular and speedy transport service over fixed routes, it was considered that the granting of contracts for subsidized aerial services would give an impetus to the development of civil aviation in Australia, while the trained flying and ground personnel would provide a technical reserve for air defence in case of war.

At 30th April, 1930, three subsidized contractors were operating under contracts which, with the exception of the Adelaide-Perth service, provided that up to 100 lb. of mail is to be carried free on each trip, the letters for transmission being surcharged 3d. per  $\frac{1}{2}$  ounce. The total route mileage of these services is 5,879 miles.

The various regular air services over prepared routes have completed 3,540,473 passenger-miles, and carried 23,508 paying passengers over various stages. Over 35,000 lbs. of letters have also been carried.

All pilots and mechanics employed on these services must join the Air Force Reserve when the Reserve is constituted.

(b) *Aerial Mail Services at 30th April, 1930.* The following aerial mail services were in operation at 30th April, 1930.

(1) *Subsidized Services.* Perth to Derby (W.A.), 1,467 miles; Brisbane to Camooweal (Q.), 1,269 miles; Cloncurry to Normanton (Q.), 215 miles; Camooweal (Q.) to Daly Waters (N.T.), 475 miles; Adelaide (S.A.) to Cootamundra (N.S.W.), via Mildura, Hay and Narrandera, 578 miles; Mildura (V.) to Broken Hill (N.S.W.), 189 miles; Adelaide (S.A.) to Perth (W.A.), 1,453 miles. Short descriptions of these subsidized services were given in Year Book No. 22, but considerations of space preclude their repetition in the present volume.

(2) *Unsubsidized Services.* During the past twelve months several companies have inaugurated regular commercial air services in various parts of the Commonwealth without the assistance of Government subsidies. Briefly, such services are as follows:—Adelaide to Renmark (S.A.), Adelaide to Mt. Gambier (S.A.), Adelaide to Streaky Bay (S.A.), Adelaide (S.A.) to Broken Hill (N.S.W.), Brisbane to Toowoomba (Q.), Melbourne (V.) to Adelaide (S.A.), Sydney (N.S.W.) to Brisbane (Q.), and Brisbane to Townsville (Q.). The total distance of these routes is 2,709 miles.

(c) *Aerial Ambulance Service.* Following an agreement made between the Queensland and Northern Territory Aerial Services Ltd. and the Australian Inland Mission, an aerial ambulance service to provide medical service where required in Western and Northern Queensland and operating from a base at Cloncurry was inaugurated on the 17th May, 1928. The aircraft company agreed to provide the aircraft and pilot and the mission authorities the doctor. The scheme has proved most successful and many instances are recorded of lives being saved by the services thus made available. During the first twelve months from the inception of the service approximately 18,000 miles were flown.

(d) *Reliability.* During 1929 over 538,400 miles were flown by the three subsidized companies operating regular air services without a fatal accident. The total mileage flown by all civil aircraft during the same period was upwards of 2,700,000 miles, and nine fatal accidents occurred, an average of one fatal accident for every 300,000 miles flown.

4. *Aircraft Construction.*—With the increase in the number of aircraft used in Australia attention is being given to the question of local production. Aircraft have been manufactured in Australia for a number of years, and locally built aircraft are in use on certain subsidized routes, but development has not yet reached a completely organized stage.

5. **Training of Air Pilots.**—(i) *The Associated Aero Clubs.* The Associated Australian Aero Clubs provide facilities in the capital cities of all States, with the exception of Tasmania, for flying instruction and practice. Training operations have not yet been commenced in Tasmania, but a start will be made in Launceston at an early date. At the end of May, 1930, 449 pupils had passed through the various flying training organizations and had qualified for Class "A" (Private) Pilots' licences.

The Commonwealth Government renders the various clubs assistance by providing D.H. 60 "Moth" aeroplanes and spare engines, hangar accommodation, the free use of aerodromes, suitable club houses which are leased to the clubs, and bonuses for practice flying carried out and for each pupil trained to a standard that will enable him to obtain a Class "A" (Private) Pilot's Licence. The Sydney body (the Aero Club of New South Wales) is a most successful organization. To 31st May, 1930, 190 pupils, including nine lady members, had graduated and received Class "A" Pilots' licences, while many graduates had completed advanced courses of training, gained their Class "B" (Commercial) licences and now own aircraft. The Queensland, New South Wales, Victorian, and South Australian clubs have recently purchased a D.H.9 aircraft each, and are thus enabled to afford their members facilities for obtaining instruction and practice in flying the heavier type of machines.

Aviation pageants are held from time to time by the various sections of the Australian Aero Club and are increasing in popularity.

(ii) *Other Organizations.* Until the recent establishment of the Western Australian Aero Club, flying training in Perth was the responsibility of West Australian Airways Ltd., which provided the necessary aircraft, hangars, and instructional personnel, while the Government assisted by paying a bonus of £40 in respect of each pupil qualifying for his pilot's licence. Flying operations along similar lines are now carried out at Goulburn (N.S.W.) and Geelong (Victoria). Flying training is also carried out more or less intermittently by companies, clubs, or private owners at various provincial centres, the principal being:—Mt. Gambier (S.A.), Lismore, Ballina, and Wagga (N.S.W.), and Rockhampton (Q.).

6. **Notable Flights.**—Since the end of the European war several notable long distance flights have been carried out by Australian pilots. Short accounts of those prior to the year under review are contained in Year Book No. 22, but owing to limitations of space the details cannot be repeated in this issue. The most notable achievements since those recorded in Year Book No. 22 were briefly as follows:—

Wing-Commander C. E. Kingsford Smith and Mr. C. T. P. Ulm in the "Southern Cross" completed the journey from Australia to England by air in 12 days 14 hours.

On 12th August, 1928, the "Southern Cross" with the above-mentioned crew made a record non-stop flight from Melbourne to Perth in 23½ hours.

Wing-Commander Kingsford Smith again in the "Southern Cross," but on this occasion accompanied by an international crew, succeeded in crossing the Atlantic Ocean from Ireland to Newfoundland in June, 1930.

Messrs. Moir and Owen commenced a flight from England to Australia on 18th March, 1929, and, after considerable delays caused by accidents *en route*, arrived at Cape Don Lighthouse on the Northern Australian coast where a forced landing was made after dark on 18th May.

In May, 1930, Miss Amy Johnson, an English pilot, flew solo from England to Australia in a D.H. "Moth" in 19 days.

7. **Statistical Summary.**—The collection and compilation of aircraft statistics were undertaken by the Commonwealth Bureau of Census and Statistics on the 1st July, 1922. The subjoined table gives a summary of operations for the years ended 30th June, 1925 to 1929:—

## CIVIL AIRCRAFT.—AUSTRALIA.—SUMMARY, 1924-25 TO 1928-29.

Particulars.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
Registered Aircraft Owners					
(a) .. .. . No.	25	23	29	37	72
Registered Aircraft (a) No.	57	54	84	90	163
Licensed Pilots—(a)					
Private .. .. . No.	34	41	48	127	209
Commercial .. . No.			47	76	123
Licensed Ground Engineers (a) .. .. . No.	110	116	148	163	198
Aerodromes—(a)					
Government .. . No.	43	44	45	46	56
Public .. .. . No.	11	11	11	13	19
Government Emergency Grounds .. . No.	88	90	91	94	108
Flights carried out	No. 4,893	No. 5,838	No. 17,284	No. 56,216	No. 92,000
Hours flown .. .. .	h. m. 5,302 44	h. m. 6,426 35	h. m. 10,447 24	h. m. 15,783 30	h. m. 27,268 20
Approx. Mileage .. . Miles	404,420	487,603	772,643	1,153,572	1,992,070
Passengers carried—					
Paying .. .. . No.	3,663	4,174	13,984	36,397	56,363
Non-paying .. . No.	2,428	2,830	3,222	5,629	10,037
<b>Total .. . No.</b>	<b>6,091</b>	<b>7,004</b>	<b>17,206</b>	<b>42,026</b>	<b>66,400</b>
Goods, weight carried	lbs. 11,132	62,873	125,924	116,373	160,424
Mails, letters carried	No. 225,128	272,707	290,746	301,677	316,338
Accidents—					
Persons killed	No. 1	..	4	2	7
Persons injured	No. 3	1	3	5	10

(a) At 30th June.

In previous issues of the Year Book, particulars of flying carried out in the various States have been shown, but, owing to the extension of interstate flying both by the subsidized companies and private pilots, it has been found impracticable to obtain complete details for the several States separately for the year ended 30th June, 1929. The figures shown in the above table are therefore for the Commonwealth as a whole.

8. New Guinea Activities.—The discovery of gold in New Guinea resulted in considerable aviation activity in the vicinity of the goldfields, which, by ground route, are situated about 70 miles inland from Salamaua, on the north-east coast of the mainland of New Guinea. The value of aircraft as a means of transporting food and stores to the field and of bringing the gold to the seaboard is shown by the fact that, whereas aircraft cover the distance in approximately one hour, the nature of the intervening country is such that a journey by other means occupies more than a week. Several air transport companies are operating successfully without any direct assistance in the form of Government subsidies. The principal company (Guinea Airways Ltd.) is now completing arrangements to operate two specially constructed freight machines to carry 2,500 tons of hydro-electric power plant and dredging machinery to the fields during the year 1931. This work, if successfully accomplished, will constitute one of the most notable feats of transport in the history of aviation. The subjoined table gives a summary of operations for the years ended 30th June, 1928 and 1929.

**CIVIL AIRCRAFT.—TERRITORY OF NEW GUINEA.—SUMMARY 1927-28  
AND 1928-29.**

Particulars.	Year ended 30th June—	
	1928.	1929.
Registered Aircraft Owners (a) .. .. . No.	5	7
Registered Aircraft (a) .. .. . No.	12	15
Licensed Pilots—(a)		
Private .. .. . No.	..	..
Commercial .. .. . No.	9	10
Licensed Ground Engineers (a) .. .. . No.	8	10
Aerodromes—(a)		
Government .. .. . No.	2	2
Emergency Landing Grounds .. .. . No.	4	4
Flights carried out .. .. . No.	821	1,532
Hours flown .. .. .	h. m.	h. m.
.. .. .	1,533 53	2,626 12
Approximate mileage .. .. . Miles	107,208	187,705
Passengers carried—		
Paying .. .. . No.	814	1,293
Non-paying .. .. . No.	94	65
Total .. .. . No.	908	1,358
Goods, weight carried .. .. . lbs.	518,831	1,385,510
Mails, weight carried .. .. . lbs.	6,171	13,876
Accidents—		
Persons killed .. .. . No.	..	..
Persons injured .. .. . No.	..	..

(a) At 30th June.

### E. MOTOR VEHICLES.

1. *The Motor Car and Motor Industry.*—(i) *Evolution of the Motor Car.* In the issue of the Year Book for 1927 (No. 20, p. 319) a short history of the evolution of the motor car is given, but consideration of space precludes its repetition in the current issue.

(ii) *Motor Industry.* The demand for mechanical transport occasioned by the recent European conflict was in no small measure responsible for the extensive development of the internal combustion engine, and the keen competition among motor car manufacturers for the overseas markets has improved the quality and efficiency of their products.

Although, as yet, motor cars are not entirely manufactured in Australia, the money invested in assembling and body building plants has assumed considerable proportions during recent years, and some idea of the value of Australia as a market for the motor trade is instanced by the fact that during the year 1928-29 the value of 14,546 motor bodies imported was £1,471,878, and of the 99,500 chassis, £8,830,362. The value of 72,193 bodies built in Australia to equip the chassis for which bodies were not imported was approximately £4,357,841. The value of the tyre equipment, both locally produced and imported, for which figures are not, however, available, must also be taken into consideration, particularly as the prevailing practice is for distributors to retail cars on a five-tyre basis. Fuels imported during the year for use in motor vehicles were—Crude petroleum, 105 million gallons, valued at £858,678, and petroleum, etc., 200 million gallons, valued at £6,816,287. Spares, batteries, accessories, etc., also are additional factors contributing to the potentialities of Australia as a market.

At the 30th June, 1929, the number of motor cars per 1,000 of population was nearly 100, which, however, is not as high as that recorded in New Zealand, viz., 134, so that it would appear that the saturation point has yet to be reached.

2. **Registration.**—The arrangements for the registration of motor vehicles and the licensing of drivers and riders thereof are not uniform throughout Australia. Methods of registration, licence fees payable, etc., in each State were referred to in Official Year Book No. 16, pp. 337–340, and later issues, but limits of space preclude the repetition of this information in the present volume.

3. **Public Vehicles.**—In all the capital cities of the States and in many of the most important provincial centres taxi-cabs and other vehicles ply for hire under licence granted either by the Commissioner of Police or the Local Government authority concerned. As most of these vehicles are independently controlled by individuals or small companies, it has not been possible to obtain complete data in respect of their operations.

4. **Motor Omnibuses.**—Motor omnibus traffic, both in urban and provincial centres, has assumed considerable proportions during recent years, and prior to the constitution of Boards empowered to allocate routes over which omnibuses may operate, had a very marked effect on Railway and Tramway services. By regulating the licensing of motor omnibuses the economic waste arising from duplication of routes and services parallel with or contiguous to existing railway and tramway systems is avoided. The general principle governing the allocation of routes is that omnibus services should act as feeders to existing transport utilities. Revenue from licence fees is devoted principally to the maintenance or construction of roadways to enable them to withstand the wear and tear caused by the heavy traffic. Complete statistics regarding motor omnibus operations are, however, not at present available, but some indication of the effect unrestricted motor omnibus services would have on the railways and tramways may be obtained from the operations of some services conducted by railway and tramway systems as adjuncts to their main services during the year 1928–29. Such services are conducted in Victoria by the Victorian Railways Commissioners and by the Melbourne and Metropolitan Tramways Board, and in South Australia by the South Australian Railways Commissioners and by the Municipal Tramway Trust, Adelaide, the number of passengers carried by these services during the year 1928–29 being 450,799, 1,085,928, 55,569 and 9,518,815 respectively.

The services operated by the Melbourne and Metropolitan Tramways Board were necessary to provide transport facilities during the conversion of certain cable tram lines to electrical traction, but it is not the intention of the Board to institute omnibus services in a general way. In other instances the omnibus service has been provided to meet the competition of private enterprise and to endeavour to protect the existing transport utilities provided by public bodies.

5. **Motor Vehicles Registered, etc.**—(i) *Year 1928–29.* Particulars of the registration of motor vehicles, etc., for the year 1928–29 are contained in the subjoined table:—

**MOTOR VEHICLES.—SUMMARY, 1928–29.**

States and Territories.	Motor Vehicles Registered.					Drivers' and Riders' Licences Issued.	Revenue derived from—		
	Motor Cars	Motor Cycles.	Commercial Vehicles.	Total.	Per 1,000 of population.		Vehicle Registrations and Motor Tax.	Drivers' and Riders' Licences.	Total.
	No.	No.	No.	No.	No.		£	£	£
New South Wales	162,298	30,937	43,572	236,807	90·2	324,666	1,522,737	153,137	1,675,874
Victoria ..	143,407	24,554	4,437	168,398	95·3	212,228	1,039,649	53,053	1,092,702
Queensland ..	78,358	8,281	62,452	84,089	90·7	56,860	447,273	20,792	468,065
South Australia	56,038	12,655	12,853	81,520	140·7	82,973	529,725	33,376	568,101
Western Australia	26,706	7,106	10,235	44,047	107·0	68,139	248,024	17,035	265,059
Tasmania ..	11,361	4,373	1,860	17,594	82·8	20,131	82,283	5,960	88,243
Central Australia	30	1	65	96	104·3	121	48	30	78
North Australia	136	41	162	339		127	104	29	133
Federal Capital Territory	1,027	121	215	1,363	163·5	1,983	7,891	888	8,779
<b>Australia ..</b>	<b>474,359</b>	<b>88,049</b>	<b>171,851</b>	<b>634,259</b>	<b>99·5</b>	<b>767,328</b>	<b>3,877,734</b>	<b>289,300</b>	<b>4,167,034</b>

(a) Motor buses. Trucks, vans, etc., included with motor cars  
(c) Pneumatic tyred vehicles.

(b) Solid tyred vehicles.  
(d) Incomplete.

(ii) *Quinquennium 1925-1929.* The following table shows the number of vehicles registered, licences issued, and revenue received therefrom during each of the years 1924-25 to 1928-29 :—

**MOTOR VEHICLES.—REGISTRATIONS, ETC., AUSTRALIA, 1924-25 TO 1928-29.**

Year.	Motor Vehicles Registered.					Drivers' and Riders' Licences Issued.	Revenue derived from—		
	Motor Cars.	Motor Cycles.	Commercial Vehicles. (a)	Total.	Per 1,000 of Population.		Vehicle Registration and Motor Tax.	Drivers' and Riders' Licences.	Total.
							£	£	£
1924-25	221,444	58,079	26,116	305,639	51.5	810,150	1,326,672	88,508	1,415,180
1925-26	282,199	70,209	37,892	390,300	64.6	496,311	2,098,112	137,639	2,235,751
1926-27	364,384	80,242	50,914	495,540	80.3	608,585	2,636,506	208,857	2,845,363
1927-28	419,131	84,017	62,006	565,154	89.9	681,237	3,364,861	249,964	3,614,825
1928-29	474,359	88,049	71,851	634,259	99.5	787,328	3,877,734	289,300	4,167,034

(a) Incomplete, partly included with Motor Cars.

During the period dealt with, the number of motor vehicles showed an average annual increase of 20 %; the greatest increase (28%) being recorded during 1925-26 and the least (12 %) during 1928-29. The number of vehicles per 1,000 of population increased from 51.5 to 99.5.

6. *Comparative Motor Vehicle Statistics, 1930.*—The result of the 1930 World Motor Census, conducted by the "American Automobile" magazine, from which the following particulars have been extracted, shows that there were nearly 35,000,000 motor cars, trucks, and buses registered in various countries of the world at 1st January, 1930.

**COMPARATIVE MOTOR VEHICLE STATISTICS, 1st JANUARY, 1930.**

Country.	Motor Cars, Trucks, and Buses.	Motor Cycles.
Australia .. .. .	570,000	100,000
Argentina .. .. .	358,625	2,766
Belgium .. .. .	140,328	43,500
Brazil .. .. .	188,349	1,630
Canada .. .. .	1,169,445	8,924
Cuba .. .. .	48,544	472
Denmark .. .. .	103,249	20,625
France .. .. .	1,265,841	321,914
Germany .. .. .	609,030	665,145
Great Britain .. .. .	1,370,711	690,000
India .. .. .	164,275	26,797
Irish Free State .. .. .	37,404	7,591
Italy .. .. .	230,509	78,772
Japanese Empire .. .. .	90,465	26,600
Mexico .. .. .	80,653	700
Netherlands .. .. .	98,428	32,500
Netherlands East Indies .. .. .	70,883	1,100
New Zealand .. .. .	173,815	37,355
Union of South Africa .. .. .	141,674	36,500
Spain .. .. .	178,176	37,500
Sweden .. .. .	144,519	60,000
Switzerland .. .. .	70,650	44,750
United States of America .. .. .	26,564,659	115,226

The foregoing figures are in some cases approximately stated, being based on estimates furnished by Trade Commissioners or representative motor trade organizations in the several countries. The figures for Australia are estimated at 31st December, 1929, and differ from those stated in para. 5, which are actual registrations at 30th June, 1929.

In respect of motor cars Australia now ranks sixth in importance numerically among the countries of the world, having been displaced by Germany from fifth position during 1928.

## F. POSTS, TELEGRAPHS AND TELEPHONES.

### § 1. Posts.

1. **The Commonwealth Postal Department.**—In previous issues of the Year Book some account was given of the procedure in connexion with the transfer to the Federal Government of the postal, telegraphic, and telephonic facilities of the separate States. (See Year Book No. 15, p. 601.)

Under the provisions of the Commonwealth Post and Telegraph Act, 1901, the Commonwealth Postal Department was placed under the control of a Postmaster-General, being a responsible Minister with Cabinet rank, and a Secretary having chief control of the Department under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General.

2. **Postal Matter Dealt With.**—In previous issues of this work, details of the postal matter dealt with by the Postmaster-General's Department were shown, but, owing to the non-completion of an investigation which is being made into the system of recording such particulars, details for the years 1927-28 and 1928-29 are not available. The usual tables have, therefore, been omitted from this issue.

3. **Postal Facilities.**—(i) *Relation to Area and Population.* The subjoined statement shows the number of post offices, the area in square miles and the number of inhabitants to each post office (including non-official offices) in each State and in Australia at the end of the year 1928-29. In order to judge clearly the relative postal facilities provided in each State, the area of country to each office, as well as the number of inhabitants per office, should be taken into account. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory, while the returns for the Federal Capital Territory are included in those for New South Wales.

#### POSTAL FACILITIES.—RELATION TO AREA AND POPULATION, at 30th JUNE, 1929.

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.
Number of post offices(a) . . . . .	2,698	2,738	1,281	808	675	517	8,717
Number of square miles of territory to each office in State . . . . .	115	32	523	1,118	1,446	51	341
Number of inhabitants to each office	916	646	724	722	610	411	731
Number of inhabitants per 100 square miles . . . . .	796	2,011	138	65	42	811	214

(a) Includes "Official," "Semi-Official," and "Non-Official" Offices.

The foregoing table does not include "telephone" offices at which telegraph and telephone business only is transacted.

(ii) *Number of Offices.* The following table shows the number of post offices in each year from 1924-25 to 1928-29 inclusive :—

## POST OFFICES AT 30th JUNE, 1925 TO 1929.

State.	At 30th June—									
	1925.		1926.		1927.		1928.		1929.	
	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)
New South Wales	459	2,205	458	2,221	456	2,228	455	2,228	448	2,250
Victoria ..	280	2,428	285	2,429	284	2,445	286	2,462	283	2,455
Queensland ..	215	1,072	216	1,068	216	1,069	215	1,064	211	1,070
South Australia ..	147	660	148	660	150	657	146	657	148	660
Western Australia	138	582	139	593	132	583	130	559	128	547
Tasmania ..	48	466	48	475	48	473	47	471	44	473
<b>Australia ..</b>	<b>1,287</b>	<b>7,413</b>	<b>1,294</b>	<b>7,446</b>	<b>1,286</b>	<b>7,453</b>	<b>1,279</b>	<b>7,441</b>	<b>1,262</b>	<b>7,455</b>

(a) Includes offices previously designated as " Allowance " and " Receiving " Offices.

(iii) *Employees and Mail Contractors.*—The number of employees and mail contractors in the Central Office and in each of the States is given in the appended table :—

## POSTAL EMPLOYEES AND MAIL CONTRACTORS, 1925 TO 1929.

State.	At 30th June—									
	1925.		1926.		1927.		1928.		1929.	
	Employees.	Mail Contractors.								
Central Office ..	110	..	130	..	149	..	170	..	195	..
New South Wales	14,413	1,915	14,244	1,924	14,214	1,933	13,856	1,947	15,267	1,952
Victoria ..	11,140	1,139	11,226	1,156	11,607	1,145	10,950	1,142	11,067	1,180
Queensland ..	6,322	839	6,181	850	5,953	860	5,504	870	5,437	786
South Australia ..	3,926	430	4,275	424	4,388	402	4,144	413	4,117	421
Western Australia	3,271	319	2,986	379	3,061	357	2,883	358	2,929	365
Tasmania ..	1,551	243	1,615	247	1,555	247	1,509	238	1,533	276
<b>Australia ..</b>	<b>40,733</b>	<b>4,885</b>	<b>40,657</b>	<b>4,980</b>	<b>40,927</b>	<b>4,944</b>	<b>39,016</b>	<b>4,966</b>	<b>40,545</b>	<b>4,980</b>

4. Registered Letters, Packets, etc.—Particulars regarding registered articles for the year 1928–29 are given in the table hereunder :—

REGISTERED ARTICLES POSTED AND RECEIVED, 1928–29.

State.	Posted in each State for Delivery within Australia.		Posted in each State for Delivery Overseas.		Total Posted.		Received in each State from Overseas.	
	Number ( <small>000 omitted</small> ).	Per 1,000 of Population.	Number ( <small>000 omitted</small> ).	Per 1,000 of Population.	Number ( <small>000 omitted</small> ).	Per 1,000 of Population.	Number ( <small>000 omitted</small> ).	Per 1,000 of Population.
New South Wales ..	2,848	1,161	210	85	3,058	1,246	252	103
Victoria ..	2,084	1,184	120	68	2,204	1,252	163	92
Queensland ..	1,022	1,115	52	56	1,074	1,171	50	54
South Australia ..	593	1,017	36	62	629	1,079	34	58
Western Australia..	536	1,320	57	142	593	1,462	48	118
Tasmania ..	293	1,352	5	24	298	1,398	10	47
Australia ..	7,376	1,164	480	76	7,856	1,240	557	88

5. Value-Payable Parcel and Letter Post.—(i) *General.* The Postal Department undertakes to deliver registered articles sent by parcel post within Australia, or between Papua or Nauru and Australia, to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment.

(ii) *Summary of Business.* The next statement gives particulars regarding the value-payable post in each State for the years 1925 to 1929 :—

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1925 TO 1929.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
NUMBER OF PARCELS POSTED.							
	No.	No.	No.	No.	No.	No.	No.
1925 .. ..	209,265	8,397	199,752	3,559	69,065	387	490,425
1926 .. ..	236,900	11,508	204,819	5,033	69,970	316	528,546
1927 .. ..	252,300	11,801	216,418	8,132	71,473	446	560,570
1928 .. ..	296,391	20,005	236,040	11,789	79,761	505	644,491
1929 .. ..	313,654	24,426	248,210	14,564	79,699	430	680,983
VALUE COLLECTED.							
	£	£	£	£	£	£	£
1925 .. ..	347,902	15,440	331,280	5,728	108,193	1,055	809,598
1926 .. ..	397,283	22,035	328,954	6,327	109,671	811	865,081
1927 .. ..	402,186	21,617	334,619	10,939	112,276	1,075	882,712
1928 .. ..	462,794	35,699	350,712	17,095	114,035	1,040	981,375
1929 .. ..	462,964	41,878	364,156	19,964	116,052	859	1,005,873

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1925 TO 1929—*continued.*

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
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REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.

	£	£	£	£	£	£	£
1925 .. ..	31,324	1,138	25,908	469	8,951	53	67,843
1926 .. ..	32,232	1,564	26,539	634	8,872	44	69,885
1927 .. ..	32,450	1,569	28,108	864	8,720	58	71,769
1928 .. ..	36,318	2,547	30,700	1,264	8,939	62	79,830
1929 .. ..	38,968	3,116	33,048	1,669	8,914	53	85,768

The number and value of parcels forwarded in New South Wales and Queensland are greatly in excess of the transactions of any of the other States, although the system has also found favour for several years in Western Australia. These three States have the largest areas, and consequently more people at long distances from business centres who avail themselves of the value-payable system. Although South Australia, too, has a large area the population of that State is, comparatively, not widely spread. The amount of business transacted in Victoria, South Australia, and Tasmania is comparatively light, but generally increased business has been done in recent years.

6. *Sea-borne Mail Services.*—(i) *General.* In earlier issues of this work particulars of sea-borne mail services were included, but owing to the restrictions of space this information cannot be given in the present issue.

(ii) *Amount of Mail Subsidies Paid.* The following table shows the amounts of subsidies paid by the Commonwealth Postal Department for ocean and coastal mail services during the year ended 30th June, 1929 :—

MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1928-29.

Service.	Orient S.N. Co.	Queensland Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
	£	£	£	£	£
Annual subsidy .. ..	130,000	2,200	4,500	5,864	29,125

During the year 1928-29 the amount paid for conveyance of mails at poundage rates by non-contract vessels was £36,038; by road services, £700,687; and by railways services, £536,766. The total expenditure during the financial year 1928-29 on the carriage of mails, as disclosed by the Profit and Loss Account, amounted to £1,428,165.

7. *Transactions of the Dead Letter Offices.*—The table hereunder shows the number of letters, postcards and letter-cards, and packets and circulars, including Inland, Interstate, and International, dealt with by the Dead Letter Offices in 1928-29, and the methods adopted in the disposal thereof :—

## DEAD LETTER OFFICES.—SUMMARY, 1928-29.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
<b>LETTERS, POSTCARDS, AND LETTER-CARDS.</b>							
Returned direct to writers or delivered	1,049,346	365,605	217,256	112,976	137,114	92,304	1,974,601
Destroyed in accordance with Act..	125,910	67,051	32,211	9,169	9,222	4,146	247,709
Returned to other States or Countries as unclaimed .. .. .	70,207	30,111	21,276	9,095	17,910	1,368	149,967
<b>Total .. .. .</b>	<b>1,245,463</b>	<b>462,767</b>	<b>270,743</b>	<b>131,240</b>	<b>164,246</b>	<b>97,818</b>	<b>2,372,277</b>
<b>PACKETS AND CIRCULARS.</b>							
Returned direct to writers or delivered	918,555	169,303	165,795	71,895	92,567	21,540	1,439,655
Destroyed in accordance with Act..	190,149	136,228	73,996	72,360	1,824	216	474,773
Returned to other States or Countries as unclaimed .. .. .	2,122	23,687	8,699	3,262	696	3,930	42,896
<b>Total .. .. .</b>	<b>1,110,826</b>	<b>329,218</b>	<b>248,490</b>	<b>147,517</b>	<b>95,087</b>	<b>25,686</b>	<b>1,956,824</b>
<b>Grand Total (letters, packets, etc.) .. .. .</b>	<b>2,356,293</b>	<b>791,985</b>	<b>519,233</b>	<b>278,757</b>	<b>259,333</b>	<b>123,604</b>	<b>4,329,101</b>

During the year 1928-29 money and valuables to the amount of £180,618 were found in undeliverable postal articles, while 39,434 postal articles were posted without address, including 347 which contained money and valuables to the extent of £2,350.

8. Money Orders and Postal Notes.—(i) *General.* The issue of money orders and postal notes is regulated by sections 74 to 79 of the Post and Telegraph Act, 1901. A money order may be issued for payment of sums up to £20 within Australia, and not exceeding £40 (in some cases £20, and in Mauritius £10) in places abroad. A postal note which is payable only within Australia and in Papua, cannot be issued for a larger sum than twenty shillings.

(ii) *Summary for States, 1928-29.* Particulars regarding the business transacted in each State for the year 1928-29 are given hereunder :—

## MONEY ORDERS AND POSTAL NOTES.—SUMMARY, 1928-29.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ..	7,925,269	7,725,520	53,334	2,532,686	56,262
Victoria .. .. .	3,370,888	3,514,736	23,387	1,720,553	38,779
Queensland.. .. .	2,693,272	2,458,191	17,723	627,405	14,468
South Australia ..	1,082,002	1,030,197	7,915	389,580	9,026
Western Australia ..	1,464,496	1,272,833	9,919	319,987	6,892
Tasmania .. .. .	558,387	501,847	3,762	151,057	3,433
<b>Australia .. .. .</b>	<b>17,094,314</b>	<b>16,503,324</b>	<b>116,040</b>	<b>5,741,268</b>	<b>128,860</b>

The figures in the foregoing table show a substantial increase over the corresponding particulars for the previous year.

(iii) *Summary, Australia, 1925 to 1929.* The next table shows the total number and value of money orders and postal notes issued and paid in Australia from 1924-25 to 1928-29 :—

**MONEY ORDERS AND POSTAL NOTES.—SUMMARY, AUSTRALIA,  
1924-25 TO 1928-29.**

Year ended 30th June—	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1925 ..	2,976	15,155	2,835	14,728	13,437	4,634	13,370	4,616
1926 ..	3,081	15,845	2,911	15,366	14,237	4,946	14,044	4,862
1927 ..	3,225	16,500	3,043	15,925	14,502	5,300	14,360	5,270
1928 ..	3,349	17,011	3,188	16,411	15,402	5,579	15,357	5,568
1929 ..	3,416	17,094	3,233	16,503	15,626	6,741	15,591	5,737

(iv) *Classification of Money Orders Issued and Paid.* (a) *Orders Issued.* The next table shows the number and value of money orders issued in each State during the year 1928-29, classified according to the country where payable :—

**MONEY ORDERS ISSUED.—COUNTRY WHERE PAYABLE, 1928-29.**

State in which Issued.	Where Payable.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
<b>NUMBER.</b>					
New South Wales ..	1,448,340	15,794	105,564	26,190	1,595,888
Victoria ..	578,959	6,966	60,458	19,348	665,731
Queensland ..	480,068	2,164	28,039	12,570	522,841
South Australia ..	202,239	1,229	18,693	8,146	230,307
Western Australia ..	241,180	1,251	26,577	7,285	276,293
Tasmania ..	116,496	1,286	5,730	1,651	125,163
<b>Australia ..</b>	<b>3,067,282</b>	<b>28,690</b>	<b>245,061</b>	<b>75,190</b>	<b>3,416,223</b>

<b>VALUE.</b>					
	£	£	£	£	£
New South Wales ..	7,432,910	65,151	305,855	121,353	7,925,269
Victoria ..	3,083,912	24,018	176,250	86,708	3,370,888
Queensland ..	2,545,480	7,749	85,627	54,416	2,693,272
South Australia ..	992,188	3,830	50,526	35,458	1,082,002
Western Australia ..	1,348,824	5,253	73,772	36,647	1,464,496
Tasmania ..	537,433	5,335	12,315	3,304	558,387
<b>Australia ..</b>	<b>15,940,747</b>	<b>111,336</b>	<b>704,345</b>	<b>337,886</b>	<b>17,094,314</b>

(b) *Orders Paid.* The number and value of money orders paid in each State during the year 1928-29, classified according to the country where issued, are given hereunder :—

## MONEY ORDERS PAID.—COUNTRY OF ISSUE, 1928-29.

State in which Paid.	Where Issued.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
NUMBER.					
New South Wales ..	1,443,404	43,581	21,004	14,907	1,522,896
Victoria ..	643,366	18,328	13,339	5,697	680,730
Queensland..	459,519	2,847	6,066	4,510	472,942
South Australia ..	200,168	1,293	3,774	1,417	206,652
Western Australia ..	230,210	1,661	6,173	1,804	239,848
Tasmania ..	103,067	3,317	1,344	2,097	109,825
Australia ..	3,079,734	71,027	51,700	30,432	3,232,893
VALUE.					
New South Wales ..	£ 7,430,628	£ 147,252	£ 94,607	£ 53,033	£ 7,725,520
Victoria ..	3,379,516	56,130	57,440	21,650	3,514,736
Queensland..	2,410,092	9,929	24,914	13,256	2,458,191
South Australia ..	1,004,028	5,365	15,786	5,018	1,030,197
Western Australia ..	1,232,100	5,319	28,265	7,149	1,272,833
Tasmania ..	485,639	8,146	3,910	4,152	501,847
Australia ..	15,942,003	232,141	224,922	104,258	16,503,324

In the tables above, money orders payable or issued in foreign countries which have been sent from or to Australia through the General Post Office at London are included in those payable or issued in Great Britain and Ireland.

(v) *Classification of Postal Notes Paid.* The subjoined table shows the number and value of postal notes paid during the year 1928-29, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid in each of the last five years have been given previously.

## POSTAL NOTES PAID.—STATE OF ISSUE, 1928-29.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
NUMBER.							
Issued in same State	4,492,827	3,106,130	1,380,591	700,100	718,785	327,749	10,721,182
Issued in other States	610,621	441,366	1,361,004	93,820	29,821	2,333,455	4,870,037
Total ..	5,103,448	3,547,496	2,741,595	793,920	748,606	2,661,204	15,591,269
VALUE.							
Issued in same State	£ 1,804,395	£ 1,169,662	£ 516,660	£ 242,011	£ 269,692	£ 111,871	£ 4,114,291
Issued in other States	212,860	166,406	397,937	31,822	11,822	801,723	1,622,570
Total ..	2,017,255	1,336,068	914,597	273,833	281,514	913,594	5,736,861

The number and value of postal notes paid in Australia during the year showed an increase of 1.5 and 3 per cent. respectively over the corresponding figures for the year 1927-28.

9. Profit or Loss, Postmaster-General's Department.—(i) *Revenue (a) Analysis, States, 1928-29.* The following table shows the gross revenue classified according to branches in each State for the year 1928-29. The figures are supplied by the Treasury, and represent the actual collections for the year.

GROSS REVENUE, POSTMASTER-GENERAL'S DEPT., ANALYSIS, 1928-29.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postage .. .. .	2,118,107	1,441,804	728,450	408,418	327,505	152,887	5,177,177
Money order commission	} 109,616	61,422	32,593	16,906	17,080	7,359	244,976
Poundage on postal notes .. .. .							
Private boxes and bags .. .. .							
Miscellaneous .. .. .	26,947	16,092	16,047	10,806	6,277	2,932	79,101
	126,952	137,008	50,641	25,593	36,813	7,143	383,150
<b>Total Postal ..</b>	<b>2,380,622</b>	<b>1,656,326</b>	<b>827,737</b>	<b>461,723</b>	<b>387,875</b>	<b>170,321</b>	<b>5,834,404</b>
Telegraphs (ordinary)	525,208	324,901	235,065	180,181	135,892	46,009	1,447,256
Telegraphs (radio) ..	7,034	9,267	1,977	1,836	1,468	545	22,177
<b>Total Telegraphs</b>	<b>532,292</b>	<b>334,168</b>	<b>237,042</b>	<b>182,017</b>	<b>137,360</b>	<b>46,554</b>	<b>1,469,433</b>
Telephones .. .. .	2,106,433	1,529,634	762,998	599,035	320,603	140,856	5,459,559
<b>Grand Total ..</b>	<b>5,019,347</b>	<b>3,520,128</b>	<b>1,827,777</b>	<b>1,242,775</b>	<b>845,638</b>	<b>357,731</b>	<b>12,813,396</b>

Increased telephone revenue (£425,508) largely contributed to the total increase of £509,254 over the revenue for 1927-28.

(b) *Branches, 1925 to 1929.* The gross revenue collected in respect of each branch of the Department during each of the past five years is shown in the table hereunder:—

GROSS REVENUE, POSTMASTER-GENERAL'S DEPT., 1925 TO 1929.

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1925 .. .. .	4,944,546	(d)1,500,076	3,599,864	10,044,486
1926 .. .. .	5,215,684	(e)1,511,658	4,044,414	10,771,756
1927 .. .. .	5,505,985	(a)1,523,971	4,576,863	11,606,819
1928 .. .. .	5,802,882	(b)1,467,209	5,034,051	12,304,142
1929 .. .. .	5,884,404	(c)1,469,433	5,459,559	12,813,396

Includes radio receipts (a) £35,815, (b) £45,030, (c) £22,177 (d) £18,292, and (e) £21,178.

As compared with the corresponding figures for the previous year, an increase of 4.14 per cent. is shown, the increases in the several branches being as follows:—Postal 1.41 per cent., Telegraph 0.15 per cent., and Telephone 8.45 per cent.

(ii) *Working Expenses (a) Analysis, States, 1928-29.* Particulars of the working expenses of each branch of the Department by States during 1928-29 are shown in the following table. As in the case of gross revenue, the figures have been furnished by the Treasury and represent actual payments during the financial year.

## WORKING EXPENSES, POSTMASTER-GENERAL'S DEPARTMENT, 1928-29.

Branch.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postal ..	2,112,811	1,383,124	699,495	406,673	358,403	197,286	5,157,792
Telegraph ..	607,782	331,461	272,274	172,221	160,917	60,202	1,604,857
Telephone ..	1,668,407	1,218,232	567,787	561,992	252,047	159,353	4,427,818
All Branches	4,389,000	2,932,817	1,539,556	1,140,886	771,367	416,841	11,190,467

The working expenses of the Postal Branch represented 46 per cent. of the total, Telegraph Branch, 14 per cent., and the Telephone Branch, 40 per cent.

(b) *Branches, 1925 to 1929.* The appended table shows the working expenses of each branch for the period 1924-25 to 1928-29.

## WORKING EXPENSES, POSTMASTER-GENERAL'S DEPARTMENT, 1925 TO 1929.

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1925 .. ..	4,488,021	1,613,695	3,128,914	9,230,630
1926 .. ..	4,637,126	1,704,705	3,487,234	9,829,065
1927 .. ..	4,868,929	1,678,372	3,864,207	10,411,508
1928 .. ..	5,083,247	1,706,870	4,238,515	11,028,632
1929 .. ..	5,157,792	1,604,857	4,427,818	11,190,467

The working expenses for the Department as a whole have increased by £1,959,837 (21 per cent.) during the four years.

(iii) *Interest Charges.*—(a) *States and Branches, 1928-29.* The interest payable on capital expenditure for the three Branches in each State during 1928-29 was as follows :—

## INTEREST CHARGES, POSTMASTER-GENERAL'S DEPARTMENT, 1928-29.

Branch.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postal ..	58,837	38,941	15,181	12,981	13,443	3,427	142,860
Telegraph ..	55,784	27,452	31,421	21,524	29,606	2,811	159,598
Telephone ..	492,368	378,904	215,094	174,424	86,253	37,343	1,384,386
All branches	607,039	445,297	261,696	208,929	120,302	43,581	1,686,844

Owing to the great expansion of the telephone service during recent years, and the more expensive nature of equipment generally, the interest charges allocated to the Telephone Branch represented over 80 per cent. of the total.

(b) *Branches, 1925 to 1929.* For the five years, 1925 to 1929, each Branch was debited with the following amounts in respect of interest on capital expenditure :—

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	All Branches.
	£	£	£	£
1925 .. ..	122,442	173,288	790,816	1,086,546
1926 .. ..	129,084	187,714	942,391	1,259,189
1927 .. ..	136,583	162,458	1,111,777	1,410,818
1928 .. ..	137,041	157,999	1,232,073	1,527,113
1929 .. ..	142,860	159,598	1,384,386	1,686,844

(iv) *Profit or Loss.*—(a) *States, 1928-29.* The operations of each branch of the Department in the several States after providing for working expenses, depreciation, and Interest Charges during the year 1928-29, showed the following results:—

**PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1928-29.**

Branch.	Profit or Loss.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
Postal ..	Profit	£ 225,466	£ 177,920	£ 111,067	£ 39,369	£ 5,656	£ ..	£ 531,870
	Loss	.. ..	.. ..	.. ..	.. ..	.. ..	28,503	.. ..
Telegraph ..	Profit	110,390	19,178	48,532	12,118	27,511	10,405	228,134
	Loss	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Telephone ..	Profit	22,406	29,895	3,776	130,037	7,733	53,315	247,212
	Loss	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
All Branches	Profit	92,670	128,847	59,659	.. ..	.. ..	.. ..	56,524
	Loss	.. ..	.. ..	.. ..	102,836	29,588	92,228	.. ..

After providing for depreciation, pensions and retiring allowances and interest on capital, the year 1928-29 closed with a profit of £56,524, which represents an increase of £287,187 on the result for the year 1927-28, when a deficit of £230,663 was shown.

(b) *Branches, 1925 to 1929.* The following statement gives particulars of the operating results of each branch for the period 1925 to 1929:—

**PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1925-29.**

Year Ended 30th June—	Branch.							
	Postal.		Telegraph.		Telephone.		All Branches.	
	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£	£	£	£
1925 ..	243,472	..	..	227,175	..	258,619	..	242,322
1926 ..	319,979	..	..	308,632	..	296,684	..	285,337
1927 ..	445,929	..	..	278,720	..	339,270	..	172,061
1928 ..	403,850	..	..	312,075	..	322,438	..	230,663
1929 ..	531,870	..	..	228,134	..	247,212	56,524	..

10. *Expenditure, Postmaster-General's Department.*—(i) *Distribution.* The following table shows, as far as possible, the distribution of expenditure on various items in each State during the year ended 30th June, 1929. The table must not be regarded as a statement of the working expenses of the Department, since items relating to new works, interest, etc., are included therein.

**EXPENDITURE, POSTMASTER-GENERAL'S DEPT.—DISTRIBUTION, 1928-29.**

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Salaries and contingencies—	£	£	£	£	£	£	£	£
Salaries ..	72,272	2,351,666	1,664,562	822,957	644,808	445,199	199,060	6,200,524
Conveyance of mails	..	530,987	282,620	251,697	101,757	109,075	43,661	1,319,997
Contingencies ..	8,168	904,815	576,171	261,794	262,795	148,907	98,340	2,261,050
Ocean mails ..	130,000	..	..	..	..	..	..	130,000
Miscellaneous ..	4,188	99,971	24,129	8,108	7,987	4,320	4,861	87,564
Pensions and retiring allowances ..	..	41,679	51,376	..	..	17,550	..	110,605
Rent, repairs, maintenance ..	725	53,420	32,690	17,442	11,089	8,528	3,061	127,855
Supervision of works	..	..	..	..	..	..	399	399
Proportion of Audit Office expenses ..	..	4,488	3,222	1,677	1,067	743	396	11,593
New works—								
Telegraph and telephone ..	1,558	1,118,570	697,526	359,779	317,772	148,573	139,686	2,783,473
New buildings, etc. ..	..	183,612	23,421	29,718	14,751	10,674	17,568	229,744
Interest on transferred properties ..	..	114,323	61,362	45,575	37,523	21,869	9,024	290,581
Other ..	2,139,685	..	..	..	..	..	..	2,139,685
(a)								
Total ..	2,356,596	5,287,545	3,417,279	1,798,747	1,399,549	915,498	517,856	15,693,070

(a) Particulars of apportionment to each State not available.

The decrease of £574,523 in the expenditure on new telegraph and telephone works was the principal factor governing the decrease of £405,707 in the total expenditure, as compared with the year 1927-28.

(ii) *Total, 1925 to 1929.* The next table gives the actual payments made as shown by records kept for Treasury purposes in respect of the Postal Department for each of the years ended 30th June, 1925 to 1929 inclusive.

#### EXPENDITURE, POSTMASTER-GENERAL'S DEPT., 1925 TO 1929.

Expenditure.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
Total .. ..	£ 14,887,929	£ 16,270,117	£ 15,281,886	£ 16,093,777	£ 15,693,070

The total expenditure for 1928-29 increased by 5 per cent. on the amount for 1924-25.

11. *Capital Account.*—The appended statement shows particulars of the fixed assets of the Postmaster-General's Department at 30th June, 1929.

#### DETAILS OF FIXED ASSETS, 30th JUNE, 1929.

Particulars.	Net Value, 1st July, 1928. (b)	Capital Expenditure, 1928-29.	Gross Value, 30th June, 1929.	Less Deprecia- tion, &c. 1928-29. (a)	Net Value, 30th June, 1929.
Telephone Lines and equipment	£ 27,147,745	£ 2,830,018	£ 29,977,763	£ 793,473	£ 29,184,290
Telegraph Lines and Trunk Line equipment .. ..	9,177,520	593,916	9,771,436	119,234	9,652,202
Telegraph equipment .. ..	467,392	57,275	524,667	26,734	497,933
Postal equipment .. ..	225,541	65,510	291,051	4,614	286,437
Sites, Buildings, Furniture, and Office equipment .. ..	8,845,970	253,900	9,099,870	76,430	9,023,440
Miscellaneous .. ..	586,847	77,549	664,396	39,779	624,617
Total .. ..	46,451,015	3,878,168	50,329,183	1,060,264	49,268,919

(a) Includes Dismantled Assets, Depreciation written off, and Assets transferred.

(b) The variations between the figures shown in this column and those shown on page 332 of *Year-Book No. 22* are due to a re-arrangement of the Asset Accounts from 1st July, 1928. The total is not affected.

During the past quinquennium the value of the fixed assets has nearly doubled, the net value at 30th June, 1924, being £28,776,726.

## § 2. Telegraphs.

1. *General.*—A review of the development of the Telegraph Services in Australia was given in a previous issue of this work (see *Year Book No. 15*), but limitations of space preclude the repetition of this information in the present issue. During the past year substantial improvements in both the speed and grade of telegraph service throughout the Commonwealth have been effected, the entire system being subjected to intensive re-organization.

(i) *Improvements Effected.* Particular attention has been paid to the introduction of up-to-date methods of handling business, the extension of "carrier wave" services whereby several messages may be transmitted simultaneously over the one line, the more profitable use of existing circuits, the adoption of better methods of circulating and routing traffic, and the recruitment and training of officers with the object of ensuring a continuous supply of skilled staff.

In order to speed up transmission, the manual system between the capital cities and between important country centres has been systematically substituted by fast speed machine operation. Thus, between Melbourne and Sydney, Melbourne and Adelaide, Sydney and Brisbane, Sydney and Adelaide, Brisbane and Rockhampton, and Brisbane and Townsville, Murray multiplex machine service is in operation, providing telegraph outlets which permit the carriage of very heavy interstate and intra-state loads with a minimum delay. Between Brisbane and Toowoomba, Brisbane and Charleville, Melbourne and Bendigo, Melbourne and Mildura, Perth and Kalgoorlie, Perth and Fremantle, Sydney and Bathurst, and Sydney and West Maitland, a modified form of the multiplex system known as the teletype has been established, providing a substantially improved service.

(ii) *Interstate Traffic.* The service and economic advantages offered by the "carrier wave" system have been recognized by the establishment of carrier transmission between Melbourne and Sydney, and Melbourne and Adelaide. As indicating the economic advantages of this system, one existing pair of wires between Melbourne and Sydney has been utilized to provide a present number of 22 telegraph channels in addition to the telephone trunk line service. The telegraph channels thus provided are adequate to meet all present requirements, but the number can be readily extended without erecting additional wires between Melbourne and Sydney in harmony with the increment in telegraph load for a number of years. The advantages are such that the establishment of telegraph carrier transmission between Perth and Adelaide and between Sydney and Brisbane is to be undertaken. High speed automatic machine printing systems will be employed for the purpose of discharging heavy traffic loads over these carrier channels.

(iii) *Grade of Service.* As a result of the action instituted, a marked improvement in plant and labour outputs has already been achieved. The improved stability of telegraph line plant and equipment, as well as the accommodation provided for the personnel has enabled an average grade of service of 15 minutes to be achieved on the principal telegraph routes of the Commonwealth.

(iv) *Phonogram Service.* So as to provide greater convenience and use to the public, the phonogram service has been extended, and telephone subscribers may now telephone telegrams for onward transmission, or have messages telephoned to them, without trouble. The fee for the service is small, and the innovation means, in effect, that the telegraph system is brought into the home of every telephone subscriber.

(v) *Radiograms within the Commonwealth.* On 1st May, 1929 the rates for radiograms between Flinders Island, King Island, Maria Island, Wave Hill, Brunette Downs and other places within the Commonwealth were reduced to 1½d. per word with a minimum charge of two shillings.

2. *Telegraph Offices, Length of Lines and Wire.*—(i) *Summary for Australia.* The following table shows the number of telegraph offices and the length of telegraph lines and of telegraph wire available for use in Australia in each year from 1925 to 1929 :—

## TELEGRAPHS.—AUSTRALIA, SUMMARY, 30th JUNE, 1925 TO 1929.

Particulars.	1925.	1926.	1927.	1928.	1929.
Number of offices .. .. .	8,576	8,904	9,111	9,136	9,252
Length of wire (miles)—					
Telegraph purposes only .. .. .	66,702	65,471	70,563	73,303	72,642
Telegraph and telephone purposes ..	126,086	149,989	158,470	87,376	87,303
Length of line (miles)—					
Conductors in Morse cable .. .. .	2,399	3,123	3,280	3,441	3,500
Conductors in submarine cable .. ..	2,919	3,598	4,251	4,505	4,676
Pole routes (miles) .. .. .	80,399	85,547	93,237	97,110	96,467

(ii) *Particulars for each State.* The following table gives corresponding particulars for each State for the year 1928-29 :—

TELEGRAPHS.—STATES, SUMMARY, 30th JUNE, 1929.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus-tralia.
Number of offices ..	3,069	2,409	1,452	790	976	556	9,252
Length of wire (miles)—							
Telegraph purposes only	21,120	8,489	19,046	9,690	13,479	818	72,642
Telegraph and telephone purposes ..	33,231	14,404	23,777	12,033	2,253	1,605	87,303
Length of line (miles)—							
Conductors in Morse cable	1,510	1,381	454	..	141	14	3,500
Conductors in submarine cable (statute miles) ..	3,226	468	348	224	..	410	4,676
Pole routes (miles) ..	31,946	18,833	15,621	14,965	11,691	3,411	96,467

A total length of 159,945 miles of wire is available for telegraph purposes, of which 87,303 miles are also used for telephone purposes, and the figures show decreases of 734 (0.5 per cent.) and of 73 miles (0.1 per cent.) respectively over the corresponding mileages for the previous year. The decreases in the mileage figures are due to the extension of the practice of exploiting the physical wires by superimposing telegraph facilities over telephone wires.

3. *Number of Telegrams Dispatched.*—(i) *Total for Australia.* The number of telegrams dispatched to destinations within Australia in each of the last five years is given hereunder :—

TELEGRAMS DISPATCHED.—AUSTRALIA, 1925 TO 1929.

Telegrams.	Year ended 30th June—				
	1925.	1926.	1927.	1928.	1929.
Number (a) ..	17,132,145	17,637,716	17,274,289	16,608,226	16,345,152

(a) Including interstate cablegrams.

(ii) *Totals for each State.* The appended table shows the total number of telegrams dispatched in each State in 1928-29 according to the class of message transmitted :—

TELEGRAMS DISPATCHED.—STATES, 1928-29.

Class of Message Transmitted within the Commonwealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
<b>Paid and Collect—</b>							
Ordinary ..	4,574,840	3,166,963	2,264,759	1,066,147	1,480,334	323,811	12,876,854
Urgent ..	656,302	208,183	162,816	68,406	83,803	15,405	1,194,915
Press ..	270,222	161,212	113,895	57,699	42,779	54,014	699,821
Lettergram ..	91,593	76,616	86,742	42,306	67,152	31,648	396,057
Radiogram ..	22,181	7,661	5,581	4,210	4,048	9,619	53,300
<b>Total ..</b>	<b>5,615,138</b>	<b>3,620,635</b>	<b>2,633,793</b>	<b>1,238,768</b>	<b>1,678,116</b>	<b>434,497</b>	<b>15,220,947</b>
<b>Unpaid—</b>							
Service ..	109,216	53,974	43,476	50,104	56,066	21,261	334,097
Shipping ..	72,298	122,719	20,482	6,418	15,371	6,916	244,204
Meteorological ..	175,954	76,845	75,291	80,578	109,882	27,354	545,904
<b>Total ..</b>	<b>357,468</b>	<b>253,538</b>	<b>139,249</b>	<b>137,100</b>	<b>181,319</b>	<b>55,531</b>	<b>1,124,205</b>
<b>Grand Total ..</b>	<b>5,972,606</b>	<b>3,874,173</b>	<b>2,773,042</b>	<b>1,375,868</b>	<b>1,859,435</b>	<b>490,028</b>	<b>16,345,152</b>

The figures in the foregoing table show a decrease in the total volume of telegraph business of 263,074 messages as compared with the previous year.

4. Letter-telegrams.—Letter-telegrams are accepted at any hour at telegraph offices, which are open for business after 7 p.m., subject to the condition that delivery is effected by posting at the letter-telegram office of destination.

5. Revenue and Expenditure.—Particulars of the revenue and expenditure of the telegraph systems for the years 1924–25 to 1928–29 are given in earlier pages.

### § 3. Submarine Cables.

1. First Cable Communication with the Old World.—In earlier issues of the Year Book will be found a detailed account of the connexion of Australia with the old world by means of submarine cables. (See No. 6, p. 770.)

2. General Cable Services.—Descriptions of the various cable services between Australia and other countries are given in Year Book No. 22, p.p. 335 and 336, but considerations of space preclude the repetition of this information in the present issue.

3. Merging of Cable and Wireless Interests.—Following upon the recommendations of the Imperial Wireless and Cable Conference in London in 1928 to examine the situation which had arisen as the result of the competition of the Beam Wireless with the Cable services, the Imperial and International Communications Limited was formed and took over the operations of the Pacific Cable Board and the control of the Eastern Extension Cable Company and the Marconi Wireless Company. As yet the merger is not fully effective in Australia although the offices of the Eastern Extension Company and the Pacific Cable Board in Sydney and Melbourne were combined during December, 1929.

4. Cable Business.—(i) *Australia.* The subjoined table shows the number of cablegrams received and dispatched in Australia from 1926–27 to 1928–29 :—

#### CABLEGRAMS.—AUSTRALIA, 1926–27 TO 1928–29.

Cablegrams.	Cablegrams Received.			Cablegrams Dispatched.			Total Cablegrams Received and Dispatched.		
	1926–27.	1927–28.	1928–29.	1926–27.	1927–28.	1928–29.	1926–27.	1927–28.	1928–29.
Number ..	690,625	710,501	727,256	720,496	759,823	808,812	1,411,121	1,470,324	1,536,068

(ii) *States.* The number of cablegrams received and dispatched in each State during the year 1928–29 is given hereunder :—

#### CABLEGRAMS.—STATES, 1928–29.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.(a)	Australia.
Number received ..	388,093	230,293	29,750	35,374	35,115	8,631	727,256
Number dispatched	415,813	256,167	38,048	43,296	46,083	9,405	808,812
Total ..	803,906	486,460	67,798	78,670	81,198	18,036	1,536,068

(a) Exclusive of interstate cablegrams, which are included with interstate telegrams.

5. Cable and Radio (Beam) Rates.—(i) *Ordinary Messages.* From 1st February, 1927, the cable rates (per word) between Australia and Great Britain were reduced as follows:—Ordinary, 2s. 6d. to 2s.; deferred ordinary, 1s. 3d. to 1s.; and Government, 1s. 4d. to 1s. 0½d., and substantial reductions were also made on the Canadian service (via Pacific) as from the same date. The following are the rates at present operating on traffic to the principal countries:—

**CABLEGRAM AND RADIOGRAM RATES, JUNE, 1929.**

To—	Rate per Word and Route.		
	Via Pacific.	Via Eastern.	Via Beam.
European Countries ..	2s. 6d. to 3s. 0d.	2s. 6d. to 2s. 7d.	1s. 11½d. to 2s. 5½d.
Asiatic Countries.. ..	5s. 4d. to 6s. 4d.	2s. 5d. to 4s. 1d.	.. ..
Africa .. ..	.. ..	1s. 7d. to 5s. 4d.	2s. 3½d. to 2s. 11d.
North America .. ..	1s. 7d. to 3s. 5d.	2s. 4d. to 4s. 4d.	1s. 5½d. to 3s. 7d.
Central America .. ..	3s. 8½d. to 5s. 4d.	5s. to 6s. 1d.	2s. 11½d. to 3s. 11d.
West Indies .. ..	3s. to 5s. 11d.	4s. to 6s. 2d.	.. ..
South America .. ..	4s. 1d. to 6s. 8d.	4s. 1d. to 7s. 11d.	4s. to 6s. 3d.

(ii) *Deferred Cable or Radio (Beam) Messages.* Under this system a reduction of 50 per cent. in the ordinary cable or radio (Beam) charges is made under certain conditions. Any such messages which have not reached their destination within 24 hours may be transmitted in turn with full-rate messages. This service, together with "Daily Letter" and "Week-end" cable services, has affected the ordinary cable business to a considerable extent. "Deferred Press" cablegrams, subject to a delay of 18 hours, may be exchanged between Australia and (a) Great Britain at the rate of 4½d. per word by cable and 3d. per word via Beam wireless; (b) Canada, at 2½d. per word by cable and 2½d. per word via Beam wireless; and (c) United States of America, at 3d. to 4d. per word by cable and 3½d. to 4d. per word via Beam wireless.

(iii) *Daily Letter Services.* The "Daily Letter" service was inaugurated in September, 1923, between Australia and Great Britain and Canada, and has since been extended to most countries in the British Empire and in Europe and to the United States of America. "Daily Letter" messages are accepted subject to a maximum transit delay of 48 hours (including allowance for variations of times). The rates on messages (20 word minimum) to Great Britain are 9d. per word via "Pacific" or "Eastern," and 6d. per word via "Beam," while for United States of America the rate varies from 7d. to 9d. per word via cable and 6½d. to 8½d. via "Beam".

(iv) *Week-end Messages.* Week-end messages may be exchanged with certain specified countries at the rates indicated hereunder. Messages—which may be lodged at any post office—are forwarded to reach the transmitting station by post or telegraph by midnight on Saturdays and are deliverable to the addressees on Tuesday mornings. The rates per word for messages (20 word minimum) to the following countries are:—Great Britain, by cable 7½d., by wireless 5d.; Holland, Czecho-Slovakia, Italy, Algeria and Tunis 9d.; Canada, 5½d. and 5½d.; Newfoundland, 7½d. and 7d.; Fanning Island, 6d.; France, Austria, Norway and Switzerland, 8d.; and Sweden, Denmark, Germany and Luxemburg 7½d. A week-end letter telegram service between the Commonwealth and Papua and New Guinea was opened in December, 1929, the rate being 4½d. per word with a minimum charge of 7s. 6d. for 20 words.

(v) *Press Messages.* The rate per word on press messages exchanged with Great Britain is 6d. via cable and 4d. via Radio (Beam) service.

(vi) *Night Letter Service.* A night letter service for traffic between Australia and New Zealand was introduced on 1st May, 1924. The rate is fixed at 3s. per message of 20 words, and 2d. per word in excess of 20. On 1st December, 1924, the service was extended to take in traffic to and from Fiji at the rate of 5s. 10d. per message of 20 words, and excess words at the rate of 3½d. per word. Night letter telegrams are accepted at any time and are delivered by first post on the morning following receipt.



channel will be 1,676 miles long, and will be the final link in the chain of communication extending from Cairns (Queensland) round the coast to Geraldton (Western Australia), a total distance of 4,672 miles. Investigations into the feasibility of linking Tasmania telephonically with the mainland are also proceeding and, when this service is provided, telephonic communication will be available between all the States. Substantial progress has been made with the introduction of the carrier system of telephony whereby several additional channels of communication may be obtained over one pair of wires, thus obviating the costly expenditure involved in erecting additional wire along important routes where the business justifies extra channels.

(v) *Automatic Exchanges.*—At 30th June, 1929, there were 55 automatic or semi-automatic exchanges in operation providing facilities for 132,450 subscribers, 129,089 of whom were in the metropolitan areas. Steady progress is being made with the work of converting the whole of the exchanges in the metropolitan networks to machine switching. Trials are being made with a specially constructed automatic unit for use at country exchanges, and the results at present are promising. The purpose of this equipment is to provide an economic day and night service at country exchanges, and it is hoped that the introduction of small automatic units will enable the benefits of continuous service to be more widely extended.

(vi) *Summary for States.* Particulars relating to the telephone service in each State for the years ended 30th June, 1927 to 1929, will be found in the following table :—

## TELEPHONE SERVICES.—SUMMARY, 1927 TO 1929.

Particulars.	Year (30th June).	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
No. of Exchanges ..	1927	1,740	1,518	821	495	574	334	5,482
	1928	1,811	1,573	844	522	610	338	5,698
	1929	1,890	1,620	891	537	628	347	5,911
No. of Telephone Offices (Including Exchanges)	1927	2,870	2,129	1,413	739	955	523	8,629
	1928	2,857	2,287	1,408	759	956	521	8,788
	1929	2,892	2,340	1,415	776	958	526	8,907
No. of lines connected ..	1927	127,784	101,891	42,911	37,132	18,232	10,051	338,001
	1928	137,602	108,878	45,549	40,407	20,039	10,801	363,076
	1929	146,492	114,603	48,065	42,186	21,562	11,450	384,358
No. of Instruments con- nected	1927	167,301	138,609	53,505	47,300	23,277	12,370	442,362
	1928	181,434	147,788	56,996	51,546	25,596	13,290	476,700
	1929	193,718	155,841	60,447	53,814	27,636	14,048	505,554
(a) No. of subscribers' instruments	1927	163,104	135,867	51,468	46,200	22,366	11,634	430,639
	1928	177,150	144,746	54,907	50,349	24,606	12,568	464,326
	1929	189,154	152,657	58,332	52,512	26,460	13,288	492,403
(b) No. of public tele- phones	1927	2,555	2,112	1,458	697	868	565	8,255
	1928	2,651	2,208	1,471	736	948	631	8,545
	1929	2,779	2,256	1,482	770	935	621	8,748
(c) No. of other local instruments	1927	1,642	630	579	403	43	171	3,468
	1928	1,683	834	618	461	42	191	3,829
	1929	1,785	928	633	532	291	239	4,408
Instruments per 100 of population	1927	7.03	8.03	5.98	8.22	6.05	5.94	7.17
	1928	7.46	8.39	6.25	8.86	6.41	6.31	7.58
	1929	7.84	8.82	6.52	9.22	6.73	6.61	7.93
Earnings .. ..		£	£	£	£	£	£	£
	1927	1,771,611	1,320,005	639,882	521,867	262,679	120,670	4,636,714
	1928	1,965,173	1,447,504	724,615	575,837	300,323	134,198	5,148,150
1929	2,138,369	1,567,241	779,105	606,329	330,567	143,381	5,564,992	
Working expenses ..	1927	1,437,290	1,012,961	590,284	444,825	239,528	139,319	3,864,207
	1928	1,503,342	1,187,404	597,332	532,428	257,270	160,739	4,238,515
	1929	1,668,407	1,218,232	567,787	561,092	252,047	159,353	4,427,818
Percentage of working ex- penses on earnings	1927	81.13	76.74	92.25	85.24	91.19	115.45	83.34
	1928	76.50	82.03	82.43	92.46	85.52	119.40	82.32
	1929	78.02	77.73	72.88	92.69	76.25	111.14	79.56

The number of instruments per 100 of population has increased from 7.17 in 1926-27 to 7.93 in 1928-29. The actual number of instruments has increased from 442,362 to 505,554, an increase of 14 per cent. Of the 505,554 instruments connected at 30th June, 1929, 221,725, or 43.9 per cent., were served by exchanges situated beyond the limits of the telephone networks of the six State capital cities. As a general rule, the metropolitan networks are limited to a radius of 15 miles from the General Post Office in Sydney and Melbourne, and 10 miles in the other State capital cities.

(vii) *Systems in Use.* The following table shows the percentage of Automatic, Common Battery, and Magneto Telephone lines at 30th June, 1927 to 1929 :—

PERCENTAGE OF AUTOMATIC, COMMON BATTERY, AND MAGNETO LINES,  
1927 TO 1929.

System.	30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Automatic .. ..	1927	37.2	24.4	16.5	18.3	32.8	..	27.2
	1928	40.9	30.3	18.3	28.4	33.1	..	31.8
	1929	42.5	34.9	19.1	33.1	33.6	..	34.5
Common Battery .. ..	1927	6.2	24.3	15.3	23.8	7.1	47.4	16.0
	1928	3.1	21.1	14.7	19.4	6.7	46.7	13.3
	1929	3.1	19.2	14.3	15.7	6.5	45.7	12.2
Magneto .. ..	1927	56.6	51.3	68.2	58.4	60.1	52.6	56.8
	1928	56.0	48.6	67.0	52.2	60.2	53.3	54.9
	1929	54.4	45.9	66.6	51.2	59.9	54.3	53.3

(viii) *Subscribers' Lines and Calling Rates.* The next table gives the number of subscribers' lines and the daily calling rate at central, suburban, and country telephone exchanges in the several States for the year 1928-29 :—

TELEPHONES.—SUBSCRIBERS' LINES AND DAILY CALLING RATE, 1928-29.

State.	Central Exchanges.		Suburban Exchanges.		Country Exchanges.		Total.	
	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.
New South Wales	15,278	13.18	65,706	3.86	60,127	2.25	141,111	4.18
Victoria	8,324	11.10	56,020	3.83	46,941	1.80	111,285	3.52
Queensland	6,778	8.94	11,610	3.13	29,142	2.57	47,530	3.61
South Australia	6,524	9.70	16,161	2.94	18,509	1.71	41,134	3.30
Western Australia	6,931	6.59	3,820	4.23	9,988	1.62	20,739	3.76
Tasmania	2,723	4.55	999	2.44	7,280	2.10	11,002	2.74
Australia	46,558	10.08	154,256	3.70	171,937	2.08	372,801	3.75

A comparison of the daily calling rates for each class of exchange shows that New South Wales registered the greatest number per line at central exchanges, Western Australia at suburban exchanges, and Queensland at country exchanges. For Australia as a whole, the average number of calls per line at central exchanges was nearly three times the number registered at suburban exchanges, while the average for suburban exchanges was slightly less than double the number shown for country exchanges.

(ix) *Trunk Line Calls and Revenue.* In the following table the number of telephone trunk line calls recorded, the amount of revenue received, and the average revenue per call are shown for each of the States for the years 1926-27 to 1928-29 :—

**TELEPHONES.—TRUNK LINE CALLS AND REVENUE FOR THE YEARS  
1926-27 TO 1928-29.**

Particulars.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Australia.
Total Calls for Year—	No.	No.	No.	No.	No.	No.	No.
1926-27 ..	10,333,612	7,555,055	4,763,831	3,395,557	1,644,292	1,329,783	29,022,130
1927-28 ..	11,174,761	8,142,637	5,530,691	3,815,309	1,874,344	1,464,328	32,002,070
1928-29 ..	11,985,196	9,222,655	5,960,612	3,964,987	2,062,621	1,545,600	34,741,671
Total Revenue for Year—	£	£	£	£	£	£	£
1926-27 ..	382,489	258,635	221,337	131,932	77,512	39,197	1,111,102
1927-28 ..	422,195	237,733	266,950	149,390	89,370	43,502	1,259,190
1928-29 ..	472,858	338,837	298,190	162,494	100,678	46,405	1,419,462
Average Revenue per Call—	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
1926-27 ..	8.88	8.22	11.15	9.32	11.31	7.07	9.18
1927-28 ..	9.06	8.48	11.58	9.39	11.44	7.12	9.44
1928-29 ..	9.47	8.82	12.01	9.84	11.71	7.20	9.80

The number of trunk line calls recorded during 1928-29 increased by over 2½ millions over the figures for the previous year, and the average revenue per call increased by 0.36d.

The rapid growth in connexion with subscribers' services is bringing about increased trunk line traffic, and extensive works are in progress to meet the growing demand and to improve the trunk line system generally.

2. Revenue from Telephones.—Particulars regarding the revenue from telephone services are included in the tables at the end of § 1.

## §5. Radio Telegraphy and Telephony.

1. Radio Telegraphy and Telephony.—(i) *General.* A statement in regard to the initial steps taken to establish radio telegraphy in Australia was given in Official Year Book No. 18, p. 343, but consideration of space precludes its repetition in the present issue.

With the exception of the war period, licences for experimental and amateur stations have been issued since 1911, with restrictions on the use of transmitting equipment.

The regulations were amended in 1920 with a view to encouraging the erection of "land" stations by pastoralists and others in remote districts, but very few satisfactory applications were received. The Department, however, at the end of 1925 opened stations at Wave Hill and at Camooweal to collect and distribute messages from private stations that might subsequently be erected in the Northern Territory or Western Queensland. One such station has been erected at Brunette Downs.

The Department took over a private station at Maria Island, Tasmania, on 1st June, 1927, and now operates it in conjunction with the Post Office at that point. During 1927, stations were erected by Amalgamated Wireless (Australasia) Ltd. at Salamoa and Bulolo, on the New Guinea gold-fields. The stations at Morobe and Marienberg have been closed.

Regulations under the Navigation Act require that all ships registered in Australia of 1,600 tons or more registered tonnage, or carrying more than 12 passengers, shall be fitted with an efficient radio telegraphy installation. At the end of June, 1930, there were 104 vessels so equipped.

(ii) *Broadcasting.* (a) *Licences, etc.* Details of the regulations governing wireless broadcasting and the issue of licences were given in Year Book No. 22, p. 342, but considerations of space preclude the repetition of such information in the present issue.

The National Broadcasting Service which is controlled by the Postmaster-General's Department, the programme services being provided under contract by the Australian Broadcasting Co., now operates two broadcasting stations in New South Wales and Victoria and one each in the other States with the exception of Tasmania. The Tasmanian station 7 Z.L. will be taken over by the National Service on 14th December, 1930.

Class "B" broadcasting stations are still under private control, but licences are issued on amended conditions which ensure satisfactory alternative programmes for listeners. The fee for these stations has been increased from £5 to £25, and the maximum period of the licence is now three years. Class "B" station licensees do not share in the listeners' licence fees, but rely for their income on revenue received from the broadcasting of advertisements and other such publicity.

The following tables show the number of each class of licence issued in each State, etc., during the years 1928-29 and 1929-30 :—

WIRELESS LICENCES, 1928-29.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	Aust.	Papua.	Grand Total.
Coast .. ..	1	1	6	1	5	3	1	18	2	20
Ship .. ..	11	59	12	20	6	1	..	109	..	109
Land .. ..	6	3	2	..	1	..	..	12	1	13
Broadcasting—										
"A" .. ..	2	2	1	1	1	1	..	8	..	8
"B" .. ..	7	2	1	2	..	..	..	12	..	12
Broadcast listeners' ..	100,798	142,534	24,636	23,927	3,841	4,751	17	300,504	24	300,528
Experimental—										
Transmitting and receiving ..	193	184	68	71	43	26	..	585	4	589
Receiving only ..	21	32	12	6	6	5	..	82	..	82
Portable .. ..	6	2	6	1	..	..	..	15	..	15
Aircraft .. ..	1	..	..	..	..	..	..	1	..	1
Special .. ..	20	6	..	..	..	..	..	26	..	26
<b>Total Licences issued</b>	<b>101,066</b>	<b>142,825</b>	<b>24,744</b>	<b>24,029</b>	<b>3,903</b>	<b>4,787</b>	<b>18</b>	<b>301,372</b>	<b>31</b>	<b>301,403</b>

WIRELESS LICENCES, 1929-30.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	Aust.	Papua.	Grand Total.
Coast .. ..	2	1	6	1	5	3	1	19	2	21
Ship .. ..	10	55	12	20	6	1	..	104	..	104
Land .. ..	6	3	3	..	3	..	1	16	..	16
Broadcasting .. ..										
"A" .. ..	..	..	..	..	1	..	..	..	..	..
"B" .. ..	9	5	3	3	1	2	..	23	..	23
Broadcast listeners' ..	111,080	139,887	23,247	25,651	5,715	6,032	20	311,632	16	311,648
Experimental .. ..	173	185	72	58	40	16	..	544	..	544
Portable .. ..	5	1	6	..	1	..	..	13	..	13
Aircraft .. ..	..	..	..	..	..	..	..	..	..	..
Special .. ..	18	11	..	..	2	..	..	31	..	31
<b>Total Licences issued</b>	<b>111,303</b>	<b>140,148</b>	<b>23,349</b>	<b>25,733</b>	<b>5,773</b>	<b>6,054</b>	<b>22</b>	<b>312,382</b>	<b>18</b>	<b>312,400</b>

(a) Stations controlled by the Postmaster-General's Department. No "A" Class Broadcasting licences are now in existence, with the exception of 7 Z.L. Hobart, which expires on 14th December, 1930.

(b) *Simultaneous Delivery.* Simultaneous broadcasting, which was successfully accomplished for the first time on 20th August, 1925, has now become the normal procedure on all occasions when it is desired to disseminate items of national interest throughout Australia. By means of the telephone trunk lines and amplifying apparatus the proceedings are distributed to the studios of the various stations of the National Broadcasting Service and in some cases relayed to oversea stations. In this manner, the listeners throughout Australia are simultaneously provided for.

(iii) *Beam Wireless.* The Beam wireless stations provided for under the agreement between the Commonwealth Government and Amalgamated Wireless (Australasia) Ltd. were completed early in 1927, and a direct beam wireless service to England was established on 8th April, 1927. A similar service to Canada, United States, and Mexico was opened on 16th June, 1928. Satisfactory communication is maintained daily over a period of hours, and the new services are being well patronized by the public. A comparison of the rates charged for "Beam" and Cable messages is given in § 3, Submarine Cables. Particulars of international traffic via "Beam" are given in para. (vi) (a) hereunder.

(iv) *International Wireless Telephone Service.* A wireless telephone service between England and Australia was opened on 30th April, 1930, Mr. Ramsay Macdonald and Mr. J. H. Scullin, the Prime Ministers of the respective countries, holding the inaugural conversation. The service is now available to most of the ordinary telephone subscribers of Europe and Australia. The fee for a conversation between Australia and England is £6 for a minimum of three minutes and £2 for each additional minute. The fee is slightly more for conversations to continental countries. Up till 30th June, 1930, 449 conversations had taken place, 312 originating in Australia and 137 in Europe.

(v) *Radio Stations (Pacific Ocean).* Radio-telegraphic stations have been erected at Suva, Ocean Island, Tulagi, and Vila under the control of the High Commissioner of the Pacific, while the New Zealand Government has erected high-power stations at Awanui (Auckland), Awarua (Bluff), and Apia (Samoa), and low-power stations at Auckland, Chatham Islands, Raratonga (Cook Islands) and Wellington.

(vi) *Radiotelegraphic Traffic.* (a) *International.* The following statement shows particulars of international traffic "via Beam" to and from United Kingdom and other places during the year ended 30th June, 1929:—

**RADIO TRAFFIC.—INTERNATIONAL, YEAR ENDED 30th JUNE, 1929.**

Class of Traffic.	Number of Words Transmitted.			Number of Words Received.		
	United Kingdom.	Other Places.	Total.	United Kingdom.	Other Places.	Total.
Ordinary .. ..	857,064	382,072	1,239,136	571,378	136,973	708,351
Deferred .. ..	519,013	278,791	797,804	432,070	96,872	528,942
Government .. ..	58,670	6,901	65,571	58,298	337	58,635
Press (including Deferred press)	290,109	15,150	305,259	740,629	14,850	755,479
Daily letter and week-end telegrams(a)	4,096,671	717,258	4,813,929	2,352,290	171,656	2,523,946
Total .. ..	5,821,527	1,400,172	7,221,699	4,154,665	420,688	4,575,353

(a) Includes Christmas and New Year Greeting telegrams to and from the United Kingdom.

(b) *Coast Stations.* Particulars of the traffic handled by the several coast stations during the year 1928-29 are as follows:—

**RADIO TRAFFIC.—COAST STATIONS, 1928-29.**

State or Territory.	Particulars.				
	Total, Paying Words.	Messages.			
		Paying.	Service.	Weather.	Total.
	No.	No.	No.	No.	No.
New South Wales .. ..	571,590	34,590	1,314	3,230	39,134
Victoria .. ..	105,034	9,582	16	1,299	10,897
Queensland .. ..	657,294	33,284	1,058	5,284	39,626
South Australia .. ..	82,991	6,148	238	997	7,383
Western Australia .. ..	246,639	18,361	411	3,843	22,615
Tasmania .. ..	196,570	11,883	343	606	12,832
Northern Territory .. ..	59,564	2,528	504	1,848	4,880
<b>Australia .. ..</b>	<b>1,919,682</b>	<b>116,376</b>	<b>3,884</b>	<b>17,107</b>	<b>137,367</b>
<b>Papua .. ..</b>	<b>290,308</b>	<b>24,419</b>	<b>637</b>	<b>1,090</b>	<b>26,146</b>
<b>Grand Total .. ..</b>	<b>2,209,990</b>	<b>140,795</b>	<b>4,521</b>	<b>18,197</b>	<b>163,513</b>

(c) *Island Stations.* Particulars of the island radio traffic dealt with during the year 1928-29 are given hereunder:—

**RADIO TRAFFIC.—ISLAND STATIONS, 1928-29.**

Particulars.	To Australia.	From Australia.	Inter- Island.	Ship.	Service.	Total.
Messages .. ..	28,749	13,796	15,073	1,973	..	59,591
Words .. ..	411,008	261,974	256,556	28,282	..	957,820

(vii) *Proficiency Certificates.* Proficiency certificates for commercial wireless operators are issued by the Minister to individuals who pass the specified tests. Limited certificates in radiotelegraphy and radiotelephony, amateur operators' certificates and watchers' certificates are, in addition, issued to successful candidates at the prescribed examinations.

Every station, in respect of which a licence is issued, must be operated by a person holding a certificate of proficiency.

Certificates issued under the International Radiotelegraph Convention of London (1912) ceased to be valid on 31st December, 1929, after which date it became necessary for certificate holders to exchange their certificates for equivalent certificates issued under the provisions of the Washington Convention (1927). To 30th June, 1930, 91 first class and 253 second class certificates had been issued under the new conditions.

At 30th June, 1930, 1 limited certificate in radiotelegraphy, 10 limited certificates in radiotelephony, and 607 amateur proficiency certificates, in addition to 114 watchers' certificates, had been issued.