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 1925-26 to 1929-30 :—

TOTAL OVERSEA SHIPPING, ENTERED.—AUSTRALIA, 1925-26 TO 1929-30.

Year.	Steam.		Sailing.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
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
1929-30	1,499	5,413,192	23	31,254	1,522	5,444,446

The average tonnage of vessels entered has risen from 3,350 tons per vessel in 1925-26 to 3,577 tons in 1929-30.

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, 1925-26 TO 1929-30.

Countries.	Cargo and Ballast.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
TONNAGE ENTERED.						
United Kingdom and European Countries	Cargo	1,815,268	1,834,752	1,939,468	1,759,576	2,043,137
	Ballast	21,444	31,267	3,950	35,563	19,840
New Zealand	Cargo	507,238	474,639	453,965	476,987	457,812
	Ballast	256,003	212,953	170,036	147,819	166,948
Asiatic Countries and Islands in the Pacific	Cargo	1,090,062	1,217,572	1,187,969	1,372,717	1,329,505
	Ballast	210,196	288,287	190,883	353,350	121,907
Africa	Cargo	23,070	16,540	34,325	57,453	42,304
	Ballast	66,494	91,582	55,595	75,807	52,103
North and Central America	Cargo	1,283,073	1,353,526	1,366,499	1,254,911	1,194,358
	Ballast	..	27,228	5,566	11,480	8,305
South America	Cargo	10,373	1,840	10,739	5,920	8,227
	Ballast	20,584	8,684	..	..	..
	Cargo	4,729,084	4,898,869	4,992,965	4,927,564	5,075,343
	Ballast	574,721	660,001	426,080	624,019	369,103
Total	..	5,303,805	5,558,870	5,419,045	5,551,583	5,444,446
TONNAGE CLEARED.						
United Kingdom and European Countries	Cargo	2,344,201	2,543,362	2,416,656	2,313,817	2,247,735
	Ballast	17,590	15,224	..	..	5,537
New Zealand	Cargo	678,616	627,538	601,802	514,588	544,643
	Ballast	57,710	41,020	23,518	29,189	43,584
Asiatic Countries and Islands in the Pacific	Cargo	1,120,019	1,181,485	1,104,361	1,390,401	1,061,434
	Ballast	273,054	298,862	453,271	444,169	594,752
Africa	Cargo	154,250	155,300	159,238	122,965	45,114
	Ballast	3,418	16,425	2,722	672	4,205
North and Central America	Cargo	492,088	445,835	474,279	536,134	633,692
	Ballast	162,008	199,209	238,166	164,290	306.629
South America.. ..	Cargo	58,090	74,531	28,643	29,356	12,356
	Ballast	3,840	6,309	3,597	..	..
	Cargo	4,847,264	5,028,051	4,784,979	4,907,261	4,544,974
	Ballast	517,620	577,049	721,274	638,320	954,707
Total	..	5,364,884	5,605,100	5,506,253	5,545,581	5,499,681

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. The percentage in 1929-30 was 73.43 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, 1925-26 TO 1929-30.

Nationality.	Tonnage.				
	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
BRITISH—					
Australian	381,178	405,968	395,680	206,188	211,890
United Kingdom ..	2,967,317	3,097,888	3,011,435	3,286,445	3,244,561
Canadian	68,091	86,701	72,079	77,907	57,282
New Zealand	492,255	458,716	403,176	415,517	399,209
Other British	76,226	102,201	94,863	120,580	84,928
Cargo.. ..	3,549,627	3,704,196	3,637,889	3,703,435	3,726,326
Ballast ..	435,440	447,278	339,344	403,202	271,544
Total British ..	3,985,067	4,151,474	3,977,233	4,106,637	3,997,870
Per cent. on total ..	75.14	74.68	73.39	73.97	73.43
FOREIGN—					
Danish	85,152	61,376	61,311	34,016	72,431
Dutch	124,824	115,363	130,500	147,843	154,036
French	109,417	99,832	97,596	118,842	106,939
German	76,650	140,810	157,381	137,766	105,435
Italian	62,046	61,583	76,921	54,716	63,840
Japanese	246,193	210,486	168,323	286,607	207,910
Norwegian	264,037	302,958	284,036	255,270	307,943
Swedish	96,625	111,920	106,159	92,397	86,540
United States	205,391	231,468	341,263	289,228	267,827
Other Foreign	48,403	71,600	18,322	28,261	73,675
Cargo.. ..	1,179,457	1,194,673	1,355,076	1,224,129	1,349,017
Ballast ..	139,281	212,723	86,736	220,817	97,559
Total Foreign ..	1,318,738	1,407,396	1,441,812	1,444,946	1,446,576
Per cent. on total ..	24.86	25.32	26.61	26.03	26.57
Cargo.. ..	4,729,084	4,898,869	4,992,965	4,927,564	5,075,343
Per cent. on total	89.16	88.13	92.14	89.76	93.22
Ballast ..	574,721	660,001	426,080	624,019	369,103
Per cent. on total	10.84	11.87	7.86	11.24	6.78
Grand Total ..	5,303,805	5,558,870	5,419,045	5,551,583	5,444,446

The Australian tonnage which entered Australia from overseas during the year 1929-30 represented 3.89 per cent. of the total tonnage entered. This figure was less than the average for the quinquennium, which was 5.87 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, 1925-26 TO 1929-30.

Nationality.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
British	75.06	75.61	72.86	75.16	73.42
Foreign	24.94	24.39	27.14	24.84	26.58
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 25.58 per cent.

(*b*) *Tonnage of Cargo.* In Transport and Communication Bulletin, No. 22 (p. 36) published by this Bureau, a statement is given of the tonnage of oversea cargo discharged and shipped during the year 1929-30 according to the nationalities of the vessels engaged in the carrying trade.

While the tonnage of British vessels entering with cargo represented 73.42 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 1929-30 was United States of America, its vessels contributing 5.81 per cent. of the total tonnage entered with cargo and 9.86 per cent. of the total cargo discharged and 4.82 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, 1929-30.

Countries.	Nationality.							
	United States.		Norwegian.		Japanese.		Dutch.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
EUROPEAN COUNTRIES—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom ..	..	..	13,077	8,548	..	..	4,132	..
Germany	..	..	19,637	3,583	..	..	38,764	4,132
Norway	..	..	9,259	58,123	..	..	..	..
Other European Countries	..	..	48,481	19,012	..	..	13,264	47,288
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—								
Netherlands East Indies	5,176	..	72,004	95,083	3,075	3,194	79,738	86,570
Japan	..	..	..	7,337	144,164	181,969	..	3,311
Straits Settlements ..	..	..	21,309	3,772	..	3,137	18,138	11,294
Other Asiatic Countries	4,875	10,051	332	4,926	2,818	23,129	..	..
New Zealand	..	7,221	275	332	3,826	..	..	..
Other Pacific Islands ..	..	3,471	15,209	20,133	3,194	..	..	..
AFRICAN COUNTRIES ..	..	..	6,090	65	..	..	..	..
NORTH AMERICAN COUNTRIES—								
United States ..	257,776	251,883	91,721	74,745	50,833	..	..	..
Canada	..	..	10,549	5,365	..	..	..	..
SOUTH AMERICAN COUNTRIES	..	..	..	..	..	..	..	..
With Cargo ..	256,272	231,808	294,713	149,244	189.728	203,116	154,024	142,372
In Ballast ..	11,555	40,818	13,230	151,780	18,182	8,313	12	10,223
Total	267,827	272,626	307,943	301,024	207,910	211,429	154,036	152,595

(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 1925-26 to 1929-30.

OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF STEAM AND SAILING VESSELS ENTERED, 1925-26 TO 1929-30.

Description and Nationality of Vessels.	1925-26.		1926-27.		1927-28.		1928-29.		1929-30.	
	Tonnage.	Percentage.	Tonnage.	Percentage.	Tonnage.	Percentage.	Tonnage.	Percentage.	Tonnage.	Percentage.
Steam—										
British ..	3,972,307	76	4,146,144	75	3,972,733	74	4,103,691	74	3,997,783	74
Foreign ..	1,272,915	24	1,366,696	25	1,400,752	26	1,418,034	26	1,415,409	26
Total Steam ..	5,245,222	100	5,512,840	100	5,373,485	100	5,521,725	100	5,413,192	100
Sailing—										
British ..	12,760	22	5,330	12	4,500	10	2,946	10	87	0.3
Foreign ..	45,823	78	40,700	88	41,060	90	26,912	90	31,167	99.7
Total Sailing..	58,583	100	46,030	100	45,560	100	29,858	100	31,254	100
Steam and Sailing—										
British ..	3,985,067	75	4,151,474	75	3,977,233	73	4,106,637	74	3,997,870	73
Foreign ..	1,318,738	25	1,407,396	25	1,441,812	27	1,444,946	26	1,446,576	27
Total ..	5,303,805	100	5,558,870	100	5,419,045	100	5,551,583	100	5,444,446	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 1925-26 to 1929-30:—

OVERSEA SHIPPING, AUSTRALIA.—TONNAGE IN BALLAST, 1925-26 TO 1929-30.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
			TOTAL TONNAGE.			
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
1929-30 ..	271,544	97,559	369,103	641,838	312,869	954,707
			PERCENTAGE.			
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
1929-30 ..	6.79	6.74	6.78	15.87	21.49	17.36

(ii) *Tonnage entered in Ballast—States.* The tonnage which entered each State in ballast during 1929-30 was as follows:—

OVERSEA TONNAGE IN BALLAST ENTERING STATES, 1929-30.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Tonnage ..	114,458	15,213	40,440	68,842	96,865	18,648	14,637	369,103
Percentage on total ..	31·01	4·12	10·96	18·65	26·24	5·05	3·97	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 1929-30, together with similar information in regard to some of the ports of New Zealand for the year 1929 and of Great Britain for the year 1929, will be found in the next table:—

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

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney	8,940,535	London	28,911,898
Melbourne	7,030,192	Liverpool (inc. Birkenhead)	17,180,434
Adelaide	4,697,886	Southampton	12,557,237
Fremantle	3,754,409	Tyne Ports	11,529,734
Brisbane	3,607,591	Cardiff	9,365,675
Newcastle	2,661,394	Plymouth	7,186,060
Townsville	1,063,713	Hull	6,061,745
Hobart	891,368	Manchester (inc. Runcorn)	4,230,144
Kembla	850,820	Swansea	4,225,315
Geelong	714,007	Bristol	3,524,512
Pirie	691,229	Middlesbrough ..	3,498,332
Cairns	658,664	Newport	3,465,597
Whyalla	540,424	Sutherland	3,198,644
Albany	487,090	Blyth	2,678,696
Launceston	389,275	Grimsby (inc. Immingham)	2,584,303
Burnie	374,007	Dover	2,227,292
Thursday Island ..	355,573	Beaumaris (inc. Holyhead)	2,135,114
Bowen	331,326	Falmouth	1,748,272
Mackay	304,680		
Bunbury	300,134		
Rockhampton	285,145	SCOTLAND—	
Devonport	268,135	Glasgow	6,320,966
NEW ZEALAND—		Leith	2,180,980
Wellington	3,604,345		
Auckland	2,500,782		
Lyttelton	2,028,195	NORTHERN IRELAND—	
Otago	1,047,221	Belfast	5,889,392

Transport and Communication Bulletin No. 22 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 1926 to 1930, 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, 1926 TO 1930.

NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Composite.	Total.				
1926 ..	1	..	..	..	1	10	..	..	11
1927 ..	..	..	1	..	1	5	1	..	7
1928 ..	2	..	..	..	2	12	4	..	18
1929 ..	..	..	..	..	..	11	2	..	13
1930 ..	..	..	..	..	..	9	1	..	10

TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1926 ..	36	27	152	97	..	..	..	..	188	124
1927 ..	6	5	86	56	3	3	..	..	95	64
1928 ..	46	36	174	141	46	44	..	..	266	221
1929 ..	..	..	315	230	17	14	..	..	332	244
1930 ..	..	..	250	177	9	9	..	..	259	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, 1930.

VESSELS ON THE STATE REGISTERS, 31st DECEMBER, 1930.

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.	No.	Net Tons.	No.	Net Tons.
New South Wales ..	49	1,264	408	80,401	260	3,456	231	11,033	51	14,156	999	110,310
Victoria	40	4,435	142	157,042	49	2,528	45	795	66	29,018	342	193,818
Queensland ..	19	2,920	38	4,350	54	870	95	1,383	32	4,536	238	14,059
South Australia ..	13	363	72	19,767	55	2,781	56	3,170	21	4,933	217	31,014
Western Australia	9	173	28	6,412	23	453	302	4,574	22	5,899	384	17,511
Tasmania ..	7	518	47	5,223	64	1,600	67	2,579	2	563	187	10,483
Northern Territory	..	..	..	..	2	26	17	163	..	..	19	189
Total ..	137	9,673	735	273,195	507	11,714	813	23,697	194	59,105	2,386	377,384

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 1925–26 to 1929–30. 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, 1925–26 TO 1929–30.

States and Territory.	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
	NUMBER.				
New South Wales ..	1,759	2,022	1,856	1,723	1,588
Victoria	1,743	1,870	1,815	1,704	1,739
Queensland	452	487	463	455	490
South Australia	838	949	852	730	753
Western Australia ..	337	366	382	339	387
Tasmania	1,024	1,014	1,052	950	1,022
Northern Territory ..	20	24	29	33	26
Total	6,173	6,732	6,449	5,934	6,005
	TONNAGE.				
New South Wales ..	4,244,524	4,626,263	4,204,347	4,103,542	4,079,399
Victoria	3,394,123	3,787,217	3,511,614	3,416,924	3,552,904
Queensland	1,011,106	1,056,045	1,074,291	1,106,905	1,164,183
South Australia	2,391,535	2,725,309	2,462,588	2,238,706	2,504,065
Western Australia ..	1,648,977	1,778,919	1,879,446	1,663,818	1,915,695
Tasmania	1,161,672	1,171,857	1,242,260	853,982	1,207,640
Northern Territory ..	51,760	62,663	61,746	59,048	64,075
Total	13,903,697	15,208,273	14,436,292	13,442,925	14,487,961

3. Oversea Vessels Moving Interstate.—To ascertain the aggregate movement of shipping between the States during the year 1929–30, 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, 1929-30.

States and Territory.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ..	560	2,692,988	476	2,377,216	1,036	5,070,204
Victoria	549	2,654,108	475	2,312,170	1,024	4,966,278
Queensland	253	1,395,191	239	1,327,002	492	2,722,193
South Australia ..	385	2,007,143	324	1,709,381	709	3,716,524
Western Australia ..	68	257,364	10	40,951	78	298,315
Tasmania	30	119,546	85	502,607	115	622,153
Northern Territory ..	1	2,438	..	..	1	2,438
Total ..	1,846	9,128,778	1,609	8,269,327	3,455	17,398,105

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 1925-26 to 1929-30 were as follows:—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1925-26 TO 1929-30.

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
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
1929-30	4,396	6,218,634	4,373	6,091,994

5. **Total Interstate Movement of Shipping.**—(i) *Australia.* The appended table shows the total inward interstate movement of shipping for each of the years 1925-26 to 1929-30:—

TOTAL INWARD INTERSTATE MOVEMENT OF SHIPPING, 1925-26 TO 1929-30.

Vessels.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate ..	15,001,432	16,777,917	17,079,249	17,136,059	17,398,105
Vessels solely interstate	6,677,578	7,422,571	6,447,495	5,611,354	6,218,634
Total ..	21,679,010	24,200,488	23,526,744	22,747,413	23,616,739

(ii) *States.* The following table shows the number and tonnage of vessels which entered and cleared each State during 1929-30, including the coastal movements of oversea vessels:—

INTERSTATE SHIPPING OF EACH STATE, 1929-30.

States and Territory.	Entered.		Cleared.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	2,148	6,772,387	2,109	6,596,070
Victoria	2,288	6,207,012	2,362	6,461,469
Queensland	743	2,559,374	757	2,615,609
South Australia	1,138	4,511,208	1,151	4,499,916
Western Australia	455	2,173,059	376	1,943,074
Tasmania	1,052	1,327,186	1,052	1,312,438
Northern Territory	27	66,513	21	61,523
Total, Australia	7,851	23,616,739	7,828	23,490,099

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 1926 to 1930:—

AUSTRALIAN INTERSTATE AND COASTAL STEAMSHIP SERVICES, 1926 TO 1930.

Particulars.	1926.	1927.	1928.	1929.	1930.
Number of companies making returns	44	40	38	29	22
Number of steamships	216	212	201	181	173
Tonnage { Gross	375,893	398,894	371,142	360,459	349,163
Tonnage { Net	214,028	214,703	208,083	202,749	196,342
Horse-power (Nominal) ..	37,129	39,545	37,980	37,911	36,230
Number of passengers for which licensed { 1st class ..	8,686	7,909	7,686	7,983	7,686
Number of passengers for which licensed { 2nd class and steerage	3,650	3,438	3,240	1,755	1,784
Complement of Crew { Masters and officers	691	698	638	588	563
Complement of Crew { Engineers ..	642	662	630	598	576
Complement of Crew { Crew	5,102	5,176	4,922	4,710	4,630

§ 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 1926-27 to 1929-30. 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, 1926-27 TO 1929-30.

Year.	Oversea Cargo.				Interstate Cargo.	
	Discharged.		Shipped.		Shipped.	
	Tons Weight.	Tons Meas.	Tons Weight.	Tons Meas.	Tons Weight.	Tons Meas.
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
1929-30 ..	4,348,396	2,298,101	3,954,893	643,373	3,460,428	1,111,355

More detailed information regarding the volume of trade at each of the principal ports is contained in Transport and Communication Bulletin No. 22 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, 1930.

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	7,856	20,321,920	382	116,524	8,238	20,438,444	25.73	30.63
Australia and New Zealand	603	677,981	11	6,918	614	684,899	1.92	1.03
Canada(a) ..	629	919,464	182	90,387	811	1,009,851	2.53	1.51
Other British ..	758	875,496	215	50,974	973	926,470	3.04	1.39
Total, British Empire ..	9,846	22,794,861	790	264,803	10,636	23,059,664	33.22	34.56
Belgium ..	238	546,002	5	7,035	243	553,037	0.76	0.83
Denmark ..	643	1,071,521	62	16,485	705	1,088,006	2.20	1.63
France ..	1,501	3,470,591	150	60,288	1,651	3,530,879	5.16	5.29
Germany ..	2,138	4,199,096	19	30,139	2,157	4,229,235	6.74	6.34
Greece ..	546	1,390,899	..	..	546	1,390,899	1.70	2.08
Holland ..	1,381	3,079,000	20	7,315	1,401	3,086,315	4.38	4.62
Italy	1,105	3,261,922	275	69,304	1,380	3,331,226	4.31	4.99
Japan ..	2,060	4,316,804	..	..	2,060	4,316,804	6.43	6.47
Norway ..	1,905	3,663,237	11	5,052	1,916	3,668,289	5.98	5.50
Spain ..	795	1,207,093	96	24,644	891	1,231,737	2.78	1.85
Sweden ..	1,306	1,594,313	111	29,625	1,417	1,623,938	4.43	2.43
United States of America(a) (b)	2,975	10,744,692	673	742,637	3,648	11,487,329	11.39	17.22
Other Foreign Countries ..	2,900	3,910,955	469	218,902	3,369	4,129,857	10.52	6.19
Total, Foreign Countries ..	19,493	42,456,125	1,891	1,211,426	21,384	43,667,551	66.78	65.44
Grand Total ..	29,339	65,250,986	2,681	1,476,229	32,020	66,727,215	100.00	100.00

(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 1930 had 64 vessels in commission, 61 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 1930 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 1930, 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 1930, 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, 1930.

Particulars.	New South Wales.	Victoria.	Western Australia.	Tasmania.	Total.
Boats in Service—					
Steam .. No.	61	1	1	4	67
Other .. No.	3	..	11	2	16
Total .. No.	64	1	12	6	83
Number of passengers which boats are licensed to carry .. No.	46,435	342	1,687	1,439	49,903
Revenue .. £	808,139	3,088	17,201	24,072	852,500
Working Expenses £	644,297	7,135	16,288	26,523	694,243
Passengers carried(b) No.	48,595,908	136,530	1,494,848	1,199,406	51,426,692
Mileage of Boats miles	(a)	12,740	94,025	(a)	(c)106,765
Accidents—					
Killed .. No.	1	..	..	..	1
Injured .. No.	108	..	..	1	109
Employees—					
Salaried Staff No.	83	..	3	7	93
Wages Staff No.	976	6	31	28	1,041

(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, 1931, 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, 1931, has been included in the Transport and Communication Bulletin No. 22, 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 1929–30 are shown in the Transport and Communication Bulletin No. 22. 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, was 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 1925-26 to 1929-30. The railway mileage given for each State includes both Federal, State, and private railways in that State :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE OPEN, 1926 TO 1930.

State or Territory.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ..	5,883.85	5,892.07	6,008.99	6,082.25	6,089.93
Victoria	4,652.21	4,659.16	4,721.69	4,723.95	4,737.65
Queensland	6,542.39	6,603.59	6,619.14	6,720.91	6,726.03
South Australia	3,608.31	3,637.01	3,636.42	3,821.29	3,938.68
Western Australia ..	4,595.37	4,649.04	4,707.62	4,809.47	4,841.89
Tasmania	865.00	845.86	841.06	827.26	821.01
Federal Capital Territory ..	4.94	4.94	4.94	4.94	4.94
Northern Territory ..	198.68	198.68	198.68	264.84	316.50
Australia	26,350.75	26,490.35	26,738.54	27,254.91	27,476.63

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, 1930 :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE CLASSIFIED, 1929-30.

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	5,974.23	..	115.70	6,089.93
Victoria	4,712.71	..	24.94	4,737.65
Queensland..	6,447.18	..	278.85	6,726.03
South Australia	2,535.61	1,369.27	33.80	3,938.68
Western Australia	4,110.90	453.99	277.00	4,841.89
Tasmania	679.45	..	141.56	821.01
Federal Capital Territory ..	..	4.94	..	4.94
Northern Territory	..	316.50	..	316.50
Australia	24,460.08	2,144.70	871.85	27,476.63

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 at the 30th June, 1930 :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—COMPARISON OF FACILITIES, 1930.

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 ..	2.45	2.66	7.14	6.78	11.57	3.81	0.56	66.32	4.27
Per 1,000 sq. miles of Territory ..	19.68	53.91	10.03	10.36	4.96	31.32	5.26	0.60	9.24

6. Classification of Lines according to Gauge, 1929-30.—The next table gives 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, 1930, and of private railways open for general traffic to the 31st December, 1930, as nearly as possible.

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1929-30.

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	771.41	..	..	..	1,369.27
Western Australia	..	453.99	..	..	..	..	453.99
Federal Capital Territory ..	..	4.94	..	..	..	..	4.94
Northern Territory ..	..	..	316.50	..	..	..	316.50
Total	..	1,056.79	1,087.91	..	..	..	2,144.70
STATE RAILWAYS.							
New South Wales	..	5,934.72	39.51	..	..	..	5,974.23
Victoria	4,590.94	..	..	..	121.77	..	4,712.71
Queensland	..	..	6,416.92	..	..	30.26	6,447.18
South Australia	1,457.59	..	1,078.02	..	..	..	2,535.61
Western Australia	..	..	4,110.90	..	..	..	4,110.90
Tasmania	..	..	654.62	..	..	24.83	679.45
Total	6,048.53	5,934.72	12,299.97	..	121.77	55.09	24,460.08
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.							
New South Wales	..	78.97	36.73	..	..	..	115.70
Victoria	13.94	..	..	11.00	..	..	24.94
Queensland	..	..	101.55	..	7.00	170.30	278.85
South Australia	..	..	33.80	..	..	..	33.80
Western Australia	..	..	277.00	..	..	..	277.00
Tasmania	..	..	125.07	..	..	16.49	141.56
Total	13.94	78.97	574.15	11.00	7.00	186.79	871.85

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1929-30—*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.	
ALL RAILWAYS OPEN FOR GENERAL TRAFFIC.							
New South Wales	..	6,013.69	76.24	..	..	..	6,089.93
Victoria	4,604.88	..	..	11.00	121.77	..	4,737.65
Queensland	..	..	6,518.47	..	7.00	200.56	6,726.03
South Australia	1,457.59	597.86	1,883.23	..	..	..	3,938.68
Western Australia	..	453.99	4,387.90	..	..	..	4,841.89
Tasmania	..	..	779.69	..	..	41.32	821.01
Federal Capital Territory ..	..	4.94	..	..	..	..	4.94
Northern Territory ..	..	..	316.50	..	..	..	316.50
GRAND TOTAL ..	6,062.47	7,070.48	13,962.03	11.00	128.77	241.88	27,476.63

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, 1927 to 1930, classified according to gauge, together with the percentages on the total :—

RAILWAYS, FEDERAL AND STATE.—TRACK MILEAGE(*a*), 1927 TO 1930.

Gauge.	At 30th June—							
	1927.		1928.		1929.		1930.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	7,465.59	24.95	7,812.26	25.77	7,847.13	25.41	7,867.32	25.17
4 ft. 8½ in. ..	8,749.82	29.24	8,896.10	29.34	8,998.12	29.14	9,040.86	28.93
3 ft. 6 in. ..	13,543.00	45.26	13,445.80	44.35	13,865.95	44.91	14,176.91	45.37
2 ft. 6 in. ..	131.56	0.44	131.87	0.43	131.87	0.43	131.87	0.42
2 ft. 0 in. ..	33.00	0.11	33.00	0.11	33.00	0.11	33.00	0.11
Total ..	29,922.97	100.00	30,319.03	100.00	30,876.07	100.00	31,249.96	100.00

(*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 Birdum.* 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 40 chains from Darwin), and on 4th September, 1929, this section was opened for traffic and further construction work ceased.

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. 662 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, 1930, together with the lines which have been or are being surveyed :—

RAILWAYS, FEDERAL, 30th JUNE, 1930.

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 Alice Springs (Central Australia)	771.41
Queanbeyan to Canberra (Federal Capital Territory)	4.94
North Australia Railway—Darwin to Birdum	316.50
Total opened for traffic	2,144.70
SURVEYED OR BEING SURVEYED.	
Birdum to Daly Waters (Northern Territory)	43.50
Kingoonya to Boorthanna (South Australia)	176.44
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	1,189.56

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

(1) 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 1926 to 1930 :—

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES, 1926 TO 1930.

MILES OPEN FOR TRAFFIC.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
	Miles.	Miles.	Miles.	Miles.	Miles.
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
1930	1,052	771	5	317	2,145

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES 1926 TO 1930—*continued.*

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
AVERAGE MILES WORKED.					
	Miles.	Miles.	Miles.	Miles.	Miles.
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
1930	1,052	760	5	307	2,124
TRAIN MILES RUN.(a)					
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
1930	453,151	239,303	9,865	43,594	745,913

(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 1926 to 1930:—

RAILWAYS, FEDERAL.—CAPITAL COST, 1926 TO 1930.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.(a)	North Australia.	
TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.					
	£	£	£	£	£
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
1930	7,805,945	4,730,364	84,253	2,749,807	15,370,369
COST PER MILE OPEN.					
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
1930	7,421	6,132	17,064	8,688	7,167

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

The sum of £1,528,821, of which £112,006 was for surveys, etc., has been provided from revenue for capital purposes to 30th June, 1930, 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 1926 to 1930 inclusive :—

RAILWAYS, FEDERAL.—GROSS REVENUE, TOTAL, ETC., 1926 TO 1930.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
TOTAL GROSS REVENUE.					
	£	£	£	£	£
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
1930	265,562	99,626	6,473	32,475	404,136
GROSS REVENUE PER AVERAGE MILE WORKED.					
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
1930	252	131	1,311	106	19
GROSS REVENUE PER TRAIN-MILE RUN.					
	d.	*d.*	*d.*	*d.*	*d.*
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
1930	140.65	99.92	157.48	178.79	130.03

(ii) *Classification and Percentages.* During the year 1929–30 receipts from coaching traffic and goods and live stock represented 63 per cent. and 16 per cent. of the total gross revenue of the Trans-Australian line, similar percentages for the remaining lines being :—Central Australia line 18 per cent. and 78 per cent., Federal Capital Territory line 51 per cent. and 48 per cent., and North Australia line 12 per cent. and 40 per cent. coaching and goods and live stock revenue respectively.

The miscellaneous receipts for the year 1929–30 include an amount of £27,231, revenue from dining cars and refreshment services on the Trans-Australian Railway. A sum of £33,683 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 1926 to 1930.

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., 1926 TO 1930.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
TOTAL WORKING EXPENSES.					
	£	£	£	£	£
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
1930	296,403	194,918	8,031	55,229	554,581
PERCENTAGE OF WORKING EXPENSES ON REVENUE.					
	%	%	%	%	%
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
1930	111.61	195.65	124.07	170.07	137.23

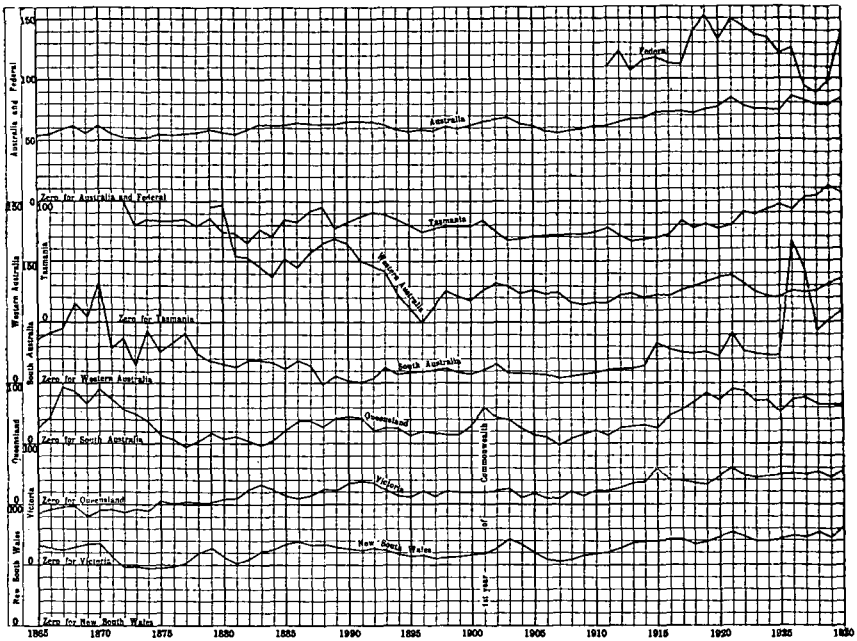
Compared with results for the previous year, the percentage of working expenses on revenue shows increases for each railway except the Federal Capital Territory line. There was a decrease of earnings on each of the railways, due mainly to (*a*) falling off in railway construction material to be hauled on the Central Australia and North Australia railways; (*b*) trade depression generally; (*c*) aerial and other competition on the Trans-Australian railway; and (*d*) serious washaways involving suspension of traffic on each of the Trans-Australian, Central Australia and North Australia railways.

(ii) *Averages.* The next table gives the working expenses per average mile worked, and per train-mile run for each railway for the years 1926 to 1930:—

RAILWAYS, FEDERAL.—WORKING EXPENSES, AVERAGES, 1926 TO 1930.

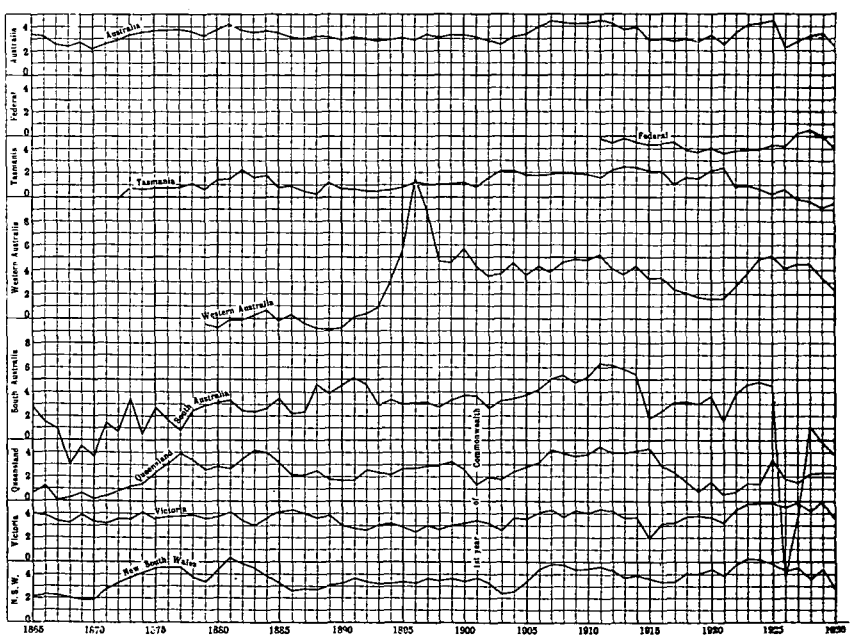
Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
WORKING EXPENSES PER AVERAGE MILE WORKED.					
	£	£	£	£	£
1926	269	393	1,406	218	301
1927	254	275	2,032	292	272
1928	274	356	2,274	342	310
1929	286	347	2,091	215	299
1930	282	256	1,627	180	261
WORKING EXPENSES PER TRAIN-MILE RUN.					
	d.	*d.*	*d.*	*d.*	*d.*
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
1930	156.98	195.49	195.38	304.05	178.44

PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE OF GOVERNMENT RAILWAYS, 1865 TO 1930.



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.

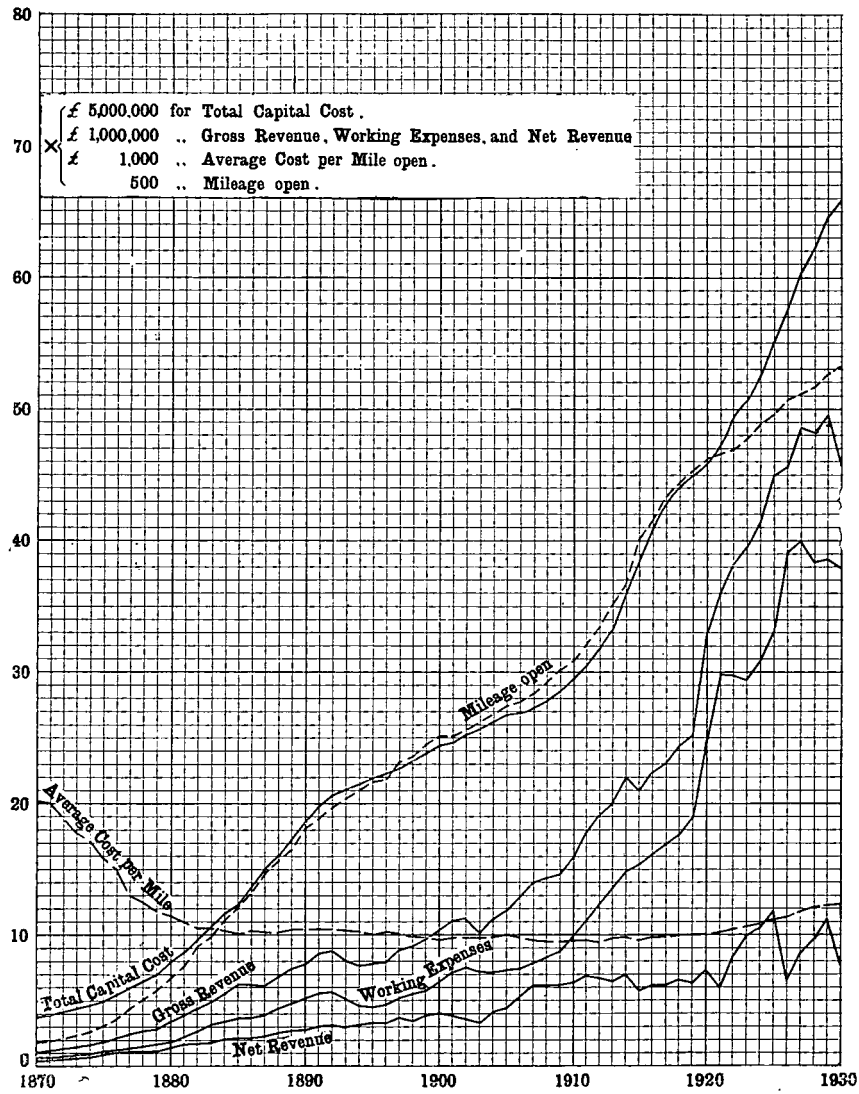
PERCENTAGES OF NET REVENUE ON CAPITAL COST OF GOVERNMENT RAILWAYS, 1865 TO 1930.



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.

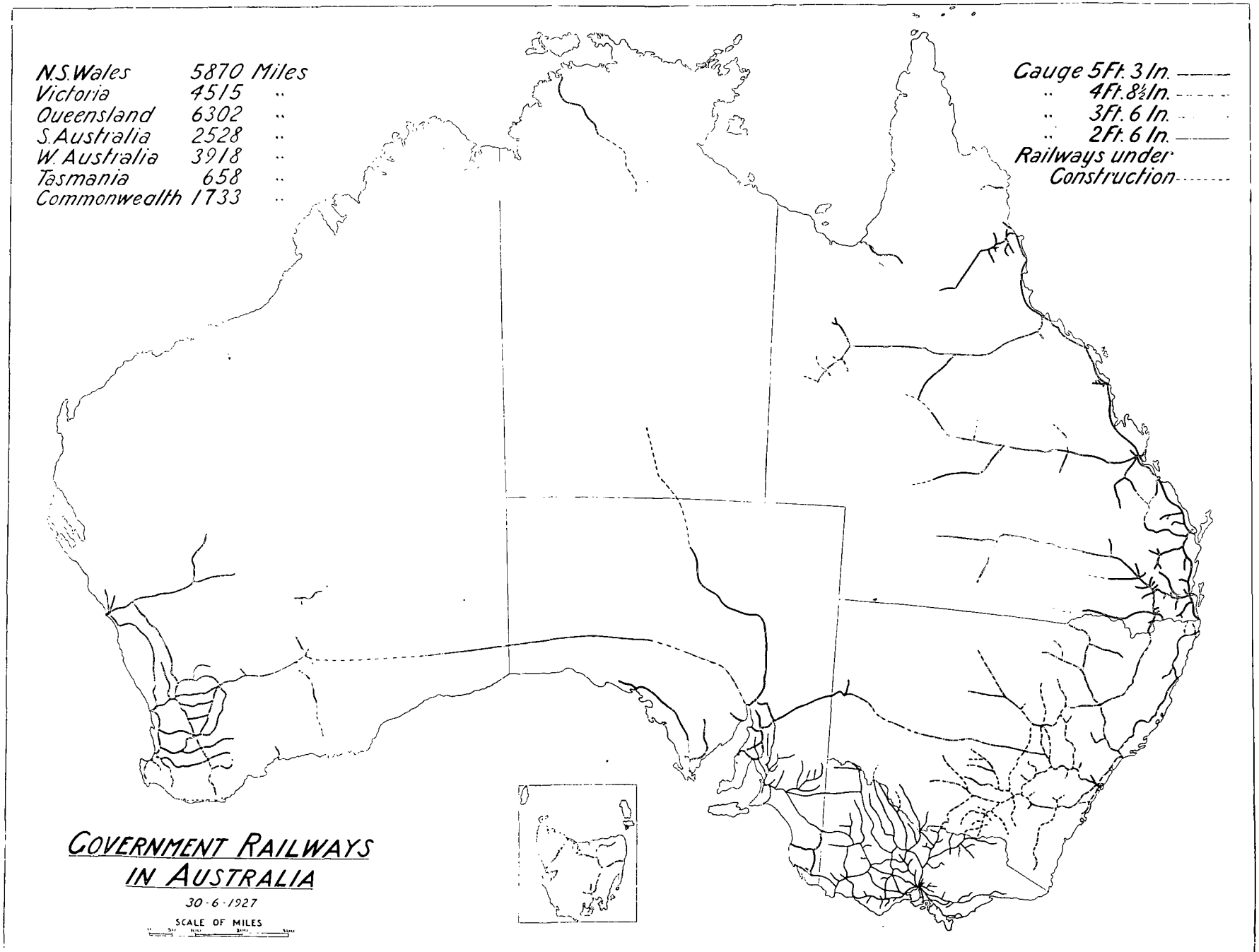
FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1870 TO 1930.



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.


N.S.Wales 5870 Miles
Victoria 4515 ..
Queensland 6302 ..
S.Australia 2528 ..
W.Australia 3918 ..
Tasmania 658 ..
Commonwealth 1733 ..
Cauge 5Ft. 3 In.
.. 4Ft. 8½ In.
.. 3Ft. 6 In.
.. 2Ft. 6 In.
Railways under Construction
GOVERNMENT RAILWAYS IN AUSTRALIA
30-6-1927
SCALE OF MILES

(iii) *Classification and Percentages.* Of the total working expenses of the Federal Railways during the year 1929-30, maintenance expenses represented 38 per cent., locomotive, carriage and wagon charges 39 per cent. and traffic expenses 14 per cent. Details for each line were as follows :—Trans-Australian line 30 per cent., 45 per cent. and 13 per cent.; Central Australia line 50 per cent., 34 per cent. and 11 per cent.; Federal Capital Territory line 12 per cent., 42 per cent. and 40 per cent.; and North Australia line 45 per cent., 27 per cent. and 23 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 1926 to 1930 :—

RAILWAYS, FEDERAL.—TRAFFIC, 1926 TO 1930.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
PASSENGER JOURNEYS.					
	No.	No.	No.	No.	No.
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
1930	29,163	45,235	45,457	3,238	123,093
TONNAGE OF GOODS AND LIVE STOCK CARRIED.					
	tons.	tons.	tons.	tons.	tons.
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
1930	20,906	44,047	20,966	7,024	92,943

(ii) *Passenger-Mileage Summary.* The appended table gives particulars of "Passenger-Mileage" on each of the Federal railways for the year 1929-30 :—

RAILWAYS, FEDERAL.—PASSENGER-MILES SUMMARY, 1929-30.

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.	*d.*	£ *s.* *d.*	
Trans-Australian ..	337,597	29,163	27,325	121,022	81	937	1.06	4 3 0	25,978
Central Australia ..	36,480	45,235	2,439	13,212	67	54	1.30	0 5 11	3,209
Federal Capital Territory	8,357	45,457	226	1,997	27	5	2.12	0 0 10¼	45,863
North Australia ..	9,854	3,238	424	3,373	43	131	1.91	1 0 10	1,378

(iii) *Ton-Mileage Summary.* Particulars of ton-mileage are shown hereunder in respect of each of the Federal railways for the year 1929-30 :—

RAILWAYS, FEDERAL.—"TON-MILEAGE" SUMMARY, 1929-30.

Railway.	Goods Train Mileage.	Total Tons Carried.	Total "Ton-Miles."	Goods Earnings.	Average Freight-paying Load per Train.	Average Haul per ton.	Earnings "per Ton-Mile."	Density of Traffic per Average Mile Worked.
			,000 omitted.	£	Tons.	Miles.	d.	
Trans-Australian ..	115,554	20,906	7,002	41,266	(a) 61	335	1.41	6,657
Central Australia ..	202,823	44,047	10,337	77,319	(a) 51	235	1.79	13,602
Federal Capital Territory	1,508	20,966	105	3,137	66	5	7.18	21,231
North Australia ..	33,740	7,024	805	12,931	(a) 24	115	3.86	2,619

(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, 1930.**—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, 1930.

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	..	20	20	..	313	313
North Australia	..	13	13	..	12	12	..	312	312
Total ..	68	37	105	51	32	83	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 1926 to 1930 inclusive, classified according to salaried and wages staffs :—

RAILWAYS, FEDERAL.—EMPLOYEES, 1926 TO 1930.

Railway.	30th June—									
	1926.		1927.		1928.		1929.		1930.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Trans-Australian	218	870	132	811	126	756	128	776	117	733
Central Australia..		345	66	523	69	492	68	539	59	383
North Australia ..		184	29	648	24	320	22	178	15	93
Federal Capital Territory (a) ..	..	..	..	..	..	..	5	8	5	7
Total ..	218	1,399	227	1,982	219	1,568	223	1,501	196	1,216

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

Of the 196 salaried staff employed, 4 were engaged in the Construction Branch on the Trans-Australian Line, the corresponding particulars for the wages staff being :— Trans-Australian Line 112 and Central Australia Line 13, a total of 125 persons.

(ii) *Average Employed throughout Year.* The average number of employees throughout the year 1929-30 was 208 salaried staff (9 of whom were on construction work) and 1,289 wages staff (Construction, 158).

15. Accidents.—(i) *Classification.* The table hereunder furnishes a classification of accidents on the Federal railways during the year 1929-30 :—

RAILWAYS, FEDERAL.—ACCIDENTS, 1929-30.

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	..	..	..	..	..	..	..	..	..	..
Accidents on line (other than train accidents)—										
Passengers	..	..	..	..	..	..	..	..	..	..
Employees	..	..	1	..	..	..	..	..	1	..
Other Persons	..	..	..	..	..	..	..	..	..	..
Shunting Accidents—										
Passengers	..	..	..	..	..	..	..	..	..	..
Employees	..	..	..	..	..	..	..	..	..	..
Other Persons	..	..	..	..	..	..	..	..	..	..
Employees proceeding to or from duty within the Railway boundary	..	..	..	..	..	..	..	..	..	..
Persons killed or injured at crossings	..	..	..	..	..	..	..	..	..	..
Trespassers	..	..	..	..	..	..	..	..	..	..
Miscellaneous	..	..	..	..	..	..	..	..	..	..
Total	..	..	1	..	..	..	..	..	1	..

(ii) *Particulars for Quinquennium* 1926-30. The following table shows the number of accidents in each of the years 1926 to 1930 :—

RAILWAYS, FEDERAL.—ACCIDENTS, 1926 TO 1930.

Railway.	Number of Persons.									
	Killed.					Injured.				
	1926.	1927.	1928.	1929.	1930.	1926.	1927.	1928.	1929.	1930.
Trans-Australian ..	..	..	3	..	..	6	12	3	3	..
Central Australia ..	1	1	2	..	1	18	5	7	7	..
Federal Capital Territory ..	..	1	..	..	..	..	..	1	..	..
North Australia ..	..	..	2	..	..	..	5	9	4	..
Total ..	1	2	7	..	1	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.

Mileage Open, 1926 to 1930.—(i) *General.* The following table shows the length of State railways open for traffic on the 30th June in the years 1926 to 1930 :—

RAILWAYS, STATE.—MILEAGE OPEN FOR TRAFFIC, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
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
1930	5,974	4,713	6,447	2,536	4,111	679	24,460

A graph indicating the mileage open in Australia at the end of each of the years 1870 to 1930 accompanies this chapter.

The appended statement shows the actual mileage opened for traffic in the year 1930, also the annual average increase in mileage opened since 1920 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 1929–30	34.01	13.70	..	–6.02(a)	32.42	26.00	100.11
Average annual mileage increase for 10 years to 30th June, 1930 ..	95.89	49.87	76.21	20.24	57.27	5.07	304.55

(a) Due to the closing of the South Terrace to Glenelg line and minor adjustments to other lines. No new lines were opened during the year.

(ii) *New South Wales.* During the year ended 30th June, 1930, the following new line was opened for traffic, viz. :—West Wyalong to Euglo 34.41 miles. Adjustments reduced the length of existing lines by 0.40 miles, the total increase for the year being therefore 34.01 miles.

(iii) *Victoria.* During the year ended 30th June, 1930, the following new lines were opened for traffic, viz. :—Albion to Broadmeadows (8.58 miles) and Eastmalvern to Glen Waverley (5.12 miles), the total increase for the year being 13.70 miles.

(iv) *Queensland.* No new lines were opened during the year 1929–30.

(v) *South Australia.* No new lines were opened during the year. The second line from South Terrace to Glenelg (5.96 miles of 5′ 3″ gauge) was closed and minor adjustments to existing lines furthur reduced the mileage open by 0.06 miles, the net decrease for the year 1929–30 being 6.02 miles.

(vi) *Western Australia.* The following new mileage was opened for traffic during the year :—Lake Brown to Bullfinch (50.39 miles) and Collie to Griffen (2.83 miles). The line from Lakeside to White Hope (20.80 miles) was closed and dismantled and the net increase for the year was therefore 32.42 miles.

(vii) *Tasmania.* No new extensions were opened during the year. The Marrawah Tramway (26 miles) was taken over from the Public Works Department by the Railway Department on 1st September, 1929.

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, 1930, is given in the Transport and Communication Bulletin No. 22 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 1926 to 1930 inclusive :—

RAILWAYS, STATE.—MILEAGE WORKED AND MILES RUN, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AVERAGE MILEAGE WORKED.							
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
1930 ..	5,959	4,708	6,447	2,538	4,110	660	24,422
TRAIN-MILES RUN. (*a*)							
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 ..	26,896,580	17,694,928	11,655,122	6,503,474	5,729,735	1,416,741	69,896,580
1929 ..	27,382,124	17,979,219	11,893,147	5,765,366	5,829,465	1,405,929	70,255,250
1930 ..	26,713,951	17,670,565	11,858,713	5,551,082	5,729,796	1,504,487	69,028,594

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

5. Lines under Construction, and Lines Authorized, 1930.—(i) *General.* The following statement gives particulars up to the 30th June, 1930, 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, 1930.

Particulars.	N.S.W.	Vic. (*a*)	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction	321.60	120.75	*b* 144.00	..	265.42	..	851.77
Mileage authorized but not commenced ..	366.24	39.50	1,130.00	26.25	319.85	..	1,881.84

(*a*) See sub-section (*b*) below.
(*b*) Exclusive of 186 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 321.60 miles, consisting of the following lines:—Booyong to Ballina (12.70 miles); Kyogle to Richmond Gap (26.66 miles); Moss Vale to Port Kembla (38.75 miles); Grafton to South Grafton (1.62 miles); Camurra to Boggabilla (73.98 miles); Tempe to East Hills (10.49 miles); Hillston to Roto (30.40 miles); Guyra to Dorrigo (89 miles); and Casino to Bonalbo (38 miles).

(*b*) *Victoria.* In this State 53.50 miles of 5 ft. 3 in. gauge lines are being constructed, viz.:—Wodonga to Tallangatta (deviation) (8.50 miles); Meringur to Morkella (9.50 miles); and Nowingi to Millewa South (35.50 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 (37 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, 1930, the following lines, of an aggregate length of 144 miles, were under construction:—Southern Division—4 ft. 8½ in. gauge—South Richmond to Richmond Gap (69 miles); 3 ft. 6 in. gauge—Inglewood to Texas (34 miles); Kalpowar to Monto (27 miles); and Meandarra towards Surat (14 miles). The following lines are partially constructed, but work thereon is temporarily suspended:—Goondoon to Kalliwa Creek (18 miles); Yaraka to Powell's Creek (27 miles); Dajarra to Moonah Creek (41 miles); Rannes to Monto (63 miles); and Winton to 37-Mile (37 miles); a total of 186 miles.

(*d*) *South Australia.* At 30th June, 1930, 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, 1930:—Kulja eastward (68.19 miles); Meekatharra to Wiluna (111.33 miles); Pemberton to Westcliffe (27.90 miles); and Lake Grace to Karlgarin (58 miles); a total of 265.42 miles.

(*f*) *Tasmania.* At 30th June, 1930, no railway construction work was in progress.

(iii) *Lines Authorized for Construction.* (*a*) *New South Wales.* At the 30th June, 1930, the following lines had been authorized for construction but not commenced:—Gilgandra to Collie (21.54 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 (146.48 miles); Inverell to Ashford (32 miles); Bungendore to Captain's Flat (21.18 miles); Gwabegar to Burren Junction (36.25 miles); Eastern Suburbs to Bondi (7.75 miles); and Western Suburbs to Western Road (5.55 miles); a total distance of 366.24 miles.

(*b*) *Victoria.* The following lines were authorized, but construction had not been commenced up to the end of June, 1930:—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:—Mildura to Gol Gol (22 miles); an aggregate distance of 39.50 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); Wandoan to Taroom (42 miles); Dirranbandi extension (52 miles); Yarraman to Nanango (16 miles); Brooloo to Kenilworth (10 miles); Dobbyn to Myally Creek (50 miles); and Peeramon 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, 1930:—Yarramony eastwards (85 miles); Brookton to Dale River (28 miles); Boyup Brook to Cranbrook (95.23 miles); Manjimup to Mount Barker (107 miles); Leighton to Robb's Jetty (4.62 miles); a total distance of 319.85 miles.

(*f*) *Tasmania.* There were no new railways authorized on which work had not been commenced at 30th June, 1930.

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, 1930, amounted to £314,129,655, representing an average cost of £48.89 per head of population. If the cost of railways owned by the Commonwealth Government is included, the total capital cost (£329,500,024) is equivalent to an amount of £51.17 per head of the population of the Commonwealth, while the total mileage open (26,604.78 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, 1930.

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, 1930.
	Miles.	£	£	£	Miles.
New South Wales (*a*) ..	5,974.23	124,555,236	20,849	50.12	2.40
Victoria	4,712.71	74,193,518	15,743	41.61	2.64
Queensland	6,447.18	58,727,528	9,109	62.33	6.84
South Australia (*a*) ..	2,535.61	27,272,316	10,756	46.97	4.37
Western Australia (*a*)..	4,110.90	22,846,871	5,558	54.57	9.82
Tasmania	679.45	6,534,186	9,617	30.32	3.15
All States ..	24,460.08	314,129,655	12,843	48.89	3.81

(*a*) Exclusive of Federal railways.

The lowest average cost (£5,558) per mile open is in Western Australia, and the highest (£20,849) in New South Wales, as compared with an average of £12,843 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 1926 to 1930 is shown in the following table :—

RAILWAYS, STATE.—CAPITAL COST OF LINES OPEN, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
			TOTAL COST OF LINES OPEN.				
	£	£	£	£	£	£	£
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
1930 ..	124,555,236	74,193,518	58,727,528	27,272,316	22,846,871	6,534,186	314,129,655
			COST PER MILE OPEN.				
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	10,558	5,498	9,945	12,711
1930 ..	20,849	15,743	9,109	10,756	5,558	9,617	12,843

(b) *From Consolidated Revenue.* The following table shows the amounts provided from Consolidated Revenue for construction and equipment to 30th June, 1930 :—

RAILWAYS, STATE.—EXPENDITURE FROM CONSOLIDATED REVENUE FOR CONSTRUCTION AND EQUIPMENT TO 30th JUNE, 1930.

To 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1930 ..	659,930	4,288,689	..	..	641,492	16,935	5,607,046

(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 1926 to 1930 :—

RAILWAYS, STATE.—LOAN EXPENDITURE, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	All States.
	£	£	£	£	£	£	£
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
1930 ..	5,034,505	953,432	739,548	405,153	849,662	*Cr.* 69,940	7,912,360

(a) Including tramways.

The following statement shows the total loan expenditure on railways to the 30th June, 1930 :—

RAILWAYS, STATE.—TOTAL LOAN EXPENDITURE TO 30th JUNE, 1930.

State.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania (a)	All States.
	£	£	£	£	£	£	£
Expenditure	135,046,602	73,310,565	61,196,339	32,225,135	23,269,090	6,888,628	331,936,359

(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 1926 to 1930 inclusive were as follows :—

RAILWAYS, STATE.—GROSS REVENUE, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
TOTAL GROSS REVENUE.							
	£	£	£	£	£	£	£
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	48,094,128
1928	19,029,512	12,821,059	7,381,532	3,941,276	3,858,051	554,743	47,586,173
1929	20,415,616	13,162,973	7,568,647	3,593,646	3,799,764	503,855	49,044,501
1930	18,626,692	12,001,806	7,302,281	3,276,945	3,659,203	507,374	45,374,301
GROSS REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1926	2,960	2,798	1,210	1,701	870	810	1,930
1927	3,290	2,951	1,170	1,610	924	819	2,028
1928	3,266	2,751	1,164	1,559	972	843	1,984
1929	3,458	2,802	1,185	1,412	951	771	2,028
1930	3 126	2,549	1 133	1,291	890	769	1,858
GROSS REVENUE PER TRAIN-MILE RUN.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1926	165.09	173.03	138.73	148.56	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	178.04	175.71	152.73	149.60	156.43	86.01	167.54
1930	167.34	163.01	147.79	141.68	153.27	80.94	157.76

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 1926 to 1930, 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, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
			COACHING TRAFFIC RECEIPTS.				
	£	£	£	£	£	£	£
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
1930 ..	7,440,016	5,428,350	2,377,798	807,090	928,435	177,799	17,159,488
			GOODS AND LIVE STOCK TRAFFIC RECEIPTS.				
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	26,854,547
1930 ..	9,353,867	5,599,182	4,780,114	2,249,895	2,523,302	311,669	24,818,029
			MISCELLANEOUS RECEIPTS.				
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 ..	1,911,708	1,040,254	174,336	221,771	209,572	18,273	3,575,914
1930 ..	1,832,809	974,274	144,369	219,960	207,466	17,906	3,396,784

(*b*) *Percentages.* The following table shows for the two years 1928–29 and 1929–30 the percentage which each class of receipts bears to the total gross revenue :—

RAILWAYS, STATE.—PERCENTAGES OF RECEIPTS, 1929 AND 1930.

State.	1929.			1930.		
	Coaching.	Goods and Live Stock.	Miscellaneous.	Coaching.	Goods and Live Stock.	Miscellaneous.
	%	%	%	%	%	%
New South Wales ..	39.80	50.84	9.36	39.94	50.22	9.84
Victoria	44.60	47.50	7.90	45.23	46.65	8.12
Queensland.. ..	32.30	65.40	2.30	32.56	65.46	1.98
South Australia ..	28.20	65.63	6.17	24.63	68.66	6.71
Western Australia ..	25.79	68.69	5.52	25.37	68.96	5.67
Tasmania	35.78	60.59	3.63	35.04	61.43	3.53
All States ..	37.95	54.76	7.29	37.82	54.70	7.48

(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, 1930 :—

RAILWAYS, STATE.—COACHING TRAFFIC RECEIPTS, AVERAGES, 1930.

State.	Number of Passenger-Train-Miles.	Coaching Traffic Receipts.		
		Gross.	Per Average Mile Worked.	Per Passenger-Train-Mile.
	No.	£	£	*d.*
New South Wales	16,952,153	7,440,016	1,249	105.33
Victoria	12,187,847	5,428,350	1,153	106.89
Queensland..	4,312,920	2,377,798	369	132.32
South Australia	3,341,969	807,090	318	57.96
Western Australia	(a) 2,244,175	928,435	226	99.29
Tasmania	(a) 670,134	177,799	269	63.68
All States	39,709,198	17,159,488	703	103.71

(a) Includes "Assistant" and "Light" mileage.

(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, 1930, are given below :—

RAILWAYS, STATE.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS, AVERAGES, 1930.

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 ..	9,761,798	12,150,964	9,353,867	1,570	229.97	184.75
Victoria	5,482,718	7,513,606	5,599,182	1,189	245.10	178.85
Queensland.. ..	7,545,793	4,528,201	4,780,114	741	152.04	253.35
South Australia ..	2,209,113	2,652,753	2,249,895	886	244.43	203.55
Western Australia ..	(a)3,654,107	3,530,188	2,523,302	614	165.73	171.55
Tasmania	(a) 856,658	632,052	311,669	472	87.32	118.35
All States ..	29,510,187	31,007,764	24,818,029	1,016	201.84	192.09

(a) Includes "Assistant" and "Light" mileage.

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 1926 to 1930 :—

RAILWAYS, STATE.—WORKING EXPENSES, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL WORKING EXPENSES.							
	£	£	£	£	£	£	£
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	9,552,793	6,202,801	3,622,567	3,055,446	563,352	37,955,314
1930	14,962,423	9,311,548	5,946,163	3,573,121	3,112,895	535,414	37,441,564
PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.							
	%	%	%	%	%	%	%
1926	73.91	75.35	86.86	167.10	75.18	92.45	85.51
1927	72.97	74.06	88.67	142.73	74.44	102.20	82.17
1928	77.54	76.54	82.72	93.20	75.45	103.45	79.48
1929	73.37	72.42	81.95	100.80	80.41	111.86	77.39
1930	80.33	77.58	81.43	109.04	85.07	105.53	82.52

(a) See (ii) below.

The variation in the percentage of working expenses on the gross revenue in each State for the years 1865 to 1930 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 £3,982,314 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 1926 to 1930 :—

RAILWAYS, STATE.—WORKING EXPENSES, AVERAGES, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
WORKING EXPENSES PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1926	2,188	2,108	1,051	a 2,843	654	749	1,651
1927	2,401	2,203	1,038	a 2,298	688	837	1,666
1928	2,533	2,105	963	1,448	733	872	1,577
1929	2,537	2,029	971	1,423	765	862	1,570
1930	2,511	1,978	922	1,408	758	811	1,533
WORKING EXPENSES PER TRAIN-MILE RUN.							
	d.	d.	d.	d.	d.	d.	d.
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	127.25	125.17	150.80	125.79	96.22	129.66
1930	134.42	126.47	120.34	154.48	130.39	85.41	130.18

(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 1926 to 1930 :—

RAILWAYS, STATE.—DISTRIBUTION OF WORKING EXPENSES, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
			MAINTENANCE.				
	£	£	£	£	£	£	£
1926	2,001,724	1,928,597	1,513,588	a2,407,266	596,046	134,835	8,582,056
1927	2,154,931	2,276,601	1,576,325	a1,027,057	636,466	134,291	7,805,671
1928	2,596,755	2,109,404	1,589,177	584,350	731,860	140,989	7,752,535
1929	2,538,981	1,926,157	1,608,978	658,941	748,123	158,302	7,639,482
1930	2,583,896	1,749,068	1,529,521	678,976	800,784	133,459	7,475,704
			LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.				
1926	6,107,302	3,592,490	2,973,033	a3,611,130	1,157,230	218,326	17,659,511
1927	6,823,914	3,746,921	2,924,903	a3,653,050	1,244,941	222,477	18,616,206
1928	7,158,605	3,659,881	2,657,596	2,002,377	1,306,504	233,670	17,018,633
1929	7,003,464	3,579,620	2,719,211	1,899,717	1,381,160	235,641	16,818,813
1930	6,926,296	3,587,086	2,630,642	1,796,616	1,368,160	236,855	16,545,655
			TRAFFIC EXPENSES.				
1926	3,391,092	2,701,124	1,859,375	a868,171	685,898	117,246	9,622,906
1927	3,733,225	2,822,524	1,844,066	a898,459	723,466	118,987	10,145,727
1928	3,877,254	2,673,518	1,709,518	823,189	773,806	124,845	9,982,130
1929	3,848,525	2,605,790	1,721,355	764,203	803,016	130,068	9,872,957
1930	3,703,106	2,536,635	1,629,238	735,022	819,671	132,233	9,555,905
			OTHER CHARGES.				
1926	1,019,875	1,325,936	113,796	a194,563	69,875	33,631	2,757,676
1927	1,083,783	1,347,535	150,028	a219,185	75,829	75,437	2,951,788
1928	1,123,713	1,369,946	149,849	250,824	98,641	74,381	3,067,354
1929	1,587,080	1,421,231	153,257	299,706	123,147	39,641	3,624,062
1930	1,749,125	1,438,759	156,762	362,507	124,280	32,867	3,864,300

(a) See sub-section (ii), page 188.

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 1926 to 1930 :—

RAILWAYS, STATE.—SALARIES AND WAGES PAID AND AVERAGES, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
			TOTAL SALARIES AND WAGES PAID.				
	£	£	£	£	£	£	£
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	7,725,188	4,751,885	2,915,912	2,442,997	345,803	30,875,491
1929	12,422,298	7,436,531	4,805,836	2,499,872	2,551,056	374,107	30,089,700
1930	11,656,142	7,097,012	4,649,032	2,437,783	2,587,456	364,636	28,792,061
			SALARIES AND WAGES PER AVERAGE MILE WORKED.				
	£	£	£	£	£	£	£
1926	1,956	1,607	816	1,388	540	515	1,255
1927	2,177	1,684	809	1,425	584	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
1930	1,956	1,507	721	960	630	553	1,179
			SALARIES AND WAGES PER TRAIN MILE RUN.				
	d.	d.	d.	d.	d.	d.	d.
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	56.58	106.01
1929	108.88	99.27	96.98	104.06	105.03	63.86	102.79
1930	104.72	96.39	94.09	105.40	108.38	58.17	100.10

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 1926 to 1930 :—

RAILWAYS, STATE.—NET REVENUE AND PERCENTAGE THEREOF ON CAPITAL COST OF LINES OPEN, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
NET REVENUE.							
	£	£	£	£	£	£	£
1926	4,419,039	3,122,914	977,298	*a*−2,843,412	828,243	41,153	6,545,235
1927	5,110,690	3,458,853	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	5,437,566	3,630,175	1,365,846	− 28,921	744,318	−59,797	11,089,187
1930	3,664,269	2,690,258	1,356,118	−296,176	546,308	−28,040	7,932,737
PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.							
	%	%	%	%	%	%	%
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	4.44	4.97	2.34	− 0.11	3.32	−0.92	3.58
1930	2.94	3.63	2.31	− 1.09	2.39	−0.43	2.53

(*a*) See sub-section (ii), page 188.

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 1928–29, with a return of 3.58 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, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
NET REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
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	921	773	214	− 11	186	− 91	458
1930	615	571	211	−117	132	− 42	325
NET REVENUE PER TRAIN-MILE RUN.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
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	46.76	48.46	27.56	− 1.20	30.64	-10.21	37.88
1930	32.92	36.54	27.45	-12.80	22.88	− 4.47	27.58

(*a*) See sub-section (ii), page 188.

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 1926 to 1930 were as follows :—

RAILWAYS, STATE.—AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AMOUNT OF INTEREST PAYABLE.							
	£	£	£	£	£	£	£
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	1,332,515	887,740	285,255	14,059,909
1928	5,882,452	3,321,727	2,827,223	1,271,686	920,569	284,076	14,507,733
1929	6,150,000	3,473,575	2,902,710	1,366,807	923,017	283,554	15,099,663
1930	6,420,643	3,508,657	2,953,211	1,399,053	950,797	284,379	15,516,740
INTEREST PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
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	739	454	537	231	434	624
1930	1,078	745	458	551	231	431	635
INTEREST PER TRAIN-MILE RUN.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
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	45.05	58.21	46.92	38.55	48.12	49.81
1929	53.80	46.37	58.58	56.90	38.00	48.40	51.58
1930	57·68	47.65	59.77	60.49	39.83	45.37	53.95

Interest charges in 1929–30, viz., £15,516,740, show an increase of £2,285,812 over the amount payable in 1925–26. The interest payable on the cost of construction and equipment, exclusive of expenditure from Consolidated Revenue (£5,607,046) for that purpose, was at the rate of 5.03 per cent. in 1929–30.

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, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.							
	£	£	£	£	£	£	£
1926	— 830,671	+ 45,009	—1,586,883	*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	—1,609,267	— 315,960	—1,551,831	— 991,150	+ 26,671	— 303,218	—4,744,755
1929	— 712,434	+ 156,600	—1,536,864	— 1,395,728	— 178,699	— 343,351	—4,010,476
1930	—2,756,374	— 818,399	—1,597,093	— 1,695,229	— 404,489	— 312,419	—7,584,003
PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.							
	%	%	%	%	%	%	%
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	—4.68	—1.59
1929	—0.58	+0.21	—2.64	—5.20	—0.80	—5.29	—1.30
1930	—2.21	—1.10	—2.72	—6.22	—1.77	—4.78	—2.41

(*a*) See sub-section (ii), page 188.

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.

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 1926 to 1930:—

RAILWAYS, STATE.—TRAFFIC, 1926 TO 1930.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
NUMBER OF PASSENGER JOURNEYS.							
1926 ..	130,725,581	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	26,812,993	23,366,760	15,737,570	2,328,970	379,099,747
1928 ..	148,046,881	164,574,870	24,800,934	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
1930 ..	147,892,548	157,119,071	24,440,946	17,829,098	14,175,175	2,243,265	363,700,103
PER 100 OF MEAN POPULATION.							
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
1930 ..	5,969	8,842	2,626	3,073	3,401	1,024	5,681
PER AVERAGE MILE OF LINE WORKED.							
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	15,049
1929 ..	25,598	34.272	3,873	7,007	3,732	3,384	15.377
1930 ..	24,821	33,370	3,791	7,024	3,449	3,399	14,892
TONNAGE OF GOODS AND LIVE STOCK CARRIED.							
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
1930 ..	12,150,964	7,513,606	4,528,201	2,652,753	3,530,188	632,052	31,007,764
PER 100 OF MEAN POPULATION.							
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
1930 ..	404	423	486	457	847	289	484
PER AVERAGE MILE OF LINE WORKED.							
1926 ..	2,627	1,928	831	1,436	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
1930 ..	2,039	1,596	702	1,045	859	958	1,270

(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 1929-30 :—

RAILWAYS, STATE.—METROPOLITAN AND SUBURBAN, AND COUNTRY PASSENGER TRAFFIC AND RECEIPTS, 1929-30.

Particulars.	Passenger Journeys.			Revenue.		
	Metropolitan and Suburban.	Country.	Total.	Metropolitan and Suburban.	Country.	Total.
	No.	No.	No.	£	£	£
N.S.W. ..	a137,547,881	10,344,667	147,892,548	2,905,162	3,705,789	6,610,951
Victoria ..	b149,571,831	7,547,240	157,119,071	2,704,370	2,125,528	4,829,898
Queensland ..	18,977,219	5,463,727	24,440,946	337,700	1,501,112	1,838,812
S. Australia ..	c 16,426,330	1,402,768	17,829,098	236,740	407,257	643,997
W. Australia	12,243,212	1,931,963	14,175,175	198,124	522,013	720,137
Tasmania ..	(d)	(d)	2,243,265	(d)	(d)	147,487
Total ..	(e)	(e)	363,700,103	(e)	(e)	14,791,282

(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 year ended 30th June, 1930, is contained in the Transport and Communication Bulletin No. 22 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 1929–30 :—

RAILWAYS, STATE.—CLASSIFICATION OF COMMODITIES CARRIED, 1929–30.

State.	Coal, Coke, and Shale.	Other Minerals.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
				TONS CARRIED.				
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	4,761,633	1,977,913	1,211,030	297,564	170,884	783,599	2,948,341	12,150,964
Victoria ..	485,060	1,139,962	791,036	356,651	91,189	689,999	3,959,709	7,513,606
Queensland ..	931,882	347,375	1,620,474a	(b)	76,508	403,533	1,148,429	4,528,201
South Australia	216,743	717,318	516,275	73,215	27,535	128,991	972,676	2,652,753
Western Australia	266,654	629,499	989,820	63,640	23,909	101,314	1,455,352	3,530,188
Tasmania ..	235,653	(c)	68,006	35,292	3.665	25,465	263,971	632,052
All States ..	6,897,625	4,812,067	5,196,641	826,362	393,690	2,132,901	10,748,478	31,007,764
				PERCENTAGE OF TOTAL TONNAGE CARRIED.				
	%	%	%	%	%	%	%	%
New South Wales	39.19	16.28	9.96	2.45	1.41	6.45	24.26	100.00
Victoria ..	6.46	15.17	10.53	4.75	1.21	9.18	52.70	100.00
Queensland ..	20.58	7.67	(a)35.79	(b)	1.69	8.91	25.36	100.00
South Australia	8.17	27.04	19.46	2.76	1.04	4.86	36.67	100.00
Western Australia	7.55	17.83	28.04	1.80	0.68	2.87	41.23	100.00
Tasmania ..	37.28	(c)	10.76	5.58	0.58	4.03	41.77	100.00
All States ..	22.24	15.52	16.76	2.67	1.27	6.88	34.66	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 1929–30 according to a classification which has been adopted by all States :—

RAILWAYS, STATE.—GOODS, ETC., TRAFFIC—REVENUE, 1929–30.

Class.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	£	£	£	£	£	£	£
General merchandise	5,110,608	3,856,115	3,023,404	1,165,837	1,474,305	218,944	14,849,213
Wheat	(a)	304,183	(a)	230,314	520,540	(a)	d 1,055,037
Wool	767,650	247,362	530,971	55,039	89,854	4,934	1,695,810
Live stock ..	1,454,448	730,008	703,952	193,554	144,184	21,043	3,247,189
Minerals—							
Coal, coke, and shale ..	1,495,867	160,600	316,651	127,097	146,056	(b) 41,774	2,288,045
Others ..	525,294	300,914	205,136	478,054	148,363	(c) 24,974	1,682,735
Total ..	9,353,867	5,599,182	4,780,114	2,249,895	2,523,302	311,669	24,818,029

(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 1925–26 to 1929–30.

RAILWAYS, STATE.—SUMMARY OF "PASSENGER-MILES," 1926 TO 1930.

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.									
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
1930	16,952	147,893	1,731,073	6,610,951	102	11.70	0.92	10.73	290,519
VICTORIA.									
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
1930	12,188	157,119	1,352,954	4,829,898	111	8.61	0.86	7.38	287,349
SOUTH AUSTRALIA.									
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
1930	3,342	17,829	208,634	628,474	62	11.70	0.72	8.46	82,193
TASMANIA.									
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
1930	670	2,243	35,257	147,487	53	15.71	1.00	15.77	53,428

(ii) *Ton-Miles.* Particulars regarding total "ton-miles" are given in the following table for each of the years 1925–26 to 1929–30.

RAILWAYS, STATE.—SUMMARY OF "TON-MILES," 1926 TO 1930.

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.								
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
1930	9,762	11,861	1,498,723	9,353,867	177	126.35	1.48	251,778
VICTORIA.								
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
1930	5,483	7,514	737,623	5,599,182	166	98.17	1.82	156,674
QUEENSLAND.(b)								
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
1930	7,546	4,528	554,171	4,780,114	73	125.20	2.06	88,628
SOUTH AUSTRALIA.								
1926	3,184	3,563	387,317	2,579,365	134	108.70	1.60	155,518
1927	2,957	3,672	389,443	2,662,866	141	105.66	1.65	154,451
1928	2,774	3,402	395,919	2,616,503	147	116.38	1.57	156,731
1929	2,202	2,748	337,639	2,358,579	156	122.91	1.66	132,694
1930	2,209	2,653	350,325	2,249,895	164	131.29	1.55	138,044
WESTERN AUSTRALIA.								
1926	2,976	3,237	272,611	2,174,895	106	84.20	1.91	71,048
1927	a3,359	3,439	317,845	2,413,852	110	92.43	1.82	81,373
1928	a3,723	3,698	357,966	2,619,816	111	96.81	1.76	90,145
1929	a3,773	3,670	367,032	2,610,193	113	100.00	1.71	91,919
1930	a3,654	3,530	361,935	2,523,302	115	102.53	1.67	88,083
TASMANIA.								
1926	762	669	32,000	293,078	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
1930	857	607	33,715	288,373	39	55.58	2.05	51,091

(a) Includes "Assistant" and "Light" mileage. (b) 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, 1930.**—The following table shows the rolling stock in use at the 30th June, 1930, classified according to gauge :—

RAILWAYS, STATE.—ROLLING STOCK, 1930.

State.	Gauge.					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2ft. 6in.	2ft. 0in.	
LOCOMOTIVES.						
New South Wales	..	1,423	..	..	..	1,423
Victoria ..	630	..	..	17	..	647
Queensland ..	..	..	777	..	10	787
South Australia	247	..	189	..	..	436
Western Australia	..	..	411	..	..	411
Tasmania ..	..	..	88	..	6	94
All States ..	877	1,423	1,465	17	16	3,798

—	Coaching Stock.									
	Ordinary.	With Motors.	Ordinary.	With Motors.	Ordinary.	With Motors.	Ordinary.	Ordinary.	Ordinary.	With Motors.
New South Wales	..	..	2,764	36	..	..	..	..	2,764	36
Victoria ..	2,192	448	..	..	..	..	55	..	2,247	448
Queensland ..	..	..	..	..	1,243	30	..	11	1,254	30
South Australia	445	38	..	..	198	5	..	..	643	43
Western Australia	..	..	..	..	490	2	..	..	490	2
Tasmania ..	..	..	..	..	205	11	..	6	211	11
All States ..	2,637	486	2,764	36	2,136	48	55	17	7,609	570

Stock other than Coaching.						
New South Wales	..	24,049	..	..	..	24,049
Victoria ..	20,712	..	..	243	..	20,955
Queensland ..	..	..	19,138	..	168	19,306
South Australia	3,840	..	5,679	..	..	9,519
Western Australia	..	..	11,042	..	..	11,042
Tasmania ..	..	..	1,943	..	77	2,020
All States ..	24,552	24,049	37,802	243	245	86,891

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 1926 to 1930 inclusive, classified according to (*a*) salaried staff, and (*b*) wages staff :—

RAILWAYS, STATE.—EMPLOYEES, (a) 1926 TO 1930.

State.	At 30th June—									
	1926.		1927.		1928.		1929.		1930.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales	5,794	38,263	6,004	39,488	6,052	38,053	5,995	37,535	5,754	34,243
Victoria ..	4,323	24,465	4,245	25,072	4,363	23,618	4,295	23,025	4,249	20,361
Queensland ..	3,617	18,419	3,565	16,105	3,478	16,146	3,403	15,467	3,219	14,542
South Australia ..	1,362	9,801	1,438	8,998	1,295	7,353	1,312	7,401	1,293	6,794
Western Australia	1,318	6,697	1,362	7,471	1,412	7,565	1,418	7,770	1,424	7,587
Tasmania ..	185	1,219	187	1,232	212	1,369	219	1,376	217	1,352
All States ..	16,599	98,864	16,801	98,366	16,812	94,104	16,642	92,574	16,156	84,879

(a) Exclusive of construction staff.

In the period under review the totals of salaried and wages staffs decreased from 115,463 in 1926 to 101,035 in 1930, a decrease of 12.5 per cent.

(ii) *Average staff employed*, 1929–30. 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, 1929–30.

State.	Operating Staff.		Construction Staff.		All Employees—Staff.	
	Salaried.	Wages.	Salaried.	Wages.	Salaried.	Wages.
New South Wales ..	5,869	35,473	157	2,866	6,026	38,339
Victoria	4,335	21,242	..	..	4,335	21,242
Queensland	3,352	14,086	56	1,273	3,408	15,359
South Australia ..	1,303	7,150	3	244	1,306	7,394
Western Australia ..	1,424	8,236	..	..	1,424	8,236
Tasmania	217	1,352	..	..	217	1,352
All States ..	16,500	87,539	216	4,383	16,716	91,922

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 1929–30 are as under :—

RAILWAYS, STATE.—ACCIDENTS, 1930.

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	..	28	..	1	..	31	..	..	1	2	1	69
Employees	2	13	..	..	..	..	..	2	1	23	..	20	3	58
Accidents on line (other than train accidents)—														
Passengers	11	155	10	113	2	17	2	48	..	21	..	..	25	354
Employees	9	162	2	9	3	21	..	56	1	141	..	25	15	414
Others	16	47	..	..	..	..	..	..	..	..	..	..	16	47
Shunting accidents—														
Passengers	..	..	..	..	..	1	..	..	..	1	..	..	..	2
Employees	5	160	5	16	3	70	..	29	1	92	..	3	14	370
Other persons	1	5	2	9	1	3	1	1	..	..	..	..	5	18
Employees proceeding to or from their duty within railway boundaries ..	1	3	1	..	..	..	..	1	..	..	..	..	2	4
Persons killed or injured at crossings	3	16	15	14	6	13	3	24	8	24	5	6	40	97
Trespassers	16	3	22	8	11	4	3	4	6	11	..	..	58	30
Miscellaneous	..	..	..	..	..	3	..	..	1	17	..	28	1	48
Total	64	571	57	197	26	133	9	196	18	330	6	84	180	1,511

(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 1926 to 1930 inclusive :—

RAILWAYS, STATE.—ACCIDENTS, 1926 TO 1930.

State.	In year ended 30th June—									
	1926.		1927.		1928.		1929.		1930.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	72	594	123	687	77	629	61	565	64	571
Victoria.. ..	78	498	53	292	60	238	46	281	57	197
Queensland ..	25	212	26	167	20	163	19	125	26	133
South Australia ..	22	329	22	263	23	255	20	156	9	196
Western Australia	12	341	17	365	16	351	15	354	18	330
Tasmania ..	4	39	..	44	1	18	2	71	6	84
All States ..	213	2,013	241	1,818	197	1,654	163	1,552	180	1,511

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 1929–30 :—

GOVERNMENT RAILWAYS.—CONSUMPTION AND VALUE OF OIL AND FUEL, 1929–30.

Government Railways.	Oil.						Coal.		
	Lubricating.			Fuel.					
	Gallons.	Value.	Average Cost per Gallon.	Gallons	Value.	Average Cost per Gallon.	Tons.	Value.	Average Cost per Ton.
		£	s. d.		£	s. d.		£	£ s. d.
New South Wales[d]	440,262	46,243	2 1.21	983,327	42,611	0 10.40	1,508,668	1,450,254	0 19 2.71
Victoria ..	171,000	19,600	2 3.15	1,078,750	45,086	0 10.03	666,120	911,650	1 7 4.46
Queensland ..	210,553	20,036	1 10.84	195,561	12,738	1 3.63	426,506	403,492	0 18 11.04
South Australia	[a]111,785	12,150	2 2.09	(*b*)	(*b*)	(*b*)	203,786	442,320	2 3 4.92
Western Australia	59,267	5,888	1 11.84	404,183	18,805	0 11.17	314,610	300,217	0 19 1.02
Tasmania ..	33,547	3,748	2 2.81	10,403	690	1 3.92	58,388	70,079	1 4 0.06
Total States	1,026,414	107,665	2 1.17	2,672,224	119,930	0 10.77	3,178,078	3,578,012	1 2 6.20
Federal ..	23,513	2,799	2 4.57	91,054	8,221	1 9.67	29,177	62,793	2 3 0.51
Grand Total, Australia ..	1,049,927	110,464	2 1.25	[c]2,763,278	[c]128,151	[c]0 11.13	3,207,255	3,640,805	1 2 8.44

(*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 18s. 11d. in Queensland to £2 3s. 5d. 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 1929–30 varied very little from that of 1928–29.

§ 4. Private Railways.

1. **Total Mileage Open, 1929-30.**—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 1929-30 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 1930. More detailed information regarding these lines will be found in " Transport and Communication Bulletin No. 22 " published by this Bureau.

RAILWAYS, PRIVATE.—SUMMARY, 1929-30.

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 ..	8	115.70	2,447,682	264,978	178,167	408,478	675,801	901,007	479	46	9	737
Victoria ..	2	24.94	93,048	12,017	8,652	22,298	17,701	30,689	15	5	4	42
Queensland	16	278.85	422,542	38,654	34,768	74,847	20,377	334,078	71	19	18	396
South Australia ..	1	33.80	(a)	(a)	(a)	100,660	740	1,077,175	29	8	1	196
Western Australia	1	277.00	2,224,272	224,414	106,345	321,206	50,072	165,939	257	23	23	486
Tasmania	4	141.56	911,611	91,255	80,547	145,704	50,126	75,423	219	22	21	302
All States(b)	32	871.85	6,099,155	631,318	408,479	1,073,193	814,817	2,584,311	1,070	123	76	2,159

(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 1929-30, also in Australia as a whole for the years 1925-26 to 1929-30, 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, 1929-30.

Nature of Motive Power, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Total, Australia.
GOVERNMENT.							
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	186.63	122.30	..	..	41.09	..	350.02
Steam	25.21	..	..	..	6.26	..	31.47
Cable	..	26.44	..	..	..	..	26.44
Horse	..	..	..	..	1.50	..	1.50
Total ..	211.84	148.74	..	..	48.85	..	409.43
MUNICIPAL.							
Electric	..	..	56.58	82.83	8.61	30.53	178.55
Steam	..	..	6.65	..	..	..	6.65
Total ..	..	..	63.23	82.83	8.61	30.53	185.20
PRIVATE.							
Electric	..	31.72	..	..	11.56	..	43.28
Steam	3.50	..	..	..	..	..	3.50
Total ..	3.50	31.72	..	..	11.56	..	46.78
ALL CONTROLLING AUTHORITIES.							
Electric	186.63	154.02	56.58	82.83	61.26	30.53	571.85
Steam	28.71	..	6.65	..	6.26	..	41.62
Cable	..	26.44	..	..	..	..	26.44
Horse	..	..	..	..	1.50	..	1.50
Total ..	215.34	180.46	63.23	82.83	69.02	30.53	641.41
ACCORDING TO GAUGE.							
Gauge—							
5 ft. 3 in. ..	..	5.18	..	..	..	..	5.18
4 ft. 8½ in. ..	215.34	175.28	56.58	82.83	..	..	530.03
3 ft. 6 in. ..	..	..	6.65	..	69.02	30.53	106.20
Total ..	215.34	180.46	63.23	82.83	69.02	30.53	641.41

TRAMWAYS.—ROUTE MILEAGE OPEN, AUSTRALIA, 1925-26 TO 1929-30.

Nature of Motive Power, Controlling Authority, and Gauge.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
ACCORDING TO MOTIVE POWER.					
	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	519.06	538.42	555.33	557.99	571.85
Steam	75.46	70.55	39.18	40.19	41.62
Cable	38.58	33.68	30.06	30.60	26.44
Horse	1.50	2.51	2.51	1.50	1.50
Total	634.60	645.16	627.08	630.28	641.41
ACCORDING TO CONTROLLING AUTHORITY.					
Government	421.42	431.05	405.21	407.16	409.43
Municipal	167.42	168.70	173.60	177.01	185.20
Private	45.76	45.41	48.27	46.11	46.78
Total	634.60	645.16	627.08	630.28	641.41
ACCORDING TO GAUGE.					
Gauge—					
5 ft. 3 in.	5.18	5.18	5.18	5.18	5.18
4 ft. 8½ in.	517.92	526.61	516.80	520.46	530.03
3 ft. 6 in.	99.00	100.87	105.10	104.64	106.20
2 ft. 0 in.	12.50	12.50	..	..	..
Total	634.60	645.16	627.08	630.28	641.41

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.

(iii) *Cost of Construction and Equipment.* The table hereunder shows, so far as information is available, the total cost of construction and equipment of all tramways to the 30th June, 1930, classified according to the nature of the motive power and the controlling authority.

TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1929-30.

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
GOVERNMENT.							
	£	£	£	£	£	£	£
Electric	11,046,461	6,730,039	..	..	1,094,157	..	18,870,657
Steam ..	431,517	..	..	..	63,073	..	494,590
Cable ..	..	1,400,581	..	..	..	..	1,400,581
Horse ..	..	..	..	..	10,355	..	10,355
Total ..	11,477,978	8,130,620	..	..	1,167,585	..	20,776,183
MUNICIPAL.							
Electric	..	..	2,241,385	3,834,302	163,392	581,395	6,820,474
Steam ..	..	..	53,235	..	..	..	53,235
Total ..	..	..	2,294,620	3,834,302	163,392	581,395	6,873,709

TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1929-30—*continued*

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
			PRIVATE.				
	£	£	£	£	£	£	£
Electric	..	493,290	..	..	452,821	..	946,111
Steam ..	(*a*)	..	..	..	..	..	..
Total ..	(*a*)	493,290	..	..	452,821	..	946,111
			ALL CONTROLLING AUTHORITIES.				
Electric	11,046,461	7,223,329	2,241,385	3,834,302	1,710,370	581,395	26,637,242
Steam ..	(*b*)431,517	..	53,235	..	63,073	..	547,825
Cable ..	..	1,400,581	..	..	..	..	1,400,581
Horse ..	..	..	..	..	10,355	..	10,355
Total ..	11,477,978 (*b*)	8,623,910	2,294,620	3,834,302	1,783,798	581,395	28,596,003

(*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 Metropolitan Transport Trust. 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, 1930, 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 1929-30 :—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—RETURNS FOR 1929-30.

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	186.63	333.31	11,046,461	3,856,892	3,545,645	311,247	622,538	– 311,291	91.93	2.82
Steam	23.78	25.21	431,517	46,578	79,928	–33,350	24,354	– 57,704	171.60	– 7.73
Total	210.41	358.52	11,477,978	3,903,470	3,625,573	277,897	646,892	– 368,995	92.88	2.42

(*a*) Exclusive of Stores Advance Account (£287,000).

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

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—CAPITAL COST, 1930.

Permanent Way.	Rolling Stock.	Power-houses, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£	£	£	£	£	£	£
5,793,218	2,523,974	2,625,385	271,705	261,304	2,392	11,477,978

The average cost per mile open was £27,533 for permanent way, and £27,018 for all other charges, making a total of £54,551 per route mile.

(d) *Summary, Government Tramways.* The following table gives a summary of the operations of all Government tramways for the years 1926 to 1930 :—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—SUMMARY, 1926 TO 1930.

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.
1926 ..	228.55	11,147,523*a*	3,619,496	3,319,996	299,500	563,137	91.73	2.69	339,412	11,459
1927 ..	228.50	11,299,050*a*	3,806,098	3,487,834	318,264	573,453	91.64	2.82	347,231	11,697
1928 ..	209.58	11,322,078*a*	4,556,561	3,937,356	619,205	576,702	86.41	5.47	346,014	11,031
1929 ..	210.43	11,456,189*a*	4,457,890	3,833,939	623,951	615,997	86.00	5.45	333,476	11,082
1930 ..	210.41	11,477,978*a*	3,903,470	3,625,573	277,897	646,892	92.88	2.42	307,790	10,139

(*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 1926 to 1930 inclusive.

ELECTRIC TRAMWAYS.—SYDNEY.—SUMMARY, 1926 TO 1930.

Particulars.	Year ended 30th June—				
	1926.	1927.	1928.	1929.	1930.
Mileage open for traffic—					
Route miles	161.83	162.11	162.05	162.66	162.89
Track miles	288.85	289.19	289.50	291.66	291.65
Total cost of construction and equipment .. .. £	9,473,497	9,889,857*b*	9,976,761*b*	10,060,822*b*	10,094,890*b*
Current used for traction purposes kilowatt hours	109,131,602*a*	123,197,596*a*	127,168,518*a*	125,995,725*a*	122,431,584*a*
Tram-miles run .. No.	31,087,894	31,086,469	31,511,169	31,258,936	30,201,973
Passengers carried .. No.	313,216,842	320,903,528	322,025,235	312,032,469	289,893,088
Gross revenue .. £	3,316,312	3,462,806	4,135,337	4,061,459	3,551,944
Working expenses .. £	2,878,855	3,066,254	3,465,920	3,471,394	3,271,935
Net revenue .. .. £	437,457	396,552	669,417	590,065	280,009
Percentage of working expenses on gross revenue .. %	86.81	88.55	83.81	85.47	92.12
Cars in use	1,567*a*	1,594*a*	1,578*a*	1,703*a*	1,608*a*
Persons employed	11,130*a*	11,512*a*	10,911*a*	10,968*a*	10,024*a*

(*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 3½ 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. 8½ in., was opened for traffic in 1883. In 1930 the number of tram-miles run was 20,440, and the number of passengers conveyed 84,230.

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, 1930, 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 26.44 miles of double track of 4-ft. 8½ in. gauge connecting the city of Melbourne with the nearer suburbs.

(2) *Particulars of Working.* A summary for the years 1926 to 1930 is given hereunder :—

CABLE TRAMWAYS.—MELBOURNE.—SUMMARY, 1926 TO 1930.

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.
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	83,004,759	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
1930 ..	26.44	6,545,033	58,692,072	604,527	493,279	81.60	1,367

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, 1930, 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, Richmond and Victoria-street lines, make an aggregate route mileage of 112.51 miles, all of 4 ft. 8½ in. gauge.

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

MELBOURNE TRAMWAYS BOARD.—ELECTRIC SERVICES.—OPERATIONS, 1926 TO 1930.

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.	£	£	£	£
1926 ..	91.98	4,040,492	27,041,867	10,657,723	99,017,038	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 ..	103.74	5,221,586	45,086,642	15,215,696	132,805,672	1,602,068	1,057,066	654,175	—109,173
1929 ..	103.75	5,568,006	44,347,542	15,640,465	133,821,902	1,629,470	1,086,948	693,676	—151,154
1930 ..	112.51	6,392,321	47,582,057	16,343,563	139,286,573	1,705,443	1,122,039	725,185	—141,781

(—) 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 1925–26 to 1929–30 are contained in the tables hereunder.

ELECTRIC TRAMWAY.—ST. KILDA–BRIGHTON.—1926 TO 1930.

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	£	£	£	£
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	5,561,619	55,202	46,661	9,525	— 984
1929 ..	201,908	1,734,426	561,593	5,380,698	56,513	49,728	9,644	— 2,859
1930 ..	202,748	1,718,119	563,092	5,197,617	53,963	46,174	9,269	— 1,480

(—) Indicates loss.

ELECTRIC TRAMWAY.—SANDRINGHAM-BEAUMARIS (*a*).—1926 TO 1930.

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.	£	£	£	£
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	15,198	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
1930 ..	134,970	468,891	188,618	1,543,830	14,636	11,972	6,844	— 4,180

(—) Indicates loss.

(*a*) The extension from Black Rock to Beaumaris, 2.20 miles in length, was opened for traffic on 1 st 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 (10.47 miles); giving a total route mileage of 31.72 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 1926 to 1930 inclusive :—

ELECTRIC TRAMWAYS.—VICTORIA.—SUMMARY, 1926 TO 1930.

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.
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
1930	154.02	7,223,329	52,531,368	18,728,831	155,738,911	1,865,955	1,282,447	642	3,795

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 56.58 route miles at 31st December, 1930. 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 1930 was £2,241,385, the gauge of line being 4-ft. 8½-in. The following table gives a summary for the calendar years 1926 to 1930 :—

ELECTRIC TRAMWAYS.—BRISBANE.—SUMMARY, 1926 TO 1930.

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.
1926	52.25	a2,053,318	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
1930	56.58	2,241,385	19,304,457	6,575,754	73,616,854	766,271	552,661	293	1,479

(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, 1930, was £53,235. During the year 1930, 1,510,748 passengers were carried, the revenue being £14,573 and working expenses £15,580. The number of the staff at the end of the year was 41.

(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, 1930, the Tramways Trust operated a total route mileage of 82.83 miles of 4-ft. 8½-in. gauge. A summary for the years 1926 to 1930 is given in the subjoined table:—

ELECTRIC TRAMWAYS.—ADELAIDE.—SUMMARY, 1926 TO 1930.

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 Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1926	73.05	2,997,976	19,303,228	7,393,122	66,207,356	661,058	472,412	255	1,556
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
1930	82.83	3,834,302	21,712,905	7,638,896	59,852,641	756,560	521,839	312	1,736

(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, 1930, was £73,428, the gross revenue for 1929-30 being £3,630, and the working expenses £2,421. 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, 1926 to 1930:—

ELECTRIC TRAMWAYS.—PERTH.—1925-26 TO 1929-30.

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 Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
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	9,002,660	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
1930 ..	41.09	1,094,157	10,293,780	3,604,827	35,565,867	349,270	294,471	125	698

(ii) *Private Tramways.* Electric Tramways with a route mileage at 31st August, 1930, 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 1930 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 1926 to 1930 :—

ELECTRIC TRAMWAYS.—WESTERN AUSTRALIA.—SUMMARY, 1926 TO 1930.

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.
1926	57.61	1,559,483	10,311,919	3,949,741	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	10,989,904	4,141,242	41,040,909	403,845	330,705	183	897
1929	60.00	1,680,151	11,763,248	4,303,871	43,198,015	423,368	353,224	183	816
1930	61.26	1,710,370	12,477,132	4,563,535	43,350,192	426,646	363,648	187	877

7. Tasmania.—(i) *Electric Tramways.* In Hobart there is a system of electric tramways consisting of 18.80 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 1926 to 1930 :—

ELECTRIC TRAMWAYS.—TASMANIA.—SUMMARY, 1926 TO 1930.

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.
1926	26.80	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
1930	30.53	581,395	4,267,113	1,885,437	17,355,933	172,187	141,801	90	392

(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 1930.* 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 1930; for other tramways they refer generaliy to the financial year 1929-30.

ELECTRIC TRAMWAYS.—AUSTRALIA.—SUMMARY, 1929-30.

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. ..	186.63	11,046,461	122,431,584	32,424,794	303,863,829	3,856,892	3,545,645	91.93	1,608	10,024
Victoria..	154.02	7,223,329	52,531,368	18,728,831	155,738,911	1,805,955	1,282,447	68.73	642	3,795
Q'land ..	56.58	2,241,385	19,304,457	6,575,754	73,610,854	766,271	552,661	72.12	293	1,479
S. Aust.	82.83	3,834,302	21,712,905	7,638,896	59,852,641	756,560	521,839	68.98	312	1,736
W. Aust.	61.26	1,710,370	12,477,132	4,563,535	43,350,192	426,646	363,648	85.23	187	877
Tasmania	30.53	581,395	4,267,113	1,885,437	17,355,933	172,187	141,801	82.35	90	392
All States	571.85	26,637,242	232,724,559	71,817,247	653,778,410	7,844,511	6,408,041	81.69	3,132	18,303

(ii) *Summary for Years 1926 to 1930.* The following table gives particulars of the operations of electric tramways in Australia for the years 1926 to 1930 :—

ELECTRIC TRAMWAYS.—AUSTRALIA.—1926 TO 1930.

Particulars.		1926.	1927.	1928.	1929.	1930.
Mileage open for Traffic (Route)	Miles	519.06	538.42	555.33	557.99	571.85
Total Cost of Construction and Equipment	£	22,444,569	23,453,826	24,511,459	25,402,823	26,637,242
Current used for Traction Purposes	Kil. hrs.	188,761,134	212,714,880	231,752,114	231,514,559	232,724,559
Tram-miles run	No.	65,302,995	68,726,257	71,449,202	71,762,830	71,817,247
Passengers carried	,,	647,351,333	677,716,965	695,233,793	682,424,725	653,778,410
Gross Revenue	£	6,633,563	7,364,964	8,350,389	8,202,601	7,844,511
Working Expenses	£	5,510,118	5,941,835	6,603,562	6,579,296	6,408,041
Percentage of Working Expenses on Gross Revenue	%	83.06	80.68	79.08	79.63	81.69
Cars, Motors and Trailers ..	No.	2,824	2,905	2,982	3,155	3,102
Persons Employed	,,	19,208	20,206	19,595	19,647	18,303

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 (600 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); (*m*) Melbourne to Charleville via Cootamundra (900 miles); and (*n*) Melbourne to Hobart via Wilson's Promontory and Launceston (380 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.

Up to 31st May, 1931, 175 landing grounds had been acquired or leased by the Government and prepared for civil aviation purposes. There were also 63 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, 1931, three subsidized contractors were operating under contracts which, with the exception of the Adelaide–Perth service, provided that such space as is required on each trip must be reserved for mails, the letters for transmission being surcharged 3d. per ½ ounce. The total route mileage of these services is 5,479 miles.

The various regular air services over prepared routes have completed 5,697,426 passenger-miles, and carried 31,394 paying passengers over various stages. Over 95,036 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 31st May,* 1931. The following aerial mail services were in operation at 31st May, 1931.

(1) *Subsidized Services.* West Australian Airways Ltd.—Perth to Derby (W.A.), 1,467 miles; Derby to Wyndham (W.A.), 600 miles, and Perth (W.A.) to Adelaide (S.A.), 1,453 miles. Queensland and Northern Territory Aerial Services Ltd.—Brisbane to Camooweal (Q.), 1,269 miles and Cloncurry to Normanton (Q.), 215 miles. Larkin Aircraft Supply Co. Ltd.—Camooweal (Q.) to Daly Waters (N.A.), 475 miles. All these services are operated once weekly in each direction over the routes mentioned. The Derby to Wyndham service is not operated in the "wet" season, which is usually December to March.

(2) *Uusubsidized 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:—Brisbane to Toowoomba (Q.), 75 miles; Brisbane (Q.) to Lismore (N.S.W.), 100 miles; Townsville to Brisbane (Q.), 730 miles; Brisbane (Q.) to Sydney (N.S.W.), 500 miles; Sydney (N.S.W.), to Melbourne (V.), 475 miles; and Melbourne (V.) to Launceston to Hobart (T.), 380 miles. The services from Townsville to Brisbane, and Brisbane to Hobart, are operated by Queensland and Northern Territory Aerial Services Ltd., and Australian National Airways Ltd., respectively. Surcharged air mail is carried under arrangements with the Postmaster-General's Department.

(*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.

(*d*) *Reliability.* During 1930 over 598,582 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 3,900,000 miles, and fourteen fatal accidents occurred, an average of one fatal accident for every 279,000 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.

During 1930, however, a notable advance beyond the experimental stage was made by " The General Aircraft Co. Ltd. " of Sydney, who proceeded to the production stage with a land plane of local design. The " Genairco " is a three-seater biplane of orthodox type, with accommodation for two passengers and a pilot, and is of standard all wood construction with fabric-covered lifting and control surfaces, and folding wings. There are now nine (9) aircraft of this type on the Commonwealth Register, the machines being used for instructional purposes and for general taxi and private hire work.

Reference was made in Official Year Book No. 22 (1929) to the aircraft construction activities of the Larkin Aircraft Supply Co. Ltd. This company has since successfully completed its contract for the manufacture of 32 " Moth " Aircraft for the Commonwealth Government, and has also produced two larger passenger aircraft of local design. One of these (the " Lascoter") is a single-engined, four passenger aircraft, and the other (the " Lasconder ") is a three-engined six passenger machine.

The Aircraft Branch of the Cockatoo Island Dockyard, Sydney, is now investigating the practicability of undertaking the production of locally designed aircraft.

5. Training of Air Pilots.—(i) *The Associated Aero Clubs.* The Associated Australian Aero Clubs provide facilities in the capital cities of all States 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 April, 1931, 662 pupils had passed through the various flying training organizations and had qualified for private " A " 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 private (" A ") pilot's licence. In lieu of the bonus for practice flying the Sydney and Melbourne Clubs are paid a subsidy in respect of each member who qualifies for the renewal of his pilot's licence. The Sydney body (the Aero Club of New South Wales) is a most successful organization. To 30th April, 1931, 215 pupils, including nine lady members, had graduated for " A " licences, while many graduates had completed advanced courses of training, gained their Commercial (" B ") licences and now own aircraft.

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 establishment of the Australian Aero Club (W.A. Section), flying training in Perth was undertaken by 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, and there are several well established commercial flying training organizations in Sydney, Brisbane, and Perth.

6. Notable Flights.—Since the end of the European war many notable long distance flights have been carried out by Australian pilots. Short accounts of those prior to the year under review are contained in previous issues of the Year Book, but owing to limitations of space the details cannot be repeated in this issue. During the past twelve months there were six additional England-Australia flights. Of these, five were solo flights, the pilots being F. R. Matthews (33 days), C. W. Hill (67 days, meeting with an accident at Timor on the fourteenth day), C. E. Kingsford-Smith (10 days 7 hours), and C. W. A. Scott (9 days 3 hours). The other flight was made by Messrs. G. P. Fairbairn and K. Shenstone. The Kingsford-Smith and Scott flights were specially meritorious as each in turn constituted a time record for the journey.

On the 7th January, 1931, Mr. G. L. Menzies, in an Avro Avian machine, the " Southern Cross Junior ", which was used by Air Commodore Kingsford-Smith on his record England–Australia flight, flew from Sydney to the Wanganui River, near Hokitika, New Zealand—a distance of approximately 1,200 miles. This constituted the first solo flight between Australia and New Zealand.

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, 1926 to 1930:—

CIVIL AIRCRAFT.—AUSTRALIA.—SUMMARY, 1925-26 TO 1929-30.

Particulars.		Year ended 30th June—				
		1926.	1927.	1928.	1929.	1930.
Registered Aircraft Owners (*a*)	No.	23	29	37	72	118
Registered Aircraft (*a*)	No.	54	84	90	163	220
Licensed Pilots—(*a*)						
Private	No.	41	48	127	200	344
Commercial	No.		47	76	123	181
Licensed Ground Engineers (*a*)	No.	116	148	163	198	257
Aerodromes—(*a*)						
Government	No.	44	45	46	56	58
Public	No.	11	11	13	19	39
Government Emergency Grounds	No.	90	91	94	108	117
Flights carried out	No.	5,838	17,284	56,216	92,000	128,916
		h. m.	h. m.	h. m.	h. m.	h. m.
Hours flown		6,426 35	10,447 24	15,783 30	27,268 20	42,963 7
Approx. Mileage	Miles	487,603	772,643	1,153,572	1,992,070	3,234,307
Passengers carried—						
Paying	No.	4,174	13,984	36,397	56,363	91,415
Non-paying	No.	2,830	3,222	5,629	10,037	12,801
Total	No.	7,004	17,206	42,026	66,400	104,216
Goods, weight carried	lbs.	62,873	125,924	116,373	160,424	196,795
Mails, letters carried (*b*)	No.	272,707	290,746	301,677	316,338	383,942
Accidents—						
Persons killed	No.	..	4	2	7	18
Persons injured	No.	1	3	5	10	20

(*a*) At 30th June. (*b*) By subsidized companies.

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, 1930. 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 operating three 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 to 1930.

CIVIL AIRCRAFT.—TERRITORY OF NEW GUINEA.—SUMMARY 1927-28 TO 1929-30.

Particulars.		Year ended 30th June—		
		1928.	1929.	1930.
Registered Aircraft Owners (a)	No.	5	7	7
Registered Aircraft (a)	No.	12	15	13
Licensed Pilots—(a)				
Private	No.	..	..	1
Commercial	No.	9	10	11
Licensed Ground Engineers (a)	No.	8	10	11
Aerodromes—(a)				
Government	No.	2	2	2
Emergency Landing Grounds	No.	4	4	4
Flights carried out	No.	821	1,532	2,882
		h. m.	h. m.	h. m.
Hours flown		1,533 53	2,626 12	3,618 50
Approximate mileage	Miles	107,208	187,705	272,976
Passengers carried—				
Paying	No.	814	1,293	2,490
Non-paying	No.	94	65	649
Total	No.	908	1,358	3,139
Goods, weight carried	lbs.	518,831	1,385,510	3,062,430
Mails, weight carried	lbs.	6,171	13,876	23,257
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 European war 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 1929-30 the value of 6,556 motor bodies imported was £697,862, and of the 61,981 chassis, £5,807,024. The value of 46,409 bodies built in Australia to equip the chassis for which bodies were not imported was approximately £3,118,987. 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 122 million gallons, valued at £1,118,332, and petroleum, etc., 240 million gallons, valued at £7,429,485. Spares, batteries, accessories, etc., also are additional factors contributing to the potentialities of Australia as a market.

At the 30th June, 1930, the number of motor cars per 1,000 of population was nearly 102, which, however, is not so high as that recorded in New Zealand, viz., 146, 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 1929–30. 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 1929–30 being 611,064, 3,742,702, 32,511 and 4,881,171 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 1929–30.* Particulars of the registration of motor vehicles, etc., for the year 1929–30 are contained in the subjoined table :—

MOTOR VEHICLES.—SUMMARY, 1929–30.

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.	No.	£	£	£
New South Wales	169,495	29,410	47,289	246,194	99.06	346,415	1,613,803	179,441	1,793,244
Victoria ..	125,315	25,405	29,167	179,887	100.88	230,853	1,128,037	57,711	1,185,748
Queensland ..	b80,403	8,778	(a) 2,334	91,515	97.12	63,879	484,651	26,058	510,709
South Australia	47,100	8,616	11,232	66,948	115.30	94,381	579,097	43,170	c622,267
Western Australia	30,707	7,707	11,781	50,195	119.90	62,917	298,387	15,913	314,300
Tasmania ..	12,533	4,814	2,198	19,545	90.68	22,510	82,190	6,574	88,764
Central Australia	77	..	22	99	115.05	108	60	27	87
North Australia	187	44	219	450		542	64	127	191
Federal Capital Territory	1,113	123	245	1,481	167.51	1,847	8,621	967	9,588
Australia ..	466,930	84,897	104,487	656,314	101.93	823,452	4,194,910	329,988	4,524,898

(a) Solid tyred vehicles. (b) Pneumatic tyred vehicles. (c) Gross Revenue.

(ii) *Quinquennium 1926–1930.* The following table shows the number of vehicles registered, licences issued, and revenue received therefrom during each of the years 1925–26 to 1929–30 :—

MOTOR VEHICLES.—REGISTRATIONS, ETC., AUSTRALIA, 1925-26 TO 1929-30.

Year.	Motor Vehicles Registered.					Drivers' and Riders' Licences Issued.	Revenue derived from—		
	Motor Cars.	Motor Cycles.	Commercial Vehicles.	Total.	Per 1,000 of Population.		Vehicle Registration and Motor Tax.	Drivers' and Riders' Licences.	Total.
							£	£	£
1925–26	282,199	70,209	(a)37,892	390,300	64.6	496,311	2,098,112	137,639	2,235,751
1926–27	364,384	80,242	(a)50,914	495,540	80.3	608,585	2,630,506	208,857	2,845,363
1927–28	419,131	84,017	(a)62,006	565,154	89.9	681,237	3,364,861	249,964	3,614,825
1928–29	474,359	88,049	(a)71,851	634,259	99.5	767,328	3,877,734	289,300	4,167,034
1929–30	466,930	84,897	104,487	656,314	101.9	823,452	4,194,910	329,988	4,524,898

(a) Incomplete, partly included with Motor Cars.

During the period dealt with, the number of motor vehicles showed an average annual increase of 14 % ; the greatest increase (27 %) being recorded during 1926–27 and the least (3 %) during 1929–30. The number of vehicles per 1,000 of population increased from 64.6 to 101.9.

6. Comparative Motor Vehicle Statistics, 1931.—The result of the 1931 World Motor Census, conducted by the " American Automobile " magazine, from which the following particulars have been extracted, shows that there were over 35,800,000 motor cars, trucks, and buses registered in various countries of the world at 1st January, 1931.

COMPARATIVE MOTOR VEHICLE STATISTICS, 1st JANUARY, 1931.

Country.	Motor Cars, Trucks, and Buses.	Motor Cycles.
Australia	593,510	95,000
Argentine	387,864	3,086
Belgium	158,000	51,314
Brazil	159,986	1,568
Canada	1,215,071	9,369
Cuba	46,204	495
Denmark	110,324	23,349
France	1,500,387	500,000
Germany	658,686	731,237
Great Britain	1,558,032	702,878
India	171,000	27,500
Irish Free State	47,198	7,039
Italy	269,500	87,500
Japanese Empire	98,500	25,000
Mexico	80,800	675
Netherlands	120,700	32,300
Netherlands East Indies	88,178	13,900
New Zealand	189,777	37,411
Union of South Africa	159,689	37,759
Spain	189,650	37,500
Sweden	151,150	59,000
Switzerland	79,100	46,500
United States of America ..	26,690,949	110,915

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, 1930, and differ from those stated in para. 5, which are actual registrations at 30th June, 1930.

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 of letters and postcards, newspapers and packets for the years subsequent to 1926–27 are not available. Transport and Communication Bulletin No. 22 issued by this Bureau gives particulars of parcels and registered articles dealt with.

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 1929–30. 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, 1930.

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Australia.
Number of post offices(*a*).. ..	2,676	2,732	1,253	805	623	518	8,607
Number of square miles of territory to each office in State	116	32	535	1,123	1,566	51	346
Number of inhabitants to each office	932	653	752	727	672	416	748
Number of inhabitants per 100 square miles	804	2,029	141	65	43	822	216

(*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 1925–26 to 1929–30 inclusive :—

POST OFFICES AT 30th JUNE, 1926 TO 1930.

State.	At 30th June—									
	1926.		1927.		1928.		1929.		1930.	
	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	458	2,221	456	2,226	455	2,228	448	2,250	445	2,231
Victoria.. ..	285	2,429	284	2,445	286	2,462	283	2,455	282	2,450
Queensland ..	216	1,068	216	1,069	215	1,064	211	1,070	207	1,046
South Australia ..	148	660	150	657	146	657	148	660	147	658
Western Australia	139	593	132	583	130	559	128	547	126	497
Tasmania ..	48	475	48	473	47	471	44	473	43	475
Australia ..	1,294	7,446	1,286	7,453	1,279	7,441	1,262	7,455	1,250	7,357

(*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, 1926 TO 1930.

State.	At 30th June—									
	1926.		1927.		1928.		1929.		1930.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
Central Office ..	130	..	149	..	170	..	195	..	205	..
New South Wales	14,244	1,924	14,214	1,933	13,856	1,947	15,267	1,952	14,383	1,952
Victoria.. ..	11,226	1,156	11,607	1,145	10,950	1,142	11,067	1,180	10,709	1,175
Queensland ..	6,181	850	5,953	860	5,504	870	5,437	786	5,179	814
South Australia ..	4,275	424	4,388	402	4,144	413	4,117	421	3,954	414
Western Australia	2,986	379	3,061	357	2,883	358	2,929	365	2,902	398
Tasmania ..	1,615	247	1,555	247	1,509	236	1,533	276	1,517	270
Australia ..	40,657	4,980	40,927	4,944	39,016	4,966	40,545	4,980	38,849	5,023

4. **Registered Letters, Packets, etc.**—Particulars regarding registered articles for the year 1929–30 are given in the table hereunder :—

REGISTERED ARTICLES POSTED AND RECEIVED, 1929-30.

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 (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.
New South Wales ..	2,792	1,123	191	77	2,983	1,200	252	102
Victoria	2,032	1,143	111	63	2,143	1,206	171	96
Queensland ..	1,028	1,104	48	52	1,076	1,156	49	53
South Australia ..	582	996	29	49	611	1,045	32	55
Western Australia..	541	1,299	55	132	596	1,431	48	114
Tasmania ..	292	1,331	5	24	297	1,355	10	45
Australia ..	7,267	1,133	439	68	7,706	1,201	562	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 1926 to 1930 :—

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1926 TO 1930.

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.
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
1930	299,930	26,145	232,968	16,653	82,148	420	658,264
VALUE COLLECTED.							
	£	£	£	£	£	£	£
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	103,683	859	993,504
1930	436,025	42,457	334,491	24,755	101,716	716	940,160

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1926 TO 1930—*continued.*

REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
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
1930	38,518	3,465	30,449	2,044	9,354	52	83,882

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, 1930 :—

MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1929-30.

Service.	Orient S.N. Co.	Queensland Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
	£	£	£	£	£
Annual subsidy	130,000	2,200	5,500	4,813	33,000

During the year 1929-30 the amount paid for conveyance of mails at poundage rates by non-contract vessels was £39,273 ; by road services, £703,543 ; and by railways services, £554,850. The total expenditure during the financial year 1929-30 on the carriage of mails, as disclosed by the Profit and Loss Account, amounted to £1,436,316.

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 1929–30, and the methods adopted in the disposal thereof :—

DEAD LETTER OFFICES.—SUMMARY, 1929–30.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
LETTERS, POSTCARDS, AND LETTER-CARDS.							
Returned direct to writers or delivered	1,093,834	364,068	227,756	139,807	147,214	83,916	2,056,595
Destroyed in accordance with Act..	93,832	42,442	36,544	10,802	10,765	4,044	198,429
Returned to other States or Countries as unclaimed	46,942	28,720	19,402	8,158	16,395	1,266	120,943
Total	1,234,608	435,230	283,702	158,767	174,374	89,226	2,375,967
PACKETS AND CIRCULARS.							
Returned direct to writers or delivered	878,746	168,544	195,005	30,423	100,809	28,872	1,402,399
Destroyed in accordance with Act..	166,117	74,712	76,346	65,842	2,212	474	385,703
Returned to other States or Countries as unclaimed	1,886	40,035	9,563	4,824	976	5,352	62,636
Total	1,046,749	283,291	280,914	101,089	103,997	34,698	1,850,738
Grand Total (letters, packets, etc.)	2,281,357	718,521	564,676	259,856	278,371	123,924	4,226,705

During the year 1929–30 money and valuables to the amount of £124,831 were found in undeliverable postal articles, while 45,566 postal articles were posted without address, including 419 which contained money and valuables to the extent of £3,531.

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, 1929–30.* Particulars regarding the business transacted in each State for the year 1929–30 are given hereunder :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, 1929–30.

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 ..	8,155,584	7,949,112	56,357	2,553,784	56,972
Victoria	3,390,148	3,496,617	28,330	1,765,486	39,951
Queensland.. ..	2,828,476	2,592,332	20,348	641,435	14,131
South Australia ..	1,033,518	991,882	8,866	388,174	8,936
Western Australia ..	1,487,182	1,304,557	11,936	337,674	7,205
Tasmania	551,872	476,930	3,984	156,850	3,553
Australia	17,446,780	16,811,430	129,821	5,843,403	130,748

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

(iii) *Summary, Australia, 1926 to 1930.* The next table shows the total number and value of money orders and postal notes issued and paid in Australia from 1925-26 to 1929-30 :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, AUSTRALIA, 1925-26 TO 1929-30.

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).
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	5,741	15,591	5,737
1930 ..	3,415	17,447	3,224	16,811	15,879	5,843	15,924	5,968

(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 1929-30, classified according to the country where payable :—

MONEY ORDERS ISSUED.—COUNTRY WHERE PAYABLE, 1929-30.

State in which issued.	Where Payable.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
	NUMBER.				
New South Wales ..	1,436,078	14,363	97,861	26,541	1,574,843
Victoria	586,719	6,822	60,095	20,701	674,337
Queensland.. ..	495,401	2,173	27,906	13,131	538,611
South Australia ..	191,323	1,169	17,358	8,514	218,364
Western Australia ..	249,750	1,335	27,151	7,014	285,250
Tasmania	115,160	1,361	5,629	1,670	123,820
Australia ..	3,074,431	27,223	236,000	77,571	3,415,225
	VALUE.				
	£	£	£	£	£
New South Wales ..	7,663,054	59,276	305,115	128,139	8,155,584
Victoria	3,074,023	23,241	195,954	96,930	3,390,148
Queensland.. ..	2,675,309	7,261	87,125	58,781	2,828,476
South Australia ..	932,216	4,068	53,645	43,589	1,033,518
Western Australia ..	1,350,886	4,238	92,650	39,408	1,487,182
Tasmania	529,029	5,330	14,058	3,455	551,872
Australia ..	16,224,517	103,414	748,547	370,302	17,446,780

(*b*) *Orders Paid.* The number and value of money orders paid in each State during the year 1929-30, classified according to the country where issued, are given hereunder :—

MONEY ORDERS PAID.—COUNTRY OF ISSUE, 1929-30.

State in which Paid.	Where Issued.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
	NUMBER.				
New South Wales ..	1,425,502	41,067	22,362	15,532	1,504,463
Victoria	647,771	19,147	13,771	5,655	686,344
Queensland.. ..	466,261	4,209	6,220	4,239	480,929
South Australia ..	195,950	1,412	3,806	1,254	202,422
Western Australia ..	234,458	1,573	6,494	1,645	244,170
Tasmania	99,410	2,772	1,484	2,080	105,746
Australia ..	3,069,352	70,180	54,137	30,405	3,224,074
	VALUE.				
	£	£	£	£	£
New South Wales ..	7,640,941	149,928	98,339	59,904	7,949,112
Victoria	3,360,629	57,209	58,007	20,772	3,496,617
Queensland.. ..	2,543,267	11,188	25,110	12,767	2,592,332
South Australia ..	965,116	5,543	15,886	5,337	991,882
Western Australia ..	1,261,164	5,782	30,775	6,836	1,304,557
Tasmania	462,275	6,379	3,942	4,334	476,930
Australia ..	16,233,392	236,029	232,059	109,950	16,811,430

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 1929-30, 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, 1929-30.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	NUMBER.						
Issued in same State	4,558,896	3,142,456	1,434,289	708,261	757,237	342,500	10,943,639
Issued in other States	525,562	422,514	1,514,585	99,650	30,952	2,387,120	4,980,383
Total ..	5,084,458	3,564,970	2,948,874	807,911	788,189	2,729,620	15,924,022
	VALUE.						
	£	£	£	£	£	£	£
Issued in same State	1,828,878	1,186,140	528,371	247,149	287,807	117,023	4,195,368
Issued in other States	192,140	164,853	439,084	32,586	12,667	931,743	1,773,073
Total ..	2,021,018	1,350,993	967,455	279,735	300,474	1,048,766	5,968,441

The number and value of postal notes paid in Australia during the year showed an increase of 2 per cent. and 4 per cent. respectively over the corresponding figures for the year 1928–29.

9. **Gross Revenue, Postmaster-General's Department**—(i) *Analysis, States*, 1929–30. The following table shows the gross revenue classified according to branches in each State for the year 1929–30. The figures are supplied by the Treasury, and represent the actual collections for the year.

GROSS REVENUE, POSTMASTER-GENERAL'S DEPT., ANALYSIS, 1929–30.

Particulars.	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postage	2,103,048	1,445,412	740,468	401,956	335,532	152,666	5,179,082
Money order commission ..	113,421	66,401	34,900	17,802	19,358	7,637	259,609
Poundage on postal notes							
Private boxes and bags	25,075	13,447	13,907	8,602	5,523	2,631	69,185
Miscellaneous .	151,338	317,308	60,553	25,771	59,231	9,465	623,666
Total Postal ..	2,392,882	1,842,658	849,828	454,131	419,644	172,399	6,131,542
Telegraphs (ordinary)	492,011	311,882	234,443	170,162	134,766	46,748	1,390,012
Telegraphs (radio) ..	64,550	84,501	6,169	6,953	4,198	476	166,847
Total Telegraphs	556,561	396,383	240,612	177,115	138,964	47,224	1,556,859
Telephones ..	2,305,453	1,633,790	818,170	607,130	350,385	147,758	5,862,686
Grand Total ..	5,254,896	3,872,831	1,908,610	1,238,376	908,993	367,381	13,551,087

(a) Includes "Central Office" collections.

Increased telephone revenue (£403,127) largely contributed to the total increase of £737,691 over the revenue for 1928–29.

(ii) *Branches, 1926 to 1930.* 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., 1926 TO 1930.

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
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
1930	6,131,542	(d)1,556,859	5,862,686	13,551,087

Includes radio receipts (a) £35,815, (b) £45,030, (c) £22,177, (d) £166,847, and (e) £21,178.

As compared with the corresponding figures for the previous year, an increase of 5.8 per cent. is shown, the increases in the several branches being as follows :—Postal 4.2 per cent., Telegraph 5.9 per cent., and Telephone 7.4 per cent.

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, 1930. 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, 1929-30.

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Salaries and contingencies—	£	£	£	£	£	£	£	£
Salaries	79,814	2,399,532	1,691,961	808,500	629,085	431,362	214,486	6,254,740
Conveyance of mails	..	537,490	287,994	255,481	103,227	114,207	43,190	1,341,589
Contingencies ..	7,581	837,918	591,785	286,074	244,679	146,756	93,600	2,208,393
Ocean mails ..	130,000	..	..	..	..	..	..	130,000
Miscellaneous ..	1,025	37,182	24,993	7,886	10,333	4,946	8,015	94,380
Pensions and retiring allowances ..	..	41,937	48,794	..	..	19,301	..	110,032
Rent, repairs, maintenance	1,124	55,507	25,837	19,659	13,429	10,055	3,534	129,145
Supervision of works	..	..	..	..	..	..	247	247
Proportion of Audit Office expenses ..	..	4,700	3,366	1,763	1,108	789	415	12,150
New works—								
Telegraph and telephone	8,914	999,812	630,943	314,874	301,335	195,156	96,492	2,547,526
New buildings, etc.	..	150,832	54,448	25,533	15,670	*Cr.*24,012	1,715	224,186
Interest on transferred properties ..	..	114,328	61,362	45,575	37,523	21,869	9,924	290,581
Other	2,454,103 (*a*)	..	..	..	..	..	..	2,454,103
Total ..	2,682,561 (*b*)	5,179,247	3,421,483	1,765,345	1,356,389	920,429	471,618	15,797,072

(*a*) Particulars of apportionment to each State not available. (*b*) Including expenditure not apportioned to States.

(ii) *Total, 1926 to 1930.* 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, 1926 to 1930 inclusive.

EXPENDITURE, POSTMASTER-GENERAL'S DEPT., 1926 TO 1930.

Expenditure.	Year ended 30th June—				
	1926.	1927.	1928.	1929.	1930.
	£	£	£	£	£
Total	16,270,117	15,281,686	16,098,777	15,693,070	15,797,072

The total expenditure for 1929–30 decreased by 3 per cent. on the amount for 1925–26

11. **Profit or Loss, Postmaster-General's Department.**—(i) *States 1929–30.* The foregoing statements of gross revenue and expenditure which represent actual collections and payments made and include capital and interest payments cannot be taken to represent the actual results of the working of the Department for the year. Transport and Communication Bulletin No. 22 issued by this Bureau gives particulars of the earnings, working expenses and interest allocation for each of the branches but considerations of space preclude its repetition here. The net results for each branch in the several States after providing for working expenses, depreciation, and interest charges during the year, were as follow :—

PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1929-30.

Branch.	Profit or Loss.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
		£	£	£	£	£	£	£
Postal ..	Profit	211,505	210,196	119,075	30,123	12,213	..	557,105
	Loss	..	..	..	..	..	26,007	..
Telegraph ..	Profit	..	..	..	..	..	..	..
	Loss	80,482	26,465	61,529	26,938	27,733	9,041	232,188
Telephone ..	Profit	134,513	32,641	..	..	..	..	..
	Loss	..	..	79,405	126,661	5,964	82,158	127,034
All Branches	Profit	265,536	216,372	..	..	..	..	197,883
	Loss	..	..	21,859	123,476	21,484	117,206	..

After providing for depreciation, pensions and retiring allowances and interest on capital, the year 1929–30 closed with a profit of £197,883, which represents an increase of £141,359 on the result for the year 1928–29, when a profit of £56,524 was shown.

(ii) *Branches, 1926 to 1930.* The following statement gives particulars of the operating results of each branch for the period 1926 to 1930 :—

PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1926-30.

Year Ended 30th June—	Branch.							
	Postal.		Telegraph.		Telephone.		All Branches.	
	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£	£	£	£
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	..
1930 ..	557,105	..	..	232,188	..	127,034	197,883	..

12. **Capital Account.**—The appended statement shows particulars of the fixed assets of the Postmaster-General's Department at 30th June, 1930.

DETAILS OF FIXED ASSETS, 30th JUNE, 1930.

Particulars.	Net Value, 1st July, 1929. (*b*)	Capital Expenditure, 1929–30.	Gross Value, 30th June, 1930.	Less Depreciation, &c. 1929–30. (*a*)	Net Value, 30th June, 1930.
	£	£	£	£	£
Telephone Lines and equipment	29,184,290	2,539,013	31,723,303	863,767	30,859,536
Telegraph Lines and Trunk Line equipment	9,652,202	490,198	10,142,400	148,599	9,993,801
Telegraph equipment ..	497,933	104,494	602,427	33,467	568,960
Postal equipment	293,519	85,791	379,310	1,355	377,955
Sites, Buildings, Furniture, and Office equipment	9,016,358	244,271	9,260,629	14,918	9,245,711
Miscellaneous	621,339	45,885	667,224	43,747	623,477
Total	49,265,641	3,509,652	52,775,293	1,105,853	51,669,440

(*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 230 of Year-Book No. 23 are due to a re-arrangement of the Asset Accounts from 1st July, 1929.

During the past quinquennium the value of the fixed assets has increased by 53 per cent., the net value at 30th June, 1925, being £33,718,472.

§ 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 three years 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) *External Circulation or Routing of Traffic.* The external circulation system of the Commonwealth telegraph service has been considerably modified, resulting in the establishment of direct communication between cities and towns of importance which were formerly served through an intermediate repeating centre. The re-organization has eliminated the transit time which was involved in these intermediate transmissions, and in addition to the improvement thus effected in the grade of service, important economies in the labour formerly required in the manual re-transmission have been made. When full effect is given in the near future to the plans already approved, only 9 out of a total of 25 repeating centres will remain.

(ii) *Carrier Wave System.* The financial advantages as well as the stability in performance of carrier wave transmission on well constructed and adequately maintained aerial routes are reflected in the extension of the carrier wave system in Australia. This system permits a number of messages to be transmitted simultaneously over the one line. The system is now in operation between Perth and Adelaide, Adelaide and Melbourne, and Melbourne and Sydney, enabling direct communication to be established between Sydney and Perth, a distance of 2,708 miles. There are now 39,064 miles of uni-directional telegraph carrier channels in operation, and it is anticipated that the system will be available between Sydney and Brisbane before the end of 1931, providing an additional 5,000 miles of uni-directional carrier channels.

(iii) *Machine Telegraphy.* In order to speed up transmission, machine printing telegraph systems have been introduced in place of the manual systems between capital cities and between important country centres. Murray multiplex machine apparatus is in operation between Sydney and Melbourne, Sydney and Brisbane, Sydney and Adelaide, Sydney and Perth, Melbourne and Adelaide, Melbourne and Perth, Adelaide and Perth, Brisbane and Rockhampton, and Brisbane and Townsville, providing telegraph outlets which permit the carriage of very heavy loads with a minimum transit time. The operation of the apparatus has been steadily improved, and now is worked so that each channel has an output of up to 50 words per minute. Between Sydney and Bathurst, Sydney and West Maitland, Melbourne and Bendigo, Melbourne and Mildura, Brisbane and Toowoomba, Brisbane and Charleville, Perth and Fremantle, and Perth and Kalgoorlie, start-stop telegraph printing systems are in operation.

(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.

(vi) *Picturegram Service.* From the time the picturegram service was opened between Sydney and Melbourne on the 9th September, 1929, until the 30th June, 1930, 412 picturegrams were lodged, the revenue therefrom being £1,029. Any kind of picture or document may be accepted for transmission, the charges varying from 30s. to 67s. 6d. according to the size of the picture or document and the grade of transmission desired.

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 1926 to 1930 :—

TELEGRAPHS.—AUSTRALIA, SUMMARY, 30th JUNE, 1926 TO 1930.

Particulars.	1926.	1927.	1928.	1929.	1930.
Number of offices	8,904	9,111	9,136	9,252	9,317
Length of wire (miles)—					
Telegraph purposes only	65,471	70,563	73,303	72,642	71,629
Telegraph and telephone purposes ..	149,989	158,470	87,376	87,303	88,785
Length of line (miles)—					
Conductors in Morse cable ..	3,123	3,280	3,441	3,500	3,735
Conductors in submarine cable ..	3,598	4,251	4,505	4,676	4,524
Pole routes (miles)	85,547	93,237	97,110	96,467	98,450

(ii) *Particulars for each State.* The following table gives corresponding particulars for each State for the year 1929–30 :—

TELEGRAPHS.—STATES, SUMMARY, 30th JUNE, 1930.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of offices ..	3,093	2,442	1,464	794	974	550	9,317
Length of wire (miles)—							
Telegraph purposes only	20,964	8,449	18,960	9,551	12,983	722	71,629
Telegraph and telephone purposes	34,424	14,040	23,659	12,135	2,914	1,613	88,785
Length of line (miles)—							
Conductors in Morse cable	1,682	1,428	460	..	142	23	3,735
Conductors in submarine cable (statute miles) ..	3,288	281	307	225	..	423	4,524
Pole routes (*miles*) ..	32,672	19,360	15,891	15,244	11,804	3,479	98,450

A total length of 160,414 miles of wire is available for telegraph purposes, of which 88,785 miles are also used for telephone purposes, and the figures show increases of 469 (0.3 per cent.) and of 1,482 miles (1.73 per cent.) respectively over the corresponding mileages for the previous year. The decrease in the mileage of wire available for telegraph purposes only is 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, 1926 TO 1930.

Telegrams.	Year ended 30th June—				
	1926.	1927.	1928.	1929.	1930.
Number (*a*).. ..	17,637,716	17,274,289	16,608,226	16,345,152	15,724,246

(*a*) Including interstate cablegrams.

(ii) *Totals for each State.* The appended table shows the total number of telegrams dispatched in each State in 1929–30 according to the class of message transmitted :—

TELEGRAMS DISPATCHED.—STATES, 1929–30.

Class of Message Transmitted within the Commonwealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
Paid and Collect—							
Ordinary ..	4,369,424	3,011,662	2,247,935	993,315	1,491,501	302,728	12,416,565
Urgent ..	518,431	203,865	127,640	54,389	75,107	12,610	992,042
Press ..	283,495	180,764	110,378	52,472	40,522	50,416	718,047
Lettergram ..	90,415	74,757	81,883	40,897	72,076	30,868	390,896
Radiogram ..	20,410	6,235	5,855	5,296	3,554	8,065	49,415
Total ..	5,282,175	3,477,283	2,573,691	1,146,369	1,682,760	404,687	14,566,965
Unpaid—							
Service ..	114,178	70,051	50,206	49,141	55,676	20,180	359,432
Shipping ..	76,921	118,054	20,743	5,754	15,589	5,071	242,132
Meteorological ..	179,796	76,507	74,873	81,530	117,556	25,455	555,717
Total ..	370,895	264,612	145,822	136,425	188,821	50,706	1,157,281
Grand Total..	5,653,070	3,741,895	2,719,513	1,282,794	1,871,581	455,393	15,724,246

The figures in the foregoing table show a decrease in the total volume of telegraph business of 620,906 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 1925-26 to 1929-30 are given in earlier pages.

6. **Telegraph Density.**—Analysis of the latest world statistics available discloses a high telegraph density in Australia; the ratio of telegrams to population being the highest for any country in the world except New Zealand. The following table gives the figures for the more important countries:—

COMPARATIVE TELEGRAPH DENSITY STATISTICS.

Country.	Percentage of Telegraph to Total Wire Communication.	Telegraph Communication per Head of Population.
Australia	4.1	2.8
Austria	0.7	0.5
Belgium	3.0	0.7
Canada	0.6	1.5
Czecho-slovakia	2.0	0.3
Denmark	0.4	0.6
France	4.6	0.9
Germany	1.4	0.5
Great Britain	3.8	1.2
Hungary	2.3	0.4
Japan	2.0	1.0
Latvia	0.7	0.2
Netherlands	1.2	0.7
New Zealand	2.2	4.7
Norway	1.9	1.7
Poland	0.7	0.2
Spain	7.7	0.9
Sweden	0.5	0.7
Switzerland	1.5	0.7
Union of South Africa	2.8	0.7
United States of America	0.8	1.9

§ 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 1927-28 to 1929-30 :—

CABLEGRAMS.—AUSTRALIA, 1927-28 TO 1929-30.

Cablegrams.	Cablegrams Received.			Cablegrams Dispatched.			Total Cablegrams Received and Dispatched.		
	1927-28.	1928-29.	1929-30.	1927-28.	1928-29.	1929-30.	1927-28.	1928-29.	1929-30.
Number ..	710,501	727,256	718,339	759,823	808,812	781,982	1,470,324	1,536,068	1,500,321

(ii) *States.* The number of cablegrams received and dispatched in each State during the year 1929-30 is given hereunder :—

CABLEGRAMS.—STATES, 1929-30.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.(a)	Australia.
Number received ..	382,323	229,231	29,622	33,396	34,987	8,780	718,339
Number dispatched	399,653	250,769	38,021	39,624	43,339	10,576	781,982
Total ..	781,976	480,000	67,643	73,020	78,326	19,356	1,500,321

(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, 1930.

To—	Rate per Word and Route.		
	Via Pacific.	Via Eastern.	Via Beam.
European Countries ..	2s. 6d. to 2s. 7d.	2s. 6d. to 2s. 7d.	1s. 11½d. to 2s. 5½d.
Asiatic Countries	5s. 3d. to 6s. 3d.	2s. 5d. to 4s. 7d.	..
Africa	..	1s. 8d. to 5s. 4d.	2s. 2½d. to 2s. 1½d.
North America	1s. 7d. to 3s. 5d.	2s. 4d. to 4s. 4d.	1s. 5½d. to 3s. 7d.
Central America	3s. 10d. to 4s. 4d.	5s. to 6s. 1d.	3s. 5½d. to 4s. 10d.
West Indies	3s. to 5s. 3d.	4s. to 5s. 8d.	..
South America	4s. 1d. to 6d. 8d.	4s. 1d. to 7s. 5d.	3s. 9d. to 6s.

(ii) *Deferred Telegrams (via Cable or Beam).* 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" telegrams, 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 Telegrams.* The "Daily Letter" telegram 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 minimum 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 Letter Telegrams.* Week-end letter telegrams 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 addresses on Tuesday mornings or if practicable on Mondays. 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, Belgium, 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 Telegrams.* The rate per word on press messages exchanged with Great Britain is 6d. via cable and 4d. via Radio (Beam) service.

(vi) *Night Letter Telegrams.* 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.

§ 4. Telephones.

1. **Telephone Services.**—(i) *Mileage, etc., Australia.* The following table shows the mileage of lines, etc., for telephone purposes, giving trunk lines separately, on 30th June, 1928 to 1930:—

TELEPHONE LINES.—AUSTRALIA, 30th JUNE, 1928 TO 1930.

Particulars.		1928.	1929.	1930.
Ordinary Lines—				
Conduits	duct miles	5,268	5,507	5,844
,, ...	route miles	2,908	3,083	3,310
Conductors in aerial cables	loop mileage	7,254	6,055	5,461
Conductors in underground cables ..	,,	632,890	691,170	775,488
Conductors in cables for junction circuits	,,	93,936	98,065	87,275
Open conductors	single wire mileage	383,352	408,559	424,007
Trunk Lines—				
Telephone trunk lines only	miles	211,133	224,150	232,909
Telegraph and telephone purposes ..	,,	87,376	87,303	88,785

(ii) *Comparison with Other Countries.* Australia is steadily improving its position in the list of countries showing the most rapid advance in the use of the telephone, and it now occupies sixth place, with 80.8 telephones per 1,000 of population. This position may be considered highly satisfactory in view of the area and distribution of population in Australia and the average length of wire required to provide a subscriber's service. The average length of wire per telephone in Australia is 4.9 miles, as compared with 3.5 miles in the United States of America, 3.5 miles in New Zealand, and 2.9 miles in Canada.

(iii) *Government Policy.* A vigorous policy has been pursued by the Government in providing telephone facilities, with the result that the system has developed rapidly during recent years. Many of the concessions have been of such a character as to render the services unremunerative, but it is considered that they are justified from the standpoint of national development. The adoption of this policy has been the means of making telephone services available to a very large number of people, and particularly to those living in isolated localities. In providing facilities to meet present and future growth, full advantage is being taken of the best modern practices as adopted in other parts of the world.

(iv) *Trunk Line System.* The trunk line system of the Commonwealth aims to make the telephone service in Australia a nation-wide service and to improve long distance communication so that each subscriber may communicate with every other subscriber to the system. Notwithstanding the great distances separating the capital cities of the various States, commercial speech is now provided between practically all of the cities and towns in the Eastern States and South Australia. On the 18th December, 1930, a channel was established between Perth and Adelaide a circuit distance of 1,676 miles, thus enabling commercial conversations to be made between Western Australia and South Australia, Victoria and New South Wales. When the service is extended to Queensland, commercial speech will be practicable between Geraldton (W.A.), and Cloncurry (Q.), a circuit distance of 5,028 miles, and this will constitute a record in land line telephony.

The practicability of linking Tasmania telephonically with the mainland has been investigated by the Parliamentary Standing Committee on Public Works which has recommended that when funds can be made available a submarine telephone cable be laid from Lorne (V.) via King Island to Stanley (T.). 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. At the 30th April, 1931, there were forty-one carrier telephone systems in operation in Australia, giving a total of seventy-five channels with an aggregate channel mileage of approximately 21,300 miles.

(v) *Oversea Telephone Service.* On 30th April, 1930, an overseas telephone service between Australia and the United Kingdom was inaugurated. Since then the service has been extended to many other European countries and North and South America, whilst direct services from Australia to New Zealand and Java have also been established. The Australian subscriber now has access to approximately 32,000,000 telephones or 91 per cent. of the world total.

(vi) *Automatic Exchanges.* At 30th June, 1930, there were 67 automatic or semi-automatic exchanges in operation providing facilities for 154,631 subscribers' lines, 151,467 of which were in the metropolitan areas. 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.

(vii) *Summary for States.* Particulars relating to the telephone service in each State for the years ended 30th June, 1928 to 1930, will be found in the following table :—

TELEPHONE SERVICES.—SUMMARY, 1928 TO 1930.

Particulars.	Year (30th June).	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas	Australia.
No. of Exchanges ..	1928	1,811	1,573	844	522	610	338	5,698
	1929	1,880	1,620	891	537	626	347	5,911
	1930	1,951	1,656	924	551	652	360	6,094
No. of Telephone Offices (Including Exchanges)	1928	2,857	2,287	1,408	759	956	521	8,788
	1929	2,892	2,340	1,415	776	958	526	8,907
	1930	3,008	2,358	1,417	786	970	520	9,059
No. of lines connected ..	1928	137,602	108,678	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
	1930	150,606	118,074	49,737	42,868	22,558	11,969	395,812
No. of Instruments connected	1928	181,484	147,788	60,996	51,546	25,596	13,290	476,700
	1929	193,718	155,841	60,447	53,814	27,686	14,048	505,554
	1930	199,007	160,381	62,607	54,550	29,082	14,542	520,169
(*a*) No. of subscribers' Instruments	1928	177,150	144,746	54,907	50,349	24,606	12,568	464,326
	1929	189,154	152,657	58,332	52,512	26,400	13,288	492,403
	1930	194,253	157,325	60,451	53,189	27,829	13,747	506,794
(*b*) No. of public telephones	1928	2,651	2,208	1,471	736	948	531	8,545
	1929	2,779	2,256	1,482	770	935	521	8,743
	1930	2,879	2,295	1,522	785	957	528	8,966
(*c*) No. of other local Instruments	1928	1,683	834	618	461	42	191	3,829
	1929	1,785	928	633	532	291	239	4,408
	1930	1,875	761	634	576	296	267	4,409
Instruments per 100 of population	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	7.98
	1930	7.98	8.99	6.64	9.32	6.95	6.75	8.08
		£	£	£	£	£	£	£
Earnings	1928	1,965,173	1,447,504	724,615	575,837	300,823	134,198	5,148,150
	1929	2,138,369	1,567,241	779,105	606,329	330,567	143,381	5,564,992
	1930	2,361,924	1,685,377	839,531	632,367	363,327	150,507	6,033,033
Working expenses ..	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	561,992	252,047	159,353	4,427,818
	1930	1,660,982	1,230,603	678,680	563,847	271,644	187,676	4,593,432
		%	%	%	%	%	%	%
Percentage of working expenses on earnings	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
	1930	70.32	73.02	80.84	89.16	74.77	124.70	76.14

The number of instruments per 100 of population has increased from 7.58 in 1927–28 to 8.08 in 1929–30. The actual number of instruments has increased from 476,700 to 520,169, an increase of 9 per cent. Of the 520,169 instruments connected at 30th June, 1930, 226,789, or 43.6 per cent., were served by exchanges situated beyond the limits of the telephone networks of the six State capital cities. 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.

(viii) *Systems in Use.* The following table shows the percentage of automatic, common battery, and magneto telephone lines at 30th June, 1928 to 1930 :—

PERCENTAGE OF AUTOMATIC, COMMON BATTERY, AND MAGNETO LINES, 1928 TO 1930.

System.	30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Automatic	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
	1930	42.5	39.2	34.3	38.9	41.3	28.7	39.5
Common Battery ..	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
	1930	3.0	18.6	..	13.7	6.3	16.6	9.1
Magneto	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
	1930	54.5	42.2	65.7	47.4	52.4	54.7	51.4

(ix) *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 1929–30 :—

TELEPHONES.—SUBSCRIBERS' LINES AND DAILY CALLING RATE, 1929–30.

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	15,645	11.37	70,806	4.01	62,448	2.17	148,899	4.01
Victoria ..	8,140	10.79	60,286	3.84	48,375	1.81	116,801	3.48
Queensland ..	6,480	9.41	12,361	3.12	29,870	2.48	48,711	3.56
South Australia	6,100	8.62	17,284	3.31	19,329	1.71	42,713	3.34
Western Australia	7,491	6.90	4,007	4.20	10,465	1.64	21,963	3.90
Tasmania ..	2,829	4.34	1,047	2.19	7,772	2.13	11,648	2.67
Australia ..	46,685	9.49	165,791	3.80	178,259	2.04	390,735	3.68

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.

(x) *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 1927–28 to 1929–30 :—

TELEPHONES.—TRUNK LINE CALLS AND REVENUE FOR THE YEARS 1927–28 TO 1929–30.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
Total Calls for Year—	No.	No.	No.	No.	No.	No.	No.
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
1929–30 ..	12,250,856	9,380,862	6,190,891	3,966,504	2,075,417	1,524,185	35,388,715
Total Revenue for Year—	£	£	£	£	£	£	£
1927–28 ..	422,195	287,783	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
1929–30.. ..	549,585	382,055	331,305	174,119	110,955	49,048	1,597,067
Average Revenue per Call—	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
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
1929–30 ..	10.76	9.77	12.84	10.54	12.83	7.72	10.38

The number of trunk line calls recorded during 1929–30 increased by nearly 650,000 over the figures for the previous year, and the average revenue per call increased by 1.03d.

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.

Under the Wireless Telegraphy Act and Regulations, no wireless station can be installed or operated without a licence from the Postmaster-General. Licences are issued for the following:—(*a*) Coast Stations, which are operated at various points around the coast and in Papua and New Guinea by Amalgamated Wireless (Australasia) Ltd., under agreement with the Commonwealth; (*b*) Ship Stations. Regulations under the Navigation Act require that all ships registered in Australia of 1,600 tons or more registered tonnage or carrying more than twelve passengers, shall be fitted with an efficient radio telegraph installation; (*c*) Land Stations to be operated where no telegraph or telephone facilities exist; (*d*) Broadcasting Stations, other than those of the National Broadcasting Service; (*e*) Broadcast Listeners' Receiving Sets; (*f*) Portable Stations, for transportable sets on motor cars, &c.; (*g*) Aircraft Stations; (*h*) Experimental Stations; and (*i*) Special Stations, for services other than those named above.

The following tables show the number of each class of licence issued in each State, etc., during the years 1929-30 and 1930-31:—

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*) ..	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
Total Licences Issued	111,303	140,148	23,349	25,733	5,773	6,054	22	312,382	18	312,400

(*a*) In addition there are nine stations operated by the National Broadcasting Service.

WIRELESS LICENCES, 1930-31.

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	9	50	13	19	5	1	..	97	..	97
Land (*b*)	7	6	3	1	3	..	3	23	..	23
Broadcasting (*a*) ..	16	10	6	3	2	2	..	39	..	39
Broadcaster listeners'	122,470	137,005	24,062	30,217	9,075	8,232	21	331,082	46	331,128
Experimental ..	278	260	106	94	69	31	1	839	2	841
Portable	7	1	11	..	1	..	..	20	..	20
Aircraft	..	..	..	..	..	..	..	..	..	..
Special	3	10	..	..	4	..	..	17	..	17
Total Licences Issued	122,792	137,343	24,207	30,335	9,164	8,269	26	332,136	50	332,186

(*a*) In addition there are nine stations operated by the National Broadcasting Service.
(*b*) In addition to the licensed stations two are operated by the Postmaster-General's Departm ent, viz.:—Wave Hill (N.T.) and Camooweal (Q.).

(ii) *Broadcasting.*—The National Broadcasting Service which is controlled by the Postmaster-General's Department, the programmes being provided under contract by the Australian Broadcasting Company, now operates two stations in Sydney and Melbourne, and one each in the other capital cities. The licence fees paid by listeners provide the revenue of the National Service, the fee for each licence being 24s. per annum.

A relay station commenced broadcasting at Newcastle (N.S.W.) on the 19th December, 1930. This is the first of a series of stations to be erected and operated in country districts by the National Broadcasting Service to ensure satisfactory broadcast reception in all the thickly populated parts of the Commonwealth.

The services of other broadcasting stations are conducted by private enterprise under licence from the Postmaster-General. Licences are granted on conditions which ensure satisfactory alternative programmes for listeners. The fee for a broadcasting station licence is £25 and the maximum period of a licence is three years. The licensees of these stations do not share in the listeners' licence fees, but rely for their income on revenue received from the broadcasting of advertisements and other publicity.

Simultaneous broadcasting in the various States has been a regular feature for some years. By means of telephone trunk lines and amplifying apparatus, items of national interest and programmes of special merit are distributed to the various stations of the National Broadcasting Service. In some cases they are relayed overseas by means of short wave stations or the Anglo-Australian radiotelephone service. Frequently, the licensed stations also are linked by telephone trunk lines for simultaneous broadcasts.

(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. Additional services have since been opened to the United States of America, New Zealand, Java and South America, the fees per minute for conversations being £3, £1, £2 and £3, respectively. The rates to the United States of America and South America increase slightly for calls made to the western portions of these countries. During the year ended 30th June, 1931, 1,078 conversations took place, 712 originating in Australia and 366 in other countries. Of this number 718 conversations were between Great Britain and Australia and 214 between New Zealand and Australia.

(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, 1930 :—

RADIO TRAFFIC.—INTERNATIONAL, YEAR ENDED 30th JUNE, 1930.

Class of Traffic.	Number of Words Transmitted.			Number of Words Received.		
	United Kingdom.	Other Places.	Total.	United Kingdom.	Other Places.	Total.
Ordinary	901,347	436,509	1,337,856	592,918	138,535	731,453
Deferred	595,403	312,914	908,317	449,326	103,713	553,039
Government	67,843	7,640	75,483	69,056	416	69,472
Press (including Deferred press	224,787	26,756	251,543	971,719	30,576	1,002,295
Daily letter and week-end telegrams(*a*)	4,125,849	915,873	5,041,722	2,382,078	240,699	2,622,777
Total	5,915,229	1,699,692	7,614,921	4,465,097	513,939	4,979,036

(*a*) Includes Christmas and New Year Greeting telegrams.

(*b*) *Coast Stations.* Particulars of the traffic handled by the several coast stations during the year 1929-30 are as follows :—

RADIO TRAFFIC.—COAST STATIONS, 1929-30.

State or Territory.	Particulars.				
	Total, Paying Words.	Messages.			
		Paying.	Service.	Weather.	Total.
	No.	No.	No.	No.	No.
New South Wales ..	1,100,273	70,616	544	4,061	75,221
Victoria	94,906	7,760	14	1,292	9,066
Queensland	443,627	27,444	1,111	5,356	33,911
South Australia	74,969	6,027	283	940	7,250
Western Australia ..	282,746	16,235	325	3,421	19,981
Tasmania	183,140	11,221	696	626	12,543
Northern Territory ..	59,822	2,696	463	1,951	5,110
Australia	2,239,483	141,999	3,436	17,647	163,082
Papua	292,284	15,401	801	1,151	17,353
Grand Total ..	2,531,767	157,400	4,237	18,798	180,435

(c) *Island Stations.* Particulars of the island radio traffic dealt with during the year 1929-30 are given hereunder :—

RADIO TRAFFIC.—ISLAND STATIONS, 1929-30.

Particulars.	To Australia.	From Australia.	Inter-Island.	Ship.	Service.	Total.
Messages	14,864	12,452	25,922	1,624	..	54,862
Words	305,041	275,494	388,601	21,915	..	991,051

(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, 1931, 208 first class and 339 second class certificates had been issued under the new conditions.

At 30th June, 1931, 5 limited certificates in radiotelegraphy, 38 limited certificates in radiotelephony, and 755 amateur proficiency certificates, in addition to 116 watchers' certificates, had been issued.