CHAPTER VII.

TRANSPORT AND COMMUNICATION.

A. SHIPPING.

§ 1. System of Record.

NOTE.—Owing to the general disorganization of shipping in consequence of the war, the figures relating to the war period given in the following tables are of little comparative significance.

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

On arrival of every vessel at a port in Australia, whether from an oversea country or from another port in Australia, the master is required to deliver to the Customs officer a form giving all particulars necessary for statistical purposes in regard to the ship, passengers, and cargo. Similarly, on departure from a port, a form containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Australian waters, are at the end of each month forwarded by the Customs officer at each port to the Commonwealth Bureau of Census and Statistics, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were very unsatisfactory, and it is believed that the method referred to above gives decidedly better results.

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

In all instances the tonnage quoted is net tonnage.

§ 2. Oversea Shipping.

1. **Total Movement.**—In previous issues of the Year Book particulars were given of the number and tonnage of vessels entered and cleared each year since 1822. In this and future issues particulars for the last five years only will be shown as in the following table, which gives the number and tonnage of steam and sailing vessels entering Australian ports from oversea during the years 1917–18 to 1921–22 :—

TOTAL OVERSEA SHIPPING, ENTERED.—AUSTRALIA, 1917-18 TO 1921-22.

Year.	Steam.		Sailing.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
1917–18	790	2,126,994	289	329,763	1,079	2,456,757
1918–19	1,053	2,907,572	297	331,488	1,350	3,239,060
1919–20	1,265	3,842,735	211	198,809	1,476	4,041,544
1920–21	1,526	4,422,880	304	336,036	1,830	4,758,916
1921–22	1,429	4,466,655	138	93,726	1,567	4,560,381

2. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, both absolutely and in respect of tonnage per head of population.

OVERSEA SHIPPING.—VARIOUS COUNTRIES.

Country.	Calendar Year.	Tonnage Entered and Cleared.	
		Total. .000 omitted.	Per Inhabitant.
Australia	1922(*a*)	9,081	1.64
Belgium	1922	34,428(*b*)	4.60
Brazil	1922	44,904	1.47
Canada	1921	24,917	2.84
France	1922	62,208(*b*)	1.59
Germany	1922	44,820	0.75
Great Britain	1922	103,008(*b*)	2.18
India	1922	14,110(*b*)	0.04
Japan	1921	55,872	0.73
Netherlands	1922	26,424(*b*)	3.79
New Zealand	1921	3,885	2.95
Norway	1922	7,464(*b*)	2.82
Spain	1921	36,012	1.69
Sweden	1922	21,324	3.58
Union of South Africa	1922	8,904	1.29
United States	1922	130,032(*c*)	1.23

(*a*) To 30th June. (*b*) With cargoes only. (*c*) Exclusive of vessels trading on lakes and rivers between Canada and the United States.

3. **Shipping Communication with various Countries.**—In previous issues of the Year Book, tables were published showing the number and tonnage of ships recorded as arriving from and departing to particular countries. At the same time it was shown that such records were of no significance, for the reason that the tonnage of a vessel can be recorded against one country only, notwithstanding that the same vessel may carry cargo or passengers to or from Australia for several countries on the same voyage. For instance a mail steamer on a voyage from Europe to Australia, through the Suez Canal, may call at Antwerp, Bremerhaven, London, Marseilles, Genoa, Port Said, Aden and Colombo, yet can be credited only to one of these ports, to the exclusion of all the other ports 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. Perhaps a more striking example of the ineffectiveness of the records referred to is afforded by the recorded statistics of the shipping between South Africa and Australia. The advertised sailings from Australia to the United Kingdom via South African ports for the month of October, 1921, represented a net tonnage of 40,145, yet the statistical records showed none of this tonnage as to South Africa, but all was shown as to the United Kingdom. In view of this defect, it has been decided to discontinue the publication of the figures purporting to show the shipping communication with particular countries, and to restrict the statistics relating to the direction of the shipping to and from Australia to the following tables in which countries situated on the main trade routes are grouped together.

4. **General Direction of Shipping.**—A grouping of countries into larger geographical divisions, as in the following tables, shows more readily the general direction of Australian shipping, and, to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes. The figures relating to Africa, however, are still subject to the limitations referred to in the previous sub-section.

OVERSEA SHIPPING, AUSTRALIA.—DIRECTION, 1917-18 TO 1921-22.

Countries.	Cargo and Ballast.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
TONNAGE ENTERED.						
United Kingdom and European Countries	Cargo	404,661	607,680	982,237	1,102,994	1,333,469
	Ballast	166,693	348,719	477,183	269,351	204,680
New Zealand	Cargo	395,271	393,927	411,819	518,789	421,365
	Ballast	76,248	98,691	173,601	350,370	213,347
Asiatic Countries and Islands in the Pacific	Cargo	641,471	619,174	682,592	837,195	686,886
	Ballast	62,419	296,264	538,630	631,004	794,175
Africa	Cargo	80,574	107,607	50,982	21,298	36,170
	Ballast	87,236	254,878	254,527	236,320	215,841
North and Central America	Cargo	440,889	490,592	454,830	747,599	629,688
	Ballast	..	14,895	3,642	8,747	15,940
South America	Cargo	5,703	1,179	11,501	8,236	1,179
	Ballast	43,708	5,454	..	27,013	7,641
Unspecified(a)	Cargo	32,206	..	..	..	..
	Ballast	19,678	..	..	..	..
	Cargo	2,000,775	2,220,159	2,593,961	3,236,111	3,108,757
	Ballast	455,082	1,018,901	1,447,583	1,522,805	1,451,624
Total	..	2,456,757	3,239,060	4,041,544	4,758,916	4,560,381
TONNAGE CLEARED.						
United Kingdom and European Countries	Cargo	322,268	1,122,890	1,925,711	1,864,330	1,819,444
	Ballast	7,904	33,446	12,547	15,421	13,951
New Zealand	Cargo	427,607	373,058	596,367	789,094	542,865
	Ballast	10,776	25,230	23,157	24,254	43,140
Asiatic Countries and Islands in the Pacific	Cargo	606,409	672,306	844,879	1,123,141	1,116,430
	Ballast	34,878	43,618	30,129	52,374	27,644
Africa	Cargo	198,806	387,550	320,721	387,649	581,359
	Ballast	4,463	7,270	4,789	7,506	..
North and Central America	Cargo	332,000	235,228	224,358	294,145	345,817
	Ballast	2,976	5,791	17,068	22,673	3,488
South America	Cargo	38,216	33,709	45,237	162,974	26,759
	Ballast	..	1,330	..	541	..
Unspecified(a)	Cargo	562,150	..	..	..	..
	Ballast	26,540	..	..	..	..
	Cargo	2,487,456	2,824,741	3,957,273	4,621,333	4,432,674
	Ballast	87,537	116,685	87,690	122,769	88,223
Total	..	2,574,993	2,941,426	4,044,963	4,744,102	4,520,897

(a) For military purposes, information regarding these vessels was suppressed.

5. **Nationality of Oversea Shipping.**—(i) *General.* The greater part of the shipping visiting Australia is of British nationality, though the proportion of British tonnage in 1920–21 was very much lower than in the immediately preceding years. This was largely due to the wages troubles in the coal-mining industry in the United Kingdom. The exports of coal from Australia were, in consequence, largely increased, and the unusual practice of shipping coal from Australia to European countries was adopted, and the demand for Australian coal was the principal cause of the increased tonnage of foreign ships which were sent to carry the coal to their home countries. Japanese tonnage was active in the carriage of coal—particularly to the Netherlands Indies—and also in the transport of wool and wheat. In 1921–22 approximately 80 per cent. of the shipping entering Australian ports was British as compared with 70 per cent. in 1920–21.

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, 1917-18 TO 1921-22.

Nationality.	Tonnage.				
	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
BRITISH—					
Australian	463,552	448,610	395,865	551,100	589,175
United Kingdom ..	1,211,616	1,969,441	2,553,850	2,541,310	2,802,487
Canadian	..	..	..	38,569	88,526
New Zealand	110,833	129,463	147,585	149,650	103,471
Other British	43,371	18,639	46,375	35,623	54,464
Cargo.. ..	1,506,565	1,679,659	2,096,754	2,529,089	2,568,236
Ballast ..	322,807	886,494	1,046,921	787,163	1,069,887
Total British ..	1,829,372	2,566,153	3,143,675	3,316,252	3,638,123
Per cent. on total ..	74.46	79.23	77.78	69.69	79.78
FOREIGN—					
Danish	20,068	8,394	9,716	24,542	28,416
Dutch	78,361	69,280	70,966	133,613	134,662
French	150,788	74,585	181,899	107,990	69,033
Italian	8,588	15,229	63,733	128,466	105,159
Japanese	126,747	164,724	307,896	505,989	218,564
Norwegian	55,246	93,890	39,760	132,647	123,218
Russian	7,179	21,916	..	..	..
Swedish	20,618	33,086	20,741	85,405	65,971
United States	154,559	174,999	192,805	273,989	139,686
Other Foreign	5,231	16,804	10,353	50,023	37,549
Cargo.. ..	494,210	540,500	497,207	707,022	540,521
Ballast ..	133,175	132,407	400,662	735,642	381,737
Total Foreign ..	627,385	672,907	897,869	1,442,664	922,258
Per cent. on total ..	25.54	20.77	22.22	30.31	20.22
Cargo.. ..	2,000,775	2,220,159	2,593,961	3,236,111	3,108,757
Per cent. on total	81.44	68.54	64.18	68.00	68.17
Ballast ..	455,982	1,018,901	1,447,583	1,522,805	1,451,624
Per cent. on total	18.56	31.46	35.82	32.00	31.83
Grand Total ..	2,456,757	3,239,060	4,041,544	4,758,916	4,560,381

The Australian tonnage which entered Australia from overseas during the year 1921–22 represented 12.92 per cent. of the total tonnage entered. This figure was slightly in excess of the average for the quinquennium, which was 12.85 per cent.

(ii) *Proportion of British and Foreign with Cargo.* The relative proportions of British and foreign tonnage which entered Australia with cargo during the last five years is given below. These figures may be considered to indicate more closely the proportion of the actual carrying trade done than does the total tonnage. The proportion of foreign tonnage declined materially in the earlier years of the war owing to the complete withdrawal of ships under the German and Austrian flags and to the greatly reduced tonnage of French and Norwegian ships, which were precluded from following their usual employment.

OVERSEA SHIPPING, AUSTRALIA.—PERCENTAGE BRITISH AND FOREIGN ENTERED WITH CARGO, 1917-18 TO 1921-22.

Nationality.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
British	75.30	75.65	80.83	78.15	82.61
Foreign	24.70	24.35	19.17	21.85	17.39
Total	100.00	100.00	100.00	100.00	100.00

During the period under review the average annual tonnage of foreign vessels entering with cargo was 21.12 per cent.

(iii) *Principal Foreign Countries Engaged.* The following table shows the direction of the activities of the principal foreign countries engaged in the oversea carrying trade of Australia :—

OVERSEA SHIPPING, AUSTRALIA.—FOREIGN TONNAGE, 1921-22.

Countries.	Nationality.							
	Japanese.		French.		United States.		Dutch.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
EUROPEAN COUNTRIES—								
United Kingdom ..	..	4,260	4,539	7,957	..	3,552	..	2,209
France	..	..	18,540	13,612	..	..	..	..
Other European Countries	..	..	4,410	4,539	..	..	42,273	64,191
NEW ZEALAND	..	..	..	..	2,351	7,184	..	..
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—								
Dutch East Indies ..	18,401	22,864	4,414	4,420	..	3,066	66,478	15,089
Japan	159,527	163,841	..	..	..	..	..	..
New Caledonia ..	..	..	29,185	28,362	..	..	..	..
Other Pacific Islands ..	..	..	5,400	7,200	2,996	5,202	229	23
Straits Settlements ..	7,975	7,282	2,545	..	..	..	23,428	33,343
Other Asiatic Countries	16,339	9,537	..	2,545	2,701	6,849	2,254	..
AFRICAN COUNTRIES ..	1,790	10,626	..	..	2,565	7,099	..	14,102
NORTH AMERICAN COUNTRIES—								
United States ..	11,165	..	..	..	129,073	117,654	..	..
Canada	3,367	..	..	..	..	..	..	..
SOUTH AMERICAN COUNTRIES—								
Peru	..	..	..	..	..	5,115	..	..
With Cargo ..	99,760	218,410	52,765	68,635	130,170	150.507	80,395	126,621
In Ballast ..	118,804	..	16,268	..	9,516	5,214	54,267	2,336
Total	218,564	218,410	69,033	68,635	139,686	155,721	134,662	128,957

Most of the foreign tonnage entered is employed between its home ports or the colonies of its own country and Australia, *e.g.*, French shipping is engaged chiefly between Australia, France and New Caledonia, while Dutch ships are employed almost entirely between Australia and the Netherlands or the Netherlands East Indies. Norwegian shipping is always an exception to this rule. The greater portion of Norwegian tonnage engaged in trade with Australia is composed of vessels operating under charters. Of the 123,218 tons of Norwegian shipping which entered Australia during 1921–22, 63,647 tons (51.65 per cent.) were in ballast.

The greater portion of Japanese tonnage entering during the year was in ballast. These vessels lifted cargoes consisting chiefly of coal, wool, and wheat.

(iv) *Nationality of Steam and Sailing Tonnage.* A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality which entered Australia during the years 1917–18 to 1921–22.

OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF STEAM AND SAILING VESSELS ENTERED, 1917-18 TO 1921-22.

Description and Nationality of Vessels.	1917–18.		1918–19.		1919–20.		1920–21.		1921–22.	
	Tonnage.	Percentage.	Tonnage.	Percentage.	Tonnage.	Percentage.	Tonnage.	Percentage.	Tonnage.	Percentage.
Steam—										
British ..	1,739,936	82	2,487,868	86	3,102,345	81	3,232,463	73	3,597,388	81
Foreign ..	387,058	18	419,704	14	740,390	19	1,190,417	27	869,267	19
Total Steam	2,126,994	100 (87)	2,907,572	100 (90)	3,842,735	100 (95)	4,422,880	100 (93)	4,466,655	100 (98)
Sailing—										
British ..	89,436	27	78,285	24	41,330	21	83,789	25	40,735	43
Foreign ..	240,327	73	253,203	76	157,479	79	252,247	75	52,991	57
Total Sailing	329,763	100 (13)	331,488	100 (10)	198,809	100 (5)	336,036	100 (7)	93.726	100 (2)
Steam and Sailing—										
British ..	1,829,372	74	2,566,153	79	3,143,675	78	3,316,252	70	3,638,123	80
Foreign ..	627,385	26	672,907	21	897,869	22	1,442,664	30	922,258	20
Total ..	2,456,757	100	3,239,060	100	4,041,544	100	4,758,916	100	4,560,381	100

6. **Tonnage in Ballast.**—(i) *Total and Percentage by Nationality.* The following table shows the tonnage according to nationality of oversea vessels which entered and cleared Australia in ballast during the years 1917–18 to 1921–22 :—

OVERSEA SHIPPING, AUSTRALIA.—TONNAGE IN BALLAST, 1917-18 TO 1921-22.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	TOTAL TONNAGE.					
1917–18 ..	322,807	133,175	455,982	68,021	19,516	87,537
1918–19 ..	886,494	132,407	1,018,901	93,671	23,014	116,685
1919–20 ..	1,046,921	400,662	1,447,583	60,021	27,669	87,690
1920–21 ..	787,163	735,642	1,522,805	75,356	47,413	122,769
1921–22 ..	1,069,887	381,737	1,451,624	79,377	8,846	88,223
	PERCENTAGE.					
1917–18 ..	17.65	21.23	18.56	3.49	3.11	3.40
1918–19 ..	34.55	19.68	31.46	4.05	3.65	3.97
1919–20 ..	33.30	44.62	35.82	1.90	3.12	2.17
1920–21 ..	23.74	50.99	32.00	2.27	3.32	2.59
1921–22 ..	29.41	41.39	31.83	2.22	0.93	1.95

(ii) *Tonnage entered in Ballast—States.* The tonnage which entered each State in ballast during 1921–22 was as follows:—

OVERSEA TONNAGE IN BALLAST ENTERING STATES, 1921-22.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Tonnage ..	585,248	164,854	46,877	172,725	476,742	5,155	23	1,451,624
Percentage on total ..	40.32	11.36	3.23	11.90	32.84	0.35	..	100.00

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

§ 3. Shipping of Ports.

1. **Tonnage Entered.**—Appended is an abstract of the total shipping tonnage—oversea, interstate, and coastwise—which entered the more important ports of Australia during the year 1921–22, together with similar information in regard to some of the ports of New Zealand for the year 1921 and of Great Britain for the year 1920:—

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

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney	7,541,361	London	16,519,347
Melbourne	5,608,013	Liverpool (inc. Birkenhead)	12,778,674
Newcastle	4,567,632	Cardiff	9,631,849
Adelaide(*a*)	3,040,229	Tyne Ports	8,391,340
Fremantle	2,528,464	Southampton	4,895,070
Brisbane	2,215,273	Hull	3,553,588
Townsville	943,665	Newport	3,132,050
Albany	710,487	Plymouth	2,975,130
Mackay	549,628	Bristol	2,728,453
Hobart	542,746	Middlesbrough	2,430,769
Rockhampton	479,614	Manchester (inc. Runcorn)	2,280,579
Pirie	474,411	Swansea	2,218,281
Cairns	433,340	Sunderland	1,891,498
Bunbury	425,568	Dartmouth	1,553,350
Bowen	392,862	Cowes	1,304,428
Burnie	382,275	Blyth	1,253,001
Geelong	379,422	Port Talbot	1,109,881
Launceston	318,823	Falmouth	818,718
Devonport	316,342	SCOTLAND—	
Thursday Island ..	276,099	Glasgow	4,533,191
Wallaroo	222,595	Leith	1,186,209
NEW ZEALAND—		IRELAND—	
Wellington	2,697,751	Belfast	3,026,518
Auckland	1,771,496	Dublin	2,728,031
Lyttleton	1,516,021	Cork (inc. Queenstown) ..	1,305,349
Dunedin	629,119		

(*a*) Exclusive of coastal shipping, particulars of which are not available.

§ 4. Vessels Built and Registered.

1. **Vessels Built.**—The following tables show the number and tonnage of vessels built in Australia during each of the calendar years 1918 to 1922, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, does not, however, make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers are the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

VESSELS BUILT IN AUSTRALIA, 1918 TO 1922.

NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Total.
	Wood.	Iron.	Steel.	Composite.	Total.			
1918	2	..	..	..	2	4	..	6
1919	2	..	3	..	5	4	8	17
1920	6	..	8	1	15	4	9	28
1921	2	..	5	..	7	5	3	15
1922	4	..	4	..	8	5	4	17

TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1918 ..	378	201	456	357	..	..	..	..	834	558
1919 ..	10,829	6,626	64	55	1,010	864	..	..	11,903	7,545
1920 ..	30,851	17,834	65	57	540	407	..	..	31,456	18,298
1921 ..	14,129	8,044	50	42	27	23	..	..	14,206	8,109
1922 ..	5,887	3,171	169	127	262	209	..	..	6,318	3,507

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, 1922 :—

VESSELS ON THE STATE REGISTERS, 31st DECEMBER, 1922.

State.	Steam.				Sailing.				Barges, Hulks, Dredges, etc., not Self-propelled.		Total.	
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.					
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.
New South Wales ..	48	1,396	561	143,672	116	1,877	248	16,048	45	9,915	1,018	172,908
Victoria	23	2,815	160	139,198	31	1,215	68	4,670	68	27,386	350	175,284
Queensland ..	21	3,352	65	24,898	26	306	118	2,060	30	4,109	260	34,725
South Australia ..	13	608	87	43,843	24	1,126	60	2,251	50	8,510	234	56,338
Western Australia	10	191	31	18,133	12	205	331	4,921	26	8,339	410	31,789
Tasmania ..	6	478	57	14,332	51	1,292	71	3,001	2	563	187	19,666
Northern Territory	..	..	..	..	1	17	27	328	..	..	28	345
Total ..	121	8,840	961	384,076	261	6,038	923	33,279	221	58,822	2,487	491,055

§ 5. Interstate Shipping.

1. System of Record.—*Interstate Shipping* comprises two elements, viz. :—(*a*) Vessels engaged solely in interstate trade; and (*b*) Vessels trading between Australia and oversea countries and in the course of their voyage proceeding from one State to another. (It should be mentioned that these vessels, except under special circumstances, do not now engage in interstate carrying.)

No complexity enters into the record of those in category (*a*), but with regard to the method of recording the movements of the overseas vessels (*b*) some explanation is necessary. Each State desires that its shipping statistics (which are prepared in the Commonwealth Bureau of Census and Statistics) shall show in full its shipping communication with oversea countries, but at the same time it is necessary to avoid any duplication in the statistics for Australia as a whole. In order to meet these dual requirements, a vessel arriving in any State from an overseas country—say United Kingdom—*via* another State, is recorded in the second State as from United Kingdom, *via States*, thus distinguishing the movement from a *direct* oversea entry. Continuing the voyage, the vessel is in the third State again recorded for the statistics of the State concerned as from United Kingdom *via* other States. As, however, this inward voyage will terminate at an Australian port it follows that the *clearance* from the second State to the third 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 OVERSEA 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 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. (*c*) From the example given in the table it may be noticed that for every entry "*Oversea via States*" there is a corresponding clearance "Interstate," so that according to the purpose for which the figures are required, the movements of "oversea ships *via* States" can be added to the recorded interstate shipping, and thus furnish figures showing the total interstate *movement* of shipping, or a similar deduction may be made from the recorded interstate shipping to give the total movement of shipping engaged solely in interstate trade.

2. **Vessels and Tonnage Entered.**—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 1917–18 to 1921–22. The shipping on the Murray River, between the States of New South Wales, Victoria, and South Australia is not included.

INTERSTATE SHIPPING.—NUMBER AND TONNAGE OF VESSELS ENTERED, 1917–18 TO 1921–22.

State.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
			NUMBER.		
New South Wales ..	1,469	1,461	1,226	1,650	1,748
Victoria	1,335	1,239	1,269	1,614	1,797
Queensland	524	529	406	469	459
South Australia	429	445	456	603	724
Western Australia ..	144	309	367	431	484
Tasmania	761	727	787	987	1,072
Northern Territory ..	29	28	21	18	19
Total	4,691	4,738	4,532	5,772	6,303
			TONNAGE.		
New South Wales ..	2,502,174	2,291,462	2,451,644	3,297,358	3,614,744
Victoria	1,665,921	1,393,549	2,017,798	2,434,778	3,091,313
Queensland	768,769	700,617	635,809	770,233	857,715
South Australia	796,627	707,248	1,215,970	1,554,649	1,949,071
Western Australia ..	475,840	944,088	1,364,866	1,600,142	1,817,361
Tasmania	432,208	442,457	441,660	592,852	937,296
Northern Territory ..	61,464	53,607	34,251	36,269	52,814
Total	6,703,003	6,533,028	8,161,998	10,286,281	12,320,314

3. **Oversea Vessels Moving Interstate.**—From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1921–22, 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 overseas 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, 1921-22.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ..	484	2,036,462	479	1,911,288	963	3,947,750
Victoria	431	1,777,215	441	1,724,531	872	3,501,746
Queensland	144	787,672	184	926,447	328	1,714,119
South Australia ..	231	991,799	241	1,005,194	472	1,996,993
Western Australia ..	5	17,650	15	53,832	20	71,482
Tasmania	27	113,227	46	234,023	73	347,250
Northern Territory ..	..	..	..	..	..	..
Total	1,322	5,724,025	1,406	5,855,315	2,728	11,579,340

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

4. **Vessels engaged Solely in Interstate Trade.**—Reverting to the explanation given in the first paragraph it may be assumed that vessels *entered* in the several States as from "Oversea countries *via* other States" have really been *cleared* from other States as "Interstate," and further, that the vessels *cleared* to "Oversea countries *via* other States" have likewise been *entered* as "Interstate". If, on this assumption, all such vessels are excluded, the remainder will represent vessels engaged in the interstate trade only. Applying this suggestion, and so eliminating all interstate movements of oversea vessels, the number and tonnage movement of vessels engaged solely in the interstate trade for Australia as a whole during the years 1917–18 to 1921–22 were as follows :—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1917-18 TO 1921-22.

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1917–18	4,171	4,856,751	4,152	4,765,957
1918–19	4,093	4,357,115	4,074	4,377,666
1919–20	3,482	3,939,055	3,510	3,986,345
1920–21	4,539	5,406,967	4,566	5,433,856
1921–22	4,897	6,464,999	4,885	6,335,396

5. **Total Interstate Movement of Shipping.**—(i) *Australia.* The appended table shows the total inward interstate movement of shipping for each of the years 1917–18 to 1921–22 :—

TOTAL INWARD INTERSTATE MOVEMENT OF SHIPPING, 1917-18 TO 1921-22.

Vessels.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate	4,202,179	5,219,515	8,741,260	10,001,668	11,579,340
Vessels solely interstate ..	4,856,751	4,357,115	3,939,055	5,406,967	6,464,999
Total	9,058,930	9,576,630	12,680,315	15,408,635	18,044,339

(ii) *States.* The following table shows the number and tonnage of vessels which entered and cleared each State during 1921–22, including the coastal movements of oversea vessels :—

INTERSTATE SHIPPING OF EACH STATE, 1921-22.

State.	Entered.		Cleared.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	2,232	5,651,206	2,185	5,390,160
Victoria	2,228	4,868,528	2,323	5,169,720
Queensland	603	1,645,387	630	1,712,992
South Australia	955	2,940,870	992	3,122,964
Western Australia	489	1,835,011	384	1,467,564
Tasmania	1,099	1,050,523	1,083	1,005,854
Northern Territory	19	52,814	16	45,482
Total Australia	7,625	18,044,339	7,613	17,914,736

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 1918 to 1922 :—

AUSTRALIAN INTERSTATE AND COASTAL STEAMSHIP SERVICES, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Number of companies making returns	23	23	23	(a)39	32
Number of steamships	142	143	154	183	195
Tonnage — Gross	208,700	250,610	280,609	317,019	357,652
Tonnage — Net	126,444	143,143	159,293	179,393	204,219
Horse-power (Nominal)	25,073	27,841	29,557	32,801	34,886
Number of passengers for which licensed — 1st class	4,674	5,229	5,250	4,226	4,647
Number of passengers for which licensed — 2nd class and steerage	4,325	5,524	5,632	4,642	5,016
Complement of Crew — Masters and officers	480	493	537	571	667
Complement of Crew — Engineers	378	409	464	551	607
Complement of Crew — Crew	3,365	3,671	4,502	4,613	5,175

(a) In this year a number of small organizations were included for the first time.

§ 6. Tonnage of Cargo.

The following table shows the aggregate tonnage of oversea cargo discharged and shipped in Australian ports, and, also, the tonnage of interstate cargo shipped in all ports for the years 1917–18 to 1921–22 :—

AUSTRALIAN SHIPPING—CARGO MOVEMENT, 1917-18 TO 1921-22.

Year.	Oversea Cargo.		Interstate Cargo.
	Discharged.	Shipped.	Shipped.
	Tons.	Tons.	Tons.
1917–18	2,012,387	2,613,561	4,833,428
1918–19	2,312,288	3,813,651	4,495,258
1919–20	2,238,298	4,984,946	4,415,909
1920–21	3,201,215	5,925,133	4,993,678
1921–22	2,419,977	5,816,174	5,533,716

In the foregoing table cargo which was recorded in cubic feet has been converted to weight on the basis of 40 cubic feet to the ton.

§ 7. Commonwealth Government Shipping Activities.

1. **Local Building Programme.**—The original Commonwealth Government programme of ship construction in Australia provided for 48 vessels, 24 of which were to be wooden sailing vessels, and the remainder steel cargo ships. Owing to certain variations, the programme resulted in the building of 21 steel cargo vessels and 2 five-masted schooners with auxiliary power.

The appended table shows, in respect of each steam vessel, the yard where built, builder's name, deadweight capacity, and date of launching up to 31st December, 1922 :—

COMMONWEALTH GOVERNMENT STEAMSHIPS BUILT IN AUSTRALIA, 31st DECEMBER, 1922.

Name of Vessel.	Yard where built.	By whom.	Registered Tonnage.		Date of Launching.
			Gross.	Net.	
"D" CLASS—(DEADWEIGHT CAPACITY APPROX. 5,608 CUBIC FEET).					
Delungra ..	Walsh Island ..	New South Wales Government	3,346	1,934	25.3.19
Dromana ..	Williamstown ..	Commonwealth Ship Construction Branch	3,350	1,934	11.4.19
Dundula ..	Cockatoo Island ..	Commonwealth Navy Department	3,344	1,936	9.7.19
Dinoga	Walsh Island ..	New South Wales Government	3,341	1,939	17.10.19
Dilga	Walsh Island ..	New South Wales Government	3,308	1,949	15.11.19
Dumosa ..	Williamstown ..	Commonwealth Ship Construction Branch	3,351	1,941	25.11.19
"E" CLASS—(DEADWEIGHT CAPACITY APPROX. 6,170 CUBIC FEET).					
Eudunda ..	Cockatoo Island ..	Commonwealth Navy Department	3,352	1,922	29.3.20
Eurelia	Walsh Island ..	New South Wales Government	3,351	1,921	10.4.20
Enoggera ..	Walsh Island ..	New South Wales Government	3,359	1,922	25.6.20
Emita	Williamstown ..	Commonwealth Ship Construction Branch	3,347	1,919	1.7.20
Erriba	Williamstown ..	Commonwealth Ship Construction Branch	3,345	1,919	10.12.20
Eromanga ..	Walsh Island ..	New South Wales Government	3,359	1,922	12.3.21
Eurimbla ..	Adelaide ..	Messrs. Poole and Steele ..	3,351	1,916	20.4.21
Echuca	Maryborough ..	Walkers Limited ..	3,362	1,924	6.7.21
Echunga ..	Maryborough ..	Walkers Limited ..	3,362	1,923	14.12.21
Euwarra ..	Adelaide ..	Messrs. Poole and Steele ..	3,349	1,907	17.12.21
Euroa	Williamstown ..	Commonwealth Ship Construction Branch	*a*3,353	*a*1,921	27.1.22
Elouera ..	Williamstown ..	Commonwealth Ship Construction Branch	*a*3,353	*a*1,921	2.3.22
Erina	Adelaide ..	Messrs. Poole and Steele ..	3,350	1,916	4.11.22

(*a*) Approximate.

Two vessels are in course of construction by the Commonwealth Ship Construction Branch at Cockatoo Island. These are of much greater dimensions than the vessels referred to above, being 520 feet in length, of approximately 9,700 gross and 5,800 net registered tonnage, a deadweight capacity of 12,800 cubic feet, with 170,000 cubic feet of insulated space and having a speed at sea of 13 knots. The first of these vessels (s.s. "*Fordsdale*") launched on 21st June, 1923, will probably be placed in commission about the end of 1923. It is anticipated that the other vessel (s.s. "*Ferndale*") will be launched about April, 1924.

2. Vessels Built in the United Kingdom.—In addition to the vessels referred to above, the following steamers were constructed in yards in the United Kingdom :—

COMMONWEALTH GOVERNMENT STEAMSHIPS BUILT IN UNITED KINGDOM, 31st DECEMBER, 1922.

Name of Vessel.	Yard where built.	By whom.	Registered Tonnage.		Date of handing over to C'wealth Government Line.
			Gross.	Net.	
"BAY LINERS"—(DEADWEIGHT CAPACITY APPROX. 12,590 CUBIC FEET).					
Moreton Bay ..	Barrow	Vickers Limited	13,850	8,447	13.11.21
Largs Bay ..	Glasgow ..	W. Beardmore and Co. Ltd.	13,851	8,457	23.12.21
Hobsons Bay ..	Barrow	Vickers Limited	13,837	8,440	17.2.22
Esperance Bay ..	Glasgow	W. Beardmore and Co. Ltd.	13,851	8,457	14.7.22
Jervis Bay ..	Barrow	Vickers Limited	13,837	8,440	11.9.22

These vessels have an approximate length of 520 feet by 68 feet beam, and a capacity of 900,000 cubic feet of which 370,000 cubic feet are insulated.

Each of the above vessels has already made trips to and from Australia.

3. Commonwealth Government Line of Steamers.—(i) *Number and Capacity.* The number and tonnage of the fleet operated by the management of the Commonwealth Government Line of Steamers as at the end of June, 1923, was as follows :—

COMMONWEALTH GOVERNMENT STEAMSHIPS, 1923.

Particulars.	Number.	Tonnage.	
		Gross.	Net.
		Tons.	Tons.
Vessels owned by Commonwealth Government ..	33	174,084	105,732
Ex-enemy vessels operated	17	79,792	49,570
Total	50	253,876	155,302
Not yet in Commission	4	26,106	15,442
Grand Total	54	279,982	170,744

(ii) Profit on Working. From its inception in October, 1916, to the 30th June, 1921, the Line has made a profit as follows :—From 16th October, 1916, to 30th June, 1918, £903,500 ; from 1st July, 1918, to 30th June, 1919, £1,160,034 ; from 1st July, 1919, to 30th June, 1920, £137,959 ; from 1st July, 1920, to 30th June, 1921, £102,949 ; total £2,304,442. Particulars for the years 1921–22 and 1922–23 are not at present available.

§ 8. World's Shipping Tonnage.

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

WORLD'S SHIPPING TONNAGE, 1922-23.

Nationality.	Steam and Motor.		Sailing.		Total.		Percentage on Total.	
	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.
United Kingdom	8,430	19,088,638	419	206,999	8,849	19,295,637	26.52	31.14
Australia and New Zealand	595	747,214	41	18,824	636	766,038	1.91	1.24
Canada (*a*) ..	557	894,318	320	126,666	877	1,020,984	2.63	1.65
Other British ..	609	714,769	278	75,022	887	789,791	2.66	1.27
Total, British Empire ..	10,191	21,444,939	1,058	427,511	11,249	21,872,450	33.72	35.30
Belgium ..	270	571,074	5	8,403	275	579,477	0.82	0.93
Denmark ..	622	963,142	200	74,996	822	1,038,138	2.46	1.68
France ..	1,723	3,537,382	371	308,410	2,094	3,845,792	6.28	6.21
Germany ..	1,533	1,785,767	190	101,641	1,723	1,887,408	5.16	3.05
Greece ..	361	657,604	18	10,523	379	668,127	1.14	1.08
Holland ..	1,100	2,617,485	64	15,228	1,164	2,632,713	3.49	4.25
Italy	1,016	2,698,722	397	167,613	1,413	2,866,335	4.23	4.63
Japan ..	2,026	3,586,918	..	..	2,026	3,586,918	6.07	5.79
Norway ..	1,716	2,417,680	136	183,181	1,852	2,600,861	5.55	4.20
Spain ..	780	1,215,276	193	67,481	973	1,282,757	2.92	2.07
Sweden ..	1,122	1,040,032	223	75,343	1,345	1,115,375	4.03	1.80
United States of America (*b*) ..	3,862	13,652,558	1,123	1,162,212	4,985	14,814,770	14.94	23.91
Other Foreign Countries ..	2,392	2,828,399	676	333,506	3,068	3,161,905	9.19	5.10
Total, Foreign Countries ..	18,523	37,572,039	3,596	2,508,537	22,119	40,080,576	66.28	64.70
Grand Total..	28,714	59,016,978	4,654	2,936,048	33,368	61,953,026	100.00	100.00

(*a*) Sea-going. (*b*) Includes Philippine Islands.

It should be mentioned that the foregoing figures have been compiled from Lloyd's Register of Shipping, and only vessels of 100 tons or upwards have been included.

§ 9. Ferries.

1. **General.**—In previous issues of the Year Book particulars of ferries were included in the sub-section dealing with tramways, as the ferries are mainly a supplementary means of transport to the suburban railway and tramway systems.

2. **New South Wales.**—The ferry services in Port Jackson are under the control of two companies which, during the year 1922 had 62 vessels in commission, 60 of which were double-ended screw steamers, the remaining two being motor driven. It is claimed for the steamers that they are superior in size and equipment to boats employed on similar service in any other part of the world.

3. **Victoria.**—The Williamstown City Council owns one steamer which is engaged in the transport of passengers between Port Melbourne and Williamstown. There are several other steamers which are engaged during the summer season in the carriage of passengers and goods to the several seaside resorts. Particulars of these services, however, are not included in the table on the next page.

4. **Queensland.**—The Brisbane City Council and the Balmoral Shire Council control the ferry services in the Metropolitan area. During the year 1922, 13 vessels were employed, 5 of which were steam-propelled.

5. **Western Australia.**—The ferries plying on the Swan River during 1922 were operated by a private company, and consisted of 9 petrol-driven vessels. At South Perth the Western Australian Government employed 4 vessels, 2 of which were steamers.

6. **Tasmania.**—In and around Hobart there were in 1922 3 ferry services, 2 being controlled by private companies which had 6 steamers in commission, and 1 by the Public Works Department, with 2 motor-propelled vessels.

7. **Particulars of Working.**—The subjoined table shows for the year 1922 so far as returns are available the most important items in connexion with the operation of the ferry services in the several States :—

FERRIES.—PARTICULARS OF WORKING, 1922.

Particulars.	New South Wales.	Victoria.	Queensland.	Western Australia.	Tasmania.	Total.
Boats in Service—						
Steam .. No.	60	1	5	2	6	74
Other .. No.	2	..	8	11	2	23
Total No.	62	1	13	13	8	97
Number of passengers which boats are licensed to carry .. No.	40,438	380	845	1,802	1,880	45,345
Revenue .. £	622,038	6,051	13,444	18,099	21,351	680,983
Working Expenses £	558,427	8,931	27,055	18,328	21,544	634,285
Passengers carried (*b*) No.	37,953,290	205,000	3,564,000	1,232,098	924,018	43,876,406
Mileage of Boats miles	(*a*)186,195	(*b*)3,000	(*b*)35,000	82,917	58,375	(*a*)365,487
Accidents—						
Killed .. No.	..	..	..	1	..	1
Injured .. No.	77	..	..	..	..	77
Employees—						
Salaried Staff No.	34	..	4	2	8	48
Wages Staff No.	998	5	38	28	42	1,111

(*a*) Incomplete. (*b*) Approximate.

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

§ 10. Miscellaneous.

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

2. **Distances by Sea.**—A statement giving the distances by sea between the ports of the capital cities of Australia and the most important ports in other countries which trade with Australia has also been included in the 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 give the rates current at 30th June, 1923.

B. RAILWAYS.

§ 1. General.

1. **Introduction.**—In the issues of the Official Year Book, Nos. 1 to 7, the statistics of all Government railway systems were treated under the head of *Government Railways*. In the following issues, Nos. 8 to 15, the greater part of the statistics relating to State-owned lines was dealt with separately from those under the control of the Commonwealth Government. This arrangement is continued in the present issue. The State railways are referred to throughout as "State" and the Commonwealth railways as "Federal" railways. There is, however, a summary of the working of the Federal and States railways in § 4 of this section.

In all tables relating to Government Railways, the particulars quoted, except where otherwise stated, are for the financial years.

2. **Improvement of Railway Statistics.**—Some of the 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).

In accordance with the decision of the Conference of Railways Commissioners, held in Sydney on the 17th May, 1921, in regard to the desirability of attaining uniformity in the methods of accounting in the several Railways Departments of Australia, representative officials from the accountancy staffs met in conference in Melbourne on 31st May, 1921, and formulated a scheme for the uniform classification of earnings and working expenses, and the mode of presentation of financial and certain other tables in the Commissioners' Annual Reports.

The Australian Bureau of Railway Statistics was established in Sydney almost entirely at the expense of the New South Wales and Victorian Railways, but each of the other States has undertaken to supply all available information.

Bulletins giving details of revenue, operating costs, etc., are published quarterly.

3. **Railway Communication in Australia.**—(i) *General.* 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. In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral, and mining districts towards the principal ports, which are themselves connected by systems of lines running approximately parallel to the coast. In the east, lines radiating from Cairns, Townsville, Rockhampton, Brisbane, and Sydney extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are four main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports, meeting the main line from Melbourne on the border of South Australia and Victoria near Serviceton. The South Australian and Victorian railway systems also meet on the border at two other points, one near Pinnaroo, and the other at Rennick, near Mount Gambier.

In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts, while there are also two short lines, one on the north-west, the other on the south coast, which are unconnected with the main system. In the northern parts of Queensland and in the Northern Territory there are also several disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

By the opening, in 1917, of the Trans-Australian railway from Port Augusta to Kalgoorlie, through communication by rail was established between the eastern States and the Western Australian railway system.

(ii) *The Main Interstate Lines.* The main interstate lines, which permit of direct communication between the five capital cities—Brisbane, Sydney, Melbourne, Adelaide, and Perth—cover a distance from end to end of 3,474.80 miles or 3,479.82 miles via Newcastle. The scheduled time for the journey from Brisbane to Perth is six days

one hour forty-two minutes, and from Perth to Brisbane five days twenty-one hours forty minutes, the time in each case being taken over all.

The time allowed for the journey from Port Augusta to Kalgoorlie, a distance of 1,051.45 miles, is 37 hours 13 minutes (actual), giving an average speed of 28.25 miles per hour throughout, inclusive of stoppages. Exclusive of stoppages, which aggregate slightly under three hours, the average speed is approximately 30 miles per hour. In the opposite direction the gross time is 38 hours 45 minutes (actual), which gives an average speed of 27.13 miles per hour. Exclusive of stoppages, which aggregate about 3 hours 10 minutes, the average speed is about 29.55 miles per hour.

The average speed inclusive of all stops on the journey from Brisbane to Perth is 23.88 miles per hour, and from Perth to Brisbane 21.00 miles per hour.

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Yaraka in Queensland to Meekatharra in Western Australia, a total distance of 4,809.14 miles.

4. **Non-conformity of Gauge.**—(i) *General.* With but few exceptions, all the railway lines in Australia open for general traffic are now owned and managed by the respective States in whose territory they run, or by the Commonwealth Government; but, unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. A statement giving the reasons for the adoption of the various gauges in the several States appeared in Year Book No. 15, p. 534, but considerations of space preclude its repetition in the present issue.

(ii) *Interstate Junctions.* Connexions at border stations were established as follows :— Victoria and New South Wales, at Albury, 14th June, 1883; Victoria and South Australia, at Serviceton, 19th January, 1887; and New South Wales and Queensland, at Wallangarra, 16th January, 1888. Through trains were unable to run on this latter section until the completion of the Hawkesbury River Bridge on 1st May, 1889. On the 22nd October, 1917, through communication from East to West was made possible by the opening of the Trans-Australian line.

(iii) *Proposals for Unification.* The question of the unification of gauges in the several States has been under consideration for several years, and numerous conferences on the subject have been held from time to time between the several Railways Commissioners and between the Premiers of the States concerned. Reference to these conferences have been made in previous issues of the Year Book.

(iv) *Estimated Cost of Unification of Gauges.* The scheme advocated by the Royal Commission of 8th February, 1921, and adopted by the Prime Minister and Premiers of the several States in conference during November of the same year, as the first step will provide a standard 4-ft. 8½-in. gauge railway between Brisbane and Fremantle, and the conversion of the whole of the broad-gauge lines of Victoria and South Australia, at an estimated cost of £21,600,000, spread over a period of approximately eight years. The details of the estimate of £21,600,000, which provides for a main trunk line between Fremantle and Brisbane, and the conversion of the 5-ft. 3-in. gauge lines in Victoria and South Australia are as given in the subjoined table, together with the quota from each State and the Commonwealth Government in terms of the allocation of cost agreed upon :—

COST OF UNIFICATION OF RAILWAY GAUGES.

State.	Alterations to existing railways and structures.	New Lines necessary.	Adjustments of Rolling Stock.	Total cost of work within the State.	Quota.
	£	£	£	£	£
New South Wales ..	800,000	857,000	..	1,657,000	7,094,388
Victoria	5,246,000	..	3,078,000	8,324,000	4,939,349
Queensland	..	1,250,000	598,000	1,848,000	2,535,868
South Australia ..	1,706,000	1,646,000	1,322,000	4,674,000	1,632,292
Western Australia ..	1,260,000	3,120,000	650,000	5,030,000	1,078,103
Commonwealth ..	..	..	67,000	67,000	4,320,000
Total	9,012,000	6,873,000	5,715,000	21,600,000	21,600,000

The estimated cost of converting the whole of the lines in the States concerned is approximately £57,200,000.

5. Rolling Stock Gauges.—Allied to the question of the gauges of the railways of Australia is that of the rolling stock gauges in use, the rolling stock gauge being the maximum transverse dimensions to which the rolling stock may be constructed. The following table gives particulars of the present rolling stock gauges, together with the maximum lengths and weights of vehicles :—

RAILWAYS, STATE AND FEDERAL.—ROLLING STOCK GAUGES, 1921-22.

PASSENGER ROLLING STOCK.

Railway.	Gauge of Track.	Maximum Rolling Stock Gauge.		Length over all.	Maximum Tare.
		Width.	Height above Rail Level.		
	ft. in.	ft. in.	ft. in.	ft. in.	t. c. q.
New South Wales	4 8½	10 6	14 0	74 4½	44 2 1
Victoria	5 3	10 0	14 0	74 1¼	47 16 0
,, ...	2 6	7 0¼	10 4¼	31 8	8 11 0
Queensland	3 6	9 4	12 9	55 5	26 17 0
,, ...	2 0	6 3⅞	10 0	22 0	3 0 0
South Australia	5 3	10 4¼	14 1¾	74 1¼	40 11 0
,, ...	3 6	9 4⅜	12 1	62 6	24 18 0
Western Australia	3 6	8 10	12 7	61 9	31 10 0
Tasmania	3 6	9 6	12 5	64 0	30 0 0
,, ...	2 0	6 6	10 0	30 2	5 10 1
Federal—					
Trans-Australian	4 8½	10 6	14 6	78 11½	48 0 0
Northern Territory	3 6	9 4	12 9	39 0	12 0 0
Oodnadatta	3 6	10 2	12 4	39 0	12 0 0

GOODS ROLLING STOCK.

Railway.	Gauge of Track.	Maximum Rolling Stock Gauge.		Length over all.	Maximum—	
		Width.	Height above Rail Level.		Tare.	Carrying Capacity.
	ft. in.	ft. in.	ft. in.	ft. in.	t. c. q.	t. c. q.
New South Wales ..	4 8½	9 8	13 6	60 11	20 10 3	40 0 0
Victoria	5 3	9 7½	13 7¾	55 4½	20 13 1	30 0 0
,, ...	2 6	6 5½	9 7¼	27 3¾	7 12 2½	10 0 0
Queensland	3 6	8 9	12 0	45 5	14 16 0	21 8 0
,, ...	2 0	6 6	9 0	22 0	4 10 0	16 0 0
South Australia ..	5 3	10 0¼	12 10¾	52 1	23 10 0	30 0 0
,, ..	3 6	8 6	12 5¼	52 9	22 0 0	25 0 0
Western Australia ..	3 6	8 8	12 6	44 9	17 10 0	27 0 0
Tasmania	3 6	8 6	11 0	40 10	12 5 0	30 0 0
,, ...	2 0	6 0	6 6	27 0	5 15 2	20 0 0
Federal—						
Trans-Australian ..	4 8½	10 6	14 6	47 6½	15 0 0	40 0 0
Northern Territory	3 6	9 4	12 9	34 6	9 10 0	12 0 0
Oodnadatta ..	3 6	10 2	12 4	18 0	5 0 0	12 0 0

In the above tables the transverse dimensions given are the greatest employed on any vehicle.

It will be observed that the dimensions adopted by the Federal Government for the Trans-Australian Railway are in excess of those at present in use on the 5-ft. 3-in. gauge lines of Victoria and South Australia, and the 4-ft. 8½-in. gauge lines of New South Wales. It is, however, the intention of the latter State to adopt the Federal standard as soon as possible, and with that end in view a commencement has been made in the Sydney suburban area with the enlargement of bridges, tunnels, buildings and platforms to enable the larger rolling stock to be employed. The question of standard couplings on the New South Wales lines is also receiving attention.

6. **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. (See § 5 *Private Railways*, hereinafter.)

The subjoined table shows the mileage of Commonwealth Government, State Government, and private lines open for traffic (exclusive of sidings and cross-overs) in each State for each of the years 1917–18 to 1921–22. The railway mileage given for each State includes both Commonwealth and State Government railways in that State, and in this table and in those immediately following is estimated from the geographic point of view and not from that of ownership. The figures are to the end of the financial year ended on the 30th June, excepting the mileages for private lines, which are in most cases taken for the calendar year :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE OPEN, 1918 TO 1922.

State or Territory.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	5,025.16	5,169.82	5,376.99	5,402.08	5,475.44
Victoria	4,222.70	4,260.58	4,284.65	4,337.35	4,374.73
Queensland	6,769.40	6,841.41	6,946.69	7,012.62	7,063.89
South Australia	3,356.45	3,404.10	3,458.26	3,463.35	3,487.37
Western Australia ..	4,904.33	4,965.48	4,846.02	4,905.83	4,867.48
Tasmania	781.71	811.03	840.25	877.01	872.49
Federal Capital Territory ..	4.94	4.94	4.94	4.94	4.94
Northern Territory ..	199.56	199.56	198.68	198.68	198.68
Australia	25,264.25	25,656.92	25,956.48	26,201.86	26,345.02

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

(ii) *Government and Private Lines Separately.* The subjoined 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, (*b*) the length of private lines available for general use by the public, and (*c*) the length not so available. The mileages specified in the case of Government lines are to the 30th June,

1922 ; those given for private lines are to the same date with the exception of Western Australia, which are to 31st December, 1921 :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE CLASSIFIED, 1921-22.

State or Territory.	Government Lines—		Private Lines available for General Traffic.	Total Open for General Traffic.	Private Lines used for special Purposes only.	Grand Total.
	State.	Federal.				
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	5,116.08	..	186.83	5,302.91	172.53	5,475.44
Victoria ..	4,316.86	..	24.94	4,341.80	32.93	4,374.73
Queensland ..	5,799.33	..	280.79	6,080.12	983.77	7,063.89
South Australia ..	2,357.21	1,075.41	33.80	3,466.42	20.95	3,487.37
Western Australia	3,538.23	453.99	278.35	4,270.57	596.91	4,867.48
Tasmania ..	636.80	..	197.61	834.41	38.08	872.49
Federal Capital Territory ..	..	4.94	..	4.94	..	4.94
Northern Territory	..	198.68	..	198.68	..	198.68
Australia ..	21,764.51	1,733.02	1,002.32	24,499.85	1,845.17	26,345.02

7. **Comparative Railway Facilities.**—The relations to populations and areas respectively of the mileage of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1922, are shown in the subjoined statement :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—COMPARISON OF FACILITIES, 1922.

State or Territory.	Population, 30th June, 1922.	Area.	Mileage of Railway.	
			Per 1,000 of Population.	Per 1,000 sq. miles of Territory.
	Number.	Sq. miles.	Miles.	Miles.
New South Wales	2,147,655	309,432	2.55	17.70
Victoria	1,570,640	87,884	2.78	49.78
Queensland	785,449	670,500	8.99	10.54
South Australia	505,069	380,070	6.90	9.18
Western Australia	339,501	975,920	14.34	4.99
Tasmania	213,400	26,215	4.09	33.28
Federal Capital Territory ..	2,592	940	1.91	5.26
Northern Territory	3,663	523,620	54.24	0.38
Australia	5,567,969	2,974,581	4.73	8.86

8. **Classification of Lines according to Gauge, 1921-22.**—The subjoined table gives a classification, according to gauge, of the total mileage, exclusive of sidings and cross-overs, of (i) Commonwealth Government railways, given in the State or Territory in which situated ; (ii) State Government railways; (iii) Private railways open to the public for general traffic ; and (iv) Private lines open for special purposes. Particulars of Government railways are up to the 30th June, 1922, of private railways open for general

traffic to the 31st December, 1922, as nearly as possible, and of private railways open for special purposes to the 30th June, 1922, with the exception of Western Australia, the figures for which State are to the 31st December, 1921.

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1921-22.

State or Territory in which situated.	Route mileage having a gauge of—								Total.
	5 ft. 3 in.	4ft. 8½ in.	3 ft. 6 in.	3 ft. 0in.	2 ft. 6 in.	2 ft. 3 in.	2 ft. 0 in.	1 ft. 8 in.	
FEDERAL RAILWAYS.									
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
South Australia ..	..	597.46	477.95	..	..	..	..	..	1,075.41
Western Australia ..	..	453.99	..	..	..	..	..	..	453.99
Federal Capital Territory	..	4.94	..	..	..	..	..	..	4.94
Northern Territory	..	..	198.68	..	..	..	..	..	198.68
Total ..	..	1,056.39	676.63	..	..	..	..	..	1,733.02
STATE RAILWAYS.									
New South Wales ..	..	5,076.57	39.51	..	..	..	..	..	5,116.08
Victoria	4,194.96	..	..	..	121.90	..	..	..	4,316.86
Queensland ..	..	..	5,769.07	..	..	..	30.26	..	5,799.33
South Australia ..	1,147.64	..	1,209.57	..	..	..	..	..	2,357.21
Western Australia ..	..	..	3,538.23	..	..	..	..	..	3,538.23
Tasmania	..	..	611.97	..	..	..	24.83	..	636.80
Total ..	5,342.60	5,076.57	11,168.35	..	121.90	..	55.09	..	21,764.51
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.									
New South Wales ..	45.00	78.91	36.67	..	..	..	26.25	..	186.83
Victoria	13.94	..	..	11.00	..	..	..	..	24.94
Queensland ..	..	..	121.20	..	7.00	..	152.59	..	280.79
South Australia ..	..	..	33.80	..	..	..	..	..	33.80
Western Australia ..	..	..	278.35	..	..	..	..	..	278.35
Tasmania	..	..	181.12	..	..	..	16.49	..	197.61
Total ..	58.94	78.91	651.14	11.00	7.00	..	195.33	..	1,002.32
PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.									
New South Wales ..	..	158.77	3.50	..	..	..	10.26	..	172.53
Victoria	15.83	..	..	4.50	..	..	12.60	..	32.93
Queensland ..	..	..	224.04	..	240.00	..	519.73	..	983.77
South Australia ..	..	..	..	..	2.00	3.60	15.35	..	20.95
Western Australia ..	..	..	555.91	..	..	..	14.00	27.00	596.91
Tasmania	..	..	21.00	..	..	..	17.08	..	38.08
Total ..	15.83	158.77	804.45	4.50	242.00	3.60	589.02	27.00	1,845.17
ALL RAILWAYS.									
New South Wales ..	45.00	5,314.25	79.68	..	..	..	36.51	..	5,475.44
Victoria	4,224.73	..	..	15.50	121.90	..	12.60	..	4,374.73
Queensland ..	..	..	6,114.31	..	247.00	..	702.58	..	7,063.89
South Australia ..	1,147.64	597.46	1,721.32	..	2.00	3.60	15.35	..	3,487.37
Western Australia ..	..	453.99	4,372.49	..	..	..	14.00	27.00	4,867.48
Tasmania	..	..	814.09	..	..	..	58.40	..	872.49
Federal Capital Territory	..	4.94	..	..	..	..	..	..	4.94
Northern Territory	..	..	198.68	..	..	..	..	..	198.68
GRAND TOTAL	5,417.37	6,370.64	13,300.57	15.50	370.90	3.60	839.44	27.00	26,345.02

§ 2. Federal Railways.

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

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

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

(ii) *Proposed Extension.* The selection of the route of the transcontinental line from North to South has been the subject of investigations by the Parliamentary Standing Committee on Public Works which, after a tour of inspection and the taking of a mass of evidence, recommended to Parliament that—

(*a*) the existing line (Darwin to Emungalan) be extended to Daly Waters on the understanding that it is to form portion of an eventual line through Newcastle Waters to Camooweal;

(*b*) a light level line be constructed from Oodnadatta to Alice Springs;

(*c*) these lines be regarded as providing sufficient railway development for the Northern Territory for some years;

(*d*) the 3 ft. 6 in. gauge be adopted.

Several other recommendations relative to sleepers and rails, bridges, labour, and the developmental policy of the Northern Territory were also submitted.

3. **Port Augusta to Oodnadatta Railway.**—This line was taken over by the Commonwealth Government from 1st January, 1911, but was held under lease by the South Australian Government until 31st December, 1913. From the 1st January, 1914, the line has been worked by the South Australian Government for and on behalf of the Commonwealth. It is provided in the Northern Territory Acceptance Act that the Commonwealth shall annually reimburse the State with the interest payable on the amount of loans raised by the State for the purpose of constructing the railway, and the agreement for working the line prescribes that the Commonwealth is responsible to the State for any financial loss incurred by the State in the working and management of the railway, but is entitled to receive from the State any profit made in such working and management.

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

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

On the 22nd October, 1917, the first through train left Port Augusta with an official party on board for Kalgoorlie. It should be mentioned that owing to deviations from the original route, the length of this line was reduced from 1,063.39 miles to 1,051.45 miles, a saving of 11.94 miles.

6. **Lines Open, Surveyed, etc.**—The following table shows the lines open for traffic under the control of the Commonwealth Government at 30th June, 1922, together with the lines which have been or are being surveyed :—

RAILWAYS, FEDERAL, 30th JUNE, 1922.

Terminals.	Miles.
OPEN FOR TRAFFIC.	
Trans-Australian—Port Augusta (South Australia) to Kalgoorlie (Western Australia)	1,051.45
Port Augusta to Oodnadatta (South Australia)	477.95
Queanbeyan to Canberra (Federal Capital Territory)	4.94
Northern Territory Railway—Darwin to Emungalan, Katherine River	198.68
Total opened for traffic	1,733.02
SURVEYED, OR BEING SURVEYED.	
Katherine River to Mataranka (Northern Territory)	65.44
Mataranka to Daly Waters (Northern Territory)	95.00
Kingoonya to Boorthanna (South Australia)	176.44
Canberra to Jervis Bay (Federal Capital Territory)	140.22
Canberra (Federal Capital Territory) to Federal Capital Territory Border in the direction of Yass (New South Wales)	11.67
Daly Waters (Northern Territory) to Oodnadatta (South Australia)	851.50
Port Augusta to Crystal Brook (South Australia)	69.25
Total surveyed or being surveyed	1,409.52

7. **Mileage open, worked, and Train miles run.**—The following table shows the length of the Federal railways open for traffic, average miles worked, and the train miles run in the years 1918 to 1922 :—

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES, 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
MILES OPEN FOR TRAFFIC.					
	Miles.	Miles.	Miles.	Miles.	Miles.
1918	1,051	478	5	200	1,734
1919	1,051	478	5	200	1,734
1920	1,051	478	5	199	1,733
1921	1,051	478	5	199	1,733
1922	1,051	478	5	199	1,733

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES, 1918 TO 1922—*continued.*

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
AVERAGE MILES WORKED.					
	Miles.	Miles.	Miles.	Miles.	Miles.
1918	1,051	478	5	200	1,734
1919	1,051	478	5	200	1,734
1920	1,051	478	5	199	1,733
1921	1,051	478	5	199	1,733
1922	1,051	478	5	199	1,733
TRAIN MILES RUN.					
1918	475,936	259,838	1,127	112,648	849,549
1919	368,886	221,763	1,015	83,209	674,873
1920	401,709	262,917	1,000	60,348	725,974
1921	472,290	320,292	1,058	17,270	810,910
1922	471,061	242,751	1,263	16,078	731,153

8. **Cost of Construction and Equipment.**—In the following table particulars are given of the cost of construction and equipment for traffic of the undermentioned railways for each of the years 1918 to 1922 :—

RAILWAYS, FEDERAL.—CAPITAL COST, 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Oodnadatta. (*a*)	Federal Capital Territory. (*b*)	Northern Territory.	
TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.					
	£	£	£	£	£
1918	6,674,278	2,281,939	47,883	1,695,556	10,699,656
1919	6,911,624	2,282,973	48,124	1,707,392	10,950,113
1920	7,053,900	2,282,934	48,144	1,709,932	11,094,910
1921	7,137,365	2,287,193	48,144	1,711,585	11,184,287
1922	7,213,923	2,296,139	48,144	1,718,021	11,276,227
COST PER MILE OPEN.					
1918	6,349	4,774	9,693	8,496	6,171
1919	6,574	4,776	9,742	8,556	6,316
1920	6,710	4,776	9,746	8,607	6,402
1921	6,788	4,785	9,746	8,615	6,454
1922	6,861	4,804	9,746	8,647	6,507

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

9. **Gross Revenue.**—(i) *Total, per average mile worked, and per train mile run.* The following table shows the total revenue from all sources, the revenue per average mile worked and the revenue per train mile run for each of the undermentioned railways for the financial years from 1918 to 1922 inclusive :—

RAILWAYS, FEDERAL.—GROSS REVENUE, TOTAL, ETC., 1918 TO 1922.

Year ended 30th June—	Railway. Trans-Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	Total.
TOTAL GROSS REVENUE.					
	£	£	£	£	£
1918	175,039	69,231	705	32,511	277,486
1919	175,134	58,286	407	32,237	266,064
1920	213,388	74,709	571	27,089	315,757
1921	206,871	112,091	1,240	12,214	332,416
1922	206,826	99,462	1,847	14,364	322,499
GROSS REVENUE PER AVERAGE MILE WORKED.					
1918	166	145	141	163	160
1919	167	122	82	162	153
1920	203	156	116	136	182
1921	197	235	251	62	192
1922	197	208	374	72	186
GROSS REVENUE PER TRAIN-MILE RUN.					
	d.	*d.*	*d.*	*d.*	*d.*
1918	88.27	63.95	150.13	69.27	78.39
1919	113.94	63.08	96.24	92.98	94.62
1920	127.49	68.25	137.04	107.73	104.39
1921	105.12	83.99	281.29	169.74	98.38
1922	105.37	98.34	350.97	214.41	105.86

(ii) *Classified and Percentages.* The gross revenue is composed of (*a*) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains ; (*b*) receipts from the carriage of goods and live stock ; and (*c*) rents and miscellaneous items. The subjoined table shows the gross revenue for 1918 to 1922 classified according to the three chief sources of receipts, together with their percentages on the total revenue. The respective totals of the three items are given in the preceding table.

RAILWAYS, FEDERAL.—RECEIPTS, VARIOUS SOURCES, 1918 TO 1922.

Year ended 30th June—	Railway. Trans-Australian.		Oodnadatta.		Federal Capital Territory.		Northern Territory.		Total.	
	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.
COACHING TRAFFIC RECEIPTS.										
	£	%	£	%	£	%	£	%	£	%
1918 ..	72,352	41.33	14,586	21.07	31	4.40	5,341	16.43	92,310	33.27
1919 ..	93,867	53.60	12,455	21.37	34	8.25	5,250	16.28	111,606	41.95
1920 ..	95,671	44.83	10,600	14.19	15	2.63	4,433	16.36	110,719	35.07
1921 ..	128,953	62.34	18,589	16.58	20	1.61	2,700	22.11	150,262	45.20
1922 ..	139,192	67.30	19,669	19.78	48	2.60	2,685	18.69	161,594	50.11
GOODS AND LIVE STOCK RECEIPTS.										
1918 ..	77,339	41.19	51,213	73.97	674	95.60	19,539	60.10	148,765	53.61
1919 ..	50,485	28.83	43,194	74.11	373	91.75	19,676	61.04	113,728	42.74
1920 ..	82,490	38.67	61,401	82.19	453	79.33	14,930	55.12	159,274	50.44
1921 ..	39,750	19.21	90,802	81.01	1,210	97.58	4,859	39.78	136,621	41.10
1922 ..	31,081	15.03	76,710	77.12	1,779	96.32	5,194	36.16	114,764	35.58
MISCELLANEOUS RECEIPTS.										
1918 ..	25,348	14.48	3,432	4.96	..	..	7,631	23.47	36,411	13.12
1919 ..	30,783	17.57	2,636	4.52	..	..	7,311	22.68	40,730	15.31
1920 ..	35,227	16.50	2,708	3.62	103	18.04	7,726	28.52	45,764	14.49
1921 ..	38,168	18.45	2,700	2.41	10	0.81	4,655	38.11	45,533	13.70
1922 ..	36,553	17.67	3,083	3.10	20	1.08	6,485	45.15	46,141	14.31

10. Working Expenses.—(i) *Total.* The following table shows the total working expenses, and the percentages of the total of those expenses on the corresponding gross revenues of each railway for each year from 1918 to 1922.

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

RAILWAYS, FEDERAL.—WORKING EXPENSES, TOTAL, ETC., 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
TOTAL WORKING EXPENSES.					
	£	£	£	£	£
1918	232,468	100,179	1,496	53,482	387,625
1919	243,988	111,362	1,288	50,617	407,255
1920	256,027	112,192	801	48,617	417,637
1921	298,209	172,552	655	27,551	498,967
1922	255,434	177,369	1,308	26,511	460,622
PERCENTAGE OF WORKING EXPENSES ON REVENUE.					
	%	%	%	%	%
1918	132.81	144.70	212.20	164.50	139.69
1919	139.31	191.06	316.45	157.02	153.07
1920	119.98	150.17	140.28	179.47	132.26
1921	144.15	153.94	52.82	225.57	150.10
1922	123.50	178.33	70.82	184.56	142.83

(ii) *Averages.* The following table shows the working expenses per average mile worked and per train-mile run for each railway for the years 1918 to 1922:—

RAILWAYS, FEDERAL.—WORKING EXPENSES, AVERAGES, 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
WORKING EXPENSES PER AVERAGE MILE WORKED.					
	£	£	£	£	£
1918	224	198	299	267	220
1919	232	233	261	254	235
1920	243	235	162	245	241
1921	284	361	133	139	288
1922	243	371	265	133	266
WORKING EXPENSES PER TRAIN-MILE RUN.					
	d.	*d.*	*d.*	*d.*	*d.*
1918	117.23	87.25	318.58	113.95	107.89
1919	158.74	120.52	304.55	145.99	145.00
1920	152.96	102.41	192.40	193.34	138.07
1921	151.54	129.30	148.59	382.87	147.67
1922	130.14	175.36	248.55	395.73	151.20

(iii) *Distribution and Percentages.* The subjoined table shows the distribution of working expenses among four chief heads of expenditure for the years 1918 to 1922, together with their percentages on the total working expenses which are given in 10 (i) hereinbefore :—

RAILWAYS, FEDERAL.—DISTRIBUTION OF WORKING EXPENSES, 1918 TO 1922.

Year ended 30th June.	Railway.								Total.	
	Trans-Australian.		Oodnadatta.		Federal Capital Territory.		Northern Territory.			
	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.
	MAINTENANCE.									
	£	%	£	%	£	%	£	%	£	%
1918 ..	64,990	27.96	39,673	39.60	609	40.71	23,699	44.31	128,971	33.27
1919 ..	71,309	29.23	45,284	40.67	601	46.66	21,500	42.48	138,694	34.06
1920 ..	72,197	28.20	43,967	39.19	553	69.04	20,664	42.51	137,381	32.89
1921 ..	99,559	33.38	57,920	33.57	254	38.78	13,236	48.04	170,969	34.27
1922 ..	75,941	29.73	78,780	44.42	736	56.27	14,683	55.38	170,140	36.94
	LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.									
1918 ..	121,574	52.30	48,302	48.22	544	36.36	22,309	41.71	192,729	49.72
1919 ..	118,163	48.43	52,377	47.03	351	27.25	20,796	41.09	191,687	47.07
1920 ..	119,753	46.77	53,437	47.63	196	24.47	19,841	40.81	193,227	46.27
1921 ..	128,680	43.15	94,381	54.70	340	51.91	9,269	33.64	232,670	46.63
1922 ..	112,317	43.97	79,640	44.90	508	38.84	4,848	18.29	197,313	42.84
	TRAFFIC EXPENSES.									
1918 ..	41,022	17.64	10,400	10.38	343	22.93	5,704	10.67	57,469	14.83
1919 ..	47,572	19.50	11,471	10.30	336	26.09	7,104	14.03	66,483	16.32
1920 ..	54,606	21.33	12,803	11.41	52	6.49	6,881	14.15	74,342	17.80
1921 ..	41,294	13.85	17,656	10.23	61	9.31	4,129	14.99	63,140	12.65
1922 ..	38,416	15.04	16,609	9.36	64	4.89	6,248	23.57	61,337	13.31
	OTHER CHARGES.									
1918 ..	4,882	2.10	1,804	1.80	..	..	1,769	3.31	8,455	2.18
1919 ..	6,944	2.84	2,230	2.00	..	..	1,217	2.40	10.391	2.55
1920 ..	9,471	3.70	1,985	1.77	..	..	1,231	2.53	12,687	3.04
1921 ..	28,676	9.62	2,595	1.50	..	..	917	3.33	32,188	6.45
1922 ..	28,760	11.26	2,340	1.32	..	..	732	2.76	31,832	6.91

11. **Passenger Journeys, and Tonnage of Goods and Live Stock.**—(i) *General.* In the next table particulars are given of the passenger journeys, and tonnage of goods and live stock carried on the Federal railways during the years 1918 to 1922 :—

RAILWAYS, FEDERAL.—TRAFFIC, 1918 TO 1922.

Year ended 30th June.	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
	PASSENGER JOURNEYS.				
	No.	No.	No.	No.	No.
1918	17,934	(*a*)	300	11,546	(*b*) 29,780
1919	23,942	51,516	93	5,842	81,393
1920	22,968	55,742	..	4,818	83,528
1921	29,686	69,407	..	3,704	102,797
1922	28,003	64,477	..	3,343	95,823
	TONNAGE OF GOODS AND LIVE STOCK CARRIED.				
	tons.	tons.	tons.	tons.	tons.
1918	124,806	(*a*)	7,261	40,862	(*b*) 172,929
1919	116,971	57,565	4,385	35,124	214,045
1920	53,722	94,892	4,691	23,122	176,427
1921	20,089	87,879	6,913	3,610	118,491
1922	20,780	76,089	9,817	2,251	108,937

(*a*) Not available. (*b*) Exclusive of Oodnadatta Line.

(ii) *Passenger Mileage Summary.* The subjoined table gives particulars of "Passenger Mileage" on each of the Federal Railways for the year 1921-22 :—

RAILWAYS, FEDERAL.—PASSENGER MILES SUMMARY, 1921-22.

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.	£	•		d.	£ s. d.	
Trans-Australian ..	367,099	28,003	24,157	110,941	7.59	862.65	1.10	3 19 2.8	22,975
Oodnadatta	43,960	64,477	2,579	15,929	9.60	40.00	1.48	0 4 11.3	5,397
Federal Capital Territory	..	..	..	..	..	..	..	..	..
Northern Territory ..	5,197	3,343	286	2,554	520	85.65	2 14	0 15 3.4	1,441

(iii) *Ton Mileage Summary.* Particulars of ton mileage are shown hereunder in respect of each of the Federal Railways for the year 1921-22 :—

RAILWAYS, FEDERAL.—"TON MILEAGE" SUMMARY, 1921-22.

Railway.	Goods Train Mileage.	Total Tons Carried.	Total "Ton-Miles."	Goods Earnings.	Average Freight-paying Load per Train Mile.	Average Miles per ton.	Earnings per "Ton-Mile."	Density of Traffic per Average Mile Worked.
			,000 omitted.	£			d.	
Trans-Australian ..	103,962	20,780	7,165	31,081	559.34	344.82	1.04	6,815
Oodnadatta ..	198,791	76,089	7,520	76,710	(a)	98.83	2.45	15,734
Federal Capital Territory ..	1,263	9,817	49	1,779	42.26	5.00	8.70	9,936
Northern Territory	10,881	2,251	361	5,194	(a)	160.58	3.45	1,819

(a) Not available.

12. **Passenger Fares, Goods Rates, and Parcel Rates.**—(i) *Passenger Fares.* In the following table the fares for certain specified distances on the Trans-Australian, Oodnadatta, and Northern Territory railways are set out :—

RAILWAYS, FEDERAL.—PASSENGER MILEAGE RATES, 1922.

Single Fare for a Journey of—	Trans-Australian Railway.				Oodnadatta Railway.				Northern Territory Railway.			
	First Class.		Second Class.		First Class.		Second Class.		First Class.		Second Class.	
	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.
Miles.	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.
50	9 7	2.30	6 5	1.54	9 9	2.34	6 7	1.58	11 6	2.76	7 8	1.84
100	19 2	2.30	12 9	1.53	19 9	2.37	13 3	1.59	22 11	2.75	15 3	1.83
200	38 4	2.30	25 7	1.54	39 3	2.36	26 0	1.56	45 10	2.75	30 7	1.83
300	57 6	2.30	38 4	1.53	58 6	2.34	39 3	1.57	..	..	..	..
400	64 7	1.94	43 1	1.29	78 0	2.34	52 0	1.56	..	..	..	..
500	77 1	1.85	51 5	1.23	..	..	..	..	..	..	..	..
600	89 7	1.79	59 9	1.20	..	..	..	..	..	..	..	..
700	102 1	1.75	68 1	1.17	..	..	..	..	..	..	..	..
800	110 5	1.66	73 8	1.11	..	..	..	..	..	..	..	..
900	117 9	1.57	78 6	1.05	..	..	..	..	..	..	..	..
1,000	122 11	1.48	81 11	0.98	..	..	..	..	..	..	..	..
1,051	125 0	1.43	83 4	0.95	..	..	..	..	..	..	..	..

In the case of the Trans-Australian railway, through passengers have to pay for sleeping berths and meals in addition to the ordinary fares. For the first class sleeping-berths the charge is twelve shillings and sixpence for a night or part of a night, the corresponding charge for the second class being eight shillings. There is a fixed scale of

charges made in respect of the meals served to other than through passengers between Port Augusta and Kalgoorlie. It will be observed that both the first and second class fares on the Trans-Australian railway have a constant rate for distances up to 300 miles and then have a tapering character beyond that distance; while those for the Oodnadatta and the Northern Territory railways are practically uniform for all distances.

(ii) *Agricultural Produce and Ordinary Goods Rates.* The rates for agricultural produce and ordinary goods on the Trans-Australian and Northern Territory railways are set out in the following tables :—

RAILWAYS, FEDERAL.—RATES FOR AGRICULTURAL PRODUCE, 1922.

For a haul of—	Northern Territory Railway.		Trans-Australian Railway.		For a haul of—	Trans-Australian Railway, *contd.*	
	Rate per Ton in Truck Loads.	Average per Ton-Mile.	Rate per Ton in Truck Loads.	Average per Ton-Mile.		Rate per Ton in Truck Loads.	Average per Ton-Mile.
	s. d.	d.	s. d.	d.		s. d.	d.
50 miles ..	8 5	2.02	6 3	1.50	600 miles ..	38 4	0.77
100 ,, ..	13 8	1.64	10 1	1.21	700 ,, ..	42 6	0.73
200 ,, ..	24 1	1.44	17 9	1.07	800 ,, ..	46 8	0.70
300 ,, ..	..	..	24 11	0.99	900 ,, ..	50 5	0.67
400 ,, ..	..	..	27 6	0.83	1,000 ,, ..	53 9	0.65
500 ,, ..	..	..	33 4	0.80	1,051 ,, ..	55 0	0.63

RAILWAYS, FEDERAL.—RATES FOR ORDINARY GOODS, 1922.

For a Haul of—	Northern Territory Railway. Class of Freight. Highest. Rate per Ton.	Highest. Average per Ton-Mile.	Lowest. Rate per Ton.	Lowest. Average per Ton-Mile.	Trans-Australian Railway. Class of Freight. Highest. Rate per Ton.	Highest. Average per Ton-Mile.	Lowest. Rate per Ton.	Lowest. Average per Ton-Mile.	For a Haul of—	Trans-Australian Railway, *contd.* Class of Freight. Highest. Rate per Ton.	Highest. Average per Ton-Mile.	Lowest. Rate per Ton.	Lowest. Average per Ton-Mile.
Miles.	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.	Miles.	s. d.	d.	s. d.	d.
50	39 5	9.46	8 5	2.02	36 2	8.68	6 3	1.50	600	223 9	4.48	38 4	0.77
100	71 11	8.63	13 8	1.54	56 2	6.74	10 1	1.21	700	239 5	4.10	42 6	0.73
200	133 2	7.99	24 1	1.45	122 5	7.34	17 9	1.07	800	255 0	3.83	46 8	0.70
300	..	..	..	..	164 6	6.58	24 11	0.99	900	269 1	3.59	50 5	0.67
400	..	..	..	..	172 2	5.17	27 6	0.83	1,000	281 7	3.38	53 9	0.65
500	..	..	..	..	201 4	4.83	33 4	0.80	1,051	287 6	3·28	55 0	0·63

In the above tables it will be seen that the average rates per ton-mile are of a tapering character.

(iii) *Parcel Rates.* On the Trans-Australian railway, parcels weighing between 85 and 112 lbs. are taken by passenger train 500 miles for thirteen shillings and threepence.

13. **Rolling Stock, 1922.**—The following table shows the numbers of locomotives and rolling stock in use on the Federal railways, classified according to gauge :—

RAILWAYS, FEDERAL.—LOCOMOTIVES AND ROLLING STOCK, 1922.

Railway.	Gauge. 4 ft. 8½ in.	Gauge. 3 ft. 6 in.	Total.	Gauge. 4 ft. 8½ in.	Gauge. 3 ft. 6 in.	Total.	Gauge. 4 ft. 8½ in.	Gauge. 3 ft. 6 in.	Total.
	Locomotives.			Coaching Stock.			Stock other than Coaching.		
Trans-Australian	68	1	69	46	..	46	737	31	768
Northern Territory ..	..	13	13	..	8	8	..	303	303
Total ..	68	14	82	46	8	54	737	334	1,071

The Oodnadatta and Federal Capital Territory Railways are worked by the South Australian and New South Wales Government Railways Departments respectively, which use their own rolling stock.

14. **Employees.**—The following table shows the number of employees on the Federal railways at 30th June in each year from 1918 to 1922 inclusive, classified according to salaried and wages staffs :—

RAILWAYS, FEDERAL.—EMPLOYEES, 1918 TO 1922.

Railway.	30th June—									
	1918.		1919.		1920.		1921.		1922.	
	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	201	913	194	846	184	798	172	961	161	802
Oodnadatta (*a*) ..	..	..	..	..	..	..	..	..	..	..
Federal Capital Territory (*b*) ..	..	..	..	..	..	..	..	..	..	..
Northern Territory	12	164	20	150	12	79	7	60	8	54
Total ..	213	1,077	214	996	196	877	179	1,021	169	856

(*a*) Worked by South Australian Government Railways.
(*b*) Worked by New South Wales Government Railways.

15. **Accidents.**—(i) *Classification.* As a uniform method of recording accidents has been adopted by the States and Federal Railways Commissioners the statistics relative to accidents connected with the movement of rolling stock on each line during the year 1921-22 is published in the form hereunder for the first time :—

RAILWAYS, FEDERAL.—ACCIDENTS, 1921-22.

Classification.	Trans-Australian.		Oodnadatta.		Federal Capital Territory.		Northern Territory.		All Railways.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers—										
Through causes beyond their own control	..	..	..	..	..	..	..	..	..	..
Through contributory negligence	..	..	..	..	..	..	..	..	..	..
Solely through their own action or negligence ..	..	1	..	..	..	..	..	1	..	2
Employees while in the execution of their duty—										
Through causes beyond their own control ..	..	5	..	2	..	..	..	..	..	7
Through contributory negligence	..	..	..	..	..	..	..	..	..	..
Solely through their own action or negligence ..	..	..	..	4	..	..	..	..	..	4
Employees proceeding to or from duty within the Railway boundary	..	1	..	2	..	..	..	..	..	3
Persons killed or injured at crossings	..	..	..	..	..	..	..	..	..	..
Trespassers	..	..	..	..	..	..	..	..	..	..
Miscellaneous	..	1	..	..	..	..	..	..	..	1
Total	..	8	..	8	..	..	..	1	..	17
Number of passengers killed or injured per million carried due to causes beyond their own control ..	..	..	..	..	..	..	..	..	..	..

(ii) *Particulars for Quinquennium* 1918–22. The following table shows the number of accidents which have occurred during each of the years 1918 to 1922 inclusive :—

RAILWAYS, FEDERAL.—ACCIDENTS, 1918 TO 1922.

Railway.	Number of Persons—									
	Killed.					Injured.				
	1918.	1919.	1920.	1921.	1922.	1918.	1919.	1920.	1921.	1922.
Trans-Australian ..	3	1	3	..	..	13	10	6	3	8
Oodnadatta ..	1	..	..	..	..	12	8	12	6	8
Federal Capital Territory ..	..	..	..	..	..	..	..	..	..	..
Northern Territory	..	..	..	3	..	1	..	3	1	1
Total ..	4	1	3	3	..	26	18	21	10	17

§ 3. State Railways.

1. **Administration and Control of State Railways.**—In each State of the Commonwealth the policy has been established that the railways should be under the control of the Government. This policy, as has been shown, was adopted early in the railway history of Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. 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, 1918 to 1922.**—The following table shows the length of State railways open for traffic on the 30th June in the years 1918 to 1922 :—

RAILWAYS, STATE.—MILEAGE OPEN FOR TRAFFIC, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1918	4,678	4,152	5,295	2,242	3,491	588	20,446
1919	4,825	4,190	5,469	2,290	3,538	601	20,913
1920	5,015	4,214	5,685	2,333	3,538	629	21,414
1921	5,043	4,267	5,752	2,333	3,538	630	21,563
1922	5,116	4,317	5,799	2,357	3,538	637	21,764

A graph indicating the mileage open in the Commonwealth at the end of each of the years 1870 to 1922 accompanies this chapter.

The following statement shows the actual mileage opened for traffic in the year 1922, and also the annual average increase in mileage opened since 1912 in each State :—

RAILWAYS, STATE.—MILEAGE OPENED ANNUALLY.

Mileage.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total all States.
Mileage opened during 1921–22	73.30	50.28	47.62	24.02	..	6.96	202.18
Average annual mileage increase for 10 years to 30th June, 1922 ..	128.41	69.44	167.63	89.58	94.07	14.10	563.23

(i) *New South Wales.* During the year ended 30th June, 1922, the extensions from Nimmitabel to Bombala (37.53 miles); Rozelle Bay to Darling Island (2.47 miles); and from Yanco to Griffith (33.66 miles) were opened for traffic. A few small readjustments of actual mileage on existing lines were made, reducing the mileage opened by 0.36 miles.

(ii) *Victoria.* The following lines were opened for traffic during 1921–22 :— Bittern to Red Hill (9.91 miles); Yarram to Won Wron (8.38 miles); Koo-Wee-Rup to Strzelecki (30.69 miles); and Morwell Brown Coal line to Yallourn (1.30 miles); a total distance of 50.28 miles.

(iii) *Queensland.* The increase of 47.62 miles in the mileage opened for traffic in 1921–22 was due to the opening of the following lines :—St. Lawrence to Carmila (33.00 miles); Tarzali to Millaa Millaa (9.35 miles); and Gargett to near Owen's Creek (5.53 miles). Certain minor readjustments to the mileage of existing lines reduced the mileage by 0.26 miles.

(iv) *South Australia.* A line from Clare to Spalding (24.30 miles) was opened for traffic, while two small adjustments decreased the existing mileage by 0.28 miles. The net increase in mileage open for the year was 24.02 miles.

(v) *Western Australia.* For the third year in succession there were no additional new lines opened during the year.

(vi) *Tasmania.* During the year the line from Irishtown to Smithton (5.25 miles) was completed and taken over, and several adjustments increased the existing mileage by 1.71 miles, making a total increase of 6.96 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 of the different States for the year ended 30th June, 1922, is given in the Transport and Communication Bulletin No. 14 issued by this Bureau.

4. **Average Mileage Worked and Train-Miles Run.**—The total mileage open for traffic at the end of each financial year has been given previously, but, in considering the returns relating to revenue and expenditure and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shows the average number of miles worked and the total number of train-miles run by the Government railways of each State during the years 1918 to 1922 inclusive :—

RAILWAYS, STATE.—MILEAGE WORKED AND MILES RUN, 1918 TO 1922.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
			AVERAGE MILEAGE WORKED.				
1918 ..	4,551	4,139	5,281	2,235	3,463	591	20,260
1919 ..	4,737	4,159	5,324	2,285	3,507	599	20,611
1920 ..	4,966	4,194	5,635	2,316	3,538	635	21,284
1921 ..	5,019	4,237	5,733	2,333	3,538	637	21,497
1922 ..	5,077	4,279	5,784	2,344	3,538	635	21,657
			TRAIN-MILES RUN.				
1918 ..	18,143,267	13,626,371	10,319,694	5,440,515	4,094,510	1,056,373	52,680,730
1919 ..	19,935,202	13,031,655	9,942,744	5,412,924	4,256,627	1,107,890	53,687,042
1920 ..	22,834,889	15,022,465	10,443,619	5,192,038	4,851,446	1,266,625	59,611,082
1921 ..	22,792,053	15,533,556	10,735,723	5,712,491	4,918,113	1,387,417	61,079,353
1922 ..	21,887,065	15,856,815	9,634,532	5,629,957	4,564,631	1,433,099	59,006,099

In some years the average mileage worked by the Government in Tasmania is greater than the Government mileage open owing to the Railway Department having running powers over certain private lines.

A decrease in train-mileage occurs principally in the States of New South Wales and Queensland, where the goods-train-mileage was respectively 982,559 and 1,035,871 miles less than the previous year.

5. **Lines under Construction, and Lines Authorized, 1922.**—(i) *General.* The following statement gives particulars up to the 30th June, 1922, 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, 1922.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction	a584.70	35.00	b466.00	115.00	c120.75	37.75	1,359·20
Mileage authorized but not commenced ..	87.39	41.25	1,178.00	28.75	54.75	..	1,390.14

(*a*) Exclusive of 155.70 miles on which work has been suspended.
(*b*) Exclusive of 289 miles on which work has been suspended.
(*c*) Exclusive of 53.25 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 although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view.

(*a*) *New South Wales.* The total mileage under construction was 584.70 miles, consisting of the following lines :—Coff's Harbour to Glenreagh (26.38 miles); Molong to Dubbo (80.00 miles); Binnaway to Werris Creek (90.88 miles); Coonabarabran to Burren Junction (95.36 miles); Griffith to Hillston (66.15 miles); Barmedman to Rankin's Springs (70.91 miles); Gilmore to Batlow (22.00 miles); Canowindra to Eugowra (26.70 miles); Glenreagh to Dorrigo (44.25 miles); Regent's Park to Cabramatta and Enfield (8.10 miles); Macksville to Raleigh (20.68 miles); Tarana to Oberon (16.00 miles); and Sydenham to Botany (6.20 miles). Work on the City and Suburban Electric Railway (11.09 miles) was recommenced after being shut down for four and a half years.

The line from Westmead to Dural (1.56 miles) was completed on the 12th November, 1921, but had not been opened for traffic at 30th June, 1922.

A line from Trida to Menindie (155.70 miles) has been commenced, but work was suspended at 30th June, 1922.

(*b*) *Victoria.* In this State a 5-ft. 3-in. gauge line is being constructed from Red Cliffs to Millewa North, a distance of 35.00 miles.

(*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, 1922, the following lines, of an aggregate length of 466 miles, were under construction :—Northern Division—Gargett to Owen's Creek (6 miles); Merinda to Bowen Coal Fields (49 miles); North Coast Railway—Daradgee to Tully River (36 miles); Tully River to Cardwell (24 miles); Lilypond to Cardwell (28 miles); Farleigh to Proserpine (68 miles); Central Division—Many Peaks to Monto (45 miles); Rannes to Monto (109 miles). Southern Division—Mundubbera to Monto (65 miles); Murgon to Proston (26 miles); Kalbar to Mt. Edwards (10 miles). The following lines are partially constructed, but work thereon is temporarily suspended :—Tara to Surat (50 miles); Wallaville to Kalliwa (18 miles); Longreach to Winton (109 miles); Yaraka to Powell's Creek (27 miles); Dajarra to Moonah Creek (41 miles); Mt. Molloy Extension (7 miles); and Winton to 37-Mile (37 miles); a total of 289 miles.

(*d*) *South Australia.* In this State the lines under construction on the 30th June, 1922, were as follows :—Wandana to Penong (54.00 miles), and Long Plains to Redhill (61.00 miles), an aggregate distance of 115.00 miles.

(*e*) *Western Australia.* The following lines were in course of construction by the Public Works Department on the 30th June, 1922 :—Esperance northward (60 miles).

Mt. Marshall Extension (23 miles), and from Busselton to Margaret River (37.75 miles). a total of 120.75 miles. The construction of the line from Narembeen to Merredin (53.25 miles) is at present in abeyance.

(*f*) *Tasmania.* At 30th June, 1922, the following lines were under construction :— Myalla to Wiltshire (27.25 miles); Marrawah Tram Extension (1.25 miles); Melrose Extension (4.75 miles); and Preolenna Extension (4.50 miles); a total of 37.75 miles.

(ii) *Lines Authorized for Construction.* (*a*) *New South Wales.* At the 30th June, 1922, the following lines had been authorized for construction but not commenced :— Gilgandra to Collie (21.51 miles); Roslyn to Taralga (15.66 miles); Grafton to South Grafton with bridge over Clarence River (2.34 miles); The Rock to Pulletop (26.00 miles); Ballina to Buyong (15.20 miles); Richmond to Kurrajong (6.68 miles); a total distance of 87.39 miles.

(*b*) *Victoria.* The following lines were authorized, but construction had not been commenced up to the end of June, 1922 :—*5-ft. 3-in. gauge :* Merbein to Yelta (10 miles); Port Fairy to Yambuk (11.50 miles); Won Wron to Woodside (9.75 miles); and Colac to Alvie (10.00 miles); an aggregate of 41.25 miles.

(*c*) *Queensland.* In addition to the new lines upon which work has been commenced, Parliament has also 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 (217 miles). The following lines were also authorized for construction: Branch to Windera (12 miles); Inglewood to Texas and Silverspur (44 miles); Mount Edwards to Maryvale (28 miles); Lanefield to Rosevale (17 miles); Gatton to Mount Sylvia (11 miles); Juandah to Taroom (42 miles); Dirranbandi extension (52 miles); Yarraman to Nanango (16 miles); Brooloo to Kenilworth (10 miles); Dobbyn to Myally Creek (50 miles); Peeramon towards Boonjee (11 miles); a total of 1,178 miles.

(*d*) *South Australia.* Parliament has authorized the construction of lines on the 5-ft. 3-in. gauge from Paringa to Renmark, a distance of 2.50 miles, and on the 3-ft. 6-in. gauge from Kielpa to Mangalo Hall (26.25 miles). The conversion of certain 3-ft. 6-in. gauge lines in the north-west of the State to 5-ft. 3-in. gauge has also been authorized. About 175 miles of line are involved in this scheme.

(*e*) *Western Australia.* The following lines were authorized for construction up to the 30th June, 1922 :—Dwarda-Narrogin (33 miles), and Nyabing-Pingerup (21.75 miles), a distance of 54.75 miles.

(*f*) *Tasmania.* There were no railways authorized on which work had not been commenced at 30th June, 1922.

6. **Cost of Construction and Equipment.**—(i) *General.* The total cost of construction and equipment of the State railways at the 30th June, 1922, amounted to £233,077,006, or to an average cost of £10,709 per mile open for traffic. 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, 1922.

State.	Length of Line Open (Route).	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.	Mileage per 1,000 of Population.
	Miles.	£	£	£	Miles.
New South Wales (*a*) ..	5,116.08	83,789,871	16,378	39.01	2.38
Victoria	4,316.86	(*b*) 62,941,364	(*b*) 14,580	40.07	2.75
Queensland	5,799.33	42,519,012	7,332	54.13	7.39
South Australia (*a*) ..	2,357.21	(*c*) 19,742,821	(*c*) 8,376	39.09	4.67
Western Australia (*a*)	3,538.23	18,330,557	5,181	53.99	10.41
Tasmania	636.80	5,753,381	9,035	26.96	2.99
All States ..	21,764.51	(*bc*)233,077,006	(*bc*) 10,709	41.91	3.91

(*a*) Exclusive of Federal railways.
(*b*) Exclusive of cost of line from Murrayville to South Australian border (12.53 miles).
(*c*) Exclusive of cost of line from Mount Gambier to Victorian border (11.79 miles).

The lowest average cost (£5,181) per mile open is in Western Australia, and the highest (£16,378) in New South Wales, as compared with an average of £10,709 for all States. There were few costly engineering difficulties in Western Australia, and the fact that contractors were permitted to carry traffic during the term of their contracts considerably lessened the cost of construction in that State, particularly in respect of all goldfield contracts.

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

(ii) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of lines constructed recently is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1,750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1892 many hundreds of miles of "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2,000 to £7,500 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar and the Peak, the average cost of which, to the end of June, 1922, was £3,792. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost up to 30th June, 1922, of the narrow gauge (2 ft. 6 in.) lines, having a length of 121.90 miles, was £347,575, which gives an average cost per mile of £2,851 only. In the other States, the cost of construction per mile has been similarly reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened, and the stations and siding accommodation enlarged.

(iii) *Examples of Expensive Lines.* The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days of railway construction.

RAILWAYS, STATE.—EXAMPLES OF EXPENSIVE LINES.

Line.	Gauge.	Length.			Total Cost.	Average Cost per Mile.	Date of Opening.
		Double Lines and over.	Single Line.	Total.			
	ft. in.	Miles.	Miles.	Miles.	£	£	
NEW SOUTH WALES—							
Penrith to Bathurst ..	4 8½	97.56	16.52	114.08	5,010,131	43,916	1876
Sydney to Nowra	4 8½	44.28	54.15	98.43	5,114.015	51,955	1887
Homebush to Waratah ..	4 8½	95.71	..	95.71	3,627,518	37,900	1889
VICTORIA—							
Melbourne to Bendigo ..	5 3	100.89	..	100.89	5,025,067	49,807	1862
North Geelong to Ballarat ..	5 3	41.45	11.98	53.43	1,968,844	36,849	1862

The average cost per mile of the 462.54 miles comprised in the above table was £44,851, whereas the average cost of the 493.47 miles referred to in the next table was £1,891.

(iv) *Examples of Cheaply-Constructed Lines.* The next table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

RAILWAYS, STATE.—EXAMPLES OF CHEAPLY-CONSTRUCTED LINES.

Line.	Gauge.		Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft.	in.	Miles.	£	£	
NEW SOUTH WALES—						
Parkes to Condobolin	4	8½	62.66	141,930	2,265	1898
Burren Junction to Pokataroo ..	4	8½	42.55	105,287	2,474	1906
VICTORIA—						
Wangaratta to Whitfield ..	2	6	30.49	41,029	1,346	1899
Wycheproof to Sea Lake ..	5	3	47.89	87,839	1,834	1895
Ultima to Chillingollah ..	5	3	20.14	35,293	1,752	1909
QUEENSLAND—						
Dalby to Bell	3	6	23.50	38,458	1,637	1906
Mahar to Jandowae	3	6	28.24	65,214	2,309	1914
Almaden to Forsayth	3	6	142.32	244,932	1,721	1919
SOUTH AUSTRALIA—						
Wandilo to Glencoe	3	6	9.13	11,740	1,287	1904
Tailem Bend to Pinnaroo ..	5	3	86.55	161,840	1,870	1906

The figures given in the two preceding tables are subject to certain limitations, inasmuch as the cost was naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (*i.e.*, exclusive of cost of equipment), and cannot therefore be directly compared with the average cost per mile open.

(v) *Capital Cost, All Lines.* The increase in the total capital cost of construction and equipment of Government railways for each year from 1918 to 1922 is shown in the following table :—

RAILWAYS, STATE.—CAPITAL COST OF LINES OPEN, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
			TOTAL COST OF LINES OPEN.				
	£	£	£	£	£	£	£
1918 ..	75,050,450	a56,535,414	37,301,889	b17,974,348	17,760,566	4,979,399	(a, b)209,602,066
1919 ..	76,601,591	a57,403,576	38,244,494	b18,649,979	17,995,941	5,076,014	(a, b)213,971,595
1920 ..	79,318,917	a58,287,897	40,005,868	b19,105,510	18,062,354	5,240,276	(a, b)220,020,822
1921 ..	80,756,194	a59,798,696	41,368,640	b19,270,704	18,169,980	5,383,192	(a, b)224,747,406
1922 ..	83,789,871	a62,941,364	42.519.012	b19,742,821	18,330,557	5,753,381	(a, b)233,077,006
			COST PER MILE OPEN.				
1918 ..	16,042	(a)13,659	7,045	(b)8,058	5,087	8,470	(a, b)10,263
1919 ..	15,877	(a)13,743	6,992	(b)8,186	5,086	8,438	(a, b)10,243
1920 ..	15,815	(a)13,832	7,037	(b)8,188	5,105	8,344	(a, b)10,275
1921 ..	16,014	(a)14.0.6	7,192	(b)8,259	5,135	8,547	(a, b)10,495
1922 ..	16,378	(a)14,580	7,332	(b)8,376	5,181	9,035	(a, b)10,709

(*a*) Exclusive of cost of line from Murrayville to South Australian border (12.53 miles).
(*b*) Exclusive of cost of line from Mount Gambier to Victorian border (11.79 miles).

(vi) *Loan Expenditure.* The subjoined table shows the total loan expenditure on Government railways (including lines both open and unopen) in each State, except Tasmania, and on Government railways and tramways in the latter State for the years 1918 to 1922 :—

RAILWAYS, STATE.—LOAN EXPENDITURE, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	All States.
	£	£	£	£	£	£	£
1918 ..	2,294,547	761,705	984,147	500,441	181,394	55,561	4,777,795
1919 ..	1,441,105	878,384	1,416,302	324,041	154,720	39,165	4,253,717
1920 ..	2,387,303	982,182	2,356,498	236,925	93,676	91,221	6,147,805
1921 ..	3,598,351	1,685,329	1,760,932	252,097	145,724	254,079	7,696,512
1922 ..	4,399,725	3,478,021	1,226,280	572,482	323,296	490,990	10,490,794

(a) Including tramways.

The following statement shows the total loan expenditure on railways to the 30th June, 1922 :—

RAILWAYS, STATE.—TOTAL LOAN EXPENDITURE TO 30th JUNE, 1922.

State ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.a	All States.
Expenditure	£ 91,884,734	£ 61,668,618	£ 45,794,950	£ 22,024,413	£ 17,910,019	£ 6,342,055	£ 245,624,789

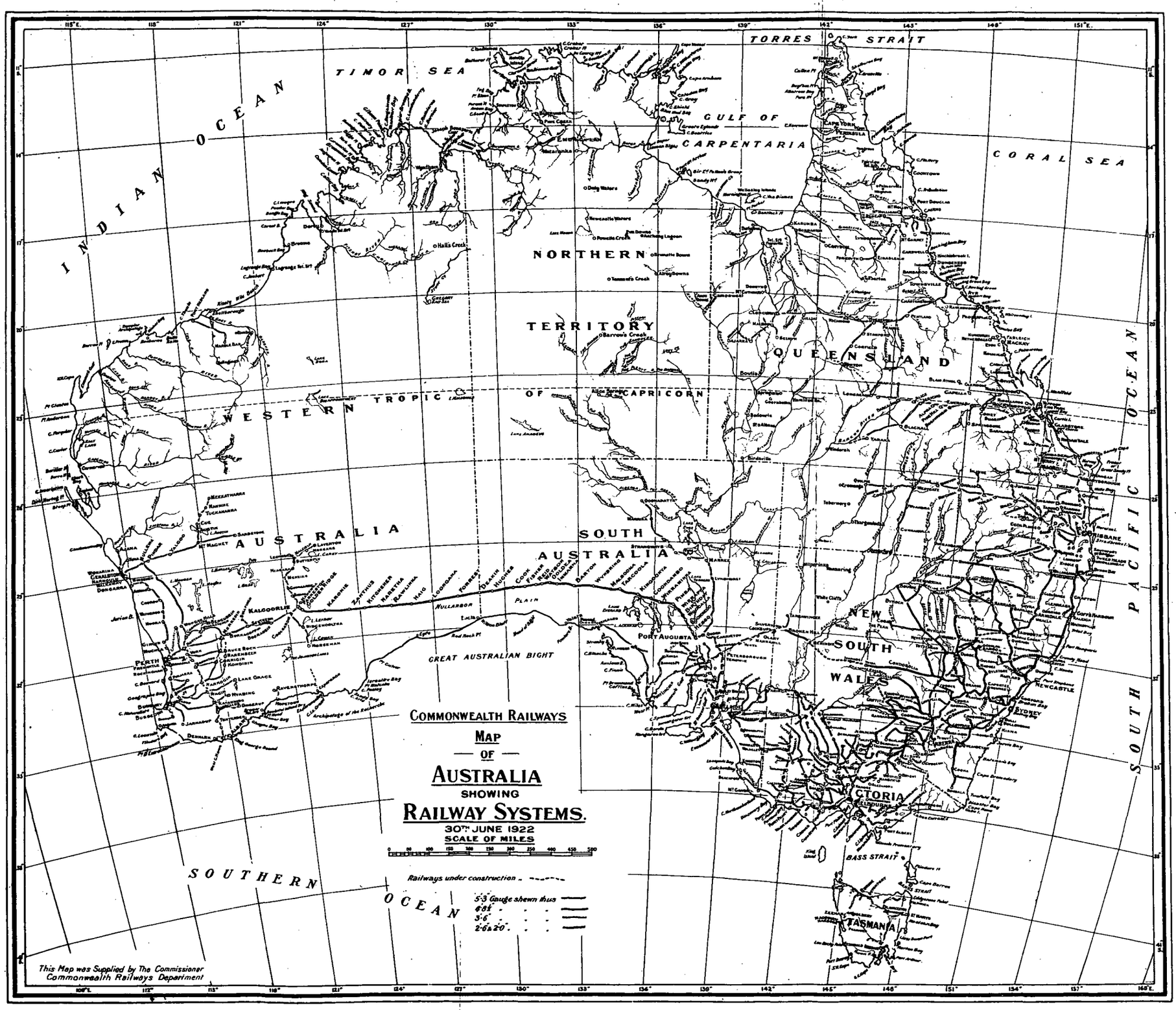
(a) Including tramways.

7. **Gross Revenue.**—(i) *General.* The following table shows the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run during each financial year from 1918 to 1922 inclusive :—

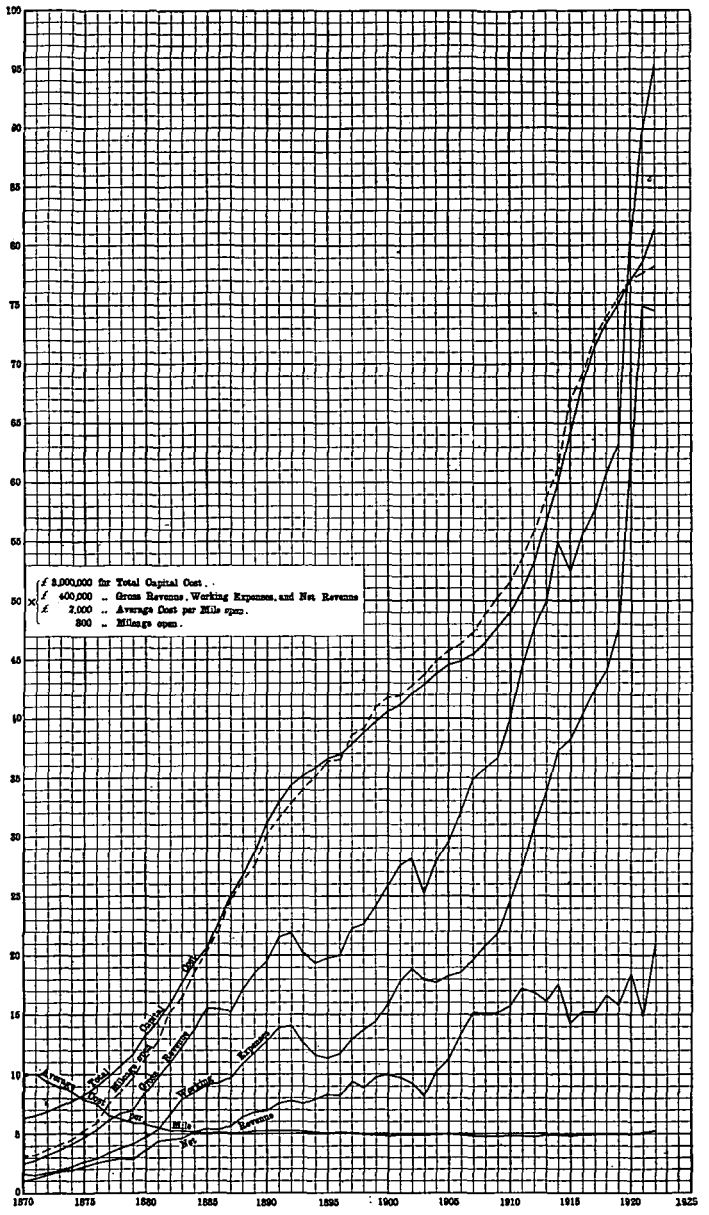
RAILWAYS, STATE.—GROSS REVENUE, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
TOTAL GROSS REVENUE.							
	£	£	£	£	£	£	£
1918	8,954,880	6,562,259	4,023,921	2,331,549	1,816,388	356,735	24,045,732
1919	9,958,173	6,432,277	3,984,597	2,391,409	1,872,897	401,364	25,040,717
1920	13,083,847	8,224,972	4,960,150	2,726,540	2,291,876	506,177	31,793,562
1921	14,267,205	9,795,763	5,279,412	2,942,028	2,720,032	600,045	35,604,485
1922	15,213,019	10,791,082	5,154,530	3,297,347	2,827,856	588,297	37,872,131
GROSS REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1918	1,968	1,585	762	1,043	525	604	1,166
1919	2,102	1,547	748	1,047	534	670	1,215
1920	2,635	1,961	880	1,177	648	797	1,494
1921	2,843	2,312	921	1,261	768	942	1,656
1922	2,996	2,522	891	1,406	799	927	1,749
GROSS REVENUE PER TRAIN-MILE RUN.							
	d.	d.	d.	d.	d.	d.	d.
1918	118.46	115.58	93.58	102.85	106.47	81.05	109.55
1919	119.88	118.46	96.18	106.03	105.60	86.95	111.94
1920	137.51	131.40	113.99	126.03	113.38	95.91	127.80
1921	150.23	151.35	118.02	123.60	132.74	103.79	139.90
1922	166.82	163.33	128.40	140.56	148.68	98.51	150.04

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


TORRES STRAIT
TIMOR SEA
INDIAN OCEAN
GULF OF CARPENTARIA
CORAL SEA
NORTHERN TERRITORY
QUEENSLAND
TROPIC OF CAPRICORN
WESTERN AUSTRALIA
SOUTH AUSTRALIA
NEW SOUTH WALES
VICTORIA
TASMANIA
BASS STRAIT
GREAT AUSTRALIAN BIGHT
NULLARBOR PLAIN
SOUTHERN OCEAN
SOUTH PACIFIC OCEAN
PERTH
KALGOORLIE
PORT AUGUSTA
BRISBANE
SYDNEY
NEWCASTLE
COMMONWEALTH RAILWAYS
MAP
OF
AUSTRALIA
SHOWING
RAILWAY SYSTEMS.
30TH JUNE 1922
SCALE OF MILES
Railways under construction
5'3 Gauge shewn thus
4'8½
3'6
2'6 & 2'0
This Map was Supplied by The Commissioner
Commonwealth Railways Department

FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1870 TO 1922.



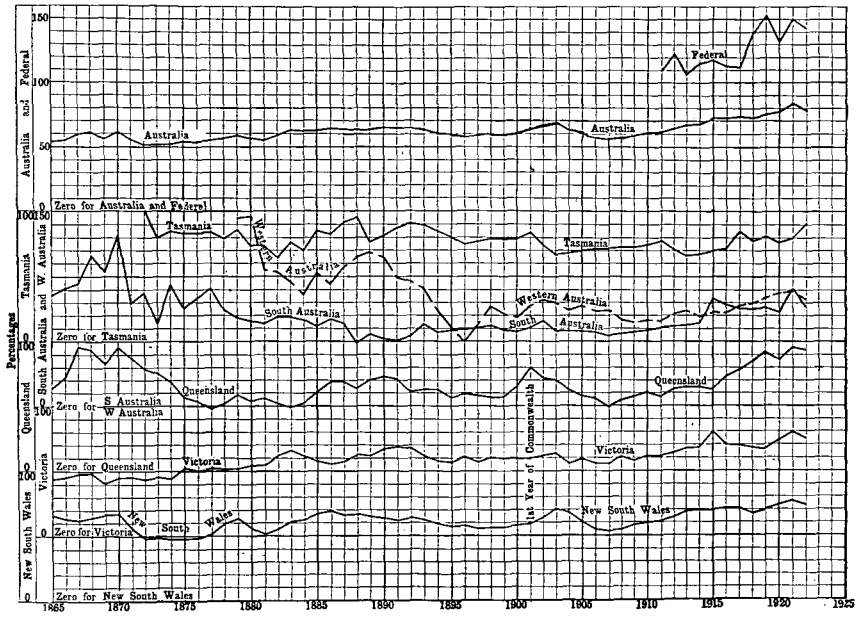
(See page 320.)

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

In the curve for the total capital cost, the vertical side of each square represents £3,000,000.

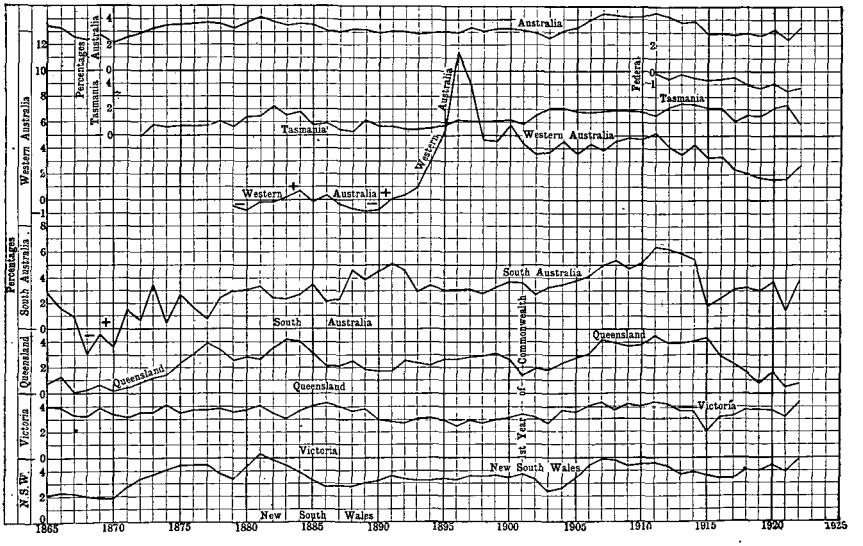
In the curves for (i) gross revenue, (ii) working expenses, and (iii) net revenue, the vertical height of each small square represents £400,000. For the curve of average cost per mile open, the vertical side of each small square represents £2,000. The mileage open is shown by a dotted curve, the vertical side of each square representing 300 miles.

PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE OF GOVERNMENT RAILWAYS, 1865 TO 1922.



EXPLANATION.—The base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent, the heavy zero lines being different for each State and Australia, with, however, two exceptions, the zero lines for South Australia and Western Australia being identical, as is also the case with the zero line for Australia and Federal.

PERCENTAGES OF NET REVENUE ON CAPITAL COST OF GOVERNMENT RAILWAYS, 1865 TO 1922.



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

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

(ii) *Coaching, Goods, and Miscellaneous Receipts.* (*a*) *Totals.* The gross revenue is composed of (*a*) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (*b*) receipts from the carriage of goods and live stock; and (*c*) rents and miscellaneous items. The subjoined table shows the gross revenue for 1918 to 1922, 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, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
			COACHING TRAFFIC RECEIPTS.				
	£	£	£	£	£	£	£
1918 ..	3,932,936	3,254,274	1,396,803	819,197	617,606	177,854	10,198,670
1919 ..	3,978,180	3,241,194	1,392,476	807,747	637,851	188,329	10,245,777
1920 ..	5,714,131	4,205,420	1,833,349	1,130,659	764,872	236,763	13,885,194
1921 ..	6,384,031	4,897,258	1,885,677	1,185,878	911,007	270,635	15,534,486
1922 ..	6,636,530	5,376,620	1,898,050	1,240,354	973,153	263,340	16,388,047
			GOODS AND LIVE STOCK TRAFFIC RECEIPTS.				
1918 ..	4,652,113	3,137,547	2,516,564	1,480,469	1,105,836	168,095	13,060,624
1919 ..	5,583,982	2,957,789	2,483,698	1,536,209	1,127,539	203,412	13,892,629
1920 ..	6,807,792	3,721,122	3,000,829	1,556,224	1,394,908	261,657	16,742,532
1921 ..	7,270,856	4,411,276	3,267,289	1,719,556	1,637,979	320,798	18,627,754
1922 ..	7,953,909	4,815,056	3,105,485	2,000,716	1,688,482	312,890	19,876,538
			MISCELLANEOUS RECEIPTS.				
1918 ..	369,831	170,438	110,554	31,883	92,946	10,786	786,438
1919 ..	396,011	233,294	108,423	47,453	107,507	9,623	902,311
1920 ..	561,924	298,430	125,972	39,657	132,096	7,757	1,165,836
1921 ..	612,318	487,229	126,446	36,594	171,046	8,612	1,442,245
1922 ..	622,580	599,406	150,995	56,277	166,221	12,067	1,607,546

(*b*) *New South Wales.* The increase in revenue over 1921 is due to the higher rates and fares which came into operation in November, 1920. In the previous year only eight months' operations were affected by the increase in rates.

(*c*) *Victoria.* The increased fares and rates from 1st January, 1921, were operative over the whole year as against only six months of the previous year. This fact, together with the increased traffic on suburban lines and the revenue from the sale of electric power, was responsible for the increased revenue in this State.

(*d*) *Queensland.* A reduction of 20 per cent. on freight rates for cattle, sheep, pigs, and dairy produce which was made in March, 1922, to assist the pastoral and dairying industries over a period of depression was mainly the cause of a decrease in revenue over the previous year.

(*e*) *South Australia.* Consequent on the re-opening of the Port Pirie smelters a very substantial increase in the carriage of ores from Broken Hill resulted. This was the principal reason for an increase of revenue over the year 1921.

(*f*) *Western Australia.* As compared with the previous year the receipts from all sources except carriage of live stock, jetties, and miscellaneous showed an increase. The decrease in live stock receipts is attributable to the drought conditions in the Murchison and Gascoyne districts.

(*g*) *Tasmania.* Although the passenger journeys showed an increase of 163,038 over the previous year, the receipts from this source decreased by £5,111. A very appreciable falling off in the goods and live stock traffic accentuated the decrease of revenue over the previous year.

(*b*) *Percentages.* The following table shows for the two years 1920–21 and 1921–22 the percentage which each class of receipts bears to the total gross revenue :—

RAILWAYS, STATE.—PERCENTAGES OF RECEIPTS, 1921 AND 1922.

State.	1921.			1922.		
	Coaching.	Goods and Live Stock.	Miscellaneous.	Coaching.	Goods and Live Stock.	Miscellaneous.
	%	%	%	%	%	%
New South Wales ..	44.75	50.96	4.29	43.63	52.28	4.09
Victoria	49.99	45.03	4.98	49.83	44.62	5.55
Queensland	35.72	61.89	2.39	36.82	60.25	2.93
South Australia ..	40.31	58.45	1.24	37.62	60.67	1.71
Western Australia ..	33.49	60.22	6.29	34.41	59.71	5.88
Tasmania	45.10	53.46	1.44	44.76	53.19	2.05
All States ..	43.63	52.32	4.05	43.27	52.48	4.25

(*c*) *Averages for Coaching Traffic Receipts.* The subjoined table shows the receipts from coaching traffic per average mile of line worked, and per passenger-train mile, in each State for the year ended the 30th June, 1922 :—

RAILWAYS, STATE.—COACHING TRAFFIC RECEIPTS, AVERAGES, 1922.

State.	Number of Passenger-Train-Miles.	Coaching Traffic Receipts.		
		Gross.	Per Average Mile Worked.	Per Passenger-Train-Mile.
	No.	£	£	*d.*
New South Wales	11,378,832	6,636,530	1,307	139.98
Victoria	9,865,214	5,376,620	1,256	130.80
Queensland	3,702,325	1,898,050	328	123.04
South Australia	2,748,703	1,240,354	529	108.30
Western Australia	1,875,871	973,153	275	124.51
Tasmania	662,272	263,340	415	95.43
All States	30,233,217	16,388,047	756	130.09

(*d*) *Averages for Goods and Live Stock Traffic.* The following table shows the gross receipts from goods and live stock traffic per mile worked, per goods-train-mile, and per ton carried, for the year ended the 30th June, 1922 :—

RAILWAYS, STATE.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS, AVERAGES, 1922.

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 ..	10,508,233	14,197,055	7,953,909	1,567	181.66	134.46
Victoria	5,991,601	7,491,031	4,815,056	1,125	192.87	154.27
Queensland ..	5,932,207	3,732,413	3,105,485	537	125.64	199.69
South Australia ..	2,881,254	2,827,681	2,000,716	853	166.65	169.81
Western Australia ..	2,688,760	2,548,258	1,688,482	477	150.71	159.02
Tasmania	770,827	621,751	312,890	493	97.42	120.78
All States ..	28,772,882	31,418,189	19,876,538	917	165.79	151.83

8. **Working Expenses.**—(i) *General.* In order to make an adequate comparison of the working expenses, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—*i.e.*, a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little backloading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure. Reference has already been made to the agreement arrived at by the Conference of Railway Accountants.

The following table shows the total annual expenditure and the percentage of the total of these expenses upon the corresponding gross revenues in each State for each year 1918 to 1922 :—

RAILWAYS, STATE.—WORKING EXPENSES, 1918 TO 1922.

Year ended 30th June.—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL WORKING EXPENSES.							
	£	£	£	£	£	£	£
1918	5,940,447	4,451,092	3,410,157	1,747,055	1,451,334	277,952	17,278,037
1919	6,904,450	4,279,663	3,690,445	1,829,634	1,567,591	324,595	18,596,378
1920	9,570,983	6,058,912	4,323,392	2,007,361	2,000,473	390,191	24,351,312
1921	11,032,677	7,835,756	5,048,498	2,655,465	2,422,004	476,187	29,470,587
1922	11,116,302	8,026,665	4,810,362	2,537,110	2,328,843	538,066	29,357,348
PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.							
	%	%	%	%	%	%	%
1918	66.34	67.83	84.75	74.93	79.90	77.92	71.85
1919	69.33	66.53	92.62	76.51	83.70	80.87	74.26
1920	73.15	73.66	87.16	73.62	87.29	77.08	76.59
1921	77.33	79.99	95.63	90.26	89.04	79.35	82.77
1922	73.07	74.38	93.32	76.94	82.35	91.46	77.52

(*a*) *New South Wales.* The increase in working expenses over 1921 was due to greater expenditure on materials and also on wages consequent on the reduction of the hours of duty from 48 to 44 hours per week in the case of certain sections of the staff.

(*b*) *Victoria.* The increased rates of salaries which were in operation for the whole year as against six months only in the year 1921 were principally responsible for an increase of £493,161 in working expenses. Certain economies which were effected in the several branches reduced this increase to £190,909.

(*c*) *Queensland.* The decrease in working expenses over the previous year—notwithstanding that damage by floods involved an expenditure of approximately £50.000—was attributable to a reduction in the number of train-miles run and also to economics effected in several branches.

(*d*) *South Australia.* A decrease in the train-mileage of 82,534 miles was partly responsible for the reduced working expenses compared with the previous year. The principal decrease occurred in the expenses of the maintenance of ways and works, though increases in the cost of materials prevented a still greater reduction of working expenses.

(*e*) *Western Australia.* The cost of the Traffic Branch showed a decrease of £67,019 as contrasted with the previous year. This is brought about mainly by a reduction of 353,482 train-miles.

(*f*) *Tasmania.* The increase of £61,879 in the working expenses as compared with the previous year was ascribed to increases of salaries and wages and the higher cost of stores and other material.

(*g*) *All States.* In each State the percentages of the working expenses on the gross earnings during the last five years generally reached the maximum in 1920–21. In the last year, with the exception of Tasmania, there has been a general decline.

The variation in the percentage of working expenses on the gross revenue in each State for the years 1865 to 1922 is illustrated in the graph which accompanies this chapter.

(ii) *Averages.* The following table shows the working expenses per average mile worked and per train-mile run in each State for the years 1918 to 1922 :—

RAILWAYS, STATE.—WORKING EXPENSES, AVERAGES, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
WORKING EXPENSES PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1918	1,305	1,075	646	782	419	470	838
1919	1,457	1,029	693	801	447	542	902
1920	1,927	1,445	767	867	565	614	1,144
1921	2,198	1,849	881	1,138	684	748	1,371
1922	2,189	1,876	832	1,082	658	848	1,356
WORKING EXPENSES PER TRAIN-MILE RUN.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1918	78.58	78.40	79.31	77.07	85.07	63.15	78.72
1919	83.12	78.82	89.08	81.12	88.39	70.32	83.13
1920	100.59	96.80	99.35	92.79	98.96	73.93	98.04
1921	116.17	118.21	112.86	111.56	118.19	82.37	115.10
1922	121.89	121.49	119.83	108.15	122.45	90.11	119.41

The working expenses per average mile worked for all States for the year 1922 increased by £518 over the year 1918, but at the same time it must be taken into consideration that the gross revenue shows a still greater increase, viz., £583. The working expenses per train-mile run increased during the same period by 40.69d., while the gross revenue rose by 40.49d.

(iii) *Distribution.* The subjoined table shows the distribution of working expenses, under four chief heads of expenditure, for the years 1918 to 1922 :—

RAILWAYS, STATE.—DISTRIBUTION OF WORKING EXPENSES, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
MAINTENANCE.							
	£	£	£	£	£	£	£
1918	996,502	1,049,270	851,525	304,462	371,411	72,515	3,645,685
1919	1,126,118	870,123	904,199	338,785	411,986	87,902	3,739,113
1920	1,589,472	1,288,030	988,881	350,953	485,647	100,276	4,803,259
1921	1,808,531	1,576,857	1,153,095	526,120	561,845	122,349	5,748,797
1922	1,940,794	1,708,539	1,162,367	400,541	557,091	152,168	5,921,500
LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.							
1918	2,755,183	2,042,846	1,515,121	982,298	656,576	125,190	8,077,214
1919	3,277,623	2,019,967	1,650,263	981,646	689,333	149,260	8,768,092
1920	4,603,775	2,785,614	2,000,901	1,101,629	927,139	185,576	11,604,634
1921	5,466,880	3,541,967	2,374,560	1,414,866	1,095,300	229,154	14,122,727
1922	5,474,485	3,426,370	2,165,438	1,417,305	1,074,460	239,158	13,797,216
TRAFFIC EXPENSES.							
1918	1,727,861	1,225,479	974,513	426,775	379,991	63,728	4,798,347
1919	1,927,612	1,257,685	1,067,667	459,147	418,050	72,514	5,202,675
1920	2,535,813	1,820,588	1,251,192	495,700	529,802	87,786	6,720,881
1921	3,027,041	2,246,443	1,428,008	651,579	688,077	109,521	8,150,669
1922	2,993,601	2,395,694	1,387,425	660,202	621,058	125,038	8,183,018
OTHER CHARGES.							
1918	460,901	133,497	68,998	33,520	43,356	16,519	756,791
1919	573,097	131,888	68,316	50,056	48,222	14,919	886,498
1920	841,923	164,680	82,418	59,079	57,885	16,553	1,222,538
1921	730,225	470,489	92,835	62,900	76,782	15,163	1,448,394
1922	707,422	496,062	95,132	59,062	76,234	21,702	1,455,614

In New South Wales and Victoria the expenditure in connexion with refreshment rooms is included in " Other Charges " for the whole five years in the case of the former State, and from 1920 inclusive in the case of Victoria.

9. **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 opened for traffic in each State for the years 1918 to 1922 :—

RAILWAYS, STATE.—NET REVENUE AND PERCENTAGE OF NET REVENUE ON CAPITAL COST OF LINES OPEN, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
Net Revenue.							
	£	£	£	£	£	£	£
1918	3,014,433	2,111,167	613,764	584,494	365,054	78,783	6,767,695
1919	3,053,723	2,152,614	294,152	561,775	305,306	76,769	6,444,339
1920	3,512,863	2,166,060	636,758	719,180	291,403	115,986	7,442,250
1921	3,234,528	1,960,007	230,914	286,563	298,028	123,858	6,133,898
1922	4,096,717	2,764,417	344,168	760,237	499,013	50,231	8,514,783
Percentage of Net Revenue on Capital Expenditure.							
	%	%	%	%	%	%	%
1918	4.02	3.73	1.65	3.25	2.06	1.58	3.23
1919	3.99	3.75	0.77	3.01	1.70	1.51	3.01
1920	4.43	3.72	1.59	3.76	1.61	2.21	3.38
1921	3.93	3.27	0.56	1.48	1.64	2.30	2.72
1922	4.89	4.39	0.81	3.85	2.72	0.87	3.65

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

The percentage of net revenue on capital expenditure for all States during the past five years reached its maximum during the year 1921–22, with a return of 3.65. This was, however, insufficient to meet interest payable, for which particulars are included in the following paragraph.

(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, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
Net Revenue per Average Mile Worked.							
	£	£	£	£	£	£	£
1918	663	510	116	261	105	133	328
1919	645	518	55	246	87	128	313
1920	708	516	113	311	82	183	350
1921	645	463	40	123	84	194	286
1922	807	646	59	324	141	79	393
Net Revenue per Train-mile Run.							
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
1918	39.88	37.18	14.27	25.78	21.40	17.90	30.83
1919	36.76	39.64	7.10	24.91	17.21	16.63	28.81
1920	36.92	34.61	14.63	33.24	14.42	21.97	29.96
1921	34.06	29.56	5.16	12.04	14.55	21.42	23.95
1922	44.93	41.84	8.57	32.41	26.23	8.41	30.63

The substantial increases in the net revenue per average mile worked and per train-mile run are due to the causes mentioned in dealing with the increased gross revenue and decreased working expenses.

10. **Profit or Loss.**—The net revenue after payment of working expenses is shown in the previous subsection. The following table shows the amount of interest payable on expenditure from loans on the construction and equipment of the railways, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment :—

RAILWAYS, STATE.—PROFIT OR LOSS, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE.							
	£	£	£	£	£	£	£
1918	3,043,349	2,120,547	1,559,136	716,234	654,059	183,977	8,277,302
1919	3,265,540	2,157,798	1,617,404	747,671	665,100	186,402	8,639,915
1920	3,641,988	2,225,881	1,723,760	789,362	690,618	197,587	9,269,196
1921	3,811,560	2,401,132	1,811,974	847,867	716,398	205,765	9,794,696
1922	4,217,881	2,580,001	1,924,375	905,319	756,737	228,488	10,612,801
PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.							
	£	£	£	£	£	£	£
1918	— 28,916	— 9,380	— 945,372	— 131,740	— 289,005	— 105,194	—1,509,607
1919	— 211,817	— 5,184	—1,323,252	— 185,896	— 359,794	— 109,633	—2,195,576
1920	— 129,125	— 59,821	—1,087,001	— 70,182	— 399,215	— 81,601	—1,826,945
1921	— 577,032	— 441,125	—1,581,060	— 561,304	— 418,370	— 81,907	—3,660,798
1922	— 121,164	+ 184,416	—1,580,207	— 145,082	— 257,724	— 178,257	—2,098,018
PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.							
	%	%	%	%	%	%	%
1918	−0.03	−0.02	−2.53	−0.73	−1.63	−2.11	−0.72
1919	−0.28	−0.01	−3.46	−1.00	−2.00	−2.16	−1.03
1920	−0.16	−0.10	−2.71	−0.36	−2.21	−1.55	−0.83
1921	−0.70	−0.74	−3.82	−2.91	−2.30	−1.52	−1.62
1922	−0.15	+0.29	−3.72	−0.74	−1.41	−3.10	−0.90

— Indicates a loss.

The losses during the last five years in all the States are due to the causes to which allusion has already been made in the remarks as to increases in the working expenses. It will be observed in the preceding table that the interest charges in 1922 were £2,335,499 higher than they were in 1918, in which year the rate was 3.95 per cent. as against 4.55 per cent. in 1922.

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

The following table gives particulars for the years 1918 to 1922 :—

RAILWAYS, STATE.—TRAFFIC, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
NUMBER OF PASSENGER JOURNEYS.							
1918 ..	94,304,516	105,753,073	25,682,368	18,936,104	16,081,695	1,874,029	262,631,785
1919 ..	98,568,768	111,904,786	26,414,817	20,176,544	17,325,424	1,889,102	276,279,441
1920 ..	114,654,660	134,012,162	28,177,817	22,852,116	18,411,231	2,267,856	320,375,842
1921 ..	120,735,140	134,045,683	27,735,179	23,787,884	17,732,571	2,687,837	326,724,294
1922 ..	121,298,861	142,456,924	27,155,606	23,316,141	17,895,509	2,757,702	334,880,743
PER 100 OF MEAN POPULATION.							
1918 ..	5,028	7,524	3,810	4,381	5,212	942	5,365
1919 ..	5,107	7,821	3,804	4,527	5,527	904	5,492
1920 ..	5,651	8,907	3,837	4,835	5,512	1,042	6,054
1921 ..	5,732	8,720	3,627	4,782	5,322	1,260	5,992
1922 ..	5,645	9,067	3,469	4,606	5,272	1,283	6,020
PER AVERAGE MILE OF LINE WORKED.							
1918 ..	20,722	25,551	4,863	8,473	4,644	3,171	12,963
1919 ..	20,808	26,907	4,961	8,830	4,940	3,154	13,404
1920 ..	23,087	31,953	5,003	9,867	5,203	3,570	15,052
1921 ..	24,058	31,639	4,838	10,195	5,012	4,220	15,199
1922 ..	23,892	33,290	4,695	9,945	5,059	4,345	15,462
TONNAGE OF GOODS AND LIVE STOCK CARRIED.							
1918 ..	11,293,060	6,231,093	4,154,441	2,767,734	2,259,070	407,405	27,112,803
1919 ..	12,714,012	6,515,470	3,783,334	2,618,510	2,379,403	472,926	28,483,655
1920 ..	13,293,528	7,770,694	3,790,881	2,578,908	2,613,606	575,169	30,622,786
1921 ..	15,563,131	7,572,993	3,867,650	2,682,218	2,604,068	672,127	32,962,187
1922 ..	14,197,055	7,491,031	3,732,413	2,827,681	2,548,258	621,751	31,418,189
PER 100 OF MEAN POPULATION.							
1918 ..	602	443	616	640	732	205	554
1919 ..	659	455	545	587	759	226	566
1920 ..	655	516	516	546	782	264	579
1921 ..	739	493	506	539	782	315	605
1922 ..	661	477	477	559	751	289	565
PER AVERAGE MILE OF LINE WORKED.							
1918 ..	2,481	1,505	787	1,238	652	689	1,338
1919 ..	2,684	1,567	711	1,146	678	790	1,382
1920 ..	2,676	1,852	672	1,113	738	905	1,438
1921 ..	3,101	1,787	675	1,150	736	1,055	1,533
1922 ..	2,796	1,751	645	1,206	720	980	1,451

The tonnage of goods and live stock quoted above for New South Wales does not include 335,756 tons of coal on which shunting and haulage charges only were collected.

(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, suburban, and country traffic in each State. Particulars are, however, available only for the States of New South Wales, Victoria, and South Australia. The subjoined table shows the number of metropolitan and country passengers carried in each of the States mentioned and the revenue from the traffic during the year 1921-22 :—

RAILWAYS, STATE.—METROPOLITAN, SUBURBAN, AND COUNTRY PASSENGER TRAFFIC AND RECEIPTS, 1921-22.

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
				£	£	£
N.S.W. ..	a110,921,845	10,377,016	121,298,861	2,182,030	3,752,586	5,934,616
Victoria ..	b132,646,198	9,810,726	142,456,924	2,142,346	2,672,474	4,814,820
South Australia	c 21,188,793	2,127,348	23,316,141	394,897	659,381	1,054,278

(*a*) Within 34 miles of Sydney and Newcastle, including the Richmond line. (*b*) Within 20 miles of Melbourne. (*c*) Within 25 miles of Adelaide.

The number of passenger journeys in country districts in Victoria was less than the corresponding number in New South Wales, while, on the other hand, the number of metropolitan passenger journeys in Victoria was greater than in New South Wales. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne and Adelaide. In addition, the Sydney suburban transport facilities are considerably augmented by motor omnibus services and ferry services. These are dealt with in the paragraphs allocated to motor vehicles and shipping.

(iii) *Electrification of Melbourne Suburban Railways.* The electrification of the Melbourne Suburban Railways which has been in progress during the last ten years was completed in April, 1923.

The scheme comprised the electrification of 143 route-miles of steam-operated railway, including sidings, and the conversion and construction of the necessary rolling stock. Particulars of the lines concerned were given in Year Book No. 15, p. 564.

(iv) *Country Lines.* As the traffic on main country lines develops, it is intended to convert to electric traction busy sections which are within reasonable distance of a cheap power supply, and investigations are being made in order to determine which lines offer prospects of financial success.

(v) *Goods Traffic.* 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 1921-22 :—

RAILWAYS, STATE.—CLASSIFICATION OF COMMODITIES CARRIED, 1921-22.

State.	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Com-modities.	Total.
TONS CARRIED.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	a7,155,245	185,391	c1,651,994	389,609	128,085	603,067	4,083,664	14,197,055
Victoria ..	b1,459,681	618,706	1,690,828	319,378	84,136	467,174	2,851,128	7,491,031
Queensland ..	895,256	247,066	d 41,140	f 464,412	77,334	291,731	1,715,474	3,732,413
South Australia	958,712	186,541	672,736	84,271	33,307	119,617	772,497	2,827,681
Western Australia	246,227	464,781	500,503	99,462	19,526	78,505	1,139,254	2,548,258
Tasmania ..	172,955	57,979	e	46,649	3,025	20,165	320,978	621,751
All States ..	10,888,076	1,760,464	4,557,201	1,403,781	345,413	1,580,259	10,882,995	31,418,189
PERCENTAGE ON TOTAL TONNAGE CARRIED.								
	%	%	%	%	%	%	%	%
New South Wales	50.40	1.31	11.64	2.74	0.90	4.25	28.76	100.00
Victoria ..	19.49	8.26	22.57	4.26	1.12	6.24	38.06	100.00
Queensland ..	23.99	6.62	1.10	12.44	2.07	7.82	45.96	100.00
South Australia	33.90	6.60	23.79	2.98	1.18	4.23	27.32	100.00
Western Australia	9.66	18.24	19.64	3.90	0.77	3.08	44.71	100.00
Tasmania ..	27.82	9.33	e	7.50	0.49	3.24	51.62	100.00
All States ..	34.66	5.60	14.50	4.47	1.10	5.03	34.64	100.00

(*a*) Exclusive of 335,756 tons of coal on which only shunting and haulage were collected. (*b*) Coal, stone, gravel, and sand. (*c*) Up journey only (to coast). (*d*) Flour only. (*e*) Included in all other commodities. (*f*) Sugar-cane.

Corresponding information regarding the revenue derived from each class of commodity is not, however, generally available in a comparable form. In this connexion it may be stated that the following resolution was passed at the Inter-State Conference of Railway Commissioners held in Melbourne in May, 1909 :—" That in view of the variations in the character and classification of the goods traffic in the different States, the subdivisions of tonnage carried and revenue in each State shall be those which best suit local conditions."

(vi) *Parcels Traffic.* In Victoria two electric motor coaches have been constructed and put into operation for the transfer of parcels from the central stations to suburban stations, and also to convey luggage and parcels between the two main terminal stations. These coaches, which run to a fixed schedule, are the nucleus of a fleet which will eventually separate the whole of the parcels traffic from the passenger traffic on the suburban system.

12. **Passenger-Mileage and Ton-Mileage.**—(i) *General.* In earlier issues of the Year Book reference has been made to the resolution on the subject of passenger-mileage and ton-mileage statistics passed at the Inter-State Conference of Railway Commissioners held in Melbourne in May, 1909 ; and to the Report [Cd. 4697] on the same subject by a Committee appointed by the President of the Board of Trade in the United Kingdom (see Year Book No. 10, p. 654).

(ii) *Passenger-Miles.* The subjoined table gives particulars of passenger-mileage in respect of the States of New South Wales, Victoria, South Australia, and Tasmania for the years 1917-18 to 1921-22. The average number of passengers carried per " train " is obtained by dividing the number of " passenger-miles " by the number of " passenger-train-miles." Similarly, the " density of traffic " is obtained by dividing the number of " passenger-miles " by the " average miles worked."

RAILWAYS, STATE.—SUMMARY OF "PASSENGER-MILES," 1918 TO 1922.

Year ended 30th June—	Passenger-Train-Mileage.	Number of Passenger Journeys.	Total Passenger-Miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger Journey.	Average Earnings per Passenger-Mile.	Average Fare per Passenger Journey.	Density of Traffic per Average Mile Worked.
	Miles. (,000 omitted.)	No. (,000 omitted.)	No. (,000 omitted.)	£	No.	Miles.	d.	d.	No.
NEW SOUTH WALES.									
1918	9,441	94,305	1,384,766	3,473,340	151	14.67	0.60	8.84	304,277
1919	9,689	98,569	1,367,691	3,533,869	144	13.88	0.62	8.60	288,725
1920	11,136	114,655	1,632,627	5,137,247	151	14.24	0.74	10.75	328,761
1921	11,301	120,735	1,620,857	5,736,256	147	13.42	0.85	11.57	322,976
1922	11,379	121,299	1,610,619	5,934,616	145	13.27	0.88	11.74	320,936
VICTORIA.									
1918	7,699	105,753	939,788	2,892,556	122	8.89	0.74	6.56	227,057
1919	5,308	111,905	1,012,955	2,894,409	131	9.05	0.69	6.21	243,557
1920	6,655	134,012	1,239,022	3,780,251	148	9.25	0.73	6.77	295,427
1921	8,822	134,046	1,205,052	4,398,124	138	8.99	0.88	7.87	284,412
1922	9,865	142,457	1,231,828	4,814,820	125	8.65	0.94	8.11	287,777
SOUTH AUSTRALIA.									
1918	2,597	18,936	234,197	703,221	90	12.37	0.72	8.91	104,786
1919	2,644	20,177	238,845	703,748	90	11.84	0.71	8.37	104,527
1920	2,576	22,852	305,834	979,596	119	13.38	0.77	10.29	132,052
1921	2,815	23,788	280,904	1,019,480	100	11.81	0.87	10.29	120,438
1922	2,749	23,330	268,558	1,045,530	102	11.51	0.93	10.76	115,110
TASMANIA.									
1918	448	1,874	40,385	151,874	90	21.55	0.90	19.45	68,324
1919	448	1,889	39,961	167,035	89	21.15	1.00	21.22	67,713
1920	472	2,268	46,015	209,866	97	20.29	1.09	22.21	72,465
1921	494	2,688	50,263	238,719	102	18.70	1.14	21.31	78,905
1922	662	2,758	46,550	233,608	70	16.88	1.15	20.33	73,336

The difference in the number of passenger journeys given in this table and that in connexion with traffic in respect of the State of South Australia is accounted for by the fact that the latter table is compiled from the receipts from passenger traffic while the former is based on the passenger traffic carried.

(iii) *Ton-Miles.* Particulars regarding total "ton-miles" are available for each of the years 1917–18 to 1921–22 for the States of New South Wales, Victoria, South Australia, and Tasmania. For the State of Western Australia corresponding particulars are not available for the years 1913 to 1917 inclusive. The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the fourth column by the "goods-train-mileage" in the second column, except in respect of New South Wales for the year 1922 and Victoria for the years 1920 to 1922, in which instances the Railways Departments concerned have supplied the information.

RAILWAYS, STATE.—SUMMARY OF "TON-MILES," 1918 TO 1922.

Year ended the 30th June—	Goods-Train-Mileage.	Total Tons Carried.	Total "Ton-miles."	Earnings.	Average Freight-paying Load carried per "Train."	Average Miles 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.								
1918	8,703	11,094	1,044,437	4,051,655	120.02	94.14	0.93	229,496
1919	10,246	12,469	1,237,806	4,889,343	120.80	99.27	0.95	261,306
1920	11,698	13,010	1,394,099	6,106,563	119.17	107.15	1.05	280,729
1921	11,491	15,262	1,418,386	6,501,914	123.44	92.94	1.10	282,631
1922	10,508	14,197	1,365,961	7,953,910	154.43	96.21	1.38	269,049
VICTORIA.								
1918	5,928	6,231	601,445	3,137,547	101.47	96.52	1.25	145,312
1919	5,308	6,515	487,083	2,957,789	91.76	74.76	1.46	117,115
1920	6,655	7,771	631,374	3,721,122	94.88	81.25	1.41	150,542
1921	6,711	7,573	727,930	4,411,276	137	96.12	1.45	171,803
1922	5,992	7,491	684,887	4,815,056	143	91.43	1.69	160,058
SOUTH AUSTRALIA.								
1918	2,844	2,768	270,104	1,480,469	94.99	97.59	1.32	120,852
1919	2,769	2,619	263,984	1,536,209	95.33	100.81	1.40	115,529
1920	2,616	2,579	196,534	1,556,224	75.13	76.21	1.90	84,859
1921	2,897	2,682	217,879	1,719,556	75.20	81.23	1.81	93,383
1922	2,881	2,828	284,269	2,000,716	98.66	100.53	1.68	121,253
WESTERN AUSTRALIA.								
1918	2,747	2,542	184,748	1,154,087	67.25	72.67	1.49	77,767
1919	2,485	2,379	173,283	1,127,539	69.73	72.83	1.56	49,411
1920	2,873	2,614	207,384	1,394,908	72.18	79.34	1.61	58,616
1921	2,865	2,604	200,379	1,637,979	69.95	76.95	1.96	56,633
1922	2,689	2,548	208,347	1,688,482	77.49	81.76	1.95	58,894
TASMANIA.								
1918	609	389	21,539	153,577	35.39	55.42	1.71	36,444
1919	660	456	23,745	190,524	35.97	52.12	1.93	39,641
1920	794	553	30,967	234,147	38.99	56.01	1.81	48,767
1921	893	650	33,638	302,594	37.67	51.78	2.15	52,807
1922	771	602	30,850	295,480	40.01	51.28	2.29	48,602

In New South Wales the tonnage carried is exclusive of coal, on which shunting and haulage charges only have been collected, and terminal charges have also been disregarded, but in the cases of South Australia and Tasmania such charges are included.

13. **Passenger Fares and Goods Rates.**—(i) *General.* Fares and rates are changed from time to time to suit the varying necessities of the railways, but as traffic develops and revenue increases they are in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges.

(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. (*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 passenger fares for different distances charged in each State between stations for which specific fares are not fixed :—

RAILWAYS, STATE.—ORDINARY PASSENGER MILEAGE RATES, 1922.

State.	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	11 0	7 2	22 0	14 7	43 11	27 3	65 4	39 9	86 10	50 9	101 6	57 10
Victoria ..	9 9	6 6	18 11	12 7	37 9	25 2	52 9	35 2	64 0	42 8	75 3	50 1
Queensland ..	9 4	6 3	17 0	11 0	32 0	20 6	46 0	28 9	59 0	36 0	71 0	43 0
South Australia	9 9	6 7	19 9	13 3	39 3	26 0	58 6	39 3	78 0	52 0	97 6	65 3
Western Australia ..	8 4	5 3	16 8	10 5	33 4	20 10	50 0	31 3	66 8	41 8	83 4	52 1
Tasmania ..	10 6	6 9	20 9	13 9	41 0	27 6	61 3	41 0	..	..	..	..
Average ..	9 9	6 5	19 2	12 7	37 10	24 6	55 8	35 10	70 11	44 7	85 9	53 8
Average per passenger-mile	d. 2.34	d. 1.54	d. 2.30	d. 1.51	d. 2.27	d. 1.47	d. 2.23	d. 1.43	d. 2.13	d. 1.34	d. 2.46	d. 1.29

The above rates, which were in force in June, 1922, have not changed materially since 1921, increases in South Australia of 14s. and 9s. 6d. respectively on the first and second class fares for journeys of 500 miles being the only alteration.

(iii) *Parcel Rates.* Parcels may be transmitted by passenger train at prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from fivepence for a parcel not exceeding 3 lbs. for any distance up to 25 miles to eighteen shillings and eightpence for a parcel weighing from 85 lbs. to 112 lbs. for a distance of 500 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance of 450 miles is sixteen shillings and elevenpence. The rate in Queensland for a parcel weighing from 85 lbs. to 112 lbs. for 500 miles is sixteen shillings and threepence; in South Australia for 550 miles seventeen shillings and fourpence; in Western Australia for a parcel weighing from 99 lbs. to 112 lbs. for 500 miles fifteen shillings and sixpence; and in Tasmania for a distance of 250 miles the rate is eight shillings.

(iv) *Goods Rates.* (*a*) *General.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz. :—(*a*) Mileage rates, (*b*) District or "development" rates, and (*c*) Commodity rates. In each of the States there is a number—ranging from nine in Victoria to fifteen in Tasmania—of different classes of freight. Most of the mileage rates are based upon a tapering principle, *i.e.*, a lower charge per ton-mile is made for a long haul than for a short haul; but for some classes of freight there is a fixed rate per mile irrespective of distance. District rates are charged between specified stations, and are somewhat lower than the mileage rates. In addition to the ordinary classification of freights under class (*a*), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given under class (*c*) special rates, lower than the mileage rates.

Space does not permit of exhibiting a detailed analysis of goods rates in the several States, but the subjoined tables give an indication of the range and amount of the rates for the highest and lowest class freights and for agricultural produce at 30th June, 1922.

(*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 :—

RAILWAYS, STATE.—HIGHEST AND LOWEST CLASS FREIGHT RATES, 1922.

State.	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.
N.S. 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 ..	32 6	63 3	119 3	163 0	200 6	238 3	3 6	5 4	7 10	10 6	11 8	12 8
Queensland	51 10	89 4	159 8	a220 6	a254 1	a268 4	5 8	10 2	17 3	21 2	25 8	30 3
South Aust.	40 10	78 0	145 11	200 2	247 10	288 6	4 3	8 0	13 9	18 0	22 3	26 6
Westn. Aust.	47 1	77 1	131 10	177 9	215 4	246 8	3 3	4 1	6 2	8 3	10 4	12 5
Tasmania ..	46 1	72 9	134 1	..	..	..	4 4	7 0	16 8	..	..	..
Average ..	42 11	76 2	136 11	184 3	219 7	247 10	4 4	6 11	11 8	13 7	16 3	18 5
Average per ton-mile	d. 10.30	d. 9.14	d. 8.21	d. 7.37	d. 6.59	d. 5.95	d. 1.04	d. 0.83	d. 0.70	d. 0.54	d. 0.49	d. 0.44

(*a*). Maximum freight for distances up to 500 miles on highest-class goods to Western stations is 210 shillings per ton.

The only change in the rates from the preceding year was a slight general increase in those for South Australia.

The classification of commodities varies. Generally, the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries.

In New South Wales, for example, the highest-class freight comprises such articles as boots, drapery, drugs, groceries, furniture, liquors, crockery and glassware, cutlery, ironmongery, confectionery, and carpets. In the same State the lowest-class freight includes agricultural produce, ores, manures, coal, coke, shale, firewood, limestone, stone, slate, bricks, screenings, rabbit-proof netting, timber, and posts and rails.

(*c*) *Agricultural Produce.* The rates at 30th June, 1922, for agricultural produce in truck loads are given in the table below :—

RAILWAYS, STATE.—RATES FOR AGRICULTURAL PRODUCE, 1922.

State.	Charge per Ton in Truck-loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	7 4	11 6	14 5	16 1	17 9	19 0
Victoria	7 0	10 10	14 4	16 6	18 8	20 8
Queensland	5 8	10 2	12 0	13 0	14 6	15 6
South Australia	9 1	12 11	19 2	25 4	31 7	37 8
Western Australia	8 3	10 11	14 1	19 0	24 0	26 0
Tasmania	8 4	12 11	16 8	20 0	..	..
Average	7 7	11 6	15 1	18 4	21 4	23 9
Average per ton-mile ..	d. 1.82	d. 1.38	d. 0.91	d. 0.73	d. 0.64	d. 0.57

The rates in force in June, 1922, showed very little increase over those for June, 1921. The rate for a 400 mile haul in New South Wales was increased from seventeen shillings and sevenpence to seventeen shillings and ninepence, and for a 300 mile haul in Tasmania from sixteen shillings and eightpence to twenty shillings. In South Australia, wheat is carried at a lower rate than that specified for agricultural produce generally.

14. **Rolling Stock, 1922.**—The following table shows the rolling stock in use at the 30th June, 1922, classified according to gauge :—

RAILWAYS, STATE.—ROLLING STOCK, 1922.

State.	Gauge.					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	
LOCOMOTIVES.						
New South Wales	..	1,321	..	..	..	1,321
Victoria ..	766	..	..	17	..	783
Queensland ..	..	..	671	..	9	680
South Australia..	254	..	235	..	..	489
Western Australia	..	..	423	..	..	423
Tasmania ..	..	..	79	..	7	86
All States ..	1,020	1,321	1,408	17	16	3,782

	Coaching Stock.									
	Ordinary.	With Motors.	Ordinary.	With Motors.	Ordinary.	With Motors.			Ordinary.	With Motors.
New South Wales	..	..	2,193	1	..	..	..	..	2,193	1
Victoria ..	2,119	346	..	..	..	..	55	..	2,174	346
Queensland ..	..	..	..	..	857	17	..	8	865	17
South Australia..	479	2	..	..	225	2	..	..	704	4
Western Australia	..	..	..	..	426	..	..	..	426	..
Tasmania ..	..	..	..	..	213	2	..	6	219	2
All States ..	2,598	348	2,193	1	1,721	21	55	14	6,581	370

Stock other than Coaching.						
New South Wales	..	23,319	..	..	..	23,319
Victoria ..	19,624	..	..	243	..	19,867
Queensland ..	..	..	14,723	..	180	14,903
South Australia..	4,154	..	5,426	..	..	9,580
Western Australia	..	..	10,135	..	..	10,135
Tasmania ..	..	..	1,654	..	77	1,731
All States ..	23,778	23,319	31,938	243	257	79,535

In previous issues of the Year Book the particulars of rolling stock were classified under the headings of "Locomotives," "Passenger Vehicles," and "Vehicles other than Passenger." The present classification has been adopted by all States with the exception of Queensland.

15. **Employees.**—The following table shows the number of railway employees in each year from 1918 to 1922 inclusive, classified according to (*a*) salaried staff, and (*b*) wages staff :—

RAILWAYS, STATE.—EMPLOYEES, 1918 TO 1922.

State.	At 30th June—									
	1918.		1919.		1920.		1921.		1922.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales	*a*4,870	*a*29,370	*a*4,937	*a*29,776	4,913	*a*29,807	5,088	32,470	5,302	36,018
Victoria ..	*b*2,380	*b*16,859	*b*2,525	*b*17,285	2,727	21,824	2,738	24,411	3,097	23,791
Queensland ..	3,251	11,090	3,296	11,222	3,239	10,692	3,121	11,237	3,458	14,862
South Australia ..	*a*1,099	*a*8,904	*a*1,075	*a*8,570	1,004	8,122	1,038	8,392	1,116	8,448
Western Australia	972	5,675	1,037	6,057	1,115	6,553	1,187	6,896	1,175	6,330
Tasmania ..	221	1,146	199	1,240	210	1,330	205	1,454	215	1,491
All States ..	12,793	73,044	13,069	74,150	13,208	78,328	13,377	84,860	14,363	90,940

(*a*) Including those absent on military or naval service. (*b*) Excluding those absent on active service.

In the period under review the totals of salaried and wages staffs rose from 85,837 in 1918 to 105,303 in 1922, an increase of nearly 22.6 per cent.

16. **Accidents.**—(i) *Classification.* A new classification of accidents which occurred through the movement of rolling stock has been adopted by each State, and particulars in accordance therewith are given hereunder :—

RAILWAYS, STATE.—ACCIDENTS, 1922.

Particulars.	N.S.W.		Vic.		Q'land.		S. Aust.		W. Aust.		Tas.		All States.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers—														
Through causes beyond their own control	..	38	..	10	1	9	..	7	..	6	..	..	1	70
Through contributory negligence	..	..	..	1	1	21	..	1	..	4	..	1	1	28
Solely through their own negligence	4	134	10	134	2	35	1	75	..	28	..	..	17	406
Employees in the execution of their duty—														
Through causes beyond their own control	1	25	1	35	1	335	..	22	2	47	..	12	5	476
Through contributory negligence	..	57	4	49	2	113	..	..	..	10	..	16	6	245
Solely through their own negligence	21	154	9	142	2	41	..	37	2	8	..	3	34	385
Employees proceeding to or from their duty within Railway boundaries	1	3	..	2	1	..	..	6	..	..	..	1	2	12
Persons killed or injured at crossings	3	3	12	12	3	5	2	12	2	3	2	1	24	36
Trespassers	29	18	19	7	2	4	..	..	9	1	..	..	59	30
Miscellaneous	8	35	3	16	3	1	3	32	..	..	..	..	17	84
Total	67	467	58	408	18	564	6	192	15	107	2	34	166	1,772
Number of passengers killed or injured through causes beyond their own control, per million carried	..	.313	..	.070	.037	.333	..	.300	..	.335	..	..	..	.209

(ii) *Particulars for Quinquennium.* The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for each of the years 1918 to 1922 inclusive :—

RAILWAYS, STATE.—ACCIDENTS, 1918 TO 1922.

State.	In year ended 30th June—									
	1918.		1919.		1920.		1921.		1922.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	59	496	44	690	70	751	68	554	67	467
Victoria ..	44	561	52	510	38	451	41	597	58	408
Queensland ..	21	205	28	162	20	694	20	905	18	564
South Australia ..	17	189	22	193	13	157	12	174	6	192
Western Australia	13	86	20	140	30	127	18	134	15	107
Tasmania ..	2	7	4	7	3	31	..	47	2	34
All States ..	156	1,544	170	1,702	174	2,211	159	2,411	166	1,772

§ 4. Government Railways Generally.

1. **Summary, Federal and State Government Railways.**—In the following table a summary is given of the working of all Federal and State Government railways for the year ended 30th June, 1922 :—

RAILWAYS, FEDERAL AND STATE.—SUMMARY, 1922.

Particulars.		Federal Railways.	State Railways.	Total for Australia.
Total mileage open	Miles	1,733.02	21,764.51	23,497.53
Average miles open during the year ..	,,	1,733	21,657	23,390
Total train mileage	,,	731,153	59,006,099	59,737,252
Total cost of construction of lines open	£	11,276,227	*a*233,077,006	244,353,233
Cost per mile	£	6,507	*a*10,709	10,399
Gross revenue	£	322,499	37,872,131	38,194,630
Working expenses	£	460,622	29,357,348	29,817,970
Percentage of working expenses on gross revenue	%	142.83	77.52	78.07
Net revenue	£	— 138,123	8,514,783	8,376,660
Interest payable	£	216,446	10,612,801	10,829,247
Number of passenger journeys ..	No.	95,823	334,880,743	334,976,566
Tonnage of goods and live stock carried	Tons	108,937	31,418,189	31,527,126
Number of employees at 30th June, 1922—				
Salaried	No.	169	14,363	14,532
Wages	,,	856	90,940	91,796
Number of persons killed and injured during the year through train accidents and movement of rolling stock—				
Killed	,,	..	166	166
Injured	,,	17	1,772	1,789

(*a*) Exclusive of lines from Mount Gambier to Victorian border, and from Murrayville to Victorian border.

NOTE.—(—) Denotes a loss on working.

A graph which accompanies this chapter illustrates the total capital cost, mileage open, average cost per mile open, gross revenue, working expenses and the net revenue for each of the years 1870 to 1922.

2. **Government Railway Facilities.**—The population per mile of line open for general traffic in respect of the States' railways for each State has been given previously. The following table gives the mileage of all Government railways, and the mileage per 1,000 of population :—

RAILWAYS, FEDERAL AND STATE.—MILEAGE AND POPULATION, 1922.

State or Territory.	Length of Line Open (Route).			Mileage per 1,000 of Population.
	State.	Federal.	Total.	
	Miles.	Miles.	Miles.	Miles.
New South Wales	5,116.08	..	5,116.08	2.38
Victoria	4,316.86	..	4,316.86	2.75
Queensland	5,799.33	..	5,799.33	7.38
South Australia	2,357.21	1,075.41	3,432.62	6.80
Western Australia	3,538.23	453.99	3,992.22	11.76
Tasmania	636.80	..	636.80	2.98
Federal Territory	..	4.94	4.94	1.91
Northern Territory	..	198.68	198.68	54.24
Australia	21,764.51	1,733.02	23,497.53	4.22

3. **Mileage Open for Traffic.**—(i) *Route Mileage.* The Government railway route mileages open for traffic, classified according to gauge, as at the 30th June in each of the years 1919 to 1922 are set out in the following table, which gives also the percentages of each mileage on the total on the mainland—the figures for Tasmania being shown separately, as in the case of the succeeding table relating to rolling stock :—

RAILWAYS, FEDERAL AND STATE.—ROUTE MILEAGE, 1919 TO 1922.

Gauge.	At 30th June—							
	1919.		1920.		1921.		1922.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
Mainland—								
5 ft. 3 in. ..	5,148.01	23.35	5,215.70	23.16	5,268.28	23.24	5,342.60	23.37
4 ft. 8½ in. ..	5,840.82	26.50	6,032.05	26.79	6,059.66	26.74	6,132.96	26.83
3 ft. 6 in. ..	10,905.53	49.47	11,118.81	49.38	11,185.41	49.36	11,233.01	49.14
2 ft. 6 in. ..	121.90	0.55	121.90	0.54	121.90	0.53	121.90	0.53
2 ft. 0 in. ..	29.35	0.13	30.26	0.13	30.26	0.13	30.26	0.13
Total ..	22,045.61	100.00	22,518.72	100.00	22,665.51	100.00	22,860.73	100.00
Tasmania—								
3 ft. 6 in. ..	577.96	..	605.12	..	606.26	..	611.97	..
2 ft. 0 in. ..	23.58	..	23.58	..	23.58	..	24.83	..
Grand Total	22,647.15	..	23,147.42	..	23,295.35	..	23,497.53	..

In the four years from 1919 to 1922 the 5-ft. 3-in. gauge percentage has not changed materially, but, while the 4-ft. 8½-in. gauge has risen by 0.33, the 3-ft. 6-in. gauge has fallen by a similar percentage.

(ii) *Track Mileage.* The following table gives the track mileages of all Government railways and sidings, exclusive of Tasmania, for the years ended 30th June, 1919 to 1922, classified according to gauge, together with the percentages of each mileage on the total :—

RAILWAYS, FEDERAL AND STATE.—TRACK MILEAGE(*a*), 1919 TO 1922.

Gauge.	At 30th June—							
	1919.		1920.		1921.		1922.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	6,586.49	24.95	6,650.84	24.71	6,671.62	24.67	6,756.56	24.81
4 ft 8½ in. ..	7,549.03	28.60	7,794.49	28.96	7,827.13	28.96	7,923.12	29.08
3 ft. 6 in. ..	12,101.70	45.84	12,302.01	45.71	12,376.10	45.77	12,398.50	45.51
2 ft. 6 in. ..	130.97	0.50	131.04	0.49	131.07	0.48	131.09	0.48
2 ft. 0 in. ..	29.35	0.11	34.00	0.13	34.00	0.12	34.00	0.12
Total ..	26,397.54	100.00	26,912.38	100.00	27,039.92	100.00	27,243.27	100.00

(*a*) Exclusive of Tasmania.

4. **Rolling Stock.**—The numbers of the rolling stock employed on both the Federal and State Government railways are set out hereunder, classified according to gauge, as at the 30th June, 1922, together with the percentage of the numbers for each gauge on the total for the mainland. The figures for Tasmania are shown separately from those for the mainland.

RAILWAYS, FEDERAL AND STATE.—ROLLING STOCK, 1922.

Gauge.	Locomotives.		Coaching Stock.,						Vehicles other than Coaching.	
			Ordinary.		With Motors.		Total.			
	No.	%	No.	%	No.	%	No.	%	No.	%
Mainland—										
5 ft. 3 in. ..	1,020	27.00	2,598	40.49	348	94.57	2,946	43.42	23,778	30.14
4 ft. 8½ in. ..	1,389	36.76	2,239	34.90	1	0.27	2,240	33.02	24,056	30.50
3 ft. 6 in. ..	1,343	35.55	1,516	23.63	19	5.16	1,535	22.63	30,618	38.82
2 ft. 6 in. ..	17	0.45	55	0.86	..	..	55	0.81	243	0.31
2 ft. 0 in. ..	9	0.24	8	0.12	..	..	8	0.12	180	0.23
Total ..	3,778	100.00	6,416	100.00	368	100.00	6,784	100.00	78,875	100.00
Tasmania—										
3 ft. 6 in. ..	79	..	213	..	2	..	215	..	1,654	..
2 ft. 0 in. ..	7	..	6	..	..	..	6	..	77	..
Grand Total	3,864	..	6,635	..	370	..	7,005	..	80,606	..

The present classification was adopted by the Conference of Railways Commissioners in 1921.

§ 5. Private Railways.

1. **Classification.**—A list of private railways, including those open to the public for general traffic and for special purposes, is given in "Transport and Communication Bulletin, No. 14," but, owing to limitations of space, it is not possible to include the information in this volume.

2. **Total Mileage Open, 1921-22.**—As stated in a previous page, a number of private railway lines have from time to time been constructed in Australia. Most of these lines, however, have been laid down for the purpose of hauling timber, 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, and they run through bush country in connexion with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Private railways referred to herein include (*a*) lines open to the public for general passenger and goods traffic; and (*b*) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this chapter dealing with Tramways (see C. *Tramways*).

The following table gives particulars of private railways open for traffic for general and special purposes during 1921-22. A classification of these lines according to gauge has already been given in § 1.

RAILWAYS, PRIVATE.—MILEAGE OPEN, 1921-22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
For general traffic	186.83	24.94	280.79	33.80	278.35	197.61	1,002.32
For special purposes	172.53	32.93	983.77	20.95	596.91	38.08	1,845.17
Total ..	359.36	57.87	1,264.56	54.75	875.26	235.69	2,847.49

3. **Lines Open for General Traffic.**—The following statement shows, in tabular form, for each State the particulars of the operations of private railways open for general traffic for the year 1922. More detailed information regarding these lines will be found in "Transport and Communication Bulletin No. 14," published by this Bureau.

RAILWAYS, PRIVATE.—SUMMARY, 1921-22.

State.	Companies from which returns were received.	Miles Open (Route).	Train-Miles.	Capital Cost.	Gross Revenue.	Working Expenses.	Rolling Stock.			Passenger Journeys.	Tons of Goods, etc.	No. of Employees.
							Locos.	Coaches.	Other Vehicles.			
	No.	No.	No.	£	£	£	No	No.	No.	No.	Tons.	No.
New South Wales ..	10	186.83	627,685	2,643,228	364,657	265,869	57	43	886	1,061,060	770,237	665
Victoria ..	2	24.94	39,500	86,001	13,492	10,400	4	4	42	29,224	82,579	27
Queensland	16	280.79	53,956	499,866	38,866	29,170	17	21	261	112,890	96,006	94
South Australia ..	1	33.80	57,470	(*a*)	(*a*)	(*a*)	7	3	165	1,662	367,341	31
West. Australia ..	1	278.35	233,990	2,060,831	128,073	76,900	18	20	400	62,160	83,951	226
Tasmania	6	197.61	139,879	1,228,565	91,977	75,373	27	18	405	55,252	116,034	177
All States	36	1,002.32	1,152,480	6,518,491 (*b*)	637,065 (*b*)	457,712 (*b*)	130	109	2,159	1,322,248	1,516,148	1,220

(*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.

§ 6. Comparative Railway Statistics, Various Countries.

A table has been given showing the railway facilities in 1921–22 in the States, in the Northern Territory, and in the Commonwealth, the railway mileage open for traffic being compared both with the area and population.

In the table below, comparative railway statistics of a like character are given in respect of the principal countries of the world at certain dates. The dates have been so chosen as to bring into relation the latest accurate figures for both population and railway mileage.

RAILWAYS, VARIOUS COUNTRIES.—MILEAGE, POPULATION, AND AREA.

Country.	Year.	Miles of Railway.	Population.	Area in Square Miles.	Miles of Railway.	
					Per 1,000 of Population.	Per 1,000 Sq. Miles of Territory.
Europe—						
United Kingdom	1920	23,734	47,307,601	121,633	0.50	195.12
Belgium	1919	4,649	7,478,840	11,752	0.62	395.59
Denmark	1920	2,662	3,289,195	17,144	0.81	155.27
France	1922	25,766	39,209,518	212,659	0.66	121.16
Germany	1920	35,677	59,858,284	182,271	0.60	195.74
Greece	1920	1,470	5,536,375	41,933	0.27	35.06
Italy	1921	10,290	38,835,941	110,632	0.26	93.01
Netherlands	1921	2,377	6,977,430	12,582	0.34	188.92
Norway	1921	2,141	2,649,775	124,964	0.81	17.13
Portugal	1920	2,128	6,041,000	35,490	0.35	59.96
Spain	1920	9,504	21,347,335	194,800	0.45	48.79
Sweden	1921	9,417	5,954,316	173,035	1.58	54.42
Switzerland	1920	3,915	3,880,320	15,976	1.01	245.06
Asia—						
India	1922	37,266	318,942,480	1,802,629	0.12	20.67
Japan	1922	6,728	76,987,469	260,738	0.08	25.80
Africa—						
Egypt	1922	3,040	13,551,000	350,000	0.22	8.69
Union of South Africa	1922	10,890	6,928,580	473,089	1.57	23.02
America, North and Central—						
Canada	1921	39,771	8,788,483	3,729,665	4.53	10.66
Mexico	1920	10,754	13,887,080	767,198	0.77	14.02
United States	1920	254,845	105,710,620	3,026,789	2.41	84.19
America, South—						
Argentina	1922	21,935	8,750,000	1,153,119	2.51	19.02
Brazil	1920	17,213	30,635,605	3,275,510	0.56	5.26
Chile	1920	5,403	3,754,723	289,829	1.44	18.64
Australasia—						
Australia	1922	26,345	5,567,969	2,974,581	4.73	8.86
New Zealand	1922	3,156	1,316,902	103,861	2.40	30.39

It will be seen from the above table that per 1,000 of population the Commonwealth of Australia had the greatest mileage (in 1922), 4.73 miles; the next in magnitude being Canada (1921), with 4.53 miles, Argentina (1922), with 2.51 miles, United States (1920), with 2.41 miles, and New Zealand (1922), with 2.40 miles.

The least mileage per 1,000 of population is shown in the case of Japan (1922), with 0.08 mile, followed by India (1922), with 0.12 mile.

With regard to the mileage per 1,000 square miles of territory, Belgium (1919) with 395.59 miles was easily first, followed by Switzerland (in 1920) with 245.06 miles, Germany (in 1920) with 195.74 miles, the United Kingdom (in 1920) with 195.12 miles, Netherlands in (1921) with 188.92 miles, and Denmark (in 1920) with 155.27 miles.

The least mileage open per 1,000 square miles is that of Brazil (in 1920) with 5.26 miles.

C. TRAMWAYS.

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

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

(ii) *Total Mileage Open and Classification of Lines.* The following tables show the total mileage of tramway lines open for general passenger traffic for the year 1921–22, and also in Australia as a whole for the years 1917–18 to 1921–22, classified (*a*) according to the motive power utilized, (*b*) according to the nature of the authority by which the lines are controlled and (*c*) according to gauge :—

TRAMWAYS.—MILEAGE OPEN FOR PASSENGER TRAFFIC, 1921–22.

Nature of Motive Power, Controlling Authority, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia. (*a*)	Western Australia.	Tasmania.	All States.
According to Motive Power.							
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	158.78	109.50	42.60	69.45	50.38	25.64	456.35
Steam	73.98	..	6.65	..	17.75	..	98.38
Cable	..	45.90	..	..	..	..	45.90
Horse	..	0.63	..	19.86	7.16	..	27.65
Total ..	232.76	156.03	49.25	89.31	75.29	25.64	628.28
According to Controlling Authority.							
Government ..	229.26	122.83	..	19.86	51.64	..	423.59
Municipal ..	..	..	6.65	69.45	8.83	25.64	110.57
Private	3.50	33.20	42.60	..	14.82	..	94.12
Total ..	232.76	156.03	49.25	89.31	75.29	25.64	628.28
According to Gauge.							
Gauge—							
5 ft. 3 in. ..	..	5.14	..	7.35	..	..	12.49
4 ft. 8½ in. ..	232.76	150.89	42.60	69.45	..	..	495.70
3 ft. 6 in. ..	..	..	6.65	10.01	58.38	25.64	100.68
2 ft. 0 in. ..	..	..	..	2.50	16.91	..	19.41
Total ..	232.76	156.03	49.25	89.31	75.29	25.64	628.28

(*a*) 16·36 miles included in South Australian Government railway mileage.

TRAMWAYS.—MILEAGE OPEN FOR PASSENGER TRAFFIC, AUSTRALIA, 1917-18 TO 1921-22.

Nature of Motive Power, Controlling Authority, and Gauge.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
ACCORDING TO MOTIVE POWER.					
	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	426.40	430.87	443.03	445.10	456.35
Steam	93.80	99.39	98.86	97.73	98.38
Cable	46.04	45.92	45.90	45.90	45.90
Horse	32.37	23.74	25.15	27.89	27.65
Total	598.61	599.92	612.94	616.62	628.28
ACCORDING TO CONTROLLING AUTHORITY.					
Government	345.94	345.09	413.46	417.84	423.59
Municipal	158.03	159.17	103.82	104.19	110.57
Private	94.64	95.66	95.66	94.59	94.12
Total	598.61	599.92	612.94	616.62	628.28
ACCORDING TO GAUGE.					
Gauge—					
5 ft. 3 in.	12.51	12.51	12.51	12.51	12.49
4 ft. 8½ in.	469.76	473.28	484.57	486.42	495.70
3 ft. 6 in.	93.91	94.48	96.21	98.04	100.68
2 ft. 0 in.	22.43	19.65	19.65	19.65	19.41
Total	598.61	599.92	612.94	616.62	628.28

The mileage of electric tramways has steadily increased during the period dealt with above. It may be noted that the transfer in 1920 from municipal to Government control of the principal Melbourne and suburban systems was responsible for the increase in Government-controlled mileage.

2. **New South Wales.**—(i) *Government Tramways.* The tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners. In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1922, seven such systems in operation within the metropolitan area, five of which are operated by electricity and two by steam.

(*a*) *Particulars of Working.* The subjoined statement gives particulars of the working of the electric and steam tramways in Sydney, and of other tramways under Government control in 1921–22 :—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—RETURNS FOR 1921–22.

Line.	Mileage Open for Traffic.		Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings. (*a*)	Interest.	Profit or Loss.(*a*)	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.(*a*)
	Route.	Track.								
	Miles.	Miles.	£	£	£	£	£	£	%	%
Sydney and Suburban—										
Electric	158.78	283.07	8,343,096	3,353,768	2,700,686	653,082	411,266	241,816	80.53	+ 7.83
Steam	8.19	9.61	53,731	23,574	32,992	– 9,418	2,710	– 12,128	139.95	–17.53
Total	166.97	292.68	8,396,827	3,377,342	2,733,678	643,664	413,976	229,688	80.94	+ 7.67
Parramatta —Steam	6.69	6.69	40,451	14,358	16,233	– 1,875	2,044	– 3,919	113.06	– 4.64
Sutherland to Cronulla— Steam	7.40	7.40	52,083	19,738	21,536	– 1,798	2,624	– 4,422	109.11	– 3.45
Newcastle —Steam	34.09	44.46	888,729	177,404	208,894	– 31,490	42,253	– 73,743	117.75	– 3.51
East to West Maitland —Steam	4.06	4.06	35,318	7,817	9,345	– 1,528	1,783	– 3,311	119.55	– 4.33
Broken Hill —Steam	10.05	11.44	92,324	13,476	25,930	– 12,454	4,648	– 17,102	192.42	–14.60
Total	229.26	366.73	9,505,732	3,610,135	3,015,616	594,519	467,328	127,191	83.53	+ 6.25

(*a*) + indicates a profit ; – indicates a loss.

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

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—CAPITAL COST, 1922.

Permanent Way.	Rolling Stock.	Power-houses. Sub-stations. and Plant.	Machinery.	Workshops.	Furniture.	Store Advances Account.	Total.
£	£	£	£	£	£	£	£
4,946,572	1,927,806	1,901,897	182,519	257,546	2,392	287,000	9,505,732

The average cost per mile open was £21,579 for permanent way and £19,889 for all other charges, making a total of £41,468 per mile.

During the year 1921–22, two new extensions, 1.97 miles in length, were opened for traffic.

(c) *Summary, Government Tramways.* The following table gives a summary of the operations of all Government tramways for the years 1918 to 1922 :—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	Mileage Open for Traffic. (Route.)	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.	Passengers carried.	Persons employed.
	Miles.	£	£	£	£	£	%	%	No. '000	No.
1918 ..	225.35	8,470,091*a*	1,992,641	1,603,260	389,381	348,546	80.46	4.60	255,741	8,955
1919 ..	225.54	8,568,138*a*	2,237,701	1,850,724	386,977	368,529	82.71	4.52	268,798	9,028
1920 ..	225.81	8,768,548*a*	2,881,797	2,486,121	395,676	404,125	86.27	4.51	324,885	8,970
1921 ..	227.29	9,060,757*a*	3,471,737	2,943,251	528,486	421,814	84.78	5.83	337,690	9,018
1922 ..	229.26	9,505,732*a*	3,610,135	3,015,616	594,519	467,328	83.53	6.40	330,939	9,344

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

The net result in 1922, after providing for all working expenses and £467,328 for interest on the capital invested, was a profit of £127,191 as compared with a profit of £106,672 in the preceding year. During the year 1921–22, 330,938,567 passengers were carried, a decrease of 6,751,306 as compared with the previous year.

(d) *Sydney Tramways.* Official Year Book No. 15, p. 589, gives a short account of the progress of the Sydney Tramway System. Owing to limitations of space this information cannot be repeated, but the subjoined table shows certain important particulars for the years 1918 to 1922 inclusive.

ELECTRIC TRAMWAYS.—SYDNEY.—SUMMARY, 1918 TO 1922.

Particulars.	Year ended 30th June—				
	1918.	1919.	1920.	1921.	1922.
Mileage open for traffic—					
Route miles	154.37	154.56	155.35	156.81	158.78
Track miles	274.55	274.75	276.00	278.75	283.07
Total cost of construction and equipment .. .. £	7,738,377	7,779,227	7,842,549	8,009,611	8,343,096
Current used for traction purposes kilowatt hours	73,384,629	83,780,703	92,074,950	97,193,560	99,477,210
Tram miles run .. ..No.	20,618,808	23,298,238	25,394,701	27,112,029	27,768,543
Passengers carried .. ..No.	239,442,696	250,706,503	304,986,683	315,847,363	310,037,935
Gross revenue .. .. £	1,847,868	2,063,055	2,676,748	3,216,358	3,353,768
Working expenses .. .. £	1,457,349	1,673,536	2,246,674	2,649,132	2,700,686
Net revenue .. .. £	390,519	389,519	430,074	567,226	653,082
Percentage of working expenses on gross revenue .. ..%	78.87	81.12	83.93	82.36	80.53
Cars in use	1,398	1,393	1,394	1,414	1,427
Persons employed	8,463	8,610	8,440	8,352	9,177

The current for the operation of the City and Suburban tramways is generated at the power-houses at Ultimo and White Horse Bay, which have been erected at a total cost of £1,901,897, including the cost of the sub-stations and plant. The total output of the power-houses, for both lighting and traction purposes, during the year 1921–22 was 133,225,053 kilowatt-hours, of which the direct-current supply was 45,424, and the alternating current 133,179,629 kilowatt-hours.

(ii) *Private Tramways.* A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 3½ miles, where it connects with the Parramatta River steamers which convey passengers and goods to and from Sydney. This line, which has a gauge of 4 ft. 8½ in., was opened for traffic in 1883. In 1922 the number of tram-miles run was 18,200, and the number of passengers conveyed 128,184.

3. **Victoria.**—(i) *General.* In Melbourne there are several tramway systems carried on under the control of various authorities, the most important being the cable and electric systems worked by the Melbourne and Metropolitan Tramway Board, to which reference will be made further on. There were also, at 30th June, 1922, four lines of electric tramways, viz. :—(*a*) St. Kilda to Brighton, and (*b*) Sandringham to Black Rock, both of which belong to and are operated by the Railway Commissioners ; (*c*) Flemington Bridge to the Saltwater River and Keilor-road, owned by a private company. In addition there are systems of electric tramways at Ballarat, Bendigo, and Geelong, constructed and run by private companies.

Numerous tramways have been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. These, however, are of the nature of the private railways referred to in sub-section 1 hereof. A tramway to the Zoological Gardens, with horse traction, is operated by the Melbourne and Metropolitan Tramways Board.

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

(*b*) *Cable and Horse Tramways.* (1) *Services.* The complete system consists of 45.90 miles of double track connecting the City of Melbourne with the nearer suburbs and 0.63 miles of horse tramway at Royal Park. The gauge of track is 4 ft. 8½ in.

(2) *Particulars of Working.* A summary for the years 1918 to 1922 is given hereunder :—

CABLE TRAMWAYS.—MELBOURNE.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	Mileage Open (Route).			Mileage Run during Year.			Number of Passengers Carried.		
				Tram.			Tram.		
	Cable.	Horse.	Total.	Cable.	Horse.	Total.	Cable.	Horse.	Total.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	No.	No.	No.
1918(*a*) ..	43.68	0.63	44.31	12,822,147	10,882	12,833,029	112,754,979	279,178	113,034,157
1919(*a*) ..	43.68	0.63	44.31	13,138,992	10,645	13,149,637	118,043,604	259,177	118,302,781
1920(*b*) ..	45.90	0.63	46.53	13,424,488	10,648	13,435,136	133,378,390	296,651	133,675,041
1921 ..	45.90	0.63	46.53	14,058,575	10,406	14,068,981	148,755,005	293,676	149,048,681
1922 ..	45.90	0.63	46.53	14,624,684	10,134	14,634,818	150,962,255	239,508	151,201,763

Year ended 30th June—	Traffic Revenue.			Working Expenses.			Percentage of Working Expenses on Revenue.	No. of Employees at end of Year.
	Tram.		Total.	Tram.		Total.		
	Cable.	Horse.		Cable.	Horse.			
	£	£	£	£	£	£	%	No.
1918(*a*)	902,471	549	903,020	513,717	735	514,452	56.97	2,273
1919(*a*)	945,286	513	945,799	577,736	1,154	578,890	61.21	2,400
1920(*b*)	1,075,236	606	1,075,842	722,482	1,564	724,046	67.30	2,786
1921	1,146,955	792	1,147,747	843,333	1,100	844,433	73.60	2,836
1922	1,232,415	916	1,233,331	943,415	1,184	944,599	76.59	2,864

(*a*) Exclusive of Northcote Cable Tramway. (*b*) Inclusive of Northcote Cable Tramway from 2nd February, 1920, to 30th June, 1920.

(*c*) *Electric Tramways.* (1) *Services Operated.* The system controlled by the Melbourne and Metropolitan Tramway Board at 30th June, 1922, consisted of five services, viz., (*a*) The Prahran and Malvern Tramways ; (*b*) The Hawthorn Tramways ;

(*c*) The Melbourne, Brunswick and Coburg Tramways; (*d*) The Fitzroy, Northcote and Preston Tramways; and (*e*) The Footscray Tramways, all of 4 ft. 8½ in. gauge. The last-mentioned tramways were completed about the middle of 1920, but the opening for traffic was deferred until 6th September, 1921, pending the supply of power from the Railways Commissioners' power house at Newport.

(2) *Particulars of Working.* A summary of operations for the year 1921–22 is given hereunder :—

MELBOURNE TRAMWAY BOARD.—ELECTRIC SERVICES.—OPERATIONS, 1921–22.

Year.	Mileage. (Route.)	Total Cost of Construction and Equipment	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit.
	Miles.	£	Kilowatt-hours.	No.	No.	No.	£	£	£
1921–22	68.75	1,853,026	14,765,350	6,178,990	63,546,435	600,698	436,518	78,592	85,588

(3) *Future Development.* A comprehensive construction scheme has been prepared for submission to Parliament in connexion with the extension of existing lines, the linking-up of lines already constructed in different suburbs, and the opening up of new routes. The total mileage involved in this scheme is 10.40 miles (route).

(iii) *Other Government Tramways.* The Government Railways own and operate two lines of electric street railways, viz., St. Kilda to Brighton (5.14 miles of 5 ft. 3 in. gauge) and Sandringham to Black Rock (2.41 miles of 4 ft. 8½ in. gauge), a total route mileage of 7.55 miles.

Particulars of the operations of these tramways are contained in the tables hereunder. In the case of the former line the figures shown are for the years 1917–18 to 1921–22 and for the latter, 1918–19 to 1921–22 :—

ELECTRIC TRAMWAY.—ST. KILDA-BRIGHTON.—1918 TO 1922.

Year ended 30th June—	Total Cost of Construction and Equipment.	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses	Interest.	Net Profit or Loss.
	£	Kilowatt-hours.	No.	No.	£	£	£	£
1918 ..	158,986	745,853	521,525	3,854,677	31,614	23,653	6,359	1,602
1919 ..	164,347	932,010	527,305	4,945,627	40,048	27,207	6,574	6,267
1920 ..	(*a*) 150,128	1,381,821	551,307	6,805,892	50,494	42,813	6,005	1,676
1921 ..	153,581	1,487,928	552,772	5,572,454	47,005	63,921	6,143	— 23,059
1922 ..	172,661	1,550,469	538,495	5,488,034	55,372	51,501	6,906	— 3,035

(*a*) Cost of Rolling Stock for Sandringham–Black Rock electric street railway was included under this head in preceding years. (—) Indicates loss.

ELECTRIC TRAMWAY.—SANDRINGHAM-BLACK ROCK.—1919 TO 1922.

Year ended 30th June—	Total Cost of Construction.	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses	Interest.	Net Profit or Loss.
	£	Kilowatt-hours.	No.	No.	£	£	£	£
1919(*c*) ..	(*a*) 42,706	38,650	29,008	616,746	3,751	1,792	529	1,430
1920 ..	(*b*) 57,910	161,370	113,405	2,433,162	11,597	7,898	2,316	1,383
1921 ..	(*b*) 59,973	172,920	121,575	1,232,796	9,140	8,802	2,399	— 2,061
1922 ..	72,735	231,600	127,348	1,278,571	11,398	9,844	2,909	— 1,355

(*a*) Exclusive of Rolling Stock. (*b*) Inclusive of Rolling Stock. (*c*) Period, 11th March to 30th June. (—) Indicates loss.

(iv) *Private Tramways.* Three systems of tramways are owned and operated by private companies, viz., North Melbourne–Essendon (6.85 miles), Ballarat and Bendigo (21.25 miles) and Geelong (5.10 miles); giving a total route mileage of 33.20 miles. Electric traction is used on each of these lines which are constructed to the 4 ft. 8½ in. gauge.

The first-mentioned system was purchased by the Melbourne and Metropolitan Tramways Board on the 1st August, 1922.

(v) *Summary for all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1918 to 1922 inclusive :—

ELECTRIC TRAMWAYS.—VICTORIA.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	92.17	1,939,887	13,169,343	6,775,538	57,020,726	432,921	318,163	268	1,167
1919	94.58	2,027,057	13,955,124	6,832,873	60,753,278	463,320	344,220	274	1,318
1920	105.26	2,442,746	15,758,101	7,302,713	74,359,826	553,507	418,462	294	1,554
1921	105.26	2,528,665	17,618,387	8,102,393	79,807,665	647,067	539,652	302	1,795
1922	109.50	2,675,023	18,755,105	8,471,039	82,444,219	790,494	585,434	309	1,836

4. **Queensland.**—(i) *General.* The electric tramways in the city and suburbs of Brisbane were controlled by a private company, whose head office is in London, until 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 Tramway system. The total length of the Brisbane system was 42.60 route miles at the end of the year 1922. There is also a steam tramway having a length of 6.65 route miles in operation at Rockhampton.

(ii) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. Cost of construction and equipment to the end of the year 1921 (the latest available) was £1,640,127, the gauge of line being 4 ft. 8½ in. The following table gives a summary for the calendar years 1918 to 1922 :—

ELECTRIC TRAMWAYS.—BRISBANE.—SUMMARY, 1918 TO 1922.

Year ended 31st Dec.–	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	41.58	*a*1,435,414	9,453,441	4,379,679	57,456,832	412,569	264,858	173	1,103
1919	42.60	*a*1,435,414	10,309,249	4,600,482	61,415,350	445,333	295,697	174	1,073
1920	42.60	*a*1,435,414	11,000,875	4,934,043	69,236,690	527,264	387,456	178	1,130
1921	42.60	1,640,127	11,413,745	4,994,357	68,056,309	544,828	411,180	178	1,142
1922	42.60	*b*1,640,127	12,143,194	5,102,527	71,529,033	575,088	446,472	181	1,179

(*a*) To 31st December, 1917. (*b*) To 31st December, 1921.

(iii) *Rockhampton Municipal Tramways.* These tramways were opened for traffic in 1909, the motive power being steam. The length of line is 6.65 route miles, and the gauge 3 ft. 6 in. The capital cost to 31st December, 1922, was £53,129. During the year 1,763,007 passengers were carried, the revenue being £14,475 and working expenses £15,778. The number of the staff at the end of year was 46.

(iv) *Sugar-Mill Tramways.* In various parts of Queensland there are tramways used in connexion with the sugar-milling industry, chiefly for the purpose of hauling cane. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms. Particulars of these lines are given in Transport and Communication Bulletin No. 14, but lack of space precludes the publication of such information in this volume.

5. **South Australia.**—(i) *Electric Tramways.* The tramways in Adelaide and suburbs are controlled by a Municipal Tramways Trust created in 1907. Prior to this year, the system was run with horse-traction by several private companies. Electric traction was inaugurated in 1909, and at the 31st July, 1922, the Tramways Trust operated a total route mileage of 69.45 miles of 4 ft. 8½ in. gauge. A summary for the years 1918 to 1922 is given in the subjoined table :—

ELECTRIC TRAMWAYS.—ADELAIDE.—SUMMARY, 1918 TO 1922.

Year ended 31st July—	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	65.66	1,751,943	10,758,897	5,359,776	46,466,258	414,836	250,586	174	1,099
1919	65.66	1,789,487	10,730,307	5,176,264	45,882,376	428,477	284,993	185	1,337
1920	66.03	1,793,298	11,261,046	5,407,654	50,815,848	505,303	339,166	190	1,270
1921	66.40	1,890,067	12,096,515	5,785,148	55,323,737	555,421	392,824	190	1,264
1922	69.45	2,190,147	12,542,540	5,960,082	56,787,339	580,505	405,230	198	1,287

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

HORSE TRAMWAYS.—SOUTH AUSTRALIA.—PARTICULARS, 1922.

Particulars.	Length.	Gauge.	Nature of Traffic.
	Miles.	ft. in.	
Moonta, Moonta Bay, and Hamley Flat	(*a*)5.15	5 3	Passengers and goods
Gawler	(*a*)1.20	5 3	,, ,,
Victor Harbour and Breakwater ..	1.00	5 3	,, ,,
Dry Creek and Magazine	1.00	2 0	Explosives
Magazine and Broad Creek	1.50	2 0	,,
Port Broughton and Mundoora ..	(*a*)10.01	3 6	Passengers and goods

(*a*) Included in mileage of Government railways.

6. **Western Australia.**—(i) *Government Tramways.* (*a*) *General.* Apart from the electric tramways, there are several Government tramways, with a total length of 24.91 miles. The lines are under the control of the Department of the North-West, and the most important is that between Roebourne and Cossack, constructed on a 2-ft. gauge, with a length of 12.50 miles, and worked by steam. The remaining 12.41 miles are made up of several short lengths worked by steam or horses in connexion with the jetties at certain ports and providing communication between the jetties and the goods sheds or warehouses.

(*b*) *Steam and Horse Tramways.* The Government steam or horse tramways for the year ended 30th June, 1922, showed a capital cost to that date of £87,592, the gross revenue for the year being £20,845, and the working expenses £11,362.

(c) *Perth Electric Tramways.* These tramways were opened for traffic by a private company on the 24th September, 1899, and the system has since been extended to many of the suburbs. The system was taken over by the Government on the 1st July, 1913, and is now worked in conjunction with the Government railways. The gauge of line is 3 ft. 6 in. The following table shows particulars of working for the year ended 30th June, 1922 :—

ELECTRIC TRAMWAYS.—PERTH.—1922.

Mileage.	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
26.73	779,081	6,666,050	2,644,725	25,042,689	248,463	209,104	103	645

(ii) *Private Tramways.* Electric tramways with a route mileage at 31st August, 1922, of 8.83 miles, and controlled by the municipal authorities, are in operation in Fremantle. In Kalgoorlie and Boulder a private company controls the electric tramways, and at the end of 1922 the length of line was 14.82 miles (route). All the foregoing lines are of 3 ft. 6 in. gauge.

(iii) *Summary, all Electric Tramways.* The subjoined table gives a summary for all electric tramway systems in the State for the years 1918 to 1922 :—

ELECTRIC TRAMWAYS.—WESTERN AUSTRALIA.—SUMMARY, 1918 TO 1922.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	50.62	1,152,417	6,118,637	3,127,234	21,218,019	215,011	169,058	130	503
1919	50.22	1,150,018	5,922,421	2,951,053	20,954,579	209,664	170,261	130	545
1920	50.66	1,175,597	7,724,522	3,612,417	27,322,826	278,117	221,045	136	629
1921	50.90	1,227,304	8,412,175	3,472,632	33,377,124	313,195	276,607	136	728
1922	50.38	1,364,177	8,745,935	3,540,886	32,954,755	338,353	277,971	160	826

7. **Tasmania.**—(i) *Electric Tramways.* In Hobart there is a system of electric tramways consisting of 15.50 route miles of 3 ft. 6 in. gauge controlled by the Hobart Municipal Council. The Launceston City Council operates tramways in Launceston having a length of 10.14 route miles of 3 ft. 6 in. gauge.

The following table gives a summary of the working of the two systems for the years 1918 to 1922 :—

ELECTRIC TRAMWAYS.—TASMANIA.—SUMMARY, 1918 TO 1922.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	22.00	389,659	1,913,720	1,192,955	9,785,155	81,918	56,103	60	253
1919	23.25	400,375	2,396,717	1,215,663	10,070,263	97,459	63,561	60	288
1920	23.13	413,060	2,192,420	1,257,911	11,961,256	112,023	83,385	63	362
1921	23.13	443,872	2,610,504	1,428,696	14,766,819	142,500	108,684	67	428
1922	25.64	490,476	2,697,680	1,504,634	15,315,969	155,129	122,622	68	448

(ii) *Other Tramways.* There are, also, several lines of steam tramways privately-owned. These are dealt with in § 5, Private Railways, as they do not come within the category of street tramways for the conveyance of passengers.

8. **Electric Tramways, Australia.**—(i) *Summary for 1922.* The subjoined table gives details regarding all electric tramways in Australia. The returns for tramways in Hobart, in Ballarat and Bendigo, in Kalgoorlie, and in Brisbane are for the calendar year 1922; for other tramways they refer generally to the financial year 1922.

ELECTRIC TRAMWAYS.—AUSTRALIA.—SUMMARY, 1921-22.

State.	Mileage open for Traffic (Route).	Cost of Construction and Equipment.	Current used for Traction purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue.	Cars, Motors and Trailers.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	%	No.	No.
N.S.W. ..	158.78	8,343,096	99,477,210	27,768,543	310,037,935	3,353,768	2,700,686	80.53	1,427	9,177
Victoria ..	109.50	2,675,023	18,755,105	8,471,039	82,444,219	790,494	585,434	74.06	309	1,836
Q'land ..	42.60	*a*1,640,127	12,143,194	5,102,527	71,529,033	575,088	446,472	77.64	181	1,179
S. Aust...	69.45	2,190,147	12,542,540	5,960,082	56,787,339	580,505	405,230	69.81	198	1,287
W. Aust.	50.38	1,364,177	8,745,935	3,540,886	32,954,755	338,353	277,971	82.15	160	826
Tasmania	25.64	490,476	2,697,680	1,504,634	15,315,969	155,129	122,622	79.04	68	448
All States	456.35	16,703,046	154,361,664	52,347,711	569,069,250	5,793,337	4,538,415	78.33	2,343	14,753

(*a*) To 31st December, 1921.

The percentage of working expenses on gross revenue for all electric tramways in Australia was 78.33, ranging from 69.81 in the case of South Australia to 82.15 in the case of Western Australia.

(ii) *Summary for Years 1918 to 1922.* The following table gives particulars of the operations of electric tramways in Australia for the years 1918 to 1922 :—

ELECTRIC TRAMWAYS.—AUSTRALIA.—1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Mileage open for Traffic (Route) Miles.	426.40	430.87	443.03	445.10	456.35
Total Cost of Construction and Equipment .. .. £	14,441,189	14,581,578	15,110,405	15,239,646	16,703,046
Current used for Traction Purposes .. .. Kil. hrs.	114,798,667	127,094,621	140,011,914	149,344,886	154,361,664
Tram-miles run .. .. No.	41,454,040	44,075,173	47,909,439	50,895,255	52,347,711
Passengers carried .. .. ,,	431,389,686	449,782,349	538,683,129	567,179,017	569,067,250
Gross Revenue .. .. £	3,405,123	3,707,307	4,652,962	5,419,369	5,703,337
Working Expenses .. .. £	2,516,117	2,832,268	3,696,188	4,378,079	4,538,415
Percentage of Working Expenses on Gross Revenue .. .. £	73.89	76.40	79.44	80.78	78.33
Cars, Motors and Trailers .. No.	2,203	2,216	2,255	2,287	2,343
Persons Employed .. .. ,,	12,588	13,171	13,385	13,709	14,753

During the five years included in the above table the percentage of working expenses on the gross revenue of all electric tramways in Australia reached a maximum of 80.78 in 1921 and a minimum of 73.89 in 1918, the average over the whole period being 78.12.

D. AIRCRAFT.

1. **General.**—About thirty years ago Lawrence Hargraves, of Sydney, New South Wales, discovered the principles that have made human flight possible. Contemporaneously with Otto Lilienthal, a German scientist, he produced the "box-kite" which was afterwards used by European and American experimenters as the basis of design for the modern flying-machine.

To Hargraves is also due the idea of the rotary engine, which, by reason of its lightness per horse-power, was later to make possible many remarkable achievements in aviation.

The first flight in a power-driven machine was made by the Wright Brothers in 1903. During the succeeding five or six years similar success attended the efforts of a number of designers in Europe and Great Britain. In Australia the first successful flight in a power-driven machine took place in 1909, when a number of demonstration flights were made in the capital cities.

Meanwhile, Australian enthusiasts had not been idle, and the first successful flights on an Australian machine designed by Mr. J. R. Duigan, of Mia Mia, Victoria, were accomplished in September, 1910. The whole of the machine, except the engine, which was constructed in Melbourne, was built from Australian materials by the designer. This machine is now in the Australian War Museum.

Numerous other experimenters also had successful results, but the distance of Australia from the centres of activity in this direction so hampered their efforts that several who later became famous left the country and continued their work in England and Europe.

2. **Australian Aviation Schools during the War.**—During the war period, Aviation Schools were established at Point Cook, Victoria, and at Richmond, New South Wales, and much useful work was done in the training of pilots and mechanics for the squadrons overseas.

3. **Post-war Activities.**—After the cessation of hostilities, a number of small companies were formed by ex-officers of the Australian Flying Corps and the Royal Air Force, and throughout Australia machines were engaged in carrying passengers on short flights.

4. **England-Australia Flight.**—During 1919 the Commonwealth Government offered a prize of £10,000 to the crew of the first aeroplane to complete within thirty days a flight from England to Australia. A number of attempts were made, but only one machine, in charge of Captain (later, Sir) Ross Smith, D.F.C., M.C., A.F.C., succeeded in fulfilling all the conditions, and landed at Port Darwin on the 10th December, 1919. Several other praiseworthy attempts were made, notably that of Lieutenant R. Parer, who completed the journey, and that of Captain G. C. Matthews, who almost succeeded.

5. **Formation of Civil Aviation Department.**—At a conference of Federal Ministers and State Premiers in May, 1920, it was agreed that the Commonwealth should introduce a Bill to give effect to the Convention for the Regulation of Air Navigation signed in Paris on the 13th October, 1919.

The Air Navigation Act became law on the 2nd December, 1920, and the Civil Aviation Department was formed under Lieut.-Col. H. C. Brinsmead, O.B.E., M.C., who was appointed Controller of Civil Aviation on the 16th December, 1920. The Regulations under the Air Navigation Act were gazetted on the 11th February, 1921.

6. **Activities of Civil Aviation Department.**—(i) *Aerodromes and Landing-grounds.* Amongst the earlier activities of the Civil Aviation Department were the acquisition and preparation of civil aviation landing-grounds which have been established on the following routes :—

(*a*) Adelaide to Sydney ;
(*b*) Sydney to Brisbane ;
(*c*) Charleville to Cloncurry (Queensland).

Aerodromes at Sydney and Brisbane have been compulsorily acquired at an estimated cost of £20,000, but payment has been deferred pending further negotiations as to the amount. Preliminary surveys have been carried out along the following routes, but no expense has yet been incurred in the preparation of landing-grounds :—

(*a*) Melbourne to Charleville (Queensland) *via* Cootamundra, Narromine, Bourke (New South Wales), and Cunnamulla (Queensland) ;
(*b*) Melbourne to Perth ;
(*c*) Adelaide to Port Lincoln (for seaplanes) ;
(*d*) Melbourne to Hay (New South Wales).

Altogether 55 landing grounds have been acquired or leased and prepared for civil aviation purposes.

(ii) *Aerial Mail Services.* (*a*) *General.* Contracts have been entered into by the Commonwealth Government for the establishment and maintenance of mail services by aeroplane over certain approved routes within Australia under subsidy from Government funds allocated for the development of civil aviation. The contractors for these services must provide and reserve space sufficient to accommodate 100 lbs. of mail matter. All space other than that reserved for mails is to be at the disposal of the contractor, but the charges for the conveyance of passengers and goods must be on a scale agreed to by the Minister for Defence. The Postmaster-General has approved of the services being availed of for the conveyance of first-class mail matter, provided that only such matter be carried as is superscribed for transmission by aerial service, and bears in postage stamps a special fee at the rate of 3d. per ½ ounce or portion thereof in the case of letters, and 3d. each in the case of letter cards and post cards, in addition to the ordinary rate of postage. The extra amount received by the Postmaster-General's Department less any expenditure incurred by that Department in the handling of aerial mails is paid to the Defence Department as a credit to revenue.

(*b*) *Geraldton-Derby (Western Australia) Service.* The Geraldton-Derby service was to have commenced on the 5th December, 1921, but was suspended as a result of an accident on that date, and an interim service was substituted between Geraldton and Port Hedland from the 21st February, 1922, until the 6th April, 1922, when the full Geraldton-Derby service was brought into operation. The service has been maintained since the last-mentioned date with approximately 100 per cent. efficiency, the volume of passenger traffic and mail matter carried showing a steady increase. An extension of the contract for this service for a further period of twelve months was granted to Western Australian Airways Ltd. on the 5th December, 1922.

(*c*) *Charleville-Cloncurry (Queensland) Service.* The Charleville-Cloncurry Service was commenced on the 2nd November, 1922. It is intended to use a number of modern eight-passenger-machines which have been ordered from England, but in the meantime the reserve machines have been placed in commission.

(*d*) *Sydney-Adelaide Service.* It is anticipated that the service connecting Sydney and Adelaide will be initiated before the end of 1923.

(*e*) *Particulars of All Services.* Particulars of the services in respect of which contracts have been entered into are as follows :—

AERIAL MAIL SERVICES.—AUSTRALIA, 1922.

Description of Service.	Distance in Miles.	Frequency of Service.	Places between which Service is maintained.	Term of Service and Subsidy.
1. Sydney (N.S.W.)–Adelaide (S.A.) —Larkin Aircraft Supply Co. Ltd., of Melbourne	760	Weekly each way	Sydney, Cootamundra, Narrandera and Hay (N.S.W.), Mildura (V.), Adelaide (S.A.)	Twelve months from date not yet fixed. Subsidy, £17,500
2. Sydney (N.S.W.)–Brisbane (Qld.) —F. L. Roberts, of Brisbane	550	Weekly each way	Sydney, Newcastle, Kempsey, Grafton, and Ballina (N.S.W.), Brisbane (Qld.)	Twelve months from date not yet fixed. Subsidy, £11,500
3. Charleville (Qld.) - Cloncurry (Qld.) — Queensland and Northern Territory Aerial Services Ltd., of Longreach, Qld.	575	Weekly each way	Charleville, Tambo, Blackall, Longreach, Winton and McKinlay (Qld.)	Twelve months from 2nd November, 1922. Subsidy, £12,000
4. Geraldton (W.A.)–Derby (W.A.) —Western Australian Airways Ltd.	1,195	Weekly each way	Geraldton, Carnarvon, Onslow, Roebourne, Port Hedland, Broome, and Derby (W.A.)	Twelve months, commencing 5th December, 1922. Subsidy, £25,000

These services will doubtless be followed by many others within the next few years. The excellent climatic conditions, the long distances between centres of commercial activity, and the large expanses of country devoid of mountains render Australia especially suitable for the operations of this latest method of transport and communication.

(*f*) *Landing-Grounds and Workshops.* In connexion with the aerial mail services it is the practice of the Defence Department to provide properly prepared landing-grounds, but the contractor is required to provide hangars and workshops along the route as specified in the contract. If these are erected on the landing-ground a nominal rental is charged by the Department.

7. **Statistics.**—The collection and compilation of aircraft statistics were undertaken by this Bureau on the 1st July, 1922. The subjoined table gives a summary of operations for the six months ended 31st December, 1922 :—

AIRCRAFT.—SUMMARY, SIX MONTHS ENDED 31st DECEMBER, 1922.

Particulars.	State in which Aeroplanes are Located.					Total.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	
Companies or persons owning aircraft .. No.	11	11	5	1	2	30
Aeroplanes .. No.	18	23	9	1	8	59
Staff employed(*a*)—						
Certificated pilots No.	6	12	4	1	5	28
Others .. .. No.	5	27	4	1	16	53
Flights carried out .. No.	627	1,587	344	6	449	3,013
Hours flown ..	176 h. 4 m.	383 h. 38 m.	313 h. 0 m.	5 h. 30 m.	821 h. 55 m.	1,700 h. 7 m.
Approx. mileage miles	11,333	27,815	21,413	360	65,418	126,339
Passengers carried—						
Paying .. .. No.	891	1,107	84	..	269	2,351
Non-paying .. No.	99	465	157	3	292	1,016
Total .. No.	990	1,572	241	3	561	3,367
Goods, weight carried lbs.	..	..	1,495	..	2,927	4,422
Mails, letters carried No.	..	..	(*b*)2,577	..	60,238	62,815
Accidents involving						
Injuries to *personnel* No.	..	..	..	..	..	..
Damage to aircraft No.	4	1	..	1	2	8

(*a*) Monthly average. (*b*) For two months.

In future issues of this work it is intended to publish information of a similar character to the foregoing for each financial year.

8. **Customs Regulations.** During the 1923 session of the Commonwealth Parliament a Bill for an Act to amend the Customs Act 1901–1922 was introduced with a view to treating aircraft in the same manner as merchant shipping in regard to Customs entries and clearances.

E. MOTOR VEHICLES.

1. **Registration.**—(i) *General.* The arrangements for the registration of motor-vehicles and the licensing of drivers and riders thereof are not uniform throughout Australia. The following statement indicates the procedure obtaining in each of the States, the fees for registration and licensing, and the amount of motor tax payable where such tax is not incorporated in the registration fees.

It should be mentioned that before a licence to drive a motor-car or a motor-cycle is issued, the applicant must, by passing the prescribed test, satisfy the competent authority that he is capable of driving or riding the vehicle concerned.

(ii) *New South Wales.* The Motor Traffic Act 1909, which is administered by the Inspector-General of Police, provides for the registration of all motor-vehicles of under 5 tons weight unladen, and the licensing of drivers, the annual fees payable being as follows :—

Motor-vehicles, including Tricars, but excluding motor cycles ..	£1	0	0
Motor-cycles	0	2	6
Licences—Motor-drivers	0	5	0
Motor-cycle-riders	0	2	6
Learners' permits (available one month)	0	2	6

A Motor Tax is imposed under the provisions of the Motor Vehicles (Taxation) Act 1916 on all motor-vehicles on a horse-power basis as follows :—

Of and under 12 horse-power	£2 per annum
Over 12, of, and under, 16 horse-power	£3 „
„ 16 „ „ 26 „	£4 „
„ 26 „ „ 33 „	£7 „
„ 33 „ „ 40 „	£10 „
„ 40 „ „ 60 „	£15 „
„ 60 horse-power	£20 „
Any motor-vehicle (other than a motor-cycle) which is propelled by electricity	£4 „
Any motor-cycle or tricycle and taxi-cab	£1 „

Half the above rates are payable in respect of one motor-car owned and used either by a medical practitioner or a clergyman for the purposes of their respective professions ; for motor-cars used solely for private hiring ; for public motor-cars except taxi-cabs ; and trade motor-vehicles.

The horse-power of motor-vehicles is, for the purpose of assessing the tax, determined by squaring the internal diameter in inches of the cylinders, multiplying by the number of cylinders, and dividing the resultant figures by 2.5.

Licences for public vehicles are issued under the Metropolitan Traffic Act 1900–1913, the annual fees payable being £2 in the case of motor omnibuses ; £1 each for taxi-cabs and motor-vans ; and for drivers' and conductors' licences 5s. each per annum. Under the Motor Tax Act 1916 fees are payable annually in respect of such public vehicles as follows :—Motor-omnibuses and vans, half the tax payable for private motor-vehicles of the same horse-power, and for taxi-cabs a flat rate of £1.

(iii) *Victoria.* The registration of motor-vehicles and the licensing of drivers and riders is controlled by the Chief Commissioner of Police under the provisions of the Motor Car Act 1915. The fees payable per annum for the registration of motor-vehicles and the licensing of drivers and riders are as follows :—

	£	*s.*	*d.*
Motor-cycles	0	5	0
Motor-cars, not exceeding 6½ horse-power	1	1	0
„ exceeding 6½ but not exceeding 12 horse-power	2	2	0
„ „ 12 „ „ 16 „	3	3	0
„ „ 16 „ „ 26 „	4	4	0
„ „ 26 „ „ 33 „	5	5	0
„ „ 33 horse-power	6	6	0
Motor-vehicles used exclusively for the conveyance of goods or burden in course of trade	3	3	0
Driver's licence	0	2	6

(iv) *Queensland.* The Main Roads Board controls the registration of motor vehicles within the State, but the licensing of drivers and riders is under the jurisdiction of the Commissioner of Police. The fees payable per annum for the registration of motor-vehicles, exclusive of motor-cycles but including motor-tricycles, are calculated on a " power-weight," or " power-weight-load " basis according to the nature of the vehicle. In the case of motor-vehicles fitted with pneumatic tyres on all wheels, the range is from £2 4s. for 25 " power-weights " to £22 for 200 " power-weights " or over. In respect of those vehicles fitted with solid tyres, the range is £1 13s. for 25 " power-weight-loads " to £23 18s. 6d. for 300 " power-weight-loads " or over, while 33⅓ per cent. is added to the latter rates if the vehicles are fitted with solid tyres other than rubber.

The formulæ for ascertaining the " power-weights " and " power-weight-loads " of vehicles for the purpose of assessing the registration fees are :—

" Power-weights " (P.W.) = weight in cwt. of vehicle ready for use plus the horse-power prescribed for the particular make of vehicle.

" Power-weight-loads " (P.W.L.) = as for " power-weights " plus the weight in cwt. of the maximum load the vehicle is capable of carrying.

Motor-cycle registration fees are 15s., with 10s. extra when side-cars are fitted.

The registration of steam-propelled motor-vehicles is also controlled by the Main Roads Board, the fees payable being calculated in a similar manner as in the case of internal-combustion vehicles.

Traction-engines are registered under the provisions of the "Traction Engines Regulations 1921" under the "Main Roads Act," the fee payable being £3 3s.

In addition to the registration of motor-vehicles with the Main Roads Board, the owners of those vehicles which are used, kept or let for hire in any traffic district proclaimed under the provisions of the Traffic Acts 1905 to 1916, are required to obtain a licence in respect of every such vehicle.

The driver of any motor-vehicle and the rider of every motor-cycle must obtain a licence from the Commissioner of Police before using any such vehicle or cycle within a Traffic District.

(v) *South Australia.* Under the provisions of the Motor Vehicles Act 1921, and Motor Vehicles Act Amendment Act of 1922, the fees prescribed for the registration of motor-cycles and motor-vehicles other than motor-cycles are 2s. 6d. and 10s. respectively, and for licences to drive motor-cars or ride motor-cycles 5s. and 2s. 6d. respectively. These latter fees are payable on 1st July each year. For licences issued between 1st January and 30th June, half the above fees are payable.

The Motor Vehicle Tax Act 1907 prescribes the following annual taxes in respect of all motor-vehicles which are not motor-tricycles or cycles:—

	£	*s.*	*d.*
Not exceeding 12 horse-power	2	10	0
Exceeding 12 horse-power but not exceeding 16 horse-power ..	3	5	0
„ 16 „ „ „ 26 „ ..	4	0	0
„ 26 „ „ „ 33 „ ..	6	5	0
„ 33 „ „ „ 40 „ ..	8	10	0
„ 40 „ „ „ 60 „ ..	12	5	0
„ 60 „	16	0	0
Any other motor-vehicle excepting motor-tricycles or cycles..	4	0	0
Any motor-tricycle or cycle	1	0	0

(vi) *Western Australia.* Motor-vehicle registrations are effected under the Traffic Act 1919 in the metropolitan area by the Commissioner of Police as agent for the Minister of Works who is the licensing authority, the fees payable annually in respect thereof being, as in the case of Queensland, calculated on a "power-weight" and "power-load-weight" basis according to the nature of the vehicles, and ranging from £2 for vehicles not exceeding 25 "power-weights" to £10 for those over 60 "power-weights." For motor-wagons, etc., the range is from £4 for vehicles not exceeding 30 "power-load-weights" to £21 for those exceeding 200 "power-load-weights." The annual fee payable for the registration of solo motor-cycles is 15s., and for combination-outfits 7s. 6d. per wheel irrespective of the "power-weight."

The formulæ for ascertaining the "power-weight" and "power-load-weight" are similar to those operative in the State of Queensland.

Licences to drive motor-vehicles or ride motor-cycles are also issued by the Commissioner of Police at an annual fee of 5s.

The registration of motor vehicles in municipalities or Road Board Districts outside the metropolitan area is vested in the authorities of the particular Local Government area in which the vehicle-owner applies for registration.

(vii) *Tasmania.* The Motor Traffic Act 1907 which is administered by the Commissioner of Police provides for the registration of all motor-vehicles and the licensing of riders and drivers thereof. The fees payable for the registration or renewal of registration of motor-cycles and motor-vehicles other than motor-cycles are 10s. and £1 respectively. Licences to ride motor-cycles and to drive motor-vehicles other than motor-cycles are issued on payment of an annual fee of 5s. and 10s. respectively.

The tax which is imposed under the provisions of the Motor Vehicles Tax Act 1923 on all motor-vehicles other than a motor-cycle propelled wholly or partly by an internal-combustion engine, is calculated on the product of the horse-power of the vehicle into the weight unladen expressed in tons and decimals of a ton. The horse-power is determined on the same formula as is in force in the State of New South Wales.

The scale of tax payable annually is as follows :—

Where the product	£	s.	d.
Does not exceed 9	2	0	0
Exceeds 9 but not 16	3	0	0
„ 16 „ 30	4	0	0
„ 30 „ 50	5	0	0
„ 50 „ 80	7	0	0
„ 80 „ 120	12	0	0
„ 120 ..	15	0	0

The tax in respect of every motor-cycle is £1.

Where vehicles are propelled by steam or electricity the annual tax is based on the weight unladen, and ranges from £4 in cases where the weight does not exceed 1½ tons, to £20 where the weight exceeds 5 tons.

Vehicles fitted with one or more rubber tyres not being pneumatic are taxed an additional 25%, and those vehicles which have one or more solid tyres not being of rubber are taxed an additional 100% on the above rates.

2. **Public Vehicles.**—In all the capital cities of the States and in many of the most important provincial centres taxi-cabs ply for hire under licence granted either by the Commissioner of Police or the Local Government authority concerned. In addition, there is a considerable number of motor-omnibuses operating over routes more or less definitely laid down between the capital cities and their suburbs. These services are firmly established in Sydney (New South Wales), in which city, at the end of the year 1921–22, there were about 100 omnibuses in operation. About 1,500,000 'bus-miles were run, and approximately 5,000,000 passengers were carried during the year.

3. **Vehicles Registered, etc., 1922.**—Particulars of the registration of motor-vehicles, etc., for the year 1922 are contained in the subjoined table :—

MOTOR VEHICLES.—SUMMARY, 1922.

State.	Year ended—	Registrations.			Riders' and Drivers' Licences issued.	Revenue obtained.
		Motor Cars, etc.	Motor Cycles.	Total.		
		No.	No.	No.	No.	£
New South Wales ..	31·12·22	39,227	12,143	51,370	80,245	224,547
Victoria	30·6·22	27,232	12,406	39,638	43,701	119,877
Queensland	30·6·22	11,643	2,164	13,807	(a)	48,938
South Australia.. ..	30·6·22	15,898	7,784	23,682	21,632	66,961
Western Australia (b) ..	30·6·22	2,161	1,206	3,367	4,398	(a)
Tasmania	30·6·22	3,109	1,875	4,984	6,101	16,236
All States (c)		99,270	37,578	136,848	156,077	476,559

(a) Not available.
(b) Metropolitan traffic district only.
(c) Incomplete.

4. **Comparative Motor Vehicle Statistics, 1921.**—The following statement, which has been extracted from the United States Department of Commerce World Census of Automotive Vehicles, published in Commerce Report No. 7 of the 12th February, 1923, shows the number of motor cars and trucks, and motor-cycles in several of the most important countries of the world. The figures, which are for the year 1921, except where otherwise stated, are in some instances approximate, being based on the estimates of the Commerce Bureau officials in the various countries.

COMPARATIVE MOTOR VEHICLE STATISTICS, 1921.

Country.	Motor Cars and Trucks.	Motor Cycles.
Australia (1922)	99,270	37,578
Argentine	78,413	2,500
Belgium	36,000	20,300
Brazil	25,000	1,084
Canada	509,670	9,713
Cuba	33,800	250
Denmark	22,260	14,241
France	295,876	45,995
Germany (1922)	128,092	37,941
India	36,529	12,133
Italy	53,600	31,600
Mexico	20,734	2,226
Netherlands	22,740	25,000
New Zealand	37,500	25,000
South African Union	26,978	15,305
Spain	41,000	4,000
Sweden (1922)	29,478	16,270
United Kingdom	498,271	335,796
United States of America	12,357,376	210,000

The estimated total number of motor-vehicles in 1921 as disclosed by the World's Census of Automotive Vehicles was 14,612,181 cars and trucks and 893,627 motor-cycles.

The figures quoted for Australia have been compiled from data supplied by the responsible registration authorities in the several States, and differ slightly from those contained in the United States Department of Commerce Report.

F. POSTS, TELEGRAPHS AND TELEPHONES.

§ 1. Posts.

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

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

2. **Postal Matter Dealt With.**—(i) *Australia.* In the following table the matter dealt with from 1917–18 to 1921–22 is divided into (i) matter posted in Australia for delivery therein, (ii) matter received from overseas, (iii) matter despatched overseas, and

(iv) total postal matter dealt with by the Commonwealth Postal Department. Although mail matter posted in Australia for delivery therein is necessarily handled at least twice, only the numbers despatched are included in the table following, which consequently gives the number of distinct articles handled.

POSTAL MATTER DEALT WITH.—AUSTRALIA, 1917-18 TO 1921-22.

Year ended 30th June—	Letters and Post-cards.		Newspapers.		Packets.		Parcels.		Registered Articles.	
	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.
POSTED WITHIN AUSTRALIA FOR DELIVERY THEREIN.										
1918 ..	483,048	97,876	116,899	23,686	42,455	8,602	4,421	896	4,677	948
1919 ..	485,452	96,502	122,116	24,275	39,039	7,760	4,863	967	4,741	942
1920 ..	526,261	100,297	119,448	22,765	38,140	7,269	5,434	1,036	5,313	1,013
1921 ..	512,021	94,603	117,824	21,770	47,567	8,789	6,633	1,226	5,664	1,046
1922 ..	507,239	91,099	126,165	22,659	56,622	10,169	8,284	1,488	5,516	991
OVERSEA RECEIVED.										
1918 ..	48,961	9,920	7,152	1,449	2,099	425	278	56	537	109
1919 ..	38,708	7,695	7,194	1,430	2,582	513	428	85	510	101
1920 ..	36,493	6,955	7,799	1,486	2,119	404	339	65	425	81
1921 ..	35,804	6,615	8,931	1,650	2,440	451	371	69	415	77
1922 ..	30,912	5,552	9,770	1,755	2,674	480	339	61	410	74
OVERSEA DESPATCHED.										
1918 ..	44,942	9,106	10,896	2,208	2,826	573	1,179	239	357	72
1919 ..	29,550	5,874	7,360	1,463	1,907	379	770	153	281	56
1920 ..	20,705	3,946	3,838	731	1,495	285	163	31	270	51
1921 ..	21,519	3,976	4,128	763	1,402	259	188	35	305	57
1922 ..	23,822	4,278	4,542	816	1,299	233	176	32	286	51
TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL DEPARTMENT.										
1918 ..	576,951	116,902	134,947	27,343	47,380	9,600	5,878	1,191	5,571	1,129
1919 ..	553,710	110,071	136,670	27,168	43,528	8,652	6,061	1,205	5,532	1,099
1920 ..	583,459	111,198	131,085	24,982	41,754	7,958	5,936	1,132	6,008	1,145
1921 ..	569,344	105,194	130,883	24,183	51,409	9,499	7,192	1,330	6,384	1,180
1922 ..	561,973	100,929	140,477	25,230	60,595	10,882	8,799	1,581	6,212	1,116

The decrease in oversea mail matter received and despatched since 1918 is mainly attributable to the return of Australian troops from abroad.

(ii) *Postal Matter dealt with.—States.* The following table shows separately for each State the postal matter dealt with in 1921-22 under the classification adopted in the preceding paragraph with the exception of registered articles, which are dealt with

separately hereinafter. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory. Similarly, the returns for the Federal Territory are included in those for New South Wales.

POSTAL MATTER DEALT WITH.—STATES, 1921-22.

State.	Letters and Post-cards.		Newspapers.		Packets.		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 COMMONWEALTH.								
New South Wales	213,947	99,499	60,281	28,034	19,609	9,119	3,680	1,674
Victoria ..	149,922	95,453	27,632	17,593	10,387	6,613	1,909	1,210
Queensland ..	57,152	72,763	19,622	24,982	10,622	13,523	1,476	1,879
South Australia	38,496	75,670	7,297	14,344	9,999	19,655	611	1,201
Western Australia	26,585	78,306	5,372	15,823	4,020	11,841	450	1,325
Tasmania ..	21,137	99,049	5,961	27,933	1,985	9,302	158	740
Australia ..	507,239	91,099	126,165	22,659	56,622	10,169	8,284	1,488
OVERSEA RECEIVED.								
New South Wales	10,397	4,836	3,571	1,661	666	310	134	62
Victoria ..	13,946	8,879	2,396	1,526	643	409	90	57
Queensland ..	2,522	3,211	1,781	2,267	519	661	57	73
South Australia	1,616	3,177	597	1,173	268	527	25	49
Western Australia	1,624	4,783	951	2,801	387	1,140	25	74
Tasmania ..	807	3,782	474	2,221	191	395	8	37
Australia ..	30,912	5,552	9,770	1,755	2,674	480	339	61
OVERSEA DESPATCHED.								
New South Wales	13,501	6,279	2,530	1,177	768	357	94	44
Victoria ..	4,743	3,020	1,265	805	345	220	48	31
Queensland ..	1,660	2,113	309	393	75	95	11	14
South Australia	868	1,706	168	330	50	98	9	18
Western Australia	1,318	3,882	150	442	23	68	12	35
Tasmania ..	1,732	8,351	120	562	38	178	2	9
Australia ..	23,822	4,278	4,542	816	1,299	233	176	31

3. **Postal Facilities.**—(i) *Relation to Area and Population.* The subjoined statement shows the number of post and receiving offices, the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in Australia at the end of the year 1921-22. 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.

POSTAL FACILITIES.—RELATION TO AREA AND POPULATION, 30th JUNE, 1922.

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Australia.
Number of post and receiving offices	2,588	2,576	1,241	805	668	503	8,381
Number of square miles of territory to each office in State	120	34	540	1,123	1,461	52	355
Number of inhabitants to each office	831	610	633	632	508	424	664
Number of inhabitants per 100 square miles	693	1,787	117	56	35	814	187

(ii) *Number of Offices.* The following table shows the numbers of post and receiving offices in each year from 1917–18 to 1921–22 inclusive :—

POST AND RECEIVING OFFICES AT 30th JUNE, 1918 TO 1922.

State.	Year ended 30th June—									
	1918.		1919.		1920.		1921.		1922.	
	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.
New South Wales ..	2,031	548	2,037	562	2,034	559	2,031	578	2,032	556
Victoria	1,726	878	1,715	854	1,707	829	1,712	864	1,721	855
Queensland ..	643	659	640	643	645	627	658	604	665	576
South Australia ..	670	143	666	125	674	118	670	127	666	139
Western Australia ..	407	212	402	201	402	209	405	222	414	254
Tasmania	396	85	406	83	405	83	409	89	413	90
Australia ..	5,873	2,525	5,866	2,468	5,867	2,425	5,885	2,484	5,911	2,470

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

EMPLOYEES AND MAIL CONTRACTORS, 1918 TO 1922.

State.	Year ended 30th June—									
	1918.		1919.		1920.		1921.		1922.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
Central Office ..	92	..	84	..	83	..	(a)139	..	87	..
New South Wales ..	11,684	1,972	11,732	1,964	11,334	1,912	11,669	2,046	12,451	2,087
Victoria	8,249	1,105	8,499	1,112	7,962	1,089	8,117	1,091	8,553	1,095
Queensland ..	4,477	794	4,289	787	4,778	723	4,728	750	4,792	766
South Australia ..	2,737	368	2,768	350	2,679	427	2,826	439	2,895	441
Western Australia ..	2,462	271	2,258	264	2,110	286	2,111	302	2,200	338
Tasmania ..	1,212	250	1,173	227	1,156	227	1,220	223	1,229	236
Australia ..	30,913	4,760	30,803	4,704	30,102	4,664	30,810	4,851	32,207	4,963

(a) Includes "radio staff."

4. **Rates of Postage.**—(i) *General.* Under the provisions of the Postal Rates Act of 1910, which became operative from 1st May, 1911, the rates of postage were made uniform in all States. An amendment to this Act in 1920 provided for the rates quoted

hereunder for mail matter posted in Australia for internal delivery and for despatch overseas in respect of the various classes of mail matter. Owing to space limitations, particulars are not given in regard to third-class mail matter, as no change has taken place in the rates during the past year.

(*a*) First-class mail matter consists of letters, lettercards, and post-cards.
(*b*) Second-class mail matter—Commercial and printed papers; patterns, samples, and merchandise; books, and catalogues.
(*c*) Third-class mail matter—Newspapers registered for transmission as such, and magazines.
(*d*) Fourth-class mail matter—Parcels forwarded by parcels post and articles irregularly posted as second-class matter and which are officially treated as parcels.

(ii) *Postal Rates.* (*a*) *First and Second-class Mail Matter.* The subjoined tabular statement gives the postage rates for first and second-class mail matter posted in Australia for inland delivery and for despatch overseas :—

POSTAL RATES, 1922.

Postal Article.	Rates of Postage.		
	For Inland Delivery.	For Despatch Overseas.	
		British Empire.	Foreign Countries.
First class mail matter—			
Letters	2d. per ½ ounce ..	2d. per ½ ounce ..	4d. for first ounce and 2d. each additional ounce or part
Lettercards { Single ..	2d. each	2d. each	4d each
Lettercards { Reply ..	2d. each half ..	2d. each half	4d. each half
Postcards { Single ..	1½d. each	1½. each	2d. each
Postcards { Reply ..	1½d each half ..	1½d. each half ..	2d. each half
Second class mail matter—			
Commercial papers (as prescribed)	1½d. per 2 ounces or part	New Zealand and Fiji—1½. per 2 ounces or part Other British Countries—As above (minimum 3d.)	1½d. per 2 ounces or part (minimum 4d.)
Patterns, Samples, and Merchandise (as prescribed)	1½d. per 2 ounces or part	1½d. per 2 ounces or part	1½d. per 2 ounces or part (Parcels rates apply to Merchandise)
Printed Papers (as prescribed)	1d. per 2 ounces or part	1d. per 2 ounces or part	1½d. per 2 ounces or part
Books—			
Printed in Australia	1d. per 8 ounces or part	1d. per 4 ounces or part	1½d. per 2 ounces or part
Printed outside Australia	1d. per 4 ounces or part		
Catalogues	Wholly set up and printed in Australia —1½d. per 4 ounces or part	1d. per 2 ounces or part	1½d. per 2 ounces or part

(*b*) *Third-class Mail Matter.* Information in respect of the postage rates for magazines and newspapers was given in Year Book No. 15, and the rates quoted there are still in force.

(*c*) *Fourth-class Mail Matter.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 feet in length and girth combined. The rate for the inland postage of parcels is 6d. up to 1 lb., and then 3d. for every additional pound. For Inter-State, New Zealand, Fiji, and Papua the rate is 8d. up to 1 lb., and then 6d. per lb., and for transmission to the United Kingdom the rate is 1s. 4d. up to 1 lb., and 6d. for every additional pound. Various rates are charged for the conveyance of parcels to other parts of the world.

5. **Registered Letters, Packets, etc.**—(i) *General.* Under section 38 of the *Post and Telegraph Act* 1901, provision is made for the registration of any letter, packet, or newspaper upon payment of a fee of 3d., and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying an additional fee of 3d. in advance at the time of registration.

(ii) *Number of Registered Articles.* The subjoined table shows the number of registered articles posted in each State, classified according to the places to which they were despatched for delivery, also the number of registered articles received in each State from overseas during the year 1921–22 :—

REGISTERED ARTICLES POSTED AND RECEIVED, 1921–22.

State.	Posted in each State for Delivery within Australia.		Posted in each State for Delivery Overseas.		Total Posted.		Received in each State from Overseas.	
	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.
New South Wales ..	1,926	896	129	60	2,055	956	188	87
Victoria	1,530	974	77	49	1,607	1,023	120	76
Queensland ..	849	1,081	33	42	882	1,123	38	48
South Australia ..	505	993	18	35	523	1,028	27	53
Western Australia ..	438	1,290	24	71	462	1,361	28	82
Tasmania	269	1,261	5	23	274	1,284	9	42
Australia ..	5,517	991	286	51	5,803	1,042	410	74

6. **Value-Payable Parcel and Letter Post.**—(i) *General.* The Postal Department undertakes to deliver registered articles sent by parcel post within Australia, or between Papua 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, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of 2d. on sums not exceeding 10s., and 1d. for each additional 5s. or part thereof, must be prepaid by postage stamps affixed to the articles, distinct from the postage, and marked "commission." The registration fee (3d.) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. Any article that can be sent by parcel-post may be transmitted as a value-payable parcel. Letters may also be sent as value-payable parcels, if prepaid at the letter rate of postage and handed to the parcels clerk, in the same manner as in the case of parcels.

(ii) *Summary of Business.* The subjoined statement gives particulars of the number and value of parcels sent through the Value-Payable Post in each State during the years 1918 to 1922 :—

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1918 TO 1922.

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.
1918	21,962	1,204	63,523	473	23,421	37	110,620
1919	28,544	1,579	68,601	588	24,211	22	123,545
1920	38,713	2,134	94,733	666	29,628	76	165,950
1921	53,829	3,192	120,045	689	36,125	155	214,035
1922	93,621	4,092	171,848	606	48,187	111	318,465

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1918 TO 1922—*continued.*

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
VALUE COLLECTED.							
	£	£	£	£	£	£	£
1918	37,813	2,310	88,388	1,089	37,155	97	166,852
1919	54,876	3,003	98,882	1,492	38,244	72	196,569
1920	85,055	3,804	137,976	2,555	46,964	336	276,690
1921	124,502	6,105	177,662	2,027	57,170	711	368,177
1922	172,258	8,086	238,047	1,694	81,370	444	501,899
REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.							
	£	£	£	£	£	£	£
1918	3,338	153	8,839	70	3,165	5	15,570
1919	3,917	223	9,637	82	3,275	4	17,138
1920	5,435	331	13,076	106	4,000	15	22,963
1921	8,502	446	16,102	103	4,966	32	30,151
1922	12,144	549	22,214	177	6,259	47	41,390

The number of parcels forwarded in Queensland is in excess of the combined transactions of all the other States, chiefly owing to the fact that the system has been established in that State for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office. The system has also found favour for a number of years in Western Australia, and continues to make marked progress in New South Wales, but the amount of business transacted in South Australia and Tasmania remains negligible. The Victorian business has more than trebled itself during the period under review.

The average value collected in each of the States for the five years 1917–18 to 1921–22 was New South Wales £2 0s. 1d., Victoria £1 18s. 2d., Queensland £1 8s. 7d., South Australia £2 18s. 7d., Western Australia £1 12s. 4d., Tasmania £4 2s. 9d., and for Australia £1 12s. 5d.

7. Sea-borne Mail Services.—(i) *Summary.* In previous issues of this work statements regarding the development of the principal sea-borne mail services were included, but owing to the restrictions of space this information cannot be repeated. The following tabular summary, however, contains the latest available information in respect of the Australian sea-borne mail services :—

SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES, 1923.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. *To and from Ports in New South Wales*—			
(i) NORTHERN PORTS—			
(*a*) North Coast S.N. Co.	Twice weekly	Sydney and Clarence River, Byron Bay, and Richmond River	Poundage rates
(*b*) ,, ,,	Fortnightly	Sydney and South Solitary Island	,, ,,
(ii) SOUTH COAST PORTS—			
Illawarra and S. Coast S.N. Co.	Fortnightly	Sydney, Montague Island	,, ,,
2. *To and from Northern Ports of Queensland*—			
(*a*) Australasian United Steam Navigation Co. Limited	Weekly	Gladstone, Mackay, Bowen, Townsville, Lucinda, Mourilyan, Cairns, Port Douglas, and Cooktown	Subsidised by agreement dated 6th Dec., 1920, for two years, and extended to 5th Dec., 1923. Amount of subsidy, £22,500, exclusive of Port and Light dues
(*b*) John Burke and Sons ..	Ten trips a year	Brisbane, Townsville, Cairns, Cooktown, Thursday Island, Normanton and Burketown	Subsidised from 18th November, 1921. Amount of subsidy, £2,000 per annum
(*c*) Other steamers ..	Irregularly	Various	Poundage rates

SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
3. *To and from Ports in South Australia*—			
(*a*) Coast Steamship Co. Ltd.	Weekly	Port Adelaide and Kingscote	Subsidised to 31st December, 1925. Amount of subsidy, (*a*) £900 ; (*b*) £400 ; (*c*) £500 ; (*d*) £400
(*b*) „ „	Twice a week	Port Adelaide and Edithburgh	
(*c*) „ „	„	Port Adelaide and Stansbury	
(*d*) „ „	„	Port Adelaide and Port Vincent	
(*e*) Adelaide Steamship Co...	Weekly	Port Adelaide and Port Lincoln	Subsidised for three years from 1st January, 1923. Amount of subsidy, £3,000
(*f*) Adelaide Steam Tug Co. ..	As required	Port Pirie and Whyalla	Subsidised without agreement. Amount of subsidy, £120
4. *Western Australia*—			
(i) TO AND FROM PORTS ON N.W. COAST—			
(*a*) State Steamship Service	Monthly ..	Fremantle and Derby ..	Subsidised by agreement dated 28th February, 1913, for three years. Later extended to a date three months after expiration of war. Subsequently extended for indefinite period. Amount of subsidy, £5,500
(*b*) „ „ „	Once each sixty days	Fremantle and Darwin	
(*c*) West Australian S.N. Co.	About fortnightly	Fremantle and Singapore, via N.W. Ports	Poundage rates
(*d*) Ausn. United S. Navigation Co., State S.S. Co. and Melbourne S.S. Coy.	Irregularly, during the cattle season	Fremantle, Derby, and Wyndham	„ „
(ii) TO AND FROM PORTS ON S. COAST—			
(*a*) State Steamship Service	Fortnightly	Albany and Esperance..	Subsidised by agreement for three years, dating from 1st July, 1921. Amount of subsidy, £1,500
(*b*) „ „	Quarterly	Albany and Eucla, via intermediate ports	
5. *Tasmania*—			
(*a*) Tasmanian Steamers Pty. Ltd.	Three times a week summer ; twice a week winter	Melbourne and Launceston	Subsidy, £30,000 per annum from 1st May, 1921, under contract for twelve months, and thereafter terminable on twelve months' notice by either party to the agreement
(*b*) „ „ „	Twice a week	Melbourne and Burnie	
(*c*) Union S.S. Co. and Huddart Parker Ltd.	Irregular..	Sydney, Hobart, and Wellington	Poundage rates
(*d*) Union Steamship Co. ..	„ ..	Sydney, Launceston, and Devonport	„ „
(*e*) Shipping and Trading Agency Pty. Ltd.	„ ..	Launceston	„ „
(*f*) „ „ „	„ ..	Melbourne, Burnie, etc.	„ „
(*g*) Huon Channel and Peninsular Co.	Twice a week	Hobart and Kelly's Point, via Pearson's Point	Subsidised by agreement dated 1st January, 1922, for three years. Amount of subsidy, £50 per annum
(*h*) Tasmanian Government Shipping Department	Every two weeks	Launceston and Furneaux group of islands	Subsidised by agreement dated 1st January, 1922, for three years. Amount of subsidy, £350 per annum
(*i*) „ „ „	Fortnightly	Launceston and Currie, King Island	Subsidised by agreement dated 1st January, 1922, for three years. Amount of subsidy, £400 per annum
(*j*) Holyman Bros. Pty. Ltd.	Weekly ..	Burnie and Melbourne, via Fraser River and King Island	Poundage rates

SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
6. *To and from Northern Territory—*			
(*a*) Burns, Philp and Co. ..	Monthly ..	To and from Adelaide and Sydney, via Queensland ports	Poundage rates
(*b*) State Steamship Service of Western Australia	Once each sixty days	Fremantle and Darwin	See Item 4 above
7. *To and from New Zealand—*			
(*a*) Conjointly by Union S.S. Co. and Huddart, Parker Ltd.	Weekly	Sydney and Wellington, Sydney and Auckland	Poundage rates
(*b*) Other steamers ..	Irregularly, when convenient	Sydney, Wellington, Auckland, Lyttelton, and other Ports	,, ,,
(*c*) ,, ,, ..	About every three weeks	Melbourne, Wellington, or Bluff	,, ,,
8. *Pacific Islands—*			
(*a*) Burns, Philp and Co. ..	Every two months	Sydney to Lord Howe and Norfolk Islands and New Hebrides	Subsidised by Commonwealth
(*b*) ,, ,, ..	Irregularly	Sydney to Nauru and Ocean Islands, Gilbert and Ellice Groups	,, ,,
(*c*) ,, ,, ..	,,	Sydney to Marshall Islands	,, ,,
(*d*) ,, ,, ..	Every three weeks	Sydney to Papua and Rabaul	,, ,,
(*e*) ,, ,, ..	Every five weeks	Sydney to Rabaul ..	,, ,,
(*f*) ,, ,, ..	Twice in six weeks	Sydney to Solomon Islands	,, ,,
(*g*) ,, ,, ..	Once in six weeks	Sydney to Solomon Islands and Rabaul	,, ,,
9. *New Caledonia and New Hebrides—*			
(*a*) Messageries Maritimes ..	Monthly	Sydney and Noumea and to Vila (New Hebrides)	Postal Union rates
(*b*) Other steamers ..	About twice a month	Sydney and Noumea ..	Poundage rates
10. *Fiji, Friendly Islands, and Samoa—*			
(*a*) Union S.S. Co ..	Every four weeks	Sydney and Suva ..	,, ,,
(*b*) ,, ,, ..	,,	Sydney, Suva, Tonga, and Samoa	,, ,,
(*c*) A.U.S.N. Co.	,,	Sydney and Suva ..	,, ,,
11. *To Eastern Ports—*			
(*a*) Burns, Philp and Co. ..	Monthly	Melbourne and Sydney to Java and Singapore, via Queensland Ports and Darwin	Subsidised by Commonwealth Govt. Mails at poundage rates
(*b*) China Navigation, Eastern and Ausn., and China Australian Line	About once a month	Melbourne and Sydney to Hong Kong, Manila, etc., via Queensland Ports	Poundage rates
(*c*) Nippon Yusen Kaisha ..	Every four weeks	Melbourne and Sydney to Manila, China, and Japan, via Queensland Ports	Postal Union rates
(*d*) Royal Dutch Packet S.N. Co.	Monthly	Melbourne to Java and Singapore, via Sydney and Queensland Ports	Poundage rates
(*e*) Various other steamers	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula	,, ,,
(*f*) W.A.S.N. Co.	About fortnightly	W.A. Ports, Java, and Singapore	,, ,,
(*g*) Commonwealth Government line of steamers	About fortnightly	Sydney, Melbourne, Adelaide, Fremantle, Java, and Singapore	,, ,,
12. *South Africa—*			
White Star, P. and O. Branch Service, and other Companies	Irregularly	Sydney, Melbourne, Adelaide, and Fremantle to Durban and Capetown	,, ,,

SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
13. *To and from Europe, via Suez*—			
(*a*) Orient Steam Navigation Co.	Every four weeks	Brisbane, Sydney, Melbourne, Adelaide, Fremantle, and London, via Suez	Subsidy, £130,000. Commenced 20th September, 1921. Terminable on twelve months' notice by either party
(*b*) Peninsular and Oriental S.N. Co. Ltd.	Every four weeks	Sydney, Melbourne, Adelaide, Fremantle, and London, via Suez	Postal Union rates
14. *To and from Europe, via Vancouver* (*a*)—			
Union Steamship Co. ..	Every four weeks	Sydney and Vancouver, B.C., via Auckland, Fiji, Honolulu	Poundage rates
15. *To and from Europe, via San Francisco*—			
(*a*) Union Steamship Company	Twice in nine weeks	Sydney, Wellington, Raratonga, Tahiti, and San Francisco	Subsidised by New Zealand Govt. Mails from Aust. at Postal Union rates
(*b*) Oceanic Steamship Co. ..	,,	Sydney, Pago Pago (Samoa), Honolulu, and San Francisco	Poundage rates
16. *North America*—			
(*a*) Various steamers ..	Irregularly	Sydney or Newcastle to San Francisco	,, ,,
(*b*) ,, ,, ..	,,	Sydney to Guaymas (Mexico)	,, ,,
(*c*) Union S.S. Co. ..	Twice in nine weeks	Sydney, Wellington, Tahiti, and San Francisco	,, ,,
(*d*) ,, ,, ..	Every four weeks	Sydney, Auckland, Fiji, Honolulu, and Vancouver	,, ,,
(*e*) Oceanic S.S. Co. ..	Twice in nine weeks	Sydney, Pago Pago (Samoa), and San Francisco	,, ,,
17. *South America*—			
(*a*) Oceanic S.S. Co. / Union S.S. Co.	Twice a month	Sydney, via San Francisco to ports in Chile, Brazil, Peru, Uruguay, and Argentina	,, ,,
(*b*) Various other steamers	Irregularly	Via Newcastle to various ports	,, ,,

(*a*) Carries also mails to Canada and United States.

(ii) *Average and Fastest Time of Mails to and from London.* (*a*) *Via Suez Canal.* During the European war steamers of the Orient S.N. Co. were diverted from the Suez Canal to the Cape route, but the former route has since been resumed by that company and by the Peninsular and Oriental S.N. Co.

In the 1921 mail contracts, Fremantle was made the mail port in Australia, and letters arriving from the United Kingdom are now landed there instead of as formerly at Adelaide. By this arrangement a saving of approximately 67 hours is effected. A service equal to that of pre-war days is not yet available, but a regular fortnightly service is assured, however, under the terms of contracts entered into between the Commonwealth Government and the Orient Steam Navigation Company, and between the Imperial Government and the Peninsular and Oriental Company. Particulars of these contracts, which date from September, 1921, will be found in Year Book No. 15.

The subjoined table shows the average and the fastest times occupied in the conveyance of mails from London to Fremantle and vice versa during the year 1921–22 :—

AVERAGE AND FASTEST TIME.—MAILS VIA SUEZ CANAL, LONDON TO FREMANTLE, AND VICE VERSA, DURING 1921–22.

Service.	London to Fremantle.				Fremantle to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Orient S. N. Co.	31	7	30	23	31	10	31	—
Peninsular and Oriental S.N. Co.	31	20	30	23	33	14	33	—

At present a mail leaving Perth by train for the Eastern States, say, at 9 p.m. on Monday, arrives at Adelaide at 7.50 p.m. on Thursday, at Melbourne at 1.3 p.m. on Friday, at Sydney at 10.45 a.m. on Saturday, and at Brisbane at 6.40 p.m. on Monday. The time over all between Perth and Brisbane is 165 hours 40 minutes, of which the stops at changing stations take 38 hours 32 minutes. The journey from Melbourne to Hobart occupies about 26 hours via Launceston, and about 32 hours direct.

(*b*) *Via America.* The average and fastest times occupied in the conveyance of mails between London and Sydney via America during 1921–22 were :—

AVERAGE AND FASTEST TIME.—MAILS VIA AMERICA, DURING 1921–22.

Service.		Average Time.		Fastest Time.	
		Days.	Hours.	Days.	Hours.
London to Sydney	via Vancouver	39	22	35	—
	via San Francisco (Oceanic)	42	1	35	—
Sydney to London	via Vancouver	40	2	37	—
	via San Francisco (Oceanic)	38	20½	34	—

(iii) *Amount of Mail Subsidies Paid.* The following table shows the amounts of subsidies paid by the Commonwealth Postal Department for ocean and coastal mail services during the year ended 30th June, 1922 :—

MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1921–22.

Service.	Orient S. N. Co.	Queensland Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
	£	£	£	£	£
Annual subsidy	113,337	24,038	5,320	5,578	(*a*) 36,497

(*a*) Includes £5,978 arrears from 1920–21.

During the year 1921–22 the amount paid by the Commonwealth for conveyance of mails at poundage rates by non-contract vessels was £32,926 ; by road services, £574,633 ; and by railway services, £400,475. The total expenditure in 1922 on the carriage of mails, as disclosed by the Profit and Loss Account, amounted to £1,119,883.

8. **Transactions of the Dead Letter Offices.**—(i) *General.* Under sections 45 to 53 of the Post and Telegraph Act 1901, the Postmaster-General may cause to be opened all unclaimed and undelivered postal articles originally posted within Australia which have been returned from the places to which they were forwarded. Every unclaimed letter and postal article must be kept for the prescribed period at the office to which it has been

transmitted for delivery, and must then be sent to the General Post Office. Letters and packets originally posted overseas are returned to the proper authorities in the country of origin, or if originally posted in Australia are returned to the General Post Office in the State where posted. Unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing valuables are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards an opened letter or packet containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee, or, failing him, by the writer or sender. If unclaimed within three months, the letter and contents may be destroyed or sold, and the proceeds paid into the Consolidated Revenue Fund.

(ii) *Summary.* The following table shows the total number of letters, postcards, and lettercards, and packets and circulars, including Inland, Inter-State, and International, dealt with by the Dead Letter Offices in 1921–22, and the methods adopted in their disposal.

DEAD LETTER OFFICES—SUMMARY, 1921–22.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
LETTERS, POSTCARDS, AND LETTERCARDS.							
Returned direct to writers or delivered	639,308	417,112	221,591	97,070	117,553	59,580	1,552,214
Destroyed in accordance with Act	89,631	51,095	18,403	13,961	8,663	5,622	187,375
Returned to other States or Countries as unclaimed	119,789	56,344	38,380	19,585	23,646	10,746	268,490
Total	848,728	524,551	278,374	130,616	149,862	75,948	2,008,079
PACKETS AND CIRCULARS.							
Returned direct to writers or delivered	707,840	177,640	75,766	44,493	37,384	5,574	1,048,697
Destroyed in accordance with Act	129,200	222,999	29,626	46,725	1,256	426	430,232
Returned to other States or Countries as unclaimed	9,689	11,630	32,458	13,546	8,312	8,124	83,759
Total	846,729	412,269	137,850	104,764	46,952	14,124	1,562,688
Grand total (letters, packets, etc.)	1,695,457	936,820	416,224	235,380	196,814	90,072	3,570,767

9. **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 £30, £20, or £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. Money orders are sent direct from Australia to the United Kingdom, and to most of the British colonies and possessions, to the British Solomon Islands Protectorate and the Gilbert and Ellice Islands Protectorate, to Italy, to Norway, and to the United States of America. Money orders, payable in Japan and China, are sent via Hong Kong; orders payable in other countries, with a few exceptions, are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less twopence for each £1 or fraction of £1, with a minimum charge of fourpence. To secure the full amount of the original order being forwarded to the payee, this extra commission must be paid by the sender.

(ii) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows :—

RATES OF COMMISSION, MONEY ORDERS.

Orders Payable in.	Rates of Commission.
Australia	6d. for each £5 or fraction of £5.
New Zealand	3d. for each £1 or fraction of £1, with minimum of 6d.
Papua, Rabaul (New Guinea), Nauru, Fiji, New Caledonia	4d. for each £1, or fraction of £1, with minimum of 6d.
United Kingdom, Canada, Union of South Africa, India, Ceylon, Dutch East Indies, Egypt, Federated Malay States, Gilbert and Ellice Islands, Hong Kong, Italy, Mauritius, North Borneo, Norway, Solomon Islands, Straits Settlements, Tonga	4d. for each £1, or fraction of £1, with minimum of 9d.
United States of America (including Hawaii)	9d. for any amount up to £2 and 4d. for each additional £1 or fraction of £1.
Philippine Islands	(*a*) In the case of amounts not exceeding £1, 7d. for every 2s. or fraction thereof. (*b*) In the case of amounts exceeding £1, 6s. for each £1 and for any odd amount less than £1, 7d. for every 2s. or fraction thereof.

Remittances may also be made by telegraph to and from money order offices in Australia which are also telegraph or telephone offices, and to New Zealand. The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. Where payment is to be made within Australia the remitter must also send a telegram advising the transmission of the money, which telegram must be produced by the payee when applying for payment. In the case of New Zealand a second telegram is not required, but an additional charge of sixpence is made by the Department to cover the cost of notifying the payee.

A telegraph money order service between the United Kingdom and Australia via the Pacific Cable was inaugurated on 31st July, 1921, by agreement between the London Postal Authorities, the Commonwealth Postal Department, and the Pacific Cable Board. Under the arrangement made, a telegraph money order may be drawn by the United Kingdom on any money order office in Australia whether it is a telegraph or telephone office or not, while a telegraph money order may be drawn by Australia on any place whatsoever in the United Kingdom. An order may not be issued for a sum in excess of the maximum for a single money order to and from the United Kingdom, viz., £40.

(iii) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. The poundage or commission charged on notes of different denominations is as follows :—

POUNDAGE RATES, POSTAL NOTES.

Denomination of Note ..	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ..	½d.	1d.	1½d.	2d.	3d.

(iv) *Value of Orders Issued and Paid and of Notes Sold, 1921–22.* The following table shows the total value of money orders issued and paid, and of postal notes sold in each State and in Australia during the year 1921–22, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department.

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, 1921-22.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ..	6,132,508	6,138,339	42,664	1,645,272	31,088
Victoria	2,684,447	2,897,734	18,769	1,180,819	22,924
Queensland ..	2,295,507	2,060,920	17,358	513,242	9,939
South Australia ..	841,734	751,678	6,165	262,760	5,342
Western Australia ..	1,304,747	1,091,573	9,416	244,086	4,660
Tasmania	543,562	472,188	3,594	121,538	2,445
Australia ..	13,802,505	13,412,432	97,966	3,967,717	76,398

The figures in the foregoing table show a general increase over the corresponding particulars for the year 1920-21.

(v) *Money Orders and Postal Notes—Summary, Australia, 1918 to 1922.* The following table shows the total number and value of money orders and postal notes issued and paid in Australia from 1917-18 to 1921-22 :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, AUSTRALIA, 1917-18 TO 1921-22.

Year ended 30th June.	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1918 ..	2,196	10,901	2,138	10,510	9,842	3,252	9,814	3,221
1919 ..	2,300	11,697	2,214	11,370	9,830	3,277	9,775	3,244
1920 ..	2,352	12,382	2,258	12,094	10,163	3,389	10,127	3,409
1921 ..	2,543	13,675	2,439	13,181	10,849	3,674	10,821	3,671
1922 ..	2,761	13,803	2,632	13,412	11,631	3,968	11,522	3,909

(vi) *Classification of Money Orders Issued and Paid.* (*a*) *Orders Issued.* The following table shows the number and value of money orders issued in each State during the year 1921-22, classified according to the country where payable :—

MONEY ORDERS ISSUED.—COUNTRY WHERE PAYABLE, 1921-22.

State in which Issued.	Where Payable.				Total.
	In Australia.	In New Zealand.	In the United K'dom.	In Other Countries.	
	NUMBER.				
New South Wales ..	1,133,290	10,744	71,811	12,966	1,228,811
Victoria	455,387	5,972	43,164	9,910	514,433
Queensland ..	450,420	1,810	26,980	7,296	486,506
South Australia ..	157,777	996	13,826	3,398	175,997
Western Australia ..	215,754	965	19,048	3,467	239,234
Tasmania	108,313	1,703	4,787	1,042	115,845
Australia ..	2,520,941	22,190	179,616	38,079	2,760,826
	VALUE.				
	£	£	£	£	£
New South Wales ..	5,779,917	50,320	223,641	78,630	6,132,508
Victoria	2,474,286	24,881	136,399	48,881	2,684,447
Queensland ..	2,146,860	8,471	81,787	58,389	2,295,507
South Australia ..	776,384	4,401	44,992	15,957	841,734
Western Australia ..	1,214,198	5,745	64,433	20,371	1,304,747
Tasmania	520,601	8,363	11,854	2,744	543,562
Australia ..	12,912,246	102,181	563,106	224,972	13,802,505

(*b*) *Orders Paid.* The following table shows the number and value of money orders paid in each State during the year 1921–22, classified according to the country where issued :—

MONEY ORDERS PAID.—COUNTRY OF ISSUE, 1921–22.

State in which Paid.	Where Issued.				Total.
	In Australia.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales ..	1,145,544	32,993	16,250	9,320	1,204,107
Victoria	513,138	18,158	9,729	4,578	545,603
Queensland ..	413,064	3,158	5,040	2,413	423,675
South Australia ..	149,880	1,340	2,849	909	154,978
Western Australia ..	196,974	2,016	4,325	1,144	204,459
Tasmania	92,788	3,811	1,340	1,575	99,514
Australia ..	2,511,388	61,476	39,533	19,939	2,632,336
VALUE.					
	£	£	£	£	£
New South Wales ..	5,886,805	138,090	72,807	40,637	6,138,339
Victoria	2,774,645	62,891	41,888	18,310	2,897,734
Queensland ..	2,017,363	13,967	22,285	7,305	2,060,920
South Australia ..	731,070	5,772	11,017	3,819	751,678
Western Australia ..	1,062,707	6,105	17,927	4,834	1,091,573
Tasmania	452,701	10,528	5,181	3,778	472,188
Australia ..	12,925,291	237,353	171,105	78,683	13,412,432

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

(vii) *Classification of Postal Notes Paid.*—The subjoined table shows the number and value of postal notes paid during the year 1921–22, 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, 1921–22.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
NUMBER.							
Issued in same State ..	3,350,043	2,340,742	1,200,959	556,460	554,819	282,203	8,285,226
Issued in other States ..	411,333	338,118	390,835	59,004	25,967	2,011,644	3,236,901
Total ..	3,761,376	2,678,860	1,591,794	615,464	580,786	2,293,847	11,522,127
VALUE.							
Issued in same State ..	£ 1,296,463	£ 834,474	£ 419,404	£ 185,558	£ 212,468	£ 92,280	£ 3,040,647
Issued in other States ..	150,579	129,707	95,659	24,051	10,511	457,355	867,862
Total ..	1,447,042	964,181	515,063	209,609	222,979	549,635	3,908,509

The total number and value of postal notes paid in Australia during the year showed an increase of 6.48 per cent. over the corresponding figures for the financial year 1920–21.

10. Gross Revenue, Postmaster-General's Department.—(i) *Total.* The following table shows the gross revenue of the Postmaster-General's Department for the years ended 30th June, 1918 to 1922 inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources. The following figures and also those for expenditure are supplied by the Treasury and represent the actual collections and payments for the periods mentioned :—

GROSS REVENUE OF POSTMASTER-GENERAL'S DEPARTMENT, AUSTRALIA, 1918 TO 1922.

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1918	2,998,724	1,032,317	1,731,149	5,762,190
1919	3,129,932	1,103,664	1,876,929	6,110,525
1920	3,310,778	1,274,527	2,159,450	6,744,755
1921	4,574,618	(*a*)1,381,974	2,431,981	8,388,573
1922	5,194,081	(*b*)1,401,583	2,724,554	9,320,218

(*a*) Includes £12,052 radio receipts. (*b*) Includes £25,998 radio receipts.

(ii) *Analysis for States.* The following table gives an analysis of the actual collections of the Postal Department in each State and in Australia during the year ended 30th June, 1922 :—

ANALYSIS OF GROSS REVENUE OF POSTMASTER-GENERAL'S DEPARTMENT, 1921–22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postage	1,817,771	1,362,344	677,951	393,581	261,916	169,402	4,682,965
Telegraphs (ordinary)	486,295	287,425	224,694	206,901	119,562	50,708	1,375,585
Telegraphs (radio) ..	3,899	6,263	8,794	1,853	4,674	515	25,998
Telephones ..	1,080,370	768,860	373,435	267,894	155,168	78,827	2,724,554
Money order commission	72,517	40,839	27,615	11,584	14,076	6,231	172,862
Poundage on postal notes							
Private boxes and bags	15,835	8,519	8,546	4,921	2,885	1,898	42,604
Miscellaneous ..	102,770	84,722	41,545	21,915	33,831	10,867	295,650
Total ..	3,579,457	2,558,972	1,362,580	908,649	592,112	318,448	9,320,218

As compared with the corresponding figures for the previous financial year, a total increase of 11.10 per cent. is shown. The figures for the Postal, Telegraph, and Telephone Branches increased by 13.54, 1.42, and 2.03 per cent. respectively. These increases were mainly due to the operation of the increased rates for the whole year as against nine months only for the year 1920–21.

11. Expenditure, Postmaster-General's Department.—(i) *Total.* The subjoined 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, 1918 to 1922 inclusive. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, new buildings and additions and interest on transferred properties.

EXPENDITURE OF POSTMASTER-GENERAL'S DEPARTMENT, AUSTRALIA. 1918 TO 1922.

Expenditure.	Year ended 30th June—				
	1918.	1919.	1920.	1921	1922.
	£	£	£	£	£
Total	5,677,783	5,826,049	6,649,432	8,268,725	9,976,593

(ii) *Distribution.* The following table shows, as far as possible, the distribution of expenditure on various items in each State during the year ended 30th June, 1922. The table is not to be regarded as a statement of the working expenses of the Department, since items relating to new works, interest, etc., are included therein.

DISTRIBUTION OF EXPENDITURE OF POSTMASTER-GENERAL'S DEPARTMENT, 1921–22.

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Salaries and contingencies—								
Salaries	*b*47,849	1,683,811	1,086,733	570,000	378,880	359,690	139,313	4,266,276
Conveyance of mails	..	444,049	239,094	216,258	82,658	79,723	37,688	1,099,470
Contingencies ..	*b*39,741	738,569	459,275	363,758	182,644	124,146	85,283	1,993,416
Cables	3,840	..	..	..	..	..	..	3,840
Ocean mails ..	313,337	..	..	..	..	..	..	313,337
Miscellaneous ..	3,520	33,971	23,568	6,967	6,002	2,234	3,814	80,076
Pensions and retiring allowances ..	..	31,036	42,398	867	..	6,871	..	81,172
Rent, repairs, maintenance	*b*2,788	39,455	23,318	15,969	8,666	8,077	2,775	101,048
Supervision of works	..	400	292	145	95	63	41	1,036
Proportion of Audit Office expenses ..	..	3,450	2,513	1,247	820	543	354	8,927
Unforeseen expenditure	..	26	20	13	..	3	2	64
New works—								
Telegraph and telephone	*b*5,893	719,841	530,903	166,314	122,746	75,477	27,885	1,649,059
New buildings, etc.	..	19,391	19,329	11,346	23,973	60,774	4,032	138,845
Interest on transferred properties ..	..	81,633	46,490	32,173	..	19,090	7,366	186,752
Other	*a*53,275	..	..	..	..	..	..	*a*53,275
Total ..	470,243	3,795,632	2,473,933	1,385,057	806,484	736,691	308,553	9,976,593

(*a*) Particulars of apportionment to each State not available. (*b*) Includes radio expenditure.

The expenditure for the financial year 1921–22 represented an increase of £1,707,868 or 20.65 per cent. over the corresponding figures for the previous year. New works (£824,422), salaries (£258,334), and a sum of £200,000 paid to the United Kingdom in adjustment of charges for conveyance of overseas mails during the war period contributed the major portion of the increase.

12. **Balance Sheet of the Postmaster-General's Department.**—(i) *General.* The first complete balance sheet and profit and loss account of the Postmaster-General's Department was presented in November, 1913, for the year ending 30th June, 1913. As will be seen from the figures of the General Profit and Loss Account hereunder, the year 1921–22, after providing for depreciation, pensions and retiring allowances, closed with a surplus of £2,244,120. From this amount £703,039, interest on capital, was deducted, leaving a profit of £1,541,081, or £397,313 more than that of 1920–21.

PROFIT AND LOSS ACCOUNT, POSTMASTER-GENERAL'S DEPARTMENT, 1918 TO 1922.

Items.	Year ended 30th June—				
	1918(*a*).	1919(*a*).	1920(*a*).	1921.	1922.
	£	£	£	£	£
Total earnings	5,773,954	6,158,571	6,732,096	8,511,494	9,347,656
Total working expenses ..	4,809,571	5,043,891	5,633,752	6,724,543	7,103,536
Surplus	964,383	1,114,680	1,098,344	1,786,951	2,244,120
Interest on capital ..	577,001	590,035	610,390	643,183	703,039
Total surplus	387,382	524,645	487,954	1,143,768	1,541,081

(*a*) Excluding Wireless Telegraphy Branch, which was transferred to the Department of the Navy as from 1st July, 1915.

In contrast with the results obtained in previous years, a profit of £387,382, the first in the history of the Department, was earned in 1917–18. This satisfactory condition of affairs has been more than maintained in succeeding years, the profit for 1921–22 amounting to £1,541,081.

(ii) *Results for each State.* The next table gives the results for each State during the five years 1917–18 to 1921–22 :—

PROFIT OR LOSS OF THE POSTMASTER-GENERAL'S DEPARTMENT, STATES, 1918 TO 1922.

State.	Year ended 30th June—				
	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
New South Wales ..	(+) 140,354	(+) 155,159	(+) 95,285	(+) 334,395	(+) 508,474
Victoria	(+) 177,805	(+) 254,013	(+) 259,507	(+) 516,860	(+) 644,824
Queensland ..	(+) 68,929	(+) 60,103	(+) 61,311	(+) 143,844	(+) 186,185
South Australia ..	(+) 104,868	(+) 132,772	(+) 151,984	(+) 189,936	(+) 218,528
Western Australia	(−) 102,409	(−) 81,460	(−) 81,391	(−) 62,397	(−) 30,764
Tasmania ..	(−) 2,165	(+) 4,058	(+) 1,258	(+) 21,130	(+) 13,834
Australia ..	(+) 387,382	(+) 524,645	(+) 487,954	(+) 1,143,768	(+) 1,541,081

(+) Denotes profit. (−) Denotes loss.

(iii) *Profit or Loss of Branches.* The following table shows the profit or loss on the various branches during the five years 1917–18 to 1921–22 :—

PROFIT OR LOSS, BRANCHES, POSTMASTER-GENERAL'S DEPARTMENT, 1918 TO 1922.

Year ended 30th June—	Postal.		Telegraph.		Telephone.		All Branches.	
	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.
	£	£	£	£	£	£	£	£
1918 ..	..	237,421	..	28,116	..	121,845	..	387,382
1919 ..	..	239,337	..	63,133	..	222,175	..	524,645
1920 ..	..	81,217	..	95,636	..	311,101	..	487,954
1921 ..	..	929,605	8,312	..	..	222,475	..	1,143,768
1922 ..	..	1,258,286	..	1,809	..	280,986	..	1,541,081

In the period of five years covered by the foregoing table it will be observed that in only one instance (Telegraph Branch in 1921) was there a loss.

§ 2. Telegraphs.

1. **General.**—A review of the development of the Electric Telegraph Services in Australia was given in a previous issue of this work (see Year Book No. 15), but limitations of space preclude the repetition of this information in the present issue.

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 from 1918 to 1922 inclusive :—

TELEGRAPHS.—AUSTRALIA, SUMMARY, 30th JUNE, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Number of offices	6,196	6,219	6,251	6,366	6,641
Length of wire (miles)—					
Telegraph purposes only	62,981	63,148	63,458	63,295	62,781
Telegraph and telephone purposes ..	74,682	78,004	79,930	82,234	84,855
Length of Line (miles)—					
Conductors in Morse cable ..	2,218	2,153	2,152	2,133	2,139
Conductors in submarine cable ..	1,708	1,705	1,736	1,851	2,067
Pole routes (miles)	59,849	60,275	60,693	60,563	62,473

(ii) *Particulars for each State.* The following table gives corresponding particulars for each State for the year 1921–22 :—

TELEGRAPHS.—STATES, SUMMARY, 30th JUNE, 1922.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	Australia.
Number of offices ..	2,324	1,791	879	566	582	499	6,641
Length of wire (miles)—							
Telegraph purposes only	21,541	6,183	14,195	11,719	9,007	136	62,781
Telegraph and Telephone purposes	31,326	18,587	15,226	6,363	7,928	5,425	84,855
Length of line (miles)—							
Conductors in Morse cable	722	1,058	324	..	21	14	2,139
Conductors in submarine cable	1,450	440	54	68	5	50	2,067
Pole routes (miles) ..	24,539	8,498	10,935	7,244	8,413	2,844	62,473

It will be noticed that 147,636 miles of wire are available for telegraph purposes, of which 84,855 miles are also used for telephone purposes.

These figures represent an increase of 2,107 and 2,621 miles respectively over the corresponding mileages for the previous year.

3. **Number of Telegrams Despatched.**—(i) *Total for Australia.* The following table shows the number of telegrams despatched to destinations within Australia in each of the years 1918 to 1922 inclusive :—

TELEGRAMS DESPATCHED.—AUSTRALIA, 1918 TO 1922.

Telegrams.	Year ended 30 h June—				
	1918.	1919.	1920.	1921.	1922.
Number(*a*)	14,633,859	15,461,034	17,934,998	16,723,111	15,796,022

(*a*) Including interstate cablegrams.

(ii) *Totals for each State.* The following table shows the number of telegrams despatched in each State in 1921-22 for delivery in that State, and the number despatched in each State for delivery in other States, and also the total number of telegrams—exclusive of cablegrams for places outside Australia—despatched in each State :—

TELEGRAMS DESPATCHED.—STATES, 1921-22.

State, etc. ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
Inland	4,187,795	2,593,954	2,021,593	1,036,922	1,320,248	352,827	11,513,339
Interstate (*a*) ..	1,324,654	1,177,108	681,259	502,786	368,131	228,745	4,282,683
Total ..	5,512,449	3,771,062	2,702,852	1,539,708	1,688,379	581,572	15,796,022

(*a*) Including interstate cablegrams.

The figures in the foregoing table show an all round decrease in the volume of telegraph business as compared with the corresponding figures for the previous financial year.

4. **Rates for Transmission of Telegrams.**—The original rates for the transmission of telegrams within Australia were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act "ordinary" and "press" telegrams are charged different rates. "Press" telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorized correspondent, and must be addressed to a registered newspaper or recognized news agency. The subjoined table shows the scales of charges imposed by an amending Act which came into operation on 1st October, 1920. The first table refers to ordinary telegrams.

TRANSMISSION CHARGES.—ORDINARY TELEGRAMS.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 miles from the Sending Station.	Other Places within the State, except Town and Suburban.	Interstate.
	s. d.	*s. d.*	*s. d.*
Including address and signature—			
Not exceeding 16 words	0 9	1 0	1 4
Each additional word	0 1	0 1	0 1

Double the foregoing rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams lodged for "urgent" transmission.

The charges for press telegrams are given hereunder :—

TRANSMISSION CHARGES.—PRESS TELEGRAMS.

Particulars.	Within any State.	Interstate.	Relating to Parliamentary, Executive, Departmental, and other Commonwealth Proceedings as may be prescribed.(*a*)
	s. d.	*s. d.*	*s. d.*
Not exceeding 25 words	0 8	1 4	1 4
From 26 to 50 words	0 11	1 10	1 8
From 51 to 100 words	1 9	3 6	2 0
Every additional 50 words	0 8	1 4	0 8

(*a*) Within Australia.

5. **Letter-telegrams.**—Letter-telegrams which are limited to messages of a social, domestic or private nature may be exchanged between any of the following offices: (*a*) offices which are open for the receipt of ordinary business between 7 p.m. and midnight; (*b*) offices which are open for ordinary or press business after 7 p.m. The rates charged throughout Australia are one shilling and threepence for the first 30 words, and one halfpenny for each additional word, double these rates being charged on Sundays. On the 1st April, 1923, the service applied to 101 offices.

6. **Wireless Telegraphy and Telephony.**—(i) *General.* In Year Book No. 15 a résumé was given of the activities in connexion with Wireless Telegraphy and Telephony in Australia. Since the publication of that issue, the Radio Service, which had hitherto been administered under the Wireless Telegraphy Act 1905, by the Postmaster-General's Department—with the exception of the period September, 1915, to June, 1920—during which it was controlled by the Navy Department—was placed under the Prime Minister's Department as the Wireless Branch from 1st December, 1922, on which date the Wireless Telegraphy Regulations 1922 became operative.

On 1st March, 1923, the Wireless Branch was re-transferred to the control of the Postmaster-General's Department.

The Radio Stations handed over to the control of the Amalgamated Wireless (Australasia) Ltd. in accordance with the agreement of 28th March, 1922 (see Year Book No. 15, 1922, pp. 628–9), are situated in Sydney, Melbourne, Brisbane, Cooktown, Rockhampton, Thursday Island, Townsville, Adelaide, Broome, Esperance, Geraldton, Perth, Wyndham, Flinders Island, Hobart, King Island, Darwin, Misima, Port Moresby, and Samarai, all formerly under the control of the Postmaster-General's Department, and Aitape, Kavieng, Kieta, Madang, Manus, Morobe, and Rabaul, previously under the control of the Administrator of the Territory of New Guinea.

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

The following rates are applicable to radio-telegrams transmitted either way:—Between any telegraph office in Australia and Australian ships, 6d. per word, allocated as follows: Coast station 3d., ship station 2d., landline 1d. British and foreign ships, 11d. per word, allocated: Coast station 6d., ship station 4d., landline 1d. Between the Commonwealth and Port Moresby the rate is 6d. per word, and between the mainland and Flinders Island or King Island 2s. 8d. for sixteen words, 2d. each additional word.

(ii) *Licence Fees.* The Regulations provide for the issue of the following licences, for which the respective fees per annum, payable in advance, are as shown, viz.:—(*a*) Coast Station, £1; (*b*) Ship Station, £1; (*c*) Land Station, £1; (*d*) Broadcasting Station, £5; (*e*) Experimental Station (i) Transmitting and Receiving, £1, (ii) Receiving only, 10s.; (*f*) Portable Station, £1; (*g*) Aircraft Station, £1. Licences remain valid for a period of twelve months from date of issue, but may be renewed from time to time.

(iii) *Licences Issued.* The following table shows the number of each class of licence in force at 31st December, 1922:—

WIRELESS LICENCES, 31st DECEMBER, 1922.

Station Licence.	Total.
Coast	28
Ship	128
Land	..
Broadcasting	..
Experimental—	
Transmitting and Receiving ..	724
Receiving only	32
Portable	..
Aircraft	..
Total	912

Licences previously issued by the Minister for the Navy under the Naval Defence Act 1910–1918, or by the Postmaster-General under the Act, and which were in force on 1st December, 1922, are not prejudiced by these Regulations.

(iv) *Unauthorized Stations.* In order that an adequate check may be kept on unauthorized stations, dealers in wireless apparatus or accessories are compelled to keep a register and record therein all sales of wireless telegraphy or telephony apparatus; such register must be made available for inspection at any time. It is provided in the Regulations that no person or firm shall sell or supply apparatus or accessories to any person unless that person is the holder of, or is about to obtain, a licence.

(v) *Proficiency Certificates.* Proficiency certificates for wireless operators and watchers are issued by the Minister to individuals who pass the specified tests. Fees of 10s. and 5s. respectively are imposed on candidates for either class of certificate on each occasion when they sit for examinations.

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

At 31st December, 1922, 730 first-class and 29 second-class proficiency certificates and 21 watchers' certificates had been issued.

7. **Revenue and Expenditure.**—Particulars as to the revenue from the telegraph systems for the years 1917–18 to 1921–22 are given in another portion of this section.

§ 3. Submarine Cables.

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

2. **The Tasmanian-Victoria Cables.**—On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria, the contract price being £52,447. The new cables were taken over on the 24th March, 1909, and opened to the public on the 1st May, 1909, the day following the expiration of the agreement with the Eastern Extension Company. Their aggregate length is approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore-end cable, making a total of 390 nautical miles.

3. **The Eastern Extension Company's Cables.**—In addition to the first Victoria-Tasmania cable and the original cable from Darwin (see Year Book No. 6, p. 770), the Eastern Extension Company has constructed several other cables connecting with various places in Australia., viz., Darwin to Banjoewangie (two lines); Fremantle to Durban; Fremantle to Adelaide; Java to Cocos Island, which provides another route between Australia and South Africa; and a cable partly owned by this Company connecting the Darwin-Singapore cable with London *via* Hong Kong, Shanghai, Possiet Bay (Pacific Russia), Libau (Latvia), and Newbiggin (London).

4. **The Pacific Cable.**—(i) *Cable Lines.* The Pacific Cable lines are controlled by the Pacific Cable Board, consisting of three representatives of the Imperial Government and one each from Canada, Australia, and New Zealand. The main cable route known as the "All Red" runs from Southport in Queensland to Bamfield in British Columbia, thence overland to Montreal. Traffic is then transmitted across the Atlantic over the cables of the Anglo-American and Commercial Companies, or, if so desired, the Marconi Wireless System between Canada and the United Kingdom may be availed of for either homeward or outward messages at a reduction of twopence on the through cable rate of three shillings per word. Cable stations are established at Norfolk Island, Fiji, and Fanning Island. A branch cable approximately 600 miles long runs from Norfolk Island to Doubtless Bay, North Island of New Zealand.

The report of the Pacific Cable Board for 1920–21 states that while the cable has been singularly free from interruption it is recognized that the margin of safety must decrease as time goes on. Moreover, the capacity of the single line is inadequate when special circumstances cause a rush of heavy traffic. For these reasons the Board has had under consideration for some time the question of duplicating the cable, and, as a result, definite proposals to this end were submitted to the Governments concerned in April, 1920. These proposals have been temporarily deferred pending further information regarding a new, but, as yet, untried type of cable. During the year 1921–22 three interruptions, due to corrosion, occurred to the Board's cable. Two of these were in the vicinity of Norfolk Island, and the other at Fanning Island. The interruptions in the neighbourhood of Norfolk Island are causing concern, but fortunately the breaks were in the New Zealand cable and did not result in such a serious dislocation of traffic as would be the case should a break occur in the Suva cable. The local conditions in the vicinity of Norfolk Island are singularly unfavourable to the life of cables owing to the waters being shallow and rocky for a considerable distance from land, and, in addition, the surf beats heavily, causing damage by chafing. In addition, the marine growth to which the cause of corrosion is ascribed, is very prolific.

(ii) *Financial Summary.* The receipts for the year exceeded the ordinary expenses by £210,257, from which a special contribution of £100,000 has been made to the Reserve and Renewal Fund together with £2,800 earned by the cable steamer "Iris." These payments are in addition to the normal annual payment of £30,000. After payment of the above special contributions and also of the annuity of £77,545 in respect of interest and repayment of the capital of £2,000,000, and of the annuity of £9,150 to the Renewal Fund for interest and Sinking Fund on £177,254 borrowed from the fund for the purposes of the Auckland-Sydney cable, there remains a surplus of £20,762, of which the Commonwealth Government's share was £6,921. In accordance with the Pacific Cable Act 1901 the surplus was applied in the reduction of the balance of the original loan of £2,000,000. The following table shows particulars of the revenue, expenditure, total profit, and the proportion thereof payable to the Commonwealth for the years ended 31st March, 1918 to 1922.

PACIFIC CABLE—FINANCIAL SUMMARY, 1918 TO 1922.

Year ended the 31st March—	Revenue.	Expenditure (including Annuities and Renewal Fund).	Profit.	Commonwealth Proportion of Profit.
	£	£	£	£
1918 ..	411,061	385,668	25,393	8,464
1919 ..	564,097	554,516	9,581	3,193
1920 ..	664,986	654,552	10,434	3,478
1921 ..	633,343	629,866	3,477	1,159
1922 ..	528,428	507,666	20,762	6,921

5. **New Zealand Cables.**—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1,191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidized by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. During 1911 a scheme for providing a second cable between New Zealand and Australia (Auckland to Sydney) was adopted by the various Governments concerned, and the laying of the new cable was completed on the 24th December, 1912, the cable being opened for traffic on the 31st December, 1912.

6. **The New Caledonia Cable.**—In April, 1892, a French Company, known as the Compagnie Francaise des Cables Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8,000, and by the Governments of New South Wales and

Queensland to the amount of £2,000 each annually for a period of 30 years. The cable was opened for use in October, 1893, the Australian shore-end being at Burnett Heads, near Bundaberg. The guarantees of the Governments of New South Wales and Queensland have since been transferred to the Commonwealth Government.

7. **Lengths of Cable Routes.**—The following table gives the lengths of various cable routes :—

LENGTHS OF CABLE ROUTES.

Via Darwin.	Miles.	Via South Africa.	Miles.
Adelaide to Darwin	2,134	Perth to Mauritius	4,417
Darwin to Banjoewangie	1,150	Mauritius to Durban	1,786
Banjoewangie to London	9,841	Durban to Cape Town	800
		Cape Town to Madeira	5,715
		Madeira to Penzance	1,341
		Penzance to London	260
Total	13,125	Total	14,319
Via Vancouver.		**Via Russia.**	
	Miles.		Miles.
Southport (Queensland) to Norfolk Island	963	Sydney to Darwin	2,992
Norfolk Island to Suva (Fiji)	1,129	Darwin to Hong Kong	4,237
Suva to Fanning Island	2,351	Hong Kong to Possiet Bay	2,647
Fanning Island to Bamfield (Canada)	3,980	Possiet Bay to Libau	6,399
Across Canada	3,450	Libau to Newbiggin (England)	1,657
Canada to Ireland	2,450		
Total	14,323	Total	17,932

8. **Number of Cablegrams Received and Despatched.**—(i) *Totals for Australia.* The subjoined table shows the number of cablegrams received and despatched in Australia from 1919–20 to 1921–22 :—

CABLEGRAMS.—AUSTRALIA, 1919–20 TO 1921–22.

Cablegrams.	Cablegrams Received.			Cablegrams Despatched.			Total Cablegrams Received and Despatched.		
	1919–20.	1920–21.	1921–22.	1919–20.	1920–21.	1921–22.	1919–20.	1920–21.	1921–22.
Number	502,671	477,137	499,104	478,263	473,533	499,634	980,934	950,670	999,738

(ii) *Totals for States.* The number of cablegrams received and despatched in each State during the year 1921–22 is given hereunder :—

CABLEGRAMS.—STATES, 1921–22.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.(a)	Australia.
Number received	269,188	161,345	20,369	21,750	20,470	5,982	499,104
Number despatched	252,815	169,105	22,495	24,871	23,487	6,861	499,634
Total	522,003	330,450	42,864	46,621	43,957	12,843	998,738

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

9. **Cable Rates.**—(i) *Ordinary Cablegrams.* The rates per word for ordinary cablegrams to some of the most important countries as at the 27th March, 1923, are shown in the appended tabular statement:—

CABLE RATES, 1923.

Country.	Route and Rate per Word.	
	Via Pacific.	Via Eastern.
Europe—		
Great Britain (*a*), Belgium, France, Germany, Holland, Jugo-Slavia, Switzerland	3/-	3/-
Other European countries	3/6 to 4/6	3/- to 3/6
Asia—		
China	6/11 to 7/1½	2/6 to 2/11
India	..	2/6
Japan	7/4½	3/5
Netherlands East Indies	6/10	2/6
Philippine Islands	..	2/6 to 3/3
Straits Settlements	..	2/6
Other Asiatic Countries	4/4 to 7/4½	2/6 to 5/11
Africa—		
Egypt	..	3/5 and 3/6
Mauritius	..	2/5
Portuguese East Africa	..	2/5 to 2/7
South African Union	..	2/2 and 2/3
Sierra Leone	..	4/8 to 4/11
Other African countries	..	2/5 to 11/3
North America—		
Alaska	3/7	5/7
Canada	2/4 to 3/6	..
Newfoundland	2/7½	..
United States	2/4 to 2/8	4/- to 4/6
Central America	2/8 to 4/10½	4/6 to 6/6
West Indies	3/- to 8/1½	4/8 to 10/2
South America—		
Argentine	4/9	4/9
Brazil	4/7 to 7/5	5/- to 8/7
Other	4/7 to 8/1½	4/9 to 9/9
New Zealand and Pacific Islands—		
Fanning Island	2/-	..
Fiji	8d. to 11d.	8d. to 11d.
New Zealand	4½d.	4½d.
New Caledonia	9d. (*b*)	..
Norfolk Island	3d.	..
Ocean Island (via Suvaradio)	1/8	1/8
Sandwich Islands	3/4½ to 4/5	5/1 to 5/8
Other	1/4½ to 5/10½	3/6 to 5/1

(*a*) Pacific-Marconi 2s. 10d. per word. (*b*) *via* Queensland.

(ii) *Deferred Cablegrams.* Under this system a reduction of 50 per cent. in the ordinary cable charges is made, provided the message is written in plain language, and conveys no other meaning than that which appears on the face of it. Messages can only be transmitted after non-urgent private cablegrams and press cablegrams. Those which have

not reached their destination within a period of 24 hours from the time of handing in are transmitted in turn with cablegrams charged full rate. They may be sent via the Pacific or Eastern routes to nearly all countries to which the ordinary rate exceeds tenpence per word. This service, together with that of the week-end cable letters, has affected the ordinary cable business to a large extent. Deferred press cablegrams subject to a delay of eighteen hours may be exchanged between Australia and the United Kingdom at the rate of fourpence halfpenny per word, and between Australia and Vancouver at the rate of twopence halfpenny per word. The deferred cable service was frequently suspended during the war owing to the pressure of other cable business, and the service has not yet returned to normal conditions.

(iii) *Week-end Cable Letters.* Week-end cable letters may be exchanged between Australia and the United Kingdom, British North America, and Fanning Island at the rates indicated hereunder. Under this arrangement, messages written in plain language may be lodged at any post office in Australia or the United Kingdom in time to reach the forwarding cable office by post or telegraph by midnight on Saturday. The messages, which are deliverable by post on Tuesday morning, are charged at the rate of ninepence per word, plus ordinary telegraph rate, if required to be forwarded by land telegraph in either the country of despatch or destination.

The rates to the countries named, including the United Kingdom, are as follows :—

RATES FOR WEEK-END CABLE LETTERS.

Country.	Rate per Word.	Minimum Charge per Telegram. (20 Words.)
United Kingdom	9d.	15/-
Canada (ordinary rate 2s. 4d.)	7d.	11/8
Other parts of Canada	8d. to 10d.	12/11 to 16/8
Newfoundland	8½d.	13/9
Fanning Island	6d.	10/-

(iv) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence halfpenny per word. Between New Zealand and Tasmania the charge was fixed at fivepence halfpenny a word, but it has since been reduced to fourpence halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. **Cable Subsidies Paid.**—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. From the year 1895 onwards the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—were met by the receipts.

The following table shows the total amounts paid by way of cable subsidies for the years 1918 to 1922 :—

CABLE SUBSIDIES, 1918 TO 1922.

Subsidies.	Year ended 30th June—				
	1918.	1919.	1920.	1921.	1922.
Amount .. £	3,851	3,756	3,797	3,749	3,840

As the agreement in connexion with the Tasmanian cable expired in 1909, and as new cables were laid by the Commonwealth Government, the guarantees were, in the course of the year 1910, reduced to those in connexion with the New Caledonia and Pacific cables. From 1915–16 the only cable subsidy paid by the Commonwealth was in respect of the New Caledonian cable guarantee.

§ 4. Telephones.

1. **Telephone Services.**—(i) *Mileage, etc., Australia.* The following table shows the mileage of lines, etc., for telephone purposes, giving trunk lines separately, on 30th June, 1921 and 1922 :—

TELEPHONE LINES—AUSTRALIA, 30th JUNE, 1921 AND 1922.

Particulars.		1921.	1922.
Ordinary Lines—			
Conduits	duct miles	2,697	2,926
Conductors in aerial cables	loop mileage	37,923	35,627
Conductors in underground cables	,,	226,886	260,349
Conductors in cables for junction circuits ..	,,	33,759	43,193
Open conductors	single wire mileage	195,264	205,354
Trunk Lines—			
Telephone trunk lines only	miles	27,781	33,175
Telegraph and telephone purposes	,,	82,234	84,855

(ii) *Summary for States.* Particulars relating to the telephone service in each State for the years ended 30th June, 1920, to 1922 will be found in the following table :—

TELEPHONE SERVICES.—SUMMARY, 1920 TO 1922.

Particulars.	Year (30th June.)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
No. of Exchanges ..	1920	873	697	378	206	115	140	2,409
	1921	921	750	398	218	122	144	2,553
	1922	960	814	421	221	133	154	2,703
No. of lines connected ..	1920	70,700	49,017	22,803	14,319	9,905	5,362	172,106
	1921	74,490	52,791	23,855	15,984	10,438	5,805	183,363
	1922	80,042	55,986	25,575	17,402	10,624	6,257	195,886
No. of instruments connected	1920	91,117	66,211	28,161	19,273	12,671	6,567	224,000
	1921	96,710	72,088	29,637	21,480	13,412	7,180	240,507
	1922	104,108	77,744	31,878	23,248	13,748	7,751	258,477
No. of subscriber's instruments	1920	88,015	64,479	26,953	18,545	12,081	6,232	216,305
	1921	93,467	70,319	28,392	20,705	12,827	6,854	232,564
	1922	100,747	75,914	30,561	22,421	13,151	7,418	250,212
No. of public telephones ..	1920	1,606	1,376	800	440	343	234	4,799
	1921	1,693	1,410	835	473	355	206	4,972
	1922	1,787	1,469	888	523	368	213	5,248
No. of other local instruments	1920	1,496	356	408	288	247	101	2,896
	1921	1,550	359	410	302	230	120	2,971
	1922	1,574	361	429	304	229	120	3,017
Instruments per 100 of population	1920	4.7	4.4	3.9	4.1	3.8	3.0	4.3
	1921	4.60	4.69	3.85	4.28	4.03	3.39	4.41
	1922	4.84	4.95	4.06	4.57	4.05	3.63	4.64
		£	£	£	£	£	£	£
Earnings	1920	868,049	599,960	306,860	202,829	125,630	64,741	2,168,069
	1921	964,981	695,409	339,116	235,269	142,906	73,300	2,450,981
	1922	1,086,908	777,388	375,541	271,881	154,799	79,548	2,746,065
Working expenses ..	1920	635,600	375,034	190,900	119,477	101,892	46,251	1,469,154
	1921	788,671	443,522	243,135	150,960	122,896	59,438	1,808,622
	1922	856,255	479,304	281,414	170,360	133,048	71,150	1,991,531
		%	%	%	%	%	%	%
Percentage of working expenses on earnings	1920	73.22	62.51	62.21	58.91	81.10	71.44	67.76
	1921	81.73	63.78	71.70	64.16	86.00	81.09	73.79
	1922	78.78	61.66	74.93	62.66	85.95	89.44	72.52

In Australia there were 195,886 telephone lines connected to 2,703 exchanges at 30th June, 1922, an increase of 12,523 and 150 respectively over the corresponding figures for the preceding year.

(iii) *Subscribers' Lines and Calling Rates.* The subjoined table gives the number of subscribers' lines and the daily calling rate at central, suburban, and country telephone exchanges in the several States for the year 1921–22 :—

TELEPHONES.—SUBSCRIBERS' LINES AND DAILY CALLING RATE, 1921–1922.

State.	Central Exchanges.		Suburban Exchanges.		Country Exchanges.		Total.	
	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.
New South Wales	10,464	7.70	36,218	3.00	30,459	1.50	77,141	3.05
Victoria ..	11,778	8.14	23,984	3.56	18,820	1.52	54,582	3.84
Queensland ..	6,775	7.72	3,596	3.20	14,850	2.66	25,221	4.10
South Australia	6,662	7.00	5,441	4.20	4,665	1.36	16,768	4.52
Western Australia	3,863	6.57	2,431	4.40	3,996	2.07	10,290	4.31
Tasmania ..	2,256	4.27	286	2.40	3,651	1.67	6,193	2.65
Australia ..	41,798	7.43	71,956	3.33	76,441	1.76	190,195	3.60

A comparison of the daily calling rates for each class of exchange shows Victoria to have registered the greatest number per line at central exchanges, Western Australia at suburban exchanges, and Queensland at country exchanges. Taking the figures for Australia, it will be observed that the average number of calls per line at central exchanges was more than double the number registered at suburban exchanges, while the average for suburban exchanges was slightly less than double the number shown for country exchanges.

(iv) *Trunk Line Calls and Revenue.* In the following table the number of telephone trunk line calls recorded, the amount of revenue received, and the average revenue per call are shown for each of the States for the years 1919–20 to 1921–22 :—

TELEPHONES.—TRUNK LINE CALLS AND REVENUE FOR THE YEARS 1919–20 TO 1921–22.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
Total Calls for Year—	No.	No.	No.	No.	No.	No.	No.
1919–20 ..	4,898,098	3,200,528	2,050,209	1,092,516	489,905	688,949	12,420,205
1920–21 ..	5,042,929	3,363,971	2,130,234	1,148,882	525,642	699,298	12,910,956
1921–22 ..	5,267,870	3,699,176	2,307,804	1,350,946	582,340	760,033	13,968,169
Total Revenue for Year—	£	£	£	£	£	£	£
1919–20 ..	172,200	116,262	97,983	49,444	22,724	23,241	481,854
1920–21 ..	178,704	124,721	102,748	52,162	24,938	23,508	506,781
1921–22 ..	197,295	138,643	112,396	64,973	26,911	24,921	565,139
Average Revenue per Call—	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
1919–20 ..	8.44	8.72	11.47	10.86	11.13	8.10	9.31
1920–21 ..	8.50	8.89	11.57	10.89	11.38	8.07	9.42
1921–22 ..	8.98	8.99	11.69	11.54	11.09	7.87	9.71

2. **Telephone Rates.**—On the 10th December, 1915, revised charges for telephone services came into operation. Under the new scale, ground-rent for telephones is calculated on the number of subscribers connected with the exchange or network, instead of being based on the total population residing within the telephone network, as formerly. The smallest and greatest rental charges remain the same as under the old system, but between these a more gradual scale was introduced. Previously the charge for calls made by a subscriber was at the rate of two calls for one penny up to 2,000 calls per half-year ; above that number, three calls for one penny. This charge was increased to one penny per call, without any progressive reduction. At the same time, the public

telephone charge per call was increased from one penny to twopence. On the 1st October, 1920, telephone charges were again increased, and the rates in the following table are now in force:—

TELEPHONES, AUSTRALIA.—RENTAL CHARGES, 1st APRIL, 1923.

Exchanges or Networks with Subscribers' Lines Connected, as shown hereunder.	Radius of Network with Main Exchange as Centre.	Annual Ground Rent, within Two-mile Radius.		
		For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Service.	For each Subscriber or Instrument on a Three or more party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 300	5	3 0 0	2 10 0	2 0 0
,, 301 to 600	5	3 5 0	2 10 0	2 0 0
,, 601 to 1,500	5	4 7 6	3 7 6	2 15 0
,, 1,501 to 4,000 ..	10	4 12 6	3 15 0	3 2 6
4,001 and upwards	10	5 0 0	3 15 0	3 2 6

It is provided that for each effective call originating from a subscriber's instrument the charge shall be one penny in respect of exchanges or networks with 600 subscribers or less, and one penny farthing in respect of exchanges or networks with more than 600 subscribers.

3. **Revenue from Telephones.**—Particulars regarding the revenue from telephone services are included in the paragraph dealing with the revenue of the Postmaster-General's Department.

[NOTE.—In connexion with the postal rates quoted on page 345 hereinbefore it may be noted that, at the time of going to press with this Chapter, the Commonwealth Parliament is considering amendments thereof. Information regarding the new rates will be found in the Appendix.]