

CHAPTER VI.

TRANSPORT AND COMMUNICATION.

A. SHIPPING.

§ 1. System of Record.

The system of recording statistics of oversea shipping 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 forwarded to the Commonwealth Bureau of Census and Statistics. Similar documents furnish information regarding oversea migration and for interstate migration by sea. 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 1923-24 to 1932-33 :—

TOTAL OVERSEA SHIPPING, ENTERED.—AUSTRALIA.

Year.	Steam.		Sailing.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
1923-24	1,437	4,808,129	109	103,007	1,546	4,911,136
1924-25	1,675	5,535,871	51	60,529	1,726	5,596,400
1925-26	1,537	5,245,222	46	58,583	1,583	5,303,805
1926-27	1,598	5,512,840	26	46,030	1,624	5,558,870
1927-28	1,544	5,373,485	33	45,560	1,577	5,419,045
1928-29	1,564	5,521,725	18	29,858	1,582	5,551,583
1929-30	1,499	5,413,192	23	31,254	1,522	5,444,446
1930-31	1,517	5,562,230	17	19,287	1,534	5,581,517
1931-32	1,497	5,653,731	22	33,167	1,519	5,686,898
1932-33	1,531	5,891,878	23	41,446	1,554	5,933,324

The average tonnage of vessels entered has risen from 3,177 tons per vessel in 1923-24 to 3,818 tons in 1932-33.

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.**—Records, as they are invariably made, of the number and tonnage of vessels arriving from and departing to particular countries may be misleading for the reason that the tonnage of a vessel can be recorded against one country only, notwithstanding that the same vessel on the same

voyage may carry cargo or passengers to or from Australia for several countries. For instance, a mail steamer on a voyage from the United Kingdom to Australia, through the Suez Canal, may call at Marseilles, Genoa, Port Said, Aden and Colombo yet can be credited only to the United Kingdom, the country where the voyage commenced, to the exclusion of all of the others from the records. Also a number of vessels touch at New Zealand ports on their voyages to and from the United States of America and Canada, but their tonnages are not included in the records of Australian shipping trade with New Zealand. Similarly, the record of shipping engaged in trade between Australia and the United Kingdom via South African ports does not show tonnage to and from South Africa, the whole of it being included in the figures for United Kingdom. In view of this defect, statistics relating to the direction of the shipping to and from Australia are restricted to the following tables in which countries situated on the main trade routes are grouped together. This grouping into larger geographical divisions to some extent avoids the limitations referred to, except, as already pointed out, in the case of Africa and New Zealand.

OVERSEA SHIPPING, AUSTRALIA—DIRECTION.

Countries.	Cargo and Ballast.	1928-29.	1929-30.	1930-31.	1931-32.	1932-33.
TONNAGE ENTERED.						
United Kingdom and European Countries	Cargo	1,759,576	2,043,137	1,632,252	1,524,673	1,549,889
	Ballast	35,563	39,840	248,998	593,997	946,342
New Zealand	Cargo	476,987	457,812	400,623	426,704	448,684
	Ballast	147,819	166,948	157,029	97,781	110,559
Asiatic Countries and Islands in the Pacific	Cargo	1,372,717	1,329,505	1,196,313	1,182,212	1,291,014
	Ballast	353,350	121,907	765,805	895,825	441,286
Africa	Cargo	57,453	42,304	34,543	7,836	19,129
	Ballast	75,807	52,103	261,442	226,226	144,699
North and Central America	Cargo	1,254,911	1,194,358	861,415	802,672	966,985
	Ballast	11,480	8,305	12,987	..	12,088
South America	Cargo	5,920	8,227	2,821	2,321	2,649
	Ballast	..	..	7,289	16,151	..
	Cargo	4,927,564	5,075,343	4,127,967	3,946,918	4,278,350
	Ballast	624,019	369,103	1,453,550	1,739,980	1,654,974
Total .. ..	.. ..	5,551,583	5,444,446	5,581,517	5,686,898	5,933,324

TONNAGE CLEARED.						
United Kingdom and European Countries	Cargo	2,313,817	2,247,735	2,457,125	2,673,463	2,496,405
	Ballast	..	5,537	..	5,659	11,784
New Zealand	Cargo	514,588	544,643	469,806	385,088	460,937
	Ballast	29,189	43,584	19,121	66,739	93,613
Asiatic Countries and Islands in the Pacific	Cargo	1,390,401	1,061,434	1,651,536	1,647,769	1,657,465
	Ballast	444,169	594,752	311,894	249,981	440,372
Africa	Cargo	122,965	45,114	(a)169,060	42,096	33,567
	Ballast	672	4,205	..	56	2,627
North and Central America	Cargo	536,134	633,692	450,702	488,134	542,663
	Ballast	164,290	306,629	120,786	130,270	146,511
South America	Cargo	29,356	12,356	18,643	19,631	23,272
	Ballast	..	..	..	..	..
	Cargo	4,907,261	4,544,974	5,216,872	5,256,181	5,213,409
	Ballast	638,320	954,797	451,801	452,705	694,907
Total .. ..	.. ..	5,545,581	5,499,681	5,668,673	5,708,886	5,908,316

(a) Includes 23 vessels of 71,801 tons cleared to Las Palmas and 13 vessels of 40,966 tons cleared to Port Said for orders, all of which were subsequently diverted to ports in the United Kingdom and Europe.

3. Nationality of Oversea Shipping.—The greater part of the shipping visiting Australia is of British nationality, though the proportion of British tonnage is declining. The proportion which British ships represent has been reduced during the past three years mainly by an increase in the tonnage of Japanese, Norwegian and Swedish vessels.

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.

Nationality.	Tonnage.				
	1928-29.	1929-30.	1930-31.	1931-32.	1932-33.
BRITISH—					
Australian	206,188	211,890	227,550	230,996	264,848
United Kingdom	3,286,445	3,244,561	3,086,586	3,138,330	3,218,273
Canadian	77,907	57,282	38,683	42,032	54,228
New Zealand	415,517	399,209	320,822	260,628	291,329
Other British	120,580	84,928	62,398	59,905	115,681
Cargo	3,703,435	3,726,326	2,924,814	2,680,856	2,831,878
Ballast	403,202	271,544	811,225	1,051,035	1,112,481
Total British	4,106,637	3,997,870	3,736,039	3,731,891	3,944,359
Per cent. on total	73.97	73.43	66.94	65.62	66.48
FOREIGN—					
Danish	34,016	72,431	44,693	46,061	107,052
Dutch	147,843	154,036	147,425	156,617	185,342
French	118,842	106,939	102,641	90,552	108,032
German	137,766	105,435	114,922	116,004	117,589
Italian	54,716	63,840	68,220	68,220	76,674
Japanese	286,607	207,910	671,742	688,712	546,088
Norwegian	255,270	307,943	339,695	395,269	394,470
Swedish	92,397	86,540	114,244	111,196	136,059
United States	289,228	267,827	186,800	205,485	245,530
Other Foreign	28,261	73,075	55,096	76,891	72,129
Cargo	1,224,129	1,349,017	1,203,153	1,266,062	1,446,472
Ballast	220,817	97,559	642,325	688,945	542,493
Total Foreign	1,444,946	1,446,576	1,845,478	1,955,007	1,988,965
Per cent. on total	26.03	26.57	33.06	34.38	33.52
Cargo	4,927,564	5,075,343	4,127,967	3,946,918	4,278,350
Per cent. on total	89.76	93.22	73.96	69.40	72.11
Ballast	624,019	369,103	1,453,550	1,739,980	1,654,974
Per cent. on total	11.24	6.78	26.04	30.60	27.89
Grand Total	5,551,583	5,444,446	5,581,517	5,686,898	5,933,324

The Australian tonnage which entered Australia from overseas during the year 1932-33 represented 4.47 per cent. of the total tonnage entered. This figure was greater than the average for the quinquennium, which was 4.05 per cent. The Australian tonnage has decreased considerably since 1928, due mainly to the disposal of Australian-owned vessels to foreign owners or to other Australian owners and transferred to the interstate trade, and to the sale effected in April, 1928, of the five Bay liners and the freighters *Fordsdale* and *Ferndale* to the White Star Line.

§ 3. Shipping of Ports.

The total shipping tonnage—oversea, interstate, and coastwise—which entered the more important ports of Australia during the year 1932-33, together with similar information in regard to some of the ports of New Zealand and of Great Britain for the year 1932, 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 (N.S.W.) ..	9,360,116	London	26,855,937
Melbourne (Vic.) ..	6,775,924	Liverpool (including Birkenhead) ..	15,506,106
Adelaide (S.A.) ..	4,245,445	Southampton	10,870,325
Brisbane (Qld.) ..	3,637,774	Tyne Ports	8,732,820
Newcastle (N.S.W.) ..	3,506,472	Cardiff	6,883,233
Fremantle (W.A.) ..	3,460,481	Plymouth	6,633,534
Townsville (Qld.) ..	1,163,199	Hull	5,422,419
Hobart (Tas.) ..	896,116	Swansea	3,920,337
Geelong (Vic.) ..	848,314	Manchester (including Runcorn)	3,510,683
Pirie (S.A.) ..	663,340	Bristol	3,125,421
Kembla (N.S.W.) ..	639,537	Sunderland	2,836,212
Cairns (Qld.) ..	591,033	Harwich	2,699,809
Launceston (Tas.) ..	410,197	Grimsby (including Immingham) ..	2,478,923
Lincoln (S.A.) ..	407,999	Blvth	2,361,981
Burnie (Tas.) ..	392,612	Middlesbrough ..	2,279,631
Wallaroo (S.A.) ..	342,188	Dover	2,217,520
Albany (W.A.) ..	337,364	Newport	2,153,125
Mackay (Qld.) ..	332,247	Portsmouth	2,024,522
Devonport (Tas.) ..	322,243		
Thursday Island (Qld.) ..	301,579	SCOTLAND—	
Rockhampton (Qld.) ..	288,754	Glasgow	5,230,194
Geraldton (W.A.) ..	269,813	Greenock	3,059,790
		Leith	2,031,956
NEW ZEALAND—		NORTHERN IRELAND—	
Wellington	3,448,286	Belfast	6,351,927
Auckland	2,424,186		
Lyttleton	1,856,568		
Dunedin	868,521		

§ 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 1929 to 1933, 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.
NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Com- posite.	Total.				
1929	14	2	..	16
1930	11	2	..	13
1931	4	..	..	4
1932	8	2	..	10
1933	3	1	..	4

TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1929	383	287	17	14	..	..	400	301
1930	310	219	12	12	..	..	322	231
1931	60	43	..	..	..	..	60	43
1932	166	109	15	15	..	..	181	124
1933	140	115	3	3	..	..	143	118

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, 1933 :—

VESSELS ON THE STATE REGISTERS, 31st DECEMBER, 1933.

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 ..	47	1,235	314	64,737	259	4,694	218	7,508	48	11,782	886	89,956
Victoria ..	41	4,160	131	141,588	54	2,610	53	825	63	27,730	342	176,913
Queensland ..	16	2,429	36	5,452	54	849	94	1,375	27	4,002	227	14,107
South Australia ..	11	337	59	9,624	58	2,576	53	3,107	21	4,743	202	20,387
Western Australia ..	9	173	28	5,818	29	567	289	4,559	21	4,370	376	15,487
Tasmania ..	5	530	43	4,858	66	1,651	64	2,408	1	382	179	9,829
Northern Territory ..	..	..	..	..	3	44	17	163	..	..	20	207
Total ..	129	8,864	611	232,077	523	12,991	788	19,945	181	53,009	2,232	326,886

§ 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.) No complexity enters into the record of those in category (a), but with regard to the method of recording the movements of the overseas vessels (b) some explanation is necessary. Each State desires that its

shipping statistics (which are prepared in the Commonwealth Bureau of Census and Statistics) shall show in full its shipping communication with oversea countries, but at the same time it is necessary to avoid any duplication in the statistics for Australia as a whole. In order to meet these dual requirements, a vessel arriving in any State from an overseas country—say United Kingdom—*via* another State, is recorded in the second State as from United Kingdom, *via* States, thus distinguishing the movement from a *direct* oversea entry. Continuing the voyage, the vessel is in the third State again recorded for the statistics of the State concerned as from United Kingdom *via* other States. On an inward voyage the *clearance* from the first State to the second State is a *clearance* interstate, and is included with interstate tonnage in conformity with the pre-federation practice of the States, and to preserve the continuity of State statistics. Thus, movements of ships which are, from the standpoint of Australia as a whole, purely coastal movements, must for the individual States be recorded as “Oversea *via* other States” or “Interstate” according to the direction of the movement. The significance of the record of these movements will be more clearly seen from the following tabular presentation of the inward and outward voyages to and from Australia of a mail steamer which, it is presumed, reaches Fremantle (Western Australia) and then proceeds to the terminal port of the voyage—Sydney (New South Wales)—*via* the States of South Australia and Victoria. From the terminal port the vessel will commence the outward voyage, and retrace its inward track.

ITINERARY OF AN OVERSEAS VESSEL ON AUSTRALIAN COAST.

Particulars.	Recorded as—	
	For the State and for Australia.	For the States.
Inward Voyage—		
Enters Fremantle from United Kingdom	Oversea direct	
Clears Fremantle for Adelaide .. ..	.. ..	Interstate direct
Enters Adelaide from United Kingdom <i>via</i> Fremantle .. ..	.. ..	.. .. Oversea <i>via</i> States
Clears Adelaide for Melbourne .. ..	.. ..	Interstate direct
Enters Melbourne from United Kingdom <i>via</i> Adelaide .. ..	.. ..	.. .. Oversea <i>via</i> States
Clears Melbourne for Sydney .. ..	.. ..	Interstate direct
Enters Sydney from United Kingdom <i>via</i> Melbourne .. ..	.. ..	.. .. Oversea <i>via</i> States
Outward Voyage—		
Clears Sydney for United Kingdom <i>via</i> Melbourne .. ..	.. ..	.. .. Oversea <i>via</i> States
Enters Melbourne from Sydney .. ..	.. ..	Interstate direct
Clears Melbourne for United Kingdom <i>via</i> Adelaide .. ..	.. ..	.. .. Oversea <i>via</i> States
Enters Adelaide from Melbourne .. ..	.. ..	Interstate direct
Clears Adelaide for United Kingdom <i>via</i> Fremantle .. ..	.. ..	.. .. Oversea <i>via</i> States
Enters Fremantle from Adelaide .. ..	.. ..	Interstate direct
Clears Fremantle for United Kingdom ..	Oversea direct	

From the method outlined above, the requirements for Australia and for the individual States are ascertained as follows :—(a) The aggregate of all ships recorded for each State as “Oversea *direct*” gives the oversea shipping for Australia as a whole. (b) The aggregate for all ships recorded in any State as “Oversea *direct*” plus those recorded as “Oversea *via* States” gives the total *oversea shipping* for that State. (c) From the example given in the table it may be noticed that for every entry “Oversea *via* States” there is a corresponding clearance “Interstate,” so that according to the purpose for which the figures are required, the movements of “oversea ships *via* States” can be added to the recorded interstate shipping, and thus furnish figures showing the total interstate *movement* of shipping, or a similar deduction may be made from the recorded interstate shipping to give the total movement of shipping engaged solely in interstate trade.

2. **Vessels and Tonnage Entered.**—(*Interstate direct.*) 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 1928-29 to 1932-33. The shipping of 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.

States and Territory.	1928-29.	1929-30.	1930-31.	1931-32.	1932-33.
NUMBER.					
New South Wales	1,723	1,588	1,564	1,483	1,656
Victoria	1,704	1,739	1,534	1,494	1,678
Queensland	455	490	469	483	485
South Australia	730	753	606	598	644
Western Australia	339	387	305	311	309
Tasmania	950	1,022	941	933	984
Northern Territory	33	26	21	19	20
Total	5,934	6,005	5,440	5,321	5,776

TONNAGE.					
New South Wales	4,103,542	4,079,399	3,996,976	3,947,128	4,583,979
Victoria	3,416,924	3,552,904	3,274,609	3,154,197	3,594,992
Queensland	1,106,905	1,164,183	1,061,560	1,123,578	1,184,471
South Australia	2,238,706	2,504,065	2,143,692	2,176,155	2,191,498
Western Australia	1,663,818	1,915,695	1,653,953	1,643,755	1,695,267
Tasmania	853,982	1,207,640	1,134,113	1,094,767	1,255,877
Northern Territory	59,048	64,075	62,570	51,570	53,553
Total	13,442,925	14,487,961	13,327,473	13,191,150	14,559,637

3. **Oversea Vessels Moving Interstate.**—(*Oversea via States.*) To ascertain the aggregate movement of shipping between the States during the year 1932-33, 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, 1932-33.

States and Territory.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	459	2,340,152	479	2,546,910	938	4,887,062
Victoria	426	2,274,810	481	2,606,668	907	4,881,478
Queensland	232	1,442,977	232	1,470,359	464	2,913,336
South Australia	261	1,500,436	272	1,555,234	533	3,055,670
Western Australia	38	132,411	11	40,491	49	172,902
Tasmania	33	146,292	93	568,348	126	714,640
Northern Territory	1	1,218	..	..	1	1,218
Total	1,450	7,838,296	1,568	8,788,010	3,018	16,626,306

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 1928-29 to 1932-33 were as follow :—

VESSELS ENGAGED SOLELY IN INTERSTATE TRADE. NUMBER AND TONNAGE ENTERED AND CLEARED.—AUSTRALIA.

Year.	Entered.		Cleared	
	Vessels.	Tonnage.	Vessels.	Tonnage.
1928-29	4,373	5,512,897	4,383	5,611,354
1929-30	4,396	6,218,634	4,373	6,091,994
1930-31	4,054	5,761,040	4,074	5,838,626
1931-32	3,958	5,512,175	3,999	5,557,763
1932-33	4,208	5,771,627	4,170	5,789,251

5. **Total Interstate Movement of Shipping.**—(i) *Australia.* The appended table shows the total interstate movement of shipping including oversea vessels moving interstate for each of the years 1928-29 to 1932-33 :—

TOTAL INTERSTATE MOVEMENT OF SHIPPING.—AUSTRALIA.

Year.	Entered.		Cleared.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
1928-29	7,823	22,648,956	7,833	22,747,413
1929-30	7,851	23,616,739	7,828	23,490,099
1930-31	6,916	20,987,466	6,936	21,065,052
1931-32	6,631	20,475,864	6,672	20,521,452
1932-33	7,226	22,397,933	7,188	22,415,557

(ii) *States.* The following table shows the number and tonnage of vessels which entered and cleared each State from and for other States during 1932-33, including the coastal movements of oversea vessels :—

INTERSTATE SHIPPING OF EACH STATE, 1932-33.

States and Territory.	Entered.		Cleared.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	2,115	6,924,131	2,053	6,701,695
Victoria	2,104	5,869,802	2,123	6,126,596
Queensland	717	2,627,448	721	2,643,239
South Australia	905	3,691,934	959	3,887,130
Western Australia	347	1,827,678	306	1,646,595
Tasmania	1,017	1,402,169	1,007	1,356,763
Northern Territory	21	54,771	19	53,539
Total, Australia	7,226	22,397,933	7,188	22,415,557

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 1929 to 1933 :—

INTERSTATE AND COASTAL STEAMSHIP SERVICES.—AUSTRALIA.

Particulars.	1929.	1930.	1931.	1932.	1933.
Number of companies making returns	29	22	23	23	22
Number of steamships	181	173	162	154	154
Tonnage { Gross	360,459	349,163	319,756	306,878	309,309
Net	202,749	196,342	178,549	171,089	172,334
Horse-power (Nominal)	37,911	36,230	34,357	33,340	34,514
Number of passengers for which licensed { 1st class	7,983	7,686	7,278	7,222	7,230
2nd class and steerage	1,755	1,784	1,775	1,755	1,755
Masters and officers	588	563	524	498	512
Engineers	598	576	538	514	529
Crew	4,710	4,630	4,232	4,072	4,193

§ 6. Tonnage of Cargo.

1. Oversea and Interstate Cargo.—(i) *Australia.* 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 1928–29 to 1932–33. Cargo which was stated in cubic feet has been converted to tons measurement on the basis of 40 cubic feet to the ton.

CARGO MOVEMENT.

Year.	Oversea Cargo.				Interstate Cargo.	
	Discharged.		Shipped.		Shipped.	
	Tons Weight.	Tons Meas.	Tons Weight.	Tons Meas.	Tons Weight.	Tons Meas.
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
1930–31	2,375,412	1,037,889	5,802,593	639,032	3,295,051	805,314
1931–32	2,072,334	894,380	5,951,914	726,040	3,002,327	1,007,351
1932–33	2,679,800	1,217,218	5,641,926	778,579	3,819,654	1,047,054

(ii) *Principal Ports.* The following table shows the tonnage of Oversea and Interstate Cargo discharged and shipped at principal ports, 1932-33 :—

TONNAGE OF CARGO DISCHARGED AND SHIPPED AT PRINCIPAL PORTS, 1932-33.

Port.	Discharged.			Shipped.		
	Oversea.	Interstate.	Total.	Oversea.	Interstate.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sydney	1,217,527	769,942	1,987,469	1,649,813	548,503	2,198,316
Newcastle	79,798	624,015	703,813	240,314	1,587,106	1,827,420
Kembla	30,195	141,162	171,357	57,324	116,925	174,249
Other .. ..	..	548	548	9,119	43,202	52,321
Total, New South Wales	1,327,520	1,535,667	2,863,187	1,956,570	2,295,736	4,252,306
Melbourne	1,178,786	1,408,958	2,587,744	957,321	651,781	1,609,102
Geelong	109,900	174,612	284,512	357,026	32,356	389,382
Other	12,426	13,316	25,742	37,339	4,586	41,925
Total, Victoria	1,301,112	1,596,886	2,897,998	1,351,686	688,723	2,040,409
Brisbane	222,763	304,483	527,246	170,121	112,664	282,785
Cairns	5,641	32,582	38,223	80,413	98,165	178,578
Townsville	36,725	70,262	106,987	93,920	60,676	154,596
Other	11,397	36,261	47,658	97,660	82,826	180,486
Total, Queensland	276,526	443,588	720,114	442,114	354,331	796,445
Adelaide	325,167	563,949	889,116	481,617	235,636	717,253
Pirie	53,952	171,805	225,757	376,504	134,659	511,163
Walleroo	33,605	1,127	34,732	254,850	15,291	270,141
Whyalla .. ..	..	..	..	13,757	613,027	626,784
Other	12,886	26,937	39,823	257,261	8,446	265,707
Total, South Australia	425,610	763,818	1,189,428	1,383,989	1,007,059	2,391,048
Fremantle	453,800	207,383	661,183	748,495	25,287	773,782
Bunbury	31,211	529	31,740	127,148	20,595	147,743
Geraldton	26,738	4,846	31,584	161,829	..	161,829
Other	2,847	7,353	10,200	55,978	7,472	63,450
Total, Western Australia	514,596	220,111	734,707	1,093,450	53,354	1,146,804
Hobart	38,933	257,748	296,681	154,999	185,393	340,392
Launceston	3,914	84,823	88,737	28,603	51,643	80,246
Other	976	64,995	65,971	8,811	229,161	237,972
Total, Tasmania	43,823	407,566	451,389	192,413	466,197	658,610
Darwin (Northern Territory)	7,831	4,843	12,674	283	1,308	1,591
Total, AUSTRALIA	3,897,018	4,972,479	8,869,497	6,420,505	4,866,708	11,287,213

a Includes Devonport, 135,624 tons.

2. **Nationality.**—The following table shows the total oversea cargo discharged and shipped according to the nationality of the vessels carrying during the years 1928–29 to 1932–33 :—

OVERSEA CARGO DISCHARGED AND SHIPPED.—TONS.(a)

Vessels Registered at Ports in—	1928–29.	1929–30.	1930–31.	1931–32.	1932–33.
British—					
Australia	255,296	237,792	219,168	223,841	229,930
United Kingdom	6,988,043	6,861,323	5,528,848	5,429,998	5,644,962
Canada	190,273	135,154	86,775	64,169	88,733
New Zealand	456,560	441,593	357,258	260,988	317,821
Other British	222,787	163,949	98,492	134,739	221,606
Total British	8,112,959	7,839,811	6,290,541	6,113,735	6,503,052
Per cent. on Total	71.44	69.72	63.83	63.39	63.03
Foreign—					
Denmark	117,499	227,779	133,777	137,378	296,265
France	153,670	119,533	92,460	76,666	95,977
Germany	385,692	269,783	241,868	248,983	258,915
Italy	92,476	108,605	90,412	73,962	107,503
Japan	532,174	436,747	1,146,557	1,161,303	1,071,568
Netherlands	280,675	290,949	234,897	254,768	313,188
Norway	687,509	876,701	868,346	876,991	883,810
Sweden	330,290	355,621	360,373	313,986	418,101
United States of America	585,587	512,923	282,383	232,182	226,033
Other Foreign	77,943	206,311	113,312	154,714	143,111
Total Foreign	3,243,515	3,404,952	3,564,385	3,530,933	3,814,471
Per cent. on Total	28.56	30.28	36.17	36.61	36.97
Grand Total	11,356,474	11,244,763	9,854,926	9,644,668	10,317,523

(a) Tons weight and tons measurement combined.

§ 7. 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 were 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, 1934, show that the rate for general merchandise from Australia to United Kingdom and Continent was 63s. per ton weight or measurement, while the rates for wheat and wool (greasy) were respectively 22s. 6d. per ton weight and 1½d. per lb. plus 5 per cent. less 10 per cent. The charter rate for wheat was 24s. per ton.

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, 1934, was included in the Transport and Communication Bulletin No. 24, 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 1933 are shown in the Transport and Communication Bulletin No. 24. This information also was 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).

(ii) *Amending Acts.* 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 provisions of the Act.

Under an amendment of the Principal Act made by 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. By Order in Council under this provision, British vessels of not less than 10,000 tons gross register and of a speed of not less than 15 knots (reduced in December, 1928, to 14 knots) were granted permission—as exempt from the coasting trade provisions of the Act—to engage in the carriage of passengers between the port of Hobart and the ports of Brisbane, Sydney, and Melbourne during the periods 6th March, 1926, to 31st May, 1926; 1st January, 1927, to 31st May, 1927; 1st January, 1928, to 31st May, 1928; and 1st December, 1928, to 31st May, 1929. No further exemption was granted till December, 1932. The exemption was, however, then repeated as from 9th December, 1932, to 31st May, 1933; later, as from 1st December, 1933, to 31st May, 1934; and has been issued, in advance, for the period from 1st December, 1934, to 31st May, 1935.

A Bill to further amend the Act was introduced into the House of Representatives on 24th May, 1933, the purpose of the Bill being to implement, and to enable the Commonwealth to ratify, a number of International Conventions. Of these, the principal are the Convention for the Safety of Life at Sea, London, 1929, and the Load Line Convention, London, 1930.

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 two Parliamentary Papers (No. 86 printed 14th March, 1927, and No. 108 printed 9th May, 1927).

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 railways owned by the different States are referred to throughout as "State" and those owned by the Commonwealth 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 Railway 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.

4. **Grafton-South Brisbane (Uniform Gauge) Line.**—The line from Grafton (New South Wales) to Brisbane (Queensland) which was opened for traffic on 27th September, 1930, was constructed to overcome the break of gauge between Sydney and Brisbane, and is the first step towards uniform gauge railway communication between the capitals of the mainland States. It was constructed under agreement between the Commonwealth and the States of New South Wales and Queensland, and is of 4ft. 8½in. gauge. The work consisted of regrading and relaying the existing New South Wales line between Grafton and Kyogle and the construction of a new line 94.82 miles in length from Kyogle (New South Wales) to South Brisbane (Queensland). Under the agreement, the Commonwealth in the first instance provided the cost of the work, of which one-fifth was deemed to have been on behalf of the Commonwealth, and four-fifths on behalf of the five mainland States of the Commonwealth collectively on a population basis. The agreement also provides that if in any financial year the earnings from the line exceed the working expenses, the excess shall be applied in paying to the Commonwealth the interest on the money provided by it on behalf of the States and the Commonwealth. The order in which such excess shall be applied is laid down in the agreement, and provides that the interest on the quotas of Victoria, South Australia, and Western Australia shall be paid first, then the interest on the quotas of Queensland and New South Wales, and lastly the interest on the quota of the Commonwealth. Any balance remaining after payment of interest will be returned to Queensland and New South Wales. The States of Victoria, South Australia and Western Australia did not enter into the agreement, and the quotas of these States were assumed by the Commonwealth. To 30th June, 1933, the total expenditure by the Commonwealth was £4,371,000, the interest charge for the year 1932-33 being £205,435. During the same period, the working of the line, which is the responsibility of the New South Wales and Queensland Railways Commissioners, resulted in a loss of £38,877 being shown on the New South Wales section and a profit of £21,720 on the Queensland section. In addition, the following amounts were paid as interest:—New South Wales £72,320, and Queensland £27,082, the remainder, £106,033, being borne by the Commonwealth. Figures relating to the operation, etc., of the line are incorporated as far as possible with those for New South Wales and Queensland in the tables in Section 3, State Railways.

5. **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 1928-29 to 1932-33. The railway mileage given for each State includes both Federal, State, and private railways in that State:—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE OPEN.

State or Territory.	1928-29.	1929-30.	1930-31.	1931-32.	1932-33.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	6,082.25	6,089.93	6,159.70	6,208.30	6,246.61
Victoria	4,723.95	4,737.65	4,741.69	4,745.71	4,745.71
Queensland	6,720.91	6,726.03	6,794.54	6,821.04	6,834.14
South Australia	3,821.29	3,765.45	3,759.10	3,775.81	3,775.81
Western Australia	4,809.47	4,841.89	4,911.37	4,966.06	5,068.72
Tasmania	827.26	821.01	806.45	786.45	786.45
Federal Capital Territory ..	4.94	4.94	4.94	4.94	4.94
Northern Territory	264.84	489.73	489.73	489.73	489.73
Australia	27,254.91	27,476.63	27,667.52	27,798.04	27,952.11

In previous issues of the Year Book particulars of mileage open 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, 1933 :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE CLASSIFIED, 1932-33.

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	6,163.91	..	82.70	6,246.61
Victoria	4,720.77	..	24.94	4,745.71
Queensland	6,566.51	..	267.63	6,834.14
South Australia	2,529.26	1,196.04	50.51	3,775.81
Western Australia	4,337.73	453.99	277.00	5,068.72
Tasmania	644.89	..	141.56	786.45
Federal Capital Territory ..	..	4.94	..	4.94
Northern Territory .. ..	..	489.73	..	489.73
Australia	24,963.07	2,144.70	844.34	27,952.11

6. *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, 1933 :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—COMPARISON OF FACILITIES, 1933.

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 ..	2.40	2.61	7.26	6.50	11.55	3.45	0.55	100.77	4.23
Per 1,000 sq. miles of Territory ..	20.19	54.00	10.19	9.93	5.19	30.00	5.26	0.94	9.40

7. Classification of Lines according to Gauge, 1932-33.—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, 1933, and of private railways open for general traffic to the 31st December, 1933, as nearly as possible.

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1932-33.

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	598.18	..	..	..	1,196.04
Western Australia	453.99	..	..	..	..	453.99
Federal Capital Territory	4.94	..	..	..	..	4.94
Northern Territory	489.73	..	..	..	489.73
Total	1,056.79	1,087.91	..	..	..	2,144.70

STATE RAILWAYS.

New South Wales .. ..	..	6,124.40	39.51	..	..	..	6,163.91
Victoria	4,599.00	..	..	..	121.77	..	4,720.77
Queensland .. ..	..	68.82	6,467.43	..	..	30.26	6,566.51
South Australia	1,451.24	..	1,078.02	..	..	..	2,529.26
Western Australia .. ..	..	..	4,337.73	..	..	..	4,337.73
Tasmania .. ..	..	..	633.56	..	..	11.33	644.89
Total	6,050.24	6,193.22	12,556.25	..	121.77	41.59	24,963.07

PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.

New South Wales .. ..	..	45.97	36.73	..	..	..	82.70
Victoria	13.94	..	..	11.00	..	..	24.94
Queensland .. ..	..	..	97.24	..	7.50	162.89	267.63
South Australia .. ..	..	..	50.51	..	..	..	50.51
Western Australia .. ..	..	..	277.00	..	..	..	277.00
Tasmania .. ..	..	..	125.07	..	..	16.49	141.56
Total	13.94	45.97	586.55	11.00	7.50	179.38	844.34

ALL RAILWAYS OPEN FOR GENERAL TRAFFIC.

New South Wales .. ..	..	6,170.37	76.24	..	..	..	6,246.61
Victoria	4,612.94	..	..	11.00	121.77	..	4,745.71
Queensland .. ..	..	68.82	6,564.67	..	7.50	193.15	6,834.14
South Australia	1,451.24	597.86	1,726.71	..	..	..	3,775.81
Western Australia .. ..	..	453.99	4,614.73	..	..	..	5,068.72
Tasmania .. ..	..	..	758.63	..	..	27.82	786.45
Federal Capital Territory .. ..	..	4.94	..	..	..	..	4.94
Northern Territory .. ..	..	..	489.73	..	..	..	489.73
GRAND TOTAL	6,064.18	7,295.98	14,230.71	11.00	129.27	220.97	27,952.11

8. **Summary of Operations, 1932-33.**—In the following table a summary is given of the working of all railways open for general traffic in Australia during the year ended 30th June, 1933:—

RAILWAYS.—FEDERAL, STATE, AND PRIVATE.—SUMMARY 1932-33.

Particulars.	Federal Railways.	State Railways.	Private Railways.	Total for Australia.
Mileage open (route) 30th June, 1933 Miles	2,144.70	24,963.07	844.34	27,952.11
Capital cost £	15,544,745	309,986,574	5,113,409	330,644,728
Cost per mile £	7,248	12,418	6,056	11,829
Gross revenue £	308,452	37,691,541	542,475	38,542,468
Gross revenue per train mile d.	135.27	143.56	133.47	143.34
Working Expenses £	347,801	27,175,672	347,096	27,870,569
Working Expenses per train mile d.	152.53	103.51	85.40	103.65
Net Revenue £	-39,349	10,515,869	195,379	10,671,899
Net Revenue per train mile d.	-17.26	40.05	48.07	39.69
Train miles run Miles	547,246	63,010,011	975,457	64,532,714
Passengers carried No.	81,339	314,758,638	983,097	315,823,074
Tons of goods, etc., carried Tons	105,401	26,816,299	1,652,370	28,574,070
Average number of employees No.	(d) 1,094	(d) 91,534	(b) (c) 942	93,570
Average wage £	222	208	221	208

(a) Exclusive of the capital cost of 166.65 miles of private lines for which information is not available. (b) Incomplete. (c) Employees at 30th June, 1932. (d) Exclusive of Construction Branch.

9. **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, 1930 to 1933, classified according to gauge, together with the percentages on the total:—

RAILWAYS, FEDERAL AND STATE.—TRACK MILEAGE.(a)

Gauge.	At 30th June—							
	1930.		1931.		1932.		1933.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	7,867.32	25.17	7,872.09	25.05	7,860.50	24.88	7,859.71	24.70
4 ft. 8½ in. ..	9,040.86	28.93	9,113.21	29.01	9,205.61	29.14	9,317.75	29.28
3 ft. 6 in. ..	14,176.91	45.37	14,268.41	45.41	14,358.58	45.45	14,478.76	45.50
2 ft. 6 in. ..	131.87	0.42	131.87	0.42	131.87	0.42	131.87	0.42
2 ft. 0 in. ..	33.00	0.11	33.00	0.11	33.00	0.11	33.00	0.10
Total ..	31,249.96	100.00	31,418.58	100.00	31,589.56	100.00	31,821.09	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. 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 provided for the construction of a 3 ft. 6 in. gauge line from the then existing 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 involved the construction of an extension to Alice Springs of the then 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, was £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, 1933, together with the lines which have been or are being surveyed :—

RAILWAYS, FEDERAL, 30th JUNE, 1933.

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 1929 to 1933 :—

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES.

MILES OPEN FOR TRAFFIC.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
	Miles.	Miles.	Miles.	Miles.	Miles.
1929	1,052	648	5	265	1,970
1930	1,052	771	5	317	2,145
1931	1,052	771	5	317	2,145
1932	1,052	771	5	317	2,145
1933	1,052	771	5	317	2,145

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES
—continued.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
AVERAGE MILES WORKED.					
	Miles.	Miles.	Miles.	Miles.	Miles.
1929	1,052	566	5	265	1,888
1930	1,052	760	5	307	2,124
1931	1,052	771	5	317	2,145
1932	1,052	771	5	317	2,145
1933	1,052	771	5	317	2,145

TRAIN MILES RUN.(a)					
1929	500,402	408,970	12,915	82,861	1,005,148
1930	453,151	239,303	9,865	43,594	745,913
1931	403,615	200,051	6,900	40,686	651,252
1932	319,747	154,529	6,865	35,819	516,960
1933	324,173	182,414	6,850	33,809	547,246

(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 of the undermentioned railways for each of the years 1929 to 1933 :—

RAILWAYS, FEDERAL.—CAPITAL COST.

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.

	£	£	£	£	£
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
1931	7,840,504	4,760,548	84,429	2,750,718	15,436,199
1932	7,879,397	4,769,938	84,429	2,755,700	15,489,464
1933	7,928,876	4,773,301	84,429	2,758,139	15,544,745

COST PER MILE OPEN.

1929	7,355	5,991	16,981	9,183	7,176
1930	7,421	6,132	17,064	8,688	7,167
1931	7,454	6,171	17,091	8,691	7,197
1932	7,490	6,187	17,091	8,693	7,221
1933	7,538	6,188	17,091	8,714	7,248

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

The sum of £1,633,015, of which £113,266 was for surveys, etc., has been provided from revenue for capital purposes to 30th June, 1933, 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 1929 to 1933 inclusive :—

RAILWAYS, FEDERAL.—GROSS REVENUE, TOTAL, ETC.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
TOTAL GROSS REVENUE.					
	£	£	£	£	£
1929	332,199	184,046	6,824	46,156	569,225
1930	265,562	99,626	6,473	32,475	404,136
1931	187,681	88,479	3,904	29,010	309,134
1932	173,402	79,400	3,810	23,495	280,107
1933	188,168	93,359	4,313	22,612	308,452
GROSS REVENUE PER AVERAGE MILE WORKED.					
1929	316	325	1,381	174	302
1930	252	131	1,311	106	190
1931	179	115	802	92	144
1932	165	103	771	74	131
1933	179	121	873	71	144
GROSS REVENUE PER TRAIN-MILE RUN.					
	d.	d.	d.	d.	d.
1929	159.32	108.00	126.81	133.69	135.92
1930	140.65	99.92	157.48	178.79	130.03
1931	111.60	106.15	137.88	171.13	113.92
1932	130.15	123.32	133.20	157.42	130.04
1933	139.31	122.83	151.11	160.51	135.27

(ii) *Classification and Percentages.* During the year 1932–33 receipts from coaching traffic, and goods and live stock represented 50 per cent. and 28 per cent. respectively of the total gross revenue of the Trans-Australian line, similar percentages for the remaining lines being :—Central Australia line 15 per cent. and 80 per cent., Federal Capital Territory line 53 per cent. and 46 per cent., and North Australia line 14 per cent. and 32 per cent. coaching, and goods and live stock revenue respectively.

The miscellaneous receipts for the year 1932–33 include an amount of £15,669, revenue from dining cars and refreshment services on the Trans-Australian and Central Australia Railways. A sum of £14,037 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 1929 to 1933 :—

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.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
TOTAL WORKING EXPENSES.					
	£	£	£	£	£
1929	300,270	196,329	10,331	56,862	563,792
1930	296,403	194,918	8,031	55,229	554,581
1931	241,490	155,438	6,363	55,330	458,621
1932	197,147	111,555	5,012	44,088	357,802
1933	197,363	106,875	4,720	38,843	347,801
PERCENTAGE OF WORKING EXPENSES ON REVENUE.					
	%	%	%	%	%
1929	90.39	106.67	151.39	123.20	99.05
1930	111.61	195.65	124.07	170.07	137.23
1931	128.67	175.68	160.52	190.73	148.36
1932	113.69	140.49	131.55	187.65	127.74
1933	104.90	114.48	109.43	171.79	112.76

Compared with results for the previous year, the percentage of working expenses on revenue shows decreases for each railway. There was an increase in earnings on each of the railways, with the exception of the North Australia line. The reductions in working expenses were due to (a) the operation of the Financial Emergency Act; (b) improved methods of working; and (c) the closest scrutiny over every item of expenditure.

(ii) *Averages.* The next table gives the working expenses per average mile worked, and per train-mile run for each railway for the years 1929 to 1933:—

RAILWAYS, FEDERAL.—WORKING EXPENSES, AVERAGES.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
WORKING EXPENSES PER AVERAGE MILE WORKED.					
	£	£	£	£	£
1929	286	347	2,091	215	299
1930	282	256	1,627	180	261
1931	230	202	1,288	175	214
1932	187	145	1,015	139	167
1933	188	139	956	123	162
WORKING EXPENSES PER TRAIN-MILE RUN.					
	d.	d.	d.	d.	d.
1929	144.01	115.21	191.98	164.70	134.62
1930	156.98	195.49	195.38	304.05	178.44
1931	143.60	186.48	221.32	326.38	169.01
1932	147.98	173.26	175.21	295.40	166.11
1933	146.11	140.61	165.37	275.73	152.53

(iii) *Classification and Percentages.* Of the total working expenses of the Federal Railways during the year 1932-33, maintenance expenses represented 39 per cent., locomotive, carriage and wagon charges 38 per cent., and traffic expenses 14 per cent. Details for each line were as follow :—Trans-Australian line 35 per cent., 42 per cent. and 12 per cent.; Central Australia line 44 per cent., 37 per cent., and 12 per cent.; Federal Capital Territory line 14 per cent., 41 per cent. and 39 per cent.; and North Australia line 50 per cent., 19 per cent. and 22 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 1929 to 1933 :—

RAILWAYS, FEDERAL.—TRAFFIC.

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

PASSENGER JOURNEYS.

	No.	No.	No.	No.	No.
1929	36,030	57,993	47,470	5,135	146,628
1930	29,163	45,235	45,457	3,238	123,093
1931	19,209	31,107	31,248	3,384	84,948
1932	15,875	25,683	29,417	3,101	74,076
1933	19,642	28,380	30,533	2,784	81,339

TONNAGE OF GOODS AND LIVE STOCK CARRIED.

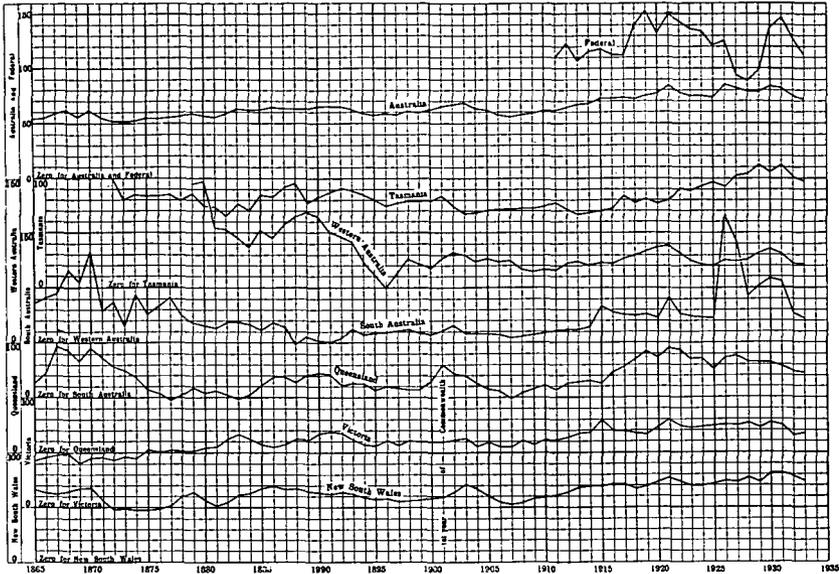
	Tons.	Tons.	Tons.	Tons.	Tons.
1929	40,750	90,734	23,196	14,919	169,599
1930	20,906	44,047	20,966	7,024	92,943
1931	12,360	38,831	10,077	3,296	64,564
1932	21,316	65,538	7,807	3,039	97,700
1933	19,754	71,710	10,502	3,435	105,401

(ii) *Passenger-Mileage Summary.* The appended table gives particulars of "Passenger-Mileage" on each of the Federal railways for the year 1932-33 :—

RAILWAYS, FEDERAL.—PASSENGER-MILES SUMMARY, 1932-33.

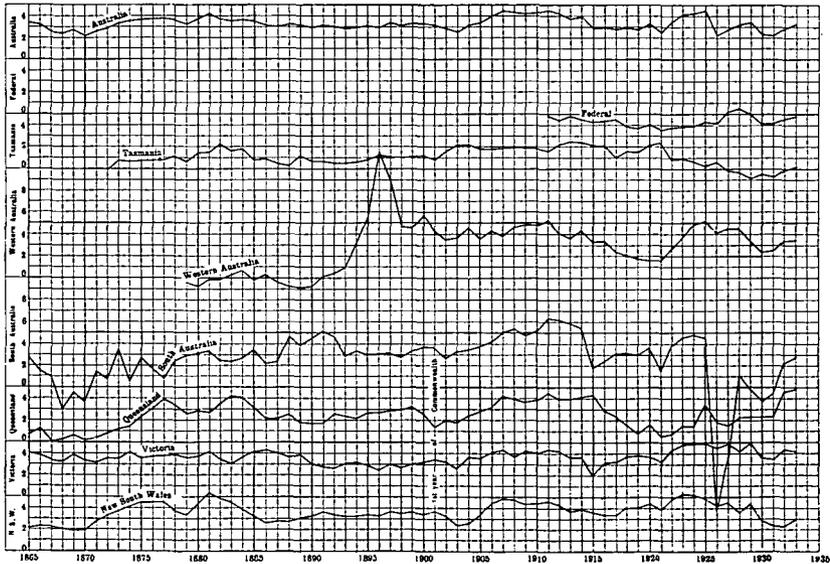
Railway.	Passenger Train Mileage.	Number of Passenger Journeys.	Total "Passenger-Miles."	Amount Received from Passengers.	Average Number of Passengers carried per Train Mile.	Average Mileage per Passenger Journey.	Average Earnings per "Passenger-Mile."	Average Fare per Passenger Journey.	Density of Traffic per Average Mile Worked.
			,000 omitted.	£		Miles.	d.	£ s. d.	
Trans-Australian ..	224,950	19,642	14,845	67,898	66	756	1 10	3 9 1	14,113
Central Australia ..	23,325	28,380	1,820	10,238	78	64	1 35	0 7 2	2,359
Federal Capital Territory ..	5,906	30,533	152	1,234	26	5	1 95	0 0 10	39,722
North Australia ..	10,761	2,784	315	2,543	29	113	1 93	0 18 3	997

PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE OF GOVERNMENT RAILWAYS, 1865 TO 1933.



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.

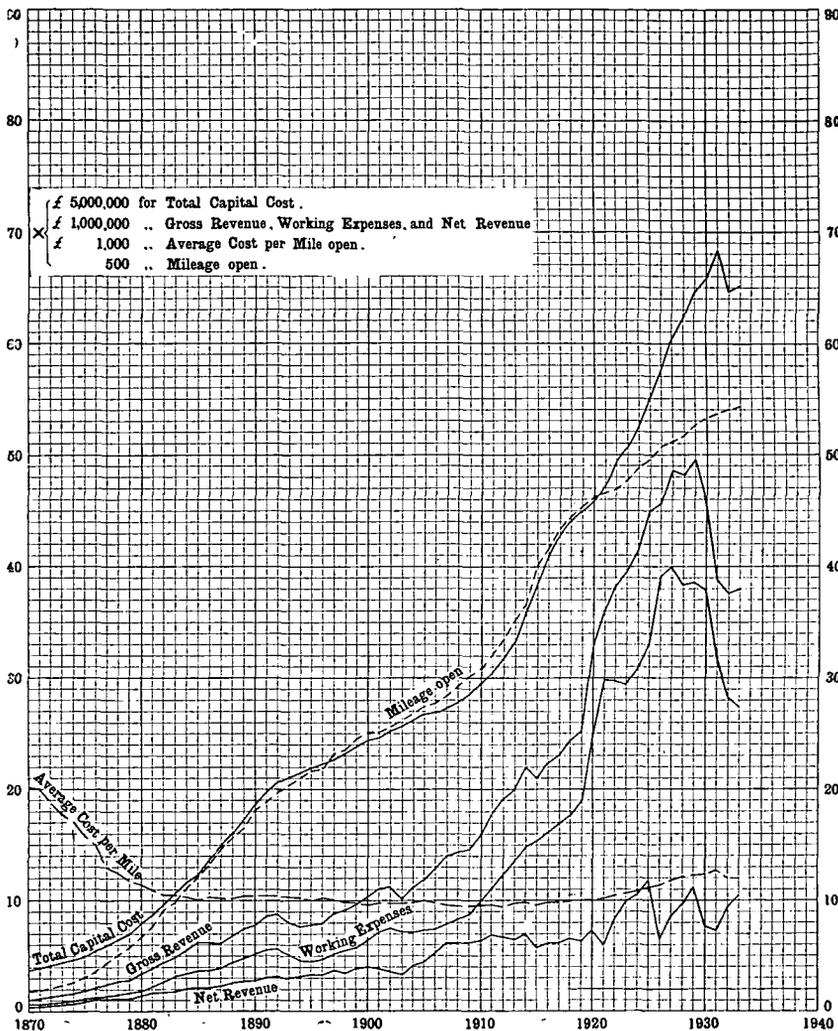
PERCENTAGES OF NET REVENUE ON CAPITAL COST OF GOVERNMENT RAILWAYS, 1865 TO 1933.



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.

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 1933.



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.

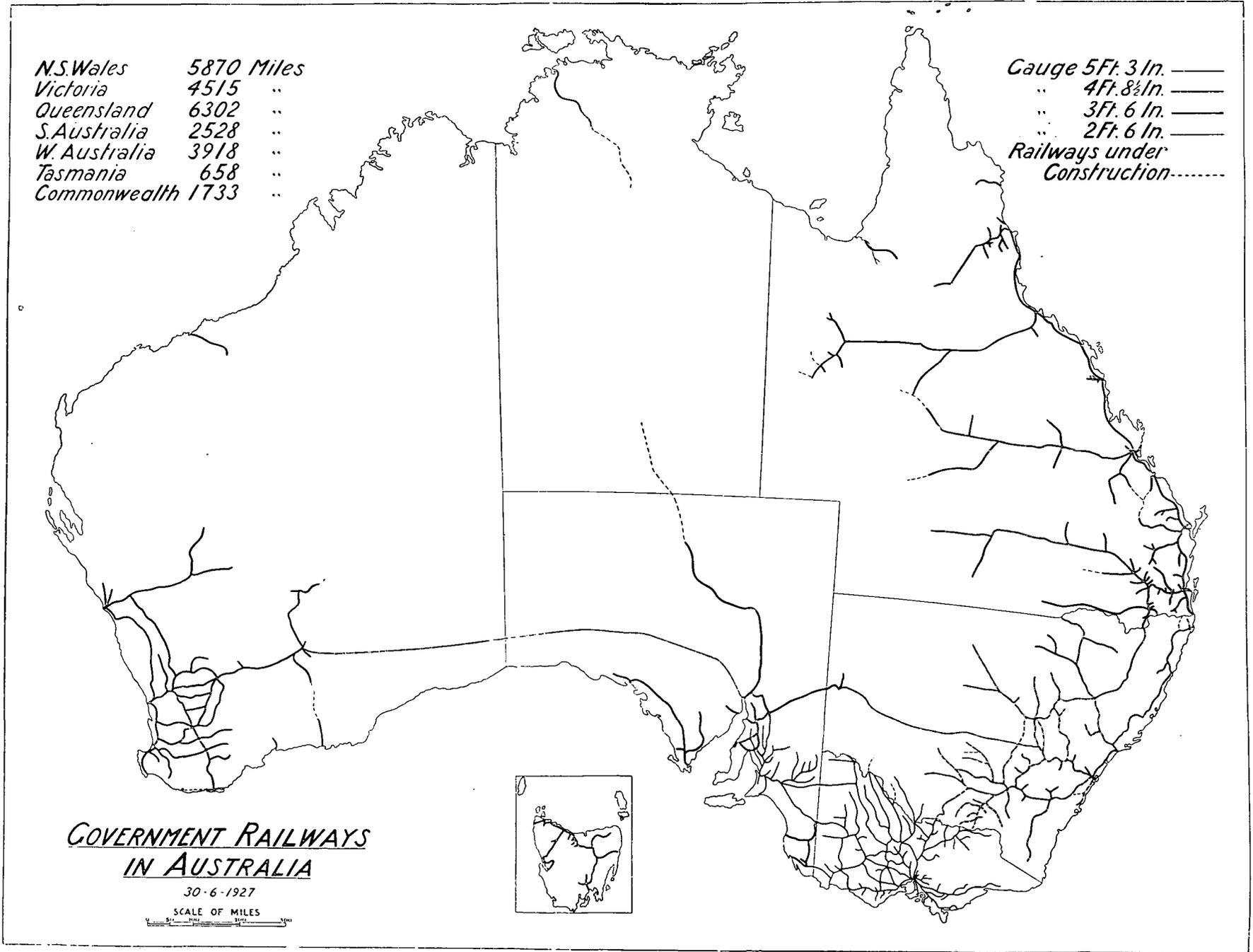
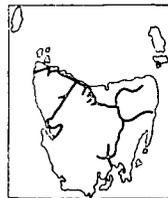
<i>N.S.Wales</i>	<i>5870 Miles</i>
<i>Victoria</i>	<i>4515 ..</i>
<i>Queensland</i>	<i>6302 ..</i>
<i>S.Australia</i>	<i>2528 ..</i>
<i>W. Australia</i>	<i>3918 ..</i>
<i>Tasmania</i>	<i>658 ..</i>
<i>Commonwealth</i>	<i>1733 ..</i>

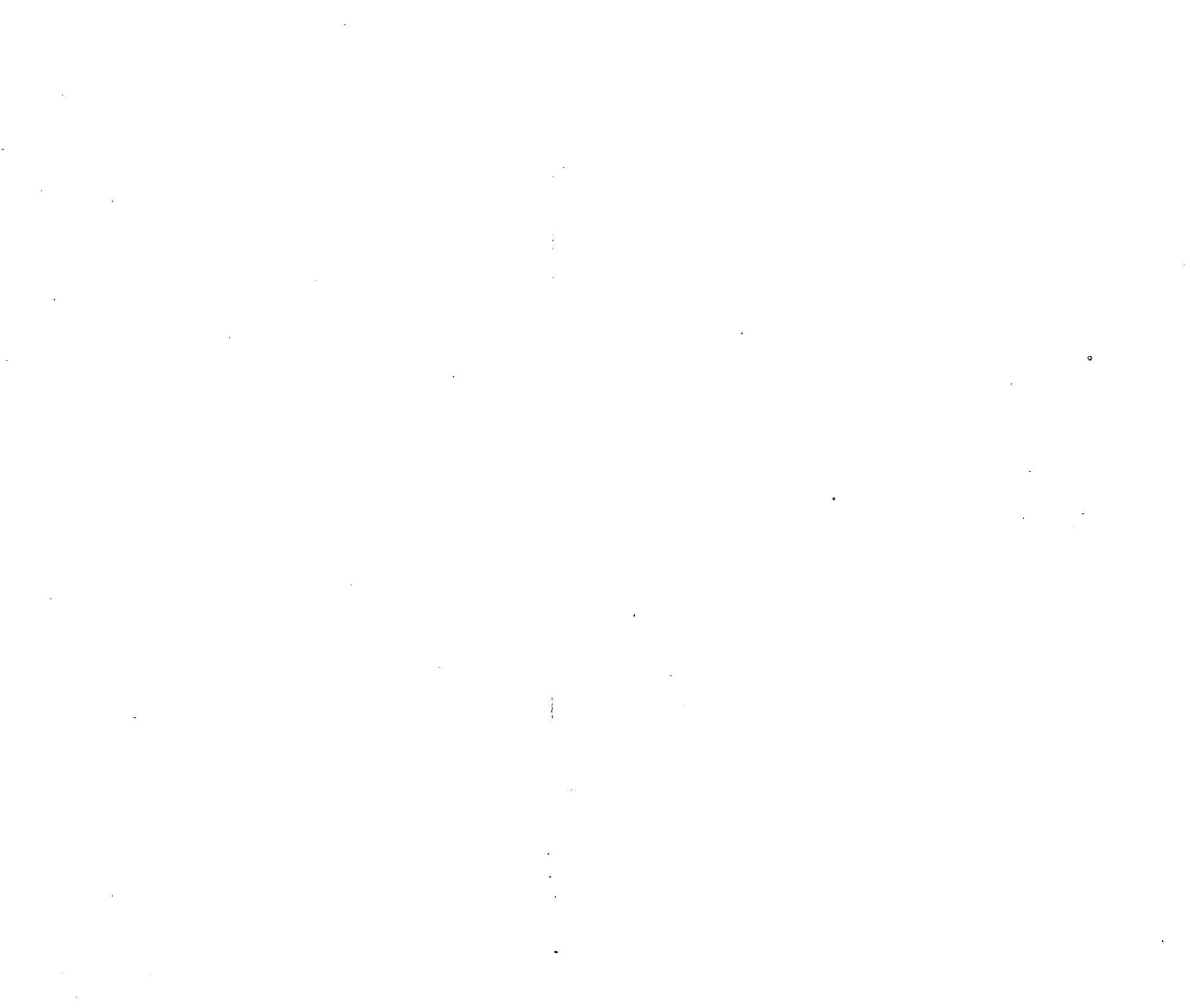
Gauge 5 Ft. 3 In. ———
 .. *4 Ft. 8½ In.* ———
 .. *3 Ft. 6 In.* ———
 .. *2 Ft. 6 In.* ———
Railways under Construction - - - - -

***GOVERNMENT RAILWAYS
 IN AUSTRALIA***

30-6-1927

SCALE OF MILES





(iii) *Ton-Mileage Summary.* Particulars of ton-mileage are shown hereunder in respect of each of the Federal railways for the year 1932-33 :—

RAILWAYS, FEDERAL.—“TON-MILEAGE” SUMMARY, 1932-33.

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.
					£	Tons.	Miles.	d.
Trans-Australian ..	99,223	19,754	9,006 omitted.	51,837	(a) 92	461	1.37	8,657
Central Australia ..	159,089	71,710	10,128	74,555	(a) 64	141	1.77	13,129
Federal Capital Territory ..	944	10,502	53	2,000	56	5	9.14	10,629
North Australia ..	23,048	3,435	349	7,134	(a) 15	102	4.91	1,102

(a) Approximate.

12. *Rolling Stock.*—Particulars of locomotives and rolling stock in use on the Federal railways, may be found on page 21 of Transport and Communication Bulletin No. 24.

13. *Employees.*—(i) *General.* The following table shows the number of employees on the Federal railways at 30th June in each year from 1929 to 1933 inclusive, classified according to salaried and wages staffs :—

RAILWAYS, FEDERAL.—EMPLOYEES.

Railway.	At 30th June—									
	1929.		1930.		1931.		1932.		1933.	
	Salaried Staff.	Wages Staff.								
	No.	No.								
Trans-Australian	128	776	117	733	106	(b) 554	102	(b) 556	99	(b) 718
Central Australia	68	539	59	383	57	331	55	275	53	(c) 297
Federal Capital Territory (a) ..	5	8	5	7	4	5	4	5	4	5
North Australia ..	22	178	15	93	13	100	14	82	15	88
Total ..	223	1,501	196	1,216	180	990	175	918	171	1,108

(a) Worked by New South Wales Government Railways until 1st July, 1928. (b) Includes those engaged on construction work, 1931, 4; 1932, 15; and 1933, 157. (c) Includes 6 on construction work.

(ii) *Average Employed throughout Year.* The average number of employees throughout the year 1932-33 was 172 salaried staff and 1,010 wages staff (88 of whom were on construction work).

14. *Accidents.*—The following table shows the number of accidents in each of the years 1929 to 1933 :—

RAILWAYS, FEDERAL.—ACCIDENTS.

Railway.	Number of Persons.									
	Killed.					Injured.				
	1929.	1930.	1931.	1932.	1933.	1929.	1930.	1931.	1932.	1933.
Trans-Australian	3	..	2	3	2
Central Australia	1	..	..	..	7	..	2	1	4
Federal Capital Territory	1	..
North Australia	4	..	..	1	..
Total	1	..	..	..	14	..	4	6	6

Of those injured in 1933, all were railway employees. Further details are available on page 24 of Transport and Communication Bulletin No. 24.

§ 3. State Railways.

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

2. *Mileage Open, 1929 to 1933.*—(i) *General.* The following table shows the length of State railways open for traffic on the 30th June in the years 1929 to 1933 :—

RAILWAYS, STATE.—MILEAGE OPEN FOR TRAFFIC.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
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
1931	6,044	4,717	6,529	2,529	4,180	665	24,664
1932	6,126	4,721	6,558	2,529	4,235	645	24,814
1933	6,164	4,721	6,566	2,529	4,338	645	24,963

A graph indicating the mileage open in Australia at the end of each of the years 1870 to 1933 accompanies this chapter.

The appended statement shows the actual mileage opened for traffic in the year 1933, also the annual average increase in mileage opened since 1923 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 1932-33	38.31	..	8.42	..	102.67	..	149.40
Average annual mileage increase for 10 years to 30th June, 1933 ..	84.61	38.74	66.11	15.62	78.29	1.85	281.52

(ii) *New South Wales.* During the year ended 30th June, 1933, the following new line was opened for traffic, viz. :—Unanderra to Moss Vale, a distance of 38.31 miles.

(iii) *Victoria.* During the year ended 30th June, 1933, no new lines were opened for traffic.

(iv) *Queensland.* The new line from Thangool to Lawgi (8.42 miles) was opened for traffic during the year ended 30th June, 1933.

(v) *South Australia.* There were no alterations to route mileage during this year.

(vi) *Western Australia.* The following new mileage was opened for traffic during the year :—Paroo to Wiluna (43.54 miles) and Lake Grace to Hyden (58.45 miles). Minor adjustments increased the length of existing lines by 0.68 miles, the total increase for the year being therefore 102.67 miles.

(vii) *Tasmania.* There were no alterations to route mileage during this year.

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, 1933, is given in the Transport and Communication Bulletin No. 24 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 1929 to 1933 inclusive :—

RAILWAYS, STATE.—MILEAGE WORKED AND TRAIN-MILES RUN.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AVERAGE MILEAGE WORKED.							
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
1931 ..	6,013	4,710	6,509	2,535	4,123	665	24,553
1932 ..	6,050	4,720	6,550	2,529	4,214	645	24,708
1933 ..	6,159	4,721	6,565	2,529	4,278	645	24,897

TRAIN-MILES RUN. (a)

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
1931 ..	25,628,405	15,945,315	10,883,045	4,991,695	5,402,694	1,251,702	64,102,256
1932 ..	25,848,580	15,363,776	10,064,819	4,914,265	5,093,179	1,130,122	63,314,741
1933 ..	25,562,220	15,321,398	10,826,016	4,909,588	5,282,989	1,107,800	63,010,011

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

5. **Lines under Construction, and Lines Authorized, 1933.**—(i) *General.* The following statement gives particulars at the 30th June, 1933, 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, 1933.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction ..	(a)	(b)38.00	(c)	..	27.90	..	65.90
Mileage authorized but not commenced ..	366.24	39.50	1,130.00	26.25	319.85	..	1,881.84

(a) 127 miles on which work has been suspended. (b) Exclusive of 65.75 miles on which work has been suspended. (c) 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.* At 30th June, 1933, no railway construction work was in progress. Work has been suspended on the Guyra to Dorrigo (89 miles) and Casino to Bonalbo (38 miles) lines.

(b) *Victoria.* In this State 35.50 miles of 5 ft. 3 in. gauge lines have been partially constructed, from Nowingi to Millewa South, work thereon being temporarily suspended. 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 Lette (30.25 miles); and Yarrowonga to Oaklands (38 miles). Work has also been suspended on the former line. 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, 1933, no railway construction work was in progress. 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, 1933, no railway construction work was in progress.

(e) *Western Australia.* The following line was in course of construction but not completed by the Railways Department on the 30th June, 1933 :—Pemberton to Westcliffe (27.90 miles).

(f) *Tasmania.* At 30th June, 1933, no railway construction work was in progress.

(iii) *Lines Authorized for Construction.* (a) *New South Wales.* At the 30th June, 1933, the following lines had been authorized for construction but not commenced :—Gulgandra 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, 1933 :—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); Wandooan 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, 1933 :—Yarramony to Merredin (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, 1933.

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, 1933, amounted to £309,986,574, representing an average cost of £46.85 per head of population. If the cost of railways owned by the Commonwealth Government is included, the total capital cost (£325,531,319) is equivalent to an amount of £49.10 per head of the population of the Commonwealth, while the total mileage open (27,107.77 miles) per 1,000 of population is 4.09. 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, 1933.

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, 1933.
	Miles.	£	£	£	Miles.
New South Wales (a) ..	(b)6,163.91	(d)138,921,968	(d) 20,915	(d) 53.41	(c) 2.37
Victoria	4,720.77	74,706,736	15,833	41.04	2.59
Queensland	(b)6,566.51	(d)34,098,724	(d) 5,193	(d) 35.98	(c) 6.93
South Australia (a) ..	2,529.26	27,167,930	10,743	46.76	4.35
Western Australia (a) ..	4,337.73	24,159,782	5,569	55.04	9.88
Tasmania	644.89	6,560,434	10,173	28.82	2.83
All States	24,963.07	(c)309,986,574	(c) 12,418	(c) 46.85	(c) 3.77

(a) Exclusive of Federal railways. (b) Includes portion of Grafton-South Brisbane uniform gauge line—New South Wales 26 miles, Queensland 68.82 miles (see para. 4, page 153). (c) Includes Grafton-South Brisbane line, £4,371,000. (d) Exclusive of Grafton-South Brisbane line.

The lowest average cost (£5,569) per mile open is in Western Australia, and the highest (£20,915) in New South Wales, as compared with an average of £12,418 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 gold-field contracts.

There was a reduction of £28,000,000 in the capital cost of the Queensland railways as a result of a continued agitation on the part of the railway authorities for some relief from the over-capitalization of the government railways. As the latter are largely a means of developing the country, it follows that they cannot be conducted as a purely commercial undertaking, nor can they be expected to show a profit after payment of operation costs and interest charges on capital invested. As it was deemed hardly equitable to burden the railways with the interest charges on capital expended largely in developing the State, part of the capitalization of the railways was transferred to a separate fund by "The Railway (Capital Indebtedness) Reduction Act of 1931."

The large increases in the capital cost of the New South Wales railways during the last few years are mainly attributable to the electrification of suburban lines and the construction of the underground city railway.

In the table above, the figures relating to cost of construction and equipment do not include stores advance accounts and the discounts and flotation charges on loans allocated to the railways. This will explain the differences between the amounts shown therein for the various States and those shown in the several Railway Reports.

(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 1929 to 1933 is shown in the following table :—

RAILWAYS, STATE.—CAPITAL COST OF LINES OPEN.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL COST OF LINES OPEN.							
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
1931 ..	130,802,3624	74,302,935	59,497,4954	27,255,443	23,329,093	6,549,965	6326,108,493
1932 ..	137,792,3194	74,415,458	633,884,1904	27,202,936	23,648,654	6,561,429	6307,875,986
1933 ..	138,921,9684	74,706,736	634,098,7244	27,167,930	24,159,782	6,560,434	6309,986,574
COST PER MILE OPEN.							
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
1931 ..	(a) 21,735	15,753	(a) 9,210	10,776	5,581	9,851	(b) 13,222
1932 ..	(a) 22,493	15,763	(a) 5,167	10,756	5,584	10,173	(b) 12,407
1933 ..	(a) 20,915	15,833	(a) 5,193	10,743	5,569	10,173	(b) 12,418

(a) Exclusive of Grafton-South Brisbane line.

(b) Includes Grafton-South Brisbane line.

(c) The Capital Account was reduced by £28,000,000, in accordance with "The Railway (Capital Indebtedness) Reduction Act" of 1931.

(b) *From Consolidated Revenue.* The following table shows the amounts provided from Consolidated Revenue for construction and equipment to 30th June, 1933 :—

RAILWAYS, STATE.—EXPENDITURE FROM CONSOLIDATED REVENUE FOR CONSTRUCTION AND EQUIPMENT TO 30th JUNE, 1933.

To 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
1933 ..	£ 669,390	£ 4,622,595	£ ..	£ ..	£ 640,908	£ 16,935	£ 5,949,828

(iii) *Loan Expenditure.* The subjoined table shows the total net loan expenditure on Government railways in each State, except Tasmania, and on Government railways and tramways in the latter State for the years 1929 to 1933 :—

RAILWAYS, STATE.—NET LOAN EXPENDITURE.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	All States.
1929 ..	£ 6,356,971	£ 1,229,521	£ 1,212,131	£ 706,144	£ 826,204	£ Cr. 11,684	£ 10,319,287
1930 ..	5,034,505	947,527	739,548	405,153	849,335	Cr. 69,940	7,906,128
1931 ..	2,312,557	455,293	434,350	Cr. 55,467	454,159	44,725	3,645,617
1932 ..	1,052,137	..	50,275	Cr. 127,576	137,025	Cr. 15,008	1,096,853
1933 ..	214,885	..	Cr. 28,829	Cr. 101,622	180,495	Cr. 6,682	258,247

(a) Including tramways.

The following statement shows the total loan expenditure on railways to the 30th June, 1933 :—

RAILWAYS, STATE.—TOTAL LOAN EXPENDITURE TO 30th JUNE, 1933.

State.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.(a)	All States.
Expenditure	£ 138,160,396	£ 74,085,988	£ 61,652,135	£ 31,940,470	£ 24,039,825	£ 6,911,662	£ 336,790,476

(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 1929 to 1933 inclusive were as follow :—

RAILWAYS, STATE.—GROSS REVENUE.

Year ended 30th June—	N.S.W.	Victoria. (b)	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
TOTAL GROSS REVENUE.							
1929	£ 220,415,616	£ 13,162,973	£ 7,568,647	£ 3,593,646	£ 3,799,764	£ 503,855	£ 49,044,501
1930	£ 218,626,692	£ 12,001,806	£ 7,302,281	£ 3,276,945	£ 3,659,203	£ 507,374	£ 45,374,301
1931	£ 216,005,741	£ 10,008,358	£ 6,476,979	£ 2,586,132	£ 3,198,913	£ 400,176	£ 38,676,299
1932	£ 215,301,022	£ 9,454,304	£ 5,994,523	£ 2,746,341	£ 2,922,385	£ 381,283	£ 37,290,858
1933	£ 216,205,320	£ 9,446,121	£ 5,992,394	£ 2,734,683	£ 2,932,140	£ 381,483	£ 37,691,541

GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£
1929	3,458	2,802	1,185	1,412	951	712	2,028
1930	3,126	2,549	1,133	1,291	890	709	1,858
1931	2,662	2,124	995	1,020	776	602	1,575
1932	2,612	2,003	915	1,086	693	591	1,510
1933	2,631	2,001	913	1,081	685	592	1,514

GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
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
1931	149.89	150.64	142.83	124.34	142.10	76.77	144.80
1932	146.71	147.69	131.21	134.12	137.71	80.07	141.39
1933	152.15	147.97	132.84	133.65	133.20	82.65	143.56

(a) Includes £800,000, contributions from consolidated revenue towards losses on working of country developmental lines. (b) Includes contributions from consolidated revenue in respect of losses on non-paying lines, 1930-31, £158,508; 1931-32, £139,429; 1932-33, £124,288.

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 1929 to 1933, 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.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
COACHING TRAFFIC RECEIPTS.							
	£	£	£	£	£	£	£
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
1931 ..	5,870,676	4,378,162	2,021,666	635,490	724,989	144,526	13,775,509
1932 ..	5,606,430	3,946,053	1,762,225	631,104	649,890	132,456	12,728,158
1933 ..	5,693,953	3,968,871	1,768,247	655,799	662,444	126,273	12,875,587

GOODS AND LIVE STOCK TRAFFIC RECEIPTS.

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
1931 ..	7,841,406	4,817,808	4,191,161	1,787,747	2,289,638	241,458	21,169,218
1932 ..	7,853,315	4,805,738	4,008,966	1,948,293	2,106,129	234,986	20,957,427
1933 ..	8,169,056	4,773,699	4,006,279	1,924,982	2,110,065	240,978	21,225,059

MISCELLANEOUS RECEIPTS.

		(b)					
1929 ..	21,911,708	1,040,254	174,336	221,771	209,572	18,273	3,575,914
1930 ..	21,832,809	974,274	144,369	219,960	207,466	17,906	3,396,784
1931 ..	22,293,659	812,388	264,152	162,895	184,286	14,192	3,731,572
1932 ..	22,341,277	702,513	223,332	166,944	166,366	13,841	3,614,273
1933 ..	22,342,311	703,551	217,868	153,302	159,631	14,232	3,590,895

(a) Includes £800,000, contributions from consolidated revenue towards losses on working of country developmental lines. (b) Includes contributions from consolidated revenue in respect of losses on non-paying lines, 1930-31, £158,508; 1931-32, £139,429; 1932-33, £124,288.

(b) Percentages. The following table shows for the two years 1931-32 and 1932-33 the percentage which each class of receipts bears to the total gross revenue:—

RAILWAYS, STATE.—PERCENTAGES OF RECEIPTS.

State.	1931-32.			1932-33.		
	Coaching.	Goods and Live Stock.	Miscellaneous.	Coaching.	Goods and Live Stock.	Miscellaneous.
	%	%	%	%	%	%
New South Wales ..	35.48	49.70	14.82	35.14	50.41	14.45
Victoria ..	41.74	50.83	7.43	42.01	50.54	7.45
Queensland ..	29.40	66.87	3.73	29.51	66.85	3.64
South Australia ..	22.98	70.94	6.08	23.98	70.41	5.61
Western Australia ..	22.24	72.07	5.69	22.59	71.96	5.45
Tasmania ..	34.74	61.63	3.63	33.10	63.17	3.73
All States ..	34.12	56.19	9.69	34.16	56.31	9.53

(c) *Averages for Passenger Earnings.* The subjoined table shows the passenger earnings per average mile of line worked and per passenger-train-mile in each State for the year ended the 30th June, 1933. Further particulars of passenger-mileage will be found in sub-paragraph 14 (i) hereinafter.

RAILWAYS, STATE.—PASSENGER EARNINGS, AVERAGES, 1932-33.

State.	Number of Passenger-Train-Miles.	Passenger Earnings.		
		Gross.	Per Average Mile Worked.	Per Passenger-Train-Mile.
	No.	£	£	d.
New South Wales	16,382,222	5,025,484	816	73.62
Victoria	10,540,785	3,561,588	754	81.09
Queensland	4,657,942	1,301,405	198	67.05
South Australia	3,151,505	519,277	205	39.54
Western Australia	(a) 2,181,247	503,177	118	55.36
Tasmania	(a) 498,328	104,978	163	51.56
All States	37,412,029	11,015,909	442	70.67

(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, 1933, are given below. Particulars of ton-mileage will be found in sub-paragraph 14 (ii) hereinafter.

RAILWAYS, STATE.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS, AVERAGES, 1932-33.

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	9,179,998	610,888,973	8,169,056	1,326	213.57	180.05
Victoria	4,780,613	6,244,346	4,773,699	1,011	239.65	183.48
Queensland	6,072,594	3,620,222	3,944,275	601	155.88	261.48
South Australia	1,758,083	2,387,817	1,924,982	761	262.78	193.48
Western Australia	(a) 3,229,557	2,840,077	2,110,065	493	156.81	178.31
Tasmania	(a) 613,396	510,585	240,978	374	94.29	113.27
All States	25,634,241	26,492,020	21,163,055	850	198.14	191.72

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

(b) Exclusive of 258,893 tons of coal on which way leave charges only were collected.

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 systems. When traffic is light, the percentage of working expenses is naturally greater than when 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 1929 to 1933 :—

RAILWAYS, STATE.—WORKING EXPENSES.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL WORKING EXPENSES.							
	£	£	£	£	£	£	£
1929	14,978,050	9,532,798	6,202,801	3,622,567	3,055,446	563,652	37,955,314
1930	14,962,423	9,311,548	5,945,163	3,573,121	3,112,895	535,414	37,441,564
1931	12,899,646	7,499,934	5,075,478	2,734,619	2,610,839	448,838	31,269,354
1932	12,532,869	6,181,490	4,429,218	2,139,395	2,123,281	386,929	27,784,182
1933	12,021,284	6,366,838	4,323,655	1,978,545	2,111,588	373,762	27,175,672

PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.

	%	%	%	%	%	%	%
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
1931	80.59	74.94	78.36	105.74	81.62	112.16	80.85
1932	79.32	65.38	73.89	77.57	72.65	101.48	74.49
1933	74.18	67.40	72.15	72.37	72.02	97.97	72.10

The variation in the percentage of working expenses on the gross revenue in each State for the years 1865 to 1933 is illustrated in the graph which accompanies this chapter.

(ii) *Averages.* The next table shows the working expenses per average mile worked and per train-mile run in each State for the years 1929 to 1933 :—

RAILWAYS, STATE.—WORKING EXPENSES, AVERAGES.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
WORKING EXPENSES PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1929	2,537	2,029	971	1,423	765	862	1,570
1930	2,511	1,978	922	1,408	758	811	1,533
1931	2,145	1,592	780	1,079	633	675	1,273
1932	2,071	1,310	676	842	504	600	1,124
1933	1,952	1,349	659	782	494	580	1,092

WORKING EXPENSES PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
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
1931	120.80	112.88	111.93	131.48	115.98	86.10	117.07
1932	116.36	96.56	96.95	104.04	100.05	82.17	105.32
1933	112.87	99.73	95.85	96.72	95.93	80.97	103.51

(iii) *Distribution.* The subjoined table shows the distribution of working expenses under four chief heads of expenditure for the years 1929 to 1933 :—

RAILWAYS, STATE.—DISTRIBUTION OF WORKING EXPENSES.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
MAINTENANCE.							
	£	£	£	£	£	£	£
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
1931	2,199,347	1,394,185	1,401,338	438,462	576,723	117,319	6,127,374
1932	2,346,791	1,110,987	1,221,829	335,280	470,544	102,116	5,587,547
1933	2,460,825	1,464,041	1,156,044	327,887	493,968	94,756	5,997,521
LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.							
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	2,639,642	1,796,616	1,368,160	236,855	16,545,655
1931	5,642,719	2,840,181	2,068,942	1,382,409	1,218,580	192,911	13,345,742
1932	5,280,630	2,260,152	1,780,463	1,102,292	978,698	168,194	11,570,429
1933	4,991,900	2,231,648	1,764,765	955,698	960,993	167,605	11,072,609
TRAFFIC EXPENSES.							
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
1931	3,212,276	2,026,918	1,321,254	564,025	698,463	110,037	7,932,973
1932	3,059,815	1,690,512	1,177,336	457,706	572,101	92,275	7,049,773
1933	2,771,583	1,628,237	1,136,739	450,886	562,000	87,154	6,636,599
OTHER CHARGES.							
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
1931	1,845,304	1,238,650	283,944	349,723	117,073	28,571	3,863,263
1932	1,845,633	1,119,809	249,590	235,117	101,938	24,344	3,576,431
1933	1,796,976	1,042,912	266,107	244,074	94,627	24,247	3,468,943

9. *Salaries and Wages.*—The following table shows the total amount paid in salaries and wages in each State during the years 1929 to 1933 :—

RAILWAYS, STATE.—SALARIES AND WAGES PAID.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
TOTAL SALARIES AND WAGES PAID.							
	£	£	£	£	£	£	£
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	2,587,455	364,636	28,792,061
1931	10,167,293	5,587,539	3,851,295	1,743,574	2,099,947	314,590	23,764,238
1932	9,637,122	4,435,618	3,311,129	1,382,707	1,620,084	260,943	20,677,633
1933	8,462,006	4,417,160	3,244,342	1,376,676	1,675,594	254,882	19,431,560

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 1929 to 1933 :—

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

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
NET REVENUE.							
	£	£	£	£	£	£	£
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
1931	3,106,095	2,508,424	1,401,501	— 148,487	588,074	— 48,662	7,406,945
1932	3,268,153	3,272,814	1,565,305	615,946	799,104	— 5,616	9,515,676
1933	4,184,036	3,079,283	1,668,739	755,538	820,552	7,721	10,515,869

PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.

	%	%	%	%	%	%	%
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
1931	(a) 2.40	3.38	(a) 2.38	— 0.54	2.52	— 0.74	(b) 2.27
1932	(a) 2.37	4.40	(a) 4.62	2.26	3.37	— 0.09	(b) 3.09
1933	(a) 3.01	4.12	(a) 4.89	2.78	3.40	0.12	(b) 3.39

(a) Exclusive of Grafton—South Brisbane line.

(b) Includes Grafton—South Brisbane line.

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

(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.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States
NET REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1929	921	773	214	— 11	186	— 91	458
1930	615	571	211	— 117	132	— 42	325
1931	517	532	215	— 59	143	— 73	302
1932	540	693	239	243	190	— 9	385
1933	679	652	254	299	192	12	422

NET REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
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
1931	29.09	37.76	30.90	— 7.14	26.12	— 9.33	27.73
1932	30.34	51.12	34.26	30.08	37.65	— 1.20	36.07
1933	39.28	48.24	36.99	36.93	37.28	1.67	40.05

11. **Interest.** The amount of interest payable on expenditure from loans on the construction and equipment of the railways in each State, during the years ended 30th June, 1929 to 1933, was as follows :—

RAILWAYS, STATE.—INTEREST ON RAILWAY LOAN EXPENDITURE.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AMOUNT OF INTEREST PAYABLE.							
	£	£	£	£	£	£	£
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
1931	66,790,082	3,596,758	43,018,355	1,426,741	968,066	285,881	116,205,274
1932	66,519,217	3,641,109	41,589,643	1,217,338	989,173	263,900	114,328,550
1933	66,352,581	3,221,710	41,593,522	1,137,193	996,233	263,861	113,673,133

(a) Interest charges on the Grafton—South Brisbane line for the year 1930—31 amounted to £215,971, of which New South Wales contributed £70,269 and Queensland £26,311, the remainder, £119,391, being borne by the Commonwealth. The total charges for 1931—32 were £213,027, of which New South Wales contributed £72,301, Queensland £32,546 and the Commonwealth £108,180. The total charges for 1932—33 were £210,609, of which New South Wales contributed £72,320, Queensland £32,256, and the Commonwealth £106,033. See B § 1, 4 ante.

Exchange on interest payments in London during the year 1931—32, New South Wales £1,313,541, Victoria £440,938 and South Australia £176,913, are not included in the amounts shown above for those States; the figures for the year 1932—33 being New South Wales £1,191,937, Victoria £402,705, and South Australia £180,826. With regard to the remaining States, the amounts of exchange, which are not available, are not charged against the Railways, and are therefore not included in the above figures. The interest payable on the cost of construction and equipment, exclusive of expenditure from consolidated revenue (£5,949,828) for that purpose, was at the rate of 4.50 per cent., in 1932—33.

The reduction of £28,000,000 in the Queensland Capital Account referred to on page 171 is reflected in the decrease in the annual interest payable by that State.

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.

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.							
	£	£	£	£	£	£	£
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	- 1,693,229	- 404,489	- 312,419	- 7,584,003
1931	a- 3,683,987	- 1,088,334	- 1,616,854	- 1,575,228	- 379,092	- 334,543	a- 8,798,329
1932	a- 3,251,064	- 368,295	- 24,338	- 601,392	- 190,069	- 269,546	a- 4,812,884
1933	a- 2,168,545	- 142,427	+ 73,217	- 381,655	- 175,681	- 256,140	a- 3,157,264

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

	%	%	%	%	%	%	%
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
1931	(b) - 2.73	- 1.46	(b) - 2.64	- 5.78	- 1.63	- 5.11	(c) - 2.70
1932	(b) - 2.36	- 0.49	(b) - 0.07	- 2.21	- 0.80	- 4.11	(c) - 1.56
1933	(b) - 1.56	- 0.19	(b) + 0.21	- 1.40	- 0.73	- 3.90	(c) - 0.98

(a) See Note (a) paragraph 11 above. (b) Exclusive of Grafton—South Brisbane line.
(c) Includes Grafton—South Brisbane line.

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 seaborne competition. The long and bulky hauls of wheat, live stock and wool to the coast require a large equipment of rolling stock, but the requirement for back freight is very much less. In this respect, therefore, the Australian railways are at a disadvantage compared with those of countries where there is a more balanced traffic in both directions.

The following table gives particulars for the years 1929 to 1933 :—

RAILWAYS, STATE.—TRAFFIC.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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NUMBER OF PASSENGER JOURNEYS.

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
1931 ..	126,811,993	134,655,220	22,009,473	15,437,440	11,702,741	1,852,145	312,469,012
1932 ..	128,359,419	125,990,585	20,761,976	15,608,245	10,394,311	1,680,897	302,795,433
1933 ..	132,867,221	130,190,013	22,216,409	16,074,221	11,732,291	1,678,483	314,758,638

PER 100 OF MEAN POPULATION.

1929 ..	6.083	9.141	2.775	3.117	3.596	1.022	5.864
1930 ..	5.872	8.833	2.704	3.114	3.329	1.023	5.666
1931 ..	4.983	7.511	2.397	2.688	2.715	831	4.819
1932 ..	4.999	6.984	2.231	2.705	2.397	744	4.630
1933 ..	5.128	7.173	2.361	2.774	2.685	736	4.775

PER AVERAGE MILE OF LINE WORKED.

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
1931 ..	21,089	28,588	3,382	6,091	2,838	2,786	12,725
1932 ..	21,216	26,693	3,170	6,172	2,467	2,606	12,255
1933 ..	21,574	27,577	3,384	6,355	2,742	2,603	12,643

TONNAGE OF GOODS AND LIVE STOCK CARRIED.

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	632,057	31,007,764
1931 ..	10,743,109	6,099,310	3,857,766	2,162,709	3,153,525	466,153	26,482,572
1932 ..	10,211,322	6,186,081	3,860,668	2,419,094	2,847,568	449,039	25,973,772
1933 ..	11,147,866	6,244,346	3,685,608	2,387,817	2,840,077	510,585	26,816,299

PER 100 OF MEAN POPULATION.

1929 ..	5.84	4.65	5.11	4.80	8.85	3.05	5.42
1930 ..	4.82	4.22	5.01	4.63	8.20	2.88	4.83
1931 ..	4.22	3.40	4.20	3.77	7.32	2.09	4.08
1932 ..	3.98	3.43	4.15	4.19	6.57	1.99	3.97
1933 ..	4.30	3.44	3.92	4.12	6.50	2.24	4.07

RAILWAYS, STATE.—TRAFFIC—*continued.*

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
PER AVERAGE MILE OF LINE WORKED.							
1929 ..	2,459	1,743	714	1,080	919	1,010	1,423
1930 ..	2,039	1,596	702	1,045	859	958	1,270
1931 ..	1,787	1,295	593	853	765	701	1,079
1932 ..	1,688	1,311	589	956	676	696	1,051
1933 ..	1,810	1,323	561	944	664	792	1,077

(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 1932-33 :—

RAILWAYS, STATE.—METROPOLITAN AND SUBURBAN, AND COUNTRY PASSENGER TRAFFIC AND RECEIPTS, 1932-33.

Particulars.	Passenger Journeys.			Revenue.		
	Metropolitan and Suburban.	Country.	Total.	Metropolitan and Suburban.	Country.	Total.
	No.	No.	No.	£	£	£
N.S.W. ..	a124,986,591	7,880,630	132,867,221	2,524,984	2,500,500	5,025,484
Victoria ..	b124,898,334	5,291,679	130,190,013	2,178,893	1,382,695	3,561,588
Queensland ..	17,577,067	4,639,342	22,216,409	252,405	1,083,425	1,335,830
S. Australia ..	c14,930,714	1,143,507	16,074,221	212,777	306,500	519,277
W. Australia ..	10,333,956	1,398,435	11,732,391	131,145	372,032	503,177
Tasmania ..	(d)	(d)	1,678,483	(d)	(d)	104,978
Total ..	(e)	(e)	314,758,738	(e)	(e)	11,050,334

(a) Within 34 miles of Sydney and Newcastle, including the Richmond line. of Melbourne.

(c) Within 25 miles of Adelaide.

(d) Not available.

(b) Within 20 miles of Melbourne.

(e) Incomplete.

(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 1932-33 :—

RAILWAYS, STATE.—CLASSIFICATION OF COMMODITIES CARRIED, 1932-33.

State.	Coal, Coke, and Shale.	Other Minerals.	Grain and Flour.	Hay, Straw and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
TONS CARRIED.								
New South Wales	4,890,533	848,877	2,368,743	220,315	198,243	656,097	1,965,058	11,147,866
Victoria ..	218,810	321,898	1,386,824	197,389	86,483	483,774	3,549,168	6,244,346
Queensland ..	514,498	351,833	1,488,750 ^(a)	(b)	86,087	311,975	932,465	3,685,608
South Australia ..	121,426	457,620	914,238	16,029	32,558	99,414	746,532	2,387,817
Western Australia	216,419	281,854	1,187,137	45,498	21,464	84,058	1,003,647	2,840,077
Tasmania ..	199,580	(c)	66,176	19,002	3,971	20,809	201,047	510,585
All States ..	6,161,266	2,262,082	7,411,868	498,233	428,806	1,656,127	8,397,917	26,816,299

PERCENTAGE OF TOTAL TONNAGE CARRIED.

	%	%	%	%	%	%	%	%
New South Wales	43.87	7.61	21.25	1.98	1.78	5.88	17.63	100.00
Victoria ..	3.50	5.16	22.21	3.16	1.38	7.75	56.84	100.00
Queensland ..	13.96	9.55	40.39	(b)	2.34	8.46	25.30	100.00
South Australia ..	5.09	19.17	38.29	0.67	1.36	4.16	31.26	100.00
Western Australia	7.62	9.92	41.80	1.60	0.76	2.96	35.34	100.00
Tasmania ..	39.09	(c)	12.96	3.72	0.78	4.07	39.38	100.00
All States ..	22.97	8.43	27.64	1.86	1.60	6.18	31.32	100.00

(a) Agricultural produce.
coal, coke, and shale.

(b) Included with "All other commodities."

(c) Included with

(b) *Revenue.* The following table shows the revenue derived from goods and live stock traffic during 1932-33 according to a classification which has been adopted by all States :—

RAILWAYS, STATE.—GOODS, ETC., TRAFFIC—REVENUE, 1932-33.

Class.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	£	£	£	£	£	£	£
General merchandise	4,973,560	3,022,593	2,518,151	925,193	1,086,324	169,002	12,694,823
Wheat ..	..	758,150	(a)	460,291	662,754	(a)	4,181,195
Wool ..	822,980	244,112	499,888	71,892	60,961	5,510	1,705,343
Live stock	1,099,681	590,691	480,957	140,100	109,077	17,716	2,438,222
Minerals—							
Coal, coke, and shale ..	1,038,680	68,557	240,324	33,934	118,455	(b) 30,730	1,530,680
Others ..	234,155	89,596	266,959	293,572	72,494	(c) 18,020	974,796
Total ..	8,169,056	4,773,699	4,006,279	1,924,982	2,110,065	240,978	21,225,059

(a) Included with General Merchandise.
(d) Incomplete.

(b) Native coal.

(c) Minerals other than native coal.

In New South Wales and Victoria, electric motor coaches are used for the transfer of parcels from the central stations to suburban stations, and in Victoria 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 all States for the years 1928-29 to 1932-33.

RAILWAYS, STATE.—SUMMARY OF "PASSENGER-MILES."

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-Mile.	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.									
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
1931	16,496	126,812	1,414,061	5,172,359	85	11.15	0.88	9.79	235,161
1932	17,148	128,359	1,366,764	4,943,790	80	10.64	0.86	9.24	220,768
1933	16,382	132,867	1,422,105	5,025,484	87	10.70	0.85	9.08	230,911
VICTORIA.									
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
1931	11,066	134,655	1,134,376	3,890,604	103	8.42	0.82	6.93	240,830
1932	10,534	125,991	1,053,215	3,514,104	100	8.35	0.80	6.69	223,138
1933	10,541	130,190	1,087,543	3,561,588	103	8.35	0.79	6.57	230,363
QUEENSLAND.									
1929	4,143	24,738	(a)	1,905,285	(a)	(a)	(a)	18.48	(a)
1930	4,313	24,441	(a)	1,838,812	(a)	(a)	(a)	18.06	(a)
1931 ^b	4,411	21,955	(a)	1,510,412	(a)	(a)	(a)	16.51	(a)
1932 ^b	4,625	20,695	(a)	1,290,225	(a)	(a)	(a)	14.96	(a)
1933 ^b	4,658	22,147	(a)	1,301,405	(a)	(a)	(a)	14.10	(a)
SOUTH AUSTRALIA.									
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
1931	3,193	15,437	167,738	499,745	53	10.87	0.72	7.77	66,179
1932	3,140	15,608	166,407	493,933	53	10.66	0.71	7.59	65,792
1933	3,152	16,074	172,106	519,277	55	10.71	0.72	7.75	68,046
WESTERN AUSTRALIA.									
1929	2,169	14,905	(a)	774,225	(a)	(a)	(a)	12.47	(a)
1930	2,206	14,175	(a)	720,137	(a)	(a)	(a)	12.19	(a)
1931 ^c	2,062	11,703	(a)	551,347	(a)	(a)	(a)	11.31	(a)
1932 ^c	1,938	10,394	(a)	489,436	(a)	(a)	(a)	11.30	(a)
1933 ^c	2,181	11,732	(a)	503,177	(a)	(a)	(a)	10.29	(a)
TASMANIA.									
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
1931	(c) 590	1,852	28,646	117,339	49	15.46	0.98	15.20	43,083
1932	(c) 506	1,681	27,158	107,587	54	16.16	0.95	15.36	42,111
1933	(c) 498	1,678	26,795	104,978	54	15.09	0.94	15.01	41,549

(a) Not available.

(b) Exclusive of Queensland portion of Grafton-South Brisbane (uniform gauge) line.

(c) Includes "Assistant" and "Light" Mileage.

(ii) *Ton-Miles.* Particulars regarding total "ton-miles" are given in the following table for each of the years 1928-29 to 1932-33:—

RAILWAYS, STATE.—SUMMARY OF "TON-MILES."

Year ended 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.								
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
1931	8,997	10,616	1,425,184	7,841,406	184	134.25	1.30	237,260
1932	8,700	10,054	1,407,451	7,853,315	186	139.99	1.33	233,030
1933	9,180	10,889	1,550,327	8,169,056	193	142.38	1.25	252,129
VICTORIA.								
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
1931	4,879	6,099	713,022	4,817,808	174	116.90	1.62	151,385
1932	4,830	6,186	769,228	4,805,738	181	124.34	1.49	162,972
1933	4,781	6,244	734,970	4,773,699	178	117.70	1.55	155,681
QUEENSLAND.								
1929	7,751	4,558	553,815	4,949,614	071	124.03	2.14	88,572
1930	7,546	4,528	554,171	4,780,114	073	125.20	2.06	88,628
1931 ^b	6,406	3,838	495,912	4,148,845	077	133.20	2.00	79,149
1932 ^b	6,257	3,835	516,699	3,968,227	083	139.02	1.83	82,084
1933 ^b	6,073	3,620	517,502	3,944,275	085	147.72	1.82	82,101
SOUTH AUSTRALIA.								
1929	2,202	2,748	337,631	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
1931	1,799	2,163	285,639	1,787,747	165	132.07	1.50	112,711
1932	1,774	2,419	287,619	1,948,293	170	118.37	1.63	113,731
1933	1,758	2,388	283,565	1,924,982	161	118.76	1.63	112,114
WESTERN AUSTRALIA.								
1929	23,773	3,670	367,032	2,610,193	113	100.00	1.71	91,919
1930	23,654	3,530	361,935	2,523,302	115	102.53	1.67	88,083
1931	23,487	3,154	373,405	2,289,638	121	118.41	1.47	90,566
1932	23,266	2,848	347,492	2,106,129	119	122.03	1.45	82,461
1933	23,230	2,840	339,007	2,110,065	105	119.37	1.49	79,237
TASMANIA.								
1929	2787	636	31,140	281,577	040	48.99	2.17	47,623
1930	2857	607	33,715	288,373	039	55.58	2.05	51,091
1931	2667	444	27,253	220,545	041	61.39	1.94	40,988
1932	2627	427	26,690	215,180	043	62.45	1.93	41,386
1933	2613	490	27,246	223,262	044	55.63	1.98	42,248

(a) Includes "Assistant" and "Light" mileage. (b) Exclusive of Queensland portion of Grafton-South Brisbane (uniform gauge) line. (c) Approximate.

In New South Wales the tonnage carried is exclusive of some coal on which way leave charges only have been collected, the quantities being 209,664 tons (1929), 289,667 tons (1930), 127,209 tons (1931), 157,110 tons (1932) and 258,893 tons (1933). Particulars for Tasmania 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.

16. **Rolling Stock.**—Particulars of locomotives and rolling stock in use on State railways may be found in the Transport and Communication Bulletin No. 24.

17. **Employees.**—(i) *At 30th June.* The following table gives the number of railway employees in each year from 1929 to 1933 inclusive, classified according to (a) salaried staff, and (b) wages staff :—

RAILWAYS, STATE.—EMPLOYEES. (a)

State.	At 30th June—									
	1929.		1930.		1931.		1932.		1933.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales	5,995	37,535	5,754	34,243	5,947	34,517	5,948	34,091	5,724	32,984
Victoria	4,295	23,025	4,249	20,361	4,051	17,985	3,720	17,456	3,621	18,159
Queensland	3,403	15,467	3,219	14,542	3,030	12,970	2,946	12,461	2,917	12,554
South Australia	1,312	7,401	1,293	6,794	1,158	5,586	1,137	5,736	1,143	5,784
Western Australia	1,418	7,770	1,424	7,587	1,287	5,900	1,204	5,671	1,178	6,135
Tasmania	219	1,376	217	1,352	191	1,234	174	1,137	166	1,133
All States	16,642	92,574	16,156	84,879	15,664	78,192	15,129	76,552	14,754	76,747

(a) Exclusive of construction staff.

In the period under review the totals of salaried and wages staffs decreased from 109,216 in 1929 to 91,501 in 1933, a decline of 16.2 per cent.

(ii) *Average staff employed, 1932-33.* 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, 1932-33.

State.	Operating Staff.		Construction Staff.		All Employees—Staff.	
	Salaried.	Wages.	Salaried.	Wages.	Salaried.	Wages.
New South Wales	5,824	33,057	48	243	5,872	33,300
Victoria	3,855	17,767	..	..	3,855	17,767
Queensland	2,943	12,565	6	154	2,949	12,719
South Australia	1,143	5,711	..	..	1,143	5,711
Western Australia	1,186	6,184	12	188	1,198	6,372
Tasmania	166	1,133	..	..	166	1,133
All States	15,117	76,417	60	585	15,183	77,002

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

18. Accidents.—The following 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 1929 to 1933 inclusive :—

RAILWAYS, STATE.—ACCIDENTS.

State.	In year ended 30th June—									
	1929.		1930.		1931.		1932.		1933.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	61	565	64	571	44	409	73	308	69	329
Victoria ..	46	281	57	197	57	150	56	227	52	177
Queensland ..	19	125	26	133	15	138	13	124	26	100
South Australia	20	156	9	196	13	98	7	104	13	127
Western Australia	15	354	18	330	13	195	23	266	15	236
Tasmania ..	2	71	6	84	2	42	4	16	1	70
All States ..	163	1,552	180	1,511	144	1,032	176	1,045	176	979

Particulars relating to the number of passengers, employees and other persons affected by railway accidents are published on page 24 of Transport and Communication Bulletin No. 24.

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 1932-33 :—

GOVERNMENT RAILWAYS.—CONSUMPTION AND VALUE OF OIL AND FUEL, 1932-33.

Government Railways.	Oil.						Coal.		
	Lubricating.			Fuel and Light.			Tons.	Value.	Average Cost per Ton.
	Gallons.	Value.	Average Cost per Gallon.	Gallons.	Value.	Average Cost per Gallon.			
		£	s. d.		£	s. d.	£	£ s. d.	
New South Wales	392,786	45,630	2 3.88	1,189,483	42,213	0 8.52	1,288,355	929,510 0 14 5.15	
Victoria ..	159,128	15,232	1 10.90	1,689,177	63,092	0 8.96	496,793	421,382 0 16 11.60	
Queensland ..	162,920	21,193	2 7.22	165,978	9,232	1 1.35	349,036	295,057 0 16 10.88	
South Australia	84,406	10,721	2 6.48	997,602	56,105	1 1.50	141,638	182,993 1 5 10.07	
Western Australia	66,256	8,579	2 7.10	257,544	11,516	0 10.70	278,250	215,316 0 15 5.72	
Tasmania ..	28,574	3,205	2 2.92	95,443	4,355	0 10.95	41,560	44,286 1 1 3.74	
Total States ..	894,070	104,560	2 4.07	4,395,227	186,513	0 10.18	2,595,632	2,088,544 0 16 1.11	
Federal ..	14,833	1,609	2 2.03	54,405	3,775	1 4.65	16,871	26,249 1 11 1.41	
Total, Australia..	908,903	106,169	2 4.03	4,449,632	190,288	0 10.26	2,612,503	2,114,793 0 16 2.28	

(a) Railways and Tramways.

The range in the average cost per ton of coal from 14s. 5d. in New South Wales to £1 11s. 1d. per ton for coal used on the Federal Railways is attributable to the comparatively low haulage expenses incurred in the coal-producing States. The average cost of coal during 1932-33 showed a decrease of 1s. 6.77d. on that for 1931-32.

§ 4. Private Railways.

1. **Total Mileage Open, 1932-33.**—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. Complete particulars of lines used for special purposes only for the year 1932-33 are not available.

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 1932-33:—

RAILWAYS, PRIVATE.—SUMMARY, 1932-33.

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.	
New South Wales ..	7	82.70	1,286,914	267,992	175,464	453,977	889,142	571,512	406	46	7	729
Victoria ..	2	24.94	93,574	11,494	6,805	20,024	12,469	34,038	22	5	4	35
Queensland	13	267.63	600,825	38,773	32,181	110,634	13,459	214,538	71	24	16	456
South Australia ..	1	50.51	(a)	(a)	(a)	37,310	300	644,526	30	7	1	188
Western Australia	1	277.00	2,235,783	156,705	77,037	237,045	30,701	121,432	238	23	23	488
Tasmania	4	141.56	896,313	67,511	55,609	116,467	37,026	66,324	175	21	19	298
All States(b)	28	844.34	5,113,409	542,475	347,096	975,457	983,097	1,652,370	942	126	70	2,194

(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 in 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 1932-33, classified (a) according to the motive power utilized, and (b) according to gauge, also for Australia according to motive power for the years 1928-29 to 1932-33, :—

TRAMWAYS.—ROUTE MILEAGE OPEN, 1932-33.

Nature of Motive Power, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Total Australia.
ACCORDING TO MOTIVE POWER.							
Electric	Miles. 188.41	Miles. 154.38	Miles. 56.86	Miles. 82.83	Miles. 61.08	Miles. 30.73	Miles. 574.29
Steam	9.06	..	6.65	..	6.26	..	21.97
Cable .. ..	..	24.29	..	..	..	..	24.29
Horse .. ..	..	..	..	..	1.50	..	1.50
Total	197.47	178.67	63.51	82.83	68.84	30.73	622.05

ACCORDING TO GAUGE.

Gauge—							
5 ft. 3 in. .. ..	..	5.18	..	..	..	..	5.18
4 ft. 8½ in.	197.47	173.49	56.86	82.83	..	..	510.65
3 ft. 6 in. .. ..	..	..	6.65	..	68.84	30.73	106.22
Total	197.47	178.67	63.51	82.83	68.84	30.73	622.05

Of the total mileage of tramway lines, 400.06 are Government owned, 185.68 are municipal and 36.31 are private. Further details on this subject may be obtained from page 27 of Transport and Communication Bulletin No. 24.

TRAMWAYS.—ROUTE MILEAGE OPEN, AUSTRALIA.

Nature of Motive Power.	1928-29.	1929-30.	1930-31.	1931-32.	1932-33.
ACCORDING TO MOTIVE POWER.					
Electric	Miles. 557.99	Miles. 571.85	Miles. 574.52	Miles. 574.59	Miles. 574.29
Steam	40.19	41.62	29.37	21.97	21.97
Cable	30.60	26.44	24.29	24.29	24.29
Horse	1.50	1.50	1.50	1.50	1.50
Total	630.28	641.41	629.68	622.35	622.05

(iii) *Cost of Construction and Equipment.* The table hereunder shows the total cost of construction and equipment of all tramways to the 30th June, 1933, classified according to the nature of the motive power. Further details relating to controlling authorities are available on page 27 of Transport and Communication Bulletin No. 24.

TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1932-33.

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
ACCORDING TO MOTIVE POWER.							
	£	£	£	£	£	£	£
Electric	8,001,622a	7,314,710	2,109,396	4,068,156	1,732,095	630,657	23,856,636
Steam ..	202,443	..	53,235	..	60,632	..	316,310
Cable ..	..	1,285,743	..	..	..	..	1,285,743
Horse ..	..	..	..	..	10,104	..	10,104
Total ..	8,204,065	8,600,453	2,162,631	4,068,156	1,802,831	630,657	25,468,793

(a) Exclusive of Stores Advance and Power Houses Accounts transferred to Railways Department.

2. *New South Wales.*—(i) *General.* With the exception of a steam tramway 3½ miles in length from Parramatta to Duck River, which is operated by Sydney Ferries Ltd., the tramways of New South Wales are the property of the Government, and are under the control of the Department of Road Transport and Tramways. In Sydney and suburbs the Government tramways are divided into six distinct systems, five of which are operated by electricity, and one, the Kogarah to Sans Souci line, by steam. The conversion of the Newcastle system from steam to electric traction has now been completed, the last of the steam lines having been closed in November, 1930. The gauge of all lines is 4 ft. 8½ in.

(ii) *Particulars of Working.—Electric and Steam Tramways.* The following table gives a summary of the operations of all tramways for the years 1929 to 1933 :—

ELECTRIC AND STEAM TRAMWAYS.—NEW SOUTH WALES.—SUMMARY.

Year ended 30th June—	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	In-terest.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.	Passengers carried.	Persons employed.
	Miles.	£	£	£	£	£	%	%	No. ,000	No.
1929 ..	213.93	11,476,189	4,460,063	3,837,213	622,850	615,997	86.03	5.43	333,615	11,090
1930 ..	213.91	11,497,978	3,905,205	3,628,554	276,651	646,892	92.92	2.41	307,874	10,147
1931 ..	203.09	8,090,699	3,059,897	3,124,366	-64,469	475,571	102.11	-0.80	266,393	8,191
1932 ..	197.57	8,155,204	3,306,557	3,010,267	257,290	546,626	92.22	3.15	286,504	8,417
1933 ..	197.47	8,204,065	3,268,200	2,781,968	486,232	484,057	85.12	5.93	295,783	8,033

(a) Exclusive of the cost of power houses now charged to the Railways Department.

The cost of construction and equipment is exclusive of the amount of the Stores Advance Account.

3. *Victoria.*—(i) *General.* In Melbourne, electric and cable tramway systems with route mileages of 114.54 miles and 24.29 miles respectively are worked by the Melbourne and Metropolitan Tramways Board, while two electric tramways, (a) St. Kilda to Brighton 5.18 miles and (b) Sandringham to Black Rock 2.43 miles, belong to and are operated by the Railways Commissioners. The line from Black Rock to Beaumaris was closed for traffic in August, 1931. The State Electricity Commission operates 10.98 miles of electric tramways at Geelong, and there are also systems of electric tramways 21.25 miles in length at Ballarat and Bendigo constructed and worked by a private company.

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 (see Year Books No. 7 page 652, No. 9 page 679 and No. 15 page 593).

With the exception of the St. Kilda-Brighton line which is of 5 ft. 3 in. gauge, all the tramways of the State are of 4 ft. 8½ in. gauge.

(ii) *Particulars of Working.*—*Electric and Cable Tramways.* The following table gives particulars for all tramways in Victoria during each of the years 1929 to 1933 inclusive :—

ELECTRIC AND CABLE TRAMWAYS.—VICTORIA.—SUMMARY.

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.
1929 ..	180.19	7,943,382	2,586,663	1,846,454	749,209	313,854	71.38	9.32	228,308	5,713
1930 ..	180.46	8,623,910	2,470,482	1,775,726	694,756	314,433	71.88	8.06	214,431	5,162
1931 ..	180.85	8,690,155	2,191,009	1,524,033	666,976	347,546	69.56	7.68	188,452	4,785
1932 ..	178.67	8,644,770	2,049,698	1,327,161	722,537	326,250	64.75	8.36	175,433	4,740
1933 ..	178.67	8,600,453	2,058,241	1,285,984	772,257	325,412	62.48	8.98	176,917	4,734

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 56.86 route miles at 30th June, 1933, the gauge of the line being 4 ft. 8½ in.

In addition to the electric tramways, a steam tramway operated by the City Council is in operation at Rockhampton. The length of line is 6.65 route miles and the gauge 3 ft. 6 in.

(ii) *Particulars of Working.—Electric and Steam Tramways.* The following table gives particulars of the working of all tramways in Queensland for each year from 1929 to 1933:—

ELECTRIC AND STEAM TRAMWAYS.—QUEENSLAND.—SUMMARY.

Year ended 31st December—	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.
1929 ..	62.38	2,267,872	810,148	600,567	209,581	115,483	74.13	9.24	77,791	1,594
1930 ..	63.23	2,204,620	780,844	568,241	212,603	113,032	72.77	9.27	75,128	1,520
1931 ..	63.34	2,273,109	716,605	519,738	196,867	109,346	72.53	8.66	70,761	1,404
1932 ..	63.51	2,195,545	688,883	481,186	207,697	106,689	69.85	9.46	69,478	1,431
1933 (a)	63.51	2,162,631	694,611	479,426	215,185	106,651	69.02	9.95	69,646	1,359

(a) Year ended 30th June.

5. *South Australia.—(i) General.* 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, 1933, the Tramways Trust operated a total route mileage of 82.83 miles of 4-ft. 8½-in. gauge.

(ii) *Particulars of Working.—Electric Tramways.* The following table gives particulars of the working of electric tramways in Adelaide for each year from 1929 to 1933:—

ELECTRIC TRAMWAYS.—ADELAIDE.—SUMMARY.

Year ended 31st July—	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.
1929..	75.79	3,527,710	677,513	501,362	176,151	231,737	74.00	4.99	66,578	1,982
1930..	82.83	3,834,302	756,560	521,839	234,721	258,697	68.98	6.12	59,853	1,736
1931..	82.84	a 4,036,396	a 722,104	a 445,260	a 276,844	a 287,534	a 61.66	a 6.86	a 52,756	a 1,840
1932..	82.84	a 4,043,913	a 659,575	a 383,400	a 276,175	a 264,597	a 58.13	a 6.83	a 48,467	a 1,777
1933..	82.83	a 4,068,156	a 643,274	a 392,526	a 250,748	a 253,930	a 61.02	a 6.16	a 48,154	a 1,719

(a) Includes motor omnibuses. Separate particulars are not available.

There are also various Government horse-tramways in country districts, worked in connexion with the railway system, which are used mainly for passenger service, though some are for special purposes.

6. *Western Australia.—(i) General.* The Perth electric 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 length of line open at 30th June, 1933, was 40.91 route miles. Electric tramways with a route mileage at 31st August, 1933, 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 1933, the length of line was 11.56 route miles. All the electric tramways of the State are of 3-ft. 6-in. gauge.

In addition to 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 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.

(ii) *Particulars of Working.—All Tramways.* The following table gives a summary for all tramways in the State for the years 1929 to 1933 :—

ELECTRIC, STEAM AND HORSE TRAMWAYS.—WESTERN AUSTRALIA.—SUMMARY.

Year.	Mileage Open for Traffic (Route)	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	In-terest. (b)	Per-centage of Working Expenses on Gross Revenue.	Per-centage of Net Earnings on Capital Cost.	Passen-gers carried.	Persons em-ployed.
	Miles.	£	£	£	£	£	%	%	No. ,000	No.
1929 ..	67.76	1,753,499	427,224	354,960	72,264	54,651	83.09	4.12	43,206	822
1930 ..	69.02	1,783,798	429,067	365,087	63,980	55,857	85.09	3.59	43,358	882
1931 ..	69.03	1,793,341	379,240	326,700	52,450	57,432	86.17	2.92	38,292	794
1932 ..	60.03	1,793,651	359,080	288,098	70,982	55,480	80.23	3.96	36,133	761
1933 ..	68.84	1,802,831	354,321	290,448	63,873	55,426	81.97	3.54	36,329	741

(a) Electric tramways only.
operated by a private company.

(b) Exclusive of Kalgoorlie and Boulder electric tramways

7. *Tasmania.—(i) General.* In Hobart there is a system of electric tramways consisting of 19.00 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.

There are also several lines of privately-owned steam tramways, which have been included with private railways, as they do not come within the category of street tramways for the conveyance of passengers.

(ii) *Particulars of Working.—Electric Tramways.*—The following table gives a summary of the working of the two electric systems for the years 1929 to 1933 :—

ELECTRIC TRAMWAYS.—TASMANIA.—SUMMARY.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	In-terest.	Per-centage of Working Expenses on Gross Revenue.	Per-centage of Net Earnings on Capital Cost.	Passen-gers carried.	Persons em-ployed.
	Miles.	£	£	£	£	£	%	%	No. ,000	No.
1929 ..	30.23	567,841	171,664	138,808	32,856	32,549	80.86	5.79	17,334	387
1930 ..	30.53	581,395	172,187	141,801	30,386	35,614	82.35	5.23	17,356	392
1931 ..	30.53	612,632	159,136	127,854	31,282	37,308	80.34	5.11	16,360	388
1932 ..	30.73	628,794	154,812	113,096	39,716	41,485	74.34	6.32	15,493	353
1933 ..	30.73	630,657	161,902	116,112	45,790	42,726	71.72	7.26	14,850	291

8. Australia.—All Tramways—Summary 1929 to 1933. The following table gives a summary of the working of all tramway systems in Australia for the years 1929 to 1933:—

ALL TRAMWAYS—AUSTRALIA—SUMMARY.

Particulars.	1929.	1930.	1931.	1932.	1933.
Mileage open for traffic .. Miles	630.28	639.98	629.68	622.35	622.05
Cost of Construction and Equipment .. £	27,536,493	28,616,003	25,330,705	25,461,877	25,468,793
Cost per mile .. £	43.689	44.714	40.228	40.912	40.943
Gross Revenue .. £	9,133,275	8,514,345	7,227,991	7,218,605	7,180,549
Working Expenses .. £	7,279,364	7,001,248	6,068,041	5,644,208	5,346,464
Net Earnings .. £	1,853,911	1,513,097	1,159,950	1,574,397	1,834,085
Interest .. £	1,364,271	1,424,525	1,314,737	1,341,127	1,268,202
Percentage of Working Expenses on Gross Revenue .. %	79.70	82.23	83.95	78.19	74.46
Percentage of Net Earnings on Capital Cost .. %	6.73	5.29	4.58	6.18	7.20
Tram-miles run .. ,000 miles	80,566	79,010	77,308	79,963	80,910
Gross revenue per tram mile .. d.	27.21	25.86	22.44	21.66	21.30
Working expenses per tram mile .. d.	21.69	21.27	18.84	16.94	15.86
Net earnings per tram mile .. d.	5.52	4.59	3.60	4.72	5.44
Passengers carried .. ,000	766,832	718,000	633,014	631,508	641,680
Passengers carried per tram mile .. No.	9.52	9.09	8.19	7.90	7.93
Average revenue per passenger .. d.	2.86	2.85	2.74	2.74	2.69
Persons employed at end of year .. No.	21,588	19,839	17,402	17,479	16,875

(a) Exclusive of cost of power houses for New South Wales electric tramways which are now charged to Railways.

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.

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

3. Aerodromes and Landing Grounds.—Landing grounds have been established over the following approved routes:—Perth to Wyndham (2,067 miles); Perth to Adelaide (1,453 miles); Adelaide to Sydney (790 miles); Sydney to Brisbane (550 miles); Brisbane to Camooweal (1,226 miles); Camooweal to Darwin (802 miles); Katherine to Ord River (375 miles); Cloncurry to Normanton (221 miles); Melbourne to Launceston (342 miles); Melbourne to Hobart, via King Island (487 miles); Melbourne to Hay (233 miles); Mildura to Broken Hill (189 miles); Melbourne to Charleville, via Cootamundra (900 miles).

Up to the 30th June, 1934, 204 landing grounds had been acquired or leased and prepared by the Commonwealth Government for civil aviation purposes. In addition to landing grounds established and maintained by the Commonwealth Government, considerable activity is being displayed by local governing authorities in the establishment of public aerodromes. The Civil Aviation Branch assists local authorities desirous of establishing aerodromes by giving technical advice regarding the suitability of proposed sites and the preparation of approved areas to comply with Departmental requirements. At the 30th June, 1934, there were 130 licensed public aerodromes under the control of local authorities. The total number of recognized landing grounds in Australia at the 30th June, 1934, was 334.

4. General Flying Activities, 1933.—During 1933, 553,963 miles were flown by the subsidized contractors without a fatal accident. The total mileage flown by all civil aircraft during the same period was 3,534,232 miles. Three fatal accidents occurred—an average of one fatal accident for every 1,178,077 miles flown. These figures cover all phases of civil flying operations in Australia and New Guinea.

5. **Air Services.**—(i) *General.* Since the year 1920 the grant of financial assistance for the establishment and maintenance of regular air transport services has been part of the Government's policy for the development of civil aviation in Australia.

At the 30th June, 1934, seven subsidized contractors were operating under contracts which provided that such space as is required on each trip must be reserved for mails, the letters for transmission being surcharged 3d. per $\frac{1}{2}$ ounce. The total route mileage of these services is 5,336 miles.

Since their inception the various subsidized regular air services over prepared routes have completed 11,279,000 passenger miles, and have carried 54,886 paying passengers over various stages. Over 183,300 lb. (81 tons) of letters have also been carried.

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

(ii) *Reorganization of Services.* During the year, tenders were called for the establishment of services in accordance with the reorganized and extended air transport scheme indicated on page 192 of Official Year Book No. 26. The following contracts were let :—

Singapore-Darwin-Brisbane (4,361 miles)	..	Qantas Empire Airways Ltd. (D.H.86 aircraft).
Charleville-Cootamundra (629 miles)	..	A. C. Butler (D.H.84 aircraft)
Perth-Katherine (2,252 miles)	..	MacRobertson-Miller Aviation Co. Ltd. (D.H.84 aircraft).
Cloncurry-Normanton (215 miles)	..	Qantas Empire Airways Ltd. ("Fox Moth" aircraft).
Melbourne-Launceston-Hobart (469 miles)	..	Holyman's Airways Pty. Ltd. (D.H.86 aircraft).

For the Ord River-Wyndham service (158 miles) no tender was accepted. Fresh tenders are being called for this small "spur" service.

It has been decided to extend the system by the establishment of a service between Adelaide and Bourke (590 miles), thus giving South Australia direct connexion with the overseas service, via Bourke, Charleville and Darwin. Tenders are being invited for this additional service. It is expected that the new contracts already let will be in operation by December, 1934, replacing the existing "major" subsidized services mentioned in (iii) (a) hereunder. All the new services will be operated weekly in each direction, except the Melbourne-Hobart connexion, which will be flown six times weekly in each direction.

In the latter part of 1933, the Government authorized the establishment of four additional air services, operative for twelve months, and subsidized at the rate of approximately 6d. per mile. These are known as "minor" services, and are shown in detail in sub-paragraph (iii) (b) hereunder.

(iii) *Regular Air Services at 30th June, 1934.* The following regular air services were in operation at 30th June, 1934 :—

(a) "*Major*" *Subsidized Services.* West Australian Airways Ltd.—Perth-Derby, 1,467 miles; Derby-Wyndham, 600 miles. Queensland and Northern Territory Aerial Services Ltd.—Brisbane-Camooweal, 1,269 miles; Cloncurry-Normanton, 215 miles; Daly Waters-Birdum, 50 miles. Larkin Aircraft Supply Co. Ltd.—Camooweal-Daly Waters, 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. The Daly Waters to Birdum service is operated during the "wet" season only, when surface transport between these two centres is impracticable except by pack-horses.

(b) "*Minor*" *Subsidized Services.* Aircrafts Pty. Ltd.—Brisbane-Cracow, 250 miles. Rockhampton Aerial Services Ltd.—Rockhampton-Mt. Coolon, 330 miles. Adastræ Airways Ltd.—Sydney-Bega, 205 miles. Commercial Aviation Co.—Adelaide-Port Pirie-Eyre's Peninsula, 475 miles. Services are weekly in each direction excepting Sydney-Bega, which is bi-weekly.

(c) *Unsubsidized Services.* West Australian Airways Ltd.—Perth—Adelaide, 1,453 miles, weekly in each direction (until 1st April, 1934, this was a “major” subsidized service). New England Airways Ltd.—Brisbane—Sydney, 500 miles, daily (except Sundays) in each direction. Tasmanian Aerial Services Ltd. (now Holyman's Airways Pty. Ltd.)—Melbourne—Launceston, via Flinders Island, 356 miles, tri-weekly in each direction; Launceston—Flinders Island, 120 miles, bi-weekly in each direction. Rockhampton Aerial Services Ltd.—Brisbane—Rockhampton, 325 miles, weekly in each direction. With the exception of the lastmentioned, surcharged air mail is carried on all services under arrangements with the Postmaster-General's Department.

(d) *Air Ambulance Services.* Following an agreement between the Queensland and Northern Territory Aerial Services Ltd. and the Australian Inland Mission, an air ambulance service to provide medical attention where required in Western and Northern Queensland, operating from a base at Cloncurry, was inaugurated on the 17th May, 1928. The aircraft company provides the aircraft and pilot, and the mission authorities provide the doctor. The scheme has proved most successful, and many instances are recorded of lives being saved by the services thus made available.

The “flying doctor” scheme will be extended to North-west Australia when the Ord River—Wyndham regular air service is established at the end of 1934. The contractor for this service will provide an air ambulance for the use of the Australian Aerial Medical Services as required. The Commonwealth Government will also assist by granting a subsidy for the first year. Negotiations are also in train for the establishment of a “flying doctor” service in the Port Hedland (W.A.) district.

The outback districts of North Australia also have the benefit of a “flying doctor”, as the Commonwealth Medical Officer at Katherine is a licensed pilot, and, by arrangement with the Government, he uses his aeroplane to visit patients at distant isolated centres.

6. *Air Survey.*—The Western Mining Corporation Ltd., in the latter part of 1933, began an air survey, based on Kalgoorlie, of portions of Western Australia. The work involves the photographing of extensive areas of territory, and is being carried out with specially equipped aircraft. Large tracts of auriferous country will be mapped, and the information gained should prove of great assistance to the Company's geologists. Directional wireless is being employed by the Company in both its ground and its air operations.

An interdepartmental committee was appointed in 1933 to investigate the possibilities of the development of air survey and of air photography in Australia. This Committee has completed its inquiry and has submitted its report to the Minister for Defence.

The Government has decided to make extensive use of air photography in connexion with the proposed geophysical survey of the Northern Territory. It is proposed, in the first instance, to invite tenders for this work from aircraft companies possessing, or willing to provide, the necessary equipment and trained personnel.

7. *Gliding.*—The Government has approved the grant of assistance to responsible and properly incorporated gliding associations, believing that the development of gliding will stimulate interest in aviation generally, and will provide an avenue for the youth of the country to interest itself in a form of aviation at a small cost. The grant of assistance under this heading is subject to compliance with prescribed conditions. The first agreement of this nature was made by the Commonwealth with the Western Australian Flying Club.

8. *Meteorological Aids to Aviation.*—Close co-operation exists between the meteorological authorities and aviation interests, with corresponding advantage to both. Certain of the air transport companies operating regular services compile for the meteorological authorities logs of the weather conditions along their routes. In return, aviation interests obtain from the Weather Bureau regular weather reports and forecasts for the main air routes, while special information may be had at any time on request. Civil Aviation authorities have also made available special apparatus for upper air observations, and special observation flights have been conducted over a long period by the Royal Australian Air Force at Point Cook.

To secure further information over a wider area of upper air conditions, arrangements were made for civil aircraft operators to carry out daily observations during April, 1934, at a number of selected places in the Eastern States. The series of flights proved very successful, and provided information which will be of value to the meteorological authorities for general as well as for special aviation purposes.

Arrangements have been made for an extension of the Commonwealth meteorological organization to ensure that the companies operating the Darwin-Singapore, Melbourne-Hobart, and other air services, will have the benefit of special weather forecasts before commencing their weekly journeys.

9. *Wireless*.—Preliminary action has been taken by the Government to ensure that suitable wireless facilities will be available as aids to navigation in the operation of the Singapore-Darwin and Melbourne-Hobart air services, both of which involve sea crossings.

10. *Aircraft Construction*.—The local construction of aircraft has made steady progress, but the industry is chiefly directed to the manufacture of airscrews and other parts rather than to the building of complete aircraft. The Aircraft Section at Cockatoo Island Dockyard has, however, built to the design of Wing-Commander L. J. Wackett, a twin-engined six-seater passenger aircraft, known as the "Codock". This aircraft performed well during official flight trials. It is proposed to use the aircraft in the operation of a regular service between Sydney and Newcastle.

A Genairco cabin float seaplane was constructed by Tugan Aircraft Co. Ltd., Sydney, for Rabaul Airways Ltd. This aircraft completed its flight trials for certificates of airworthiness in Sydney and was shipped to New Guinea for service between the islands in the Territory.

The Lascoter, a locally-built aircraft employed on a regular subsidized service, is being modified by the incorporation of a large radial air-cooled engine which will ensure a better performance under tropical conditions.

11. *Training of Air Pilots*.—(i) *The Associated Aero Clubs*. These clubs provide facilities in all States for flying instruction and practice. At the end of June, 1934, over 800 pupils had qualified for private ("A") pilots' licences, whilst many graduates had completed advanced courses of training, gained their commercial ("B") licences and now own aircraft. Other pupils have qualified as instructors.

The Commonwealth Government grants assistance to the clubs 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 each pupil trained to a standard that will enable him to obtain a private ("A") pilot's licence. Bonuses are also paid to the clubs in respect of the renewal of pilots' licences of club members, and each club receives an establishment grant conditional on a prescribed number of aircraft being maintained in an airworthy condition and a prescribed amount of flying being performed each month.

Originally instruction was confined to the capital cities, but operations have now been extended by the clubs to a certain number of provincial centres where aircraft and instructors are made available as pupils are offering.

Aviation pageants are held from time to time by the various Aero Clubs, both at their base cities and at country centres, and have had a valuable educative effect in stimulating interest in aviation.

(ii) *Other Organizations*. Flying training is also carried out intermittently by companies, clubs, or private owners at various centres throughout the Commonwealth. These do not receive Government subsidy.

During the year 1933, 156 pupils graduated from all flying training organizations for "A" pilots' licences, whilst the number so qualifying during the six months ended 30th June, 1934, was 65.

12. *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. (See No. 21 and subsequent issues.)

During the twelve months ended 30th June, 1934, there were ten flights between Europe and Australia. Those perhaps worthy of special mention were Sir Charles Kingsford Smith's solo flight from England in the remarkably fast time of 7 days, 4 hours, 47 minutes, which, however, was eclipsed a week later by Messrs. Ulm, Allan and Taylor, who completed the journey in the record time of 6 days, 17 hours, 57 minutes, and the solo flight of Miss Jean Batten, a young New Zealand pilot, who arrived at Darwin in just over 14 days from the time of departure from England. Her flight was particularly meritorious, inasmuch as it was her third attempt, and on this, the successful occasion, the aviatrix had to contend with very unfavorable weather conditions over several stages. During the period under review, there were also seven successful flights between Australia and New Zealand. Five of these were carried out by Mr. C. T. P. Ulm and crew in the aircraft *Faith in Australia*, and the other two were made by Sir Charles Kingsford Smith and crew in the famous *Southern Cross*. On the flight from New Zealand on the 17th February, 1934, by Mr. Ulm and party, approximately 44,000 letters were carried. This constituted the first official air mail across the Tasman Sea. The first official air mail from Australia to New Zealand—some 37,000 letters—was carried by the *Faith in Australia* on 11th–12th April, 1934, and the return flight was made two days later, when approximately 22,000 letters were carried.

13. 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, 1929, to 1933:—

CIVIL AIRCRAFT.—AUSTRALIA.—SUMMARY.

Particulars.	Year ended 30th June—				
	1929.	1930.	1931	1932.	1933.
Registered Aircraft Owners					
(a) No.	72	122	129	115	115
Registered Aircraft (a) No.	175	220	225	189	197
Licensed Pilots—(a)					
Private .. No.	209	344	407	363	370
Commercial .. No.	122	181	209	183	184
Licensed Ground Engineers					
(a) No.	198	257	293	277	272
Aerodromes—(a)					
Government No.	56	58	57	58	59
Public .. No.	19	39	66	96	114
Government Emergency					
Grounds .. No.	108	114	121	121	119
Flights carried out No.	92,000	128,916	113,340	96,192	85,346
Hours flown .. No.	27,268	42,963	44,507	31,959	31,883
Approx. Mileage .. Miles	1,992,070	3,234,307	3,596,930	2,527,700	2,587,389
Passengers carried—					
Paying .. No.	56,363	91,415	80,651	56,883	58,155
Non-paying .. No.	10,037	12,801	13,699	13,771	12,949
Total .. No.	66,400	104,216	94,350	70,654	71,104
Goods, weight carried lb.	160,424	196,795	204,445	221,552	244,258
Mails, letters carried No.	316,338	383,942	(b) 48,503	(b) 29,494	(b) 36,212
Accidents—					
Persons killed No.	7	18	29	7	5
Persons injured No.	10	20	20	17	6

(a) At 30th June.

(b) Weight in lb. all contractors.

In earlier 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. The figures shown in the above table are therefore for Australia as a whole.

14. **New Guinea Activities.**—The discovery of gold in New Guinea resulted in considerable aviation activity in the vicinity of the gold-fields, 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 less than one hour, the nature of the intervening country is such that a journey by other means occupies more than a week. Guinea Airways Ltd. is now operating three specially constructed freight machines for the transportation of several thousand tons of hydro-electric power plant and dredging machinery to the Bulolo fields. This work is being successfully accomplished and constitutes one of the most notable feats of transport in the history of aviation. Inward mails are carried by Guinea Airways Ltd. under arrangement with the Postmaster-General's Department, from Port Moresby to Wau, Salamaua, and Bulolo. The air mail fee is 1½d. per ounce in addition to the ordinary postage, plus 3d. per half-ounce (air mail surcharge) if an Australian air service is also used. Mails are carried by Holden's Air Transport Service Ltd. under arrangement with New Guinea Administration from Salamaua to Wau and other inland mining centres. None of the air services operating in the Territory is subsidized by the Commonwealth Government, but the latter Company holds a contract with the New Guinea Administration for the provision of air transport for Administration passengers and goods between the coast and the gold-fields. Several new aerodromes have been prepared in the Territory and there has been an increase in aviation activities generally. The Companies operating in New Guinea are—Guinea Airways Ltd.; Holden's Air Transport Service Ltd.; W. R. Carpenter Ltd.; and Pacific Air Transport. The subjoined table gives a summary of operations for the years ended 30th June, 1929 to 1933.

CIVIL AIRCRAFT.—TERRITORY OF NEW GUINEA.—SUMMARY.

Particulars.	Year ended 30th June—				
	1929.	1930.	1931.	1932.	1933.
Registered Aircraft Owners					
(a) No.	7	7	5	6	5
Registered Aircraft (a) No.	15	13	15	15	19
Licensed Pilots—(a)					
Private .. . No.	..	1	4	2	1
Commercial .. No.	10	11	13	16	21
Licensed Ground Engineers					
(a) No.	10	11	18	30	30
Aerodromes—(a)					
Government .. No.	2	2	2	2	2
Emergency Landing					
Grounds .. . No.	4	4	3	3	3
Flights carried out No.	1,532	2,882	2,672	4,664	7,228
Hours flown .. . No.	2,626	3,619	3,969	5,160	8,499
Approximate mileage Miles	137,705	272,976	325,807	424,232	680,871
Passengers carried—					
Paying .. . No.	1,293	2,490	2,992	3,450	6,948
Non-paying .. No.	65	649	87	31	93
Total .. . No.	1,358	3,139	3,079	3,481	7,041
Goods, weight carried lb.	1,385,510	3,062,430	3,107,616	9,778,072	10,982,936
Mails, weight carried lb.	13,876	23,257	24,604	23,394	47,097
Accidents—					
Persons killed No.	..	..	1	..	2
Persons injured No.	..	..	1	..	..

(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.

(ii) *Motor Industry.* Although motor cars are not entirely manufactured in Australia, the capital invested in assembling and body building plants is considerable. The importance of the industry is shown by the figures relating to local manufacture of motor bodies and imports of motor cars and fuel which are given in the following table for the years 1928-29 to 1932-33 :—

**MOTOR BODIES BUILT, AND BODIES, CHASSIS AND FUELS IMPORTED—
AUSTRALIA.**

Particulars.		1928-29.	1929-30.	1930-31.	1931-32.	1932-33.
Motor bodies built in Australia ..	No.	72,193	46,409	10,417	6,322	12,701
	Value £	4,357,841	3,118,987	864,209	450,510	1,039,925
Motor bodies imported ..	No.	14,546	6,556	137	61	108
	Value £	1,471,878	697,862	14,007	7,360	12,233
Chassis imported ..	No.	99,500	61,981	9,367	4,146	15,776
	Value £	8,830,362	5,807,024	721,893	355,415	1,306,830
Fuels imported—						
Crude petroleum ..	Million gallons	105	122	93	49	58
	Value £	858,678	1,118,332	823,575	448,651	486,302
Petroleum spirit, etc. ..	Million gallons	200	240	171	156	181
	Value £	6,816,287	7,429,485	4,054,265	2,622,414	3,218,209

The value of the tyres 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. Spares, batteries, accessories, etc., are additional items for which there is a wide market in Australia.

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 up to No. 25.

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. In some States the various railway and tramway systems have adjunct mot. services to their main services. Such services are conducted in New South Wales by the Department of Road Transport and Tramways, in Victoria by the Victorian Railways Commissioners, in South Australia by the South Australian Railways Commissioners and by the Municipal Tramways Trust, Adelaide, and in Tasmania by the Municipality of Hobart. In most 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 1932-33. Particulars of the registration of motor vehicles, etc., for the year 1932-33 are contained in the subjoined table:—

MOTOR VEHICLES.—SUMMARY, 1932-33.

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', etc., Licences.	Total.
	No.	No.	No.	No.	No.		£	£	£
New South Wales	152,717	23,354	46,399	222,470	85.5	309,704	1,402,476	154,965	1,557,441
Victoria	124,609	23,439	31,554	179,602	98.7	235,613	1,125,954	59,520	1,185,474
Queensland	b 81,492	7,725	(c)	89,217	94.1	46,222	474,397	19,106	493,503
South Australia	39,036	8,520	12,073	59,629	102.6	89,507	462,161	41,225	d 503,386
Western Australia	27,710	5,992	12,885	46,587	106.1	56,730	257,139	17,582	274,721
Tasmania	11,557	3,741	2,457	17,755	78.0	20,863	86,770	10,432	97,202
North Australia	369	39	206	614	485	139.9	113	223	336
Central Australia	42	4	20	66	66	87	52	36	88
Federal Capital Territory	967	82	243	1,292	144.4	1,762	6,408	820	7,228
Australia	438,499	72,896	105,837	617,232	93.1	760,973	3,815,470	303,909	4,119,379

(a) Approximate figures only on account of Annual and Quarterly Registration Certificates. (b) Includes Commercial Vehicles. (c) Included under Motor Cars. (d) Gross Revenue.

(ii) *Quinquennium* 1929-1933. The following table shows the number of vehicles registered, licences issued, and revenue received therefrom during each of the years 1928-29 to 1932-33:—

MOTOR VEHICLES.—REGISTRATIONS, ETC., AUSTRALIA.

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 Registrations and Motor Tax.	Drivers' and Riders', etc., Licences.	Total.
							£	£	£
1928-29	474,359	88,049	(a) 71,851	634,259	99.2	767,328	3,877,734	289,300	4,167,034
1929-30	466,930	84,897	104,487	656,314	101.5	823,452	4,194,910	329,988	4,524,898
1930-31	429,206	76,966	97,933	604,105	92.6	805,626	3,747,726	324,907	4,072,633
1931-32	410,970	71,696	96,254	587,920	89.4	754,839	3,717,707	305,175	4,022,882
1932-33	438,499	72,896	105,837	617,232	93.1	760,973	3,815,470	303,909	4,119,379

(a) Incomplete, partly included with Motor Cars.

(iii) *Relation to Population.* The table hereunder gives the number of vehicles (exclusive of motor cycles) registered per 1,000 of population in each State for each of the years 1921 and 1929 to 1933:—

MOTOR VEHICLES (EXCLUSIVE OF MOTOR CYCLES) REGISTERED PER 1,000 OF POPULATION.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	North-ern Territory	Federal Capital Territory.	Australia.
31st Dec., 1921	15	16	8	24	12	13	(a)	(a)	15
30th June, 1929	84	81	82	119	90	62	94	149	86
" 1930	87	87	88	100	101	68	106	154	89
" 1931	79	80	86	82	92	65	110	155	81
" 1932	73	81	83	85	96	61	119	134	79
" 1933	77	86	86	88	92	62	131	135	82

(a) Not available.

(iv) *Revenue per Motor Vehicle.* The following table gives the approximate average revenue per vehicle (exclusive of motor cycles) received in respect of registration and motor tax in the several States for each year from 1928-29 to 1932-33. In some States the revenue from motor tax on cycles is not separately recorded. In these cases the flat rate provided for cycles in the registration acts has been applied, and the average amounts shown must therefore be regarded as approximate only.

AVERAGE REVENUE PER VEHICLE FROM REGISTRATION FEES AND MOTOR TAX (EXCLUSIVE OF MOTOR CYCLES).

State, etc.	1928-29.	1929-30.	1930-31.	1931-32.	1932-33.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales	7 4 5	7 5 8	7 2 6	7 8 8	6 17 11
Victoria	6 19 2	7 0 10	7 0 2	6 19 2	6 19 6
Queensland	5 14 5	5 13 8	5 12 3	5 13 3	5 13 5
South Australia	7 6 10	9 7 11	8 5 9	8 16 7	8 13 1
Western Australia	6 10 0	6 16 1	6 15 8	6 3 11	6 3 5
Tasmania	5 0 11	5 1 6	5 11 1	5 15 0	5 15 8
Northern Territory	0 7 5	0 3 6	1 0 0	0 7 6	0 5 2
Federal Capital Territory	6 0 11	6 2 2	4 19 9	5 9 2	5 4 6
Australia	6 17 0	7 2 0	6 17 8	7 0 1	6 16 1

6. *Comparative Motor Vehicle Statistics, 1934.*—The result of the 1934 World Motor Census, conducted by the "American Automobile" magazine, from which the following particulars have been extracted, shows that there were 33,268,000 motor cars, trucks, and buses registered in various countries of the world at 1st January, 1934.

COMPARATIVE MOTOR VEHICLE STATISTICS, 1st JANUARY, 1934.

Country.	Approximate Population in Millions.	Motor Cars, Trucks, and Buses.	Motor Cycles.
Australia	7	543,551	73,000
Argentina	12	325,000	..
Belgium	8	150,000	45,000
Brazil	43	163,200	..
Canada	10	1,041,593	9,380
Cuba	4	30,987	368
Denmark	4	119,546	27,798
France	42	1,881,885	..
Germany	65	682,376	852,776
Great Britain	45	1,701,076	541,000
India	353	112,982	7,445
Irish Free State	3	50,816	5,769
Italy	41	331,967	..
Japanese Empire	93	111,379	..
Mexico	17	95,356	1,267
Netherlands	8	138,450	34,400
Netherlands East Indies	62	79,984	16,460
New Zealand	2	165,964	23,020
Union of South Africa	8	168,649	32,769
Spain	24	155,700	12,100
Sweden	6	136,340	48,000
Switzerland	4	98,100	49,400
United States of America	124	23,771,854	93,414

The foregoing figures are in some cases approximations based on estimates furnished by Trade Commissioners or representative motor trade organizations in the several countries, and in other cases are incomplete, especially in relation to motor cycles. The figures for motor cycles for Australia are estimated at 31st December, 1933, and differ from those stated in para. 5, which are actual registrations at 30th June, 1933.

As regards numbers of motor cars, Australia ranks sixth among the countries of the world, having been displaced by Germany from fifth position during 1928.

POSTS, TELEGRAPHS AND TELEPHONES.

§ 1. General.

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. The Director-General of Posts and Telegraphs controls the Department under the Postmaster-General, whilst the principal officer in each State is the Deputy Director, Posts and Telegraphs.

2. 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 30th June, 1933. 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, 1933.

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Australia.
Number of post offices (a) ..	2,443	2,533	1,192	770	567	509	8,014
Number of square miles of territory to each office in State ..	127	35	563	1,174	1,721	52	371
Number of inhabitants to each office	1,068	719	795	761	774	447	827
Number of inhabitants per 100 square miles	841	2,069	141	65	45	865	223

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

The foregoing table does not include "telephone" offices at which there is no postal business.

(ii) *Number of Offices.* The following table shows the number of post offices in each State from 1901 to 1932-33 :—

POST OFFICES—NUMBER.

State.	At 31st December—				At 30th June—					
	1901. (b)		1913.		1923.		1932.		1933.	
	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	438	1,770	503	2,093	460	2,139	438	1,990	437	2,006
Victoria	181	2,076	294	2,338	270	2,325	278	2,270	276	2,257
Queensland ..	137	1,165	216	1,170	212	1,033	199	995	188	1,004
South Australia ..	180	523	161	635	141	663	146	617	145	625
Western Australia	181	34	157	387	134	598	124	436	124	443
Tasmania	57	315	54	401	46	473	43	468	43	466
Australia	1,174	5,883	1,385	7,024	1,263	7,231	1,228	6,776	1,213	6,801

(a) Includes offices previously designated as "Allowance" and "Receiving" Offices. (b) Figures for 1903 are not available.

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

POSTAL EMPLOYEES AND MAIL CONTRACTORS.

State.	At 31st December—				At 30th June—					
	1903.		1913.		1923.		1932.		1933.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
Central Office ..	(a)		(a)	..	95	..	175	..	178	..
New South Wales ..	5,726	996	10,823	2,376	13,255	1,732	12,357	2,010	12,430	1,949
Victoria ..	4,017	914	8,437	1,123	9,148	1,124	9,490	1,103	9,485	1,085
Queensland ..	2,686	(b)	4,134	812	4,978	810	4,818	832	4,792	1,054
South Australia ..	1,973	(b)	2,364	382	3,227	422	3,252	242	3,221	297
Western Australia ..	1,331	140	2,444	355	2,450	339	2,564	309	2,623	327
Tasmania ..	(c)863	(b)	1,141	294	1,321	202	1,398	238	1,361	233
Australia ..	16,596	2,050	29,343	5,342	34,474	4,629	34,054	4,734	34,090	4,945

(a) Included in Victorian Staff. (b) Included in "employees." Separate particulars are not available. (c) Estimated.

3. *Gross Revenue, Postmaster-General's Department.—Branches.* The gross revenue collected in respect of each branch of the Department during each of the last five years is shown in the table hereunder:—

GROSS REVENUE, POSTMASTER-GENERAL'S DEPARTMENT.—BRANCHES.

Branch and Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Postal Branch—	£	£	£	£	£	£	£
1928-29 ..	2,380,622	1,656,326	827,737	461,723	387,675	170,321	5,884,404
1929-30 ..	2,392,882	1,842,658	849,828	454,131	419,044	172,399	6,131,542
1930-31 ..	2,355,336	1,642,917	875,705	440,665	394,620	176,915	5,886,158
1931-32 ..	2,305,537	1,583,136	841,602	435,526	381,113	162,695	5,709,629
1932-33 ..	2,340,889	1,620,972	862,051	462,520	397,253	162,112	5,845,797
Telegraph Branch (a)—							
1928-29 ..	532,292	334,168	237,042	182,017	137,360	46,554	1,469,433
1929-30 ..	556,561	396,383	240,612	177,115	138,964	47,224	1,556,859
1930-31 ..	459,170	325,045	208,556	158,023	115,124	42,672	1,308,590
1931-32 ..	436,523	307,740	207,108	153,191	109,237	40,358	1,254,157
1932-33 ..	437,916	328,664	211,056	158,843	120,997	44,481	1,301,957
Telephone Branch—							
1928-29 ..	2,106,433	1,529,634	762,998	599,035	320,603	140,856	5,459,559
1929-30 ..	2,305,453	1,633,790	818,170	607,130	350,385	147,758	5,862,686
1930-31 ..	2,199,466	1,598,415	814,794	565,982	326,252	139,447	5,644,356
1931-32 ..	2,089,555	1,555,437	792,607	529,790	297,713	134,263	5,399,365
1932-33 ..	2,092,461	1,595,977	787,597	534,157	301,418	134,228	5,445,838
All Branches—							
1928-29 ..	5,019,347	3,520,128	1,827,777	1,242,775	845,658	357,731	12,813,396
1929-30 ..	5,254,866	3,872,831	1,908,610	1,238,376	908,993	367,381	13,551,087
1930-31 ..	5,013,972	3,566,377	1,809,055	1,164,670	835,996	359,034	12,839,104
1931-32 ..	4,831,635	3,446,313	1,841,317	1,118,507	788,063	337,316	12,363,151
1932-33 ..	4,871,266	3,545,613	1,860,704	1,155,520	819,668	340,821	12,593,592
Total Revenue per head of mean population—							
1928-29 ..	2.01	2.00	2.05	2.16	2.04	1.65	2.02
1929-30 ..	2.08	2.18	2.11	2.14	2.13	1.68	2.11
1930-31 ..	1.96	1.99	2.07	2.01	1.94	1.61	1.98
1931-32 ..	1.88	1.91	1.98	1.92	1.82	1.49	1.89
1932-33 ..	1.87	1.95	1.98	1.98	1.88	1.50	1.91

(a) Includes radio receipts.

As compared with the corresponding figures for the previous year, an increase of 1.9 per cent. is shown in the gross revenue earned, the increases in the several branches being as follow:—Postal 2.4 per cent., Telegraph 3.8 per cent., and Telephone 0.9 per cent.

4. 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, 1933. 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, 1932-33.

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£	£
Expenditure from Ordinary Votes—								
Salaries and payments in the nature of salary ..	35,224	1,688,408	1,199,335	621,677	429,690	322,363	156,702	4,453,399
General expenses ..	1,947	85,840	56,583	27,802	23,180	22,025	12,957	230,334
Stores and material	565	57,863	35,402	13,028	12,125	9,993	5,860	134,836
Mail services ..	110,000	409,774	246,168	198,355	68,393	73,190	34,976	1,140,856
Engineering services (other than New Works) ..	34,380	701,767	531,347	263,138	208,089	116,897	80,481	1,936,099
Other services ..	41,382	..	..	..	..	..	..	41,382
Total ..	223,498	2,943,652	2,068,835	1,124,000	741,477	544,468	290,976	7,936,906
Pensions and retiring allowances ..	..	35,713	48,807	..	..	27,604	..	112,124
Rent, repairs, maintenance, fittings, &c.	..	24,860	20,660	13,449	5,471	7,252	1,416	73,108
Proportion of audit expenses ..	..	3,799	2,699	1,454	882	631	335	9,800
Interest on transferred properties ..	..	114,328	61,362	45,575	37,523	21,869	9,924	290,581
New Works—								
Telegraph, telephone and wireless ..	77	191,083	138,902	49,790	30,466	29,009	16,290	455,617
New buildings, &c.	..	3,596	..	237	543	1,934	185	6,495
Other expenditure, except Central Office expenditure charged to all States on a population basis ..	3,280,579	..	..	..	..	..	..	3,280,579
	(b)							
Total ..	3,504,154	3,317,031	2,341,265	1,234,505	816,362	632,767	319,126	12,165,210
	(c)							(c)

(a) Orient Steamship Company's Overseas Mail contract. (b) Particulars of apportionment to States not available. (c) Including expenditure not apportioned to States.

(ii) *Total, 1929 to 1933.* 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, 1929 to 1933 inclusive.

EXPENDITURE, POSTMASTER-GENERAL'S DEPARTMENT.

Expenditure.	Year ended 30th June—				
	1929.	1930.	1931.	1932.	1933.
	£	£	£	£	£
Total	15,693,070	15,797,072	14,282,984	12,196,307	12,165,210

The total expenditure for 1932-33 decreased by 22.5 per cent. compared with the amount for 1928-29.

5. Profit or Loss, Postmaster-General's Department.—(i) States 1932-33. The foregoing statements of gross revenue and expenditure represent actual collections and payments made and cannot be taken to represent the actual results of the working of the Department for the year. 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, 1932-33.

Branch.	Profit or Loss.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
		£	£	£	£	£	£	£
Postal ..	{ Profit	554,715	482,913	239,540	116,380	80,543	..	1,471,685
	{ Loss	..	..	..	..	..	2,406	..
Telegraph (a)	{ Profit	..	35,156	..	..	..	..	..
	{ Loss	32,877	..	32,739	13,786	27,165	7,381	78,792
Telephone ..	{ Profit	18,290	..	9,266	..	..	..	..
	{ Loss	..	1,284	..	111,715	52,919	61,913	200,275
All Branches	{ Profit	540,128	516,785	216,067	..	459	..	1,192,618
	{ Loss	..	..	..	9,121	..	71,700	..

(a) Including Wireless Branch.

After providing for depreciation, pensions and retiring allowances and interest on capital, the year 1932-33 closed with a surplus of £1,192,618. For the preceding year a surplus of £736,009 was shown.

(ii) Branches, 1929 to 1933. The following statement gives particulars of the operating results of each branch for the period 1929 to 1933 :—

PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT—BRANCHES.

Year Ended 30th June—	Branch.							
	Postal.		Telegraph.		Telephone.		All Branches.	
	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£	£	£	£
1929 ..	531,870	..	..	228,134	..	247,212	56,524	..
1930 ..	557,105	..	..	232,188	..	127,034	197,883	..
1931 ..	721,282	..	..	355,366	..	432,920	..	67,004
1932 ..	1,267,534	..	..	152,435	..	379,090	736,009	..
1933 ..	1,471,685	..	..	78,792	..	200,275	1,192,618	..

6. Capital Account.—The appended statement shows particulars of the fixed assets of the Postmaster-General's Department at 30th June, 1933.

FIXED ASSETS, POSTMASTER-GENERAL'S DEPARTMENT, 30th JUNE, 1933.

Particulars.	Net Value, 1st July, 1932.	Capital Expenditure, 1932-33.	Gross Value, 30th June, 1933.	Less Deprecia- tion, &c. 1932-33. (a)	Net Value, 30th June, 1933.
	£	£	£	£	£
Telephone Lines and equipment	31,499,479	717,588	32,217,067	433,444	31,783,623
Telegraph Lines and Trunk Line equipment	10,117,133	84,168	10,201,301	75,290	10,126,011
Telegraph equipment	603,400	16,072	619,472	17,778	601,694
Postal equipment	395,019	6,520	401,539	1,594	399,945
Sites, Buildings, Furniture, and Office equipment	9,311,931	31,354	9,343,285	22,176	9,321,109
Miscellaneous	576,717	28,198	604,915	32,719	572,196
Wireless equipment and Buildings	128,689	32,035	160,724	9,918	150,806
Total	52,632,368	915,935	53,548,303	592,919	52,955,384

(a) Includes dismantled assets, depreciation written off, and assets transferred.

During the past quinquennium the value of the fixed assets has increased by 14 per cent., the net value at 30th June, 1928, being £46,451,015.

§ 2. Posts.

i. Postal Matter Dealt With.—(i) *Australia*. The following table gives a summary of the postal matter dealt with in Australia during the five years 1929 to 1933. Although mail matter posted in Australia for delivery therein is necessarily handled at least twice, only the numbers dispatched are included in the following table, which consequently gives the number of distinct articles handled :—

POSTAL MATTER DEALT WITH—AUSTRALIA.

Year ended 30th June—	Letters, Postcards and Packets.		Newspapers.		Parcels.		Registered Articles.	
	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.

POSTED WITHIN AUSTRALIA FOR DELIVERY THEREIN.

1929	797,743	125,571	151,698	23,878	14,873	2,341	7,376	1,161
1930	791,241	123,001	150,812	23,444	13,889	2,159	7,267	1,130
1931	701,694	107,985	127,959	19,692	9,769	1,503	6,447	992
1932	677,847	103,437	118,906	18,145	8,841	1,349	6,096	930
1933	699,932	105,974	118,357	17,920	8,661	1,311	6,093	923

TOTAL POSTAL MATTER DEALT WITH.

1929	887,799	139,747	180,612	28,430	15,571	2,451	8,413	1,324
1930	865,412	134,531	178,018	27,674	14,586	2,267	8,268	1,285
1931	761,508	117,190	152,326	23,442	10,209	1,571	7,244	1,115
1932	731,134	111,569	139,502	21,288	9,203	1,404	6,731	1,027
1933	752,755	113,972	140,733	21,308	9,044	1,369	6,710	1,016

(ii) *States.* The next table shows separately for each State the postal matter dealt with in 1932-33.

POSTAL MATTER DEALT WITH—STATES, 1932-33. (a)

State.	Letters, Postcards and Packets.		Newspapers.		Parcels.		Registered Articles.	
	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.
POSTED FOR DELIVERY WITHIN AUSTRALIA.								
New South Wales	275,475	105,959	55,645	21,403	3,707	1,426	2,255	868
Victoria ..	205,402	113,176	25,243	13,909	1,611	888	1,720	948
Queensland ..	92,759	98,588	20,454	21,739	1,714	1,822	919	976
South Australia	54,158	92,683	6,899	11,806	828	1,416	494	846
Western Australia	43,328	99,173	5,045	11,548	677	1,551	476	1,090
Tasmania ..	28,810	126,397	5,071	22,249	124	542	229	1,004
Australia ..	699,932	105,974	118,357	17,920	8,661	1,311	6,093	923

OVERSEA DISPATCHED.

New South Wales	11,712	4,505	2,021	777	84	32	125	48
Victoria ..	8,967	4,941	4,292	2,365	41	23	55	30
Queensland ..	2,355	2,503	601	639	12	13	24	26
South Australia	2,126	3,638	289	495	7	13	23	40
Western Australia	2,531	5,793	384	879	9	21	29	66
Tasmania ..	1,643	7,209	187	822	2	7	3	11
Australia ..	29,334	4,441	7,774	1,177	155	24	259	39

OVERSEA RECEIVED.

New South Wales	9,627	3,793	7,452	2,866	98	38	173	67
Victoria ..	6,454	3,556	2,105	1,160	67	37	106	58
Queensland ..	2,333	2,480	2,257	2,399	22	24	29	31
South Australia	1,328	2,273	928	1,588	13	22	17	29
Western Australia	2,958	6,770	1,543	3,532	24	54	28	64
Tasmania ..	789	3,461	316	1,388	4	17	5	23
Australia ..	23,489	3,556	14,601	2,211	228	35	358	54

(a) See explanation in paragraph (i).

2. **Value-Payable Parcel 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 1929 to 1933 :—

VALUE-PAYABLE PARCEL POST.—SUMMARY.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
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NUMBER OF PARCELS POSTED.

	No.	No.	No.	No.	No.	No.	No.
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
1931	248,316	27,786	179,564	18,413	75,977	568	550,624
1932	280,589	37,144	182,902	25,315	80,330	714	606,994
1933	289,975	37,567	195,713	23,559	79,820	1,711	628,345

VALUE COLLECTED.

	£	£	£	£	£	£	£
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
1931	342,786	38,596	242,756	21,108	86,103	764	732,113
1932	331,328	47,481	230,761	26,931	83,973	920	721,394
1933	343,155	49,392	302,347	24,704	81,029	1,980	802,607

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

	£	£	£	£	£	£	£
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
1931	32,791	3,684	23,430	2,294	8,944	68	71,211
1932	36,606	4,787	23,962	3,088	9,450	90	77,983
1933	37,555	4,952	25,723	3,031	9,867	212	81,340

The number and value of parcels forwarded in New South Wales and Queensland are much higher than in any of the other States, although the system has 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 also has a large area, the population of that State is, comparatively, not widely spread.

3. *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 the insertion of this information terminated with Year Book No. 22.

(ii) *Amount of 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, 1933 :—

MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1932-33.

Service.	Orient S.N. Co.	Queens- land Ports.	South Australian Ports.	Western Australian Ports.	Tas- manian Ports.
	£	£	£	£	£
Annual subsidy	110,000	1,200	5,000	5,520	31,853

4. *Total Cost of Carriage of Mails.*—During the year 1932-33 the amount paid for conveyance of mails at postage rates by non-contract vessels and on account of other countries' services was £25,819 ; by road services, £558,440 ; and by railway services, £397,521. The total expenditure during the financial year 1932-33 on the carriage of mails, as disclosed by the Profit and Loss Account, amounted to £1,146,552.

5. *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 1932-33, and the methods adopted in the disposal thereof :—

DEAD LETTER OFFICES.—SUMMARY, 1932-33.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
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LETTERS, POSTCARDS, AND LETTER-CARDS.

Returned direct to writers or delivered	983,853	233,216	150,128	68,417	111,869	74,148	1,621,631
Destroyed in accordance with Act	56,604	33,377	21,442	8,559	4,506	3,612	128,160
Returned to other States or Countries as unclaimed	48,396	16,835	10,651	3,620	11,466	924	91,892
Total	1,088,913	283,428	182,221	80,596	127,841	78,684	1,841,683

PACKETS AND CIRCULARS.

Returned direct to writers or delivered	651,310	104,768	133,151	9,196	71,124	32,328	1,001,877
Destroyed in accordance with Act	92,716	24,635	28,174	10,260	4,581	678	161,044
Returned to other States or Countries as unclaimed	1,601	21,167	3,327	1,769	611	330	28,805
Total	745,627	150,570	164,652	21,225	76,316	33,336	1,191,726
Grand Total (letters, packets, etc.)	1,834,540	433,998	346,873	101,821	204,157	112,020	3,033,409

During the year 1932-33 money and valuables to the amount of £60,374 were found in undelivered postal articles, while 38,090 postal articles were posted without address, including 471 which contained money and valuables to the extent of £3,293.

6. *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) *States, 1932-33.* Particulars regarding the business transacted in each State for the year 1932-33 are given hereunder :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, 1932-33.

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 ..	6,977,437	7,021,115	36,348	2,547,049	58,309
Victoria ..	2,644,680	2,847,902	17,064	1,650,113	38,835
Queensland ..	2,278,448	2,107,011	16,037	667,725	14,930
South Australia ..	758,896	765,279	5,086	367,470	8,749
Western Australia ..	1,144,414	1,062,777	7,304	360,231	7,929
Tasmania ..	452,854	424,882	2,620	153,046	3,614
Australia ..	14,256,729	14,228,966	84,459	5,745,634	132,366

The figures in the foregoing table relating to money orders show a decrease compared with the previous year, while those referring to postal notes show an increase.

(iii) *Australia, 1929 to 1933.* The next table shows the total number and value of money orders and postal notes issued and paid in Australia from 1928-29 to 1932-33 :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, AUSTRALIA.

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).
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
1931 ..	3,055	15,790	2,989	15,381	14,691	5,343	14,731	5,348
1932 ..	2,781	14,351	2,788	14,367	16,205	5,579	16,132	5,563
1933 ..	2,707	14,257	2,691	14,229	16,717	5,746	16,735	5,729

(iv) *Classification of Money Orders Issued and Paid.* (a) *Money Orders Issued.* The next table shows the number and value of money orders issued during the year 1932-33, classified according to the country where payable :—

MONEY ORDERS ISSUED.—COUNTRY WHERE PAYABLE, 1932-33.

Where Issued.	Where Payable.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
NUMBER.					
Australia	2,572,211	13,272	83,410	38,279	2,707,172
VALUE.					
Australia	£ 13,847,788	£ 55,646	£ 195,976	£ 157,319	£ 14,256,729

(b) *Money Orders Paid.* The number and value of money orders paid during the year 1932-33, classified according to the country where issued, are given hereunder:—

MONEY ORDERS PAID.—COUNTRY OF ISSUE, 1932-33.

Where Paid.	Where Issued.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
NUMBER.					
Australia	2,577,598	38,176	51,199	23,687	2,690,660
VALUE.					
Australia	£ 13,851,372	£ 71,449	£ 214,016	£ 92,129	£ 14,228,966

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 1932-33, 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, 1932-33.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
NUMBER.							
Issued in same State	6,684,848	3,295,818	1,532,545	729,329	863,506	348,059	13,454,105
Issued in other States	732,500	488,793	457,871	82,140	54,175	1,465,209	3,280,688
Total	7,417,348	3,784,611	1,990,416	811,469	917,681	1,813,268	16,734,793
VALUE.							
Issued in same State	£ 2,237,746	£ 1,156,571	£ 555,699	£ 251,113	£ 313,659	£ 114,490	£ 4,629,278
Issued in other States	237,899	172,422	189,483	32,229	15,300	452,280	1,099,613
Total	2,475,645	1,328,993	745,182	283,342	328,959	566,770	5,728,891

The number and value of postal notes paid in Australia during the year showed an increase of 3.7 per cent. and 3.0 per cent. respectively compared with the corresponding figures for the year 1931-32.

§ 3. Telegraphs.

1. *General.*—(i) *Development of System.* 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 few years substantial improvements in both the speed and grade of telegraph service throughout Australia have been effected, the entire system being subjected to intensive reorganization.

(ii) *External Circulation or Routing of Traffic.* The external circulation system of the Australian telegraph service has been considerably modified, direct communication having been established between cities and towns which formerly were served through intermediate repeating centres. The reorganization has eliminated the loss of time in transit, improved the grade of service, and led to economy as regards the labour formerly required in manual re-transmission. As a result of the reorganization there are now only nine repeating centres, fourteen centres having been abolished.

(iii) *Carrier Wave System.* This system which permits a number of messages to be transmitted simultaneously over the one line is now in operation between Perth and Adelaide, Adelaide and Melbourne, Melbourne and Sydney, and Sydney and Brisbane. There are now 38,260 miles of uni-directional telegraph carrier channels in operation.

(iv) *Direct Telegraph Communication over Great Distances.* The telegraph system in Australia provides direct communication between many places separated by great distances as indicated in the following examples:—Sydney-Perth, 2,695 miles; Perth-Wyndham, 1,933 miles; Melbourne-Brisbane, 1,246 miles; Brisbane-Cairns, 1,056 miles; Adelaide-Perth, 1,627 miles; Melbourne-Perth, 2,104 miles; Adelaide-Darwin, 1,940 miles; and Sydney-Adelaide, 1,068 miles. These direct channels provide a speedy service between the centres named, the average time involved in the transmission of a telegram being ten minutes.

(v) *Machine Telegraphy.* In order to speed up transmission, machine printing telegraph systems have been introduced 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 Brisbane, 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 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.

(vi) *Phonogram Service.* Telephone subscribers may now telephone telegrams for onward transmission, or have messages telephoned to them. 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. The number of telegrams lodged by telephone during the twelve months ended 30th June, 1933, was 1,621,256 or 12.7 per cent. of the total lodgments, and the popularity of this facility is growing.

(vii) *Radiograms within Australia.* On 1st May, 1929, the rates for radiograms between Flinders Island, King Island, Wave Hill, Brunette Downs and other places within the Commonwealth were reduced to 1½d. per word with a minimum charge of two shillings. Communication at these rates was extended to Lord Howe Island in August, 1929.

(viii) *Picturegram Service.* During the year ended 30th June, 1933, 300 picturegrams were transmitted between Sydney and Melbourne, the revenue being £691. 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.

(ix) *Special Telegram Forms.* The use of appropriately designed telegram forms for conveying Christmas and New Year greetings continues to increase in volume and popularity. The increase since the inception of this facility in 1929 represents 33.5 per cent. as indicated in the following table:—

Year.						No. of Greeting Telegrams.
1929	..	..	..	..	..	144,102
1930	..	..	..	..	..	157,705
1931	..	..	..	..	..	184,142
1932	..	..	..	..	..	191,156
1933	..	..	..	..	..	192,363

During the year 1933-34 telegram forms of special design and attractive colouring, in connexion with Mothers' Day messages, Birthday greetings and Congratulatory telegrams, have been placed at the disposal of the public.

(x) *Linking of Telegraph and Broadcast Services.* During the 1932-33 Australian tour of the English Test Cricket Team, a network of telegraph channels linking the National Broadcasting Stations was arranged. This innovation permitted direct and simultaneous transmission of ball-to-ball descriptions from the observer on the field to the studio announcers who were able to describe events to listeners within 30 seconds of their actual occurrence, over 12,000 miles away.

(xi) *Private Wire Teleprinter Services.* In conformity with its policy of placing at the service of the public new developments in communication, the Department has now introduced teleprinter service. This may be briefly defined as typewriting over electrical circuits, teleprinters being similar in performance to typewriters, except that the keyboard and platen are electrically connected by means of a telegraph line.

This facility combines the speed of the telegraph and the flexibility and personal touch of the telephone with the accuracy and permanency of the printed word. It affords the great advantage of direct and instantaneous communication between points within the same building or separated by distances up to thousands of miles. Communications are automatically produced at both ends exactly as sent, and matter may be despatched with the utmost privacy even in exposed situations where other means are unsuitable. It affords two-way communication and a great variety of matter can be despatched at speeds up to 60 words a minute.

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 1929 to 1933:—

TELEGRAPHS, AUSTRALIA.—SUMMARY.

Particulars for Year ended 30th June.	1929.	1930.	1931.	1932.	1933.
Number of offices	9,252	9,317	9,189	9,160	9,137
Length of wire (miles)—					
Telegraph purposes only	72,642	71,629	62,009	58,891	55,302
Telegraph and telephone purposes ..	87,303	88,785	98,140	98,369	101,797
Length of line (miles)—					
Conductors in Morse cable	3,500	3,735	3,789	4,157	4,401
Conductors in submarine cable (statute miles)	4,676	4,524	4,859	4,863	4,833
Pole routes (miles)	96,467	98,450	100,596	100,507	99,951

(ii) *States.* The following table gives corresponding particulars for each State for the year 1932-33:—

TELEGRAPHS.—STATES, SUMMARY, 30th JUNE, 1933.

Particulars.	N.S.W.	Victoria.	Q'land.	S.Aust.	W.Aust.	Tas.	Aus- tralia.
Number of offices	2,978	2,423	1,442	796	959	539	9,137
Length of wire (miles)—							
Telegraph purposes only	17,779	8,248	12,776	7,111	8,659	729	55,302
Telegraph and telephone purposes	37,331	14,109	28,179	13,553	6,931	1,694	101,797
Length of line (miles)—							
Conductors in Morse cable	2,253	1,438	477	..	209	24	4,401
Conductors in submarine cable (statute miles)	3,573	282	311	251	..	416	4,833
Pole routes (miles)	34,613	19,289	15,735	15,037	11,758	3,519	99,951

A total length of 157,099 miles of wire is available for telegraph purposes, of which 101,797 miles are also used for telephone purposes. Compared with those for the previous year the figures show a decrease of 161 miles (0.1 per cent.) in the total length and an

increase of 3,428 miles (3.48 per cent.) in the length of line used for both telegraph and telephone purposes. The decrease in the mileage of wire available for telegraph purposes only is due to the extension of the practice of superimposing telegraph facilities over telephone wires.

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

TELEGRAMS DISPATCHED.—AUSTRALIA.

Telegrams.	Year ended 30th June—				
	1929.	1930.	1931.	1932.	1933.
Number (a) ..	16,345,152	15,724,246	12,985,298	12,679,951	12,778,028

(a) Including interstate cablegrams.

(ii) *States.* The appended table shows the total number of telegrams dispatched in each State in 1932-33 according to the class of message transmitted :—

TELEGRAMS DISPATCHED.—STATES, 1932-33.

Class of Message Transmitted within Australia.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
Paid and Collect—							
Ordinary ..	3,558,626	2,520,005	2,002,601	858,149	1,188,717	236,472	10,364,570
Urgent ..	220,808	73,663	68,080	35,124	36,988	7,912	442,575
Press ..	214,065	121,887	94,539	38,386	34,882	22,284	526,043
Lettergram ..	74,771	72,670	68,698	35,052	80,085	30,636	361,912
Radiogram ..	12,042	4,348	4,488	5,411	2,473	6,163	34,925
Total ..	4,080,312	2,792,573	2,238,406	972,122	1,343,145	303,467	11,730,025
Unpaid—							
Service ..	126,520	46,265	48,715	38,106	45,357	15,896	320,859
Shipping ..	31,985	77,654	16,733	3,786	11,271	5,242	146,671
Meteorological ..	177,351	82,357	77,286	87,145	127,279	29,055	580,473
Total ..	335,856	206,276	142,734	129,037	183,907	50,193	1,048,003
Grand Total	4,416,168	2,998,849	2,381,140	1,101,159	1,527,052	353,660	12,778,028

The figures in the foregoing table show an increase in the total volume of telegraph business of 98,077 messages (0.8 per cent.) 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 1928-29 to 1932-33 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 :—

TELEGRAPH DENSITY STATISTICS—CHIEF COUNTRIES.

Country.	Percentage of Telegraph to Total Wire Communication.	Telegraph Communication per Head of Population.
Australia	3.1	2.1
Austria	0.5	0.4
Belgium	2.3	0.7
Canada	0.5	1.2
Czechoslovakia	1.8	0.4
Denmark	0.4	0.6
France	3.8	0.8
Germany	0.8	0.3
Great Britain	2.9	1.0
Hungary	1.9	0.3
Japan	1.5	0.8
Netherlands	0.8	0.5
New Zealand	1.4	2.9
Norway	1.2	1.1
Poland	0.6	0.1
Spain	3.4	1.0
Sweden	0.5	0.6
Switzerland	1.0	0.6
Union of South Africa	2.3	0.6
United States of America	0.7	1.5

§ 4. Overseas Cable and Radio Communication.

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, pp. 335 and 336.

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.

4. **Overseas Cable and Radio Business.**—(i) *Australia.* The subjoined table shows the number of cablegrams and radiograms received and dispatched in Australia from 1930-31 to 1932-33 :—

CABLEGRAMS AND RADIOGRAMS.—AUSTRALIA.

Messages.	Number Received.			Number Dispatched.			Total Number Received and Dispatched.		
	1930-31.	1931-32.	1932-33.	1930-31.	1931-32.	1932-33.	1930-31.	1931-32.	1932-33.
Number ..	572,423	564,205	579,958	647,655	610,763	639,121	1,220,078	1,174,968	1,219,079

(ii) *States.* The number of cablegrams received and dispatched in each State during the year 1932-33 is given hereunder :—

CABLEGRAMS AND RADIOGRAMS.—STATES, 1932-33.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	Australia.
Number received ..	298,814	190,856	24,474	28,674	28,926	8,214	579,958
Number dispatched	311,142	215,591	32,557	34,312	35,411	10,108	639,121
Total ..	609,956	406,447	57,031	62,986	64,337	18,322	1,219,079

(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 follow :—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 in regard to traffic with the principal countries :—

CABLEGRAM AND RADIOGRAM RATES, JUNE, 1933.

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. 11d.
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 6s. 8d.	4s. 1d. to 7s. 5d.	3s. 9d. to 6s.

(ii) *Deferred Telegrams (via Cable or Radio).* Under this system a reduction of 50 per cent. in the ordinary cable or radio 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 the "Daily Letter Telegram" service, has affected the ordinary 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 radio ; (b) Canada, at 2½d. per word by cable and 2½d. per word via radio ; and (c) United States of America, at 3d. to 4d. per word by cable and 3½d. to 4d. per word via radio.

(iii) *Daily Letter Telegrams.* The Daily Letter Telegram service was inaugurated in September, 1923, between Australia and Great Britain and Canada, later being extended to most countries in the British Empire and in Europe, to the United States and to certain other places. In accordance with the decision of the International Telegraph Conference which was held at Madrid in 1932, the charges on Daily Letter Telegrams have, since 1st April, 1933, been based on one-third of the tariff per word for full-rate messages, and are now subject to a minimum charge as for 25 words (in lieu of 20 as previously). These messages are deliverable on the morning of the second day following that of lodgment.

(iv) *Week-end Letter Telegrams.* The Week-end Letter Telegram facility which had been in operation for a number of years between Australia and certain other countries was abolished on 1st April, 1933, in accordance with the decision of the Madrid International Telegraph Conference.

(v) *Press Telegrams.* The rate per word on press messages exchanged with Great Britain is 6d. by cable and 4d. via radio.

(vi) *Night Letter Telegrams.* A Night Letter Telegram service was introduced between Australia and New Zealand on 1st May, 1924, and was extended to Fiji on 1st December, 1924. As from 1st April, 1933, the minimum charge for messages has been fixed as for 25 words (in lieu of 20 as previously) in accordance with a decision of the Madrid Conference, the minimum charges being—to New Zealand, 3s. 9d. minimum, 2d. for each additional word beyond 25; Suva, 5s. 10d. minimum, 3d. for each additional word; other places in Fiji, 7s. 4d. minimum, and 4d. for each additional word beyond 25. Night Letter Telegrams are accepted at any time and are delivered by first post on the morning following receipt.

§ 5. 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, 1930 to 1933 :—

TELEPHONE LINES.—AUSTRALIA.

Particulars.	Year ended 30th June—			
	1930.	1931.	1932.	1933.
Ordinary Lines—				
Conduits duct miles	5,844	6,047	6,217	6,454
„ route miles	3,310	3,416	3,571	3,776
Conductors in aerial cables loop mileage	5,461	5,213	4,436	4,276
Conductors in underground cables loop mileage	761,723	789,736	800,081	811,122
Conductors in cables for junction circuits loop mileage	101,040	105,047	103,237	102,168
Open conductors single wire mileage	424,007	422,737	418,264	418,053
Trunk Lines—				
Telephone trunk lines only .. miles	232,909	233,543	236,209	232,409
Telegraph and telephone purposes „	88,785	98,140	98,369	101,797

(ii) *Comparison with Other Countries.* An encouraging improvement in telephone development occurred in Australia during 1932–33, a net gain of 3,036 telephones having been secured as against a loss of 13,429 for 1931–32 and 22,114 for 1930–31. This recovery has enabled Australia to retain seventh place in the list of countries showing the greatest density of telephone growth; there are 73.6 telephones per 1,000 of population. The average length of wire per telephone in Australia is 5.3 miles, as compared with 5.0 miles in the United States of America, 4.0 miles in Canada and 3.9 miles in New Zealand.

(iii) *Trunk Line System.* The system embraces practically every town and village, and commercial communication is available between the States on the mainland. The proposal to link up Tasmania by a submarine telephone cable has been advanced a step by the invitation of tenders for the necessary material. When this cable is laid the ideal of a nation-wide telephone service will be realized.

Increasing use continues to be made of the carrier system of telephony whereby several additional channels of communication may be obtained over one pair of wires. There are 54 carrier telephone systems in service in Australia, giving a total of 91 channels with an aggregate channel mileage of approximately 25,534 miles.

(iv) *Automatic Exchanges.* At the 30th June, 1933, there were 69 automatic or semi-automatic exchanges in operation, providing facilities for 198,963 telephones, 193,482 of which were in the telephone networks of the six State capital cities.

(v) *Rural Automatic Exchanges.* For some time, trials have been conducted in country districts of small units of automatic equipment designed to provide continuous telephone service where an extension of the hours under manual conditions is impracticable. The trials have indicated the suitability of this equipment for Australian conditions, and arrangements are in progress to install additional units at selected centres throughout Australia.

(vi) *Summary for States.* Particulars relating to the telephone service in each State for the years ended 30th June, 1931 to 1933, will be found in the following table:—

TELEPHONE SERVICES.—SUMMARY.

Particulars.	Year (30th June).	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
No. of Exchanges ..	1931	1,946	1,652	934	553	646	355	6,086
	1932	1,942	1,641	938	552	648	348	6,069
	1933	1,935	1,639	947	554	644	352	6,071
No. of Telephone Offices (including Exchanges)	1931	2,993	2,353	1,424	787	934	516	9,007
	1932	2,981	2,350	1,429	790	937	513	9,000
	1933	2,937	2,339	1,415	791	930	512	8,924
No. of lines connected ..	1931	141,445	113,282	48,979	39,552	21,258	11,727	376,243
	1932	135,179	110,213	48,346	37,815	20,639	11,380	363,572
	1933	135,859	110,386	48,170	37,339	20,561	11,461	363,776
No. of instruments connected	1931	188,345	154,647	62,375	50,656	27,734	14,298	498,055
	1932	181,326	151,455	62,065	48,696	27,117	13,967	484,626
	1933	182,992	152,693	62,207	48,463	27,220	14,087	487,662
(a) No. of subscribers' instruments	1931	183,507	151,190	60,065	49,237	26,505	13,499	484,003
	1932	176,426	147,989	59,740	47,181	25,884	13,148	470,368
	1933	177,869	149,179	59,859	46,945	25,956	13,255	473,063
(b) No. of public tele- phones	1931	2,944	2,213	1,527	788	900	525	8,897
	1932	2,986	2,199	1,532	788	903	544	8,952
	1933	3,229	2,226	1,534	789	900	549	9,227
(c) No. of other local instruments	1931	1,894	1,444	783	631	329	274	5,155
	1932	1,914	1,267	793	727	330	275	5,306
	1933	1,894	1,288	814	729	364	283	5,372
Instruments per 100 of population	1931	7.49	8.60	6.50	8.61	6.59	6.52	7.66
	1932	7.15	8.39	6.38	8.25	6.42	6.32	7.40
	1933	7.01	8.39	6.56	8.27	6.20	6.19	7.36
Earnings		£	£	£	£	£	£	£
	1931	2,246,395	1,628,164	819,395	568,925	328,833	139,636	5,731,348
	1932	2,087,878	1,556,936	798,088	529,743	303,527	134,905	5,411,077
1933	2,125,762	1,603,177	799,251	532,090	308,470	136,090	5,504,840	
Working expenses ..	1931	1,643,800	1,219,722	558,500	496,697	272,543	167,225	4,358,487
	1932	1,351,053	1,033,698	485,962	405,252	241,369	143,919	3,661,253
	1933	1,330,070	1,037,901	479,664	391,371	226,122	138,224	3,603,352
Percentage of working expenses on earnings	1931	%	%	%	%	%	%	%
	1932	73.18	74.91	68.16	87.30	82.83	119.76	76.05
	1933	64.71	66.39	60.89	76.50	79.52	106.68	67.66
	1933	62.57	64.74	60.01	73.55	73.30	101.57	65.46

The number of instruments per 100 of population declined from 7.40 in 1931-32 to 7.36 in 1932-33. The actual number of instruments increased from 484,626 to 487,662, a gain of 0.63 per cent. Of the total instruments connected at 30th June, 1933, 214,206, or 43.9 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.

(vii) *Systems in Use.* The following table shows the percentage of automatic, common battery, and magneto telephone lines at 30th June, 1931 to 1933 :—

PERCENTAGE OF AUTOMATIC, COMMON BATTERY, AND MAGNETO LINES.

System.	30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Automatic	1931	41.8	37.3	34.1	37.9	40.9	28.7	38.5
	1932	42.6	37.1	35.7	37.3	40.8	29.0	39.0
	1933	45.1	37.7	36.0	37.0	41.9	29.4	40.1
Common Battery ..	1931	2.9	18.6	..	13.4	6.1	16.8	9.0
	1932	2.9	19.0	..	13.5	6.2	17.2	9.1
	1933	2.8	18.9	..	13.7	6.2	17.1	9.1
Magneto	1931	55.3	44.1	65.9	48.7	53.0	54.5	52.5
	1932	54.5	43.9	64.3	49.2	53.0	53.8	51.9
	1933	52.1	43.4	64.0	49.3	51.9	53.5	50.8

(viii) *Subscribers' Lines and Calling Rates.* The next table gives the number of subscribers' lines and the daily calling rate at central, suburban, and rural telephone exchanges in the several States for the year 1932-33 :—

TELEPHONES.—SUBSCRIBERS' LINES AND DAILY CALLING RATE, 1932-33.

State.	Central Exchanges.		Suburban Exchanges.		Rural 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	15,283	10.82	60,445	4.02	58,262	2.07	133,990	3.95
Victoria ..	7,667	10.13	55,031	3.81	45,786	1.63	108,484	3.34
Queensland ..	6,558	8.69	11,763	3.56	29,679	2.40	48,000	3.54
South Australia ..	5,088	8.23	14,420	3.32	17,634	1.57	37,142	3.16
Western Australia	6,846	5.55	3,872	3.77	9,839	1.37	20,557	3.21
Tasmania ..	2,712	4.06	987	2.30	7,458	1.88	11,157	2.45
Australia ..	44,154	8.87	146,518	3.82	168,658	1.91	359,330	3.54

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 and suburban exchanges, and Queensland at rural exchanges. For Australia as a whole, the average number of calls per line at central exchanges was nearly two and a half times the number registered at suburban exchanges, while the average for suburban exchanges was double the number shown for rural exchanges.

(ix) *Trunk Line Calls and Revenue.* In the following table the number of telephone trunk line calls recorded, the amount of revenue received, and the average revenue per call are shown for each of the States for the years 1930-31 to 1932-33 :—

TELEPHONES.—TRUNK LINE CALLS AND REVENUE.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
Total Calls for Year—	No.	No.	No.	No.	No.	No.	No.
1930-31 ..	10,384,188	8,100,657	5,549,423	3,999,105	1,736,945	1,293,759	30,164,077
1931-32 ..	9,678,897	8,067,603	5,334,890	3,959,101	1,549,363	1,218,231	28,908,085
1932-33 ..	9,851,642	8,157,857	5,329,262	3,115,450	1,559,904	1,196,868	29,210,983
Total Revenue for Year—	£	£	£	£	£	£	£
1930-31 ..	512,403	358,833	318,748	142,557	90,085	43,494	1,466,120
1931-32 ..	480,847	357,688	300,801	140,023	83,831	41,500	1,404,690
1932-33 ..	473,295	357,063	288,681	142,013	81,858	41,454	1,384,364
Average Revenue per Call—	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
1930-31 ..	11.84	10.63	13.78	11.04	12.45	8.07	11.66
1931-32 ..	11.91	10.64	13.53	10.99	12.99	8.18	11.66
1932-33 ..	11.53	10.51	13.00	10.94	12.59	8.31	11.37

The number of trunk line calls originated during 1932-33 increased by over a quarter of a million compared with the figures for the previous year, but the average revenue per call decreased by 0.29d.

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

§ 6. 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.

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 have 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*, i.e. Stations other than those named above.

The following table shows the number of each class of licence issued in each State, etc., during the years 1932-33 and 1933-34:—

WIRELESS LICENCES, 1932-33.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	F.C.T.	Aust.	Papua and New Guinea	Grand Total.
Coast	2	1	6	1	5	3	1	..	19	9	28
Ship	21	60	2	12	4	..	..	..	99	..	99
Land (b) ..	8	3	3	..	2	3	4	..	24	3	27
Broadcasting (a) ..	14	14	8	4	4	3	..	1	48	..	48
Broadcast listeners' ..	177,386	170,995	36,146	50,097	20,536	12,563	53	614	468,390	40	468,430
Experimental	383	323	126	111	68	30	..	4	1,045	2	1,047
Portable	9	1	7	2	1	..	5	..	25	..	25
Special	26	11	..	1	6	..	..	..	44	..	44
Total Licences issued	177,849	171,408	36,298	50,229	20,626	12,602	63	619	469,694	54	469,748

WIRELESS LICENCES, 1933-34.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	F.C.T.	Aust.	Papua and New Guinea	Grand Total.
Coast	2	1	6	1	5	3	1	..	19	9	28
Ship	16	68	4	6	3	3	..	..	100	..	100
Land (b) ..	8	3	4	1	2	3	7	..	28	8	36
Broadcasting (a) ..	16	15	8	4	6	3	..	1	53	..	53
Broadcast listeners' ..	225,897	206,995	51,998	64,139	31,404	16,547	35	934	597,949	40	597,989
Experimental	454	329	146	128	72	35	1	4	1,169	5	1,174
Portable	9	5	7	..	3	..	7	..	31	1	32
Special	26	15	..	1	6	..	..	..	48	..	48
Total Licences Issued	226,428	207,431	52,173	64,280	31,501	16,594	51	939	599,397	63	599,460

(a) There are also twelve stations operated by the National Broadcasting Service. (b) In addition to the licensed stations two are operated by the Postmaster-General's Department, viz.:—Wave Hill (N.T.) and Camooweal (Q.).

(ii) *Broadcasting.* (a) *The National Broadcasting Service.* The technical services for the National Service are provided by the Postmaster-General's Department, and the programmes by the Australian Broadcasting Commission, a body consisting of five members, constituted under the provisions of the Australian Broadcasting Commission Act. The Department receives 12s. and the Commission 12s. from each listener's licence fee of 24s.

There are at present twelve National Stations—2FC Sydney, 2BL Sydney, 2NC Newcastle—regional station—programmes relayed from Sydney, 2CO Corowa—regional station—programmes relayed from Melbourne, 3LO Melbourne, 3AR Melbourne, 4QG Brisbane, 4RK Rockhampton—regional station—programmes relayed from Brisbane, 5CL Adelaide, 5CK Crystal Brook—regional station—programmes relayed from Adelaide, 6WF Perth, 7HO Hobart.

Contracts have been let for the erection of seven additional regional stations—two in New South Wales, two in Victoria and one each in Queensland, Western Australia and Tasmania.

(b) *Licensed Stations.* 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. The number of these stations in operation at 30th June, 1934, was 53.

(c) *Simultaneous Broadcasts.* 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 North America was opened on 16th June, 1928. Satisfactory communication is maintained daily over a period of hours, and the services are being well patronized by the public. A comparison of the rates charged for "Beam" and Cable messages is given in § 4, Overseas Cable and Radio Communication. Particulars of international traffic via "Beam" are given in para. (vi) (a).

(iv) *International Wireless Telephone Service.* A wireless telephone service between Australia and England was opened on the 30th April, 1930. Since then, direct services have been opened to New Zealand and Java, and the Anglo-Australian service has been extended to most of the countries in Europe, and to Egypt, Palestine, certain trans-Atlantic liners, India, South Africa, and North and South America. The fee for a conversation between Australia and England is £6 for a minimum of three minutes' effective conversation and £2 for each additional minute, and to Continental countries is slightly higher. The fee for calls to Egypt, and the trans-Atlantic liners is £2 8s. per minute, and to India, South Africa, and North and South America £3 per minute. The rates to the last-mentioned countries increase slightly on calls made to the western portions. Calls to New Zealand and Java cost £1 and £1 10s. per minute respectively.

The Australian telephone subscriber now has access to about 32,000,000 telephones, or approximately 93 per cent. of the world's total. Since the first overseas radio telephone service was established in 1930, 4,963 calls have been completed, of which 3,597 were between Australia and Great Britain, and 834 between Australia and New Zealand. During the year ended 30th June, 1934, 1,565 calls were completed, 907 originating in Australia and 658 in other countries. Of the total calls, 1,161 were between Australia and Great Britain, 283 between Australia and New Zealand, 35 between Australia and the United States of America, and 86 between Australia and other foreign countries.

(v) *Radio Stations (Pacific Ocean).* Radiotelegraphic 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, 1933 :—

RADIO TRAFFIC.—INTERNATIONAL, YEAR ENDED 30th JUNE, 1933.

Class of Traffic.	Number of Words Transmitted.			Number of Words Received.		
	United Kingdom.	Other Places.	Total.	United Kingdom.	Other Places.	Total.
Ordinary	940,294	379,294	1,319,588	618,001	148,861	766,862
Deferred	581,975	212,582	794,557	485,949	79,319	565,268
Government	70,790	10,599	81,389	68,874	3,362	72,236
Press (including deferred press) ..	153,361	2,421	155,782	1,025,291	52,365	1,077,656
Daily letter and week-end telegrams (a) ..	3,244,510	687,006	3,931,516	2,096,685	227,886	2,324,571
Total	4,990,930	1,291,902	6,282,832	4,294,800	511,793	4,806,593

(a) Includes Christmas and New Year Greeting telegrams.

(b) *Coast Stations.* Particulars of the traffic handled by the several coast stations during the year 1932-33 are as follow :—

RADIO TRAFFIC.—COAST STATIONS, 1932-33.

State or Territory.	Particulars.				
	Total, Paying Words.	Messages.			
		Paying.	Service.	Weather.	Total.
	No.	No.	No.	No.	No.
New South Wales	780,135	47,333	5,656	5,928	58,917
Victoria	65,243	6,539	175	1,780	8,494
Queensland	182,491	14,717	4,727	3,094	22,538
South Australia	47,618	4,568	146	601	5,315
Western Australia	143,699	11,331	2,115	2,903	16,349
Tasmania	198,797	12,082	1,658	1,669	15,409
Northern Territory	50,002	2,302	863	1,276	4,441
Australia	1,467,985	98,872	15,340	17,251	131,463
Papua	202,823	12,389	685	1,171	14,245
Grand Total	1,670,808	111,261	16,025	18,422	145,708

(c) *Island Stations.* Particulars of the island radio traffic dealt with during the year 1932-33 are given hereunder:—

RADIO TRAFFIC.—ISLAND STATIONS, 1932-33.

Particulars.	To Australia.	From Australia.	Inter- Island.	Ship.	Total.
	No.	No.	No.	No.	No.
Messages	21,506	15,812	17,652	1,911	56,881
Words	310,651	282,976	233,999	22,097	849,723

(vii) *Proficiency Certificates.* Every station, in respect of which a licence is issued, must be operated by a person holding a certificate of proficiency.

The number of each class of certificate issued during the year ended 30th June, 1934, was:—First Class 40, Second Class 20, limited certificates in radiotelegraphy 8, limited certificates in radiotelephony 52, and amateur certificates 168.