CHAPTER V.

TRANSPORT AND COMMUNICATION.

A. SHIPPING.

§ 1. System of Record.

In the system of recording statistics of oversea shipping Australia is considered as a unit, and, therefore, only one entry and one clearance are counted 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 interstate migration by sea. This arrangement has been in operation since the 1st July, 1924.

Since the 1st July, 1914, the Trade and Shipping of Australia has been recorded for the fiscal years ending 30th June.

In the following tables, commencing with the year 1935–36, a change has been made in the classification of sailing vessels with auxiliary engines. Particulars of these vessels, previously included in the columns headed "Steam", are now included in those headed "Sailing", as this classification is considered more correct, in view of the fact that the main method of propulsion of these vessels is sail.

§ 2. Oversea Shipping.

1. **Total Movement.**—The following table gives the number and net tonnage of oversea steam and sailing vessels entering Australian ports during the years 1926–27 to 1936–37:—

TOTAL OVERSEA SHIPPING, ENTERED.—AUSTRALIA.

Year.	Steam.		Sailing.		Total.	
	Vessels.	Net Tons.	Vessels.	Net Tons.	Vessels.	Net Tons.
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
1933–34	1,356	5,308,584	24	43,987	1,380	5,352,571
1934–35	1,559	5,951,226	23	43,024	1,582	5,994,250
1935–36	1,550	6,199,583	(a) 65	(a) 38,093	1,615	6,237,676
1936–37	1,542	6,245,767	99	28,423	1,641	6,274,190

(a) See last paragraph, § 1, above

The average tonnage per vessel entered has risen from 3,423 tons per vessel in 1926–27 to 3,823 tons in 1936–37.

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. **Total Oversea Shipping, States.**—The following table gives the numbers and net tonnages of vessels which entered and cleared the various States direct from and to overseas countries during the year 1936–37 :—

SHIPPING ENTERED FROM AND CLEARED TO OVERSEA COUNTRIES DIRECT, 1936–37.

State or Territory.	Entered.		Cleared.	
	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.
New South Wales ..	607	2,291,425	553	2,000,553
Victoria	217	813,340	185	691,503
Queensland	261	899,715	270	1,025,412
South Australia ..	127	457,885	151	605,816
Western Australia ..	343	1,686,512	408	1,898,176
Tasmania	17	72,949	16	61,835
Northern Territory ..	69	52,364	73	54,286
Total	1,641	6,274,190	1,656	6,337,581

3. **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.	1932–33.	1933–34.	1934–35.	1935–36.	1936–37
NET TONNAGE ENTERED.						
United Kingdom and European Countries	Cargo	1,549,889	1,644,837	1,698,613	1,812,263	1,679,282
	Ballast	946,342	485,391	376,291	281,157	232,995
New Zealand	Cargo	448,684	469,343	539,443	557,091	732,104
	Ballast	110,559	92,913	107,662	134,200	169,170
Asiatic Countries and Islands in the Pacific	Cargo	1,291,014	1,313,042	1,476,957	1,721,540	1,832,771
	Ballast	441,286	149,376	520,769	353,102	230,813
Africa	Cargo	19,129	13,394	22,535	34,983	59,136
	Ballast	144,699	143,275	143,468	172,302	194,360
North and Central America	Cargo	966,985	1,041,000	1,105,873	1,161,903	1,134,797
	Ballast	12,088	..	..	6,240	5,941
South America ..	Cargo	2,649	..	2,639	2,895	2,821
	Ballast	..	..	..	..	..
	Cargo	4,278,350	4,481,616	4,846,060	5,290,675	5,440,911
	Ballast	1,654,974	870,955	1,148,190	947,001	833,279
Total	..	5,933,324	5,352,571	5,994,250	6,237,676	6,274,190
NET TONNAGE CLEARED.						
United Kingdom and European Countries	Cargo	2,496,405	2,495,377	2,517,126	2,719,463	2,735,452
	Ballast	11,784	8,447	20,364	16,709	3,170
New Zealand	Cargo	460,037	512,190	512,487	537,359	832,200
	Ballast	93,613	40,816	28,863	73,948	39,789
Asiatic Countries and Islands in the Pacific	Cargo	1,657,465	1,199,738	1,653,931	1,695,483	1,473,801
	Ballast	440,372	440,489	422,053	526,048	587,925
Africa	Cargo	33,567	22,220	35,573	50,108	43,172
	Ballast	2,627	2,627	..	344	2,880
North and Central America	Cargo	542,663	536,061	615,644	591,144	519,017
	Ballast	146,511	148,268	83,355	87,944	91,991
South America ..	Cargo	23,272	5,077	5,398	4,719	8,184
	Ballast	..	..	..	3,615	..
	Cargo	5,213,409	4,770,663	5,340,159	5,598,276	5,611,826
	Ballast	694,907	640,647	554,635	708,608	725,755
Total	..	5,908,316	5,411,310	5,894,794	6,306,884	6,337,581

4. **Nationality of Oversea Shipping.**—The greater part of the shipping visiting Australia is of British nationality. The proportion of British tonnage increased by 3.40 per cent. during 1936–37 and was the highest recorded since 1929–30, when the percentage was 73.43. Likewise the percentage of vessels arriving with cargo (86.72) was the greatest since the figure of 93.22 in 1929–30.

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.	Net Tonnage.				
	1932–33.	1933–34.	1934–35.	1935–36.	1936–37.
BRITISH—					
Australian	264,848	289,172	310,186	314,439	326,652
United Kingdom ..	3,218,273	2,788,464	3,137,192	3,334,332	3,447,244
Canadian	54,228	79,268	76,101	95,889	41,694
New Zealand	291,329	335,513	321,481	322,296	523,436
Other British	115,681	221,647	215,597	276,162	242,843
Cargo	2,831,878	3,032,040	3,323,552	3,732,921	3,944,272
Ballast	1,112,481	682,024	737,005	610,197	637,597
Total British ..	3,944,359	3,714,064	4,060,557	4,343,118	4,581,869
Per cent. on total ..	66.48	69.39	67.74	69.63	73.03
FOREIGN—					
Danish	107,052	75,753	48,613	54,689	53,233
Dutch	185,342	164,469	176,424	150,012	173,011
French	108,032	114,715	137,142	102,031	82,636
German	117,589	121,829	134,231	126,500	152,506
Italian	76,674	83,055	62,205	39,465	43,222
Japanese	546,088	333,109	461,400	464,311	344,304
Norwegian	394,470	335,775	426,539	462,884	439,845
Swedish	136,059	110,927	141,265	134,502	104,281
United States	245,530	247,959	240,474	233,047	199,794
Other Foreign	72,129	50,916	105,400	127,117	99,489
Cargo	1,446,472	1,449,576	1,522,508	1,557,754	1,496,639
Ballast	542,493	188,931	411,185	336,804	195,682
Total Foreign ..	1,988,965	1,638,507	1,933,693	1,894,558	1,692,321
Per cent. on total ..	33.52	30.61	32.26	30.37	26.97
Cargo	4,278,350	4,481,616	4,846,060	5,290,675	5,440,911
Per cent. on total ..	72.11	83.73	80.85	84.82	86.72
Ballast	1,654,974	870,955	1,148,190	947,001	833,279
Per cent. on total ..	27.89	16.27	19.15	15.18	13.28
Grand Total	5,933,324	5,352,571	5,994,250	6,237,676	6,274,190

The Australian tonnage which entered Australia from overseas during the year 1936–37 represented 5.21 per cent. of the total tonnage entered and was mainly confined to the New Zealand and Pacific Island trade.

§ 3. Shipping of Ports.

The total shipping tonnage—oversea, interstate and coastwise—which entered the more important ports of Australia during the year 1936–37, together with similar information in regard to some of the ports of New Zealand and of Great Britain for the year 1936, will be found in the next table :—

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

Port.	Net Tonnage Entered.	Port.	Net Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney (N.S.W.) ..	10,993,395	London	30,868,381
Melbourne (Vic.) ..	8,173,042	Liverpool (including Birkenhead) ..	17,085,293
Adelaide (S.A.) ..	4,930,752	Southampton ..	12,872,106
Newcastle (N.S.W.) ..	4,875,732	Tyne Ports	8,970,694
Brisbane (Qld.) ..	4,469,773	Cowes (including coast of Isle of Wight) ..	7,988,368
Fremantle (W.A.) ..	3,512,202	Cardiff	6,766,709
Townsville (Qld.) ..	1,408,390	Hull	6,016,957
Hobart (Tas.)	1,139,593	Plymouth	5,614,195
Kembla (N.S.W.) ..	1,123,482	Manchester (including Runcorn)	4,000,513
Geelong (Vic.)	928,839	Bristol	3,689,629
Whyalla (S.A.)	850,004	Swansea	3,317,176
Cairns (Qld.)	728,386	Dover	3,228,532
Burnie (Tas.)	673,963	Middlesbrough ..	3,082,618
Pirie (S.A.)	671,889	Blyth	3,072,288
Mackay (Qld.)	576,630	Harwich	2,806,434
Launceston (Tas.) ..	499,527	Sunderland	2,787,528
Rockhampton (Qld.) ..	492,122	Portsmouth	2,283,230
Albany (W.A.) ..	473,014	Newport	2,104,397
Lincoln (S.A.)	434,268	SCOTLAND—	
Devonport (Tas.) ..	430,118	Glasgow	6,367,114
Gladstone (Qld.) ..	367,801	Greenock (including Port Glasgow)	3,455,521
Thursday Island (Qld.) ..	309,618	Leith	2,129,479
Bowen (Qld.)	283,709	NORTHERN IRELAND—	
NEW ZEALAND—		Belfast	7,495,426
Wellington	3,907,073		
Auckland	3,054,979		
Lyttleton	2,103,627		
Otago	1,180,943		

Figures relating to ports of the United Kingdom have been obtained from the British Board of Trade's Statement of Navigation and Shipping for the year 1936, and those relating to New Zealand ports from the New Zealand Statistical Report on Trade and Shipping for the same year.

§ 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 1933 to 1937, 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.

VESSELS BUILT IN AUSTRALIA.

NUMBERS AND TONNAGES.

Year.	Steam.			Motor (a).			Sailing.			Pontoons, Dredges, &c.			Total.		
	No.	Tonnages.		No.	Tonnages.		No.	Tonnages.		No.	Tonnages.		No.	Tonnages.	
		Gross.	Net.		Gross.	Net.		Gross.	Net.		Gross.	Net.		Gross.	Net.
1933 ..	..	..	..	4	144	118	2	20	18	1	779	645	7	943	781
1934 ..	..	..	..	20	623	372	5	92	91	..	..	..	25	715	463
1935 ..	..	..	..	15	377	287	1	16	14	..	..	..	16	393	301
1936 ..	2	719	192	12	473	316	1	9	9	..	..	..	15	1,201	517
1937 ..	..	..	..	5	107	74	..	..	..	..	..	..	5	107	74

(a) Includes vessels with auxiliary motors.

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, 1937:—

VESSELS ON THE STATE REGISTERS, 31st DECEMBER, 1937.

State or Territory.	Steam and Motor.				Sailing.				Barges, Hulks, Dredges, &c., not Self-propelled.		Total.	
	Dredges and Tugs.		Other.		Propelled by Sail Only.		Fitted with Auxiliary Power.					
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.
New South Wales ..	39	583	307	58,434	206	6,796	293	10,160	45	11,164	890	87,137
Victoria	35	3,214	128	158,304	45	679	60	1,384	56	23,319	324	186,900
Queensland ..	15	2,224	25	4,140	91	1,234	64	2,723	27	3,941	222	14,262
South Australia ..	11	337	60	10,402	52	3,092	55	2,442	23	5,346	201	21,619
Western Australia ..	9	173	28	5,810	278	4,252	36	667	19	4,277	370	15,179
Tasmania ..	5	530	40	3,880	66	2,374	69	1,844	1	382	181	9,010
Northern Territory	..	..	..	..	15	145	5	88	..	..	20	233
Total ..	114	7,061	588	240,970	753	18,572	582	19,308	171	48,429	2,208	334,340

3. **World's Shipping Tonnage.**—The table hereunder shows the number and gross tonnage of steam and motor, and of sailing vessels owned by the most important maritime countries, together with the proportion of the grand total owned by each country:—

WORLD'S SHIPPING TONNAGE, 1st JULY, 1937.

Nationality.	Steamers and Motorships.		Sailing Vessels and Barges.		Total.		Percentage on Total.	
	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.
Great Britain and Nthn. Ireland	6,903	17,436,207	361	107,734	7,264	17,543,941	23.30	26.47
Australia and New Zealand	525	652,809	10	4,486	535	657,295	1.71	0.99
Canada (*a*) ..	797	1,257,463	97	79,575	894	1,337,038	2.87	2.02
Other British ..	859	1,051,678	159	39,557	1,018	1,091,235	3.26	1.65
Total, British Empire ..	9,084	20,398,157	627	231,352	9,711	20,629,509	31.14	31.13
Belgium ..	200	420,454	..	..	200	420,454	0.64	0.63
Denmark ..	691	1,117,512	2	475	693	1,117,987	2.22	1.69
France ..	1,295	2,843,688	71	26,561	1,366	2,870,249	4.38	4.33
Germany ..	2,185	3,927,916	6	9,325	2,191	3,937,241	7.03	5.94
Greece ..	613	1,855,435	..	..	613	1,855,435	1.96	2.80
Holland ..	1,406	2,630,802	10	3,519	1,416	2,634,321	4.54	3.97
Italy	1,109	3,174,089	161	38,545	1,270	3,212,634	4.07	4.85
Japan ..	2,564	4,475,110	..	..	2,564	4,475,110	8.22	6.75
Norway ..	1,899	4,346,782	2	830	1,901	4,347,612	6.10	6.56
Spain ..	821	1,043,715	46	10,967	867	1,054,682	2.78	1.59
Sweden ..	1,238	1,494,432	11	7,537	1,249	1,501,969	4.01	2.26
United States of America (*b*) ..	3,037	11,881,234	448	548,379	3,485	12,429,613	11.18	18.75
Other Foreign Countries ..	3,382	5,662,114	275	137,094	3,657	5,799,208	11.73	8.75
Total, Foreign Countries ..	20,440	44,873,283	1,032	783,232	21,472	45,656,515	68.86	68.87
Grand Total ..	29,524	65,271,440	1,659	1,014,584	31,183	66,286,024	100.00	100.00

(*a*) Including Great Lakes shipping. (*b*) Including Philippine Islands and Great Lakes shipping.

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

§ 5. Interstate Shipping.

1. **System of Record.**—*Interstate Shipping* comprises two elements: (*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 *via* Fremantle		Oversea *via* States
Clears Adelaide for Melbourne		Interstate direct
Enters Melbourne from United Kingdom *via* Adelaide		Oversea *via* States
Clears Melbourne for Sydney		Interstate direct
Enters Sydney from United Kingdom *via* Melbourne		Oversea *via* States
Outward Voyage—		
Clears Sydney for United Kingdom *via* Melbourne		Oversea *via* States
Enters Melbourne from Sydney		Interstate direct
Clears Melbourne for United Kingdom *via* Adelaide		Oversea *via* States
Enters Adelaide from Melbourne		Interstate direct
Clears Adelaide for United Kingdom *via* Fremantle		Oversea *via* 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; and (*c*) the aggregate for all ships recorded as "Oversea *via States*" may also be used, together with those recorded as "Interstate *direct*," to furnish figures showing the total interstate *movement* of shipping.

It should be remembered, however, that all overseas vessels do not follow the same itinerary as the vessel in the table above.

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 1932–33 to 1936–37. 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.

State or Territory.	1932–33.	1933–34.	1934–35.	1935–36.	1936–37.
			NUMBER.		
New South Wales ..	1,656	1,679	1,945	1,862	2,076
Victoria.. ..	1,678	1,777	1,908	1,966	2,146
Queensland ..	485	508	587	567	599
South Australia ..	644	694	842	865	924
Western Australia ..	309	326	347	358	366
Tasmania	984	1,008	1,035	1,065	1,216
Northern Territory ..	20	23	27	22	29
Total ..	5,776	6,015	6,691	6,705	7,356
			NET TONNAGE.		
New South Wales ..	4,583,979	4,664,917	5,334,778	5,105,740	5,693,751
Victoria.. ..	3,594,992	3,791,069	4,062,750	4,361,171	4,640,688
Queensland ..	1,184,471	1,281,334	1,410,487	1,495,200	1,616,188
South Australia ..	2,191,498	2,335,796	2,761,195	2,898,358	3,043,302
Western Australia ..	1,695,267	1,763,371	1,855,563	1,916,546	1,869,071
Tasmania	1,255,877	1,282,947	1,101,544	1,335,725	1,559,603
Northern Territory ..	53,553	56,694	59,011	66,710	71,057
Total	14,559,637	15,176,128	16,585,328	17,179,450	18,493,660

3. **Oversea Vessels Moving Interstate.**—(*Oversea via States.*) To ascertain the aggregate movement of shipping between the States during the year 1936–37 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, 1936–37.

State or Territory.	Entered.		Cleared.		Total.	
	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.
New South Wales ..	495	2,584,473	464	2,432,211	959	5,016,684
Victoria	485	2,644,585	484	2,626,080	969	5,270,665
Queensland	267	1,623,327	237	1,410,089	504	3,033,416
South Australia ..	326	1,791,052	262	1,505,401	588	3,296,453
Western Australia ..	46	173,940	12	48,831	58	222,771
Tasmania	84	460,395	121	715,069	205	1,175,464
Northern Territory ..	2	2,419	..	..	2	2,419
Total ..	1,705	9,280,191	1,580	8,737,681	3,285	18,017,872

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 voyages.

4. **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 1932–33 to 1936–37 :—

TOTAL INTERSTATE MOVEMENT OF SHIPPING.—AUSTRALIA.

Year.	Entered.		Cleared.	
	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.
1932–33	7,226	22,397,933	7,188	22,415,557
1933–34	7,463	23,114,881	7,462	23,282,301
1934–35	8,279	25,369,207	8,288	25,460,522
1935–36	8,502	26,857,399	8,508	26,860,842
1936–37	9,061	27,773,851	9,106	27,792,951

(ii) *States.* The following table shows the number and tonnage of vessels which entered and cleared each State from and for other States during 1936–37, including the coastal movements of oversea vessels :—

INTERSTATE SHIPPING OF EACH STATE, 1936–37.

State or Territory.	Entered.		Cleared.	
	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.
New South Wales	2,571	8,278,224	2,612	8,539,070
Victoria	2,631	7,285,273	2,664	7,378,528
Queensland	866	3,239,515	865	3,140,547
South Australia	1,250	4,834,354	1,249	4,748,325
Western Australia	412	2,043,011	353	1,855,410
Tasmania	1,300	2,019,998	1,332	2,062,852
Northern Territory	31	73,476	31	68,219
Total, Australia	9,061	27,773,851	9,106	27,792,951

5. **Vessels engaged Solely in Interstate Trade.**—The following table gives the number and net tonnage of vessels engaged solely in interstate trade which entered the ports of each state direct from other states during the year 1936–37 :—

VESSELS SOLELY IN INTERSTATE TRADE.—NUMBER AND TONNAGE OF VESSELS ENTERED, 1936–37.

State or Territory.	Vessels Entered.	
	No.	Net Tonnage.
New South Wales	1,605	3,301,942
Victoria	1,804	2,723,079
Queensland	430	941,906
South Australia	691	1,632,582
Western Australia	118	420,659
Tasmania	1,141	1,037,342
Northern Territory	14	17,393
Total	5,803	10,074,903

The above figures are not entirely comparable with similar figures previously published, as they have been compiled direct from the shipping returns, while former particulars were derived from calculations based on an assumption, which did not hold in all cases.

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 1933 to 1937 :—

INTERSTATE AND COASTAL STEAMSHIP SERVICES.—AUSTRALIA.

Particulars.	1933.	1934.	1935.	1936.	1937.
Number of companies operating ..	30	31	30	29	30
Number of steamships	154	155	156	160	162
Tonnage — Gross	309,309	302,897	324,891	352,661	353,280
Tonnage — Net	172,334	168,056	180,468	197,256	197,130
Horse-power (Nominal) ..	34,514	33,510	36,037	37,188	37,887
Number of passengers for which licensed(a) — 1st class ..	3,939	3,914	4,311	4,450	4,410
Number of passengers for which licensed(a) — 2nd class and steerage	1,755	1,755	1,920	1,695	1,801
Complement of Crew — Masters and officers	512	505	513	547	545
Complement of Crew — Engineers ..	529	419	548	579	585
Complement of Crew — Crew	4,193	4,045	4,264	4,458	4,515

(a) Exclusive of purely day passenger accommodation.

§ 6. Tonnage of Cargo.

1. **Oversea and Interstate Cargo.**—(i) *Australia.* The table hereunder shows the aggregate tonnage of oversea cargo discharged and shipped and the tonnage of interstate cargo shipped in all ports for the years 1932–33 to 1936–37. 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.
1932–33 ..	2,679,800	1,217,218	5,641,926	778,579	3,819,654	1,047,054
1933–34 ..	2,606,101	1,395,291	4,260,182	738,846	4,278,159	1,201,617
1934–35 ..	2,969,914	1,722,485	5,220,757	857,976	5,244,386	1,346,422
1935–36 ..	3,531,839	1,948,508	5,214,194	893,509	5,540,938	1,502,813
1936–37 ..	3,655,623	2,024,051	5,027,746	933,416	6,501,393	1,596,869

(ii) *Principal Ports.* The following table shows the tonnage of Oversea and Interstate Cargo discharged and shipped at principal ports, 1936–37 :—

TONNAGE OF CARGO DISCHARGED AND SHIPPED AT PRINCIPAL PORTS, 1936–37.

Port.	Discharged.			Shipped.		
	Oversea.	Interstate.	Total.	Oversea.	Interstate.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sydney	1,911,202	1,127,872	3,039,074	1,396,441	855,418	2,251,859
Newcastle	159,532	1,494,937	1,654,469	347,972	2,301,941	2,649,913
Kembla	59,275	465,497	524,772	93,779	234,167	327,946
Other	..	..	..	21,269	15,259	36,528
Total, New South Wales	2,130,009	3,088,306	5,218,315	1,859,461	3,406,785	5,266,246
Melbourne	1,633,323	2,275,852	3,909,175	1,020,524	1,044,754	2,065,278
Geelong	194,435	206,687	401,122	327,484	53,120	380,604
Other	16,165	8,179	24,344	6,175	5,308	11,483
Total, Victoria ..	1,843,923	2,490,718	4,334,641	1,354,183	1,103,182	2,457,365
Brisbane	331,766	517,825	849,591	167,483	198,803	366,286
Cairns	6,100	40,150	46,250	139,998	118,839	258,837
Townsville	60,090	65,167	125,257	169,591	51,467	221,058
Other	19,310	72.228	91,538	236,803	99,289	336,092
Total, Queensland ..	417,266	695,370	1,112,636	713,875	468,398	1,182,273
Adelaide	472,767	837,273	1,310,040	394,981	379,002	773,983
Pirie	67,055	204,911	271,966	298,423	141,710	440,133
Wallaroo	26,587	2,398	28,985	89,460	15,035	104,495
Whyalla	..	..	..	266,884	1,660,155	1,927,039
Other	27,182	6,709	33,891	153,521	9,628	163,149
Total, South Australia ..	593,591	1,051,291	1,644,882	1,203,269	2,205,530	3,408,799
Fremantle	523,629	354,248	877,877	380,925	49,989	430,914
Bunbury	41,837	900	42,737	145,233	29,050	174,283
Geraldton	39,285	10,715	50,000	51,224	3	51,227
Other	18,675	15,270	33,945	59,391	17,059	76,450
Total, Western Australia ..	623,426	381,133	1,004,559	636,773	96,101	732,874
Hobart	56,498	324,446	380,944	156,231	209,594	365,825
Launceston	6,178	109,702	115,880	27,350	77,962	105,312
Devonport	507	22,108	22,615	..	341,578	341,578
Other	..	71,375	71,375	9,754	186,478	196,232
Total, Tasmania ..	63,183	527,631	590,814	193,335	815,612	1,008,947
Darwin (Northern Territory) ..	8,276	10,952	19,228	266	2,654	2,920
Total, AUSTRALIA ..	5,679,674	8,245,401	13,925,075	5,961,162	8,098,262	14,059,424

2. **Nationality.**—The following table shows the total oversea cargo discharged and shipped according to the nationality of the vessels carrying during the years 1932–33 to 1936–37 :—

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

Vessels Registered at Ports in—	1932–33.	1933–34.	1934–35.	1935–36.	1936–37.
British—					
Australia	229,930	257,497	307,440	329,208	329,990
United Kingdom	5,644,962	4,796,937	5,813,352	6,181,120	6,831,581
Canada	88,733	115,125	127,379	154,914	81,313
New Zealand	317,821	357,087	323,630	398,238	390,892
Other British	221,606	403,757	392,606	534,585	451,409
Total British	6,503,052	5,930,403	6,964,407	7,598,065	8,085,185
Per cent. on Total	63.03	65.89	64.66	65.57	69.46
Foreign—					
Denmark	296,265	184,626	154,172	160,285	159,640
France	95,977	108,736	169,802	140,435	113,584
Germany	258,915	276,821	297,020	346,544	392,269
Italy	107,503	103,921	66,319	33,520	58,491
Japan	1,071,568	635,142	913,552	914,856	542,761
Netherlands (b)	313,188	280,509	308,187	228,726	315,640
Norway	883,810	814,447	1,023,612	1,207,673	1,164,105
Sweden	418,101	325,114	408,462	390,080	310,934
United States of America	226,033	246,858	240,271	300,974	261,746
Other Foreign	143,111	93,843	225,328	266,892	236,481
Total Foreign	3,814,471	3,070,017	3,806,725	3,989,985	3,555,651
Per cent. on Total	36.97	34.11	35.34	34.43	30.51
Grand Total	10,317,523	9,000,420	10,771,132	11,588,050	11,640,836

(a) Tons weight and tons measurement combined. (b) Includes Netherlands East Indies.

NOTE.—A summary of particulars relating to Shipping and Cargo for the year 1937–38 will be found in the Appendix to this volume.

§ 7. Miscellaneous.

1. **Lighthouses.**—Transport and Communication Bulletin No. 14, published by this Bureau, contained 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 31st March, 1938, 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 (parcels) and wool (greasy) were respectively 33s. 9d. per ton weight and 1d. per lb. plus 5 per cent., less 10 per cent. The charter rates for wheat ranged between 30s. 9d. and 36s. 6d. 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, 1938 was included in the Transport and Communication Bulletin No. 28, 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 who are found at fault. Particulars of shipping casualties reported on or near the coast during the year 1937 are shown in Transport and Communication Bulletin No. 28. 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) *Recent legislation.* Under the provisions of the Navigation Act the coasting trade of the Commonwealth in passengers and cargo is reserved by section 288 to ships licensed to engage in that trade. Licences are granted to ships complying with Australian conditions respecting wages, manning crew, accommodation and so on, stipulations which have confined the trade to Australian-owned vessels.

Provision was made in the Act for permits to be granted to unlicensed British ships to carry cargo and passengers on the coast when it was shown that the licensed service was inadequate. The permit system, however, was not entirely satisfactory and in 1926 the Act was amended to allow the Governor-General, by notice in the *Gazette*, to permit unlicensed British ships of a specified size and speed to engage in the passenger trade between particular ports. Exemptions under the Act were placed on a statutory basis by the Navigation Act of 1935 which permits unlicensed British ships of not less than 10,000 tons and a sea speed of not less than 14 knots to carry passengers between any two ports in Australia not connected by rail. In every case the voyage must be made in one ship without break of journey, transhipment, or second call at any port. On arriving at the port of destination the passenger may be taken on to the first port of call of the ship, which is either the first port of embarkation, or alternatively, a port connected with it by rail.

In the Navigation Act of 1935 also the carriage of wireless equipment was extended to all ships engaged in interstate trade. A similar provision for intra-state vessels has been made by some of the States.

The Navigation (Maritime Conventions) Act of 1934 was an amendment of the Navigation Act to enable the Commonwealth to give effect to the provisions of a number of maritime conferences of recent years, of which the most important were those dealing with the safety of life at sea and load lines.

In an effort to protect the interests of British shipping in the Pacific against subsidized foreign competition the New Zealand Government recently introduced a measure prohibiting foreign vessels from embarking passengers or cargo in a New Zealand port for any destination in Australia. On 3rd December, 1936, the British Shipping Protection Bill, designed to implement the New Zealand legislation, was introduced into the Australian Senate. After the speech on the second reading, the debate was adjourned.

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.

In an endeavour to adhere more closely to the figures used by the Railways Commissioners in relation to their financial operations and to obtain greater uniformity in the presentation of the particulars of the various systems, certain changes were made in the compilation of Railways Statistics from and including the year 1935–36. The figures relating to the last two years will not, therefore, in all cases, be entirely comparable with those of previous years, although generally the differences occasioned are relatively small.

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 was 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 4 ft. 8½ in. 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 provided 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, 1937, the capital cost of construction and equipment was £4,362,500, the interest charge for the year 1936–37 being £218,125. 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 £31,249 being shown on the New South Wales section and a profit of £6,831 on the Queensland section. In addition, the following amounts were paid as interest:—New South Wales, £72,179, and Queensland £27,029, the remainder, £126,618, 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 1932–33 to 1936–37. 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.	1932–33.	1933–34.	1934–35.	1935–36	1936–37.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ..	6,246.61	6,246.53	6,246.53	6,204.64	6,214.42
Victoria	4,745.71	4,745.71	4,745.71	4,745.71	4,745.71
Queensland	6,836.41	6,836.55	6,836.54	6,812.80	6,795.17
South Australia	3,775.81	3,775.81	3,775.90	3,775.90	3,776.29
Western Australia ..	5,068.72	5,090.87	5,089.50	5,089.33	5,088.04
Tasmania	786.45	786.45	776.46	776.46	782.57
Australian Capital Territory	4.94	4.94	4.94	4.94	4.94
Northern Territory ..	489.73	489.73	489.73	489.73	489.73
Australia	27,954.38	27,976.59	27,965.31	27,899.51	27,896.87

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, 1937 :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE CLASSIFIED, 1936–37.

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	6,124.19	..	90.23	6,214.42
Victoria	4,720.77	..	24.94	4,745.71
Queensland	6,566.65	..	228.52	6,795.17
South Australia	2,529.35	1,196.04	50.90	3,776.29
Western Australia	4,357.05	453.99	277.00	5,088.04
Tasmania	651.00	..	131.57	782.57
Australian Capital Territory ..	..	4.94	..	4.94
Northern Territory	..	489.73	..	489.73
Australia	24,949.01	2,144.70	803.16	27,896.87

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, 1937 :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—COMPARISON OF FACILITIES, 1936–1937.

Particulars.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Aus. Cap. Ter.	Nor. Ter.	Aust.
Mileage of Railway—									
Per 1,000 of population	2.31	2.56	6.85	6.41	11.20	3.37	0.48	89.79	4 08
Per 1,000 sq. miles of Territory ..	20.08	54.00	10.13	9.94	5.21	29.85	5.26	0.94	9.38

7. **Classification of Lines according to Gauge, 1936-37.**—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, 1937, and of private railways open for general traffic to the 31st December, 1937, as nearly as possible.

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1936-37.

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
Australian 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 ..	..	6,124.19	..	..	..	..	6,124.19
Victoria	4,599.00	..	..	..	121.77	..	4,720.77
Queensland	..	68.82	6,467.57	..	..	30.26	6,566.65
South Australia	1,451.24	..	1,078.11	..	..	..	2,529.35
Western Australia ..	..	..	4,357.05	..	..	..	4,357.05
Tasmania	..	..	639.67	..	..	11.33	651.00
Total	6,050.24	6,193.01	12,542.40	..	121.77	41.59	24,949.01
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.							
New South Wales ..	..	53.50	36.73	..	..	..	90.23
Victoria	13.94	..	..	11.00	..	..	24.94
Queensland	..	..	100.00	..	..	128.52	228.52
South Australia	..	..	50.90	..	..	..	50.90
Western Australia ..	..	..	277.00	..	..	..	277.00
Tasmania	..	..	125.07	..	..	6.50	131.57
Total	13.94	53.50	589.70	11.00	..	135.02	803.16
ALL RAILWAYS OPEN FOR GENERAL TRAFFIC.							
New South Wales ..	..	6,177.69	36.73	..	..	..	6,214.42
Victoria	4,612.94	..	..	11.00	121.77	..	4,745.71
Queensland	..	68.82	6,567.57	..	..	158.78	6,795.17
South Australia	1,451.24	597.86	1,727.19	..	..	..	3,776.29
Western Australia ..	..	453.99	4,634.05	..	..	..	5,088.04
Tasmania	..	..	764.74	..	..	17.83	782.57
Australian Capital Territory	..	4.94	..	..	..	..	4.94
Northern Territory ..	..	..	489.73	..	..	..	489.73
GRAND TOTAL ..	6,064.18	7,303.30	14,220.01	11.00	121.77	176.61	27,896.8

8. **Summary of Operations, 1936-37.**—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, 1937 :—

RAILWAYS.—FEDERAL, STATE AND PRIVATE.—SUMMARY, 1936-37.

Particulars.	Federal Railways.	State Railways.	Private Railways.(a)	Total for Australia.
Mileage open (route) 30th June, 1937 .. .. .. Miles	2,144.70	24,949.01	803.16	27,896.87
Capital cost (d) .. .. £	16,081,606	320,309,759	4,819,888	341,211,253
Cost per mile .. .. £	7,498	12,839	6,001	12,231
Gross revenue .. .. £	442,249	42,791,812	705,015	43,939,076
Gross revenue per train mile d.	147.31	142.11	130.51	141.96
Working Expenses (d) .. £	410,813	30,875,994	434,639	31,721,446
Working Expenses per train mile d.	136.84	102.54	80.46	102.49
Net Revenue .. .. £	31,436	11,915,818	270,376	12,217,630
Net Revenue per train mile d.	10.47	39.57	50.05	39.47
Train miles run .. .. Miles	720,540	72,266,837	1,296,473	74,283,850
Passengers carried .. No.	108,785	377,525,352	1,349,531	378,983,668
Tons of goods, etc., carried Tons	126,779	32,477,751	4,002,448	36,606,978
Average number of employees No.	(c) 1,581	(c) 99,429	(b) 1,129	102,139
Average wage .. .. £	226	235	244	235

(a) Approximate. Complete particulars not available for all items. (b) Employees at 31st December, 1937. (c) Exclusive of Construction Branch. (d) See § 1 **par.** 2, page 122.

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, 1934 to 1937, classified according to gauge, together with the percentages on the total :—

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

Gauge.	At 30th June—							
	1934.		1935.		1936.		1937.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	7,855.07	24.65	7,825.11	24.56	7,825.79	24.58	7,827.46	24.58
4 ft. 8½ in. ..	9,324.67	29.26	9,331.02	29.29	9,336.67	29.33	9,343.70	29.33
3 ft. 6 in. ..	14,528.97	45.58	14,543.16	45.64	14,507.74	45.57	14,515.88	45.57
2 ft. 6 in. ..	131.91	0.41	131.91	0.41	131.88	0.42	131.88	0.42
2 ft. 0 in. ..	33.00	0.10	33.00	0.10	33.00	0.10	33.00	0.10
Total ..	31,873.62	100.00	31,864.20	100.00	31,835.08	100.00	31,851.92	100.00

(a) Exclusive of Tasmania, particulars of which are not available.

§ 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 built in the Australian Capital Territory, connecting Canberra with the New

South Wales railway system at Queanbeyan. An extension of the transcontinental line from Port Augusta to Port Pirie was completed in July, 1937. The North Australia Railway has, since its acquisition by the Commonwealth, been extended twice, first to Emungalan and then to Birdum. The Central Australia Railway has also been extended from Oodnadatta to Alice Springs. In 1917 the Commonwealth Railways Act was passed by which all the Federal railways were vested in the Commonwealth Railways Commissioner.

2. **Northern Territory Railways.**—(i) *North Australia Railway (Darwin to Birdum).*—Provision was made in the Northern Territory Acceptance Act of 1910 for the construction of a line to and from South Australia. The first step was the extension of the existing line—Darwin to Pine Creek—as far as Katherine River, which was completed in 1917. After enquiry the Parliamentary Standing Committee on Public Works recommended a further extension to Daly Waters to form portion of an eventual line through Newcastle Waters to Camooweal in Queensland. The construction of the line from Katherine River to Daly Waters, a distance of 160 miles, was commenced by day labour in 1927. A section as far as Mataranka was opened for public traffic on 1st July, 1928, but owing to the curtailment of loan moneys the line was not taken beyond Birdum, 316 miles from Darwin, although construction had been commenced on the Birdum to Daly Waters section. The Mataranka to Birdum section was opened on 4th September, 1929.

(ii) *Central Australia Railway (Port Augusta to Alice Springs).*—The extension of the southern portion of the North-South line was authorized by the Railways (South Australia) Agreement Act 1926, which ratified the agreement between the Commonwealth and South Australian Governments for the construction of a 3 ft. 6 in. gauge line from Oodnadatta to Alice Springs, a distance of 293 miles. The estimated cost of the proposed extension was £1,700,000, exclusive of rolling stock. The first section 21¼ miles from Oodnadatta was completed on the 29th August, 1927. The section from Oodnadatta to Rumbalara (169 miles 67 chains) was opened for public traffic on the 23rd December, 1928, and the remaining portion from Rumbalara to Alice Springs was completed and opened for public traffic on the 2nd August, 1929.

3. **Australian Capital Territory Railway (Queanbeyan to 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 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 traffic on 25th May, 1914. It connects with the New South Wales railway system at Queanbeyan, and is 4.94 miles in length.

4. **Trans-Australian Railway (Kalgoorlie to Port Augusta).**—A preliminary survey of a railway line connecting Western Australia with the Eastern States was commenced in 1908 and completed in March, 1909. The estimated cost of construction and equipment of the line on the basis of a 4 ft. 8½ in. gauge from Port Augusta in South Australia to Kalgoorlie in the Western Australian goldfields—a distance of 1,063 miles—was £4,045,000. The construction of the line was commenced at Port Augusta in September, 1912, and operations began at the other end from Kalgoorlie in February, 1913. The line was completed on 17th October, 1917, and five days later the first through train left Port Augusta with an official party on board for Kalgoorlie. Owing to deviations from the original route the length of the line was reduced from 1,063.39 miles to 1,051.85 miles—a saving of 11.54 miles. More detailed reference to the construction of the line and a description of the country through which it passes is given in Official Year Book No. 11, pp. 662 and 1213.

On the 29th November, 1935, the Commonwealth and the State of South Australia entered into an agreement to extend the Trans-Australian line by the construction of a 4 ft. 8½ in. gauge railway from Port Augusta to Solomontown, a suburb of Port Pirie, in the State of South Australia, the work to be undertaken by the Commonwealth at a maximum cost of £625,000 inclusive of rolling stock. The State of South Australia agreed to construct a railway of 5 ft. 3 in. gauge from Red Hill to Port Pirie to meet the Commonwealth line at Solomontown.

These lines, which were opened for traffic on 26th July, 1937, have reduced the distance and travelling time between Port Augusta and Adelaide, eliminated one break of gauge, and avoided the heavy grades and sharp curves of the old route. A fast passenger train is to be introduced which will run through from Melbourne to Port Pirie, thus eliminating a further break of gauge.

5. **Lines Open, Under Construction and Surveyed.**—The following table shows the lines open for traffic under the control of the Commonwealth Government at 30th June, 1937, together with the lines under construction and those which have been surveyed only :—

RAILWAYS, FEDERAL, *30th* JUNE, 1937.

Terminals.	Miles.
OPEN FOR TRAFFIC.	
Trans-Australian Railway—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
Australian Territory Railway—Queanbeyan (New South Wales) to Canberra (Australian Capital Territory)	4.94
North Australia Railway—Darwin to Birdum (Northern Territory) ..	316.50
Total opened for traffic	2,144.70
UNDER CONSTRUCTION.	
Trans-Australian Railway—Port Augusta to Port Pirie (South Australia) (*a*)	56.25
North Australia Railway—Birdum to Daly Waters (Northern Territory) (*b*)	43.50
Total under construction	99.75
SURVEYED.	
Kingoonya to Boorthanna (South Australia)	176.44
Canberra to Jervis Bay (Australian Capital Territory)	140.22
Canberra (Australian Capital Territory) to Australian 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
Total surveyed	957.08

(*a*) Opened for traffic on 26th July, 1937. (*b*) Construction suspended in September, 1929.

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 (4) 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.

6. **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 1933 to 1937 :—

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

Year ended 30th June—	Railway. Trans-Australian.	Central Australia.	Australian Capital Territory.	North Australia.	Total.
MILES OPEN FOR TRAFFIC.					
	Miles.	Miles.	Miles.	Miles.	Miles.
1933	1,052	771	5	317	2,145
1934	1,052	771	5	317	2,145
1935	1,052	771	5	317	2,145
1936	1,052	771	5	317	2,145
1937	1,052	771	5	317	2,145
AVERAGE MILES WORKED.					
	Miles.	Miles.	Miles.	Miles.	Miles.
1933	1,052	771	5	317	2,145
1934	1,052	771	5	317	2,145
1935	1,052	771	5	317	2,145
1936	1,052	771	5	317	2,145
1937	1,052	771	5	317	2,145
TRAIN MILES RUN.(a)					
1933	324,173	182,414	6,850	33,809	547,246
1934	328,477	178,916	6,885	36,340	550,618
1935	335,198	158,356	6,885	35,677	536,116
1936	334,601	209,266	6,895	31,311	582,073
1937	420,804	258,759	8,865	32,112	720,540

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

7. **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 1933 to 1937 :—

RAILWAYS, FEDERAL.—CAPITAL COST.

Year ended 30th June—	Railway. Trans-Australian.	Central Australia.	Australian Capital Territory.(a)	North Australia.	Total.
TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.					
	£	£	£	£	£
1933	7,928,876	4,773,301	84,429	2,758,139	15,544,745
1934	7,987,216	4,777,278	84,493	2,758,139	15,607,126
1935	8,045,841	4,782,077	84,592	2,759,772	15,672,282
1936 (b) ..	8,251,150	4,787,882	85,325	2,775,281	15,899,638
1937	8,426,461	4,789,842	85,533	2,779,770	16,081,606
COST PER MILE OPEN.					
1933	7,538	6,188	17,091	8,714	7,248
1934	7,593	6,193	17,104	8,714	7,277
1935	7,649	6,199	17,124	8,720	7,307
1936	7,884	6,207	17,272	8,769	7,413
1937	8,011	6,209	17,314	8,783	7,498

(a) Exclusive of Rolling Stock the property of New South Wales Government Railways. (b) See § 1 par. 2, p. 122.

The sum of £2,031,390 of which £113,833 was for surveys, etc., has been provided from revenue for capital purposes to 30th June, 1937.

8. **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 1933 to 1937 inclusive :—

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

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Australian Capital Territory.	North Australia.	
TOTAL GROSS REVENUE.					
	£	£	£	£	£
1933	188,168	93,359	4,313	22,612	308,452
1934	206,205	90,566	5,277	27,907	329,955
1935	217,758	83,522	6,132	38,273	345,685
1936	246,653	100,981	6,413	33,662	387,709
1937	273,142	126,999	7,068	35,040	442,249
GROSS REVENUE PER AVERAGE MILE WORKED.					
	£	£	£	£	£
1933	179	121	873	71	144
1934	196	117	1,068	88	154
1935	207	108	1,241	121	161
1936	234	131	1,298	106	181
1937	260	165	1,431	111	206
GROSS REVENUE PER TRAIN-MILE RUN.					
	d.	*d.*	*d.*	*d.*	*d.*
1933	139.31	122.83	151.11	160.51	135.27
1934	150.66	121.49	183.95	184.31	143.82
1935	155.91	126.58	213.75	257.46	154.75
1936	176.92	115.81	223.22	258.02	159.86
1937	155.78	117.79	191.35	261.88	147.31

The comparatively large decreases in gross revenue per train mile run during 1936–37, shown in relation to the Trans-Australian and Australian Capital Territory Railways, are due mainly to the introduction of additional services on those lines.

(ii) *Classification and Percentages.* During the year 1936–37 receipts from coaching traffic and goods and live stock represented 49 per cent. and 27 per cent. respectively of the total gross revenue of the Trans-Australian line, similar percentages for the remaining lines being :—Central Australia line 13 per cent. and 84 per cent., Australian Capital Territory line 47 per cent. and 51 per cent., and North Australia line 9 per cent. and 35 per cent. coaching and goods and live stock revenue respectively.

The miscellaneous receipts for the year 1936–37 include an amount of £23,166, revenue from dining cars and refreshment services on the Trans-Australian and Central Australia Railways. A sum of £20,355 was received from this source during the previous year.

Revenues of all Federal Railways showed considerable increases as compared with the previous year.

9. **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 1933 to 1937.

Details of the annual expenditure on (*a*) maintenance of ways, works and buildings; (*b*) locomotive, carriage and wagon 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.	Australian Capital Territory.	North Australia.	
TOTAL WORKING EXPENSES.					
	£	£	£	£	£
1933	197,363	106,875	4,720	38,843	347,801
1934	218,506	113,050	4,919	39,693	376,168
1935	197,871	133,896	5,917	41,984	379,668
1936	201,421	138,419	5,983	41,634	387,457
1937	231,659	134,767	5,674	38,713	410,813
PERCENTAGE OF WORKING EXPENSES ON REVENUE.					
	%	%	%	%	%
1933	104.90	114.48	109.43	171.79	112.76
1934	105.97	124.83	93.22	142.23	114.01
1935	90.87	160.31	96.49	109.70	109.83
1936	81.66	137.07	93.29	123.68	99.94
1937	84.81	106.12	80.28	110.48	92.89

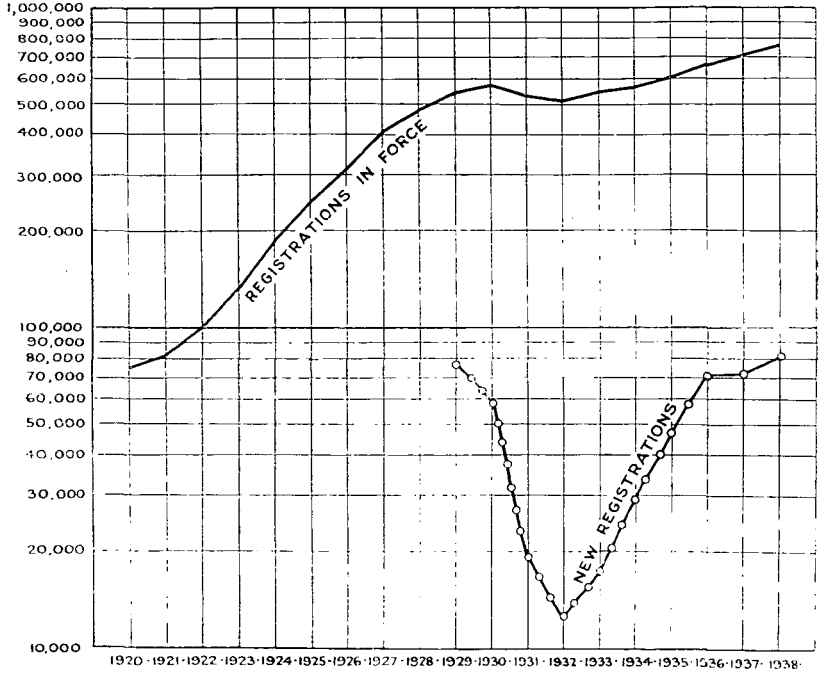
Compared with results for the previous year, the percentage of working expenses on revenue shows decreases in respect of all systems, except the Trans-Australian Railway, where an additional service was introduced, thus increasing the working expenses.

(ii) *Averages.* The next table gives the working expenses per average mile worked and per train-mile run for each railway for the years 1933 to 1937 :—

RAILWAYS, FEDERAL.—WORKING EXPENSES, AVERAGES.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Australian Capital Territory.	North Australia.	
WORKING EXPENSES PER AVERAGE MILE WORKED.					
	£	£	£	£	£
1933	188	139	956	123	162
1934	208	147	996	125	175
1935	188	173	1,198	133	177
1936	191	179	1,211	132	181
1937	220	175	1,149	122	192
WORKING EXPENSES PER TRAIN-MILE RUN.					
	d.	*d.*	*d.*	*d.*	*d.*
1933	146.11	140.61	165.37	275.73	152.53
1934	159.65	151.65	171.47	262.14	163.96
1935	141.67	202.93	206.26	282.42	169.96
1936	144.47	158.75	208.26	319.13	159.76
1937	132.12	125.00	153.61	289.33	136.84

MOTOR VEHICLE REGISTRATION—AUSTRALIA, 1920 TO 1938.

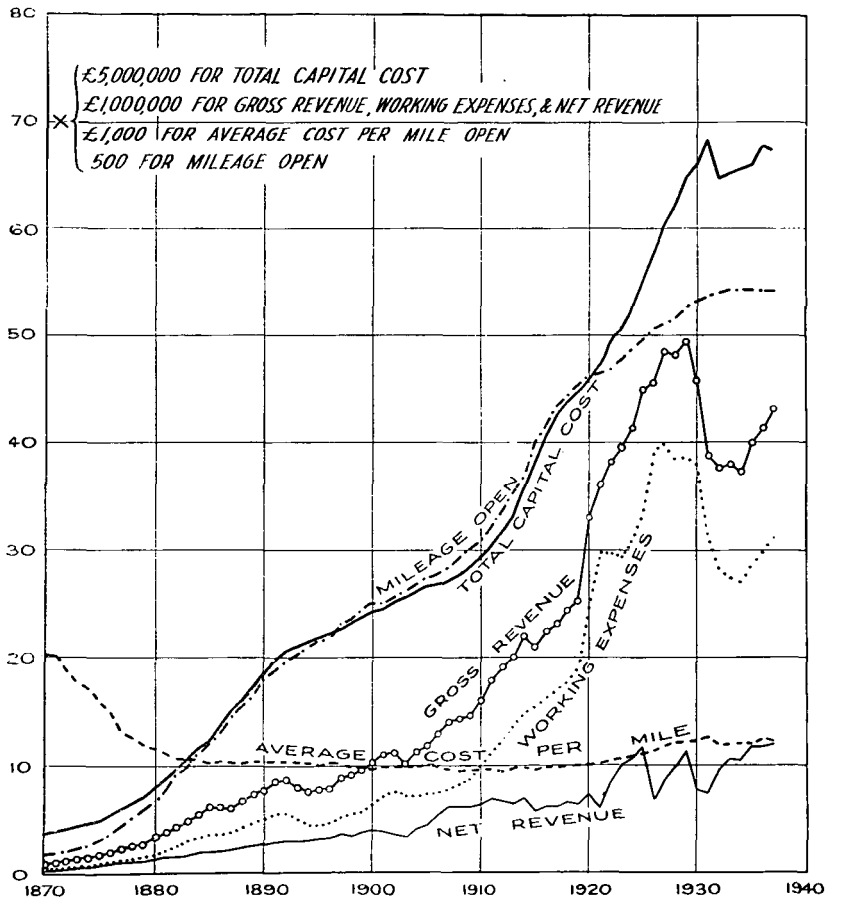


(See page 173.)

EXPLANATION.—This is a ratio graph, the vertical scale being logarithmic, and the curves rise and fall according to the rate of increase or decrease. Actual numbers are indicated by the scale at the side of the graph.

The graphs show for all motor vehicles other than motor cycles the registrations in force at 30th June each year and the number of new registrations during the year.

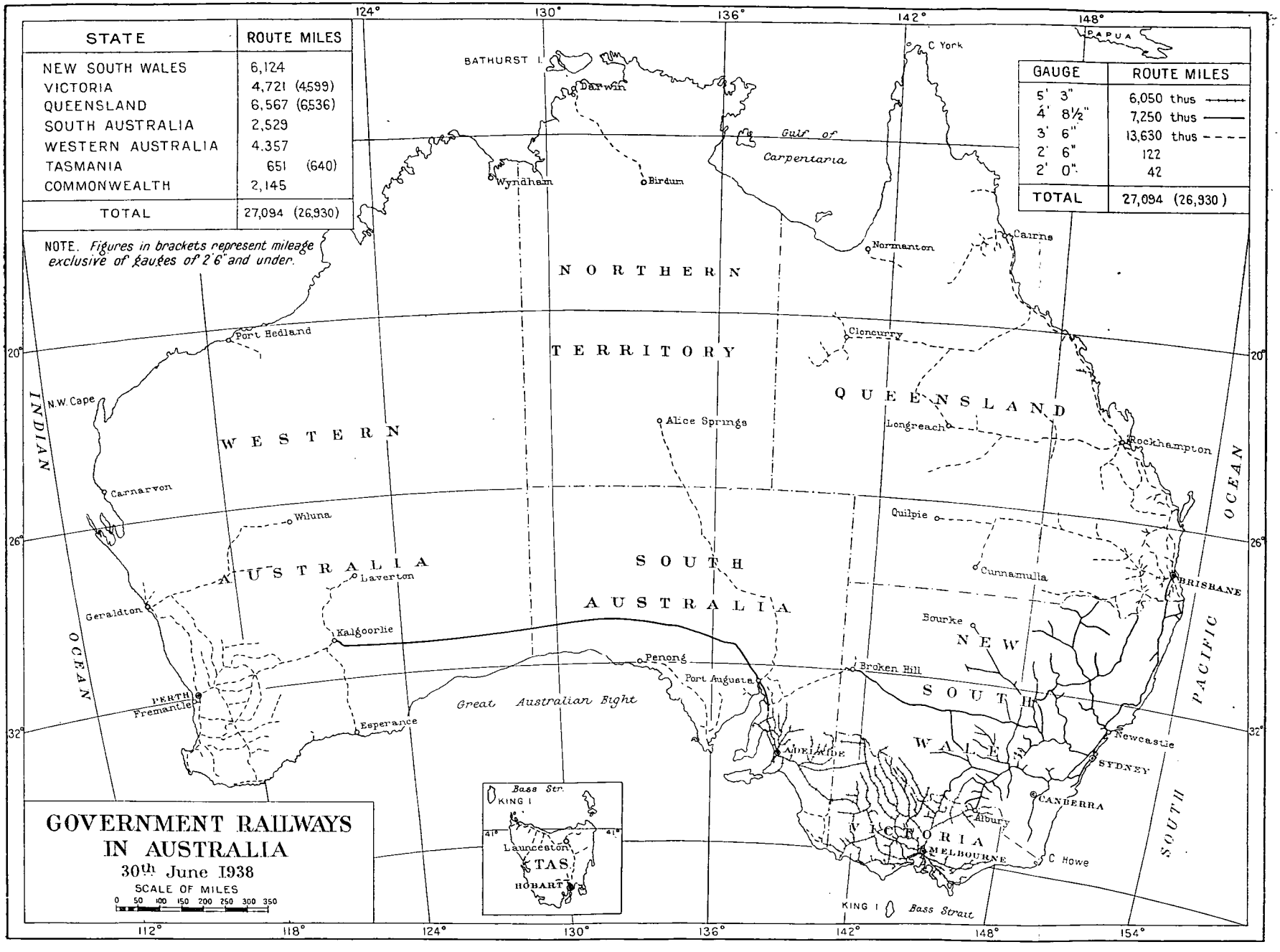
FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1870 TO 1937

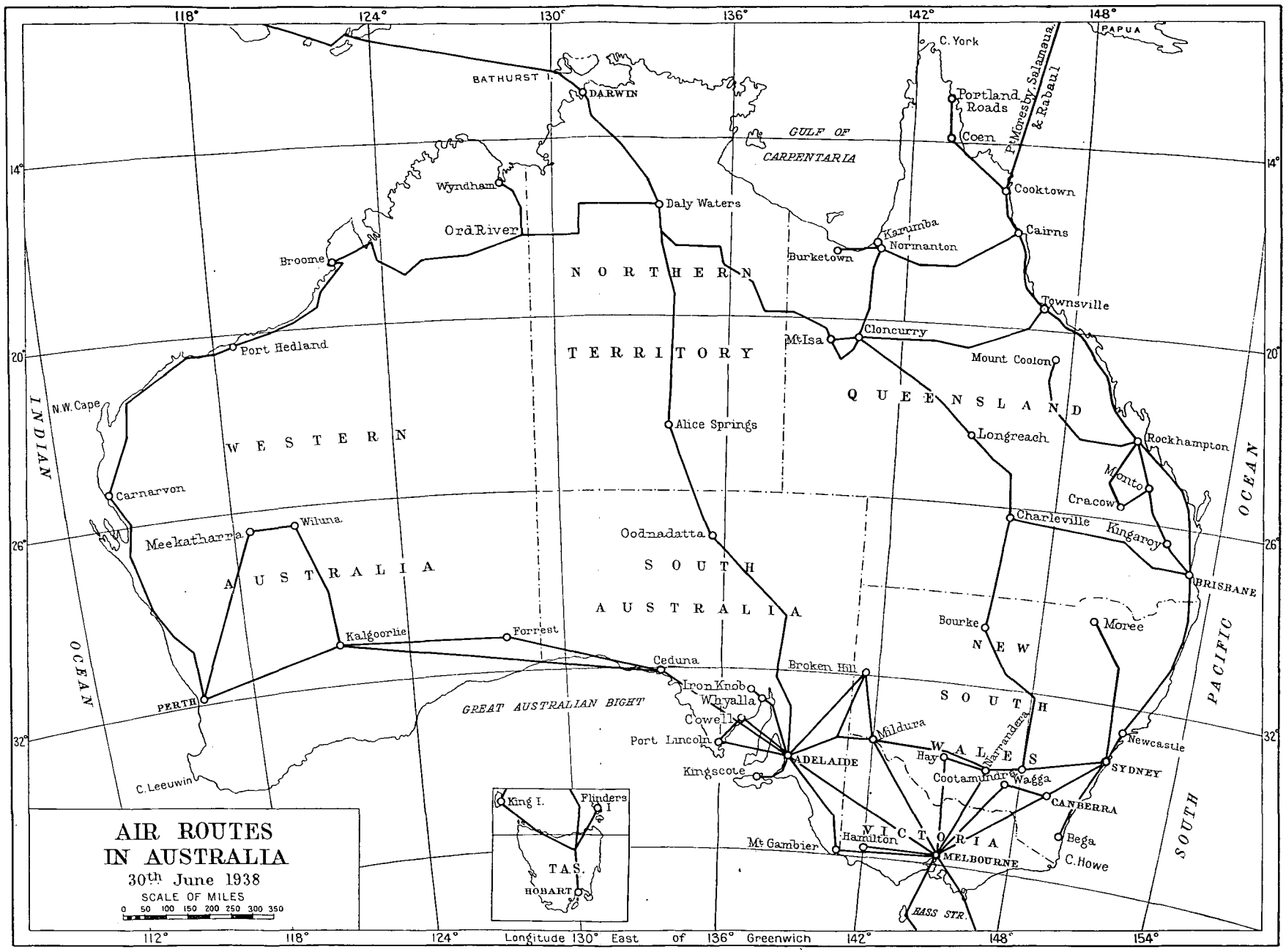


EXPLANATION. The base of each square represents throughout ten years. The significance of the vertical height of each square varies according to the nature of the several curves.

In the curve for the total capital cost, the vertical side of each square represents £50,000,000.

In the curves for (i) gross revenue; (ii) working expenses; and (iii) net revenue, the vertical side of each square represents £10,000,000. For the curve of average cost per mile open, the vertical side of each square represents £10,000. The mileage open is shown by a broken line, the vertical side of each square representing 5,000 miles.


STATE
ROUTE MILES
NEW SOUTH WALES 6,124
VICTORIA 4,721 (4,599)
QUEENSLAND 6,567 (6,536)
SOUTH AUSTRALIA 2,529
WESTERN AUSTRALIA 4,357
TASMANIA 651 (640)
COMMONWEALTH 2,145
TOTAL 27,094 (26,930)
NOTE. Figures in brackets represent mileage exclusive of gauges of 2'6" and under.
GAUGE
ROUTE MILES
5' 3" 6,050 thus
4' 8½" 7,250 thus
3' 6" 13,630 thus
2' 6" 122
2' 0" 42
TOTAL 27,094 (26,930)
GOVERNMENT RAILWAYS IN AUSTRALIA
30th June 1938
SCALE OF MILES
0 50 100 150 200 250 300 350
INDIAN OCEAN
PACIFIC OCEAN
SOUTH PACIFIC OCEAN
NORTHERN TERRITORY
WESTERN AUSTRALIA
SOUTH AUSTRALIA
QUEENSLAND
NEW SOUTH WALES
VICTORIA
TAS
BATHURST I.
KING I
Bass Str.
Bass Strait
Great Australian Bight
Gulf of Carpentaria
PAPUA
C York
Darwin
Wyndham
Birdum
Normanton
Cairns
Cloncurry
Port Hedland
N.W. Cape
Alice Springs
Longreach
Rockhampton
Carnarvon
Wiluna
Quilpie
Cunnamulla
BRISBANE
Laverton
Geraldton
Kalgoorlie
Bourke
Penong
Broken Hill
Port Augusta
PERTH
Fremantle
Esperance
ADELAIDE
Newcastle
SYDNEY
CANBERRA
Albury
MELBOURNE
C Howe
Launceston
HOBART
112° 118° 124° 130° 136° 142° 148° 154°
20° 26° 32° 41°


AIR ROUTES
IN AUSTRALIA
30th June 1938
SCALE OF MILES
0 50 100 150 200 250 300 350
Longitude 130° East of Greenwich
INDIAN OCEAN
PACIFIC OCEAN
SOUTH
AUSTRALIA
WESTERN
NORTHERN
TERRITORY
QUEENSLAND
NEW
SOUTH
WALES
VICTORIA
TAS.
GULF OF
CARPENTARIA
GREAT AUSTRALIAN BIGHT
BASS STR.
PAPUA
Port Moresby, Salamaua & Rabaul
BATHURST I.
DARWIN
C. York
Portland Roads
Coen
Cooktown
Cairns
Townsville
Burketown
Normanton
Karumba
Wyndham
Ord River
Daly Waters
Broome
Port Hedland
N.W. Cape
Carnarvon
Meekatharra
Wiluna
Alice Springs
Oodnadatta
Cloncurry
McIsa
Mount Coolon
Longreach
Rockhampton
Monto
Cracow
Charleville
Kingaroy
BRISBANE
Bourke
Moree
Newcastle
SYDNEY
Kalgoorlie
Forrest
PERTH
Ceduna
Iron Knob
Whyalla
Cowell
Port Lincoln
Kingscote
C. Leeuwin
Broken Hill
Mildura
Hay
Murrumbidgee
Cootamundra
Wagga
CANBERRA
Bega
C. Howe
ADELAIDE
Mt Gambier
Hamilton
MELBOURNE
King I.
Flinders I.
HOBART
112°
118°
124°
130°
136°
142°
148°
154°
14°
20°
26°
32°

As with gross revenue, working expenses per train-mile run show decreases due mainly to the introduction of additional services.

(iii) *Classification and Percentages.* Of the total working expenses of the Federal Railways during the year 1936-37, maintenance expenses represented 34 per cent., locomotive, carriage and wagon charges 41 per cent., and traffic expenses 16 per cent. Details for each line were as follows:—Trans-Australian line 26 per cent., 46 per cent. and 16 per cent.; Central Australia line 46 per cent., 37 per cent. and 12 per cent.; Australian Capital Territory line 20 per cent., 36 per cent. and 38 per cent.; and North Australia line 42 per cent., 26 per cent. and 26 per cent. respectively.

10. **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 1933 to 1937:—

RAILWAYS, FEDERAL.—TRAFFIC.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Australian Capital Territory.	North Australia.	
PASSENGER JOURNEYS.					
	No.	No.	No.	No.	No.
1933	19,642	28,380	30,533	2,784	81,339
1934	19,218	28,493	37,335	3,178	88,224
1935 ..	22,530	32,768	38,963	3,697	97,958
1936	22,843	31,669	39,023	2,967	96,502
1937	25,486	34,960	45,052	3,287	108,785
TONNAGE OF GOODS AND LIVE STOCK CARRIED.					
	Tons.	Tons.	Tons.	Tons.	Tons.
1933	19,754	71,710	10,502	3,435	105,401
1934	21,598	47,100	15,930	3,688	88,316
1935	19,073	43,668	18,008	6,459	87,208
1936	30,757	45,475	20,141	5,006	101,379
1937	42,973	57,396	22,185	4,225	126,779

(ii) *Passenger-Mileage Summary.* The appended table gives particulars of "Passenger-Mileage" on each of the Federal railways for the year 1936-37:—

RAILWAYS, FEDERAL.—"PASSENGER-MILES" SUMMARY, 1936-37.

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 ..	304,843	25,486	22,917	100,593	75	899	1.05	3 18 11	21,787
Central Australia ..	25,104	34,960	2,333	11,949	93	67	1.23	0 6 10	3,025
Australian Capital Territory ..	7,294	45,052	222	1,730	31	5	1.87	0 0 9	45,034
North Australia ..	6,969	3,287	324	2,456	47	99	1.82	0 14 11	1,025

(iii) *Ton-Mileage Summary.* Particulars of ton-mileage are shown hereunder in respect of each of the Federal railways for the year 1936-37:—

RAILWAYS, FEDERAL.—"TON-MILEAGE" SUMMARY, 1936-37.

Railway.	Goods Train Mileage.	Total Tons Carried.	Total "Ton-Miles."	Goods Earnings.	Average Freight-paying Load per Train.	Average Haul per ton.	Earnings per "Ton-Mile."	Density of Traffic per Average Mile Worked.
			'000 omitted.	£	Tons.	Miles.	d.	
Trans-Australian ..	115,961	42,973	13,825	73,237	119.22	322	1.27	13,143
Central Australia ..	233,655	57,396	15,186	105,903	64.99	265	1.67	19,686
Australian Capital Territory ..	1,571	22,185	111	3,604	70.61	5	7.80	22,454
North Australia ..	25,143	4,225	620	12,226	24.67	147	4.73	1,960

11. **Rolling Stock.**—The following table shows the numbers of rolling stock in use during the years 1933 to 1937. Further details may be found on page 22 of Transport and Communication Bulletin No. 28.

RAILWAYS, FEDERAL.—ROLLING STOCK.

Railway.	At 30th June—														
	1933.			1934.			1935.			1936.			1937.		
	Locos.	Coaching Stock.	Other Stock.	Locos.	Coaching Stock.	Other Stock.	Locos.	Coaching Stock.	Other Stock.	Locos.	Coaching Stock.	Other Stock.	Locos.	Coaching Stock.	Other Stock.
Trans-Australian ..	68	54	728	68	54	728	68	54	728	68	54	728	68	55	757
Central Australia ..	24	19	313	24	19	313	24	19	313	24	20	312	24	20	313
North Australia ..	13	14	314	13	14	314	13	14	314	13	14	314	13	14	314
Total ..	105	87	1,355	105	87	1,355	105	87	1,355	105	88	1,354	105	89	1,384

New South Wales Government Railway stock is used on the Australian Capital Territory line.

12. **Employees.**—(i) *General.* The following table shows the number of employees on the Federal railways at 30th June, in each year from 1933 to 1937 inclusive, classified according to salaried and wages staffs :—

RAILWAYS, FEDERAL.—EMPLOYEES.

Railway.	At 30th June—									
	1933.		1934.		1935.		1936.		1937.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No
Trans-Australian	99	(a) 718	99	(a) 696	101	(a)1,017	(c) 107	(a) 869	(c) 102	(a)1,133
Central Australia	53	(b) 297	53	(b) 311	49	385	48	365	48	357
Australian Capital Territory ..	4	5	4	7	4	7	4	8	4	8
North Australia ..	15	88	15	95	13	109	12	101	11	104
Total ..	171	1,108	171	1,109	167	1,518	171	1,343	165	1,602

(a) Includes construction staff, 1933, 157 ; 1934, 91 ; 1935, 63 ; 1936, 61 ; 1937, 99. (b) Includes construction staff, 1933, 6 ; 1934, 4. (c) Includes construction staff, 1936, 10 ; 1937, 10.

(ii) *Average Employed throughout Year.* The average number of employees throughout the year 1936-37 was 168 salaried staff and 1,535 wages staff (of whom 11 of the former and 111 of the latter were on construction work).

13. **Accidents.**—The following table shows the number of persons killed and injured in accidents in each of the years 1933 to 1937:—

RAILWAYS, FEDERAL.—ACCIDENTS.

Railway.	Year ended 30th June—									
	1933.		1934.		1935.		1936.		1937.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Trans-Australian	..	2	1	4	1	5	..	14	..	14
Central Australia	..	4	..	8	..	5	..	7	..	14
Australian Capital Territory	..	..	..	1	..	..	..	..	..	..
North Australia	..	..	..	..	1	6	..	2	..	2
Total ..	..	6	1	13	2	16	..	23	..	30

Further details are available on page 25 of Transport and Communication Bulletin No. 28.

§ 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, 1933 to 1937.**—The following table shows the length of State railways open for traffic on the 30th June in the years 1933 to 1937:—

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.
1933	6,164	4,721	6,566	2,529	4,338	645	24,963
1934	6,164	4,721	6,566	2,529	4,360	645	24,985
1935	6,164	4,721	6,566	2,529	4,359	645	24,984
1936	6,124	4,721	6,567	2,529	4,358	645	24,944
1937	6,124	4,721	6,567	2,529	4,357	651	24,949

A graph indicating the mileage open in Australia at the end of each of the years 1870 to 1937 accompanies this chapter.

The appended statement shows the actual mileage opened or closed for traffic in the year 1937, also the annual average increase or decrease in mileage opened since 1927 in each State:—

RAILWAYS, STATE.—MILEAGE OPENED OR CLOSED ANNUALLY.

Mileage.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
Mileage opened or closed during 1936-37 (*a*) ..	..	..	..	..	−1.29	+6.11	+4.82
Average annual mileage increase or decrease for 10 years to 30th June, 1937 (*a*)	37.41	8.66	26.51	0.16	43.90	−0.73	115.91

(*a*) Minus sign (−) denotes mileage closed.

In Tasmania deviations of the Main Line at the "Backbone" and Andover, and the extension of the Derwent Valley Line from Fitzgerald to Kallista occasioned an increase of 6.11 route miles. Minor adjustments in Western Australia were responsible for a decrease of 1.29 miles.

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, 1937, is given in the Transport and Communication Bulletin No. 28 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, 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 1933 to 1937 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.							
1933 ..	6,159	4,721	6,565	2,529	4,278	645	24,897
1934 ..	6,164	4,721	6,567	2,529	4,351	645	24,977
1935 ..	6,164	4,721	6,567	2,529	4,359	645	24,985
1936 ..	6,124	4,721	6,567	2,529	4,358	645	24.944
1937 ..	6,124	4,721	6,567	2,529	4,357	651	24,949
TRAIN-MILES RUN.(a)							
1933 ..	25,562,220	15,321,398	10,826,016	4,909,588	5,282,989	1,107,800	63,010,011
1934 ..	25,173,199	15,311,461	11,139,229	4,930,271	5,389,931	1,134,129	63,078,220
1935 ..	26,275,459	15,536,111	12,958,956	5,080,319	5,868,396	1,230,034	66,949,275
1936 ..	27,701,005	16,390,943	12,385,742	5,462,146	6,094,910	(b)1,659,021	69,693,767
1937 ..	28,547,207	17,211,384	12,962,742	5,606,353	6,074,984	(b)1,864,167	72,266,837

(a) Traffic Train-Miles (exclusive of "Assistant" and "Light" mileages). (b) Includes steam and petrol rail car mileages excluded prior to 1936.

5. **Lines under Construction and Lines Authorized, 1937.**—(i) *General.* The following statement gives particulars at the 30th June, 1937, 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, 1937.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction	a153.31	(b)38.00	(c)	29.25	18.78	..	239.34
Mileage authorized but not commenced ..	219.76	39.50	1,130.00	26.25	399.23	..	1,814.74

(a) Exclusive of 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.* In addition to that shown under (*b*) below, preliminary construction work has been commenced on the Sandy Hollow to Maryvale (approximately 147 miles) and Sutherland to Cronulla (6.31 miles) railways in New South Wales. Work was suspended in 1930 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 :—Euston to Lette (30.25 miles); and Yarrawonga to Oaklands (38 miles). Work has been suspended on the former line while traffic on the latter is being conducted by the Constructing Authority pending the transfer to the Railways Commissioners. 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, 1937, 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.* The South Australian Government constructed 29.25 miles of a 5 ft. 3 in. gauge line from Red Hill to Port Pirie to connect with a line of 4ft. 8½ in. gauge from Port Pirie to Port Augusta, a distance of 56.25 miles, simultaneously constructed by the Commonwealth authorities. Both sections were opened for traffic on the 26th July, 1937. For further particulars, see § 2, par. 4, page 126.

(*e*) *Western Australia.* In October, 1936, authority was received for the construction of a line, 18.78 miles in length, from Cue to Big Bell. Construction work was commenced on the 22nd October, and the line was opened for ordinary traffic on the 2nd August, 1937.

(*f*) *Tasmania.* At 30th June, 1937, no railway construction work was in progress.

(iii) *Lines Authorized for Construction.* (*a*) *New South Wales.* At the 30th June 1937, the following lines had been authorized for construction but not commenced :—Gilgandra to Collie (21.54 miles); Jerilderie towards Deniliquin (25.00 miles); Rand to Bull Plain (27.55 miles); Canowindra to Gregra (33.87 miles); St. Leonards to Eastwood (9.07 miles); 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 219.76 miles. A permanent survey is now in hand over the proposed Bungendore to Captain's Flat line.

(*b*) *Victoria.* The following lines were authorized, but construction had not been commenced up to the end of June, 1937 :—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).

(*c*) *Queensland.* In addition to the new lines upon which work has been commenced, Parliament has authorized the construction of the following parts of the Great Western Railway—Section A, from Quilpie to Eromanga (120 miles); Section B, from Powell's Creek (224 miles); Section C, from 37-Mile to Springvale (324 miles); and Section D from Moonah Creek (216 miles). The following lines were also authorized for construction :—Texas to Silverspur (9 miles); Mount Edwards to Maryvale (28 miles); Lanefield to Rosevale (17 miles); Gatton to Mount Sylvia (11 miles); Wandoan to Taroom (42 miles); Dirranbandi extension (52 miles); Yarraman to Nanango (16 miles); Brooloo to Kenilworth (10 miles); Dobbyn to Myally Creek (50 miles); and Peeramon towards Boongee (11 miles).

(*d*) *South Australia.* Parliament has authorized the construction of a line on the 3 ft. 6 in. gauge from Kielpa to Mangalo Hall (26.25 miles). The survey has been completed, but the work cannot be started without a special resolution of both Houses of Parliament.

(*e*) *Western Australia.* The following lines were authorized for construction up to the 30th June, 1937 :—Yarramony to Merredin (85 miles); Brookton to Dale River (28 miles); Boyup Brook to Cranbook (95.23 miles); Manjimup to Mount Barker (107 miles); Leighton to Robb's Jetty (4.62 miles); Southern Cross—Southwards (27.38 miles); Yuna to Dartmoor (52 miles); a total distance of 399.23 miles. The surveys have been completed in respect of all the above lines, except the Boyup Brook to Cranbook, the Manjimup to Mount Barker, and the Leighton to Robb's Jetty lines.

(*f*) *Tasmania.* There were no new railways authorized at 30th June, 1937.

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, 1937, amounted to £320,309,759, representing an average cost of £46.89 per head of population. If the cost of railways owned by the Commonwealth Government is included, the total capital cost (£336,391,365) is equivalent to an amount of £49.24 per head of the population of the Commonwealth, while the total mileage open (27,093.71 miles) per 1,000 of population is 3.97. 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, 1937.

State.	Length of Line Open (Route).	Total Cost of Construction and Equipment.(*e*)	Average Cost per Mile Open.	Cost per Head of Population.	Mileage per 1,000 of Population.
	Miles.	£	£	£	Miles.
New South Wales (*a*) ..	(*b*)6,124.19	(*d*)145,257,282	(*d*) 23,719	53.74	2.27
Victoria	4,720.77	77,164,316	16,346	41.58	2.54
Queensland (*f*) ..	(*b*)6,566.65	(*d*) 36,818,984	(*d*) 5,607	37.11	6.62
South Australia (*a*) ..	2,529.35	29,203,229	11,546	49.15	4.26
Western Australia (*a*) ..	4,357.05	25,470,403	5,846	56.07	9.59
Tasmania (*f*) ..	651.00	2,033,045	3,123	8.75	2.80
All States ..	24,949.01	(*c*)320,309,759	(*c*) 12,839	46.89	3.65

(*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 par. 4, page 122). (*c*) Includes Grafton-South Brisbane line, £4,362,500. (*d*) Exclusive of Grafton-South Brisbane line. (*e*) See § 1 par. 2, p. 122. (*f*) See below.

In Queensland a reduction of £28,000,000 in the capital cost of the railways was effected by The Railway (Capital Indebtedness) Reduction Act of 1931, it being considered inequitable to burden the Department with interest charges on capital expended on railways for the purpose of developing the State. In Tasmania also the capital indebtedness was reduced by £4,738,000 on the 1st July, 1936. The figures relating to costs for these States are fictitious, and comparisons are not possible with other States.

Excluding Queensland and Tasmania, the lowest average cost (£5,846) per mile open is in Western Australia, and the highest (£23,719) in New South Wales. 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.

In the table above, the figures relating to cost of construction and equipment do not include particulars of charges for works in course of construction, surveys, discounts

and flotation charges on loans allocated to the railways, etc. 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 1933 to 1937 is shown in the following table :—

RAILWAYS, STATE.—CAPITAL COST.

Year ended 30th June—	N.S.W. £	Victoria. £	Q'land. £ (*c*)	S. Aust. £	W. Aust. £	Tasmania. £ (*c*)	All States. £
TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.							
1933 ..	138,921,968*a*	74,706,736	34,098,724*a*	27,167,930	24,159,782	6,560,434	*b*309,986,574
1934 ..	139,058,321*a*	75,225,403	34,389,657*a*	27,176,158	24,704,212	6,561,937	*b*311,486,688
1935 ..	139,851,912*a*	75,454,243	35,010,898*a*	27,295,054	24,946,843	6,587,891	*b*313,510,841
1936(*d*) ..	143,843,072*a*	76,534,378	36,264,700*a*	29,066,465	25,297,832	6,672,329	*b*322,041,276
1937 ..	145,257,282*a*	77,164,316	36,818,984*a*	29,203,229	25,470,403	(*c*)2,033,045	*b*320,309,759
COST PER MILE OPEN.							
1933 ..	(*a*) 20,915	15,833	(*a*) 5 193	10,743	5,569	10,173	(*b*) 12,418
1934 ..	(*a*) 22,560	15,935	(*a*) 5,237	10,745	5,666	10,175	(*b*) 12,467
1935 ..	(*a*) 22,689	15,983	(*a*) 5,332	10,791	5,724	10,216	(*b*) 12,548
1936 ..	(*a*) 23,488	16,212	(*a*) 5,523	11,492	5,804	10,346	(*b*) 12,910
1937 ..	(*a*) 23,719	16,346	(*a*) 5,607	11,546	5,846	3,123	(*b*) 12,839

(*a*) Exclusive of Grafton-South Brisbane line. (*b*) Includes Grafton-South Brisbane line. (*c*) The capital indebtedness was reduced in Queensland by £28,000,000 in 1931–32, and in Tasmania by £4,378,000 from 1st July, 1936. (*d*) See § 1 par. 2, p. 122.

(*b*) *From Consolidated Revenue.* The following table shows the amounts provided from Consolidated Revenue for construction and equipment to 30th June, 1937 :—

RAILWAYS, STATE.—EXPENDITURE FROM CONSOLIDATED REVENUE FOR CONSTRUCTION AND EQUIPMENT TO 30th JUNE, 1937.

To 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1937 ..	666,864	6,142,641	..	..	640,020	16,935	7,466,460

(iii) *Loan Expenditure.* The subjoined table shows the total net loan expenditure on Government railways in each State for the years 1933 to 1937 :—

RAILWAYS, STATE.—NET LOAN EXPENDITURE.

Year ended 30th June—	N.S.W.	Victoria.(*a*)	Q'land.	S. Aust.	W. Aust. (*b*)	Tas.	All States.
	£	£	£	£	£	£	£
1933 ..	214,885	..	*Cr.* 28,829	*Cr.*101,622	180,495	*Cr.* 6,682	258,247
1934 ..	122,203	1,044	341,917	*Cr.* 79,856	316,081	*Cr.* 644	700,745
1935 ..	1,237,533	..	785,103	40,043	295,076	39,426	2,397,181
1936 ..	2,201,837	280,900	692,830	420,233	116,240	47,859	3,759,899
1937 ..	1,864,088	361,893	505,216	160,011	175,412	81,856	3,148,476

(*a*) Gross expenditure. (*b*) Includes expenditure provided in unemployment relief work programmes.

The following statement shows the total loan expenditure on railways to the 30th June, 1937 :—

RAILWAYS, STATE.—TOTAL LOAN EXPENDITURE TO 30th JUNE, 1937.

State.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust. (d)	Tasmania.(c)	All States.
	£	£	£	£	£	£	£
Expenditure	b147,163,940	a75,141,970	63,977,200	34,385,184	24,942,634	7,191,046	352,801,974

(a) Gross expenditure. (b) Excludes £1,417,928 expenditure on Grafton-South Brisbane Railway not charged to Loan Account. (c) Includes losses funded.

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 1933 to 1937 inclusive were as follows :—

RAILWAYS, STATE.—GROSS REVENUE.

Year ended 30th June—	N.S.W.(a)	Victoria.(b)	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
TOTAL GROSS REVENUE.							
	£	£	£	£	£	£	£
1933	16,205,320	9,446,121	5,992,394	2,734,083	2,932,140	381,483	37,691,541
1934	15,690,186	9,173,111	6,230,188	2,559,939	2,919,315	390,903	36,965,642
1935	16,802,699	9,421,092	7,167,073	2,658,390	3,311,839	399,764	39,760,857
1936	17,753,581	9,689,925	6,697,361	2,878,068	3,446,161	448,614	40,913,710
1937	18,616,496	10,135,291	7,091,561	3,007,761	3,462,037	478,666	42,791,812
GROSS REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1933	2,631	2,001	913	1,081	685	592	1,514
1934	2,546	1,943	949	1,012	671	606	1,480
1935	2,726	1,996	1,092	1,051	760	620	1,591
1936	2,890	2,053	1,020	1,138	791	696	1,640
1937	3,040	2,147	1,080	1,189	795	735	1,715
GROSS REVENUE PER TRAIN-MILE RUN.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1933	152.15	147.97	132.84	133.65	133.20	82.65	143.56
1934	149.59	143.82	134.23	124.62	129.99	82.72	140.65
1935	153.48	145.54	132.73	125.59	135.44	78.00	142.53
1936	153.82	141.88	129.78	126.46	135.70	(c) 64.90	140.89
1937	156.51	141.33	131.30	128.76	136.77	61.63	142.11

(a) Includes £800,000 per annum contribution from consolidated revenue towards losses on working of country development lines. (b) Includes contributions from consolidated revenue in respect of losses on non-paying lines, 1932–33, £124,288 ; 1933–34, £134,424 ; 1934–35, £140,614 ; 1935–36, £163,859 ; and 1936–37, £230,574 (includes £19,113 guarantees in respect of losses). (c) See Note (b), par. 4, p. 138.

The amounts of revenue earned per average mile worked and per train-mile run during 1936–37 in respect of (*a*) passenger 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 from 1933 to 1937, 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.							
1933 ..	5,693,953	3,968,871	1,768,247	655,799	662,444	126,273	12,875,587
1934 ..	5,555,290	3,904,663	1,872,598	646,784	688,480	128,079	12,795,894
1935 ..	5,867,820	4,087,945	1,946,526	653,610	731,449	132,566	13,419,916
1936 ..	6,186,662	4,129,493	1,974,379	686,489	741,924	141,270	13,860,217
1937 ..	6,394,612	4,231,612	1,934,229	737,021	741,964	141,248	14,180,686
Goods and Live Stock Traffic Receipts.							
1933 ..	8,169,056	4,773,699	4,006,279	1,924,982	2,110,065	240,978	21,225,059
1934 ..	7,802,130	4,572,038	4,146,808	1,762,899	2,059,813	248,261	20,591,949
1935 ..	8,582,612	4,555,722	4,987,309	1,853,188	2,405,046	255,428	22,639,305
1936 ..	9,154,921	4,768,127	4,481,887	2,027,287	2,526,619	294,144	23,252,985
1937 ..	9,660,767	5,028,806	4,902,697	2,098,591	2,541,170	323,892	24,555,923
Miscellaneous Receipts.							
	(*a*)	(*b*)					
1933 ..	2,342,311	703,551	217,868	153,302	159,631	14,232	3,590,895
1934 ..	2,332,766	698,410	210,782	150,256	171,022	14,563	3,577,799
1935 ..	2,352,267	707,425	233,238	151,592	175,344	11,770	3,701,636
1936 ..	2,411,998	792,305	241,095	164,422	177,618	13,200	3,800,638
1937 ..	2,561,117	874,873	254,635	172,149	178,903	13,526	4,055,203

(*a*) See note (*a*) to Gross Revenue table on previous page. (*b*) See note (*b*) to Gross Revenue table on previous page.

(*b*) *Percentages.* The following table shows for the two years 1935–36 and 1936–37 the percentage which each class of receipts bears to the total gross revenue :—

RAILWAYS, STATE.—PERCENTAGES OF RECEIPTS.

State.	1935–36.			1936–37.		
	Coaching.	Goods and Live Stock.	Miscellaneous.	Coaching.	Goods and Live Stock	Miscellaneous.
	%	%	%	%	%	%
New South Wales ..	34.85	51.57	13.58	34.35	51.89	13.76
Victoria	42.62	49.21	8.17	41.75	49.62	8.63
Queensland ..	29.48	66.92	3.60	27.28	69.13	3.59
South Australia ..	23.85	70.44	5.71	24.51	69.77	5.72
Western Australia ..	21.53	73.32	5.15	21.43	73.40	5.17
Tasmania	31.49	65.57	2.94	29.51	67.66	2.83
All States ..	33.88	56.83	9.29	33.14	57.38	9.48

(*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, 1937. Further particulars of passenger-mileage will be found in sub-paragraph 14 (i) hereinafter.

RAILWAYS, STATE.—PASSENGER EARNINGS, AVERAGES, 1936-37.

State.	Number of Passenger-Train-Miles.	Number of Passenger Journeys.	Passenger Earnings.			
			Gross.	Per Average Mile Worked.	Per Passenger-Train-Mile.	Per Passenger Journey.
	No.	No.	£	£	d.	d.
New South Wales ..	17,836,682	177,837,265	5,622,929	918	75.66	7.59
Victoria	11,886,400	141,343,253	3,806,858	806	76.86	6.46
Queensland (a) ..	5,503,698	25,444,438	1,446,773	223	63.09	13.65
South Australia ..	3,504,049	17,776,629	592,244	234	40.56	8.00
Western Australia ..	(b)2,397,714	12,709,583	558,770	128	55.93	10.55
Tasmania	(b)(c)949,394	2,331,516	120,676	185	30.51	12.42
All States ..	42,077,937	377,442,684	12,148,250	488	69.29	7.72

(a) Exclusive of Queensland portion of Grafton-South Brisbane (uniform gauge) line. (b) Estimated. (c) Includes Rail Motor Miles, previously excluded.

(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, 1937, 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, 1936-37.

State.	Number of Goods-Train-Miles.	Goods and Live Stock Tonnage.	Goods and Live Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train-Mile.	Per Ton Carried.
	No.	Tons.	£	£	d.	d.
New South Wales ..	10,710,525	a14,336,443	9,660,767	1,577	216.48	161.73
Victoria	5,324,984	6,812,962	5,028,806	1,065	226.65	177.15
Queensland (b) ..	7,342,924	4,879,532	4,824,403	742	157.68	237.29
South Australia ..	2,102,304	2,382,779	2,098,591	830	239.58	211.38
Western Australia ..	(c)3,677,270	2,798,448	2,541,170	583	165.85	217.94
Tasmania	(c) 914,773	823,792	323,892	498	84.98	94.36
All States ..	30,072,780	32,033,956	24,477,629	984	195.35	183.39

(a) Exclusive of 348,442 tons of coal on which way leave charges only were collected. (b) Exclusive of Queensland portion of Grafton-South Brisbane (uniform gauge) line. (c) Estimated.

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 1933 to 1937 :—

RAILWAYS, STATE.—WORKING EXPENSES.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
Total Working Expenses.							
	£	£	£	£	£	£	£
1933	11,966,648	6,366,838	4,323,655	1,978,545	2,111,588	373,762	27,121,036
1934	11,203,520	6,241,505	4,494,314	2,028,772	2,186,506	385,383	26,540,000
1935	11,565,658	6,505,859	5,086,921	2,241,411	2,382,744	471,944	28,254,537
1936 (a)	11,848,070	6,856,497	5,212,926	2,413,814	2,488,117	560,990	29,380,414
1937	12,355,322	7,258,830	5,465,112	2,556,553	2,620,093	620,084	30,875,994
Percentage of Working Expenses on Gross Revenue.							
	%	%	%	%	%	%	%
1933	73.84	67.40	72.15	72.37	72.02	97.97	71.96
1934	71.40	68.03	72.14	79.25	74.90	98.59	71.80
1935	68.83	69.06	70.98	84.31	71.95	118.06	71.06
1936	66.74	70.76	77.84	83.87	72.20	125.05	71.81
1937	66.37	71.62	77.07	85.00	75.68	129.54	72.15

(a) See § 1 par. 2, page 122.

In the graphs accompanying this chapter the gross and net revenue and working expenses are shown from 1870 to 1937.

(ii) *Averages.* The next table shows the working expenses per average mile worked and per train-mile run in each State for the years 1933 to 1937 :—

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.							
	£	£	£	£	£	£	£
1933	1,943	1,349	659	782	494	580	1,089
1934	1,818	1,322	684	802	503	598	1,063
1935	1,876	1,378	775	886	547	732	1,130
1936	1,935	1,452	794	954	571	870	1,178
1937	2,017	1,538	832	1,011	601	953	1,238
Working Expenses per Train-Mile Run.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1933	112.35	99.73	95.85	96.72	95.93	80.97	103.30
1934	106.81	97.83	96.83	98.76	97.36	81.55	100.98
1935	105.64	100.50	94.21	105.89	97.44	92.08	101.29
1936	102.65	100.39	101.01	106.06	97.97	(a)81.15	101.17
1937	103.87	101.22	101.18	109.44	103.51	79.83	102.54

(a) See note (b) par. 4 page 138.

(iii) *Distribution.* The subjoined table shows the distribution of working expenses under four chief heads of expenditure for the years 1933 to 1937 :—

RAILWAYS, STATE.—DISTRIBUTION OF WORKING EXPENSES.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
MAINTENANCE OF WAY AND WORKS.							
1933	2,460,825	1,464,041	1,156,644	327,887	493,968	94,756	5,997,521
1934	2,654,375	1,564,771	1,161,699	367,776	552,907	96,441	6,397,969
1935	2,432,517	1,570,137	1,291,450	394,152	553,090	116,000	6,357,346
1936	2,161,368	1,516,786	1,344,313	444,739	568,671	122,111	6,157,988
1937	2,319,717	1,626,953	1,450,944	471,343	609,808	130,469	6,609,234
ROLLING STOCK.							
1933	4,991,900	2,231,648	1,764,765	955,698	960,993	167,605	11,072,609
1934	4,193,295	2,156,706	1,851,705	951,529	956,702	176,451	10,286,388
1935	4,573,455	2,181,626	2,180,556	1,096,904	1,088,138	182,647	11,303,326
1936	4,842,986	2,333,626	2,205,283	1,149,710	1,140,035	214,043	11,885,683
1937	4,981,786	2,492,241	2,295,304	1,205,034	1,180,860	246,310	12,401,535
TRANSPORTATION AND TRAFFIC.							
1933	2,771,583	1,628,237	1,136,739	450,886	562,000	87,154	6,636,599
1934	2,612,947	1,647,482	1,210,915	457,182	577,981	90,230	6,596,737
1935	2,726,197	1,713,789	1,320,239	484,831	620,975	98,581	6,964,612
1936	2,925,093	1,797,996	1,349,604	530,897	648,242	112,386	7,364,218
1937	3,005,729	1,874,436	1,393,475	575,962	693,250	127,927	7,670,779
OTHER CHARGES.							
1933	1,742,340	1,042,912	266,107	244,074	94,627	24,247	3,414,307
1934	1,742,903	872,546	269,995	252,285	98,916	22,261	3,258,906
1935	1,833,489	1,040,307	294,676	265,524	120,541	(a) 74,716	3,629,253
1936	1,918,623	1,208,089	313,726	288,468	131,169	(a) 112,450	3,972,525
1937	2,048,090	1,265,200	325,389	304,214	136,175	(a) 115,378	4,194,446

(a) Includes £54,000, 1935, and £94,000, 1936 and 1937, to replacement and depreciation fund.

9. **Salaries and Wages.**—The following table shows the total amount paid in salaries and wages in each State during the years 1933 to 1937 :—

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.							
1933	8,462,906	4,417,160	3,244,342	1,376,676	1,675,594	249,856	19,426,534
1934	8,154,378	4,533,562	3,396,671	1,418,788	1,902,457	259,288	19,665,144
1935	8,782,701	4,698,837	3,805,286	1,492,693	2,050,615	287,853	21,117,985
1936	9,775,667	4,990,163	3,925,060	1,654,653	2,012,361	334,832	22,692,736
1937	9,626,478	5,299,039	4,064,587	1,827,516	2,119,625	399,676	23,336,921

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 1933 to 1937 :—

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.							
	£	£	£	£	£	£	£
1933	4,238,672	3,070,283	1,668,739	755,538	820,552	7,721	10,570,505
1934	4,486,666	2,933,606	1,735,874	531,167	732,809	5,520	10,425,642
1935	5,237,041	2,915,233	2,080,152	416,979	929,095	— 72,180	11,506,320
1936	5,905,511	2,833,428	1,484,435	464,254	958,044	—112,376	11,533,296
1937	6,261,174	2,876,461	1,626,449	451,208	841,944	—141,418	11,915,818
Percentage of Net Revenue on Capital Cost.(a)							
	%	%	%	%	%	%	%
1933	3.05	4.12	4.81	2.78	3.40	0.12	3.41
1934	3.23	3.90	4.99	1.95	2.97	0.08	3.35
1935	3.74	3.86	5.94	1.53	3.72	—1.10	3.67
1936	4.11	3.70	4.09	1.60	3.79	—1.68	3.58
1937	4.31	3.73	4.42	1.55	3.31	*b*—6.96	3.72

(*a*) The cost of the Grafton-South Brisbane line is excluded from New South Wales and Queensland, but is included with "All States." (*b*) See par. 6, page 140.

(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.							
	£	£	£	£	£	£	£
1933	688	652	254	299	192	12	425
1934	728	621	265	209	168	8	417
1935	850	618	317	165	213	—112	461
1936	964	601	226	184	220	—174	462
1937	1,023	609	248	178	193	—218	477
Net Revenue per Train-Mile Run.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1933	39.79	48.24	36.99	36.93	37.28	1.67	40.26
1934	42.78	45.99	37.40	25.86	32.63	1.17	39.67
1935	47.84	45.04	38.52	19.70	38.00	—14.08	41.25
1936	51.17	41.49	28.77	20.40	37.73	*a*—16.25	39.72
1937	52.64	40.11	30.12	19.32	33.26	—18.21	39.57

(*a*) See note (*b*) par. 4, page 138.

11. **Interest.**—The amount of interest payable on expenditure from loans on the construction and equipment of the railways in each State during the five years ended 30th June, 1937, 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.				
	£	£	£	£	£	£	£
1933	a6,352,581	3,221,710	a1,595,522	1,137,193	996,233	263,861	a13,673,133
1934	a5,971,412	3,181,736	a1,565,343	1,088,627	1,008,453	246,762	a13,165,484
1935	a5,677,540	3,056,766	a1,576,693	1,055,954	1,028,569	247,727	a12,746,007
1936(b)	a5,700,000	3,032,530	a1,591,783	1,061,393	1,015,521	247,732	a12,775,582
1937	a5,444,125	3,005,341	a1,612,564	1,060,616	1,008,554	88,372	a12,346,190

(a) Including interest charges on the Grafton-South Brisbane line, which for the year 1936–37 amounted to £225,826 and was contributed by New South Wales, £72,179 ; Queensland, £27,029 ; and the Commonwealth, £126,618. See § 1 par. 4, p. 122. (b) See § 1 par. 2, p. 122.

The interest payable on the cost of construction and equipment, the expenditure from Consolidated Revenue (£7,466,460) for that purpose being deducted, was at the rate of 3.95 per cent. in 1936–37.

Exchange on interest payments abroad and loan management and flotation expenses are not included in the above table. These items are not charged against the railways in Queensland, Western Australia and Tasmania and the figures for these States are not available. In the remaining States the amounts apportioned since 1932–33 were as follows :—

RAILWAYS, STATE.—EXCHANGE ON OVERSEA INTEREST PAYMENTS, ETC.

Year ended 30th June—	New South Wales.	Victoria.	South Australia.
	£	£	£
1933	1,191,937	402,705	180,826
1934	1,103,381	354,335	157,001
1935	843,012	300,302	130,649
1936	903,773	310,530	121,734
1937	788,652	299,632	120,340

12. **Profit or Loss.**—The following table shows the actual profit or loss after deducting working expenses and interest and all other charges, excepting exchange, etc., payments, 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. (c)	S. Aust.	W. Aust.	Tasmania. (c)	All States.
			PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.				
	£	£	£	£	£	£	£
1933	a—2,113,909	— 142,427	+ 73,217a	— 381,655	— 175,681	— 256,140	a—3,102,628
1934	a—1,484,746	— 248,130	+ 170,531a	— 557,460	— 275,644	— 241,242	a—2,739,842
1935	a— 440,499	— 141,533	+ 503,459a	— 518,975	— 99,474	— 265,907	a—1,065,687
1936	a+ 205,511	— 199,102	— 107,353a	— 597,139	— 57,477	— 360,108	a—1,242,286
1937	a+ 817,049	— 128,880	+ 13,885a	— 609,408	— 166,610	— 229,790	a— 430,372
			PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.(b)				
	%	%	%	%	%	%	%
1933	—1.52	—0.19	+0.21	—1.40	—0.73	—3.90	—1.00
1934	—1.07	—0.33	+0.53	—2.05	—1.12	—3.68	—0.88
1935	—0.31	—0.19	+1.44	—1.90	—0.40	—4.04	—0.34
1936	+0.14	—0.26	—0.30	—2.05	—0.23	—5.40	—0.38
1937	+0.56	—0.17	+0.04	—2.09	—0.65	—11.30	—0.13

(a) See Note (a) par. 11 above. (b) See Note (a) par. 10 (i) on previous page. (c) See par. 6, p. 140.

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, and also, particularly in the case of passenger traffic, to competition by air.

The following table gives particulars for the years 1933 to 1937 :—

RAILWAYS, STATE.—TRAFFIC.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
Number of Passenger Journeys.							
1933 ..	132,867,221	130,190,013	22,216,409	16,074,221	11,732,291	1,678,483	314,758,638
1934 ..	142,520,429	131,367,215	22,877,900	16,325,004	12,103,104	1,789,329	326,982,981
1935 ..	160,211,508	139,689,012	24,328,300	16,660,213	12,876,378	2,133,541	355,898,952
1936 ..	171,142,729	139,539,089	25,243,901	17,430,674	12,421,527	2,321,823	368,099,743
1937 ..	177,837,265	141,343,253	25,527,106	17,776,629	12,709,583	2,331,516	377,525,352
Per 100 of Mean Population.							
1933 ..	5,128	7,173	2,361	2,774	2,685	736	4,775
1934 ..	5,454	7,198	2,407	2,803	2,748	781	4,924
1935 ..	6,060	7,607	2,532	2,828	2,906	931	5,310
1936 ..	6,419	7,571	2,597	2,948	2,774	1,008	5,453
1937 ..	6,609	7,630	2,594	2,995	2,813	1,005	5,548
Per Average Mile of Line Worked.							
1933 ..	21,574	27,577	3,384	6,355	2,742	2,603	12,643
1934 ..	23,122	27,826	3,484	6,454	2,782	2,775	13,092
1935 ..	25,992	29,589	3,705	6,587	2,954	3,308	14,245
1936 ..	27,945	29,559	3,844	6,891	2,850	3,600	14,757
1937 ..	29,038	29,941	3,887	7,028	2,917	3,581	15,132
Tonnage of Goods and Live Stock Carried.							
1933 ..	11,147,866	6,244,346	3,685,608	2,387,817	2,840,077	510,585	26,816,299
1934 ..	11,364,235	5,858,377	4,214,382	2,141,646	2,652,247	560,611	26,791,498
1935 ..	13,018,620	6,009,961	4,879,019	2,332,581	2,903,481	678,227	29,821,889
1936 ..	13,839,012	6,424,094	4,663,567	2,464,711	2,886,648	769,841	31,047,873
1937 ..	14,684,885	6,812,962	4,974,885	2,382,779	2,798,448	823,792	32,477,751
Per 100 of Mean Population.							
1933 ..	430	344	392	412	650	224	407
1934 ..	435	321	443	368	602	245	403
1935 ..	492	327	508	396	655	296	445
1936 ..	519	349	480	417	645	334	460
1937 ..	546	368	506	401	619	355	477

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.							
1933 ..	1,810	1,323	561	944	664	792	1,077
1934 ..	1,844	1,241	642	847	610	869	1,073
1935 ..	2,112	1,273	743	922	666	1,052	1,194
1936 ..	2,260	1,361	710	974	662	1,194	1,245
1937 ..	2,398	1,443	758	942	642	1,265	1,302

(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 1936–37 :—

RAILWAYS, STATE.—METROPOLITAN AND SUBURBAN, AND COUNTRY PASSENGER TRAFFIC AND RECEIPTS, 1936–37.

State.	Passenger Journeys.			Revenue.		
	Metropolitan and Suburban.	Country.	Total.	Metropolitan and Suburban.	Country.	Total.
	No.	No.	No.	£	£	£
N.S.W. ..	166,590,647	11,246,618	177,837,265	2,715,236	2,907,693	5,622,929
Victoria ..	135,329,598	6,013,655	141,343,253	2,321,512	1,485,346	3,806,858
Queensland	20,517,211	5,009,895	25,527,106	294,802	1,194,651	1,489,453
S. Australia	16,580,742	1,195,887	17,776,629	228,662	363,582	592,244
W. Australia	11,364,099	1,345,484	12,709,583	143,027	415,743	558,770
Tasmania ..	(*a*)	(*a*)	2,331,516	(*a*)	(*a*)	120,676
Total ..	350,382,297 (*b*)	24,811,539 (*b*)	377,525,352	5,703,239 (*b*)	6,367,015 (*b*)	12,190,930

(*a*) Not available. (*b*) Incomplete, exclusive of Tasmania.

(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 1936–37 :—

RAILWAYS, STATE.—CLASSIFICATION OF COMMODITIES CARRIED, 1936–37.

State.	Coal and Coke.	Other Minerals.	Grain and Flour.	Hay, Straw and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	7,247,918	1,366,805	1,863,764	282,090	189,420	832,691	2,902,197	14,684,885
Victoria ..	245,843	251,518	1,409,773	168,483	69,404	697,664	3,970,277	6,812,962
Queensland ..	662,985	577,915	226,575	*a* 842,702	77,073	405,256	2,182,379	4,974,885
South Australia	132,605	551,054	557,246	24,543	32,540	149,780	935,011	2,382,779
Western Australia	282,561	309,263	618,995	57,896	24,840	109,578	1,395,315	2,798,448
Tasmania ..	472,712	(*b*)	(*a*)58,661	22,270	4,219	24,771	241,159	823,792
All States ..	9,044,624	3,056,555	4,735,014	1,397,984	397,496	2,219,740	11,626,338	32,477,751

PERCENTAGE OF TOTAL TONNAGE CARRIED.

	%	%	%	%	%	%	%	%
New South Wales	49.36	9.31	12.69	1.92	1.29	5.67	19.76	100.00
Victoria ..	3.61	3.69	20.69	2.47	1.02	10.24	58.28	100.00
Queensland ..	13.33	11.62	4.55	16.94	1.55	8.14	43.87	100.00
South Australia	5.56	23.13	23.39	1.03	1.36	6.29	39.24	100.00
Western Australia	10.10	11.05	22.12	2.07	0.89	3.91	49.86	100.00
Tasmania ..	57.38	(*b*)	7.12	2.70	0.51	3.01	29.28	100.00
All States ..	27.85	9.41	14.58	4.31	1.22	6.83	35.80	100.00

(*a*) Includes other agricultural produce. (*b*) Included with coal and coke.

(*b*) *Revenue.* The following table shows the revenue derived from goods and live stock traffic during 1936–37 according to a classification which has been adopted by all States :—

RAILWAYS, STATE.—GOODS, ETC., TRAFFIC—REVENUE, 1936–37.

Class.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	£	£	£	£	£	£	£
General merchandise	6,049,876	3,120,632	3,187,080	1,020,188	1,770,364	186,259	15,334,399
Wheat	(*a*)	791,036	(*a*)	275,807	314,465	(*a*)	*d*1,381,308
Wool	695,783	196,454	305,196	70,488	63,752	4,926	1,416,599
Live stock ..	1,187,163	764,146	638,671	192,101	131,692	21,680	2,935,753
Minerals—							
Coal and coke ..	1,385,894	73,213	311,065	36,075	160,780	(*b*) 24,471	1,991,498
Others ..	341,751	83,325	380,685	503,932	100,117	(*c*) 86,556	1,496,366
Total ..	9,660,767	5,028,806	4,902,697	2,098,591	2,541,170	323,892	24,555,923

(*a*) Included with General Merchandise. (*b*) Native coal. (*c*) Minerals other than native coal.
(*d*) Incomplete.

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 1932-33 to 1936-37.

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.									
1933	16,382	132,867	1,422,105	5,025,484	87	10.70	0.85	9.08	230,911
1934	16,326	142,520	1,543,531	4,869,235	95	10.83	0.76	8.20	250,418
1935	16,926	160,212	1,745,075	5,153,196	103	10.89	0.71	7.72	283,115
1936	17,448	171,143	1,864,368	5,433,176	107	10.89	0.70	7.62	304,427
1937	17,837	177,837	1,952,887	5,622,929	109	10.98	0.69	7.59	318,881
VICTORIA.									
1933	10,541	130,190	1,087,543	3,561,588	103	8.35	0.79	6.57	230,363
1934	10,559	131,367	1,079,981	3,502,513	102	8.22	0.78	6.40	228,761
1935	10,854	139,689	1,156,142	3,685,978	107	8.28	0.77	6.33	244,894
1936	11,458	139,539	1,180,297	3,713,411	107	8.46	0.76	6.39	250,022
1937	11,886	141,343	1,233,554	3,806,858	104	8.73	0.74	6.46	261,303
QUEENSLAND.(b)									
1933	4,658	22,147	(a)	1,301,405	(a)	(a)	(a)	14.10	(a)
1934	4,808	22,806	(a)	1,375,542	(a)	(a)	(a)	14.48	(a)
1935	5,082	24,250	(a)	1,448,924	(a)	(a)	(a)	14.34	(a)
1936	5,430	25,159	(a)	1,469,556	(a)	(a)	(a)	14.02	(a)
1937	5,504	25,444	(a)	1,446,773	(a)	(a)	(a)	13.65	(a)
SOUTH AUSTRALIA.									
1933	3,152	16,074	172,106	519,277	55	10.71	0.72	7.75	68,046
1934	3,202	16,325	175,559	516,253	55	10.75	0.71	7.59	69,411
1935	3,251	16,660	177,655	524,884	55	10.66	0.71	7.56	70,237
1936	3,423	17,431	189,061	548,577	55	10.85	0.70	7.55	74,747
1937	3,504	17,777	205,329	592,244	59	11.55	0.69	8.00	81,179
WESTERN AUSTRALIA.									
1933	(c)2,151	11,732	(a)	503,177	(a)	(a)	(a)	10.29	(a)
1934	(c)2,254	12,103	(a)	526,756	(a)	(a)	(a)	10.45	(a)
1935	(c)2,319	12,876	(a)	563,687	(a)	(a)	(a)	10.51	(a)
1936	(c)2,386	12,422	(a)	564,365	(a)	(a)	(a)	10.90	(a)
1937	(c)2,398	12,710	(a)	558,770	(a)	(a)	(a)	10.55	(a)
TASMANIA.									
1933	(d) (c) 692	1,678	26,795	104,978	39	15.09	0.94	15.01	41,549
1934	(c) 697	1,789	27,960	107,097	40	15.62	0.92	14.36	43,356
1935	(c) 799	2,134	31,094	111,578	39	14.57	0.86	12.55	48,217
1936	(c) 858	2,322	32,911	120,328	39	14.17	0.88	12.44	51,033
1937	(c) 949	2,332	34,653	120,676	37	14.86	0.84	12.42	53,231

(a) Not available. (b) Exclusive of Queensland portion of Grafton-South Brisbane (uniform gauge) line. (c) Estimated. (d) Amended to include Rail Motor Mileages, previously excluded.

(ii) *Ton-Miles.* Particulars regarding total "ton-miles" are given in the following table for each of the years 1932–33 to 1936–37 :—

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.								
1933	9,180	*d* 10,889	1,550,327	8,169,056	169	142.38	1.25	252,129
1934	8,847	*d* 11,066	1,410,854	7,802,130	159	127.49	1.31	228,892
1935	9,349	*d* 12,665	1,522,781	8,582,612	163	120.23	1.34	247,051
1936	10,253	*d* 13,514	1,666,603	9,154,921	163	123.32	1.32	272,134
1937	10,711	*d* 14,336	1,731,904	9,660,767	162	120.80	1.34	282,797
VICTORIA.								
1933	4,781	6,244	734,970	4,773,699	178	117.70	1.55	155,681
1934	4,752	5,858	693,741	4,572,038	146	118.42	1.58	146,948
1935	4,682	6,010	693,783	4,555,722	148	115.44	1.58	146,957
1936	4,933	6,424	759,037	4,768,127	154	118.15	1.51	160,787
1937	5,325	6,813	838,002	5,028,806	157	123.00	1.44	177,514
QUEENSLAND.(*b*)								
1933	6,073	3,620	(*e*) 517,502	3,944,275	(*c*) 85	*c*147.72	(*c*) 1.82	(*c*) 79,666
1934	6,236	4,152	(*e*) 541,238	4,080,906	(*c*) 87	*c*130.34	(*c*) 1.81	(*c*) 83,294
1935	7,788	4,841	(*e*) 684,008	4,939,658	(*c*) 88	*c*141.30	(*c*) 1.73	(*c*) 105,266
1936	6,847	4,589	(*e*) 615,972	4,411,617	(*c*) 90	*c*134.22	(*c*) 1.72	(*c*) 94,797
1937	7,343	4,880	(*e*) 665,989	4,824,403	(*c*) 91	*c*139.89	(*c*) 1.73	(*c*) 105,658
SOUTH AUSTRALIA.								
1933	1,758	2,388	283,565	1,924,982	161	118.76	1.63	112,114
1934	1,728	2,142	265,682	1,762,899	154	124.06	1.59	105,044
1935	1,830	2,333	281,068	1,853,188	154	120.50	1.58	111,123
1936	2,039	2,465	312,789	2,027,287	153	126.91	1.56	123,664
1937	2,102	2,383	314,462	2,098,591	150	131.97	1.60	124,325
WESTERN AUSTRALIA.								
1933	(*a*)3,132	2,840	339,007	2,110,065	108	119.37	1.49	79,237
1934	(*a*)3,136	2,652	317,870	2,059,813	101	119.85	1.56	73,055
1935	(*a*)3,550	2,903	362,252	2,405,046	102	124.77	1.59	83,101
1936	(*a*)3,709	2,887	353,011	2,526,619	95	122.29	1.72	80,997
1937	(*a*)3,677	2,798	346,777	2,541,170	94	123.92	1.76	79,588
TASMANIA.								
1933	(*a*) 612	(*f*) 490	27,246	(*f*)223,262	45	55.63	1.98	42,248
1934	(*a*) 636	(*f*) 540	27,623	(*f*)230,597	43	51.17	1.98	42,833
1935	(*a*) 678	(*f*) 656	30,671	(*f*)236,857	45	46.73	1.86	47,561
1936	(*a*) 801	(*f*) 746	37,837	(*f*)274,541	47	50.74	1.74	58,672
1937	(*a*) 915	(*f*) 799	41,151	(*f*)302,213	45	51.50	1.76	63,212

(*a*) Estimated. (*b*) Exclusive of Queensland portion of Grafton-South Brisbane (uniform gauge) line. (*c*) Approximate. (*d*) Exclusive of coal, on which way leave charges only were collected. (*e*) Exclusive of Cooktown, Normanton, and Innisfail and Mourilyan tramways. (*f*) Exclusive of live stock.

In New South Wales the tonnages of coal on which way leave charges only have been collected were 258,893 tons (1933), 297,960 tons (1934), 353,309 tons (1935), 324,937 tons (1936), and 348,442 tons (1937).

15. **Rolling Stock.**—The following table shows the numbers of rolling stock in use during the years 1933 to 1937. Further details may be found in the Transport and Communication Bulletin No. 28.

RAILWAYS, STATE.—ROLLING STOCK.

State.	At 30th June—														
	1933.			1934.			1935.			1936.			1937.		
	Locos.	Coaching Stock.	Other Stock.	Locos.	Coaching Stock.	Other Stock.	Locos.	Coaching Stock.	Other Stock.	Locos.	Coaching Stock.	Other Stock.	Locos.	Coaching Stock.	Other Stock.
New South Wales ..	1,432	2,710	23,705	1,432	2,676	23,498	1,403	2,657	23,457	1,378	2,704	23,340	1,346	2,725	23,293
Victoria	650	2,526	20,940	619	2,503	20,940	602	2,476	21,004	602	2,450	21,056	588	2,474	21,021
Queensland ..	776	1,329	19,068	776	1,333	18,957	734	1,356	18,774	750	1,381	18,738	753	1,397	18,744
South Australia ..	438	668	9,144	423	620	9,106	400	611	8,836	365	610	8,720	327	608	8,436
Western Australia..	420	493	11,250	420	493	11,272	420	493	11,175	420	489	11,096	417	485	11,070
Tasmania ..	94	224	2,025	94	223	2,016	94	225	2,036	92	220	2,045	93	226	2,046
All States ..	3,810	7,950	86,132	3,764	7,848	85,789	3,653	7,818	85,282	3,607	7,854	84,995	3,524	7,915	84,610

16. **Employees.**—(i) *At 30th June.* The following table gives the number of railway employees in each year from 1933 to 1937 inclusive, classified according to (*a*) salaried staff, and (*b*) wages staff :—

RAILWAYS, STATE.—EMPLOYEES.(*a*)

State.	At 30th June—									
	1933.		1934.		1935.		1936.		1937.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales	5,724	32,982	5,734	33,968	5,830	35,683	5,888	35,076	6,664	34,681
Victoria ..	3,621	18,159	3,533	17,450	3,499	18,278	3,402	19,053	3,464	20,069
Queensland ..	2,917	12,554	2,948	13,854	3,033	14,305	3,065	13,755	3,101	14,206
South Australia..	1,148	5,784	1,173	5,563	1,213	5,962	1,280	6,490	1,316	6,816
Western Australia	1,178	6,135	1,205	7,154	1,249	7,064	1,277	7,062	1,295	7,154
Tasmania ..	166	1,133	179	1,156	171	1,296	175	1,497	204	1,819
All States ..	14,754	76,747	14,772	79,145	14,995	82,588	15,087	82,933	16,044	84,745

(*a*) Exclusive of construction staff.

In the period under review the totals of salaried and wages staffs increased from 91,501 in 1933 to 100,789 in 1937, a rise of 10.2 per cent.

(ii) *Average staff employed*, 1936–37. 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, 1936-37.

State.	Operating Staff.		Construction Staff.		All Employees—Staff.	
	Salaried.	Wages.	Salaried.	Wages.	Salaried.	Wages.
New South Wales ..	6,329	34,002	43	749	6,372	34,751
Victoria	3,441	19,662	..	..	3,441	19,662
Queensland ..	3,085	14,351	6	132	3,091	14,483
South Australia ..	1,209	6,709	6	59	1,305	6,768
Western Australia ..	1,283	7,245	7	179	1,290	7,424
Tasmania	204	1,819	..	..	204	1,819
All States ..	15,641	83,788	62	1,119	15,703	84,907

In the State of Victoria, railway construction work is not under the control of the Railways Commissioners. This was also the case in Tasmania until 1935-36, when it was decided to establish a Railway Construction Branch. The latter, however, was not established and future construction work has been placed under the direction of the Chief Engineer of the Way and Works Section.

17. **Accidents.**—The following table gives particulars of the numbers 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 1933 to 1937 inclusive :—

RAILWAYS, STATE.—ACCIDENTS.

State.	In year ended 30th June—									
	1933.		1934.		1935.		1936.		1937.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	69	329	53	389	51	421	66	442	55	479
Victoria ..	52	177	49	164	41	121	46	188	55	144
Queensland ..	26	100	21	161	21	143	20	156	26	143
South Australia ..	13	127	11	127	15	119	14	143	14	172
Western Australia	15	236	21	327	13	611	14	383	18	703
Tasmania ..	1	10	1	20	2	22	4	17	3	46
All States ..	176	979	156	1,188	143	1,437	164	1,329	171	1,687

Further details relating to the number of passengers, employees and other persons affected by railway accidents are published on page 25 of Transport and Communication Bulletin No. 28.

18. **Consumption of Oil and Fuel.**—The appended table shows the quantities and values of oil and fuel consumed by the various Government Railway Departments during the year 1936-37 :—

GOVERNMENT RAILWAYS.—CONSUMPTION AND VALUE OF OIL AND FUEL, 1936-37.

Government Railways.	Oil.						Coal.		
	Lubricating.			Fuel and Light, etc.					
	Gallons.	Value.	Average Cost per Gallon.	Gallons.	Value.	Average Cost per Gallon.	Tons.	Value.	Average Cost per Ton.
		£	s. d.		£	s. d.		£	£ s. d.
New South Wales	346,454	38,229	2 2	1,106,674	36,929	0 8	1,411,436	860,850	0 12 2
Victoria ..	190,230	16,052	1 8	1,628,996	54,521	0 8	527,155	457,263	0 17 4
Queensland ..	207,874	21,197	2 0	167,588	8,143	1 0	420,226	370,415	0 17 8
South Australia ..	83,819	9,458	2 3	1,142,078	53,896	0 11	179,324	210,543	1 3 6
Western Australia	83,724	8,901	2 2	342,384	11,832	0 8	326,797	239,917	0 14 8
Tasmania ..	38,021	4,078	2 2	207,702	7,576	0 9	59,080	66,397	1 2 6
Total States ..	950,122	97,915	2 1	4,595,422	172,897	0 9	2,924,018	2,205,385	0 15 1
Federal ..	21,847	2,100	1 11	142,183	5,645	0 10	25,283	37,222	1 9 5
Total, Australia..	971,969	100,015	2 1	4,737,605	178,542	0 9	2,949,301	2,242,607	0 15 2

The range in the average cost per ton of coal from 12s. 2d. in New South Wales to £1 9s. 5d. 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 1936–37 showed an increase of 0s. 9d. on that for 1935–36.

19. **Passenger Fares and Goods Rates.**—(i) *General.* 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 starving stock to other areas.

The following fares and rates, obtained from the various Railway publications, were in operation at the 30th June, 1937.

(ii) *Passenger Fares.* Two classes are provided for passenger traffic and the fares charged may be grouped as follows:—(*a*) Fares between specified stations (including suburban fares); (*b*) Fares computed according to mileage rates; (*c*) Return, periodical and excursion fares; and (*d*) Special fares for working men, school pupils, and others. Fares in class (*a*) are issued at rates lower than the ordinary mileage rates. Fares in class (*b*) are charged between stations not included in class (*a*).

The following table shows the single passenger fares for different distances charged in each State and on the Federal Railways between stations for which specific fares are not fixed:—

GOVERNMENT RAILWAYS.—ORDINARY PASSENGER MILEAGE RATES—SINGLE FARES AT 30th JUNE, 1937.

Government Railways.	For a Journey of—											
	50 Miles.		100 Miles.		200 Miles.		300 Miles.		400 Miles.		500 Miles.	
	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ..	9 5	6 6	19 1	13 2	35 9	24 8	51 7	35 7	66 8	46 0	75 9	52 3
Victoria	10 3	6 10	19 10	13 3	39 8	26 5	55 5	36 11	67 2	44 10	79 0	52 7
Queensland	10 9	7 6	20 0	13 0	37 0	24 0	53 0	34 0	68 0	42 0	82 0	50 0
South Australia (*a*) ..	..	6 8	..	13 3	..	26 6	..	39 9	..	53 0	..	..
Western Australia ..	8 4	5 3	16 8	10 5	33 4	20 10	50 0	33 3	66 8	41 8	83 4	52 1
Tasmania	9 0	6 9	18 3	13 9	36 9	27 6	54 9	41 0	..	..	..	..
Average	9 7	6 7	18 9	12 10	36 6	25 0	52 11	36 9	67 2	45 6	80	51 9
Average per mile ..	d. 2.30	d. 1.58	d. 2.25	d. 1.54	d. 2.19	d. 1.50	d. 2.12	d. 1.47	d. 2.02	d. 1.37	d. 1.92	d. 1.24
Federal—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Trans-Australian and Central Australia..	9 7	6 5	19 2	12 9	38 4	25 7	57 6	38 4	70 0	46 8	81 6	54 4
North Australia ..	11 6	7 8	22 11	15 3	45 10	30 7	68 9	45 10	..	..	..	..
Average	10 7	7 1	21 1	14 0	42 1	28 1	63 2	42 1	70 0	46 8	81 6	54 4
Average per mile ..	d. 2.54	d. 1.70	d. 2.53	d. 1.68	d. 2.53	d. 1.69	d. 2.53	d. 1.68	d. 2.10	d. 1.40	d. 1.96	d. 1.30

(*a*) First class tickets are available only on certain lines connecting with the services of other States.

(iii) *Parcel Rates.* Parcels may be transmitted by passenger train at rates based upon weight and distance carried. The charges vary slightly in the different systems. In New South Wales the stamped or prepaid charges range from 5d. for a parcel not exceeding 1 lb. for any distance up to 25 miles to 18s. 8d. for a parcel weighing between 85 and 112 lb. for a distance of 500 miles. In Victoria the corresponding charges are 6d. and 19s. 9d., in Queensland 6d. and 18s. 10d., in South Australia 6d. and 17s. 4d., in Western Australia 6d. and 15s. 6d. (for a parcel between 99 and 112 lb.), in Tasmania

3d. (for a parcel not exceeding 2 lb.) and 10s. 9d. (for a distance of 350 miles), on the Trans-Australian and Central Australia Railways 6d. and 16s., and on the North Australia Railway 6d. (for a parcel not exceeding 3 lb.) and 18s. 4d. (for a distance of 400 miles).

(iv) *Goods Rates.* (*a*) *General.* In each Railway system there are various classes of rates charged for the conveyance of goods and merchandise. These classes are usually as follows :—Mileage rates, based on distance, irrespective of locality; District rates, applicable only between specified places; Local rates, charged on lines in respect of which it is provided that the rates charged thereon shall be as though such lines were separate from other lines; Commodity rates, applicable only in respect of specified articles; Package rates, applicable only to single packages of specified descriptions; Through rates, applicable to goods carried by rail and another method of transport or by railways controlled by several authorities; and Special rates, other than those before mentioned.

Freight itself is generally divided according to a number of different classes (e.g., in New South Wales the classes are Manure, Coal, Miscellaneous, "A," "B," "C," 1st and 2nd), but as limitations of space forbid a detailed analysis of the rate applicable to each class, the following table gives particulars of highest and lowest class freights only. Generally, the highest class freight includes expensive, bulky, or fragile articles, while the lowest class comprises many ordinary articles of merchandise, particularly those identified or connected with the primary industries.

(*b*) *Highest and Lowest Class Freights.* The ordinary mileage rates charged per ton for hauls of different distances in respect of (*a*) the highest-class freight and (*b*) the lowest-class freight are given hereunder :—

GOVERNMENT RAILWAYS.—HIGHEST AND LOWEST CLASS ORDINARY FREIGHT MILEAGE RATES AT 30th JUNE, 1937.

Government Railways.	Charge per Ton for a Haul of—											
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	Highest Class Freight.						Lowest Class Freight.					
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ..	39 2	76 8	130 10	160 0	180 0	197 6	5 0	6 9	8 5	10 0	11 3	12 4
Victoria	33 6	65 0	122 3	167 3	205 6	244 3	3 8	5 7	8 3	11 0	12 3	13 4
Queensland.. ..	60 0	101 8	180 0	248 4 (*a*)	286 8 (*a*) (*b*)	301 8 (*a*) (*b*)	5 0	5 6	10 0	12 0	13 6	15 0
South Australia ..	36 9	67 4	121 9	170 6	214 0	252 1	5 9	10 1	17 1	19 2	19 2	19 2
Western Australia ..	31 4	58 9	103 0	140 2	170 7	195 8	3 3	4 1	6 2	8 3	10 4	12 5
Tasmania	38 2	71 6	129 10	186 1	..	..	6 2	10 10	14 2	15 10	..	..
Average	39 10	73 6	131 3	178 9	211 4	238 3	4 10	7 2	10 8	12 9	13 4	14 5
Average per mile ..	*d.* 9.56	*d.* 8.82	*d.* 7.88	*d.* 7.15	*d.* 6.34	*d.* 5.48	*d.* 1.16	*d.* 0.86	*d.* 0.64	*d.* 0.51	*d.* 0.40	*d.* 0.35
Federal— Trans-Australian, Central Australia and North Australia	s. d. 40 10	s. d. 78 0	s. d. 145 11	s. d. 200 2	s. d. 247 10	s. d. 288 6	s. d. 4 6	s. d. 8 1	s. d. 13 10	s. d. 16 7	s. d. 18 10	s. d. 21 1
Average per mile ..	*d.* 9.80	*d.* 9.36	*d.* 8.76	*d.* 8.01	*d.* 7.44	*d.* 6.92	*d.* 1.08	*d.* 0.97	*d.* 0.83	*d.* 0.66	*d.* 0.57	*d.* 0.51

(*a*) Maximum rate on highest class goods sent to the Western lines from Brisbane, Rockhampton or Townsville up to 500 miles is 236s. 8d. per ton. (*b*) Rates from stations south of Yandaran and Monto to stations north and west of Rockhampton, and *vice versa*, 291s. 8d. (400 miles) and 336s. 8d. (500 miles) per ton, provided that *they are not more than the sum of the local rates to and from Rockhampton.*

NOTE.—A preliminary Summary of the Operations of all Government Railways for the year 1937–38 will be found in the Appendix to this volume.

§ 4. Private Railways.

1. **Total Mileage Open, 1936-37.**—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 1936-37 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 1936-37 :—

RAILWAYS, PRIVATE.—SUMMARY, 1936-37.

State.	Companies from which returns were received.	Miles Open (Route).	Capital Cost.	Gross Revenue.	Working Expenses.	Train-Miles.	Passenger Journeys.	Tonnage of Goods, etc.	Number of Employees.	Rolling Stock.		
										Locos.	Coaches.	Other Vehicles.
	No.	Miles.	£	£	£	Miles.	No.	Tons.	No.	No.	No.	No.
New South Wales (*b*)..	6	90.23	1,278,467	363,906	207,864	629,395	1,258,652	1,437,361	479	64	3	724
Victoria ..	2	24.94	81,688	8,874	8,755	26,320	10,252	34,088	18	5	3	30
Queensland(*b*)	11	228.52	308,623	33,528	30,830	94,656	3,513	251,809	64	14	4	451
South Australia (*b*) ..	1	50.90	(*a*)	(*a*)	(*a*)	83,957	240	1,962,624	35	7	1	226
Western Australia ..	1	277.00	2,251,726	155,207	74,687	250,384	26,231	111,173	273	23	23	536
Tasmania (*b*)	3	131.57	899,384	143,500	112,503	211,761	50,643	205,093	260	20	19	305
All States (*b*)	24	803.16	4,819,888	705,015	434,639	1,296,473	1,349,531	4,002,448	1,129	133	53	2,272

(*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. In some cases the figures relating to tonnage of goods, etc., include particulars of coal, ores, timber, sugar cane, etc., carried for private purposes, as figures relating to goods carried for the general public are not kept separate.

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 (see above), 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 section.

(ii) *Total Mileage Open and Classification of Lines.* The following tables show for each State the total mileage of tramway lines open for general passenger traffic for the

year 1936–37, classified (*a*) according to the controlling authority, (*b*) according to the motive power used, and (*c*) according to gauge; and for Australia according to motive power for the years 1932–33 to 1936–37:—

TRAMWAYS.—ROUTE MILEAGE OPEN, 1936-37.

Controlling Authority, Nature of Motive Power, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Total Australia.
According to Controlling Authority.							
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Government ..	190.30	174.40	..	..	52.16	..	416.86
Municipal ..	..	..	66.55	76.11	11.90	28.70	183.26
Private	3.50	..	..	..	9.40	..	12.90
Total ..	193.80	174.40	66.55	76.11	73.46	28.70	613.02
According to Motive Power.							
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	184.74	163.35	59.90	76.11	65.16	28.70	577.96
Steam or Petrol ..	9.06	..	6.65	..	6.35	..	22.06
Cable	..	11.05	..	..	..	..	11.05
Horse	..	..	..	..	1.95	..	1.95
Total ..	193.80	174.40	66.55	76.11	73.46	28.70	613.02
According to Gauge.							
Gauge—							
5 ft. 3 in. ..	..	5.18	..	..	..	..	5.18
4 ft. 8½ in. ..	193.80	169.22	59.90	76.11	..	..	499.03
3 ft. 6 in. ..	..	..	6.65	..	73.46	28.70	108.81
Total ..	193.80	174.40	66.55	76.11	73.46	28.70	613.02

Further details on this subject may be obtained from page 28 of Transport and Communication Bulletin No. 28.

TRAMWAYS.—ROUTE MILEAGE OPEN, AUSTRALIA.

Nature of Motive Power.	1932–33.	1933–34.	1934–35.	1935–36.	1936–37.
According to Motive Power.					
	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	571.87	573.59	570.46	570.64	577.96
Steam or Petrol	21.97	21.81	21.81	22.05	22.06
Cable	24.29	24.29	24.29	16.70	11.05
Horse	1.50	2.51	2.51	2.51	1.95
Total	619.63	622.20	619.07	611.90	613.02

(iii) *Cost of Construction and Equipment.* The table hereunder shows the total cost of construction and equipment of all tramways to the 30th June, 1937, classified according to the nature of the motive power. Further details relating to controlling authorities are available on page 28 of Transport and Communication Bulletin No. 28.

TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1936-37.

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
			ACCORDING TO MOTIVE POWER.				
	£	£	£	£	£	£	£
Electric	8,824,167	8,145,372	2,291,010	4,310,024	1,750,438	663,196	25,984,207
Steam or Petrol	92,473	..	53,235	..	64,761	..	210,469
Cable ..	..	744,139	..	..	..	..	744,139
Horse ..	..	..	..	..	10,104	..	10,104
Total ..	8,916,640	8,889,511	2,344,245	4,310,024	1,825,303	663,196	26,948,919

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, at the 30th June, 1937, the Government tramways were divided into six distinct systems, five of which were operated by electricity, and one, the Kogarah to Sans Souci line, by steam. The latter service was replaced by trolley buses on the 3rd July, 1937. 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 1933 to 1937:—

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.	Interest.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.	Passengers carried.	Persons employed at end of year.
	Miles.	£	£	£	£	£	%	%	No. ,000.	No.
1933 ..	197.47	8,204,065	3,268,200	2,781,968	486,232	484,057	85.12	5.93	295,783	8,033
1934 ..	194.49	8,410,978	3,239,696	2,535,038	704,658	455,986	78.25	8.38	296,639	7,922
1935 ..	191.20	8,937,416	3,323,498	2,717,383	606,115	442,905	81.76	6.78	307,616	8,112
1936 ..	191.55	8,875,789	3,390,443	(a)2,686,295	704,148	427,919	79.23	7.93	314,065	8,224
1937 ..	193.80	8,916,640	3,425,300	(a)2,711,304	713,996	403,400	79.16	8.01	317,251	8,285

(a) Exclusive of depreciation charges on electric tramways, included prior to 1936.

3. **Victoria.**—(i) *General.* In Melbourne, electric and cable tramway systems with route mileages of 123.70 miles and 11.05 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 State Electricity Commission operates 10.98 miles of electric tramways at Geelong, acquired from the Melbourne Electric Supply Company on the 1st September, 1930, and 13.20 miles of similar traction at Ballarat and 7.86 miles at Bendigo, taken over from the Electric Supply Company of Victoria on 1st July, 1934. The Melbourne cable trams are being gradually replaced by electric trams.

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 1933 to 1937 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 at end of year.
	Miles.	£	£	£	£	£	%	%	No. ,000.	No.
1933 ..	178.67	8,600,453	2,058,241	1,285,984	772,257	325,412	62.48	8.98	176,917	4,732
1934 ..	178.77	8,562,299	2,088,716	1,306,301	782,415	300,015	62.54	9.14	179,779	4,870
1935 ..	178.40	8,444,725	2,163,738	1,341,587	822,151	283,136	62.00	9.74	186,484	4,995
1936 ..	176.70	8,843,346*a*	2,182,952	1,326,013	856,939	277,328	60.74	9.69	186,800	5,003
1937 ..	174.40	8,889,511*a*	2,255,698	1,396,309	859,389	266,332	61.90	9.67	192,182	4,878

(*a*) Including figures relating to cost of items not included prior to 1936.

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, when 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 59.90 route miles at 30th June, 1937, 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 1933 to 1937 :—

ELECTRIC AND STEAM TRAMWAYS.—QUEENSLAND.—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 at end of year.
	Miles.	£	£	£	£	£	%	%	No. ,000.	No.
1933 ..	63.51	2,162,631	694,611	479,426	215,185	106,651	69.02	9.95	69,646	1,359
1934 ..	63.51	2,115,469	700,723	501,846	198,877	106,611	71.62	9.40	71,185	1,485
1935 ..	64.18	2,161,118	746,543	543,571	202,972	106,533	72.81	9.39	78,264	1,735
1936 ..	64.83	2,259,467	784,779	587,296	197,483	106,457	74.84	8.74	83,781	1,740
1937 ..	66.55	2,344,245	811,323	609,709	201,614	106,413	75.15	8.60	87,271	1,838

5. **South Australia.**—(i) *General.* The tramways in Adelaide and suburbs are controlled by a Municipal Tramways Trust created in 1907. Prior to that year, the system was run with horse-traction by several private companies. Electric traction was inaugurated in 1909, and at the 31st July, 1937, the Tramways Trust operated a total route mileage of 76.11 miles of 4 ft. 8½ in. gauge. This is exclusive of a motor bus route mileage of 21.69, although the remaining items in the following table relate to the operations of both trams and buses, separate figures not being available.

(ii) *Particulars of Working.—Electric Tramways.* The following table gives particulars of the working of electric tramways in Adelaide for each year from 1933 to 1937 :—

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 at end of year.
	Miles.	£	£	£	£	£	%	%	No. ,000.	No.
1933 ..	82.83	4,068,156	643,274	392,526	250,748	253,930	61.02	6.16	48,154	1,719
1934 ..	82.83	4,072,007	627,897	388,136	239,761	248,760	61.82	5.89	47,021	1,708
1935 ..	82.83	4,077,349	639,335	402,258	237,077	239,139	62.92	5.81	48,118	1,688
1936 ..	76.11	4,209,473	673,737	437,693	236,044	231,843	64.96	5.61	50,625	1,688
1937 ..	76.11	4,310,024	699,426	461,811	237,615	234,723	66.03	5.51	52,082	1,735

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, 1937, was 43.86 route miles. Electric tramways with a route mileage at 31st August, 1937, of 11.90 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 1937, the length of line was 9.40 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 tramways, other than electric, with a total length of 8.30 miles of 3 ft. 6 in. gauge. The lines are under control of the Department of Works and Labour, and the total mileage is made up of several short lengths worked by steam, petrol 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 1933 to 1937 :—

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

Year ended 30th June—	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest. (a)	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.	Passengers carried.	Persons employed at end of year.
	Miles.	£	£	£	£	£	%	%	No. ,000.	No.
1933 ..	68.84	1,802,831	354,321	290,448	63,873	55,426	81.97	3.54	36,329	741
1934 ..	74.17	1,818,775	354,552	297,367	57,185	56,347	83.87	3.14	36,595	773
1935 ..	74.05	1,811,856	369,490	291,966	68,524	55,261	80.99	3.78	37,108	737
1936 ..	74.28	1,823,046	362,104	298,416	63,688	54,734	82.41	3.49	38,135	753
1937 ..	73.46	1,825,303	361,537	298,476	63,061	52,983	82.56	3.45	37,851	813

(a) Exclusive of Kalgoorlie and Boulder electric tramways operated by a private company.

7. **Tasmania.**—(i) *General.* In Hobart there is a system of electric tramways consisting of 16.70 route miles of 3 ft. 6 in. gauge controlled by the Hobart Municipal Council. The Launceston City Council operates a length of 12.00 miles of 3 ft. 6 in. gauge in that City.

(ii) *Particulars of Working.—Electric Tramways.* The following table gives a summary of the working of the two electric systems for the years 1933 to 1937 :—

ELECTRIC TRAMWAYS—TASMANIA.—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 at end of year.
	Miles.	£	£	£	£	£	%	%	No. ,000.	No.
1933 ..	28.31	630,657	161,902	116,112	45,790	42,726	71.72	7.26	14,850	291
1934 ..	28.43	634,192	164,826	123,998	40,828	36,376	75.23	6.44	14,942	308
1935 ..	28.41	635,535	164,639	121,883	42,756	39,055	74.03	6.73	14,934	305
1936 ..	28.43	642,409	173,079	127,887	45,192	37,016	73.89	7.03	14,717	304
1937 ..	28.70	663,196	182,067	131,024	51,043	38,598	71.96	7.70	15,304	315

8. **Australia.**—*All Tramways—Summary 1933 to 1937.* The following table gives a summary of the working of all tramway systems in Australia for the years 1933 to 1937 :—

ALL TRAMWAYS—AUSTRALIA—SUMMARY.

Particulars.		1933.	1934.	1935.	1936.	1937.
Mileage open for traffic	Miles	619.63	622.20	619.07	611.90	613.02
Cost of Construction and Equipment	£	25,468,793	25,613,720	26,067,999	26,653,530	26,948,919
Cost per mile	£	41,103	41,166	42,108	43,559	43,961
Gross Revenue	£	7,180,549	7,176,410	7,398,243	7,567,094	7,735,351
Working Expenses	£	5,346,464	5,152,686	5,418,648	5,463,600	5,608,633
Net Earnings	£	1,834,085	2,023,724	1,979,595	2,103,494	2,126,718
Interest	£	1,268,202	1,204,095	1,166,029	1,135,297	1,102,449
Percentage of Working Expenses on Gross Revenue	%	74.46	71.80	73.24	72.20	72.51
Percentage of Net Earnings on Capital Cost	%	7.20	7.90	7.59	7.89	7.89
Tram-miles run ,000	miles	80,910	80,757	81,084	81,481	82,295
Gross revenue per tram mile	*d.*	21.30	21.33	21.90	22.29	22.56
Working expenses per tram mile	*d.*	15.86	15.31	16.04	16.09	16.36
Net earnings per tram mile	*d.*	5.44	6.01	5.86	6.20	6.20
Passengers carried ,000		641,680	646,161	672,523	688,123	701,941
Passengers carried per tram mile	No.	7.93	8.00	8.29	8.45	8.53
Average revenue per passenger journey	*d.*	2.69	2.67	2.64	2.64	2.64
Persons employed at end of year	No.	16,875	17,066	17,572	17,712	17,864

D. AVIATION.

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 Administration.**—A brief account of the foundation and objects of this Department will be found in Official Year Book No. 19, p. 299. In 1936 the organization was changed and the responsibility of regulating and controlling Civil Aviation in the Commonwealth was entrusted to a Board, consisting of four members and a secretary. The Chairman is the Controller-General of Civil Aviation, whilst the other three members are the Controller of Operations, the Controller of Ground Organization and the Finance Member. The Board has remained a branch of the Defence Department.

3. **Aerodromes and Landing Grounds.**—On the 30th April, 1938, 256 landing grounds were directly controlled and maintained by the Commonwealth Government for Civil Aviation purposes. These aerodromes and emergency landing grounds are located at intervals over the following approved air routes :—Brisbane–Darwin, 2,028 miles ; Adelaide–Darwin, 1,730 miles ; Cloncurry–Normanton, 216 miles ; Cootamundra–Charleville, 629 miles ; Perth–Daly Waters, 2,252 miles (connecting with Brisbane–Darwin service) ; Ord River–Wyndham, 154 miles ; Perth–Adelaide, 1,453 miles ; Adelaide–Melbourne, 410 miles ; Adelaide–Sydney (via Mildura and Cootamundra), 737 miles ; Melbourne–Sydney, 455 miles ; Melbourne–Hobart, 413 miles ; Sydney–Brisbane, 475 miles ; Brisbane–Cooktown, 1,006 miles.

A direct north-south route through Central Australia has been added to the list of trunk air routes maintained by the Civil Aviation Board. The preparation of this route necessitated the establishment of a number of emergency landing grounds and the improvement of existing aerodromes.

The construction of aerodromes at Cairns and Cooktown has been completed and these grounds are now being used as stopping places on the Sydney–Rabaul Air Service which was inaugurated on 30th May, 1938.

During the last year, several aerodromes on the Inter-Capital Air Routes were equipped for night flying. The equipment generally consists of rotating and identification beacons, boundary and obstruction lighting, together with floodlights or flares for landing. On 30th April, 1938, night flying facilities were available at the following aerodromes :—Archerfield (Brisbane), Evans Head, Coff's Harbour, Kempsey, Mascot (Sydney),

Goulburn, Holbrook, Cootamundra, Canberra, Essendon (Melbourne), Parafield (Adelaide), Maylands (Perth), and Darwin. The Cloncurry–Longreach section of the Brisbane–Darwin route and the Kalgoorlie–Cook section of the Perth–Adelaide route are also equipped for night flying.

Aerodrome lighting installations are nearing completion at Benalla (Victoria), Cambridge (Hobart) and Western Junction (Launceston). Airway rotating beacons are also being installed at intermediate points along the main air routes. These lights are visible up to 80 miles under conditions of good visibility and are a useful aid to air navigation.

Considerable activity has been displayed in the establishment of aerodromes by local authorities and private individuals, and at the 30th April, 1938, 211 aerodromes had been licensed by the Civil Aviation Board. The Board, in pursuance of its policy, provides technical advice to local authorities desirous of establishing landing grounds and this service has been largely availed of during the year. The total number of recognized landing grounds in Australia and New Guinea on the 30th April, 1938, was 466.

4. **General Flying Activities, 1937.**—The mileage flown by all civil aircraft in Australia and New Guinea in 1937 was approximately 11,907,389 and there were thirteen fatal accidents. During 1937, 2,535,429 miles were flown by the subsidized air services without injuries to passengers or crews. There were four fatal accidents on other regular services which flew 4,269,488 miles.

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 April, 1938, nine subsidized contractors were operating under contracts which provided that such space as is required on each trip must be reserved for mails. On letters within the Commonwealth there is an air mail fee of 3d. per ½ ounce in addition to the ordinary postage rate, and for letters to the United Kingdom the inclusive postage to 5th July, 1938, was 1s. 6d. per ½ ounce. (See below). The total route mileage of these services is 11,866 miles.

The principal service is that from Brisbane to Darwin, and thence through Netherlands East Indies to Singapore, where a junction is made with Imperial Airways Ltd., which maintains regular air communication with the United Kingdom. In consequence of the growth of passenger and mail traffic over this route the Government decided to increase the frequency of the service to twice-weekly as from May, 1936, and similarly to branch lines Daly Waters–Perth and Charleville–Cootamundra. The importation of high speed modern American aircraft during the year 1937 also led to increased frequency of services between the mainland and Tasmania and to the triplication of the Adelaide–Perth service. The employment of Douglas aircraft on the latter route has enabled journeys between the two capitals to be effected comfortably in one day.

During the past year the following notable additions to Australia's network of air services have been made :—Adelaide–Darwin (through Central Australia) and Adelaide–Sydney by Guinea Airways Ltd. with Lockheed aircraft; Adelaide–Melbourne and Melbourne–Sydney by Australian National Airways Pty. Ltd. with Douglas aircraft; Adelaide–Mildura–Narrandera, Melbourne–Mildura–Broken Hill, and Melbourne–Narrandera–Sydney by Ansett Airways Ltd. with Lockheed aircraft; and Sydney–Brisbane by Airlines of Australia Ltd. with Douglas aircraft.

After protracted negotiations between the United Kingdom and the Commonwealth Governments agreement was eventually reached in regard to the Empire Air Mail Scheme. Briefly, the scheme provides for the carriage of first class mails between Great Britain and the Dominions by large flying boats, but the Commonwealth Government stipulated that only surcharged mail shall be dispatched from Australia by the service. The Commonwealth Government controls the section from Singapore to Sydney (the Australian terminus) which is operated by Qantas Empire Airways Ltd., under contract to the Commonwealth Government. The Australian section of the service was inaugurated on 5th July, 1938, with a frequency of thrice weekly in each direction. The route south from Darwin is overland to Groote Eylandt in the Gulf of Carpentaria, thence to Karumba (near Normanton), across country to Townsville and thence along

the eastern coast to Sydney. The previous inclusive rate of 1s. 6d. per ½ ounce was reduced to 5d. per ½ ounce for outward mail.

All pilots and mechanics employed on the regular subsidized air transport services must join the Air Force Reserve when called upon.

(ii) *Regular Air Services at 30th April, 1938.* These services are of three categories:—(*a*) subsidized services carrying passengers, mails and freight; (*b*) unsubsidized services carrying mails (under agreement with the Postmaster-General's Department), passengers and freight; and (*c*) unsubsidized services carrying passengers and freight.

The aggregate route mileage of all operating companies is 25,712, whilst the total distance of routes over which regular services operate is 20,536. The difference between these two totals is explained by the fact that over some routes more than one company maintains a regular service, as, for instance, along the Queensland coast. The weekly mileage of all regular services is 172,861. The air routes are shown on the map herein.

The latter figure will be considerably augmented during 1938 with the inauguration on 30th May, 1938, of the Australian-New Guinea Air Service (2,522 miles), and by other services likely to be established. The frequencies of the following services vary from once weekly to twice daily.

(*a*) *Subsidized Services.*—Qantas Empire Airways Ltd.—Brisbane-Darwin-Singapore, 4,361 miles; Cloncurry-Normanton, 216 miles. MacRobertson-Miller Aviation Co. Ltd.—Perth-Daly Waters, 2,252 miles; Ord River-Wyndham, 154 miles; Adelaide-Whyalla, 150 miles. Butler Air Transport Co.—Cootamundra-Charleville, 629 miles. Australian National Airways Pty. Ltd.—Melbourne-Launceston (non-stop), 314 miles; Launceston-Hobart, 94 miles; Melbourne-King Island-Launceston, 396 miles; Launceston-Flinders Island, 109 miles; Perth-Adelaide, 1,453 miles. Aircrafts Pty. Ltd.—Brisbane-Cracow, 250 miles. Airlines of Australia Ltd.—Rockhampton-Mount Coolon, 330 miles. Adastra Airways Ltd.—Sydney-Bega, 205 miles. Airlines (W.A.) Ltd.—Perth-Wiluna-Kalgoorlie, 813 miles. North Queensland Airways Pty. Ltd.—Normanton-Burketown, 100 miles.

(*b*) *Unsubsidized (Mail) Services.* Australian National Airways Pty. Ltd.—Melbourne-Sydney (via Wagga and via Canberra) 478 miles; Melbourne-Mildura-Broken Hill, 460 miles; Melbourne-Adelaide (via Mount Gambier and via Narracoorte) 473 miles; Melbourne-Sydney, 455 miles; Adelaide-Broken Hill-Mildura-Adelaide, 638 miles; Adelaide-Renmark-Broken Hill, 287 miles; Adelaide-Cowell-Port Lincoln-Adelaide, 372 miles; Adelaide-Kangaroo Island, 95 miles; Adelaide-Melbourne, 410 miles. Aircrafts Pty. Ltd.—Brisbane-Rockhampton-Monto-Brisbane, 719 miles; Brisbane-Kingaroy, 90 miles. Airlines of Australia Ltd.—Brisbane-Townsville, 725 miles; Townsville-Cairns, 174 miles; Sydney-Brisbane, 475 miles. Ansett Airways Ltd.—Melbourne-Narrandera-Sydney, 500 miles; Melbourne-Mildura-Broken Hill, 460 miles; Melbourne-Hamilton, 160 miles; Adelaide-Mildura-Narrandera, 460 miles. Guinea Airways Ltd.—Adelaide-Darwin, 1,730 miles; Adelaide-Sydney (via Mildura and Cootamundra), 737 miles. MacRobertson-Miller Aviation Co. Ltd.—Whyalla-Iron Knob, 35 miles. North Queensland Airways Pty. Ltd.—Cairns-Normanton, 350 miles; Cairns-Townsville, 174 miles; Cairns-Cooktown, 106 miles; Brisbane-Cairns, 899 miles. North Western Airlines Ltd.—Sydney-Moree, 330 miles. Victorian and Interstate Airways Pty. Ltd.—Melbourne-Hay, 233 miles.

(*c*) *Unsubsidized Services.* Adastra Airways Ltd.—Sydney-Bega, 205 miles. Ansett Airways Ltd.—Melbourne-Sydney (direct) 455 miles. North Queensland Airways Pty. Ltd.—Cairns-Portland Road, 380 miles; Townsville-Mount Isa, 537 miles. Qantas Empire Airways Ltd.—Longreach-Charleville, 267 miles.

(*d*) *Air Ambulance Services.* The first air ambulance service in Australia was established in 1928 when an arrangement was entered into between the Queensland and Northern Territory Aerial Services Ltd. (now Qantas Empire Airways Ltd.) and the Australian Inland Mission. The company provides the aircraft and pilot, and the mission authorities provide the doctor. The base of operations is Cloncurry whence flights are made as required into Western and Northern Queensland. The scheme has continued

to prove most successful, and many instances are recorded of lives being saved by the services thus made available. A notable feature in this work is the part played by wireless communication, consequent on the introduction of pedal transceivers. The power for these small wireless units is supplied by a dynamo operated by bicycle pedals, and morse messages may be sent out by manipulating an automatic keyboard transmitter like a typewriter. Up to about 200 miles, however, telephony may be used. By this means settlers in outlying districts may call the "flying doctor" and obtain his advice or, if necessary, request the air ambulance.

The "flying doctor" scheme has been extended to Western Australia. From the Wyndham base the service is maintained by the MacRobertson-Miller Aviation Co., which employs a D.H.83 aircraft specially fitted for ambulance work. This aircraft is employed on the regular Ord River-Wyndham air service, and is available for Australian Aerial Medical Service as required. The Victorian Section of the Australian Aerial Medical Service, with the aid of a small Commonwealth monetary grant, provides a doctor and bears the cost of flying operations in this district. A further air ambulance is also available at Port Hedland, Western Australia, under the joint management of the MacRobertson-Miller Aviation Company and the Western Australian section of the Australian Aerial Medical Service. At Kalgoorlie similar work is undertaken by a local aircraft owner.

An air ambulance service has also been established at Broken Hill under the control of the New South Wales and South Australian section of Australian Aerial Medical Service. The aircraft employed is a D.H.83 (Fox Moth) which, together with pilot, is provided by Australian National Airways Pty. Ltd.

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.

The Commonwealth Government recognizes the national importance and the incalculable benefits to "outback" settlers of this form of medical aid, and has decided to make available an annual grant of £5,000 towards the maintenance and extension of air ambulance services. The allocation of this money is made upon the recommendations of a committee representing the Health, the Postmaster-General's and the Civil Aviation Administrations.

6. **Gliding.**—Activities are carried out in various centres of the Commonwealth, but the sport is confined chiefly to Perth, Melbourne, Hobart and Queensland, where local bodies are assisted in their operations by a small Governmental grant.

7. **Meteorological Aids to Aviation.**—A comprehensive programme of meteorological services and facilities has been carried out by the Civil Aviation Board in conjunction with the Commonwealth Meteorological Bureau

Full forecasting services are now established at the main capital city aerodromes, viz. :—Essendon, Canberra, Mascot, Archerfield, Parafield, Maylands, Western Junction and Cambridge. With the establishment of secondary stations at Kempsey, Nhill, Ceduna and Kalgoorlie, the organization for the Inter-Capital services will be completed.

The Empire Flying Boat Service will be catered for with first class stations which have been established at Darwin and Townsville, in addition to those at Brisbane and Sydney, and intermediate stations which will make upper air and general observations and issue short distance forecasts. These latter have been established at Groote Eylandt and Karumba on the Gulf of Carpentaria and Bowen and Gladstone on the East Coast. The stations on the eastern seaboard of Australia will also serve the New Guinea route, and the establishment of a first class station at Port Moresby with secondary stations at Cooktown and Salamaua has completed the meteorological organization for this section of the Commonwealth air services.

In view of the establishment of a Flying Boat service to New Zealand in the near future, further upper air and observing stations will be established at Lord Howe and Norfolk Islands and arrangements have been made for two observers to be stationed on board ships which regularly cross the Tasman Sea. In this manner very valuable information will be obtained before the inauguration of the New Zealand Service.

The establishment of further stations will be dependent on the re-organization of the internal air services following the inauguration of the Empire Flying Boat Service, but it has been decided to provide a first class station at Broome, together with such intermediate stations as may be found necessary for the route from Perth to Darwin, and an intermediate station at Alice Springs for the route from Adelaide to Perth.

Forecasts over the whole of each air route section will be given by meteorological officers when required. In general, these will be based on the 9 a.m. and 3 p.m. observations taken throughout the Commonwealth, with the addition of observations at other hours from specially selected stations lying on, and in the vicinity of, the various air routes.

Operation of aeronautical radio stations over the whole of the air routes concerned will provide means for rapid transmission of all meteorological observations.

8. **Wireless.**—As outlined in the previous issue of the Year Book, a comprehensive radio organization providing navigational aids for, and two-way communication with aircraft had been approved. This organization will shortly be placed in operation, but pending its establishment a temporary service has been provided. Aeronautical radio stations are in operation at Brisbane, Sydney, Canberra, Albury, Melbourne, Launceston, Adelaide, Forrest, Perth and Darwin. These stations are all equipped with Direction Finding facilities which, on the completion of the permanent organization, will be replaced, except at Forrest, Perth and Darwin, with Ultra High Frequency Radio Range Beacon Stations. The establishment of temporary radio aids for air navigation at Townsville, Rockhampton and Rabaul (Territory of New Guinea) has been approved, and will commence service with the inauguration of the Sydney–Rabaul Air Service on the 30th May.

Permanent aeronautical radio communication stations at Cooktown, Port Moresby and Salamaua have been provided for the Sydney–Rabaul air service. Other permanent radio stations at Cloncurry, Brisbane, Kempsey, Sydney, Canberra, Holbrook, Melbourne, Launceston, Hobart, Nhill, Adelaide, Ceduna, Forrest, Kalgoorlie, Perth, Groote Eylandt and Karumba are in various stages of completion and should be available for service within the next six months. The establishment of permanent stations at Darwin, Townsville and Rockhampton has been approved. These stations, together with those at Groote Eylandt and Karumba, will provide radio facilities on the Australian section of the Empire Flying Boat Service which will commence in August.

The growth of air traffic at the Brisbane, Sydney, Melbourne and Adelaide aerodromes during the last twelve months has been beyond that anticipated, and has reached a stage where control by visual signals is not adequate for safety, particularly when controlling aircraft flying in the vicinity of these aerodromes during conditions of bad visibility. It has, therefore, been approved that radio aerodrome control equipment be installed at the above capital city aerodromes and this should be in operation by the end of 1938.

9. **Aircraft Parts and Materials.**—The local production of component parts and materials for use in aircraft continues to grow rapidly, and the number of firms authorized by the Civil Aviation Board to issue release notes certifying to the compliance of certain of their products with approved designs or specifications has doubled since the previous issue of the Year Book. Forty firms in all are now issuing release notes in this country. Of this number some 24 are manufacturing locally aircraft components or materials to specifications approved by the Civil Aviation Board, and the remainder are distributors of imported aircraft materials and supplies covered by satisfactory evidence such as a release note issued in the country of origin, that they are in conformity with approved specifications.

10. **Aircraft Maintenance, Certificates of Repair.**—A system has now been established which is designed to ensure that any maintenance or overhaul work done in the specially equipped workshops of outside firms, and not under the direct supervision of the ground engineer in charge of work on the aeroplane as a whole, shall be up to the required standard. A firm having the requisite equipment, staff, and experience may be authorized, after investigation by the Civil Aviation Board, to issue Certificates of Repair which serve as evidence to the Ground Engineer finally responsible that the work so covered has

been done in properly equipped workshops by competent tradesmen, and has been subjected to proper inspection.

Such specialized classes of work as instrument repair and calibration, cylinder regrinding, remetalling and boring of bearings and the overhaul and testing of magnetos, starters, and other electrical equipment are handled by firms issuing Certificates of Repair. Some fifteen firms are at present authorized under this scheme, and their number is continually being augmented.

11. **Aircraft Imports.**—The following table shows the number of aircraft imported into the Commonwealth and Territory of New Guinea during the past five years :—

Year.	1933–34.	1934–35.	1935–36.	1936–37.	1937–38. (To 30th April, 1938.)
Number of aircraft imported	15	48	60	52	51

12. **Training of Air Pilots.**—(i) *The Associated Aero Clubs.* These clubs provide facilities in all States for flying instruction and practice. During the year ended 30th April, 1938, 210 pupils qualified for private (" A ") pilot's licences. Many graduates have 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 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 pilot's licences of club members, and each club receives a maintenance grant and 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 year. Included in the aircraft fleets of the several clubs are a number of D.H.60 (" Moth ") machines, which were originally loaned by the Commonwealth Government but have now been handed over to the clubs.

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 required.

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 ended 30th April, 1938, 122 pupils graduated for (" A ") pilot's licences, making a total of 332 pilots from all training organizations.

13. **Notable Flights.**—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.

Record-breaking flights between Australia and England were again in evidence. In April, 1937, Mr. H. F. Broadbent made a solo flight from Australia to England in a D.H.85 aircraft in six days eight hours. In October, Miss Jean Batten in a Percival Gull aeroplane improved on this performance by completing the journey in five days nineteen hours, whilst in April, 1938, Mr. Broadbent regained the record by reducing the time to five days four hours. During the previous month this aviator practically established another record, this time in the opposite direction, when four and a half days after departure from England he was forced down on Flores Island in Netherlands East Indies.

An epochal flight in March, 1938, was that of Flying Officer A. E. Clouston and Mr. V. A. Richetts, who in a D.H. " Comet " aeroplane flew from England to New Zealand and back in ten days twenty hours, covering a distance of about 28,000 miles. Many

records were established during their flight, some being: England–Darwin, two days twelve hours; Darwin–Sydney, twelve hours thirty-seven minutes; England–Sydney, three days eight hours fifty-six minutes; Sydney–New Zealand, seven hours thirteen minutes; England–New Zealand, four days eight hours.

14. **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, 1933 to 1937:—

CIVIL AVIATION.—AUSTRALIA.—SUMMARY.

Particulars.	Year ended 30th June—				
	1933.	1934.	1935.	1936.	1937.
Registered Aircraft Owners (*a*) .. .. No.	115	114	123	124	102
Registered Aircraft (*a*) No.	197	188	208	228	214
Licensed Pilots—(*a*)					
Private .. No.	370	429	569	714	744
Commercial .. No.	184	201	210	236	265
Licensed Navigators (*a*) No.	..	..	13	22	29
Licensed Aircraft Radio Telegraph Operators (*a*) No.	..	..	7	8	9
Licensed Aircraft Radio Telephone Operators (*a*) No.	..	..	..	7	4
Licensed Ground Engineers (*a*) .. .. No.	272	261	297	295	346
Aerodromes—(*a*)					
Government No.	59	64	65	63	72
Public .. No.	114	126	146	171	183
Government Emergency Grounds .. No.	119	135	138	148	151
Hours flown .. No.	31,883	35,487	45,693	62,479	84,010
Approx. Mileage .. Miles	2,587,389	3,061,449	3,854,424	5,819,751	8,731,612
Passengers carried—					
Paying .. No.	58,155	54,119	45,540	60,476	85,574
Non-paying .. No.	12,949	10,117	11,743	14,643	16,590
Total .. No.	71,104	64,236	57,283	75,119	102,164
Goods, weight carried (*b*) lb.	244,258	296,983	249,415	442,407	822,724
Mails, weight carried lb.	36,212	43,627	67,908	121,187	167,601
Accidents—					
Persons killed No.	5	10	28.	20	19
Persons injured No.	6	12	10	6	14

(*a*) At 30th June. (*b*) Prior to 1935 stage freight has been included in some instances in South Australia and Western Australia.

Separate particulars of flying over the Darwin–Singapore Section of the Imperial Airways route, also included in the above table, are shown below:—

Particulars.	Year ended 30th June—		
	1935.(*a*)	1936.	1937.
Hours flown .. .. No.	1,186	2,159	3,767
Miles flown .. .. No.	140,706	290,542	494,105
Passengers carried .. .. .. No.	49	177	351
Goods, weight carried .. .. .. lb.	1,019	8,564	17,582
Mails, weight carried .. .. .. lb.	24,828	69,436	89,647

(*a*) December, 1934 to June, 1935.

Preliminary figures relating to the Operations of Civil Aircraft in Australia during the year 1937–38 will be found in the Appendix to this volume.

15. **New Guinea Activities.**—The discovery of gold in New Guinea in 1927 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. Specially constructed freight machines are employed for the transportation of dredging machinery and other heavy material to the Bulolo fields. Horses, cattle, motor cars, building material and various kinds of heavy freight are continually being carried inland from the coast in aircraft, and such activity constitutes one of the most notable feats of transport in the history of aviation. Inward mails are carried by Guinea Airways Ltd., under arrangements with the Postmaster-General's Department, from Port Moresby to Wau, Lae and Bulolo. Mails, official passengers and cargo are carried by Mandated Airlines Ltd. under contract with the New Guinea Administration between Salamaua and Wau, Salamaua and Bulolo, Salamaua and Otibanda, Wau and Otibanda, and from Salamaua and Wau to Port Moresby in Papua. Stephen's Aviation Ltd. are also under contract with the Administration to carry mails, official passengers and cargo from *Madang to Upper Ramu, Madang and Upper Ramu to Chimbu, and Wau to 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. The Companies and persons operating in New Guinea are :—Guinea Airways Ltd. ; Mandated Airlines Ltd., Parers Air Transport Coy. ; Bulolo Gold Dredging Ltd. ; Stephen's Aviation Ltd. ; Lutheran Mission, Finschhafen ; and the Catholic Mission, Alexishafen. The subjoined table gives a summary of operations for the years ended 30th June, 1933 to 1937.

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

Particulars.		Year ended 30th June—				
		1933.	1934.	1935.	1936.	1937.
Registered Aircraft Owners (*a*)	No.	5	10	9	12	9
Registered Aircraft (*a*)	No.	19	26	25	38	34
Licensed Pilots—(*a*)						
Private	No.	1	4	3	5	4
Commercial	No.	21	24	27	27	22
Licensed Navigators (*a*)	No.	..	..	1	1	..
Licensed Ground Engineers (*a*)	No.	30	37	42	41	36
Aerodromes—(*a*)						
Government	No.	2	3	3	15	18
Public	No.	..	3	5	15	19
Government Emergency Landing Grounds	No.	3	15	3	6	8
Hours flown	No.	8,499	10,061	13,022	18,114	16,371
Approximate mileage	Miles	680,871	811,440	1,094,308	1,486,983	1,466,355
Passengers carried—						
Paying	No.	6,948	10,799	14,200	15,943	11,718
Non-paying	No.	93	209	203	616	1,382
Total	No.	7,041	11,008	14,403	16,559	13,100
Goods, weight carried	lb.	10,982,936	14,985,723	17,447,746	21,883,413	24,441,860
Mails, weight carried	lb.	47,097	90,046	97,889	128,982	122,063
Accidents—						
Persons killed	No.	2	..	2	1	..
Persons injured	No.	..	1	3	..	..

(*a*) At 30th June.

Preliminary figures relating to the Operations of Civil Aircraft in New Guinea during the year 1937-38 will be found in the Appendix to this volume.

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 1932–33 to 1936–37 :—

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

Particulars.		1932–33.	1933–34.	1934–35.	1935–36.	1936–37.
Motor bodies built in Australia ..	No.	13,532	26,302	45,445	67,337	..
	Value £	1,100,504	2,112,439	4,180,586	6,043,735	..
Motor bodies imported	No.	108	1,116	2,215	1,699	786
	Value £	12,233	86,899	179,558	149,593	81,380
Chassis imported	No.	15,776	32,924	53,975	75,652	69,915
	Value £	1,306,830	2,528,969	4,096,760	5,507,957	5,458,640
Fuels imported—						
Crude petroleum ..	Million gallons	58	58	55	65	60
	Value £	486,302	488,341	460,781	539,693	520,517
Petroleum spirit, etc. ..	Million gallons	181	208	212	255	282
	Value £	3,218,209	2,852,649	2,706,474	3,792,950	4,525,939

The value of the tyres both locally produced and imported, for which figures are, however, not 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. The regulation of traffic of motor vehicles has arisen from the belief that the economic waste arising from duplication of services parallel with or contiguous to existing railway and tramway systems is thus 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 motor services complementary 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 on the Register, etc.**—(i) Year 1936–37. Particulars of the registration of motor vehicles, etc., for the year 1936–37 are contained in the subjoined table :—

MOTOR VEHICLES.—SUMMARY, 1936-37.

State or Territory.	Motor Vehicles Registered at 30th June, 1937. (a)					Drivers' and Riders' Licences in force at 30th June, 1937.	Gross Revenue derived from—			
	Motor Cars.(b)	Commercial Vehicles (c)	Motor Cycles.	Total.	Per 1,000 of Population at 30th June, 1937.		Vehicle Registrations and Motor Tax.	Drivers' and Riders', etc., Licences.	Other Sources.	Total.
	No.	No.	No.	No.	No.	No.	£	£	£	£
New South Wales ..	190,963	66,244	23,439	280,646	104.23	395,523	2,090,172	203,894	80,576	2,374,642
Victoria ..	137,885	d69,025	26,663	233,573	125.87	315,826	1,588,912	79,299	39,712	1,707,923
Queensland ..	68,857	34,868	8,040	111,765	112.66	139,056	665,083	55,132	56,185	776,400
South Australia	50,633	19,209	9,097	78,939	134.11	135,320	569,244	72,039	9,632	650,915
Western Australia ..	34,180	19,919	6,977	61,076	134.46	77,317	367,452	23,546	21,742	412,740
Tasmania ..	15,089	4,012	3,573	22,674	97.61	26,538	120,092	13,269	10,744	144,105
Northern Territory ..	336	704	41	1,081	198.20	989	1,409	406	..	1,815
Australian Capital Territory	1,346	315	82	1,743	169.62	2,404	10,918	1,329	80	12,327
Australia ..	499,289	214,296	77,912	791,497	115.86	1,092,973	5,413,282	448,914	218,671	6,080,867

(a) Exclusive of Trailers (12,528), Road Tractors, etc. (1,348), and Dealers' Plates (4,257). (b) Includes Taxis and Hire Cars. (c) Includes Lorries, Vans, Buses and Utility Trucks. (d) Includes 36,904 vehicles registered as Primary Producers'.

Particulars relating to the numbers of Motor Vehicles Registered at 30th June, 1938, will be found in the Appendix to this volume.

(ii) *Quinquennium* 1933–1937. The following table shows the number of vehicles registered, licences issued, and revenue received therefrom during each of the years 1932–33 to 1936–37 :—

MOTOR VEHICLES.—REGISTRATIONS, ETC., AUSTRALIA.

Year.	Motor Vehicles Registered at 30th June.					Drivers' and Riders' Licences in force at 30th June.	(b) Revenue derived from—			
	Motor Cars.	Commercial Vehicles.	Motor Cycles.	Total.	Per 1,000 of Population at 30th June.		Vehicle Registrations and Motor Tax.	Drivers' and Riders', etc., Licences.	Other Sources.	Total.
	No.	No.	No.	No.	No.	No.	£	£	£	£
1932–33	438,499	a 105,837	72,896	617,232	93.1	760,973	3,847,934	303,909	..	4,151,843
1933–34	455,199	a 116,341	73,104	644,644	96.6	863,982	4,154,331	341,685	107,080	4,603,096
1934–35	457,684	155,721	75,045	688,450	102.4	910,218	4,507,034	363,194	153,586	5,023,814
1935–36	484,832	c 180,567	77,467	742,866	109.6	979,343	5,017,888	386,322	215,949	5,620,159
1936–37	499,289	214,296	77,912	791,497	115.9	1,092,973	5,413,282	448,914	218,671	6,080,867

(a) Incomplete, Queensland commercial vehicles included with motor cars. (b) Prior to the year 1933–34 the figures purporting to show the revenue collected were not uniform throughout the States. (c) Includes Primary Producers' Vehicles.

(iii) *Relation to Population.* The table hereunder gives the number of vehicles (exclusive of motor cycles) registered per 1,000 of population at 30th June, in each State for each of the years 1921 and 1933 to 1937 :—

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

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
31st Dec., 1921	15	16	8	24	12	13	(a)	(a)	15
30th June, 1933	77	86	86	88	92	62	131	135	82
,, 1934	78	90	89	99	97	65	129	143	86
,, 1935	83	97	96	98	105	70	95	148	91
,, 1936	89	105	102	110	110	77	185	160	98
,, 1937	96	112	105	119	119	82	191	162	104

(a) Not available.

6. **New Vehicles Registered.**—(i) *Year* 1936–37. The following table shows particulars of new vehicles registered in the various States during the year 1936–37 :—

MOTOR VEHICLES.—NEW VEHICLES REGISTERED, 1936-37.

State or Territory.	Motor Cars.	Commercial Vehicles, etc.	Motor Cycles.	Total.
New South Wales	21,116	9,064	2,091	32,271
Victoria	13,292	(c) 7,948	2,923	24,163
Queensland	5,580	3,966	894	10,440
South Australia (a)	4,909	1,947	870	7,726
Western Australia (b)	1,924	602	411	2,937
Tasmania	1,572	620	281	2,473
Australian Capital Territory	194	44	9	247
Total	48,587	24,191	7,479	80,257

(a) Excludes Northern Territory. (b) Metropolitan Area only. (c) Includes vehicles registered as Primary Producers'. Particulars of New Vehicles Registered during 1937–38 will be found in the Appendix to this volume.

(ii) *Quinquennium.* 1933–1937. Particulars of new vehicles registered in Australia during the years 1932–33 to 1936–37 appear in the following table :—

MOTOR VEHICLES.—NEW VEHICLES REGISTERED, AUSTRALIA. (a)

Year.	Motor Cars.	Commercial Vehicles, etc.	Motor Cycles.	Total.
1932–33	14,024	3,366	2,639	20,029
1933–34	22,522	6,589	3,936	33,047
1934–35	36,934	10,334	5,249	52,517
1935–36	52,383	18,648	6,673	77,704
1936–37	48,587	24,191	7,479	80,257

(a) Excludes Northern Territory and extra-Metropolitan Area of Western Australia ; also Australian Capital Territory prior to 1935–36. The figures relating to the earlier years are approximate only, as complete particulars are not available.

8. **Traffic Accidents.**—(i) *Year* 1936–37. The table hereunder gives particulars of the numbers of persons killed and injured in accidents (known to the Police), which occurred in public thoroughfares during the year 1936–37 :—

ACCIDENTS (KNOWN TO THE POLICE) WHICH OCCURRED IN PUBLIC THOROUGHFARES.—PERSONS KILLED AND INJURED, 1936-37.

State or Territory.	Persons Killed.			Persons Injured.		
	Total.	Per 1,000 of Mean Population	Per 100 *Motor* Vehicles Registered	Total.	Per 1,000 of Mean Population	Per 100 *Motor* Vehicles Registered
New South Wales ..	543	0.20	0.19	7,684	2.87	2.74
Victoria	430	0.23	0.18	6,949	3.75	2.98
Queensland	135	0.14	0.12	3,195	3.25	2.86
South Australia	103	0.18	0.13	3,125	5.31	3.95
Western Australia ..	123	0.27	0.20	924	2.04	1.51
Tasmania	51	0.22	0.22	1,045	4.51	4.61
Australian Capital Territory	2	0.20	0.11	18	1.80	1.03
Total	1,387	0.20	0.18	22,940	3.37	2.90

Figures in respect of accidents registered are not entirely comparable throughout the Commonwealth, as some States, like New South Wales, have not enforced the reporting of minor accidents, while others, like Victoria, require that all accidents should be reported. Because of this, particulars relating to persons injured are approximate only.

(ii) *Years* 1926–27 *to* 1936–37. Approximate figures relating to the persons killed and injured in traffic accidents in Australia during the years 1926–27 to 1936–37 are given hereunder :—

ACCIDENTS (KNOWN TO THE POLICE) WHICH OCCURRED IN PUBLIC THOROUGHFARES—PERSONS KILLED AND INJURED, AUSTRALIA.

Particulars.	Year ended 30th June (*a*)—										
	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.
Persons killed No.	943	1,003	1,145	1,054	916	818	914	952	1,100	1,350	1,387
Persons injured No.	13,569	15,745	17,314	6,38[illegible]	14,297	13,728	15,073	18,039	19,189	22,131	22,940

(*a*) Prior to 1935 figures were compiled by three States for the calendar year, and by one State for the years 1935 and 1936.

Particulars of Traffic Accidents appear in greater detail in Transport and Communication Bulletin No. 28.

(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 1932–33 to 1936–37. 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 or Territory.	1932–33.	1933–34.	1934–35.	1935–36.	1936–37.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales	6 16 5	7 6 5	7 11 0	7 14 2	7 16 0
Victoria	6 17 8	7 0 2	7 3 5	7 5 11	7 5 10
Queensland	5 17 3	6 1 3	5 18 8	6 0 8	6 3 0
South Australia	8 13 1	7 19 2	8 11 11	8 8 6	(b) 7 14 0
Western Australia	6 3 4	6 4 10	5 17 5	5 16 11	6 11 5
Tasmania	5 14 3	5 14 3	5 15 0	5 14 3	5 13 0
Northern Territory	(a) 1 0 0	(a) 1 0 0	(a) 1 0 0	1 5 0	1 7 0
Australian Capital Territory ..	5 4 2	5 3 9	5 12 1	5 12 2	6 6 0
Australia	6 15 7	6 19 6	7 2 2	7 4 0	7 4 9

(a) Estimated. (b) Decrease as compared with figures for 1935–36 largely due to the introduction during the year of a change in the method of registering, which enabled persons to register vehicles for six-monthly periods, instead of annually only, as before.

7. **World Motor Vehicle Statistics, 1938.** The result of the 1938 World Motor Census, conducted by the "American Automobile" magazine, from which the following particulars have been extracted, shows that there were 42,446,814 motor cars, trucks, and buses registered in various countries of the world at 1st January, 1938. This shows an increase of 6.0 per cent. on the figure for the previous year, 40,045,502, and is the highest figure yet attained.

The following table shows the numbers of motor vehicles registered in each continent at 1st January, 1938 :—

MOTOR VEHICLES—WORLD REGISTRATIONS AT 1st JANUARY, 1938.

Continent, etc.	Total Automobiles.	Motor Cars.(a)	Motor Trucks and Buses.(a)	Motor Cycles.(a)
Africa	607,284	487,143	119,816	57,214
America (exclusive of United States of America) ..	2,101,756	1,653,469	448,287	21,003
United States of America ..	29,654,847	25,460,397	4,194,450	100,000
Asia	673,623	394,656	278,967	98,441
Europe	8,375,491	5,828,718	2,421,773	2,364,245
Oceania	1,033,813	745,496	287,717	101,945
Total	42,446,814	34,569,879	7,751,010	2,742,848

(a) Not complete for all territories.

The next table gives particulars of the numbers of motor vehicles registered in various countries, together with their approximate populations for the purposes of comparison :—

COMPARATIVE MOTOR VEHICLE STATISTICS, 1st JANUARY, 1938.

Country.	Approximate Population in Millions.	Motor Cars, Trucks and Buses.	Motor Cycles.
Australia	7	732,320	80,000
Argentine	12	267,707	..
Canada	11	1,306,385	11,140
France	42	2,200,000	..
Germany	67	1,445,743	1,327,189
Great Britain	47	2,306,834	462,439
India	353	173,243	12,593
Italy	43	429,700	180,000
Japanese Empire	97	166,000	57,000
New Zealand	2	239,657	21,175
Union of South Africa	8	315,706	31,000
United States of America	126	29,654,847	100,000

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.

F. 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, 1937. 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 Australian Capital Territory are included in those for New South Wales.

POSTAL FACILITIES.—RELATION TO AREA AND POPULATION, AT 30th JUNE, 1937.

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Australia.
Number of post offices (*a*) ..	2,505	2,553	1,234	784	604	511	8,191
Number of square miles of territory to each office in State	124	34	543	1,153	1,616	51	363
Number of inhabitants to each office	1,079	727	804	758	752	455	834
Number of inhabitants per 100 square miles	871	2,112	148	66	47	886	230

(*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 1907 to 1936-37 :—

POST OFFICES—NUMBER.

State.	At 31st December— 1907.	At 30th June— 1917.		1927.		1936.		1937.	
	Official and Semi-Official Post Offices.	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	2,319	480	2,108	456	2,226	429	2,043	431	2,074
Victoria ..	2,326	288	2,350	284	2,445	269	2,268	269	2,284
Queensland ..	1,389	211	1,117	216	1,069	187	1,029	187	1,047
South Australia ..	716	140	690	150	657	143	641	143	641
Western Australia	365	137	481	132	583	126	471	126	478
Tasmania ..	406	48	433	48	473	42	466	42	469
Australia ..	7,521	1,304	7,179	1,286	7,453	1,196	6,918	1,198	6,993

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

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

POSTAL EMPLOYEES AND MAIL CONTRACTORS.

State.	At 31st December—		At 30th June—							
	1907.		1917.		1927.		1936.		1937.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
Central Office ..	(a)	..	(a)	..	149	..	255	..	292	..
New South Wales	6,964	1,072	12,902	1,915	14,214	1,933	14,319	2,371	14,950	2,353
Victoria	5,744	758	8,826	1,137	11,607	1,145	10,906	941	11,724	1,434
Queensland ..	3,021	640	4,442	801	5,953	860	5,430	1,280	5,963	1,343
South Australia ..	1,767	251	2,942	352	4,388	402	3,538	363	3,734	362
Western Australia	1,579	208	2,693	279	3,061	357	2,959	369	2,982	390
Tasmania ..	814	172	1,313	221	1,555	247	1,480	232	1,537	227
Australia ..	19,889	3,111	33,118	4,705	40,927	4,944	38,887	5,556	41,182	6,109

(a) Included in Victorian Staff.

3. **Gross Revenue, Postmaster-General's Department.**—*Branches.* The gross revenue (actual collections) 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—							
1932–33	2,340,889	1,620,972	862,051	462,520	397,253	162,112	5,845,797
1933–34	2,431,342	1,673,812	872,913	462,634	402,083	164,030	6,007,414
1934–35	2,556,985	1,765,381	917,172	469,015	433,302	176,576	6,318,431
1935–36	2, 04,976	1,849,667	959,010	503,578	451,703	192,714	6,661,648
1936–37	2,825,606	1,914,730	993,320	520,936	470,799	200,416	6,925,807
Telegraph Branch—							
1932–33	358,214	251,097	195,328	136,145	112,154	38,885	1,091,823
1933–34	378,656	263,904	202,579	131,086	120,318	40,385	1,136,928
1934–35	432,771	301,898	222,010	118,533	141,403	43,773	1,260,388
1935–36	442,688	321,752	224,597	112,047	144,933	43,755	1,289,772
1936–37	496,504	347,910	229,069	114,536	145,603	36,896	1,370,518
Wireless Branch—							
1932–33	79,702	77,367	15,728	22,698	8,843	5,596	210,134
1933–34	127,453	118,626	28,169	36,250	17,130	9,229	336,857
1934–35	133,177	110,328	29,929	36,363	19,287	9,509	338,593
1935–36	141,337	117,660	35,082	39,096	21,858	10,844	365,877
1936–37	162,700	136,048	44,045	45,505	27,158	13,591	429,047
Telephone Branch—							
1932–33	2,092,461	1,595,977	787,597	534,157	301,418	134,228	5,445,838
1933–34	2,202,273	1,647,408	818,981	535,158	308,490	135,662	5,647,972
1934–35	2,360,656	1,749,660	884,147	562,999	328,271	141,785	6,027,518
1935–36	2,582,680	1,891,547	945,929	594,140	356,107	151,344	6,521,747
1936–37	2,824,662	2,066,231	976,316	627,694	395,334	171,008	7,061,245
All Branches—							
1932–33	4,871,266	3,545,613	1,860,704	1,155,520	819,668	340,821	12,593,592
1933–34	5,139,724	3,703,750	1,922,642	1,165,128	848,021	349,906	13,129,171
1934–35	5,483,589	3,927,267	2,053,258	1,186,910	922,263	371,643	13,944,930
1935–36	5,871,681	4,180,626	2,164,618	1,248,861	974,601	398,657	14,829,044
1936–37	6,309,472	4,464,919	2,242,750	1,308,671	1,038,894	421,911	15,786,617
Total Revenue per head of mean population—							
1932–33	1.87	1.95	1.98	1.98	1.88	1.50	1.91
1933–34	1.96	2.03	2.02	1.98	1.93	1.53	1.97
1934–35	2.07	2.14	2.14	2.01	2.08	1.62	2.08
1935–36	2.20	2.27	2.23	2.11	2.18	1.73	2.20
1936–37	2.34	2.41	2.28	2.20	2.30	1.82	2.32

Compared with the corresponding figures for the previous year, an increase of 6.4 per cent. is shown in the gross revenue earned, the increases in the several branches being as follows :—Postal 4.0 per cent., Telegraph 6.3 per cent., Wireless 17.3 per cent., and Telephone 8.3 per cent.

4. **Expenditure, Postmaster-General's Department.**—(i) *Distribution.* The following table shows, as far as possible, the distribution of actual expenditure on various items in each State during the year ended 30th June, 1937. 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, 1936-37.

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 ..	54,642	1,892,484	1,322,970	720,01[illegible]	472,79	364,67[illegible]	179,37	5,006,958
General expenses .	11,940	145,703	110,78	40,61	3[illegible],83	24,72[illegible]	10,18	376,794
Stores and material	1,708	63,965	40,56[illegible]	25,79	13,20	10,869	5,671	161,789
Mail services ..	(a) 221.88[illegible]	413,45[illegible]	251,89[illegible]	213,20	71,94[illegible]	80,66[illegible]	35,166	1,288,210
Engineering services (other than New Works) ..	52,666	1,099,452	765,05	351,645	263,63[illegible]	206,27[illegible]	122,3[illegible]	2,861,048
Other services ..	42,808	..	..	..	..	..	..	42,808
Total ..	385,648	3,615,060	2,491,28	1,351,28[illegible]	854,406	687,20	352,715	9,737,607
Pensions and retiring allowances ..	..	29,428	30,81[illegible]	..	..	25,105	..	85,343
Rent, repairs, maintenance, fittings, etc.	..	47,060	36,551	23,047	9,851	9,977	4,517	131,603
Proportion of audit expenses ..	..	4,220	2,90[illegible]	1,535	93[illegible]	703	362	10,650
New Works—								
Telegraph, telephone and wireless ..	..	848,225	695,6[illegible]	224 08	95,0 3	153,6[illegible]	55,7[illegible]	2,072,426
New buildings, etc. ..	..	261,306	39,3[illegible]	17,048	11,6 1	12,7[illegible] 7	5,12	346,053
Other expenditure not allocated to States	3,237,973 (b)	..	..	..	..	..	..	3,237,973
Grand Total ..	3,623,621 (c)	4,805,299	3,296,51[illegible]	1,617,6[illegible]	971,31[illegible]	889,449	418,465	15,622,255 (c)

(a) Orient Steam Navigation Company's Overseas Mail Contract a[illegible] e expenditure on air mail services. (b) Particulars of apportionment to States not available. (c) Including expenditure not apportioned to States.

(ii) *Total, 1933 to 1937.* 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, 1933 to 1937 inclusive.

EXPENDITURE, POSTMASTER-GENERAL'S DEPARTMENT.

Expenditure.	Year ended 30th June—				
	1933.	1934.	1935.	1936.	1937.
	£	£	£	£	£
Total	12,165,210	12,288,173	13,458,581	14,424,388	15,622,255

The total expenditure increased by 8.3 per cent. during 1936-37.

5. **Profit or Loss, Postmaster-General's Department.**—(i) *States, 1936–37.* 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, including exchange, during the year, were as follows :—

PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1936–37.

Branch.	Profit or Loss.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
		£	£	£	£	£	£	£
Postal ..	Profit	855,150	639,021	291,063	140,368	108,303	22,058	2,055,963
	Loss	..	..	..	..	..	..	..
Telegraph ..	Profit	23,903	58,775	..	..	9,656	..	79,791
	Loss	..	..	246	5,133	..	7,164	..
Wireless ..	Profit	52,599	47,055	..	8,707	..	..	87,718
	Loss	..	..	5,799	..	6,981	7,863	..
Telephone ..	Profit	568,820	407,870	180,827	..	6,165	..	1,117,458
	Loss	..	..	..	1,906	..	44,318	..
All Branches	Profit	1,500,472	1,152,721	465,845	142,036	117,143	..	3,340,930
	Loss	..	..	..	..	..	37,287	..

After providing for depreciation, pensions and retiring allowances and interest on capital, the year 1936–37 closed with a surplus of £3,340,930. For the preceding year a surplus of £2,983,985 was shown.

(ii) *Branches, 1933 to 1937.* The following statement gives particulars of the operating results of each branch for the period 1933 to 1937 :—

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

Year Ended 30th June—	Branch.									
	Postal.		Telegraph.		Wireless.		Telephone.		All Branches.	
	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£	£	£	£	£	£
1933 ..	1,471,685	..	..	101,588	22,796	..	..	200,275	1,192,618	..
1934 ..	1,684,608	..	..	41,012	87,235	..	269,273	..	2,000,104	..
1935 ..	1,828,279	..	15,019	..	162,343	..	402,332	..	2,407,973	..
1936 ..	1,948,385	..	64,993	..	86,184	..	884,423	..	2,983,985	..
1937 ..	2,055,963	..	79,791	..	87,718	..	1,117,458	..	3,340,930	..

6. **Capital Account.**—The appended statement shows particulars of the fixed assets of the Postmaster-General's Department at 30th June, 1937 :—

FIXED ASSETS, POSTMASTER-GENERAL'S DEPARTMENT, 30th JUNE, 1937.

Particulars.	Net Value, 1st July, 1936.	Capital Expenditure, 1936-37.	Gross Value, 30th June, 1937.	Less Depreciation, &c. 1936-37. (a)	Net Value, 30th June, 1937.
	£	£	£	£	£
Telephone service plant (exclusive of Trunk lines)	34,318,844	2,236,822	36,555,666	643,977	35,911,689
Trunk and Telegraph service plant (Aerial Wires) ..	10,430,158	189,629	10,619,787	65,381	10,554,406
Telegraph service plant ..	661,038	15,921	676,959	9,511	667,448
Postal service plant	416,597	7,178	423,775	3,211	420,564
Wireless plant	299,024	92,443	391,467	1,818	389,649
Sites, buildings, furniture and office equipment	9,560,757	263,401	9,824,158	38,697	9,785,461
Miscellaneous plant	659,905	141,540	801,445	48,706	752,739
Total	56,346,323	2,946,934	59,293,257	811,301	58,481,956

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

During the past quinquennium the value of the fixed assets has increased by 11.1 per cent., the net value at 30th June, 1932, being £52,633,505.

§ 2. Posts.

1. **Postal Matter Dealt With.**—(i) *Australia.* The following table gives a summary of the postal matter dealt with in Australia during the five years 1933 to 1937. 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, Letter Cards and Packets.		Newspapers.		Parcels.		Registered Articles other than Parcels.	
	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 WITHIN AUSTRALIA FOR DELIVERY THEREIN.								
1933	699,932	105,974	118,357	17,920	8,661	1,311	6,093	923
1934	733,506	110,217	121,600	18,272	8,549	1,285	6,223	935
1935	752,112	112,215	125,088	18,663	8,456	1,262	6,576	981
1936	775,469	114,869	129,290	19,152	8,606	1,275	6,814	1,009
1937	792,869	116,519	133,034	19,550	8,811	1,295	7,128	1,048
TOTAL POSTAL MATTER DEALT WITH.								
1933	751,777	112,963	139,963	21,031	9,044	1,369	6,710	1,016
1934	790,166	118,731	142,040	21,343	8,942	1,344	6,870	1,032
1935	809,729	120,812	147,662	22,031	8,876	1,324	7,273	1,085
1936	832,685	123,344	150,755	22,331	9,058	1,342	7,539	1,117
1937	853,676	125,455	156,123	22,943	9,264	1,362	7,939	1,167

(ii) *States.* The next table shows separately for each State the postal matter dealt with in 1936–37.

POSTAL MATTER DEALT WITH—STATES 1936-37.(a)

State.	Letters, Postcards, Letter Cards and Packets.		Newspapers.		Parcels.		Registered Articles other than Parcels.	
	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	321,900	119,633	65,833	24,467	3,765	1,399	2,736	1,017
Victoria ..	222,594	120,168	26,059	14,068	1,782	962	1,967	1,062
Queensland ..	100,814	102,441	21,684	22,034	1,688	1,715	1,031	1,048
South Australia ..	57,263	96,464	7,142	12,031	774	1,304	567	955
Western Australia	52,120	115,338	6,109	13,519	686	1,518	570	1,261
Tasmania ..	38,178	164,612	6,207	26,763	116	500	257	1,108
Australia ..	792,869	116,519	133,034	19,550	8,811	1,295	7,128	1,048
OVERSEA DISPATCHED.								
New South Wales	10,324	3,837	2,280	847	108	40	171	64
Victoria ..	8,309	4,486	3,425	1,849	46	25	101	55
Queensland ..	2,881	2,927	790	803	14	14	44	45
South Australia ..	3,180	5,357	475	800	8	13	19	32
Western Australia	3,440	7,612	522	1,155	11	24	28	62
Tasmania ..	2,558	11,029	205	884	3	13	4	17
Australia ..	30,692	4,510	7,697	1,131	190	28	367	54
OVERSEA RECEIVED.								
New South Wales	12,202	4,535	7,657	2,846	126	47	217	81
Victoria ..	8,811	4,757	2,785	1,503	76	41	138	74
Queensland ..	2,575	2,617	1,478	1,502	21	21	35	36
South Australia ..	2,064	3,477	1,215	2,047	14	24	18	30
Western Australia	3,407	7,539	1,875	4,149	21	46	29	64
Tasmania ..	1,056	4,553	382	1,647	5	22	7	30
Australia ..	30,115	4,426	15,392	2,262	263	39	444	65

(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 1933 to 1937 :—

VALUE-PAYABLE PARCEL POST.—SUMMARY.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
NUMBER OF PARCELS POSTED.							
	No.	No.	No.	No.	No.	No.	No.
1933	289,975	37,567	210,992	23,559	79,820	1,711	643,624
1934	305,972	40,769	204,459	21,309	79,030	1,782	653,321
1935	309,024	36,959	200,358	19,940	76,174	1,720	644,175
1936	324,800	39,700	192,539	20,340	76,946	2,023	656,348
1937	326,045	35,510	186,439	20,367	75,068	1,573	645,002
VALUE COLLECTED.							
	£	£	£	£	£	£	£
1933	343,155	49,392	261,183	24,704	81,029	1,980	761,443
1934	377,752	55,305	248,002	22,502	83,524	1,970	789,055
1935	364,750	50,469	244,829	19,965	83,364	1,936	765,313
1936	389,595	55,577	236,608	22,347	81,538	2,597	788,262
1937	398,582	50,529	230,656	22,343	84,382	2,111	788,603
REVENUE INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.							
	£	£	£	£	£	£	£
1933	37,555	4,952	25,723	3,031	9,867	212	81,340
1934	40,356	5,460	26,947	2,827	10,452	213	86,255
1935	39,653	5,012	24,623	2,307	8,912	215	80,722
1936	43,285	5,334	24,830	2,546	8,775	242	85,012
1937	43,214	4,761	25,081	2,448	8,666	191	84,361

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 also found favour 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, 1937 :—

MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1936-37.

Service.	Orient S.N. Co.	Queensland Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
	£ Stg.	£	£	£	£
Annual subsidy	110,000	975	3,800	5,500	55,379

4. **Total Cost of Carriage of Mails.**—During the year 1936–37 the total amount paid for the carriage of mails, as disclosed by the Profit and Loss Account of the Postal Branch was £1,297,187. Details appear hereunder :—

CARRIAGE OF MAILS.—TOTAL COST, 1936-37.

Inland Mails.		Non-Contract Vessels.	Overland and Sea Transit.	Coastwise Mails.	Mails to Europe. (a)	Air Mails.	Other Payments.	Total.
By Road.	By Railway.							
£	£	£	£	£	£	£	£	£
513,117	436,758	37,774	5,619	12,490	137,500	127,207	26,722	1,297,187

(a) Orient contract.

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 1936–37, and the methods adopted in the disposal thereof :—

DEAD LETTER OFFICES.—SUMMARY, 1936-37.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
LETTERS, POSTCARDS AND LETTER-CARDS.							
Returned direct to writers or delivered	586,740	244,149	187,948	71,203	110,976	65,802	1,266,818
Destroyed in accordance with Act	71,922	34,670	15,341	9,733	4,526	2,922	139,114
Returned to other States or Countries as unclaimed ..	34,513	18,502	8,060	3,004	8,276	762	73,117
Total	693,175	297,321	211,349	83,940	123,778	69,486	1,479,049
PACKETS AND CIRCULARS.							
Returned direct to writers or delivered	200,010	136,910	267,476	9,707	63,712	31,638	709,453
Destroyed in accordance with Act	59,162	27,114	31,161	7,958	6,966	864	133,225
Returned to other States or Countries as unclaimed ..	5,515	3,670	2,317	1,365	650	582	14,099
Total	264,687	167,694	300,954	19,030	71,328	33,084	856,777
Grand Total (letters, packets, etc.)	957,862	465,015	512,303	102,970	195,106	102,570	2,335,820

During the year 1936–37 money and valuables to the amount of £82,903 were found in undeliverable postal articles.

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*, 1936–37. Particulars regarding the business transacted in each State for the year 1936–37 are given hereunder :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, 1936-37.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Issued.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ..	8,128,672	8,192,981	41,390	3,219,238	75,090
Victoria	3,300,660	3,592,527	21,140	2,075,090	50,674
Queensland ..	2,598,076	2,412,592	17,268	868,402	19,230
South Australia ..	932,286	937,540	5,619	501,197	12,216
Western Australia ..	1,524,051	1,396,978	9,278	487,179	10,934
Tasmania	614,193	572,276	3,237	196,584	4,500
Australia ..	17,097,938	17,104,894	97,932	7,347,690	172,644

The figures in the foregoing table relating to money orders and postal notes show an increase compared with the previous year.

(iii) *Australia*, 1933 *to* 1937. The next table shows the total number and value of money orders and postal notes issued and paid in Australia from 1932–33 to 1936–37 :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, AUSTRALIA.

Year ended 30th June—	Money Orders.				Postal Notes.			
	Issue.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1933 ..	2,707	14,257	2,691	14,229	16,717	5,746	16,735	5,729
1934 ..	2,769	14,646	2,762	14,589	19,595	6,397	19,446	6,370
1935 ..	2,859	15,185	2,847	15,169	19,557	6,650	19,489	6,631
1936 ..	2,968	16,303	2,938	16,260	21,083	7,221	21,103	7,222.
1937 ..	3,066	17,098	3,057	17,105	20,622	7,348	20,538	7,313

(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 1936–37, classified according to the country where payable :—

MONEY ORDERS ISSUED.—COUNTRY WHERE PAYABLE, 1936-37.

Where Issued.	Where Payable.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
	NUMBER.				
Australia	2,905,707	22,868	93,561	43,708	3,065,844
	VALUE.				
	£	£	£	£	£
Australia	16,673,971	62,672	203,930	157,365	17,097,938

(*b*) *Money Orders Paid.* The number and value of money orders paid during the year 1936-37, classified according to the country where issued, are given hereunder :—

MONEY ORDERS PAID.—COUNTRY OF ISSUE, 1936-37.

Where Paid.	Where Issued.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
			NUMBER.		
Australia	2,929,676	52,324	47,347	27,716	3,057,063
			VALUE.		
	£	£	£	£	£
Australia	16,695,278	138,402	177,513	93,701	17,104,894

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 in 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 1936–37, 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, 1936-37.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
			NUMBER.				
Issued in same State	7,488,987	3,752,478	1,859,054	821,602	1,086,167	411,877	15,420,165
Issued in other States	833,104	527,114	831,202	104,422	69,123	2,753,271	5,118,236
Total ..	8,322,091	4,279,592	2,690,256	926,024	1,155,290	3,165,148	20,538,401
			VALUE.				
	£	£	£	£	£	£	£
Issued in same State	2,707,088	1,367,453	702,231	301,788	401,558	143,143	5,623,261
Issued in other States	287,526	211,965	297,932	43,512	18,692	830,491	1,690,118
Total ..	2,994,614	1,579,418	1,000,163	345,300	420,250	973,634	7,313,379

The number of postal notes paid in Australia during the year showed a decrease of 2.7 per cent., while the value showed an increase of 1.3 per cent. compared with the corresponding figures for the year 1935–36.

§ 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, p. 625), 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 five repeating centres, eighteen centres having been abolished.

(iii) *Carrier Wave System.* This system which permits a number of messages to be transmitted simultaneously over the one pair of wires is now in operation between Perth and Adelaide, Adelaide and Melbourne, Melbourne and Sydney, and Sydney and Brisbane. There are now 41,158 miles of one-way telegraph carrier channels in operation.

(iv) *Voice-Frequency System.* This system, which enables a number of telegraph channels to be superposed on a single telephone channel by employing frequencies from 420 to 2,460 cycles per second, has been introduced between Sydney and Tamworth. Between these two points 18 duo-directional channels have been provided by adopting the voice-frequency principle, equivalent to 9,360 miles of uni-directional channels. In view of the service and economic advantages of the system, extensions to other main telegraph routes are contemplated.

(v) *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; Brisbane-Cloncurry, 1,215 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.

(vi) *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, Sydney and Canberra, Sydney and Lismore, Sydney and Newcastle, Sydney and Wagga Wagga, Melbourne and Brisbane, Melbourne and Adelaide, Melbourne and Perth, Melbourne and Canberra, 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 the system now gives a high output. Between Melbourne and Mildura, Melbourne and Launceston, Sydney and Tamworth, Brisbane and Toowoomba, Brisbane and Mackay, Perth and Fremantle, and Perth and Kalgoorlie, start-stop telegraph printing systems are in operation.

(vii) *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, 1937, was 2,705,834 or 15.8 per cent. of the total lodgments, and the popularity of this facility is growing.

(viii) *Radiograms within Australia.* On 1st May, 1929, the rates for radiograms between Flinders 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.

(ix) *Pedal Wireless Stations.* A number of privately operated pedal wireless transceiver stations have been established in the far North-West of the Commonwealth, enabling telegrams to be exchanged with departmental telegraph offices. These pedal stations are sponsored by the Australian Aerial Medical Services and communicate by wireless with base stations established at Wyndham and Port Hedland. The radiogram rates of 1½d. per word with a minimum charge of two shillings apply to pedal station telegrams.

(x) *Picturegram Service.* During the year ended 30th June, 1937, 603 picturegrams were transmitted between Sydney and Melbourne, the revenue being £1,339. 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.

(xi) *Overseas Phototelegram Service.* An overseas phototelegram service, "via Beam," was inaugurated in October 1934, permitting the transmission in either direction of facsimiles between Sydney or Melbourne and England, of dimensions up to a maximum of ten inches by seven inches. The charges are calculated at the rate of three shillings and three pence per square centimetre with a minimum charge of £16 5s. as for 100 square centimetres.

(xii) *Ornamental Telegram Forms.* The use of appropriately designed telegram forms for conveying Christmas and New Year greetings continues to increase in volume and popularity. In 1937, 356,070 Greeting Telegrams were sent, an increase of 147.1 per cent. on the number (144,102) sent in 1929, the year of inception of the service.

During the year 1933–34 telegram forms of special design and attractive colouring in connexion with Mothers' Day messages, Birthday greetings and Congratulatory telegrams were placed at the disposal of the public. The popularity of these facilities is indicated by the increase in the number of Mothers' Day telegrams from 16,091 in 1934 to 47,833 in 1938. Complete statistics are not available in respect of Birthday greetings and Congratulatory messages, but it is estimated that the number of telegrams in these categories is approximately 750,000 annually. In 1936 two additional greeting facilities employing ornamental telegram stationery were introduced, one for the conveyance of social greetings and the other for use during Easter-tide. The number of Easter Greeting telegrams in 1935, prior to the introduction of the special form for the occasion, was 4,164. This figure increased to 12,573 in 1938. Extensive use is also being made of the Social telegram service, which is popular for conveying "bon voyage" greetings and for making social engagements.

(xiii) *Private Wire Teleprinter and Printergram Services.* In conformity with its policy of placing at the service of the public new developments in communication, the Department has now introduced the teleprinter service. This may be briefly defined as typewriting over electrical circuits, teleprinters being similar in performance to typewriters, except that the keyboard and distant printer 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 information may be despatched with the utmost privacy even in exposed situations where other means are unsuitable. It affords two-way communication at speeds up to 60 words a minute.

Printergram services connecting any business premises with the local Telegraph Office for the transmission and reception of telegrams are also available. This saves time and labour, while providing a permanent record of each transaction.

Thirty private wire services employing 102 teleprinter units have already been installed, including a stock ticker service enabling the simultaneous communication of information from a single transmitting unit located in the Sydney Stock Exchange to each of 35 printer units installed in the offices of city stock-brokers.

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 1933 to 1937 :—

TELEGRAPHS, AUSTRALIA.—SUMMARY.

Particulars for Year ended 30th June.	1933.	1934.	1935.	1936.	1937.
Number of offices	9,162	9,199	9,255	9,252	9,320
Length of wire (miles)—					
Telegraph purposes only	55,302	54,655	54,806	56,292	55,196
Telegraph and telephone purposes ..	101,797	102,953	104,203	113,277	121,788
Length of line (miles)—					
Conductors in Morse cable ..	4,401	4,538	4,694	4,815	4,863
Conductors in submarine cable (statute miles)	4,833	4,764	4,883	5,193	5,421
Pole routes (miles)	99,951	96,395	97,694	97,850	96,917

(ii) *States.* The following table gives corresponding particulars for each State for the year 1936–37 :—

TELEGRAPHS.—STATES, SUMMARY, 30th JUNE, 1937.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number of offices ..	3,059	2,435	1,543	821	929	533	9,320
Length of wire (miles)—							
Telegraph purposes only	16,225	7,757	14,785	6,693	9,072	664	55,196
Telegraph and telephone purposes	45,486	15,768	36,490	13,902	8,694	1,448	121,788
Length of line (miles)—							
Conductors in Morse cable	2,697	1,452	491	..	199	24	4,863
Conductors in submarine cable (statute miles) ..	3,823	372	330	226	193	477	5,421
Pole routes (miles) ..	32,721	19,212	14,491	14,913	12,090	3,490	96,917

A total length of 176,984 miles of wire is available for telegraph purposes, of which 121,788 miles are also used for telephone purposes. Compared with those for the previous year, the figures show an increase of 7,415 miles (4.4 per cent.) in the total length and an increase of 8,511 miles (7.5 per cent.) in the length of line used for both telegraph and telephone purposes.

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—				
	1933.	1934.	1935.	1936.	1937.
Number (*a*) ..	12,778,028	13,393,627	14,617,871	15,508,843	16,268,416

(*a*) Including radiogram traffic with islands adjacent to the Commonwealth and to ships at sea.

(ii) *States.* The appended table shows the total number of telegrams dispatched in each State in 1936–37 according to the class of message transmitted :—

TELEGRAMS DISPATCHED(*a*).—STATES, 1936–37.

Class of Message Transmitted within Australia.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	No.	No.	No.	No.	No.	No.	No.
Paid and Collect—							
Ordinary ..	4,912,928	3,262,753	2,516,687	1,046,566	1,644,646	276,247	13,659,827
Urgent ..	228,882	89,443	66,448	36,105	51,865	8,699	481,442
Press ..	202,189	105,285	80,492	42,179	47,045	32,958	510,148
Lettergram ..	81,650	47,665	66,855	32,974	101,977	23,364	354,485
Radiogram ..	32,899	3,231	7,217	5,174	3,073	3,212	54,806
Total ..	5,458,548	3,508,377	2,737,699	1,162,998	1,848,606	344,480	15,060,708
Unpaid—							
Service ..	158,758	61,916	64,980	41,285	53,168	21,001	401,108
Shipping ..	22,576	77,219	16,087	3,760	11,124	5,812	136,578
Meteorological ..	203,774	90,642	95,905	129,864	118,965	30,872	670,022
Total ..	385,108	229,777	176,972	174,909	183,257	57,685	1,207,708
Grand Total ..	5,843,656	3,738,154	2,914,671	1,337,907	2,031,863	402,165	16,268,416

(*a*) See Note (*a*) above.

The figures in the foregoing table show an increase in the total volume of telegraph business of 759,573 messages (4.9 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 net operating results of the telegraph systems for the years 1932–1933 to 1936–37 are given in earlier pages.

6. **Telegraph Density.**—The latest statistics available disclose that, on a population basis, Australia now occupies a pre-eminent position in the world in the use of the Telegraph Service, with an average of 2.3 messages annually per head of population. The United States of America has the second highest average of 1.4 followed by Great Britain and Northern Ireland with 1.1 per head of population. 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	3.2	2.3
Austria	0.3	0.2
Belgium	1.9	0.6
Canada	0.4	0.9
Czechoslovakia	1.4	0.3
Denmark	0.3	0.5
Finland	0.3	0.2
France	3.0	0.7
Germany	0.7	0.3
Great Britain	2.8	1.1
Hungary	1.3	0.2
Japan	1.3	0.8
Netherlands	0.7	0.3
Norway	1.2	1.0
Poland	0.6	0.1
Spain	3.0	1.0
Sweden	0.4	0.6
Switzerland	0.6	0.4
Union of South Africa	2.5	0.8
United States of America	0.7	1.4

§ 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 Service.**—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 has arisen as the result of the competition of the Beam Wireless with the Cable services, the Imperial and International Communications Limited (since renamed Cable and Wireless Ltd.) 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. Further particulars in relation to wireless services will be found in par. 5 of this section and in § 6, Radio Telegraphy and Telephony.

4. **Overseas Cable and Radio Traffic.**—(i) *Australia.* The subjoined table shows the number of international telegrams received from and dispatched overseas in Australia from 1934–35 to 1936–37 :—

INTERNATIONAL TELEGRAMS.—AUSTRALIA.

Messages.	Number Received.			Number Dispatched.			Total Number Received and Dispatched.		
	1934–35.	1935–36.	1936–37.	1934–35.	1935–36.	1936–37.	1934–35.	1935–36.	1936–37.
Number ..	625,842	639,142	692,727	684,761	693,864	746,739	1,310,603	1,333,006	1,439,466

(ii) *States.* The number of telegrams received from and dispatched overseas in each State during the year 1936–37 is given hereunder :—

INTERNATIONAL TELEGRAMS.—STATES, 1936–37.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Number received ..	371,467	224,057	26,177	32,051	29,856	9,119	692,727
Number dispatched	370,741	253,480	33,005	37,590	41,397	10,526	746,739
Total ..	742,208	477,537	59,182	69,641	71,253	19,645	1,439,466

5. **Cable and Beam Wireless Rates.**—(i) *Ordinary Messages.* As from the 25th April, 1938, the Cable and Beam Wireless rates per word for telegrams exchanged between Australia and British Empire Countries were reduced to the following levels :—Urgent, 2s. 6d ; Ordinary, 1s. 3d. ; C.D.E. (5 letter code), 10d. ; (minimum 5 words) ; Deferred, 7½d. ; British Government, 7½d. ; Daily Letter Telegram, 5d. ; (minimum charge 10s. 5d. as for 25 words). Where, however, the charges between Australia and certain Empire countries (e.g., New Zealand, Fiji and some Pacific Islands) were below these levels, the rates were unaltered. No change was effected in the rates for traffic exchanged between Australia and foreign countries.

The following are the ordinary rates at present operating in regard to traffic with the principal countries, other than members of the British Empire :—

INTERNATIONAL TELEGRAM RATES.

To—	Rate per Word and Route.	
	Via Cable.	Via Beam.
European Countries	2s. 6d. to 2s. 7d.	1s. 11½d. to 2s. 5½d.
Asiatic Countries	2s. 5d. to 4s. 7d.	..
Africa	2s. 6d. to 5s. 6d.	2s. 2½d. to 2s. 11d.
United States of America	2s. 4d. to 2s. 8d.	2s. 1½d. to 2s. 5d.
Central America	3s. 2½d. to 4s. 4½d.	2s. 11½d. to 4s. 4½d.
West Indies	3s. 0d. to 5s. 1d.	2s. 8½d. to 4s. 11d.
South America	3s. 9d. to 5s. 9d.	3s. 8d. to 5s. 2½d.

(ii) *Deferred Telegrams (via Cable or Beam).* Under this system a reduction of 50 per cent. in the ordinary charge for international telegrams is made under certain conditions. Deferred telegrams are transmitted after ordinary rate telegrams and ordinary press telegrams have been disposed of.

(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. The charges are based on one-third of the tariff per word for ordinary messages, subject to a minimum charge as for 25 words. These messages are delivered on the morning of the second day following that of lodgment.

(iv) *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. The minimum charge for messages is fixed as for 25 words, the rates 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. Night Letter Telegrams are delivered by first post on the morning following the day of lodgment.

(v) *Overseas Press Telegrams.* The rate per word on ordinary press telegrams exchanged with Great Britain prior to the 25th April, 1938, was 6d. via Cable and 4d. via Beam, and on deferred press 4½d. and 3d. per word respectively. As from this date the rates were reduced to a uniform level irrespective of route, and are as follows—Ordinary Press, 4d. per word; Deferred Press, 3d. per word.

(vi) *Christmas Greeting Telegram Service.* A special Christmas and New Year greeting service is available between Australia and Overseas countries during the Christmas and New Year period each year. Special low rates are charged for these telegrams, the texts of which must be purely of a greeting nature. The messages are delivered on an appropriately designed form.

(vii) *Easter Greeting Telegram Service.* A special Easter greeting service is available between Australia and the United Kingdom, including Northern Ireland, during Easter periods. A special low tariff is applicable to this service. The texts of such telegrams are restricted to messages purely of a social or greeting character.

(viii) *Jewish New Year Greeting Telegram Service.* A special greeting telegram service has been established between Australia and certain overseas countries, including the United Kingdom, Egypt, Palestine, South Africa, United States of America and Canada for use during the Jewish New Year period. A specially reduced rate is charged for the service. The texts of such messages must consist of greetings only and be written in plain language.

(ix) *De-Luxe Telegram Service.* A de-luxe telegram service has been established between Australia and certain of the more important overseas countries whereby, on payment of an additional fee of sixpence per telegram, the message will be delivered to the addressee on an ornamental form enclosed in a decorative envelope.

§ 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, 1934 to 1937.

TELEPHONE LINES.—AUSTRALIA.

Particulars.	Year ended 30th June—			
	1934.	1935.	1936.	1937.
Ordinary Lines—				
Conduits .. .. duct miles	6,733	7,128	7,771	8,546
,, ... route miles	4,079	4,467	5,094	5,869
Conductors in aerial and underground cables .. .. loop mileage	837,094	847,393	861,437	892,795
Working conductors in cables for junction circuits, not included above loop mileage	71,592	74,849	75,094	77,889
Open conductors single wire mileage	419,015	417,640	421,075	425,857
Trunk Lines—				
Telephone trunk lines only .. miles	228,084	231,125	230,684	224,447
Telegraph and telephone purposes ,,	102,953	104,203	113,277	121,788

(ii) *Comparison with Other Countries.* During 1936-37 the telephone service expanded at a satisfactory rate, 32,935 telephones being added to the system, as compared with 30,945 for the preceding year. A notable feature was the marked improvement in the rate of development in country districts, the net additions being 8,396, the best total recorded for some years. With an average of 87 telephones per 1,000 of population Australia occupies seventh place among the countries of the world having the greatest density of telephones. The average length of wire per instrument in Australia is 4.5 miles.

(iii) *Trunk Line System.* It is proposed to provide underground telegraph and trunk line cables between (i) Sydney and Maitland (N.S.W.), a distance of approximately 123 miles and (ii) Melbourne and Geelong (Vic.), about 46 miles. The Newcastle cable will serve the northern portion of New South Wales and will also carry the inter-capital links between Sydney and Brisbane. The Geelong cable will carry the tele-communication channels serving Tasmania and the Western Districts of Victoria. Inter-capital links are being augumented and during the near future the Sydney–Melbourne group of channels will be increased from 18 to 24, the Sydney-Brisbane group from 7 to 10, the Melbourne–Adelaide group from 6 to 8, and the Mainland–Tasmania group from 6 to 7. The latter channels are carried in a submarine cable across Bass Strait.

A semi-automatic Trunk Exchange of modern design is being installed in Melbourne, and a new manually operated Trunk Exchange, which also embodies many additional facilities and operating aids, is being provided in Sydney.

(iv) *Automatic Exchanges.* At the 30th June, 1937, there were 110 automatic or semi-automatic exchanges in operation, providing facilities for 273,505 automatic telephones, representing 46 per cent. of the total telephones in use.

(v) *Rural Automatic Exchanges.* Progress has been made with the establishment of automatic exchanges in country districts, and on the 30th June, 1937, 33 units were in operation. The rate of installation is being accelerated and equipment has been ordered for additional exchanges. The provision of automatic facilities in rural areas enables the residents concerned to enjoy the benefits of a continuous telephone service, which it is not practicable to furnish under manual conditions because of the heavy outlay entailed.

(vi) *Summary for States.* Particulars relating to the telephone service in each State for the years ended 30th June, 1935 to 1937, 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 ..	1935	1,951	1,650	979	556	639	342	6,117
	1936	1,967	1,651	995	561	647	345	6,166
	1937	1,985	1,663	1,012	570	652	354	6,236
No. of Telephone Offices (including Exchanges)	1935	2,971	2,363	1,442	814	941	505	9,036
	1936	2,981	2,342	1,461	815	942	505	9,046
	1937	2,986	2,354	1,497	816	958	509	9,120
No. of lines connected ..	1935	150,257	121,631	51,448	38,652	22,129	11,908	396,025
	1936	160,323	128,313	53,784	39,911	23,020	12,310	417,661
	1937	170,724	135,751	55,796	41,467	23,838	12,895	440,471
No. of instruments connected	1935	202,363	168,198	67,161	50,512	29,336	14,807	532,377
	1936	215,803	177,397	70,844	52,585	30,882	15,357	562,868
	1937	229,727	187,753	73,793	55,019	32,346	16,217	594,855
(*a*) No. of subscribers' instruments	1935	196,854	164,373	64,694	48,916	28,042	13,972	516,851
	1936	210,090	173,436	68,288	50,954	29,553	14,511	546,841
	1937	223,712	183,613	71,092	53,319	30,976	15,349	578,061
(*b*) No. of public telephones	1935	3,459	2,408	1,595	824	888	537	9,711
	1936	3,561	2,412	1,633	834	896	542	9,878
	1937	3,758	2,465	1,672	875	900	551	10,221
(*c*) No. of other local instruments	1935	2,050	1,417	872	772	406	298	5,815
	1936	2,143	1,549	923	797	433	304	6,149
	1937	2,257	1,675	1,029	825	470	317	6,573
Instruments per 100 of population	1935	7.62	9.15	6.98	8.56	6.58	6.47	7.92
	1936	8.06	9.60	7.23	8.88	6.85	6.67	8.31
	1937	8.50	10.12	7.44	8.98	7.12	6.98	8.71
		£	£	£	£	£	£	£
Earnings	1935	2,400,286	1,792,748	898,346	559,646	341,175	145,212	6,137,413
	1936	2,646,392	1,940,307	965,829	598,719	377,602	160,026	6,688,875
	1937	2,902,740	2,115,372	1,002,338	640,001	396,978	178,186	7,235,615
Working expenses ..	1935	1,498,546	1,171,206	522,607	433,833	236,182	162,338	4,024,712
	1936	1,592,115	1,221,796	559,845	458,337	277,188	168,181	4,277,462
	1937	1,753,411	1,278,911	602,833	469,874	291,995	176,600	4,573,624
		%	%	%	%	%	%	%
Percentage of working expenses on earnings	1935	62.43	65.33	58.17	77.52	69.23	111.79	65.58
	1936	60.16	62.97	57.97	76.55	73.41	105.10	63.95
	1937	60.41	60.46	60.14	73.42	73.55	99.11	63.21

The number of instruments per 100 of population increased from 8.31 in 1935–36 to 8.71 in 1936–37. The net addition during 1936–37 totalled 32,935 telephones, a gain of 5.85 per cent. Of the total instruments connected at 30th June, 1937, 235,973, or 39.7 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. Instruments of the modern handset pattern are rapidly increasing in popularity. During 1936–37, 51,363 handsets were installed, compared with 37,887 in 1935–36, bringing the number in service to 130,045 or 22 per cent. of the total connexions.

(vii) *Systems in use.* The following table shows the percentage of automatic common battery and magneto telephone lines at 30th June, 1935 to 1937:—

PERCENTAGE OF AUTOMATIC, COMMON BATTERY AND MAGNETO LINES.

System.	30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia
		%	%	%	%	%	%	%
Automatic	1935	48.44	40.66	37.99	38.74	50.86	31.17	43.36
	1936	50.33	42.25	39.15	39.58	52.36	32.26	44.96
	1937	51.59	43.81	40.19	40.53	53.05	33.03	46.24
Common Battery ..	1935	2.96	18.88	..	14.10	..	17.23	8.82
	1936	3.01	18.44	..	14.22	..	17.25	8.69
	1937	3.08	17.85	..	14.11	..	17.29	8.53
Magneto	1935	48.60	40.46	62.01	47.16	49.14	51.60	47.82
	1936	46.66	39.31	60.85	46.20	47.64	50.49	46.35
	1937	45.33	38.34	59.81	45.36	46.95	49.68	45.23

(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 1936–37 :—

TELEPHONE.—SUBSCRIBERS' LINES AND DAILY CALLING RATE, 1936-37.

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.
	No.	No.	No.	No.	No.	No.	No.	No.
New South Wales	19,325	12.69	81,560	4.56	63,379	2.56	164,264	4.74
Victoria ..	9,818	10.82	73,213	4.65	48,020	1.73	131,051	4.04
Queensland ..	7,852	10.10	15,056	3.56	31,610	2.59	54,518	3.94
South Australia ..	5,721	9.94	16,205	3.48	17,411	1.79	39,337	3.67
Western Australia	7,896	6.77	5,475	4.09	9,817	1.88	23,188	4.07
Tasmania ..	3,037	4.61	1,450	2.34	7,778	2.20	12,265	2.81
Australia ..	53,649	10.35	192,959	4.40	178,015	2.21	424,623	4.23

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

(ix) *Effective Paid Local Calls.* The numbers of effective paid local calls from private and public telephones in the various States during the years ended 30th June, 1935 to 1937 appear hereunder :—

TELEPHONE.—NUMBER OF EFFECTIVE PAID LOCAL CALLS.

State.	Subscribers' Calls.			Calls from Public Telephones.			Total Calls.		
	1934–35.	1935–36.	1936–37.	1934–35.	1935–36.	1936–37.	1934–35.	1935–36.	1936–37.
	'000.	'000.	'000.	'000.	'000.	'000.	'000.	'000.	'000.
New South Wales	169,108	185,770	205,850	15,667	17,803	19,184	184,775	203,573	225,034
Victoria ..	120,865	132,052	154,428	8,173	8,812	9,369	129,038	140,864	163,797
Queensland ..	51,651	55,637	58,267	3,549	3,939	4,218	55,200	59,576	62,485
South Australia	32,816	36,727	38,821	2,772	3,044	3,248	35,588	39,771	42,069
Western Australia	21,927	23,866	25,920	1,202	1,292	1,366	23,129	25,158	27,286
Tasmania ..	8,040	8,643	9,329	656	716	735	8,696	9,359	10,064
Total, Australia	404,407	442,695	492,615	32,019	35,606	38,120	436,426	478,301	530,735

(x) *Trunk Line Calls and Revenue.* In the next 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 1934–35 to 1936–37 :—

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.
1934–35 ..	11,163,557	8,987,751	6,091,847	3,329,09	1,778,511	1,313,679	32,664,438
1935–36 ..	12,440,869	9,778,457	6,526,726	3,733,049	1,990,976	1,470,956	35,941,033
1936–37 ..	13,244,496	10,322,172	6,541,411	3,941,812	2,117,621	1,573,353	37,740,865
Total Revenue for Year—	£	£	£	£	£	£	£
1934–35 ..	552,489	403,206	346,821	152,233	94,328	42,535	1,591,612
1935–36 ..	599,000	432,635	365,237	165,208	102,328	49,351	1,713,759
1936–37 ..	644,434	470,541	368,171	178,043	113,219	61,185	1,835,593
Average Revenue per Call—	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
1934–35 ..	11.88	10.76	13.60	10.97	12.73	7.77	11.69
1935–36 ..	11.65	10.62	13.43	10.62	12.33	8.06	11.44
1936–37 ..	11.68	10.93	13.51	10.84	12.83	9.33	11.67

The number of trunk line calls during 1936–37 increased by nearly two millions, or by 5.01 per cent. compared with the figures for the previous year, while the average revenue per call increased by 0.23d.

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

§ 6. Radio Telegraphy and Telephony.

1. **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.

2. **Wireless Licences.**—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 1935 require that all ships registered in Australia and engaged in interstate traffic shall have an efficient radio telegraph installation, which in the case of cargo vessels of less than 750 tons gross register shall include apparatus for automatically transmitting prescribed signals of distress, these vessels not being required to carry fully qualified operators ; similar legislation, designed to ensure the safety of life at sea, has also been introduced by the Governments of New South Wales, Victoria and Queensland) ; (*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 on motor cars, etc. ; (*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 year 1936–37 :—

WIRELESS LICENCES, 1936-37.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Total Aust.	Papua and New Guinea	Grand Total.
Coast	2	1	6	1	5	3	1	..	19	9	28
Ship	92	89	15	10	4	1	1	..	212	..	212
Aircraft	5	9	5	1	2	..	1	..	23	..	23
Land (*b*)	8	3	32	13	45	7	29	..	137	26	163
Broadcasting (*a*) ..	25	18	16	6	7	6	..	1	79	1	80
Broadcast Listeners'	356,859	288,717	101,324	98,917	61,151	29,780	116	1,433	938,297	34	938,331
Experimental ..	676	481	227	176	114	50	..	8	1,732	5	1,737
Portable	13	6	6	3	2	1	7	..	38	14	52
Special	34	25	10	..	3	..	..	..	72	..	72
Total Licences Issued	357,714	289,349	101,641	99,127	61,333	29,848	155	1,442	940,609	80	940,698

(*a*) There were also twenty-one stations operated by the National Broadcasting Service, including a short-wave station (V.L.R, Lyndhurst, Victoria). (*b*) In addition to the licensed stations there were two operated by the Postmaster-General's Department, viz., Wave Hill (N.T.) and Camooweal (Q.), and five low powered stations established by the Government of the Territory of New Guinea.

Similar particulars to the above in relation to the year 1937–38 will be found in the Appendix to this volume.

3. **Broadcasting.**—(i) *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 fee for a broadcast listener's licence is 21s. per annum for a receiver situated approximately within 250 miles from a station of the National Service, and 15s. per annum in the territory beyond. Licences are issued free to blind persons. The Commission receives 12s. from each fee, the Department retaining the balance.

The National Broadcasting System of the Commonwealth at present comprises 23 transmitting stations, as follows:—*2FC* Sydney, *2BL* Sydney, *2NC* Newcastle, *2CO* Corowa, *2NR* Lawrence, *2CR* Cumnock, *3LO* Melbourne, *3AR* Melbourne, *3GI* Sale, *3WV* Dooen, *4QG* Brisbane, *4QR* Brisbane, *4RK* Rockhampton, *4QN* Townsville, *5CL* Adelaide, *5AN* Adelaide, *5CK* Crystal Brook, *6WF* Perth, *6WA* Minding, *6GF* Kalgoorlie, *7ZL* Hobart, *7NT* Kelso, and Short Wave Station *VLR* Lyndhurst. Contracts are current for the supply of two further stations for installation in Perth and Hobart respectively to permit the production of alternative programmes in those cities, and stations are also being erected at Canberra, A.C.T., and at Dalby, Qld. With the exception of *VLR*, all transmitters operate within the frequency band of 550 k.c. to 1,500 k.c.

Country regional stations normally radiate programmes from the central studio of the nearest capital city. To permit of this each such station is joined to its respective studio by a high quality programme transmission circuit, the total length of such circuits in use in the Commonwealth being 3,158 miles. A Commonwealth-wide system of network broadcasting is being more and more utilized, the total length of interstate lines in use permanently for this purpose for the National Broadcasting Service alone being 3,912 miles. As occasion demands, wide-band telephone circuits to the extent of several thousands of miles are employed to supplement this interstate network. Programme carrier channels having a 7,500 cycle band width and operating on the lower side band of a 42.5 k.c. carrier are extensively employed.

Short-wave programmes radiated by overseas stations, particularly from the Empire stations at Daventry, are received regularly at the departmental high frequency receiving station at Mont Park, and are re-radiated over the national network when the subject matter is of sufficiently wide local interest.

(ii) *Commercial Broadcasting 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, although they may be renewed annually at the discretion of the Postmaster-General. 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 April, 1938, was 93, and there are several stations in prospect.

(iii) *Radio Inductive Interference.* The Postmaster-General's Department takes active measures to suppress, so far as possible, interference with broadcast reception resulting from the radiations of energy from electric machinery and appliances. During the year, the Department received 8,082 complaints of interfering noises, which, in all but a few instances, were satisfactorily disposed of.

(iv) *Prosecutions Under the Wireless Telegraphy Act.* During the year 3,429 persons were convicted for using unlicensed broadcasting receiving equipment, the total fines amounted to £5,780.

(v) *World Licence Distribution.* The following table shows the number of listeners' licences and the ratio of licences to population in the leading " radio " countries. These particulars, compiled from figures supplied by L'Union Internationale de Radiodiffusion, have been obtained from the Annual Report of the Australian Broadcasting Commission.

WORLD LICENCE DISTRIBUTION, 31st DECEMBER, 1936.

Country.	Listeners' Licences.	
	Total.	Per 100 of Population.
United States of America	24,269,000 (*a*)	18.90
Denmark	652,255	17.60
Great Britain	7,914,506	17.13
Sweden	944,487	15.11
New Zealand	231,364	14.60
Australia	887,015	13.09
Canada	1,380,500 (*b*)	12.29
Germany	8,167,957	12.22
Netherlands	989,115	11.84
Switzerland	464,332	11.42
Belgium	890,323	10.73
South Africa	160,000	9.25
Austria	593,815	8.81
Norway	240,251	8.29
Argentine Republic	950,000 (*a*)	7.79
France	3,218,541	7.68
Czechoslovakia	928,112	6.30
Latvia	96,331	4.90
Finland	177,376	4.73
Hungary	365,354	4.06
Estonia	37,800	3.35
Ireland (Eire)	98,949	3.34
Japan	2,870,986 (*a*)	2.93
Soviet Union	3,760,400	2.21
Poland	677,404	2.02
Palestine	20,388	1.57
Mexico	250,000	1.49 (*c*)
Italy	625,350	1.44

(*a*) Listeners are not licensed and the totals shown are estimates only of the number of receiving sets in operation. (*b*) At 31st March, 1937. (*c*) Exclusive of native population.

Australia ranks sixth amongst countries of the world in relation to licences per 100 of population.

4. **Oversea Communication by Wireless.**—(i) *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 par. (iv) (*a*) following.

(ii) *Overseas Wireless Telephone Service.* The volume of business transacted over the radio telephone services terminating in Australia continues to grow at a satisfactory rate and the number of calls connected between the opening of the first of these services on the 30th April, 1930, and the 30th April, 1938, was 17,664. Of this total 10,060 calls originated in Australia.

Thirteen thousand and thirty-one calls were completed over the Anglo-Australian service, 4,407 on the Australia-New Zealand channel, 38 between Australia and Java, 94 between Australia and Rabaul, and 94 between Australia and the liners "Awatea" and "Empress of Britain", while those vessels were at sea. The radio telephone service between Australia and Rabaul was opened on the 18th October, 1937, whilst service to the liner "Empress of Britain" was maintained only during her presence in Australian waters from the 28th March, 1938, to the 27th April, 1938.

The Australian telephone subscriber now has access to 34,500,000 telephones, or approximately 93 per cent. of the world's total. Telephone communication is now practicable between the Commonwealth and 52 other countries, as well as two Atlantic liners and the M.V. "Awatea" which trades between Australia and New Zealand.

(iii) *Wireless Communication in the Pacific.* New Zealand, the territories of New Guinea and Papua and the various small islands in the Pacific Ocean are served by a comprehensive system of wireless communication. In New Guinea and Papua, nine wireless telegraphy stations are established under an agreement between the Commonwealth and Amalgamated Wireless (Australasia) Ltd. for communication with ships at sea, and for inter-communication. Three of these stations Rabaul (New Guinea) and Port Moresby and Samarai (Papua) also have direct communication with the mainland of Australia. In addition, there are in New Guinea several low powered transmitters established by the New Guinea Administration for interior communication, while in both Papua and New Guinea several small stations are operated by gold exploration parties, missionary societies and others.

Direct communication by wireless telegraphy exists between Sydney and Suva (Fiji) and Noumea (New Caledonia), while Wellington (New Zealand) is linked with Sydney by wireless telephone. Other wireless telegraph stations in the pacific include Auckland, Awarua and Chatham Islands (New Zealand), Port Vila (New Hebrides), Apia (Samoa), Tulagi and Vanikoro (Solomon Islands), Nauru (Marshall Islands), Ocean Island (Gilbert and Ellice Group), Truk and Yappu (Caroline Islands), and Guam (Marian Islands).

(iv) *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, 1937 :—

RADIO TRAFFIC.—INTERNATIONAL, YEAR ENDED 30th JUNE, 1937.

Class of Traffic.	Number of Words Transmitted to—			Number of Words Received from—		
	United Kingdom.	Other Places.	Total.	United Kingdom.	Other Places.	Total.
Ordinary (*a*) ..	1,712,635	739,006	2,451,641	1,404,508	290,346	1,694,854
Deferred (Ordinary) ..	1,166,114	517,582	1,683,696	1,179,299	163,320	1,342,619
Government (*a*) ..	111,155	24,376	135,531	114,718	3,518	118,236
Press (including deferred press) ..	279,959	25,872	305,831	1,896,087	96,932	1,993,019
Daily letter and greeting telegrams	1,872,383	881,888	2,754,271	1,367,186	347,768	1,714,954
Total ..	5,142,246	2,188,724	7,330,970	5,961,798	901,884	6,863,682

(*a*) Includes Code telegrams.

(b) *Coast Stations.* Particulars of the traffic handled by the several coast stations during the year 1936-37 are as follows :—

RADIO TRAFFIC.—COAST STATIONS, 1936-37.

State or Territory.	Particulars.				
	Total Paying Words.	Messages.			
		Paying.	Service.	Weather.	Total.
	No.	No.	No.	No.	No.
New South Wales ..	1,780,447	96,165	7,944	6,808	110,917
Victoria	91,361	10,028	64	1,494	11,586
Queensland	219,085	19,081	436	4,269	23,786
South Australia	68,493	6,329	685	780	7,794
Western Australia ..	147,564	10,941	1,453	3,942	16,336
Tasmania	84,100	5,278	704	2,903	8,885
Northern Territory ..	112,593	3,327	828	3,300	7,455
Australia	2,503,643	151,149	12,114	23,496	186,759
Papua	601,362	27,895	830	1,020	29,745
Grand Total ..	3,105,005	179,044	12,944	24,516	216,504

(c) *Island Stations.* Particulars of the island radio traffic dealt with during the year 1936-37 are given in the following table :—

RADIO TRAFFIC.—ISLAND STATIONS, 1936-1937.

Particulars.	To Australia.	From Australia.	Inter-Island.	Ship.	Total.
	No.	No.	No.	No.	No.
Messages	29,423	23,325	21,513	2,750	77,011
Words	543,707	377,903	302,482	33,448	1,257,540

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

During the year ended 30th April, 1938, 512 Operator's Certificates of Proficiency were awarded.

The number of each class were :—Commercial—First Class, 41 ; Second Class, 54 ; Third Class, 113 ; Aircraft—First Class, Nil ; Second Class, 2 ; Third Class, 13 ; Broadcast Station, 62 ; and Amateur, 227.