

## CHAPTER VII.

### TRANSPORT AND COMMUNICATION.

#### A. SHIPPING.

#### § 1. System of Record.

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

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

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

In all instances the tonnage quoted is net tonnage.

#### § 2. Oversea Shipping.

1. **Total Movement.**—The following table gives the number and tonnage of oversea steam and sailing vessels entering Australian ports during the years 1923–24 to 1927–28 :—

#### TOTAL OVERSEA SHIPPING, ENTERED.—AUSTRALIA, 1923–24 TO 1927–28.

Year.	Steam.		Sailing.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
1923–24 .. ..	1,437	4,808,129	109	103,007	1,546	4,911,136
1924–25 .. ..	1,675	5,535,871	51	60,529	1,726	5,596,400
1925–26 .. ..	1,537	5,245,222	46	58,583	1,583	5,303,805
1926–27 .. ..	1,598	5,512,840	26	46,030	1,624	5,558,870
1927–28 .. ..	1,544	5,373,485	33	45,560	1,577	5,419,045

The average tonnage of vessels entered has risen from 3,177 tons per vessel in 1923–24 to 3,436 tons in 1927–28.

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

2. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, which gives the latest available figures for total tonnage and tonnage per head of population.

## OVERSEA SHIPPING.—VARIOUS COUNTRIES.

Country.	Calendar Year.	Tonnage Entered and Cleared.	
		Total 000 omitted.	Per Inhabitant.
Australia .. .. .	1928 (a)	10,919	1.75
Belgium .. .. .	1927	55,655	7.02
Brazil .. .. .	1928	72,526	1.70
Canada .. .. .	1928	46,150 (c)	4.78
France .. .. .	1928	98,781 (b)	2.41
Germany .. .. .	1927	79,572	1.26
Great Britain .. .. .	1927	181,739	3.98
India .. .. .	1928 (a)	17,579	0.06
Japan .. .. .	1927	99,123	1.19
Netherlands .. .. .	1927	67,353	8.83
New Zealand .. .. .	1928	4,397	3.17
Norway .. .. .	1928	13,966	5.01
Spain .. .. .	1927	46,147	2.06
Sweden .. .. .	1927	32,488	5.34
Union of South Africa .. .. .	1927	10,518	1.37
United States .. .. .	1928	152,525 (c)	1.27

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

## OVERSEA SHIPPING, AUSTRALIA.—DIRECTION, 1923-24 TO 1927-28.

Countries.	Cargo and Ballast.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
<b>TONNAGE ENTERED.</b>						
United Kingdom and European Countries	Cargo	1,769,446	1,797,322	1,815,268	1,834,752	1,939,468
	Ballast	23,690	186,256	21,444	31,267	3,950
New Zealand .. .. .	Cargo	500,001	459,252	507,238	474,639	453,965
	Ballast	401,959	393,706	256,003	212,953	170,086
Asiatic Countries and Islands in the Pacific .. .. .	Cargo	893,179	1,002,634	1,090,062	1,217,572	1,187,969
	Ballast	188,762	390,300	210,196	288,287	190,883
Africa .. .. .	Cargo	25,036	26,709	23,070	16,540	34,325
	Ballast	24,015	145,216	66,494	91,582	55,595
North and Central America	Cargo	1,059,229	1,138,091	1,283,073	1,853,526	1,366,499
	Ballast	5,403	17,235	..	27,228	5,566
South America .. .. .	Cargo	12,039	13,895	10,373	1,840	10,739
	Ballast	8,377	25,784	20,584	8,684	..
Total .. .. .	Cargo	4,258,030	4,437,903	4,729,084	4,898,869	4,992,965
	Ballast	652,206	1,158,497	574,721	660,001	426,080
<b>TONNAGE CLEARED.</b>						
United Kingdom and European Countries	Cargo	2,127,662	2,786,002	2,344,201	2,543,362	2,416,656
	Ballast	13,699	8,097	17,590	15,224	..
New Zealand .. .. .	Cargo	792,565	768,625	678,616	627,538	601,802
	Ballast	61,943	59,349	57,710	41,020	23,518
Asiatic Countries and Islands in the Pacific .. .. .	Cargo	1,066,807	1,033,553	1,120,019	1,181,485	1,104,361
	Ballast	193,982	224,522	273,054	298,862	453,271
Africa .. .. .	Cargo	105,127	174,697	154,250	155,300	159,238
	Ballast	3,558	14,020	3,418	16,425	2,722
North and Central America	Cargo	443,864	408,476	492,088	445,835	474,279
	Ballast	75,201	58,762	162,008	199,209	238,166
South America .. .. .	Cargo	118,525	64,433	58,090	74,531	28,643
	Ballast	8,745	3,583	3,840	6,309	3,597
Total .. .. .	Cargo	4,654,550	5,235,786	4,847,264	5,028,051	4,784,979
	Ballast	357,128	368,333	517,820	577,049	721,274
Total .. .. .		5,011,678	5,604,119	5,364,884	5,605,100	5,506,253

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

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

**OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF VESSELS ENTERED,  
1923–24 TO 1927–28.**

Nationality.	Tonnage.				
	1923–24.	1924–25.	1925–26.	1926–27.	1927–28.
<b>BRITISH—</b>					
Australian .. ..	486,170	424,634	381,178	405,968	395,680
United Kingdom .. ..	2,939,210	3,209,865	2,967,317	3,097,888	3,011,435
Canadian .. ..	95,655	70,165	68,091	86,701	72,079
New Zealand .. ..	307,928	488,481	492,255	458,716	403,176
Other British .. ..	55,302	62,772	76,226	102,201	94,863
Cargo .. ..	3,342,994	3,418,124	3,549,627	3,704,196	3,637,889
Ballast .. ..	541,271	837,793	435,440	447,278	339,344
Total British .. ..	3,884,265	4,255,917	3,985,067	4,151,474	3,977,233
Per cent. on total .. ..	79.09	76.05	75.14	74.68	73.39
<b>FOREIGN—</b>					
Danish .. ..	54,161	43,311	85,152	61,376	61,311
Dutch .. ..	138,716	162,385	124,824	115,363	130,500
French .. ..	84,701	104,312	109,417	99,832	97,596
German .. ..	44,354	81,213	76,650	140,810	157,381
Italian .. ..	61,312	115,931	62,046	61,583	76,921
Japanese .. ..	143,954	297,657	246,193	210,486	168,323
Norwegian .. ..	173,311	219,258	264,037	302,958	284,036
Swedish .. ..	90,641	86,704	96,625	111,920	106,159
United States .. ..	191,938	186,089	205,391	231,468	341,263
Other Foreign .. ..	43,783	43,623	48,403	71,600	18,322
Cargo .. ..	915,936	1,019,779	1,179,457	1,194,673	1,355,076
Ballast .. ..	110,935	320,704	139,281	212,723	86,736
Total Foreign .. ..	1,026,871	1,340,483	1,318,738	1,407,396	1,441,812
Per cent. on total .. ..	20.91	23.95	24.86	25.32	26.61
Cargo .. ..	4,258,930	4,437,903	4,729,084	4,898,869	4,992,965
Per cent. on total .. ..	86.72	79.30	89.16	88.13	92.14
Ballast .. ..	652,206	1,158,497	574,721	660,001	426,080
Per cent. on total .. ..	13.28	20.70	10.84	11.87	7.86
<b>Grand Total .. ..</b>	<b>4,911,136</b>	<b>5,596,400</b>	<b>5,303,805</b>	<b>5,558,870</b>	<b>5,419,045</b>

The Australian tonnage which entered Australia from overseas during the year 1927–28 represented 7.30 per cent. of the total tonnage entered. This figure was less than the average for the quinquennium, which was 7.82 per cent., the decrease being due mainly to the disposal of vessels owned by the Commonwealth Government to foreign or other Australian owners. In the latter instance, the purchasers generally are using the vessels in the interstate trade.

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

**OVERSEA SHIPPING, AUSTRALIA.—PERCENTAGE BRITISH AND FOREIGN  
ENTERED WITH CARGO, 1923-24 TO 1927-28.**

Nationality.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
British .. .. .	78.49	77.02	75.06	75.61	72.86
Foreign .. .. .	21.51	22.98	24.94	24.39	27.14
Total .. .. .	100.00	100.00	100.00	100.00	100.00

During the period under review the average annual proportion of foreign tonnage entering with cargo was 21.15 per cent.

(b) *Tonnage of Cargo.* In Transport and Communication Bulletin, No. 20 (p. 37) published by this Bureau, a statement is given of the tonnage of oversea cargo discharged and shipped during the year 1927-28 according to the nationalities of the vessels engaged in the carrying trade.

While the tonnage of British vessels entering with cargo represented 72.86 per cent. of the total, the amount of cargo discharged from such vessels was 69.97 per cent. The foreign country which had the largest amount of shipping tonnage engaged with Australia during the year 1927-28 was United States of America, its vessels contributing 6.31 per cent. of the total tonnage entered with cargo and 6.96 per cent. of the total cargo discharged and 2.66 per cent. of the cargo shipped.

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

**OVERSEA SHIPPING, AUSTRALIA.—FOREIGN TONNAGE, 1927-28.**

Countries.	Nationality.							
	United States.		Norwegian.		Japanese.		German.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
<b>EUROPEAN COUNTRIES—</b>								
United Kingdom .. .. .	..	7,092	9,448	26,209	..	..	..	2,525
Germany .. .. .	..	..	3,926	3,580	..	..	107,664	119,439
Norway .. .. .	..	..	35,872	54,932	..	..	10,828	..
Other European Countries .. .. .	..	..	33,290	25,802	..	..	26,073	6,772
<b>ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—</b>								
Netherlands East Indies .. .. .	7,801	28,742	18,864	26,103	..	..	..	19,734
Japan .. .. .	..	..	..	2,441	144,756	148,356	..	2,957
Straits Settlements .. .. .	3,821	3,374	3,618	..	..	5,820	..	..
Other Asiatic Countries .. .. .	28,159	61,829	3,772	1,025	2,659	9,104	1,927	..
New Zealand .. .. .	..	4,290	2,161	5,748	..	..	4,066	4,066
Other Pacific Islands .. .. .	1,025	25,898	66,141	58,798	..	..	..	..
<b>AFRICAN COUNTRIES</b>	..	..	11,857	14,328	..	..	..	5,993
<b>NORTH AMERICAN COUNTRIES—</b>								
United States .. .. .	290,080	192,535	84,362	40,673	20,908	11,739	7,023	..
Canada .. .. .	10,377	..	10,725	2,296	..	..	..	..
<b>SOUTH AMERICAN COUNTRIES</b>	..	2,137	..	2,161	..	..	..	..
With Cargo .. .. .	315,129	270,311	271,082	183,624	150,740	163,280	151,388	150,859
In Ballast .. .. .	26,134	55,586	12,954	80,482	17,583	11,739	5,993	10,627
<b>Total .. .. .</b>	<b>341,263</b>	<b>325,897</b>	<b>284,036</b>	<b>264,106</b>	<b>168,323</b>	<b>175,019</b>	<b>157,381</b>	<b>161,486</b>

(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 1923-24 to 1927-28.

OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF STEAM AND SAILING VESSELS ENTERED, 1923-24 TO 1927-28.

Description and Nationality of Vessels.	1923-24.		1924-25.		1925-26.		1926-27.		1927-28.	
	Ton- nage.	Per- cent- age.	Ton- nage.	Per- cent- age.	Ton- nage.	Per- cent- age.	Ton- nage.	Per- cent- age.	Ton- nage.	Per- cent- age.
Steam—										
British ..	3,866,900	80	4,242,511	77	3,972,307	76	4,146,144	75	3,972,733	74
Foreign ..	941,229	20	1,293,360	23	1,272,915	24	1,366,696	25	1,400,752	26
Total Steam	4,808,129	100 (98)	5,535,871	100 (99)	5,245,222	100 (99)	5,512,840	100 (99)	5,373,485	100 (99)
Sailing										
British ..	17,365	17	13,406	22	12,760	22	5,330	12	4,500	10
Foreign ..	85,642	83	47,123	78	45,823	78	40,700	88	41,060	90
Total Sailing ..	103,007	100 (2)	60,529	100 (1)	58,583	100 (1)	46,030	100 (1)	45,560	100 (1)
Steam and Sailing—										
British ..	3,884,265	79	4,255,917	78	3,985,067	75	4,151,474	75	3,977,233	73
Foreign ..	1,026,871	21	1,340,483	24	1,318,738	25	1,407,396	25	1,441,812	27
Total ..	4,911,136	100	5,596,400	100	5,303,805	100	5,558,870	100	5,419,045	100

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

5. *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 1923-24 to 1927-28:—

OVERSEA SHIPPING, AUSTRALIA.—TONNAGE IN BALLAST, 1923-24 TO 1927-28.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
<b>TOTAL TONNAGE.</b>						
1923-24 ..	541,271	110,935	652,206	254,069	103,059	357,128
1924-25 ..	837,793	320,704	1,158,497	164,972	203,361	368,333
1925-26 ..	435,440	139,281	574,721	309,398	208,222	517,620
1926-27 ..	447,278	212,723	660,001	415,806	161,243	577,049
1927-28 ..	339,344	86,736	426,080	482,617	238,657	721,274
<b>PERCENTAGE.</b>						
1923-24 ..	13·93	10·80	13·28	6·48	9·45	7·13
1924-25 ..	19·68	23·92	20·70	4·41	10·93	6·57
1925-26 ..	9·15	10·56	10·84	7·63	3·88	9·64
1926-27 ..	10·77	15·11	11·87	10·04	11·03	10·29
1927-28 ..	8·53	6·02	7·86	11·87	16·57	13·10

(ii) *Tonnage entered in Ballast—States.* The tonnage which entered each State in ballast during 1927-28 was as follows :—

## OVERSEA TONNAGE IN BALLAST ENTERING STATES, 1927-28.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Tonnage ..	185,064	6,445	17,178	67,618	135,327	3,073	11,375	426,080
Percentage on total ..	43·43	1·51	4·03	15·88	31·76	0·72	2·67	100·00

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

## § 3. Shipping of Ports.

1. *Tonnage Entered.*—The total shipping tonnage—oversea, interstate, and coast-wise—which entered the more important ports of Australia during the year 1927-28, together with similar information in regard to some of the ports of New Zealand for the year 1928 and of Great Britain for the year 1927—will be found in the next table :—

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

Port.	Tonnage Entered.	Port.	Tonnage Entered.
<b>AUSTRALIA—</b>		<b>ENGLAND AND WALES—</b>	
Sydney .. ..	9,212,295	London .. ..	26,212,623
Melbourne .. ..	7,049,513	Liverpool (inc. Birkenhead)	16,136,982
Adelaide .. ..	4,665,152	Southampton .. ..	11,165,715
Newcastle .. ..	4,569,813	Tyne Ports .. ..	10,227,351
Fremantle .. ..	3,424,375	Cardiff .. ..	8,990,299
Brisbane .. ..	3,361,076	Plymouth .. ..	6,365,193
Townsville .. ..	1,061,944	Hull .. ..	5,638,534
Hobart .. ..	885,639	Swansea .. ..	3,962,234
Pirie .. ..	747,816	Manchester (inc. Runcorn)	3,920,795
Kembla .. ..	639,137	Sunderland .. ..	3,825,023
Cairns .. ..	607,839	Newport .. ..	3,517,865
Mackay .. ..	480,659	Bristol .. ..	3,388,683
Albany .. ..	480,554	Middlesbrough .. ..	3,308,673
Geelong .. ..	453,965	Blyth .. ..	2,333,755
Launceston .. ..	426,944	Beaumaris (inc. Holyhead)	2,026,943
Burnie .. ..	383,060	Grimsby (inc. Immingham)	2,023,972
Thursday Island .. ..	344,026	Dover .. ..	1,744,371
Bunbury .. ..	326,742	Falmouth .. ..	1,400,127
Bowen .. ..	324,922		
Devonport .. ..	306,963	<b>SCOTLAND—</b>	
Wallaroo .. ..	303,882	Glasgow .. ..	6,002,866
Rockhampton .. ..	224,385	Leith .. ..	2,172,326
<b>NEW ZEALAND—</b>		<b>NORTHERN IRELAND—</b>	
Wellington .. ..	3,477,706	Belfast .. ..	4,871,245
Auckland .. ..	2,402,880		
Lyttelton .. ..	1,907,384		
Otago .. ..	985,394		

Transport and Communication Bulletin No. 20 gives more detailed information regarding the shipping entered at Australian ports.

### § 4. Vessels Built and Registered.

1. **Vessels Built.**—The following table shows the number and tonnage of vessels built in Australia during each of the calendar years 1924 to 1928, 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, 1924 TO 1928.

##### NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Com-posite.	Total.				
1924 ..	2	..	2	..	4	14	1	..	19
1925 ..	..	..	6	..	6	22	1	..	29
1926 ..	1	..	..	..	1	7	..	..	8
1927 ..	..	..	1	..	1	5	1	..	7
1928 ..	1	..	..	..	1	8	3	..	12

##### TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1924 ..	19,665	11,480	331	242	9	9	..	..	20,005	11,731
1925 ..	4,074	1,478	318	251	13	13	..	..	4,405	1,742
1926 ..	36	27	108	63	..	..	..	..	144	90
1927 ..	6	5	86	56	3	3	..	..	95	64
1928 ..	8	10	114	90	40	38	..	..	162	138

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, 1928:—

#### VESSELS ON THE STATE REGISTERS, 31st DECEMBER, 1928.

States and Territory.	Steam.				Sailing.				Barges, Hulks, Dredges, etc., not Self-propelled.		Total.	
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.		No.	Net Tons.	No.	Net Tons.
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.				
New South Wales ..	54	1,532	415	77,041	241	3,282	233	11,101	49	12,741	992	105,697
Victoria ..	41	4,475	151	160,343	53	2,762	53	1,297	69	30,445	367	199,322
Queensland ..	19	2,750	51	6,178	37	492	99	1,506	32	4,405	238	15,331
South Australia ..	16	527	82	26,106	48	2,916	32	743	46	7,462	224	37,754
Western Australia ..	9	173	28	6,412	18	423	310	4,665	22	5,899	387	17,572
Tasmania ..	6	478	54	3,801	54	1,409	66	2,489	2	563	182	8,740
Northern Territory	..	..	..	..	1	17	19	159	..	..	20	206
Total ..	145	9,935	781	279,881	452	11,301	812	21,990	220	61,515	2,410	384,622

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

### § 5. Interstate Shipping.

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

2. **Vessels and Tonnage Entered.**—The following table gives the number and tonnage of vessels recorded as having entered each State from any other State during each of the years 1923–24 to 1927–28. 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, 1923–24 TO 1927–28.

States and Territory.	1923–24.	1924–25.	1925–26.	1926–27.	1927–28.
NUMBER.					
New South Wales ..	2,071	1,902	1,759	2,022	1,856
Victoria ..	1,920	1,815	1,743	1,870	1,815
Queensland ..	519	460	452	487	463
South Australia ..	867	798	838	949	852
Western Australia ..	363	421	337	366	382
Tasmania ..	1,193	1,091	1,024	1,014	1,052
Northern Territory ..	22	24	20	24	29
Total ..	6,955	6,511	6,173	6,732	6,449

TONNAGE.					
New South Wales ..	4,677,576	4,581,395	4,244,524	4,626,263	4,204,347
Victoria ..	3,724,273	3,593,320	3,394,123	3,787,217	3,511,614
Queensland ..	1,032,101	1,041,754	1,011,106	1,056,045	1,074,291
South Australia ..	2,501,928	2,348,566	2,391,535	2,725,309	2,462,588
Western Australia ..	1,668,713	1,900,077	1,648,977	1,778,919	1,879,446
Tasmania ..	1,200,569	1,098,556	1,161,672	1,171,857	1,242,260
Northern Territory ..	54,347	57,658	51,760	62,663	61,746
Total ..	14,859,507	14,621,326	13,903,697	15,208,273	14,436,292

3. **Oversea Vessels Moving Interstate.**—To ascertain the aggregate movement of shipping between the States during the year 1927–28, including the total interstate



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

**SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER AUSTRALIAN STATES, 1927-28.**

States and Territory.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ..	605	2,839,889	523	2,491,217	1,128	5,331,106
Victoria .. ..	595	2,737,107	464	2,164,494	1,059	4,901,601
Queensland .. ..	235	1,233,286	241	1,258,289	476	2,491,575
South Australia ..	341	1,765,085	286	1,583,813	627	3,348,898
Western Australia ..	61	225,035	10	41,500	71	266,535
Tasmania .. ..	38	158,661	101	580,873	139	739,534
Northern Territory ..	..	..	..	..	..	..
<b>Total .. ..</b>	<b>1,875</b>	<b>8,959,063</b>	<b>1,625</b>	<b>8,120,186</b>	<b>3,500</b>	<b>17,079,249</b>

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

4. **Vessels engaged Solely in Interstate Trade.**—Eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade for Australia as a whole during the years 1923-24 to 1927-28 were as follows :—

**NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1923-24 TO 1927-28.**

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1923-24 .. ..	5,565	8,228,391	5,546	8,109,094
1924-25 .. ..	4,909	6,960,923	4,906	6,953,546
1925-26 .. ..	4,690	6,677,578	4,628	6,622,175
1926-27 .. ..	5,129	7,303,603	5,146	7,422,571
1927-28 .. ..	4,824	6,316,106	4,865	6,447,495

5. **Total Interstate Movement of Shipping.**—(i) *Australia.* The appended table shows the total inward interstate movement of shipping for each of the years 1923-24 to 1927-28 :—

**TOTAL INWARD INTERSTATE MOVEMENT OF SHIPPING, 1923-24 TO 1927-28.**

Vessels.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate ..	14,437,674	15,856,487	15,001,432	16,777,917	17,079,249
Vessels solely interstate	8,228,391	6,960,923	6,677,578	7,422,571	6,447,495
<b>Total .. ..</b>	<b>22,666,065</b>	<b>22,817,410</b>	<b>21,679,010</b>	<b>24,200,488</b>	<b>23,526,744</b>

(ii) *States.* The following table shows the number and tonnage of vessels which entered and cleared each State during 1927-28, including the coastal movements of oversea vessels:—

INTERSTATE SHIPPING OF EACH STATE, 1927-28.

States and Territory.	Entered.		Cleared.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales .. .. .	2,461	7,044,236	2,448	6,984,280
Victoria .. .. .	2,410	6,248,721	2,466	6,388,667
Queensland .. .. .	698	2,307,577	705	2,374,980
South Australia .. .. .	1,193	4,227,673	1,269	4,534,438
Western Australia .. .. .	443	2,104,481	362	1,755,591
Tasmania .. .. .	1,090	1,400,921	1,092	1,426,430
Northern Territory .. .. .	29	61,746	23	62,358
Total, Australia .. .. .	8,324	23,395,355	8,365	23,526,744

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 1924 to 1928:—

AUSTRALIAN INTERSTATE AND COASTAL STEAMSHIP SERVICES, 1924 TO 1928.

Particulars.	1924.	1925.	1926.	1927.	1928.
Number of companies making returns .. .. .	39	41	44	40	38
Number of steamships .. .. .	207	209	216	212	201
Tonnage { Gross .. .. .	382,822	384,004	375,893	398,894	371,142
{ Net .. .. .	217,609	216,390	214,028	214,703	208,083
Horse-power (Nominal) .. .. .	37,841	38,750	37,129	39,545	37,980
Number of passengers for which licensed { 1st class .. .. .	9,538	9,110	8,686	7,909	7,686
{ 2nd class and steerage .. .. .	4,343	4,204	3,650	3,438	3,240
Complement of Crew { Masters and officers .. .. .	681	684	691	698	638
{ Engineers .. .. .	631	645	642	662	630
{ Crew .. .. .	5,336	5,190	5,102	5,176	4,922

§ 6. Tonnage of Cargo.

The table hereunder shows the aggregate tonnage of oversea cargo discharged and shipped in Australian ports, and the tonnage of interstate cargo shipped in all ports for the years 1923-24 to 1927-28. Cargo which was stated in cubic feet has been converted to weight on the basis of 40 cubic feet to the ton.

## AUSTRALIAN SHIPPING.—CARGO MOVEMENT, 1923-24 TO 1927-28.

Year.	Oversea Cargo.		Interstate Cargo.
	Discharged.	Shipped.	Shipped.
	Tons.	Tons.	Tons.
1923-24 .. .. .	4,377,171	4,981,521	6,358,191
1924-25 .. .. .	4,696,112	6,498,098	6,413,975
1925-26 .. .. .	5,342,621	5,169,407	5,735,973
1926-27 .. .. .	5,955,212	5,246,141	6,796,156
1927-28 .. .. .	5,889,127	4,686,306	6,225,088

More detailed information regarding the volume of trade at each of the principal ports is contained in Transport and Communication Bulletin No. 20 issued by this Bureau.

### § 7. Commonwealth Government Shipping and Shipbuilding 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.

Particulars of the vessels built in Australia to 31st December, 1922, were included in a previous issue of this book (see Year Book Nos. 16, p. 273 and 17, p. 269).

2. **Vessels Built in the United Kingdom.**—In addition to the vessels previously referred to, five steamers each approximately 8,450 tons net were constructed in yards in the United Kingdom.

These vessels each 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.

3. **Australian Commonwealth Line of Steamers.**—(i) *Foundation of Line.* The Commonwealth Shipping Act 1923 provided for the establishment of the Australian Commonwealth Line of Steamers under the control of a Board of Directors consisting of not less than three nor more than five members. The date at which the Act was to come into force was fixed by proclamation as 1st September, 1923.

The whole of the right, title, and interest of the Commonwealth in and to the 50 vessels (155,302 tons net) of the Commonwealth Government Line of Steamers, and appurtenances used for the purposes of such vessels, was vested in the Board, also four other vessels (15,442 tons net) which were under construction at the time of transfer. The valuation of the vessels, tackle, apparel, gear, furniture, stores and equipment was fixed at £4,718,150, office furniture and fittings at £7,500, and stores on hand £23,700, making a total of £4,749,350.

The balance-sheet of the Commonwealth Shipping Board, covering the activities of the Australian Commonwealth Line of Steamers and the Cockatoo Island Dock-yard to the 31st March, 1928, shows liabilities to the total of £6,944,025 and assets £4,437,242. The operations for the five years 1923 to 1928 show an accumulated loss of £2,506,783, the loss on operations for 1927-28 being £584,377.

(ii) *Disposal of Line.* At the end of the year 1927, the only vessels owned by the Commonwealth Government Line of Steamers were as follows (net tonnage in parentheses):—*Largs Bay* (8,432), *Jervis Bay* (8,423), *Moreton Bay* (8,420), *Esperance Bay* (8,415), and *Hobson's Bay* (8,413) all one-class passenger-carrying steamers, and the freighters *Fordsdale* (5,661) and *Ferndale* (5,656); a total net tonnage of 53,420 tons.

Following an investigation by the Parliamentary Joint Committee of Public Accounts into the operations of the Commonwealth Shipping Board, it was decided to dispose of the remaining vessels of the line, and tenders for their purchase were called in January, 1928. Three tenders were submitted, and that on behalf of the White Star Line, £1,900,000, was accepted, and the sale effected in April, 1928. The contract of sale provided, *inter alia*, that the purchaser was to maintain a service equivalent to that provided under the management of the Commonwealth Shipping Board and also to maintain an efficient Australian organization.

§ 8. World's Shipping Tonnage.

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

WORLD'S SHIPPING TONNAGE, 1st JULY, 1928.

Nationality.	Steam and Motor.		Sailing.		Total.		Percentage on Total.	
	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.
Great Britain and Nthn. Ireland	7,810	19,754,001	394	121,349	8,204	19,875,350	25.87	31.01
Australia and New Zealand	613	709,030	17	8,519	630	717,549	1.99	1.12
Canada(a)	579	871,985	209	91,685	788	963,670	2.48	1.50
Other British	724	853,034	220	50,188	944	903,222	2.98	1.41
Total, British Empire	9,726	22,188,050	840	271,741	10,566	22,459,791	33.32	35.04
Belgium	230	488,219	3	4,390	233	492,609	0.73	0.77
Denmark	627	1,042,209	86	25,330	713	1,067,539	2.25	1.67
France	1,482	3,255,832	200	88,633	1,682	3,344,465	5.30	5.22
Germany	2,053	3,738,067	27	39,184	2,080	3,777,251	6.56	5.89
Greece	515	1,187,508	..	..	515	1,187,508	1.62	1.85
Holland	1,270	2,809,375	20	7,330	1,290	2,816,705	4.07	4.39
Italy	1,142	3,348,732	287	80,085	1,429	3,428,817	4.51	5.35
Japan	2,048	4,139,815	..	..	2,048	4,139,815	6.46	6.46
Norway	1,765	2,953,944	22	14,263	1,787	2,968,207	5.63	4.63
Spain	789	1,137,813	95	26,459	884	1,164,272	2.79	1.82
Sweden	1,239	1,411,730	144	35,740	1,383	1,447,470	4.36	2.26
United States of America(a) (b)	3,104	11,249,288	754	843,597	3,858	12,092,885	12.16	18.87
Other Foreign Countries	2,734	3,439,168	512	264,858	3,246	3,704,026	10.24	5.78
Total, Foreign Countries	18,998	40,201,700	2,150	1,429,869	21,148	41,631,569	66.68	64.96
Grand Total	28,724	62,389,750	2,990	1,701,610	31,714	64,091,360	100.00	100.00

(a) Sea-going.

(b) Including Philippine Islands.

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

§ 9. Ferries.

1. **New South Wales.**—The ferry services in Port Jackson are under the control of two companies, which during the year 1928 had 64 vessels in commission, 62 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.

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

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

4. **Western Australia.**—The ferries plying on the Swan River during 1928 were operated by a private company, and consisted of 8 petrol-driven vessels. At South Perth the Western Australian Government employed 3 vessels, 1 of which was a steamer.

5. **Tasmania.**—In and around Hobart there were in 1928, 4 ferry services, 2 being controlled by private companies which had 3 steamers in commission, 1 by the Public Works Department with 2 motor-propelled vessels, and 1 by the Railway Department with 1 steamer.

6. **Particulars of Working.**—The subjoined table shows for the year 1928, 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, 1928.

Particulars.	New South Wales.	Victoria.	Western Australia.	Tasmania.	Total.
Boats in Service—					
Steam .. No.	62	1	1	4	68
Other .. No.	2	..	10	2	14
Total .. No.	64	1	11	6	82
Number of passengers which boats are licensed to carry .. No.	44,702	352	1,460	1,431	47,945
Revenue .. £	789,223	4,914	17,414	17,671	829,222
Working Expenses .. £	692,492	7,758	16,422	22,713	739,385
Passengers carried <sup>(b)</sup> .. No.	50,370,870	250,000	1,402,523	889,301	52,912,694
Mileage of Boats .. miles	(a)	22,880	94,612	99,069	(c)216,561
Accidents—					
Killed .. No.	40	..	..	..	40
Injured .. No.	191	3	1	..	195
Employees—					
Salaried Staff .. No.	90	..	3	5	98
Wages Staff .. No.	1,118	10	31	39	1,198

(a) Not Available.

(b) Approximate.

(c) Incomplete.

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

## § 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 was also included in Transport and Communication Bulletin No. 14.

3. **Shipping Freight Rates.**—The Quarterly Summary of Australian Statistics gives a list of the ruling freight rates for general merchandise both in respect of oversea and interstate shipments. The latest figures available, which give the rates current at 30th June, 1929, show that the rate for general merchandise from Australia to United Kingdom and Continent was 63s. per ton weight or measurement, as compared with 55s. per ton in 1915.

4. **Depth of Water at Main Ports.**—A table compiled from information supplied by the Director of Navigation showing the depth of water at the main ports of Australia at 1st January, 1929, has been included in the Transport and Communication Bulletin No. 20. published by this Bureau.

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

certificates of officers found to be at fault. Particulars of shipping casualties reported on or near the coast during the year 1927-28 are shown in the Transport and Communication Bulletin No. 20. This information has also been furnished by the Director of Navigation.

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

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

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

## B. RAILWAYS.

### § 1. General.

1. **Introduction.**—In the following pages statistics relating to State-owned lines are, in the main, dealt with separately from those under the control of the Commonwealth Government. The State railways are referred to throughout as "State" and the Commonwealth railways as "Federal" railways. A summary in regard to Federal and State railways will, however, be found in § 4 following.

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

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

3. **Railway Communication in Australia.**—(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 is now a 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, and two short lines, one on the north-west, the other on the south coast, which are unconnected with the main system. In the northern portion of Queensland there were also several disconnected lines running inland from the more important ports, but during the year 1924-25 an uninterrupted service as far north as Cairns was established. 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 schedule time for the journey from Brisbane to Perth is six days one hour forty-two minutes, the time being taken over all.

The longest railway journey which can be undertaken in Australia on one continuous line of railway is from Dajarra in Queensland to Meekatharra in Western Australia, a total distance of approximately 5,500 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 has been made in previous issues of the Year Book.

Some advancement, however, has been made in this connexion by the commencement of a 4 ft. 8½ in. gauge line between Kyogle (New South Wales) and South Brisbane (Queensland), which, when completed, will establish uninterrupted standard gauge communication between Sydney and South Brisbane. The mileage involved in this project is 87.12 miles, of which 60.56 miles is in Queensland Territory. The construction of this line is under the control of a Council, consisting of the Commonwealth Railways Commissioner, the Chief Railway Commissioner for New South Wales, and the Commissioner for Railways, Queensland.

The following further proposals for modifying the disadvantages attending the multiplicity of gauges have been recommended to and accepted by Parliament by the Commonwealth Parliamentary Standing Committee on Public Works:—

- (a) Extension of the Trans-Australian Railway from Port Augusta to Red Hill, 83 miles of 4 ft. 8½ in. gauge at the expense of the Commonwealth Government, which will at the expense of the South Australian Government lay a third rail to conform to the South Australian gauge of 5 ft. 3 in. from a point near Port Pirie to Red Hill; and

- (b) Laying of a third rail from Red Hill to Adelaide by the South Australian Government at the expense of the Commonwealth Government to provide a railway of 4 ft. 8½ in. gauge over the existing 5 ft. 3 in. gauge line from Red Hill to Adelaide, a total distance of approximately 107 miles.

When these proposals are completed, through passengers over the Trans-Australian line will not need to change at Port Augusta and Terowie.

(iv) *Estimated Cost of Unification of Gauges.* The scheme recommended 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, together with the quota from each State and the Commonwealth Government in terms of the allocation of cost agreed upon, were given in a previous issue (see Year Book No. 16, p. 278).

The estimated cost of converting the whole of the lines in the States concerned was given as 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. Particulars in respect of such dimensions have been published in previous issues of this work. (See Official Year Book, No. 18, p. 274.)

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.

The subjoined table shows the route mileage of Federal, State, and private lines open for general traffic (exclusive of sidings and cross-overs) in each State for each of the years 1923-24 to 1927-28. The railway mileage given for each State includes both Federal, State, and private railways in that State :—

**RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE OPEN, 1924 TO 1928.**

State or Territory.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales .. ..	5,666.18	5,799.65	5,883.85	5,892.07	6,008.99
Victoria .. ..	4,462.42	4,508.56	4,652.21	4,659.16	4,721.69
Queensland .. ..	6,326.02	6,404.39	6,542.39	6,603.59	6,619.14
South Australia .. ..	3,560.91	3,560.91	3,608.31	3,637.01	3,636.42
Western Australia .. ..	4,361.17	4,463.65	4,595.37	4,649.04	4,707.62
Tasmania .. ..	867.76	864.56	865.00	845.86	841.06
Federal Capital Territory ..	4.94	4.94	4.94	4.94	4.94
Northern Territory .. ..	198.68	198.68	198.68	198.68	198.68
Australia .. ..	25,448.08	25,805.34	26,350.75	26,490.35	26,738.54

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



(ii) *Government and Private Lines Separately.* The next table shows for each State (a) the length of lines owned by the State Government, and by the Commonwealth Government in that State, all of which lines are open for general use by the public and (b) the length of private lines available for general use by the public. The mileages specified in the case of Government and private lines are to the 30th June, 1928 :—

**RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE CLASSIFIED, 1927–28.**

State or Territory.	Government Lines—		Private Lines available for General Traffic.	Total Open for General Traffic.
	State.	Federal.		
	Miles.	Miles.	Miles.	Miles.
New South Wales .. .. .	5,866.96	..	142.03	6,008.99
Victoria .. .. .	4,696.75	..	24.94	4,721.69
Queensland .. .. .	6,344.75	..	274.39	6,619.14
South Australia .. .. .	2,527.21	1,075.41	33.80	3,636.42
Western Australia .. .. .	3,976.63	453.99	277.00	4,707.62
Tasmania .. .. .	658.25	..	182.81	841.06
Federal Capital Territory .. .. .	..	4.94	..	4.94
Northern Territory .. .. .	..	198.68	..	198.68
Australia .. .. .	24,070.55	1,733.02	934.97	26,738.54

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

**RAILWAYS.—GOVERNMENT AND PRIVATE.—COMPARISON OF FACILITIES, 1928.**

Particulars.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Fed. Cap. Ter.	Nor. Ter.	Aust.
Mileage of Railway— Per 1,000 of population ..	2.48	2.70	7.26	6.29	11.78	4.00	0.62	46.79	4.25
Per 1,000 sq. miles of Territory ..	19.42	53.73	9.87	9.57	4.82	32.08	5.26	0.38	8.99

8. *Classification of Lines according to Gauge, 1927–28.*—The next table gives a classification, according to gauge, of the total mileage, exclusive of sidings and crossovers of (i) Federal railways, given in the State or Territory in which situated; (ii) State railways; and (iii) Private railways open to the public for general traffic. Particulars of Government railways are up to the 30th June, 1928, and of private railways open for general traffic to the 31st December, 1927, as nearly as possible.

## RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1927–28.

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

## FEDERAL RAILWAYS.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
South Australia .. .. .	..	597.46	477.95	..	..	..	1,075.41
Western Australia .. .. .	..	453.99	..	..	..	..	453.99
Federal Capital Territory .. .. .	..	4.94	..	..	..	..	4.94
Northern Territory .. .. .	..	..	198.63	..	..	..	198.63
<b>Total .. .. .</b>	..	<b>1,056.39</b>	<b>676.63</b>	..	..	..	<b>1,733.02</b>

## STATE RAILWAYS.

New South Wales .. .. .	..	..	5,827.45	39.51	..	..	5,866.96
Victoria .. .. .	..	4,574.98	..	..	121.77	..	4,696.75
Queensland .. .. .	..	..	..	6,314.49	..	30.26	6,344.75
South Australia .. .. .	..	1,449.21	..	1,078.00	..	..	2,527.21
Western Australia .. .. .	..	..	..	3,976.63	..	..	3,976.63
Tasmania .. .. .	..	..	..	633.42	..	24.83	658.25
<b>Total .. .. .</b>	..	<b>6,024.19</b>	<b>5,827.45</b>	<b>12,042.05</b>	..	<b>121.77</b>	<b>24,070.55</b>

## PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.

New South Wales .. .. .	..	..	78.97	36.73	..	26.33	142.03
Victoria .. .. .	..	13.94	..	..	11.00	..	24.94
Queensland .. .. .	..	..	..	102.09	..	7.00	274.39
South Australia .. .. .	..	..	..	33.80	..	..	33.80
Western Australia .. .. .	..	..	..	277.00	..	..	277.00
Tasmania .. .. .	..	..	..	166.32	..	16.49	182.81
<b>Total .. .. .</b>	..	<b>13.94</b>	<b>78.97</b>	<b>615.94</b>	<b>11.00</b>	<b>7.00</b>	<b>934.97</b>

## ALL RAILWAYS OPEN FOR GENERAL TRAFFIC.

New South Wales .. .. .	..	..	5,906.42	76.24	..	26.33	6,008.99
Victoria .. .. .	..	4,588.92	..	..	11.00	121.77	4,721.69
Queensland .. .. .	..	..	..	6,416.58	..	7.00	6,610.14
South Australia .. .. .	..	1,449.21	597.46	1,589.75	..	..	3,636.42
Western Australia .. .. .	..	..	453.99	4,253.63	..	..	4,707.62
Tasmania .. .. .	..	..	..	799.74	..	41.32	841.06
Federal Capital Territory .. .. .	..	..	4.94	..	..	..	4.94
Northern Territory .. .. .	..	..	..	193.63	..	..	193.63
<b>GRAND TOTAL .. .. .</b>	..	<b>6,038.13</b>	<b>6,962.81</b>	<b>13,334.62</b>	<b>11.00</b>	<b>128.77</b>	<b>26,738.54</b>

## § 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 was completed, and the first train ran through to Emungalan (Katherine River) on 13th May, 1917.

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

(iii) *Line Authorized for Construction.* The Northern Territory Railway Extension Act 1923 provides for the construction of a 3 ft. 6 in. gauge line from the present terminus at Emungalan to Daly Waters, a distance of approximately 160 miles. The estimated cost of this line is £1,545,000, including the cost of a bridge over the Katherine River which was completed in May, 1926, although the first train crossed on 21st January, 1926. The terminus of the line was moved to the new station at Katherine River on 14th December, 1926. Tenders were then called for the construction of the line from Katherine River to Daly Waters, but, as no satisfactory tender was received, it was decided to do the work by day labour. Under this system, construction proceeded rapidly until December, 1927, when, owing to a reduction in the amount of money to be made available for construction during the year 1927–28, a drastic curtailment of operations was made. The work then proceeded at a limited rate, and, on 1st July, 1928, a further section, to Mataranka (264 miles 50 chains from Darwin) was opened for public traffic.

3. **Port Augusta to Oodnadatta Railway.**—(i) *General.* 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 was worked under agreement by the South Australian Government for and on behalf of the Commonwealth, but from 1st January, 1926, the management devolved upon the Commonwealth Railways Commissioner.

(ii) *Extension Authorized.* The Railways (South Australia) Agreement Act 1926, assented to by the Commonwealth Parliament in February, 1926, ratified the agreement between the Commonwealth and South Australian Governments for the construction of a 3 ft. 6 in. gauge line between Port Augusta and Alice Springs. This involves the construction of an extension to Alice Springs of the existing 3 ft. 6 in. gauge line from Port Augusta to Oodnadatta. The estimated cost, exclusive of rolling stock, of the proposed extension, which comprises 292 miles is £1,700,000. The permanent survey of the line has been completed, and the first section 21½ miles from Oodnadatta was completed on the 29th August, 1927. The contract for the construction of the balance of 270½ miles to Alice Springs was signed on the 11th August, 1927. The contract provides for the completion of the railway to Alice Springs by the 30th June, 1929.

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

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

On the 22nd October, 1917, the first through train left Port Augusta with an official party on board for Kalgoorlie. It should be mentioned that owing to deviations from the original route, the length of this line was reduced from 1,063.39 miles to 1,051.45 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, 1928, together with the lines which have been or are being surveyed:—

## RAILWAYS, FEDERAL, 30th JUNE, 1928.

Terminals.	Miles.
<b>OPEN FOR TRAFFIC.</b>	
Trans-Australian—Port Augusta (South Australia) to Kalgoorlie (Western Australia)	1,051.45
Central Australia Railway—Port Augusta to Oodnadatta (South Australia)	477.95
Queanbeyan to Canberra (Federal Capital Territory)	4.94
North Australia Railway—Darwin to Emungalan, Katherine River	198.68
Total opened for traffic	1,733.02
<b>SURVEYED OR BEING SURVEYED.</b>	
Mataranka to Daly Waters (Northern Territory)	95.00
Kingoonya to Boorthanna (South Australia)	176.44
Oodnadatta to Alice Springs	115.00
Canberra to Jervis Bay (Federal Capital Territory)	140.22
Canberra (Federal Capital Territory) to Federal Capital Territory Border in the direction of Yass (New South Wales)	11.67
Daly Waters (Northern Territory) to Alice Springs (South Australia)	559.50
Port Augusta to Crystal Brook (South Australia)	69.25
Port Augusta—Red Hill—Adelaide	188.98
Total surveyed or being surveyed	1,356.06

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

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

7. Mileage open, worked, and Train miles run.—The next table shows the length of the Federal railways open for traffic, average miles worked, and the train miles run in the years 1924 to 1928:—

## RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES, 1924 TO 1928.

## MILES OPEN FOR TRAFFIC.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
	Miles.	Miles.	Miles.	Miles.	Miles.
1924 .. ..	1,051	478	5	199	1,733
1925 .. ..	1,051	478	5	199	1,733
1926 .. ..	1,051	478	5	199	1,733
1927 .. ..	1,051	478	5	199	1,733
1928 .. ..	1,051	478	5	199	1,733

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES  
1924 TO 1928—*continued.*

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
<b>AVERAGE MILES WORKED.</b>					
	Miles.	Miles.	Miles.	Miles.	Miles.
1924 .. ..	1,051	478	5	199	1,733
1925 .. ..	1,051	478	5	199	1,733
1926 .. ..	1,051	478	5	199	1,733
1927 .. ..	1,051	478	5	199	1,733
1928 .. ..	1,051	478	5	199	1,733
<b>TRAIN MILES RUN.</b>					
1924 .. ..	453,742	293,529	4,731	18,412	770,414
1925 (a) ..	472,459	283,762	5,999	51,279	813,499
1926 (a) ..	471,322	192,773	7,123	60,641	731,859
1927 (a) ..	487,160	263,227	12,402	69,872	832,661
1928 (a) ..	485,848	359,160	15,632	105,042	965,682

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

8. Cost of Construction and Equipment.—In the following table particulars are given of the cost of construction and equipment for traffic of the undermentioned railways for each of the years 1924 to 1928 :—

## RAILWAYS, FEDERAL.—CAPITAL COST, 1924 TO 1928.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.(b)	North Australia.	
<b>TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.</b>					
	£	£	£	£	£
1924 .. ..	7,379,785	2,342,490	50,720	1,726,877	11,499,872
1925 .. ..	7,435,771	2,554,068	50,720	1,727,412	11,767,971
1926 .. ..	7,515,553	2,663,099	50,974	1,736,360	11,965,986
1927 .. ..	7,614,277	2,854,801	82,945	1,750,772	12,302,795
1928 .. ..	7,682,126	2,908,644	87,369	1,760,756	12,438,895
<b>COST PER MILE OPEN.</b>					
1924 .. ..	7,019	24,901	10,267	8,692	6,636
1925 .. ..	7,072	25,345	10,267	8,694	6,790
1926 .. ..	7,148	5,572	10,318	8,739	6,905
1927 .. ..	7,242	5,973	13,964	8,812	7,099
1928 .. ..	7,306	6,086	17,686	8,863	7,178

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

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

The sum of £1,533,284 of which £110,247 was for surveys, etc., has been provided from revenue for capital purposes to 30th June, 1928, and has been included in the total shown above.

9. Gross Revenue.—(i) *Total, per average mile worked, and per train mile run.* The following table shows the total revenue from all sources, the revenue per average mile worked, and the revenue per train mile run for each of the undermentioned railways for the financial years 1924 to 1928 inclusive :—

## RAILWAYS, FEDERAL.—GROSS REVENUE, TOTAL, ETC., 1924 TO 1928.

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
<b>TOTAL GROSS REVENUE.</b>					
	£	£	£	£	£
1924 .. ..	227,420	105,124	4,080	16,802	353,426
1925 .. ..	256,647	110,256	7,029	35,180	409,112
1926 .. ..	276,430	82,649	11,665	41,347	412,091
1927 .. ..	303,212	125,039	14,739	55,718	498,708
1928 .. ..	333,608	188,143	9,044	69,054	599,849
<b>GROSS REVENUE PER AVERAGE MILE WORKED.</b>					
1924 .. ..	216	220	826	85	204
1925 .. ..	244	231	1,423	177	236
1926 .. ..	263	173	2,362	208	238
1927 .. ..	288	262	2,984	280	288
1928 .. ..	317	394	1,831	348	346
<b>GROSS REVENUE PER TRAIN-MILE RUN.</b>					
	d.	d.	d.	d.	d.
1924 .. ..	120.29	87.96	220.04	219.01	111.16
1925 .. ..	130.37	93.25	281.20	164.65	120.69
1926 .. ..	140.67	101.68	383.98	160.57	134.41
1927 .. ..	149.36	114.00	285.22	191.38	143.73
1928 .. ..	164.80	125.72	138.85	157.77	149.08

(ii) *Classification 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 1924 to 1928 classified according to the three chief sources of receipts, together with their percentages on the total revenue. The totals of the three items are given in the preceding table.

## RAILWAYS, FEDERAL.—RECEIPTS, VARIOUS SOURCES, 1924 TO 1928.

Year ended 30th June—	Railway.									
	Trans-Australian.		Central Australia.		Federal Capital Territory.		North Australia.		Total.	
	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.
<b>COACHING TRAFFIC RECEIPTS.</b>										
	£	%	£	%	£	%	£	%	£	%
1924 .. ..	144,352	63.48	17,764	16.90	754	18.48	2,778	16.53	165,648	46.87
1925 .. ..	157,173	61.24	18,732	16.99	2,228	31.70	3,367	9.57	181,500	44.36
1926 .. ..	172,371	62.35	20,418	24.72	3,144	26.95	3,852	9.31	199,785	48.48
1927 .. ..	178,695	58.93	20,402	16.32	3,760	25.51	5,595	10.04	208,452	41.80
1928 .. ..	194,812	58.39	25,405	13.50	3,261	36.06	6,382	9.24	229,860	38.32
<b>GOODS AND LIVE STOCK RECEIPTS.</b>										
1924 .. ..	34,486	15.16	84,278	80.17	3,326	81.52	6,141	36.55	128,231	36.29
1925 .. ..	53,313	20.77	88,544	80.31	4,601	68.30	19,359	55.03	166,017	40.58
1926 .. ..	51,370	18.59	58,479	70.74	8,521	73.05	22,886	55.36	141,256	34.28
1927 .. ..	63,947	21.09	103,407	82.70	10,979	74.49	25,777	46.26	204,110	40.93
1928 .. ..	66,113	19.82	153,973	81.84	5,783	63.94	35,282	51.09	261,151	43.54
<b>MISCELLANEOUS RECEIPTS.</b>										
1924 .. ..	48,582	21.36	3,082	2.93	17	0.59	7,883	46.02	59,547	16.84
1925 .. ..	46,161	17.99	2,980	2.70	..	..	12,454	35.40	61,595	15.06
1926 .. ..	52,689	19.06	3,752	4.54	..	..	14,600	35.33	71,050	17.24
1927 .. ..	60,570	19.98	1,230	0.98	..	..	24,346	43.70	86,146	17.27
1928 .. ..	72,683	21.79	8,765	4.66	..	..	27,390	39.67	108,838	18.14

The miscellaneous receipts for the year 1927–28 include an amount of £32,595, revenue from dining cars and refreshment services on the Trans-Australian Railway. A sum of £28,514 was received from this source during the previous year.

10. Working Expenses.—(i) *Total*. The following table shows the total working expenses, and the percentages on the corresponding gross revenues of each railway for each year from 1924 to 1928.

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

**RAILWAYS, FEDERAL.—WORKING EXPENSES, TOTAL, ETC., 1924 TO 1928.**

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
<b>TOTAL WORKING EXPENSES.</b>					
	£	£	£	£	£
1924 .. ..	265,121	176,711	3,268	30,077	475,177
1925 .. ..	294,164	158,009	4,882	40,015	497,070
1926 .. ..	282,999	187,835	6,946	43,240	521,020
1927 .. ..	271,886	131,613	10,036	57,960	471,495
1928 .. ..	287,942	170,285	11,234	67,991	537,452
<b>PERCENTAGE OF WORKING EXPENSES ON REVENUE.</b>					
	%	%	%	%	%
1924 .. ..	116.58	168.10	80.10	179.01	137.04
1925 .. ..	114.61	143.31	69.45	113.75	134.45
1926 .. ..	102.38	227.27	59.55	104.58	126.43
1927 .. ..	89.67	105.25	68.09	104.02	94.53
1928 .. ..	86.30	90.50	124.21	98.46	89.59

The percentage of working expenses on revenue shows a distinct improvement during the year ended 30th June, 1928, the Federal Territory Railway being the only one of the four railways showing an increase. The unfavourable result on the Federal Territory Railway was due to an increase in working expenses on account of a considerable addition to the train service owing to Parliament meeting in Canberra, and to the earnings decreasing on account of a temporary depression in traffic to and from the Federal Capital. On each of the other three railways the working expenses for the year were lower than the earnings. This is the first year that such a result has been achieved.

(ii) *Averages*. The next table gives the working expenses per average mile worked, and per train-mile run for each railway for the years 1924 to 1928 :—

**RAILWAYS, FEDERAL.—WORKING EXPENSES, AVERAGES, 1924 TO 1928.**

Year ended 30th June—	Railway.				Total.
	Trans-Australian.	Central Australia.	Federal Capital Territory.	North Australia.	
<b>WORKING EXPENSES PER AVERAGE MILE WORKED.</b>					
	£	£	£	£	£
1924 .. ..	252	370	662	151	274
1925 .. ..	280	331	988	201	287
1926 .. ..	269	393	1,406	218	301
1927 .. ..	254	275	2,032	292	272
1928 .. ..	274	356	2,274	342	310
<b>WORKING EXPENSES PER TRAIN-MILE RUN.</b>					
	d.	d.	d.	d.	d.
1924 .. ..	140.35	147.86	176.25	392.05	149.45
1925 .. ..	149.43	133.64	195.31	187.29	146.65
1926 .. ..	144.10	233.85	234.04	171.13	170.86
1927 .. ..	133.95	120.00	194.21	199.08	135.90
1928 .. ..	142.24	113.79	172.47	155.34	133.57

(iii) *Classification and Percentages.* The subjoined table shows the distribution of working expenses among four chief heads of expenditure for the years 1924 to 1928, together with their percentages on the total working expenses which are given in (i) hereinbefore :—

## RAILWAYS, FEDERAL.—DISTRIBUTION OF WORKING EXPENSES, 1924 TO 1928.

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

## MAINTENANCE.

	£	%	£	%	£	%	£	%	£	%
1924 ..	77,892	29.38	71,087	40.23	711	21.76	13,858	46.08	163,548	34.42
1925 ..	83,219	28.29	57,411	36.33	906	18.56	14,155	35.37	155,691	31.32
1926 ..	88,490	31.27	100,583	53.55	782	11.26	15,866	36.69	205,721	39.48
1927 ..	73,564	27.06	49,765	37.81	1,172	11.68	21,891	37.77	146,392	31.05
1928 ..	80,591	27.99	67,719	39.77	1,158	10.31	20,508	30.16	169,976	31.63

## LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.

	£	%	£	%	£	%	£	%	£	%
1924 ..	115,107	43.42	84,029	47.55	1,900	58.14	8,179	27.19	209,215	44.03
1925 ..	133,467	45.37	77,809	49.24	2,756	56.45	12,891	32.22	226,923	45.66
1926 ..	116,966	41.33	61,694	32.84	4,257	61.29	14,336	33.15	197,253	37.86
1927 ..	122,740	45.14	54,896	41.71	5,092	50.74	16,606	28.65	199,334	42.28
1928 ..	126,296	43.86	73,073	42.91	4,110	36.58	24,523	36.07	228,002	42.42

## TRAFFIC EXPENSES.

	£	%	£	%	£	%	£	%	£	%
1924 ..	39,936	15.06	18,533	10.49	657	20.10	7,346	24.42	66,472	13.99
1925 ..	41,164	14.00	19,316	12.23	1,220	24.99	11,186	27.95	72,886	14.66
1926 ..	40,927	14.46	19,994	10.65	1,907	27.45	11,784	27.26	74,612	14.32
1927 ..	42,185	15.52	20,512	15.59	3,480	34.67	17,089	29.48	83,266	17.66
1928 ..	45,867	15.93	23,550	13.83	5,535	49.27	19,427	28.57	94,379	17.66

## OTHER CHARGES.

	£	%	£	%	£	%	£	%	£	%
1924 ..	32,186	12.14	3,062	1.73	..	..	694	2.31	35,942	7.56
1925 ..	36,314	12.34	3,473	2.20	..	..	1,783	4.46	41,570	8.36
1926 ..	36,616	12.94	5,564	2.96	..	..	1,254	2.90	43,434	8.34
1927 ..	33,397	12.28	6,440	4.89	292	2.91	2,374	4.10	42,503	9.01
1928 ..	35,188	12.22	5,943	3.49	431	3.84	3,533	5.20	45,095	8.39

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 1924 to 1928 :—

## RAILWAYS, FEDERAL.—TRAFFIC, 1924 TO 1928.

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

## PASSENGER JOURNEYS.

	No.	No.	No.	No.	No.
1924 ..	31,805	67,657	32,616	3,511	135,589
1925 ..	32,362	65,322	110,499	3,798	211,981
1926 ..	34,512	65,250	138,923	5,293	243,978
1927 ..	34,779	55,284	125,605	5,716	221,384
1928 ..	36,212	60,410	53,255	5,899	155,776

## TONNAGE OF GOODS AND LIVE STOCK CARRIED.

	tons.	tons.	tons.	tons.	tons.
1924 ..	32,858	69,179	18,504	3,167	123,708
1925 ..	42,225	63,622	25,405	15,259	146,511
1926 ..	37,848	46,870	45,933	15,275	145,926
1927 ..	43,503	81,048	84,450	15,612	224,613
1928 ..	45,087	96,799	41,848	22,628	206,362



(ii) *Passenger-Mileage Summary.* The appended table gives particulars of "Passenger-Mileage" on each of the Federal railways for the year 1927-28 :—

**RAILWAYS, FEDERAL.—PASSENGER-MILES SUMMARY, 1927-28.**

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.
							£	s. d.		
Trans-Australian ..	345,057	36,212	32,872	151,999	95	902	1.12	4 3 11		31,073
Central Australia ..	31,493	60,410	3,456	20,191	110	57	1.40	0 6 8		7,230
Federal Capital Territory ..	10,991	53,255	257	1,936	23	5	1.81	0 0 8½		52,059
North Australia ..	1,654	5,899	734	5,875	444	124	1.92	0 19 11		3,695

(iii) *Ton-Mileage Summary.* Particulars of ton-mileage are shown hereunder in respect of each of the Federal railways for the year 1927-28 :—

**RAILWAYS, FEDERAL.—"TON-MILEAGE" SUMMARY, 1927-28.**

Railway.	Goods Train Mileage.	Total Tons Carried.	Total "Ton-Miles."	Goods Earnings.	Average Freight-paying Load per Train Mile.	Average Haul per ton.	Earnings per "Ton-Mile."	Density of Traffic per Average Mile Worked.
Trans-Australian ..	140,791	45,087	10,310	66,113	73	229	1.54	9,805
Central Australia ..	327,667	96,799	23,783	153,973	73	246	1.55	49,760
Federal Capital Territory ..	4,641	41,848	209	5,783	45	5	6.64	42,356
North Australia ..	103,388	22,628	4,108	35,282	40	182	2.06	20,677

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

13. *Rolling Stock, 1928.*—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, 1928.**

Railway.	Gauge.			Gauge.			Gauge.		
	4 ft. 8½ in.	3 ft. 6 in.	Total.	4 ft. 8½ in.	3 ft. 6 in.	Total.	4 ft. 8½ in.	3 ft. 6 in.	Total.
	LOCOMOTIVES.			COACHING STOCK.			STOCK OTHER THAN COACHING.		
Trans-Australian	68	..	68	49	..	49	734	..	734
Central Australia	..	24	24	..	17	17	..	307	307
North Australia	..	13	13	..	12	12	..	312	312
Total ..	68	37	105	49	29	78	734	619	1,353

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

14. *Employees.*—(i) *General.* The following table shows the number of employees on the Federal railways at 30th June in each year from 1924 to 1928 inclusive, classified according to salaried and wages staffs :—

**RAILWAYS, FEDERAL.—EMPLOYEES, 1924 TO 1928.**

Railway.	30th June—									
	1924.		1925.		1926.		1927.		1928.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
Trans-Australian	No. 162	No. 761	No. 173	No. 906	} 218	No. 870	No. 132	No. 811	No. 126	No. 756
Central Australia ..	(a) 14	(a) 107	(a) 17	(a) 147		345	66	523	69	492
North Australia ..	..	..	..	..		184	29	648	24	320
Federal Capital Territory (b) ..	..	..	..	..	..	..	..	..	..	..
Total ..	176	868	190	1,053	218	1,399	227	1,082	219	1,563

(a) Worked by South Australian Government Railways.

(b) Worked by New South Wales Government Railways.

Of the 219 salaried staff employed, 20 were engaged in the Construction Branch (2 on the Trans-Australian Line, 9 on the Central Australia Line, and 9 on the North Australia Line), the corresponding particulars for the wages staff being :—Trans-Australian Line 82, Central Australia Line 183, and North Australia Line 223, a total of 488 persons.

(ii) *Average Employed throughout Year.* The average number of employees throughout the year 1927–28 was 228 salaried staff (29 of whom were on construction work) and 1,708 wages staff (Construction, 629).

15. *Accidents.*—(i) *Classification.* The table hereunder furnishes a classification of accidents on the Federal railways during the year 1927–28 :—

**RAILWAYS, FEDERAL.—ACCIDENTS, 1927–28.**

Classification.	Trans-Australian.		Central Australia.		Federal Capital Territory.		North Australia.		All Federal Railways.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Train Accidents—										
Passengers .. ..	..	..	..	..	..	..	..	2	..	2
Employees .. ..	1	..	..	1	..	..	1	..	2	1
Accidents on line (other than train accidents)—										
Passengers .. ..	..	..	..	1	..	..	..	7	1	1
Employees .. ..	1	1	..	2	..	..	..	..	1	10
Other Persons ..	..	..	..	..	..	..	1	..	1	..
Shunting Accidents—										
Passengers .. ..	..	..	..	1	..	..	..	..	..	..
Employees .. ..	1	2	..	1	..	1	..	..	1	4
Other Persons ..	..	..	..	..	..	..	..	..	..	..
Employees proceeding to or from duty within the Railway boundary ..	..	..	..	..	..	..	..	..	..	..
Persons killed or injured at crossings .. ..	..	..	1	2	..	..	..	..	1	2
Trespassers .. ..	..	..	1	..	..	..	..	..	1	..
Miscellaneous .. ..	..	..	..	..	..	..	..	..	..	..
Total .. ..	3	3	2	7	..	1	2	9	7	20

(ii) *Particulars for Quinquennium 1924-28.* The following table shows the number of accidents in each of the years 1924 to 1928 :—

#### RAILWAYS, FEDERAL.—ACCIDENTS, 1924 TO 1928.

Railway.	Number of Persons.									
	Killed.					Injured.				
	1924.	1925.	1926.	1927.	1928.	1924.	1925.	1926.	1927.	1928.
Trans - Australian	1	..	..	..	3	9	6	6	12	3
Central Australia	..	2	1	1	2	7	3	18	5	7
Federal Capital Territory	..	..	..	1	..	..	..	..	..	1
North Australia ..	1	..	..	..	2	1	4	..	5	9
Total ..	2	2	1	2	7	17	13	24	22	20

### § 3. State Railways.

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

2. *Mileage Open, 1924 to 1928.*—(i) *General.* The following table shows the length of State railways open for traffic on the 30th June in the years 1924 to 1928 :—

#### RAILWAYS, STATE.—MILEAGE OPEN FOR TRAFFIC, 1924 TO 1928.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1924 .. ..	5,523	4,434	6,040	2,452	3,629	673	22,751
1925 .. ..	5,656	4,483	6,114	2,452	3,733	673	23,111
1926 .. ..	5,742	4,627	6,240	2,499	3,864	673	23,645
1927 .. ..	5,750	4,634	6,302	2,528	3,918	658	23,790
1928 .. ..	5,867	4,697	6,345	2,527	3,977	658	24,071

A graph indicating the mileage open in Australia at the end of each of the years 1870 to 1928 accompanies this chapter.

The appended statement shows the actual mileage opened for traffic in the year 1928, also the annual average increase in mileage opened since 1918 in each State :—

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

Mileage.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
Mileage opened during 1927-28 .. ..	116.92	62.53	43.18	-0.59(a)	58.57	..	280.61
Average annual mileage increase for 10 years to 30th June, 1928 ..	118.77	54.21	104.96	28.49	48.55	7.02	362.00

(a) Due to adjustments caused by the conversion of the Western System to 5ft. 3 in. gauge. No new lines were opened during the year.

(ii) *New South Wales.* During the year ended 30th June, 1928, the new line from Ivanhoe to Menindee (116.81 miles) was opened for traffic, and alterations to the track between Strathfield and Hornsby increased the mileage of that line by 9 chains, making a total increase for the year of 116.92 miles. The opening of the line from Ivanhoe to Menindee on 7th November, 1927, provides for direct communication by rail between Sydney and Broken Hill.

(iii) *Victoria.* During the year ended 30th June, 1928, the following new lines were opened for traffic, viz. :—Marnoo to Wallaloo (6.40 miles) ; Bowser to Peechelba (12.32 miles) ; Murrabit to Stony Crossing (38.59 miles) ; and Fawknor to Somerton (re-opened) (5.22 miles) ; making a total increase for the year of 62.53 miles.

(iv) *Queenstand.* During 1927–28, 43.18 miles of new lines were opened for traffic, viz. :—Hannaford to Meandarra (10.97 miles) ; Morella to Chorregon (28.69 miles) ; and Barrimoon to Kalpowar (3.52 miles).

(v) *South Australia.* No new lines were opened during the year.

(vi) *Western Australia.* The following new mileage was opened for traffic during the year :—Norseman to Salmon Gums (58.57 miles).

(vii) *Tasmania.* No new extensions were opened during the year.

**3. Length and Gauge of Railway Systems in each State.**—In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions or systems. A summary showing concisely the gauge and length of the main and branch lines included in each division or system in the different States for the year ended 30th June, 1928, is given in the Transport and Communication Bulletin No. 20 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 1924 to 1928 inclusive :—

**RAILWAYS, STATE.—MILEAGE WORKED AND MILES RUN, 1924 TO 1928.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>AVERAGE MILEAGE WORKED</b>							
1924 ..	5,460	4,369	5,960	2,416	3,593	668	22,466
1925 ..	5,571	4,448	6,078	2,452	3,669	673	22,891
1926 ..	5,722	4,526	6,145	2,491	3,837	673	23,394
1927 ..	5,747	4,627	6,259	2,523	3,906	658	23,720
1928 ..	5,826	4,661	6,340	2,528	3,971	658	23,984
<b>TRAIN-MILES RUN.</b>							
1924 ..	23,755,897	17,244,507	11,647,077	6,791,620	4,839,285	1,416,216	65,694,602
1925 (a) ..	23,304,916	17,482,006	12,107,995	6,653,248	4,843,304	1,358,980	65,750,449
1926 (a) ..	24,624,995	17,575,547	12,866,323	6,846,149	4,862,505	1,342,475	68,117,994
1927 (a) ..	26,325,847	18,030,749	11,905,663	6,959,734	5,273,894	1,303,023	69,798,910
1928 (a) ..	26,896,580	17,694,928	11,655,122	6,503,474	5,729,735	1,416,741	69,896,580

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

The particulars of train-miles run given in the foregoing table are not strictly comparable over the quinquennium owing to the fact that "assistant" and "light" mileages have been excluded for the years 1924–25 to 1927–28.

5. *Lines under Construction, and Lines Authorized, 1928.*—(i) *General.* The following statement gives particulars up to the 30th June, 1928, 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, 1928.**

Particulars.	N.S.W.	Vic. (a)	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction .. ..	277.24	120.00	(b)197.00	..	152.25	..	746.49
Mileage authorized but not commenced ..	422.28	37.50	1,165.00	26.25	459.50	..	2,110.53

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

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

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

(a) *New South Wales.* The total mileage under construction was 277.24 miles, consisting of the following lines :—Booyong to Ballina (13.42 miles); Uranquinty towards Moon's Siding (28.33 miles); Ungarie to Naradhan (38.09 miles); Kyogle to Richmond Gap (26.66 miles); Regent's Park to Bankstown (2.35 miles); Moss Vale to Port Kembla (38.08 miles); Grafton to South Grafton (1.79 miles); Camurra to Boggabilla (73.73 miles); Wyalong towards Condobolin (33.40 miles); Tempe to East Hills (10.30 miles); and City and Suburban Railway (11.09 miles).

(b) *Victoria.* In this State 51.75 miles of 5 ft. 3 in. gauge lines are being constructed, viz. :—South Kensington to West Footscray (2.50 miles); Albion to Broadmeadows (8.50 miles); Darling to Glen Waverley (5.75 miles); and Nowingi to Millewa South (35 miles). Under the provisions of the Border Railways Act 1922 (Vic. 3194) the following lines are under construction in New South Wales territory viz. :—Euston to Letta (30.25 miles); and Yarrawonga to Oaklands (38 miles). On completion these lines which are of 5 ft. 3 in. gauge will be taken over and operated by the Victorian Railways Commissioners.

(c) *Queensland.* In previous issues of the Year Book details were given of the scheme of railway construction under the provisions of the North Coast Railway Act 1910 (see Year Book No. 15, p. 551). On the 30th June, 1928, the following lines, of an aggregate length of 197 miles, were under construction :—Southern Division—4 ft. 8½ in. gauge—South Richmond to Richmond Gap (68 miles); 3 ft. 6 in. gauge—Mulgeldie to Monto (8 miles); Central Division—Kalpowar to Monto (26 miles); and Chorregon to Winton (41 miles); Northern Division—Duchess to Mount Isa (54 miles). The following lines are partially constructed, but work thereon is temporarily suspended :—Wallaville to Kalliwa Creek (18 miles); Yaraka to Powell's Creek (27 miles); Dajarra to Moonah Creek (41 miles); Thangool to Monto (63 miles); Meandarra towards Surat (14 miles); and Winton to 37-Mile (37 miles); a total of 200 miles.

(d) *South Australia.* At 30th June, 1928, no railway construction work was in progress.

(e) *Western Australia.* The following lines were in course of construction by the Public Works Department on the 30th June, 1928 :—Amery northward (67 miles); Lake Brown to Bullfinch (50.25 miles); and Albany to Denmark Railway Extension (35 miles); a total of 152.25 miles.

(f) *Tasmania.* At 30th June, 1928, no railway construction work was in progress.

(iii) *Lines Authorized for Construction.* (a) *New South Wales.* At the 30th June, 1928, the following lines had been authorized for construction but not commenced :—Gilgandra to Collie (21.51 miles); Jerilderie towards Deniliquin (25.00 miles); Rand

to Bull Plain (27.55 miles); Canowindra to Gregra (33.87 miles); St. Leonards to Eastwood (9.07 miles); Sandy Hollow via Gulgong to Maryvale (146.5 miles); Inverell to Ashford (32 miles); Guyra to Dorrigo (89 miles); and Casino to Bouldo (37.78 miles); a total distance of 422.28 miles.

(b) *Victoria*. The following lines were authorized, but construction had not been commenced up to the end of June, 1928:—5 ft. 3 in. gauge: La La Siding to Big Pat's Creek (2.50 miles); Casterton to Nangeela (9 miles); and Orbost to Brodribb (6 miles); Under the Border Railways Act 1922, the following line has been authorized for construction in New South Wales Territory:—Extension from Mildura or vicinity (Victoria) to 20 miles north (New South Wales); an aggregate distance of 37.50 miles.

(c) *Queensland*. In addition to the new lines upon which work has been commenced, Parliament has authorized the construction of the following parts of the Great Western Railway—Section A, from Quilpie to Eromanga (120 miles); Section B, from Powell's Creek (224 miles); Section C, from 37-Mile to Springvale (324 miles); and Section D, from Moonah Creek (216 miles). The following lines were also authorized for construction Inglewood to Texas and Silverspur (44 miles); Mount Edwards to Maryvale (28 miles); Lanefield to Rosevale (17 miles); Gatton to Mount Sylvia (11 miles); Wandoan to Taroom (42 miles); Dirranbandi extension (52 miles); Yarraman to Nanango (16 miles); Brooloo to Kenilworth (10 miles); Dobbyn to Myally Creek (50 miles); and Pearamon towards Boongee (11 miles); a total of 1,165 miles.

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

(e) *Western Australia*. The following lines were authorized for construction up to the 30th June, 1928:—Yarramongy eastwards (85 miles); Brookton to Dale River (27 miles); Boyup Brook to Cranbrook (95 miles); Manjimup to Mount Barker (107 miles); Bridgetown to Jarnadup Extension (28 miles); Leighton to Robb's Jetty (4.50 miles); and Meekatharra to Wiluna (113 miles); a total distance of 459.50 miles.

(f) *Tasmania*. There were no new railways authorized on which work had not been commenced at 30th June, 1928.

6. *Cost of Construction and Equipment*.—(i) *General*. The total cost of construction and equipment of the State railways as distinct from those owned by the Commonwealth Government at the 30th June, 1928, amounted to £298,693,011, representing an average cost of £47.62 per head of population. If the cost of railways owned by the Commonwealth Government is included, the total capital cost (£311,131,906) is equivalent to an amount of £49.51 per head of the population of the Commonwealth, while the total mileage open (25,803.99 miles) per 1,000 of population is 4.11. 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, 1928.

State.	Length of Line Open (Route).	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.	Mileage per 1,000 of Population at 30th June, 1928.
	Miles.	£	£	£	Miles.
New South Wales (a) ..	5,866.96	116,221,374	19,809	47.96	2.42
Victoria .. .. .	4,696.75	72,282,201	15,390	41.32	2.68
Queensland .. ..	6,344.75	56,281,445	8,871	61.73	6.96
South Australia (a) ..	2,527.21	26,021,454	10,297	45.04	4.37
Western Australia (a) ..	3,976.63	21,403,256	5,382	53.55	9.95
Tasmania .. .. .	658.25	6,483,281	9,849	30.81	3.13
All States .. .. .	24,070.55	298,693,011	12,409	47.62	3.84

(a) Exclusive of Federal railways.

The lowest average cost (£5,382) per mile open is in Western Australia, and the highest (£19,809) in New South Wales, as compared with an average of £12,409 for all States. There were few costly engineering difficulties in Western Australia, and the fact that contractors were permitted to carry traffic during the term of their contracts considerably reduced expenditure, particularly in respect of all goldfield contracts.

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

(ii) *Capital Cost, All Lines. (a) Total.* The increase in the total capital cost of construction and equipment of Government railways for each year from 1924 to 1928 is shown in the following table :—

**RAILWAYS, STATE.—CAPITAL COST OF LINES OPEN, 1924 TO 1928.**

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

	£	£	£	£	£	£	£
1924 ..	91,792,167	65,880,792	47,367,439	21,410,602	18,967,443	6,374,784	251,793,227
1925 ..	98,060,216	67,136,069	49,453,595	23,637,283	19,643,517	6,416,194	264,346,374
1926 ..	103,674,668	68,888,145	51,555,649	25,529,866	20,327,456	6,450,185	276,425,969
1927 ..	111,226,149	70,298,673	54,496,012	28,120,046	20,855,604	6,486,109	291,482,593
1928 ..	116,221,374	72,282,201	56,281,445	26,021,454	21,403,256	6,483,281	298,693,011

**COST PER MILE OPEN.**

1924 ..	16,621	14,856	7,842	8,733	5,227	9,474	11,067
1925 ..	17,338	14,974	8,088	9,641	5,263	9,535	11,435
1926 ..	18,056	14,887	8,262	10,216	5,260	9,586	11,690
1927 ..	19,344	15,169	8,648	11,124	5,322	9,854	12,252
1928 ..	19,809	15,390	8,871	10,297	5,382	9,849	12,409

(b) *From Consolidated Revenue.* The following table shows the amounts provided from Consolidated Revenue for construction and equipment to 30th June, 1928 :—

**RAILWAYS, STATE.—EXPENDITURE FROM CONSOLIDATED REVENUE FOR CONSTRUCTION AND EQUIPMENT TO 30th JUNE, 1928.**

To 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
1928 ..	£ 659,930	£ 4,056,929	£ ..	£ 621,421	£ 642,034	£ 16,935	£ 5,997,249

(iii) *Loan Expenditure.* The subjoined table shows the total loan expenditure on Government railways (including lines both open and unopen) in each State, except Tasmania, and on Government railways and tramways in the latter State for the years 1924 to 1928 :—

## RAILWAYS, STATE.—LOAN EXPENDITURE, 1924 TO 1928.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	All States.
	£	£	£	£	£	£	£
1924 ..	2,914,722	1,395,282	2,318,205	779,441	561,988	250,514	8,220,152
1925 ..	4,246,963	1,483,720	1,741,805	2,151,329	534,103	23,638	10,186,558
1926 ..	6,060,259	1,489,285	2,826,188	2,764,511	642,854	17,255	13,800,352
1927 ..	6,229,347	1,821,005	2,470,083	2,460,555	642,225	29,824	13,653,039
1928 ..	8,172,114	1,651,884	1,646,982	555,798	806,895	37,196	12,870,869

(a) Including tramways.

The following statement shows the total loan expenditure on railways to the 30th June, 1928 :—

## RAILWAYS, STATE.—TOTAL LOAN EXPENDITURE TO 30th JUNE, 1928.

State ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. a	All States.
	£	£	£	£	£	£	£
Expenditure	123,685,412	71,107,724	58,992,160	31,113,837	21,617,639	6,959,602	313,476,374

(a) Including tramways.

7. Gross Revenue.—(i) *General.* The total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run during each financial year from 1924 to 1928 inclusive were as follows :—

## RAILWAYS, STATE.—GROSS REVENUE, 1924 TO 1928.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>TOTAL GROSS REVENUE.</b>							
	£	£	£	£	£	£	£
1924 ..	15,616,577	11,958,635	5,714,036	3,929,428	3,227,371	585,468	41,031,515
1925 ..	16,769,452	12,759,197	7,109,210	4,012,736	3,359,501	548,256	44,558,352
1926 ..	16,939,032	12,671,061	7,437,090	4,237,718	3,337,292	545,191	45,167,384
1927 ..	18,906,543	13,652,434	7,325,677	4,002,133	3,607,989	539,352	48,094,128
1928 ..	19,029,512	12,821,059	7,381,532	3,941,276	3,858,051	564,743	47,586,173

## GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£
1924 ..	2,860	2,737	959	1,627	898	877	1,826
1925 ..	3,010	2,889	1,170	1,637	916	815	1,947
1926 ..	2,960	2,798	1,210	1,701	870	810	1,930
1927 ..	3,290	2,951	1,170	1,610	924	819	2,028
1928 ..	3,266	2,751	1,164	1,559	972	843	1,984

## GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1924 ..	173.65	172.95	125.94	152.43	167.09	101.35	160.71
1925 ..	172.70	175.16	140.92	144.75	166.47	96.82	162.64
1926 ..	165.09	173.03	138.73	148.56	164.72	97.47	159.14
1927 ..	172.36	181.72	147.67	140.08	164.19	99.34	165.37
1928 ..	169.80	173.89	152.00	145.44	161.60	93.98	163.39

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



(ii) *Coaching, Goods, and Miscellaneous Receipts.* (a) *Totals.* The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock; and (c) rents and miscellaneous items. The subjoined table shows the gross revenue for 1924 to 1928, 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, 1924 TO 1928.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>COACHING TRAFFIC RECEIPTS.</b>							
	£	£	£	£	£	£	£
1924 ..	6,797,888	5,914,559	2,092,693	1,286,298	996,776	253,386	17,341,600
1925 ..	6,942,093	5,981,437	2,482,026	1,317,102	971,323	221,668	17,915,649
1926 ..	7,101,229	6,070,555	2,454,689	1,277,463	969,160	206,728	18,079,824
1927 ..	7,473,545	6,304,382	2,516,476	1,221,106	980,762	201,048	18,697,319
1928 ..	7,851,512	6,015,383	2,410,293	1,120,094	1,028,656	199,865	18,625,803

**GOODS AND LIVE STOCK TRAFFIC RECEIPTS.**

1924 ..	8,096,274	5,204,526	3,487,987	2,558,706	2,050,707	318,668	21,716,868
1925 ..	9,010,929	5,775,522	4,477,985	2,607,628	2,198,322	312,706	24,383,092
1926 ..	8,941,123	5,565,451	4,817,222	2,578,700	2,174,895	320,748	24,398,139
1927 ..	10,490,593	6,344,096	4,629,103	2,662,866	2,413,852	319,276	26,859,786
1928 ..	10,228,586	5,763,701	4,824,885	2,616,503	2,619,816	335,431	26,388,922

**MISCELLANEOUS RECEIPTS.**

1924 ..	722,415	839,550	133,356	84,424	179,888	13,414	1,973,047
1925 ..	816,430	1,002,238	149,199	88,006	189,856	13,882	2,259,611
1926 ..	896,680	1,035,055	165,179	381,555	193,237	17,715	2,689,421
1927 ..	942,405	1,003,956	180,098	178,161	213,375	19,028	2,537,023
1928 ..	949,414	1,041,975	146,354	204,679	209,579	19,447	2,571,448

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

(b) *Percentages.* The following table shows for the two years 1926-27 and 1927-28 the percentage which each class of receipts bears to the total gross revenue:—

**RAILWAYS, STATE.—PERCENTAGES OF RECEIPTS, 1927 AND 1928.**

State.	1927.			1928.		
	Coaching.	Goods and Live Stock.	Miscellaneous.	Coaching.	Goods and Live Stock.	Miscellaneous.
	%	%	%	%	%	%
New South Wales ..	39.53	55.49	4.98	41.26	53.75	4.99
Victoria ..	46.18	46.47	7.35	46.92	44.95	8.13
Queensland ..	34.35	63.19	2.46	32.65	65.37	1.98
South Australia ..	30.06	65.55	4.39	28.42	66.39	5.19
Western Australia ..	27.18	66.90	5.92	26.66	67.91	5.43
Tasmania ..	37.27	59.20	3.53	36.03	60.47	3.50
All States ..	38.88	55.85	5.27	39.14	55.46	5.40

(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, 1928 :—

**RAILWAYS STATE.—COACHING TRAFFIC RECEIPTS, AVERAGES, 1928.**

State.	Number of Passenger-Train-Miles.	Coaching Traffic Receipts.		
		Gross.	Per Average Mile Worked.	Per Passenger-Train-Mile.
	No.	£	£	d.
New South Wales .. ..	16,074,548	7,851,512	1,348	117.23
Victoria .. ..	11,547,508	6,015,383	1,290	125.02
Queensland .. ..	4,262,219	2,410,293	380	135.72
South Australia .. ..	3,758,776	1,120,094	443	71.52
Western Australia .. ..	2,130,738	1,028,656	259	115.87
Tasmania <sup>a</sup> .. ..	543,874	199,865	304	88.20
All States .. ..	38,317,663	18,625,803	777	116.66

(d) *Averages for Goods and Live Stock Traffic.* The gross receipts from goods and live stock traffic per average mile worked, per goods-train-mile, and per ton carried, for the year ended the 30th June, 1928, are given below :—

**RAILWAYS, STATE.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS, AVERAGES, 1928.**

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 .. ..	10,822,032	15,433,083	10,228,586	1,756	226.84	159.06
Victoria .. ..	6,147,420	8,117,961	5,763,701	1,236	225.02	170.40
Queensland .. ..	7,392,903	4,670,447	4,824,885	761	156.63	247.94
South Australia .. ..	2,744,698	3,401,901	2,616,503	1,035	228.79	184.59
Western Australia .. ..	3,598,997	3,697,648	2,619,816	660	174.70	170.04
Tasmania .. ..	872,867	715,387	335,431	510	92.23	112.53
All States .. ..	31,578,917	36,036,427	26,388,922	1,100	200.56	175.75

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

The following table shows the total annual expenditure and the percentage thereof on gross revenue in each State for the years 1924 to 1928 :—

**RAILWAYS, STATE.—WORKING EXPENSES, 1924 TO 1928.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>TOTAL WORKING EXPENSES.</b>							
	£	£	£	£	£	£	£
1924 .. ..	10,917,491	8,718,394	4,990,749	2,901,298	2,297,980	552,877	30,378,789
1925 .. ..	11,939,686	9,429,728	5,425,167	2,935,755	2,355,087	531,590	32,617,013
1926 .. ..	12,519,993	9,548,147	6,459,792	2,981,130	2,509,049	504,038	38,622,149
1927 .. ..	13,795,853	10,193,581	6,495,322	2,797,751	2,685,693	551,192	39,519,392
1928 .. ..	14,756,327	9,812,749	6,106,140	3,660,740	2,910,811	573,885	37,820,652

(a) See (ii) below.

**PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.**

	%	%	%	%	%	%	%
1924 .. ..	69.91	72.90	87.34	73.84	71.20	94.43	74.03
1925 .. ..	71.20	73.90	76.31	73.16	70.10	96.96	73.20
1926 .. ..	73.91	75.35	86.86	167.10	75.18	92.45	85.51
1927 .. ..	72.97	74.66	88.67	142.73	74.44	102.20	82.17
1928 .. ..	77.54	76.54	82.72	93.20	75.45	103.45	79.48

The variation in the percentage of working expenses on the gross revenue in each State for the years 1865 to 1927 is illustrated in the graph which accompanies this chapter.

(ii) *Special Expenditure.* The large increases in the working expenses in South Australia during the years 1925–26 and 1926–27 are due to amounts of £3,982,314 and £1,962,079 on account of accumulated and deferred charges being debited against the revenues for those years. This expenditure has been shown in this way in deference to the wishes of the South Australian railway authorities. Eliminating these amounts, the percentage of working expenses on gross revenue for South Australia during 1925–26 and 1926–27 would have been 73.12 per cent. and 94.43 per cent., and for all States 76.70 per cent. and 78.09 per cent., respectively.

(iii) *Averages.* The next table shows the working expenses per average mile worked and per train-mile run in each State for the years 1924 to 1928 :—

**RAILWAYS, STATE.—WORKING EXPENSES, AVERAGES, 1924 TO 1928.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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**WORKING EXPENSES PER AVERAGE MILE WORKED.**

	£	£	£	£	£	£	£
1924 .. ..	1,999	1,995	837	1,201	640	828	1,352
1925 .. ..	2,143	2,120	893	1,197	642	799	1,425
1926 .. ..	2,188	2,108	1,051	2,843	654	749	1,651
1927 .. ..	2,401	2,203	1,038	2,298	688	837	1,666
1928 .. ..	2,533	2,105	963	1,448	733	872	1,577

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

	d.	d.	d.	d.	d.	d.	d.
1924 .. ..	121.40	126.08	110.00	112.55	118.97	95.71	118.99
1925 .. ..	122.96	129.45	107.54	105.90	116.70	93.87	119.05
1926 .. ..	122.02	130.38	120.50	248.24	123.84	90.11	136.08
1927 .. ..	125.77	135.68	130.93	199.93	122.22	101.52	135.89
1928 .. ..	131.67	133.09	125.74	135.09	121.92	97.22	129.86

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

(iv) *Distribution.* The subjoined table shows the distribution of working expenses, under four chief heads of expenditure, for the years 1924 to 1928 :—

## RAILWAYS, STATE.—DISTRIBUTION OF WORKING EXPENSES, 1924 TO 1928.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>MAINTENANCE.</b>							
	£	£	£	£	£	£	£
1924 .. ..	1,865,090	1,861,887	1,197,992	545,987	543,387	152,359	6,166,708
1925 .. ..	2,176,435	1,963,960	1,280,190	501,800	527,493	144,612	6,594,490
1926 .. ..	2,001,724	1,928,597	1,513,588	a2,407,266	596,046	134,835	8,582,056
1927 .. ..	2,154,931	2,276,601	1,576,325	a1,027,057	636,466	134,291	7,805,671
1928 .. ..	2,596,755	2,109,404	1,589,177	584,350	731,860	140,989	7,752,535

## LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.

1924 .. ..	5,360,663	3,219,267	2,214,001	1,548,799	1,092,580	235,743	13,671,053
1925 .. ..	5,772,631	3,501,911	2,459,370	1,560,923	1,124,157	223,302	14,642,294
1926 .. ..	6,107,302	3,592,490	2,973,033	a3,611,130	1,157,230	218,326	17,659,511
1927 .. ..	6,823,914	3,746,921	2,924,903	a3,653,050	1,244,941	222,477	18,616,206
1928 .. ..	7,158,605	3,659,881	2,657,596	2,002,377	1,306,504	233,670	17,018,633

## TRAFFIC EXPENSES.

1924 .. ..	2,939,236	3,081,776	1,487,334	738,845	599,678	122,793	8,969,662
1925 .. ..	3,121,001	3,228,961	1,593,347	792,762	639,193	122,374	9,497,638
1926 .. ..	3,391,092	2,701,124	1,859,375	a868,171	685,898	117,246	9,622,906
1927 .. ..	3,733,225	2,822,524	1,844,066	a898,459	728,466	118,987	10,145,727
1928 .. ..	3,877,254	2,673,518	1,709,518	823,189	773,806	124,845	9,982,130

## OTHER CHARGES.

1924 .. ..	752,496	555,464	91,422	67,667	62,335	41,982	1,571,366
1925 .. ..	869,619	734,896	92,260	80,270	64,244	41,302	1,882,591
1926 .. ..	1,019,875	1,325,936	113,796	a194,563	69,875	33,631	2,757,676
1927 .. ..	1,083,783	1,347,535	150,023	a219,185	75,820	75,437	2,951,788
1928 .. ..	1,123,713	1,369,946	149,849	250,824	98,641	74,381	3,067,354

(a) See sub-section (ii), page 280.

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

9. Salaries and Wages.—The following table shows the total amount paid in salaries and wages, also the amount per average mile worked and per train-mile run in each State during the years 1924 to 1928 :—

## RAILWAYS, STATE.—SALARIES AND WAGES PAID AND AVERAGES, 1924 TO 1928.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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## TOTAL SALARIES AND WAGES PAID.

	£	£	£	£	£	£	£
1924 .. ..	9,397,574	6,651,251	3,859,913	2,232,032	1,834,495	370,652	24,345,917
1925 .. ..	9,884,596	6,969,519	4,199,965	2,689,517	1,909,995	364,771	26,018,363
1926 .. ..	11,192,851	7,273,485	5,011,678	3,456,996	2,073,207	346,832	29,355,049
1927 .. ..	12,509,021	7,792,554	5,062,347	3,596,092	2,279,878	336,287	31,576,179
1928 .. ..	12,693,706	7,725,188	4,751,885	2,915,912	2,442,997	345,803	30,875,491

## SALARIES AND WAGES PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£
1924 .. ..	1,721	1,522	648	924	511	555	1,084
1925 .. ..	1,774	1,567	691	1,097	521	542	1,137
1926 .. ..	1,956	1,607	816	1,388	540	515	1,255
1927 .. ..	2,177	1,684	809	1,425	584	511	1,331
1928 .. ..	2,179	1,657	750	1,154	615	525	1,287

## SALARIES AND WAGES PER TRAIN MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1924 .. ..	104.50	98.19	85.07	86.58	94.97	64.16	95.35
1925 .. ..	101.79	95.68	83.25	97.01	94.64	64.41	94.97
1926 .. ..	109.08	99.32	93.48	121.18	102.32	62.00	103.42
1927 .. ..	114.03	103.72	102.04	124.00	103.75	61.93	108.57
1928 .. ..	113.26	104.77	97.84	107.60	102.32	58.58	106.01

10. *Net Revenue.*—(i) *Net Revenue and Percentage on Capital Cost.* The following table shows the net sums available to meet interest charges, also the percentage of such sums upon the capital cost of construction and equipment of lines open for traffic in each State for the years 1924 to 1928 :—

**RAILWAYS, STATE.—NET REVENUE AND PERCENTAGE THEREOF ON CAPITAL COST OF LINES OPEN, 1924 TO 1928.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>NET REVENUE.</b>							
	£	£	£	£	£	£	£
1924 .. ..	4,699,086	3,240,241	723,287	1,023,130	929,391	35,283	10,655,418
1925 .. ..	4,829,766	3,329,469	1,684,043	1,076,981	1,004,414	16,666	11,941,339
1926 .. ..	4,419,039	3,122,914	977,298	a-2,843,412	828,243	41,153	6,545,235
1927 .. ..	5,110,690	3,458,853	830,355	a-1,735,618	922,296	-11,840	8,574,736
1928 .. ..	4,273,185	3,008,310	1,275,392	280,536	947,240	-19,142	9,765,521
<b>PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.</b>							
	%	%	%	%	%	%	%
1924 .. ..	5.12	4.92	1.53	4.80	4.90	0.51	4.23
1925 .. ..	4.93	4.96	3.41	4.56	5.11	0.26	4.51
1926 .. ..	4.26	4.54	1.90	a-11.14	4.07	0.63	2.37
1927 .. ..	4.59	4.92	1.52	a-6.17	4.42	-0.18	2.94
1928 .. ..	3.68	4.16	2.27	1.08	4.43	-0.29	3.27

(a) See sub-section (ii), page 280.

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

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

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

**RAILWAYS, STATE.—NET REVENUE, AVERAGES, 1924 TO 1928.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>NET REVENUE PER AVERAGE MILE WORKED.</b>							
	£	£	£	£	£	£	£
1924 .. ..	861	742	122	426	258	49	474
1925 .. ..	867	749	277	429	273	25	522
1926 .. ..	772	690	159	a-1,142	216	61	279
1927 .. ..	889	748	133	a-688	236	-18	361
1928 .. ..	733	645	201	111	239	-29	407
<b>NET REVENUE PER TRAIN-MILE RUN.</b>							
	d.	d.	d.	d.	d.	d.	d.
1924 .. ..	52.25	46.87	15.94	39.88	48.12	5.64	41.72
1925 .. ..	49.74	45.71	33.38	38.85	49.77	2.95	43.58
1926 .. ..	43.07	42.65	18.23	a-99.68	40.88	7.36	23.06
1927 .. ..	46.59	46.04	16.74	a-59.85	41.97	-2.18	29.48
1928 .. ..	38.13	40.80	26.26	10.35	39.68	-3.24	33.53

(a) See sub-section (ii), page 280.

The net revenue per average mile worked and per train-mile run showed decreases in all States with the exception of Queensland and South Australia. Here again, however, the results are prejudicially affected by the loading of the working expenses in South Australia during the years 1925-26 and 1926-27 (see page 280). But for this, the net revenue for 1926-27 per mile worked would have been £90 in South Australia, and £444 for all States, while per train-mile it would have been, respectively, 7.81d. and 36.23d.

11. **Interest.** The amount of interest payable on expenditure from loans on the construction and equipment of the railways, the amount of interest per average mile worked and per train-mile run in each State during the years ended 30th June 1924 to 1928 were as follows:—

**RAILWAYS, STATE.—AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE, 1924 TO 1928.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>AMOUNT OF INTEREST PAYABLE.</b>							
	£	£	£	£	£	£	£
1924 .. .. .	4,693,417	3,001,370	2,136,187	977,376	787,221	263,157	11,858,728
1925 .. .. .	4,796,829	3,085,648	2,419,503	1,018,117	813,849	279,832	12,413,778
1926 .. .. .	5,249,710	3,077,905	2,564,181	1,195,108	860,225	283,799	13,230,928
1927 .. .. .	5,562,308	3,271,374	2,720,717	1,332,515	887,740	285,255	14,059,909
1928 .. .. .	5,882,432	3,324,270	2,827,223	1,271,686	920,569	284,076	14,510,276
<b>INTEREST PER AVERAGE MILE WORKED.</b>							
	£	£	£	£	£	£	£
1924 .. .. .	860	687	358	405	219	394	528
1925 .. .. .	861	694	398	415	222	416	542
1926 .. .. .	917	680	417	480	224	422	566
1927 .. .. .	968	707	435	528	227	433	593
1928 .. .. .	1,010	713	446	503	232	432	605
<b>INTEREST PER TRAIN-MILE RUN.</b>							
	d.	d.	d.	d.	d.	d.	d.
1924 .. .. .	52.20	43.41	47.08	37.91	40.75	45.55	46.44
1925 .. .. .	49.39	42.36	47.95	36.72	40.32	49.42	45.31
1926 .. .. .	51.16	42.03	47.83	41.89	42.45	45.89	46.61
1927 .. .. .	50.70	43.54	54.84	45.95	40.39	52.53	48.34
1928 .. .. .	52.48	45.08	58.21	46.92	38.55	48.12	49.82

Interest charges in 1927-28, viz., £14,510,276, show an increase of £2,651,548 over the amount payable in 1923-24. The interest payable on the cost of construction and equipment, exclusive of expenditure from Consolidated Revenue (£5,997,249) for that purpose, was at the rate of 4.96 per cent. in 1927-28. If the abnormal charges to working expenses in South Australia be eliminated, the loss in that State for 1926-27 would be 3.93 per cent., and for all States, 1.21 per cent.

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

**RAILWAYS, STATE.—PROFIT OR LOSS, 1924 TO 1928.**

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.</b>							
	£	£	£	£	£	£	£
1924 .. .. .	+ 3,669	+ 238,871	-1,412,900	+ 50,754	+ 142,170	-227,574	-1,203,310
1925 .. .. .	+ 32,937	+ 243,821	- 735,460	+ 58,864	+ 190,565	-263,166	-472,439
1926 .. .. .	- 890,671	+ 45,009	-1,586,883	a-4,038,520	- 31,982	-242,646	-6,685,693
1927 .. .. .	- 451,618	+ 187,479	-1,890,362	a-3,068,133	+ 34,556	-297,095	-5,485,173
1928 .. .. .	-1,609,267	-315,960	-1,551,831	- 991,150	+ 26,671	-303,218	-4,744,755
<b>PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.</b>							
	%	%	%	%	%	%	%
1924 .. .. .	+0.01	+0.36	-2.98	+0.24	+0.75	-3.57	-0.43
1925 .. .. .	+0.03	+0.36	-1.49	+0.25	+0.97	-4.10	-0.18
1926 .. .. .	-0.80	+0.06	-3.08	a-15.82	-0.16	-3.76	-2.42
1927 .. .. .	-0.41	+0.27	-3.47	a-10.91	+0.17	-4.58	-1.88
1928 .. .. .	-1.38	-0.44	-2.76	-3.81	+0.12	-4.68	-1.59

(a) See sub-section (ii), page 280.

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

The following table gives particulars for the years 1924 to 1928 :—

#### RAILWAYS, STATE.—TRAFFIC, 1924 TO 1928.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>NUMBER OF PASSENGER JOURNEYS.</b>							
1924 ..	128,101,184	167,861,864	29,535,981	25,177,938	18,133,168	2,959,887	371,770,017
1925 ..	128,532,038	166,444,142	29,657,832	25,647,487	17,196,672	2,656,018	370,134,189
1926 ..	130,725,581	168,054,308	28,384,302	25,343,319	16,457,719	2,455,824	371,421,053
1927 ..	141,615,806	169,237,648	26,812,993	23,366,760	15,737,570	2,328,970	379,099,747
1928 ..	148,046,881	164,574,870	24,800,934	19,539,347	16,032,536	2,322,410	375,316,978
<b>PER 100 OF MEAN POPULATION.</b>							
1924 ..	5,749	10,224	3,579	4,753	5,044	1,379	6,411
1925 ..	5,652	9,959	3,483	4,715	4,670	1,244	6,249
1926 ..	5,687	9,979	3,296	4,594	4,422	1,132	6,206
1927 ..	6,032	9,886	3,039	4,126	4,155	1,084	6,213
1928 ..	6,168	9,451	2,758	3,394	4,087	1,076	6,029
<b>PER AVERAGE MILE OF LINE WORKED.</b>							
1924 ..	23,461	38,417	4,957	10,422	5,047	4,433	16,548
1925 ..	23,071	37,424	4,879	10,461	4,687	3,947	16,170
1926 ..	22,845	37,111	4,619	10,213	4,289	3,650	15,876
1927 ..	24,642	36,579	4,284	9,262	4,029	3,538	15,982
1928 ..	25,412	35,307	3,912	7,730	4,037	3,528	15,649
<b>TONNAGE OF GOODS AND LIVE STOCK CARRIED.</b>							
1924 ..	15,693,127	8,309,543	4,273,926	3,565,307	3,023,299	706,961	35,572,163
1925 ..	16,208,476	8,959,556	5,083,658	3,611,313	3,284,915	690,561	37,838,479
1926 ..	15,032,811	8,728,496	5,106,386	3,562,245	3,237,496	694,194	36,361,628
1927 ..	17,224,894	9,234,923	4,315,513	3,671,686	3,438,587	730,273	38,615,876
1928 ..	15,433,083	8,117,961	4,670,447	3,401,901	3,697,648	715,387	36,036,427
<b>PER 100 OF MEAN POPULATION.</b>							
1924 ..	704	506	518	671	841	329	612
1925 ..	719	536	597	664	892	323	645
1926 ..	654	518	593	646	870	320	608
1927 ..	734	539	489	648	908	340	633
1928 ..	643	466	519	591	943	331	579
<b>PER AVERAGE MILE OF LINE WORKED.</b>							
1924 ..	2,874	1,902	717	1,476	842	1,059	1,583
1925 ..	2,909	2,014	836	1,473	895	1,026	1,652
1926 ..	2,627	1,928	831	1,430	844	1,032	1,554
1927 ..	2,997	1,996	689	1,455	880	1,109	1,628
1928 ..	2,649	1,741	737	1,346	931	1,087	1,503

(ii) *Metropolitan and Country Passenger Traffic and Revenue.* A further indication of the difference in passenger traffic conditions is obtained from a comparison of the volume of metropolitan and suburban, and country traffic in each State. This is shown below for the year 1927-28 :—

**RAILWAYS, STATE.—METROPOLITAN AND SUBURBAN, AND COUNTRY  
PASSENGER TRAFFIC AND RECEIPTS, 1927-28.**

Particulars.	Passenger Journeys.			Revenue.		
	Metropolitan and Suburban.	Country.	Total.	Metropolitan and Suburban.	Country.	Total.
	No.	No.	No.	£	£	£
N.S.W. . . . .	a 136,796,171	11,250,710	148,046,881	2,806,403	4,191,744	6,998,147
Victoria . . . . .	b 156,393,635	8,181,235	164,574,870	2,818,489	2,540,286	5,358,775
Queensland . . . . .	19,419,855	5,381,079	24,800,934	371,438	1,529,460	1,900,898
S. Australia . . . . .	c 17,895,885	1,643,462	19,539,347	307,603	619,917	927,520
W. Australia . . . . .	13,843,281	2,189,255	16,032,536	237,437	592,161	829,598
Tasmania . . . . .	(d)	(d)	2,322,410	(d)	(d)	167,234
Total . . . . .	(e)	(e)	375,316,978	(e)	(e)	16,182,172

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

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

A more detailed analysis of the passenger traffic for the years ended 30th June, 1927 and 1928, is contained in the Transport and Communication Bulletin No. 20 issued by this Bureau.

(iii) *Electrification of Suburban and Country Railways.* Electrification of the Melbourne Suburban Railways was completed in April, 1923. The scheme comprised the electrification of 157 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. Considerable progress has been made with the electrification of the Sydney Suburban System, and at 30th June, 1928, electric trains were operating on the Illawarra, Eastern Suburbs, and Hornsby—Milton's Point lines, while on 20th December, 1926, the first of the underground electric lines—from Sydney Central Station to St. James—was opened for traffic. 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.

(iv) *Goods Traffic.* (a) *Classification.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried, and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities



carried are available for all the States, and the following table shows the number of tons of various representative commodities carried, with the percentage of each class on the total for the financial year 1927-28 :—

### RAILWAYS, STATE.—CLASSIFICATION OF COMMODITIES CARRIED, 1927-28.

State.	Coal, Coke, and Shale.	Other Minerals.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
<b>TONS CARRIED.</b>								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	7,074,845	2,501,890	1,222,382	296,750	171,249	829,791	3,336,176	15,433,083
Victoria ..	482,500	1,758,760	857,017	289,449	87,874	661,216	3,981,145	8,117,961
Queensland ..	638,621	490,541	1,795,862 <sup>a</sup>	<sup>b</sup>	65,120	470,342	1,209,961	4,670,447
South Australia	310,742	790,554	578,469	177,082	36,478	167,765	1,340,811	3,401,901
Western Australia	240,011	678,812	1,012,834	80,128	25,286	103,183	1,557,394	3,697,648
Tasmania ..	285,092	<sup>c</sup>	99,559	45,722	3,230	25,538	256,246	715,387
All States ..	9,031,811	6,220,557	5,566,123	889,131	389,237	2,257,835	11,681,733	36,036,427

### PERCENTAGE OF TOTAL TONNAGE CARRIED.

	%	%	%	%	%	%	%	%
New South Wales	45.84	16.21	7.92	1.82	1.11	5.38	21.62	100.00
Victoria ..	5.94	21.07	10.56	3.57	1.08	8.14	49.04	100.00
Queensland ..	13.97	10.50	38.45 <sup>a</sup>	<sup>b</sup>	1.40	10.07	25.91	100.00
South Australia	9.14	28.24	17.00	5.21	1.07	4.93	39.41	100.00
Western Australia	6.49	18.36	27.39	2.17	0.68	2.79	42.12	100.00
Tasmania ..	39.85	<sup>c</sup>	13.92	6.39	0.45	3.57	35.82	100.00
All States ..	25.06	17.26	15.45	2.47	1.08	6.26	32.42	100.00

(a) Agricultural produce.

(b) Included with "All other Commodities."

(c) Included with coal, coke, and shale.

(b) *Revenue.* The following table shows the revenue derived from goods and live stock traffic during 1927-28 according to a classification which has been adopted by all States :—

### RAILWAYS, STATE.—GOODS, ETC., TRAFFIC—REVENUE, 1927-28.

Class.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	£	£	£	£	£	£	£
General merchandise	5,556,712	3,919,881	2,980,034	1,972,638	1,559,175	241,217	15,629,657
Wheat ..	<sup>a</sup>	338,122	<sup>a</sup>	242,604	536,511	<sup>a</sup>	1,117,237
Wool ..	754,961	234,663	459,350	76,860	93,321	4,432	1,623,587
Live stock	1,645,305	711,909	917,821	222,242	150,045	22,182	3,669,504
Minerals—							
Coal, coke, and shale	1,604,836	158,515	250,231	172,547	130,700	631,471	2,348,300
Others ..	666,772	400,611	217,449	529,612	150,064	36,129	2,000,637
Total ..	10,228,586	5,763,701	4,824,885	2,616,503	2,619,816	335,431	26,388,922

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

(d) Incomplete.

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

14. *Passenger-Mileage and Ton-Mileage.*—(i) *Passenger-Miles.* The subjoined table gives particulars of passenger-mileage in respect of the States of New South Wales, Victoria, South Australia, and Tasmania for the years 1923-24 to 1927-28.

## RAILWAYS, STATE.—SUMMARY OF "PASSENGER-MILES," 1924 TO 1928.

Year ended 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.

1924	12,385	128,101	1,721,161	6,076,988	139	13.44	0.85	11.39	315,216
1925	12,616	128,532	1,637,381	6,186,368	130	12.74	0.91	11.55	293,907
1926	14,038	130,726	1,675,091	6,311,690	119	12.81	0.90	11.59	292,732
1927	15,044	141,616	1,765,378	6,643,337	117	12.47	0.90	11.26	307,184
1928	16,036	148,047	1,809,307	6,998,147	113	12.22	0.93	11.34	310,569

## VICTORIA.

1924	11,140	167,862	1,421,771	5,330,614	128	8.47	0.90	7.62	325,391
1925	11,602	166,444	1,426,411	5,380,887	123	8.57	0.91	7.76	320,718
1926	11,768	168,054	1,460,343	5,425,804	125	8.69	0.82	7.75	322,487
1927	11,846	169,238	1,476,307	5,641,032	125	8.72	0.92	8.00	319,064
1928	11,915	164,575	1,416,970	5,358,775	119	8.61	0.91	7.81	303,985

## SOUTH AUSTRALIA.

1924	2,918	25,107	290,843	1,088,046	100	11.58	0.90	10.40	120,394
1925	3,460	25,647	302,185	1,114,558	97	11.78	0.89	10.43	123,255
1926	3,662	25,343	300,950	1,075,082	82	11.87	0.86	10.18	120,836
1927	4,002	23,367	280,082	1,005,624	70	11.99	0.86	10.33	111,022
1928	3,729	19,539	242,308	927,520	65	12.40	0.92	11.39	95,861

## TASMANIA.

1924	672	2,960	46,766	218,020	70	15.80	1.11	17.68	70,036
1925	654	2,656	45,126	187,701	69	16.99	0.99	16.96	67,061
1926	596	2,456	39,342	173,488	66	16.02	1.06	15.67	58,466
1927	575	2,329	41,432	168,837	72	17.79	0.97	17.40	62,943
1928	615	2,322	37,971	167,234	62	16.35	1.05	17.28	57,685

The differences in the number of passenger journeys given in this table and that in connexion with traffic in respect of the State of South Australia for the years 1922 to 1924 inclusive are 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.

(ii) *Ton-Miles.* Particulars regarding total "ton-miles" are given in the following table for each of the years 1923-24 to 1927-28 in respect of all States with the exception of Queensland :—

## RAILWAYS, STATE.—SUMMARY OF "TON-MILES," 1924 TO 1928.

Year ended the 30th June	Goods-Train-Mileage.	Total Tons Carried.	Total "Ton-miles."	Earnings.	Average Freight-paying Load Carried per "Train."	Average Haul per Ton.	Earnings per "Ton-mile."	Density of Traffic per Average Mile Worked.
	No. (,000 omitted.)	No. (,000 omitted.)	No. (,000 omitted.)	£	Tons.	Miles.	d.	Tons.
NEW SOUTH WALES.								
1924	11,322	15,516	1,392,390	8,096,274	163	89.74	1.37	255,005
1925	10,689	16,027	1,647,448	9,010,929	177	102.80	1.29	295,718
1926	10,587	14,809	1,509,555	8,941,123	165	101.93	1.39	263,802
1927	11,282	16,864	1,654,815	10,490,593	165	98.13	1.50	287,994
1928	10,861	15,223	1,550,375	10,228,586	158	101.84	1.56	266,408
VICTORIA.								
1924	5,939	8,310	745,301	5,204,526	154	89.69	1.68	170,588
1925	5,880	8,960	847,202	5,775,522	176	94.56	1.64	190,468
1926	5,808	8,728	776,251	5,565,451	166	88.93	1.72	171,434
1927	6,184	9,235	882,918	6,344,096	173	95.61	1.72	190,819
1928	5,780	8,118	737,856	5,763,701	164	90.89	1.87	158,304
SOUTH AUSTRALIA.								
1924	3,269	3,565	384,576	2,558,706	129	107.87	1.60	159,195
1925	3,193	3,611	393,649	2,607,628	134	109.00	1.59	160,559
1926	3,184	3,563	387,317	2,579,365	134	108.70	1.60	155,518
1927	2,957	3,672	389,443	2,662,866	141	105.66	1.65	154,451
1928	2,774	3,402	395,919	2,616,503	147	116.38	1.57	156,731
WESTERN AUSTRALIA.								
1924	2,916	3,023	252,796	2,050,707	100	83.62	1.95	70,364
1925	3,053	3,285	277,190	2,198,322	104	84.38	1.90	75,553
1926	2,976	3,237	272,611	2,174,895	106	84.20	1.91	71,048
1927	53,359	3,439	317,845	2,413,852	110	92.43	1.82	81,373
1928	53,723	3,698	357,966	2,619,816	111	96.81	1.76	90,145
TASMANIA.								
1924	744	685	30,019	300,156	40	43.83	2.39	44,955
1925	726	668	29,697	292,004	41	44.45	2.36	44,133
1926	762	669	32,000	298,078	42	47.82	2.23	47,556
1927	742	707	31,564	296,354	43	44.63	2.25	47,955
1928	814	690	34,180	310,348	42	49.54	2.17	51,926

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

(b) Includes "Assistant" and

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

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

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

16. **Rolling Stock, 1928.**—The following table shows the rolling stock in use at the 30th June, 1928, classified according to gauge :—

**RAILWAYS, STATE.—ROLLING STOCK, 1928.**

State.	Gauge.					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2ft. 6in.	2ft. 0 in.	
<b>LOCOMOTIVES.</b>						
New South Wales	..	1,434	..	..	..	1,434
Victoria	644	..	..	19	..	663
Queensland	..	..	765	..	10	775
South Australia	254	..	210	..	..	464
Western Australia	..	..	399	..	..	399
Tasmania	..	..	89	..	6	95
All States ..	898	1,434	1,463	19	16	3,830

**COACHING STOCK.**

	Ordinary.	With Motors.	Ordinary.	With Motors.	Ordinary.	With Motors.	Ordinary.	Ordinary.	Ordinary.	With Motors.
New South Wales	..	..	2,448	32	..	..	..	..	2,448	32
Victoria	2,238	442	..	..	..	..	55	..	2,293	442
Queensland	..	..	..	..	1,239	24	..	11	1,250	24
South Australia	473	31	..	..	211	..	..	..	684	31
Western Australia	..	..	..	..	479	2	..	..	479	2
Tasmania	..	..	..	..	222	12	..	6	228	12
All States ..	2,711	473	2,448	32	2,151	38	55	17	7,382	543

**STOCK OTHER THAN COACHING.**

New South Wales	..	23,806	..	..	..	23,806
Victoria	19,978	..	..	243	..	20,221
Queensland	..	..	18,809	..	168	18,977
South Australia	3,706	..	5,621	..	..	9,327
Western Australia	..	..	10,840	..	..	10,840
Tasmania	..	..	1,806	..	77	1,883
All States ..	23,684	23,806	37,076	243	245	85,054

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

17. **Employees.**—(i) *At 30th June.* The following table gives the number of railway employees in each year from 1924 to 1928 inclusive, classified according to (a) salaried staff, and (b) wages staff :—

## RAILWAYS, STATE.—EMPLOYEES, 1924 TO 1928.

State.	At 30th June—									
	1924.		1925.		1926.		1927.		1928.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales	5,473	36,127	5,672	36,455	5,794	38,263	6,004	39,488	6,052	38,053
Victoria ..	4,083	23,400	4,153	24,857	4,323	24,465	4,245	25,072	4,363	23,618
Queensland ..	3,298	16,380	3,362	16,522	3,617	18,419	3,565	16,105	3,478	16,146
South Australia ..	1,208	9,438	1,816	11,519	1,362	9,801	1,438	8,998	1,295	7,353
Western Australia	1,224	6,510	1,282	6,334	1,318	6,697	1,362	7,471	1,412	7,565
Tasmania ..	190	1,406	169	1,297	185	1,219	187	1,232	212	1,369
All States ..	15,476	93,261	15,954	96,984	16,599	98,864	16,801	98,366	16,812	94,104

In the period under review the totals of salaried and wages staffs rose from 108,737 in 1924 to 112,195 in 1928, an increase of 3 per cent.

(ii) *Average staff employed, 1927-28.* The number of employees at one point of time does not afford the best index of employment in railway work. It is considered that the following statement of the average number employed throughout the year indicates more accurately the labour requirements of the railways.

## AVERAGE STAFF EMPLOYED, 1927-28.

State.	Operating Staff.		Construction Staff.		All Employees—Staff.	
	Salaried.	Wages.	Salaried.	Wages.	Salaried.	Wages.
New South Wales ..	6,059	38,914	172	1,974	6,231	40,888
Victoria ..	4,451	24,247	..	..	4,451	24,247
Queensland ..	3,489	14,928	97	2,795	3,586	17,723
South Australia ..	1,360	7,892	28	1,317	1,388	9,209
Western Australia ..	1,385	7,927	..	..	1,385	7,927
Tasmania ..	212	1,369	..	..	212	1,369
All States ..	16,956	95,277	297	6,086	17,253	101,363

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

18. *Accidents.*—(i) *Classification.* The following classification of accidents which occurred through the movement of rolling stock was adopted by each State in 1924-25. Particulars for 1927-28 are as under :—

## RAILWAYS, STATE.—ACCIDENTS, 1928.

Particulars.	N.S.W.		Vic.		Q'land.		S. Aust.		W. Aust.		Tas.		All States.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Train accidents—														
Passengers ..	..	5	..	15	..	2	..	11	..	2	..	..	..	35
Employees ..	..	15	..	..	..	3	2	2	1	26	..	..	3	46
Accidents on line (other than train accidents)—														
Passengers ..	10	164	9	148	1	15	3	67	1	28	..	..	24	422
Employees ..	13	152	1	13	5	16	..	84	1	129	..	..	20	394
Others ..	13	89	..	..	..	..	1	3	..	..	18	14	110	
Shunting accidents—														
Passengers ..	..	4	..	1	..	..	..	..	..	1	..	..	..	6
Employees ..	4	160	12	25	1	97	2	68	1	131	..	..	20	481
Other persons ..	2	5	1	8	2	3	..	2	..	..	..	..	5	18
Employees proceeding to or from their duty within railway boundaries	1	5	..	..	1	..	..	1	..	..	..	..	2	6
Persons killed or injured at crossings ..	6	20	17	22	3	22	12	17	5	14	1	..	44	95
Trespassers ..	28	10	20	6	7	3	3	..	7	6	..	..	65	25
Miscellaneous ..	..	..	..	..	..	2	..	..	..	14	..	..	..	16
Total ..	77	629	60	238	20	163	23	255	16	351	1	18	197	1,654

(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 1924 to 1928 inclusive:—

## RAILWAYS, STATE.—ACCIDENTS, 1924 TO 1928.

State.	In year ended 30th June—									
	1924.		1925.		1926.		1927.		1928.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	77	526	69	597	72	594	123	687	77	629
Victoria ..	51	362	47	298	78	498	53	292	60	238
Queensland ..	(a)	(a)	45	283	25	212	26	167	20	163
South Australia ..	16	211	26	203	22	329	22	263	23	255
Western Australia	16	212	16	208	12	341	17	365	16	351
Tasmania ..	5	36	2	17	4	39	..	44	1	18
All States ..	(b)165	(b)1,347	205	1,606	213	2,013	241	1,818	197	1,654

(a) Not available. (b) Incomplete.

19. *Consumption of Oil and Fuel.*—The appended table shows the quantity and value of oil and fuel consumed by the various Government Railway Departments during the year 1927–28:—

## GOVERNMENT RAILWAYS.—CONSUMPTION AND VALUE OF OIL AND FUEL, 1927–28.

Government Railways.	Oil.						Coal.		
	Lubricating.			Fuel.			Tons.	Value.	Average Cost per Ton.
	Gallons.	Value.	Average Cost per Gallon.	Gallons.	Value.	Average Cost per Gallon.			
		£	s. d.		£	s. d.		£	£ s. d.
New South Wales	458,970	48,941	2 1.59	935,053	46,375	0 11.90	1,706,245	1,612,133	0 18 10.76
Victoria ..	192,400	23,560	2 5.39	1,060,500	46,780	0 10.59	695,183	975,662	1 8 0.83
Queensland ..	248,806	22,656	1 9.85	207,658	15,568	1 5.99	462,916	447,215	0 19 3.86
South Australia	a 135,595	15,054	2 2.64	(b)	(b)	(b)	244,196	547,332	2 2 9.93
Western Australia	59,031	6,223	2 1.30	287,087	17,427	1 2.57	314,244	308,330	0 19 7.48
Tasmania ..	29,278	3,525	2 4.90	10,408	747	1 5.23	49,239	67,909	1 7 7.00
Total States	1,124,083	119,959	2 1.61	2,500,706	126,897	1 0.18	3,472,023	3,958,581	1 2 9.63
Federal ..	23,461	3,133	2 8.05	100,917	10,246	2 0.37	30,968	63,882	2 1 3.08
Grand Total, Australia ..	1,147,544	123,092	2 1.74	c2,601,623	c137,143	c1 0.65	3,502,991	4,022,463	1 2 11.59

(a) Lubricating oil used on loco. cars and wagons-only.  
 (b) Not available.  
 (c) Exclusive of South Australia.

The range in the average cost per ton of coal from 18s. 11d. in New South Wales to £2 2s. 10d. per ton for coal used on the South Australian Railways is attributable to the comparatively low haulage expenses incurred in the coal-producing States. The average cost of coal and oil during 1927–28 varied very little from that of 1926–27.

### § 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, 1928 :—

RAILWAYS, FEDERAL AND STATE.—SUMMARY, 1928.

Particulars.		Federal Railways.	State Railways.	Total for Australia.
Total mileage open .. .. Miles		1,733.02	24,070.55	25,803.57
Average miles open during the year .. ..		1,733	23,984	25,717
Total train mileage .. ..		965,682	69,896,580	70,862,262
Total cost of construction of lines open .. ..	£	12,438,895	298,693,011	311,131,906
Cost per mile .. ..	£	7,178	12,409	12,058
Gross revenue .. ..	£	599,849	47,586,173	48,186,022
Working expenses .. ..	£	537,452	37,820,652	38,358,104
Percentage of working expenses on gross revenue .. ..	%	89.59	79.48	79.60
Net revenue .. ..	£	62,397	9,765,521	9,827,918
Interest payable .. ..	£	274,861	14,510,276	14,785,137
Number of passenger journeys .. ..	No.	155,776	375,316,978	375,472,754
Tonnage of goods and live stock carried .. ..	Tons	206,362	36,036,427	36,242,789
Number of employees at 30th June, 1927—				
Salaried .. ..	No.	199	16,812	17,011
Wages .. ..	"	1,080	94,104	95,184
Number of persons killed and injured during the year through train accidents and movement of rolling stock—				
Killed .. ..	"	7	197	204
Injured .. ..	"	20	1,654	1,674

A graph which accompanies this chapter illustrates the total capital cost, mileage open, average cost per mile open, gross revenue, working expenses, and net revenue for each of the years 1870 to 1928.

2. 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 1925 to 1928 are set out in the following table, which gives also the percentages of the mileage of each gauge on the total on the mainland—the figures for Tasmania being shown separately, as in the case of the table hereinafter relating to rolling stock :—

RAILWAYS, FEDERAL AND STATE.—ROUTE MILEAGE, 1925 TO 1928.

Gauge.	At 30th June—							
	1925.		1926.		1927.		1928.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
<b>Mainland—</b>								
5 ft. 3 in. ..	5,552.31	22.97	5,743.41	23.25	5,756.89	23.15	6,024.19	23.96
4 ft. 8½ in. ..	6,672.63	27.60	6,758.70	27.36	6,766.92	27.22	6,883.84	27.38
3 ft. 6 in. ..	11,794.20	48.79	12,051.46	48.78	12,188.86	49.02	12,085.26	48.06
2 ft. 6 in. ..	121.77	0.51	121.77	0.49	121.77	0.49	121.77	0.48
2 ft. 0 in. ..	30.26	0.13	30.26	0.12	30.26	0.12	30.26	0.12
<b>Total ..</b>	<b>24,171.17</b>	<b>100.00</b>	<b>24,705.60</b>	<b>100.00</b>	<b>24,864.70</b>	<b>100.00</b>	<b>25,145.32</b>	<b>100.00</b>
<b>Tasmania—</b>								
3 ft. 6 in. ..	648.07	..	648.07	..	633.42	..	633.42	..
2 ft. 0 in. ..	24.83	..	24.83	..	24.83	..	24.83	..
<b>Grand Total</b>	<b>24,844.07</b>	<b>..</b>	<b>25,378.50</b>	<b>..</b>	<b>25,522.95</b>	<b>..</b>	<b>25,803.57</b>	<b>..</b>

In the three years from 1925 to 1928 the percentage of 5 ft. 3 in. gauge mileage has increased by 0.99, while the 4 ft. 8½ in. gauge has decreased by 0.22 and the 3 ft. 6 ins. gauge by 0.73.

(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, 1925 to 1928, classified according to gauge, together with the percentages on the total :—

**RAILWAYS, FEDERAL AND STATE.—TRACK MILEAGE (a), 1925 TO 1928.**

Gauge.	At 30th June—							
	1925.		1926.		1927.		1928.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	7,167.23	24.74	7,427.27	25.05	7,465.59	24.95	7,812.26	25.77
4 ft. 8½ in. ..	8,593.18	29.66	8,710.62	29.37	8,749.82	29.24	8,896.10	29.34
3 ft. 6 in. ..	13,042.93	45.04	13,353.87	45.03	13,543.00	45.26	13,445.80	44.35
2 ft. 6 in. ..	131.54	0.45	131.56	0.44	131.56	0.44	131.87	0.43
2 ft. 0 in. ..	33.00	0.11	33.00	0.11	33.00	0.11	33.00	0.11
Total ..	28,967.88	100.00	29,656.32	100.00	29,922.97	100.00	30,319.03	100.00

(a) Exclusive of Tasmania.

3. *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, at the 30th June, 1928, together with the percentage of the numbers for each gauge on the total for the mainland. The figures for Tasmania are shown separately.

**RAILWAYS, FEDERAL AND STATE.—ROLLING STOCK, 1928.**

Gauge.	Locomotives.		Coaching Stock.						Vehicles other than Coaching.	
			Ordinary.		With Motors.		Total.			
	No.	%	No.	%	No.	%	No.	%	No.	%
Mainland—										
5 ft. 3 in. ..	898	23.39	2,711	37.49	473	89.08	3,184	41.01	23,684	28.02
4 ft. 8½ in. ..	1,502	39.11	2,497	34.53	32	6.02	2,529	32.58	24,540	29.03
3 ft. 6 in. ..	1,411	36.74	1,958	27.07	26	4.90	1,984	25.56	35,889	42.46
2 ft. 6 in. ..	19	0.50	55	0.76	..	..	55	0.71	243	0.29
2 ft. 0 in. ..	10	0.26	11	0.15	..	..	11	0.14	168	0.20
Total ..	3,840	100.00	7,232	100.00	531	100.00	7,763	100.00	84,524	100.00
Tasmania—										
3 ft. 6 in. ..	89	..	222	..	12	..	234	..	1,806	..
2 ft. 0 in. ..	6	..	6	..	..	..	6	..	77	..
Grand Total	3,935	..	7,460	..	543	..	8,003	..	86,407	..



### § 5. Private Railways.

1. **Total Mileage Open, 1927-28.**—The bulk of the private railways in Australia have been laid down for the purpose of hauling timber, firewood, sugar-cane, coal, or other minerals, and they are not generally used for the conveyance of passengers or for public traffic. In many cases the lines are practically unballasted and easily removable.

The railways referred to in this section include only lines open to the public for general passenger and goods traffic. In previous issues of the *Year-Book* particulars of lines used for special purposes only have also been shown, but, as complete figures for the year 1927-28 are not available, they have been omitted from this issue.

2. **Lines Open for General Traffic.**—The following statement gives a summary of the operations of private railways open for general traffic for the year 1928. More detailed information regarding these lines will be found in "Transport and Communication Bulletin No. 20" published by this Bureau.

#### RAILWAYS, PRIVATE.—SUMMARY, 1927-28.

State.	Companies from which returns were received.	Miles Open (Route).	Capital Cost.	Gross Revenue.	Working Expenses.	Train-Miles.	Passenger Journeys.	Tonnage of Goods, etc.	No. of Employees.	Rolling Stock.		
										Locos.	Coaches.	Other Vehicles.
	No.	Miles.	£	£	£	Miles.	No.	Tons.	No.	No.	No.	No.
New South Wales ..	9	142.03	2,538,034	396,718	292,390	625,324	1,369,974	1,105,437	574	51	37	756
Victoria ..	2	24.94	90,751	14,734	10,629	30,220	25,179	68,439	22	4	4	42
Queensland	15	274.39	489,336	26,533	23,193	54,292	15,971	117,719	47	17	17	390
South Australia ..	1	33.80	(a)	(a)	(a)	31,231	960	592,382	34	7	3	193
Western Australia	1	277.00	2,178,064	216,126	98,224	305,005	56,152	154,935	246	24	23	474
Tasmania	6	182.81	1,273,637	112,365	88,394	159,025	60,836	136,037	253	24	20	448
All States(b)	34	934.97	6,569,822	766,476	512,830	1,205,097	1,529,122	2,174,949	1,176	127	104	2,303

(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.

In B § 1.7 *ante* a table is given showing comparative railway facilities in 1927-28 in Australia.

In the appended table comparative railway statistics of a like character are given for the principal countries of the world. The figures are based upon the latest accurate returns for both population and railway mileage.

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

Country.	Year.	Miles of Railway.	Miles of Railway—	
			Per 1,000 of Population.	Per 1,000 Sq. Miles of Territory.
Europe—				
Great Britain and Ireland .. .. .	1927	21,165	0.46	223.65
Belgium .. .. .	1927	3,257	0.41	277.07
Denmark .. .. .	1927	3,219	0.94	188.16
France .. .. .	1928	25,947	0.63	121.82
Germany .. .. .	1927	36,126	0.57	198.49
Greece .. .. .	1927	1,991	0.32	39.82
Italy .. .. .	1928	13,258	0.32	110.48
Netherlands .. .. .	1927	2,284	0.30	172.90
Norway .. .. .	1928	2,254	0.81	18.03
Portugal .. .. .	1927	2,001	0.33	56.38
Spain .. .. .	1927	10,010	0.45	51.39
Sweden .. .. .	1927	9,762	1.60	56.43
Switzerland .. .. .	1927	1,789	0.45	112.23
Asia—				
India .. .. .	1928	39,711	0.12	22.00
Japan .. .. .	1927	11,342	0.14	43.63
Africa—				
Egypt .. .. .	1927	3,126	0.22	8.16
Union of South Africa .. .. .	1927	12,624	1.65	26.73
America, North and Central—				
Canada .. .. .	1928	42,224	4.37	11.12
Mexico .. .. .	1927	14,186	0.95	18.49
United States .. .. .	1928	262,091	2.18	86.55
America, South—				
Argentina .. .. .	1927	22,791	2.14	19.60
Brazil .. .. .	1928	19,544	0.46	5.95
Chile .. .. .	1927	5,437	1.35	18.74
Australasia—				
Australia .. .. .	1928	(a) 26,739	4.25	8.99
New Zealand .. .. .	1928	3,296	2.37	31.74

(a) Exclusive of Private Railways used for special purposes only.

The figures show that per 1,000 of population Canada had the greatest mileage (in 1928), 4.37 miles; the next in magnitude being Australia (1928), with 4.25 miles.

The least mileage per 1,000 of population is shown in the cases of India (1928) with 0.12 and Japan (1927), with 0.14.

With regard to the mileage per 1,000 square miles of territory, Belgium (1927) with 277.07 miles was easily first, followed by Great Britain and Ireland (1927) 223.65 miles.

The least mileage open per 1,000 square miles is that of Brazil (in 1928) with 5.95 miles, and Egypt (1927) with 8.16 miles.

## C. TRAMWAYS.

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

In many parts of Australia private lines used for special purposes in connexion with the timber, mining, sugar, or other industries are often called tramways, but they

are more properly railways, and the traffic on them has nothing in common with that of the street tramways for the conveyance of passengers, which are dealt with in the present paragraph.

(ii) *Total Mileage Open and Classification of Lines.* The following tables show the total mileage of tramway lines open for general passenger traffic for the year 1927-28, also in Australia as a whole for the years 1923-24 to 1927-28, classified (a) according to the nature of the authority by which the lines are controlled; (b) according to the motive power utilized, and (c) according to gauge :—

**TRAMWAYS.—ROUTE MILEAGE OPEN, 1927-28.**

Nature of Motive Power, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Total, Australia.
<b>GOVERNMENT.</b>							
Electric .. ..	Miles. 185.80	Miles. 118.53	Miles. ..	Miles. ..	Miles. 39.28	Miles. ..	Miles. 343.61
Steam .. ..	23.78	..	..	..	5.25	..	29.03
Cable .. ..	..	30.06	..	..	..	..	30.06
Horse .. ..	..	..	..	..	2.51	..	2.51
<b>Total .. ..</b>	<b>209.58</b>	<b>148.59</b>	<b>..</b>	<b>..</b>	<b>47.04</b>	<b>..</b>	<b>405.21</b>
<b>MUNICIPAL.</b>							
Electric .. ..	..	..	55.41	74.17	8.61	28.76	166.95
Steam .. ..	..	..	6.65	..	..	..	6.65
<b>Total .. ..</b>	<b>..</b>	<b>..</b>	<b>62.06</b>	<b>74.17</b>	<b>8.61</b>	<b>28.76</b>	<b>173.60</b>
<b>PRIVATE.</b>							
Electric .. ..	..	30.73	..	..	14.04	..	44.77
Steam .. ..	3.50	..	..	..	..	..	3.50
<b>Total .. ..</b>	<b>3.50</b>	<b>30.73</b>	<b>..</b>	<b>..</b>	<b>14.04</b>	<b>..</b>	<b>48.27</b>
<b>ALL CONTROLLING AUTHORITIES.</b>							
Electric .. ..	185.80	149.26	55.41	74.17	61.93	28.76	555.33
Steam .. ..	27.28	..	6.65	..	5.25	..	39.18
Cable .. ..	..	30.06	..	..	..	..	30.06
Horse .. ..	..	..	..	..	2.51	..	2.51
<b>Total .. ..</b>	<b>213.08</b>	<b>179.32</b>	<b>62.06</b>	<b>74.17</b>	<b>69.69</b>	<b>28.76</b>	<b>627.08</b>
<b>ACCORDING TO GAUGE.</b>							
Gauge—							
5 ft. 3 in. ..	..	5.18	..	..	..	..	5.18
4 ft. 8½ in. ..	213.08	174.14	55.41	74.17	..	..	516.80
3 ft. 6 in. ..	..	..	6.65	..	69.69	28.76	105.10
<b>Total .. ..</b>	<b>213.08</b>	<b>179.32</b>	<b>62.06</b>	<b>74.17</b>	<b>69.69</b>	<b>28.76</b>	<b>627.08</b>

## TRAMWAYS.—ROUTE MILEAGE OPEN, AUSTRALIA, 1923-24 TO 1927-28.

Nature of Motive Power, Controlling Authority, and Gauge.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
<b>ACCORDING TO MOTIVE POWER.</b>					
	Miles.	Miles.	Miles.	Miles.	Miles.
Electric .. .. .	482.24	502.66	519.06	538.42	555.33
Steam .. .. .	85.98	79.23	75.46	70.55	39.18
Cable .. .. .	45.58	45.58	38.58	33.68	30.00
Horse .. .. .	7.39	7.39	1.50	2.51	2.51
<b>Total .. .. .</b>	<b>621.19</b>	<b>634.86</b>	<b>634.60</b>	<b>645.16</b>	<b>627.08</b>
<b>ACCORDING TO CONTROLLING AUTHORITY.</b>					
Government .. .. .	459.45	423.56	421.42	431.05	405.21
Municipal .. .. .	115.73	165.54	167.42	168.70	173.60
Private .. .. .	46.01	45.76	45.76	45.41	48.27
<b>Total .. .. .</b>	<b>621.19</b>	<b>634.86</b>	<b>634.60</b>	<b>645.16</b>	<b>627.08</b>
<b>ACCORDING TO GAUGE.</b>					
Gauge—					
5 ft. 3 in. .. .. .	5.18	5.18	5.18	5.18	5.18
4 ft. 8½ in. .. .. .	499.91	512.59	517.92	526.61	516.80
3 ft. 6 in. .. .. .	98.72	99.71	99.00	100.87	105.10
2 ft. 0 in. .. .. .	17.38	17.38	12.50	12.50	..
<b>Total .. .. .</b>	<b>621.19</b>	<b>634.86</b>	<b>634.60</b>	<b>645.16</b>	<b>627.08</b>

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

(iii) *Cost of Construction and Equipment.* The table hereunder shows, as far as information is available, the total cost of construction and equipment of all tramways to the 30th June, 1928, classified according to the nature of the motive power and the controlling authority.

## TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1927-28.

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
<b>GOVERNMENT.</b>							
Electric	£ 10,894,890	£ 5,557,801	..	..	£ 1,060,247	..	£ 17,512,938
Steam ..	427,188	..	..	..	50,766	..	477,954
Cable ..	..	1,568,765	..	..	..	..	1,568,765
Horse ..	..	..	..	..	19,571	..	19,571
<b>Total ..</b>	<b>11,322,078</b>	<b>7,126,566</b>	<b>..</b>	<b>..</b>	<b>1,130,584</b>	<b>..</b>	<b>19,579,228</b>
<b>MUNICIPAL.</b>							
Electric	..	..	2,195,340	3,176,738	156,144	558,323	6,086,545
Steam ..	..	..	53,129	..	..	..	53,129
<b>Total ..</b>	<b>..</b>	<b>..</b>	<b>2,248,469</b>	<b>3,176,738</b>	<b>156,144</b>	<b>558,323</b>	<b>6,139,674</b>

TRAMWAYS.—COST OF CONSTRUCTION AND EQUIPMENT, 1927-28—*continued*

Nature of Motive Power.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
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## PRIVATE.

	£	£	£	£	£	£	£
Electric	..	459,125	..	..	452,851	..	911,976
Steam ..	(a)	..	..	..	..	..	..
Total ..	(a)	459,125	..	..	452,851	..	911,976

## ALL CONTROLLING AUTHORITIES.

Electric	10,894,890	6,016,926	2,195,340	3,176,738	1,669,242	558,323	24,511,459
Steam ..	(b) 427,188	..	53,129	..	50,766	..	531,083
Cable ..	..	1,568,765	..	..	..	..	1,568,765
Horse ..	..	..	..	..	19,571	..	19,571
Total ..	11,322,078 (b)	7,585,691	2,248,469	3,176,738	1,739,579	558,323	26,630,878

(a) Not available. (b) Incomplete.

2. New South Wales.—(i) *Government Tramways.*—(a) *General.* The tramways, with some comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners. In Sydney and suburbs the Government tramways are divided into seven distinct systems, five of which are operated by electricity and two by steam. The conversion of the Newcastle system from steam to electric traction has been undertaken, and at 30th June, 1928, 23.75 miles (route) were completed and opened for traffic.

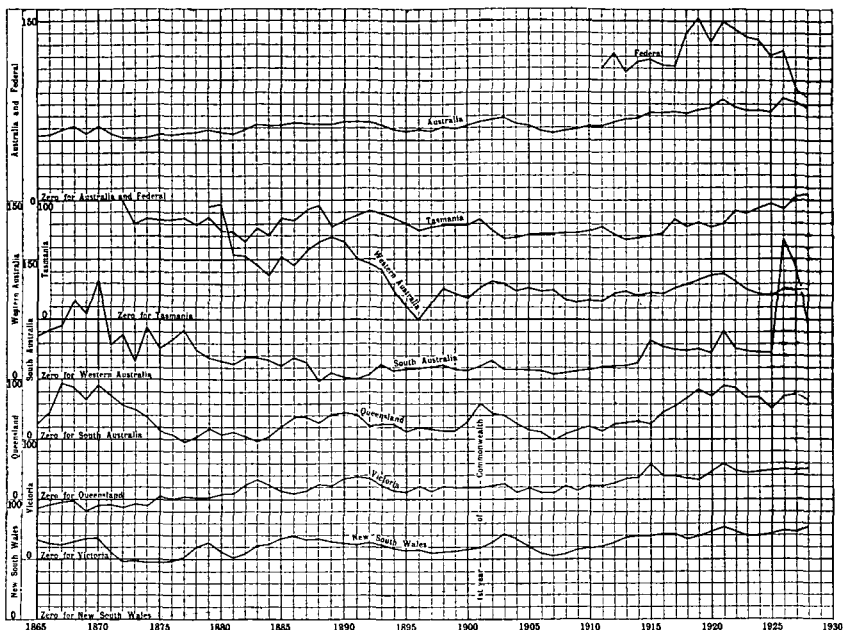
(b) *Particulars of Working.* The subjoined statement gives particulars of the working of the electric and steam tramways under Government control in 1927-28 :—

## GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—RETURNS FOR 1927-28.

Line.	Mileage Open for Traffic.		Total Cost of Construction and Equipment. (a)	Gross Revenue.	Working Expenses.	Net Earnings.	In-terest.	Profit or Loss.	Per-centage of Working Expenses on Gross Revenue.	Per-centage of Net Earnings on Capital Cost.
	Route.	Track.								
	Miles.	Miles.	£	£	£	£	£	£	%	%
Electric	185.80	331.15	10,894,890	4,495,093	3,840,549	654,544	554,887	99,657	85.44	6.01
Steam	23.78	25.21	427,188	61,468	96,807	— 35,339	21,815	-57,154	157.49	— 8.27
Total	209.58	356.36	11,322,078	4,556,561	3,937,356	619,205	576,702	42,503	86.41	5.47

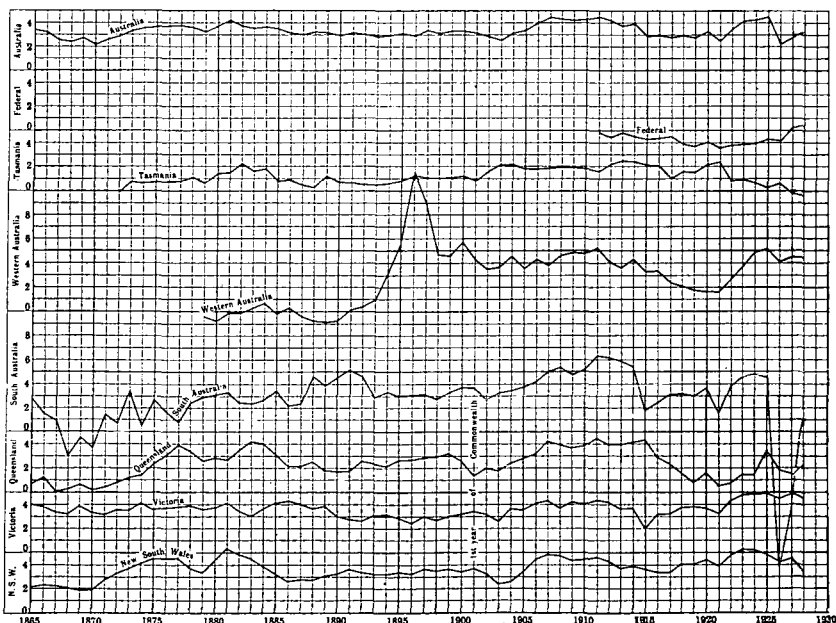
(a) Exclusive of Stores Advance Account (£287,000).

PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE OF GOVERNMENT RAILWAYS, 1865 TO 1928.



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

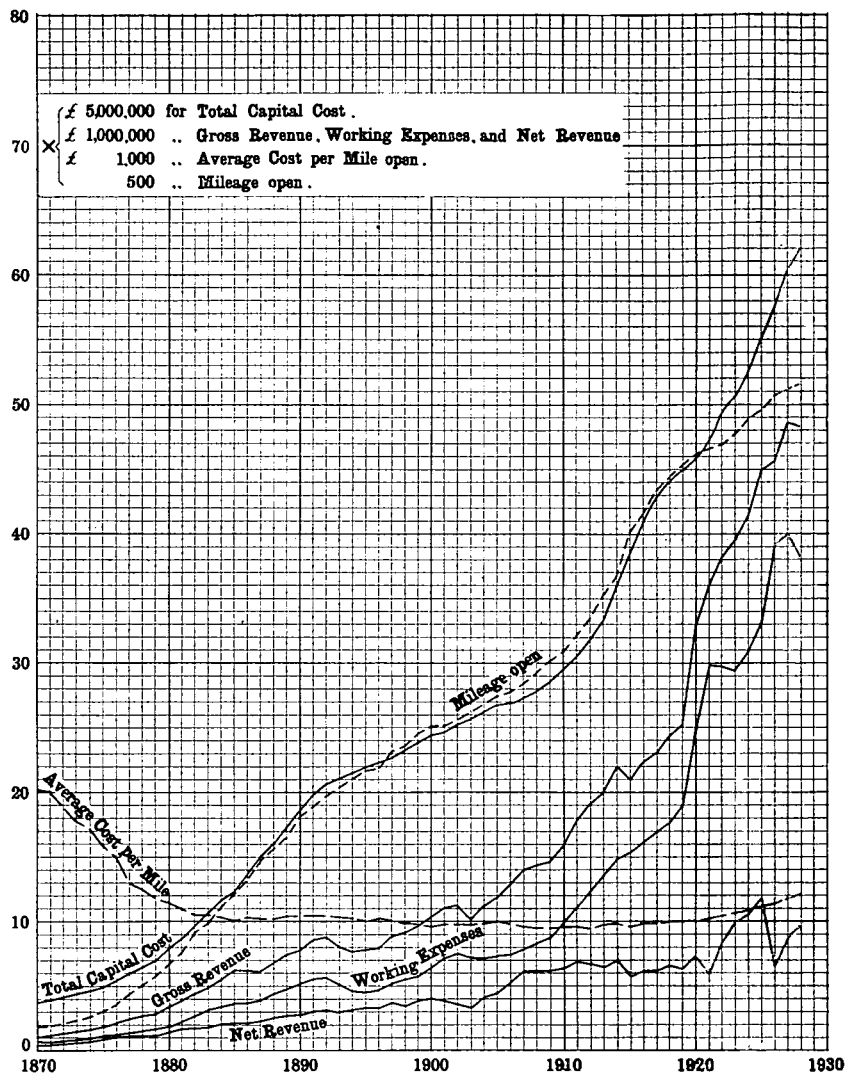
PERCENTAGES OF NET REVENUE ON CAPITAL COST OF GOVERNMENT RAILWAYS, 1865 TO 1928.



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

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

## FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1870 TO 1928.



(See page 292.)

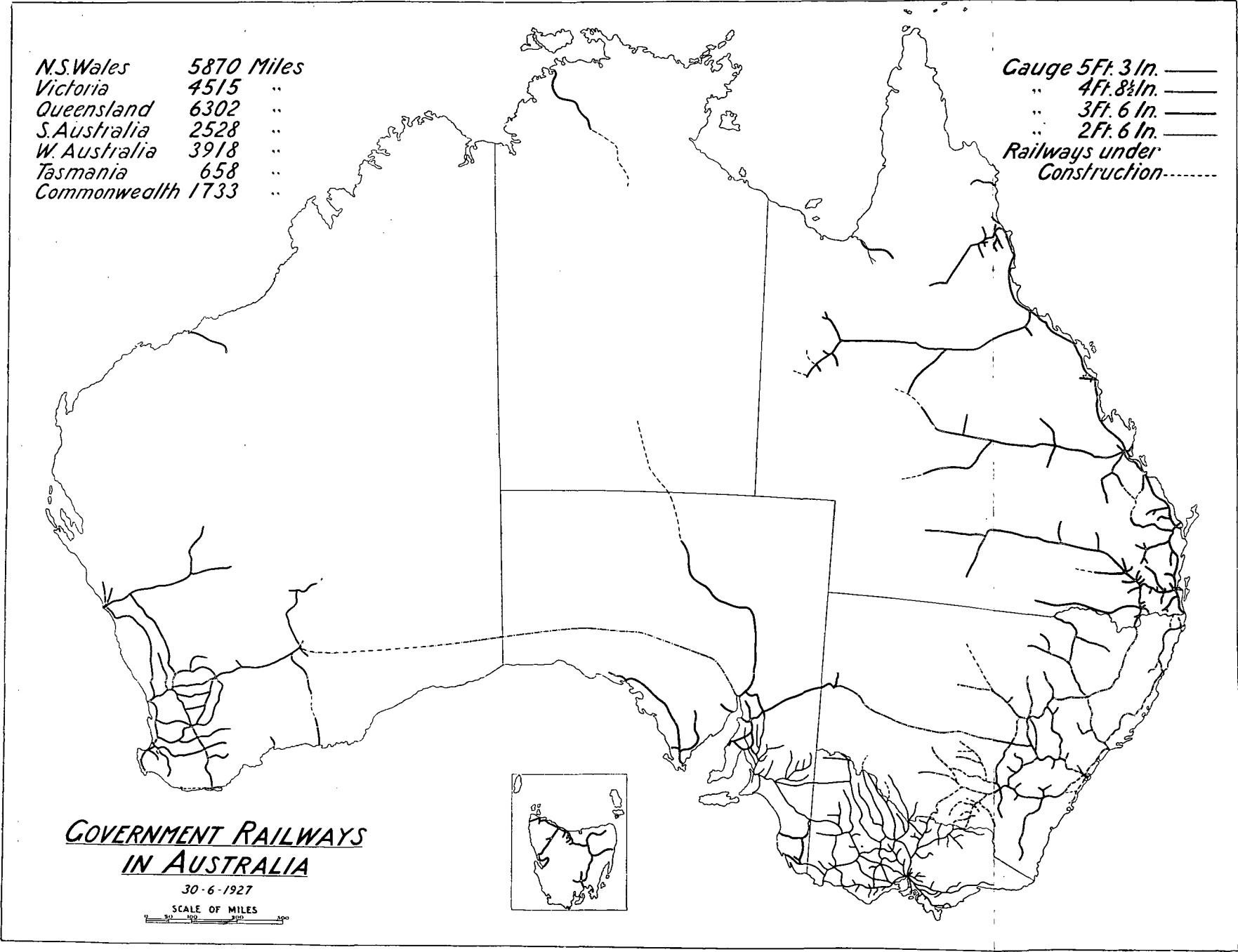
EXPLANATION.—The base of each small square represents throughout one year. The significance of the vertical height of each square varies according to the nature of the several curves.

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

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

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

*Gauge 5 Ft. 3 In.* ———  
*.. 4 Ft. 8 1/2 In.* ———  
*.. 3 Ft. 6 In.* ———  
*.. 2 Ft. 6 In.* ———  
*Railways under Construction* - - - - -



***GOVERNMENT RAILWAYS  
IN AUSTRALIA***

30-6-1927  
SCALE OF MILES  
0 50 100 150 200



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

**GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—CAPITAL COST, 1928.**

Permanent Way.	Rolling Stock.	Power-houses, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£	£	£	£	£	£	£
5,679,633	2,544,947	2,580,250	253,442	261,414	2,392	11,322,078

The average cost per mile open was £27,100 for permanent way, and £26,923 for all other charges, making a total of £54,023 per route mile.

(d) *Summary, Government Tramways.* The following table gives a summary of the operations of all Government tramways for the years 1924 to 1928:—

**GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—SUMMARY, 1924 TO 1928.**

Year ended 30th June—	Mileage Open for Traffic. (Route.)	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	In-terest.	Per-centage of Working Expenses on Gross Revenue.	Per-centage of Net Earnings on Capital Cost.	Passen-gers carried.	Persons em-ployed.
	Miles.	£	£	£	£	£	%	%	No. '000	No.
1924 ..	227.57	10,471,958a	3,633,915	3,091,531	542,384	532,187	85.07	5.18	340,803	11,264
1925 ..	228.46	10,844,454a	3,619,272	3,174,862	444,410	546,489	87.72	4.10	339,577	11,633
1926 ..	228.55	11,147,523a	3,619,496	3,319,996	299,500	563,137	91.73	2.69	339,412	11,459
1927 ..	228.50	11,299,050a	3,806,098	3,487,834	318,264	573,453	91.64	2.82	347,231	11,697
1928 ..	209.58	11,322,078a	4,556,561	3,937,356	619,205	576,702	86.41	5.47	346,014	11,031

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

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

The net result in 1928, after providing for all working expenses and £576,702 for interest on the capital invested, was a profit of £42,503, as compared with a loss of £255,189 in the preceding year. During the year 1927-28, 346,014,000 passengers were carried, a decrease of 1,217,000 as compared with the previous year.

(e) *Sydney Tramways.* Official Year Book No. 15, p. 589, gave a short account of the progress of the Sydney Tramway System. Owing to limitations of space this information cannot be repeated, but the subjoined table shows certain important particulars for the years 1924 to 1928 inclusive.

**ELECTRIC TRAMWAYS.—SYDNEY.—SUMMARY 1924 TO 1928.**

Particulars.	Year ended 30th June—				
	1924.	1925.	1926.	1927.	1928.
Mileage open for traffic—					
Route miles .. ..	160.51	161.24	161.83	162.11	162.05
Track miles .. ..	296.10	287.52	288.85	289.19	289.50
Total cost of construction and equipment .. .. £	8,955,747	9,168,939	9,473,497	9,889,857b	9,976,761b
Current used for traction purposes kilowatt hours	96,448,720a	118,631,086a	109,131,602a	123,197,596a	127,168,518a
Tram-miles run .. No.	30,318,516	31,238,517	31,087,894	31,086,469	31,511,169
Passengers carried .. No.	320,402,789	314,563,586	313,216,842	320,903,528	322,025,235
Gross revenue .. £	3,391,626	3,331,701	3,316,312	3,462,806	4,135,337
Working expenses .. £	2,781,148	2,823,510	2,878,855	3,066,254	3,465,920
Net revenue .. £	610,478	508,191	437,457	396,552	669,417
Percentage of working expenses on gross revenue .. %	82.00	84.75	86.81	88.55	83.81
Cars in use ..	1,570a	1,562a	1,567a	1,594a	1,578a
Persons employed ..	10,608a	10,255a	11,130a	11,512a	10,911a

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

(ii) *Private Tramways.* A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 3½ miles, where it connects with the Parramatta River steamers which convey passengers and goods to and from Sydney. This line, which has a gauge of 4 ft. 8½ in., was opened for traffic in 1883. In 1928 the number of tram-miles run was 15,330, and the number of passengers conveyed 113,635.

3. *Victoria.*—(i) *General.* In Melbourne there are several tramway systems carried on under the control of various authorities, the most important being the cable and electric systems worked by the Melbourne and Metropolitan Tramways Board, to which reference will be made further on. There were also, at 30th June, 1928, two lines of electric tramways, viz.:—(a) St. Kilda to Brighton, and (b) Sandringham to Beaumaris, both of which belong to and are operated by the Railways Commissioners. In addition there are systems of electric tramways at Ballarat, Bendigo, and Geelong, constructed and run by private companies.

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

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

(b) *Cable and Horse Tramways.* (1) *Services.* The complete system consists of 30.06 miles of double track of 4-ft. 8½ in. gauge connecting the city of Melbourne with the nearer suburbs. The service (horse-drawn) to Royal Park was abandoned in 1923.

(2) *Particulars of Working.* A summary for the years 1924 to 1928 is given hereunder:—

**CABLE TRAMWAYS.—MELBOURNE.—SUMMARY, 1924 TO 1928.**

Year ended 30th June—	Mileage Open (Route).			Mileage Run during Year.			Number of Passengers Carried.		
	Cable.	Horse.	Total.	Tram.		Total.	Tram.		Total.
				Cable.	Horse.		Cable.	Horse.	
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	No.	No.	No.
1924 ..	45.58	(a)	45.58	14,713,853	3,066	14,716,919	147,750,286	50,220	147,800,506
1925 ..	45.58	(a)	45.58	15,285,913	..	15,285,913	148,316,398	..	148,316,398
1926 ..	38.58	(a)	38.58	12,393,911	..	12,393,911	127,882,115	..	127,882,115
1927 ..	33.68	(a)	33.68	9,817,468	..	9,817,468	99,978,416	..	99,978,416
1928 ..	30.06	(a)	30.06	8,410,528	..	8,410,528	83,004,759	..	83,004,759

Year ended 30th June—	Gross Revenue.			Working Expenses.			Percentage of Working Expenses on Revenue.	No. of Employees at end of Year.
	Tram.		Total.	Tram.		Total.		
	Cable.	Horse.		Cable.	Horse.			
	£	£	£	£	£	£		
1924 ..	1,190,594	241	1,190,835	990,196	373	990,569	83.18	3,295
1925 ..	1,192,103	..	1,192,103	1,011,630	..	1,011,630	84.86	3,136
1926 ..	1,048,414	..	1,048,414	847,102	..	847,102	80.79	2,520
1927 ..	1,012,946	..	1,012,946	702,749	..	702,749	69.38	2,014
1928 ..	843,800	..	843,800	608,061	..	608,061	72.06	1,872

(a) Line abandoned from 16th November, 1923.

The reduction in mileage open and of the operating results as compared with the previous year is due to the progress made in the scheme of conversion to electrical traction.

(c) *Electric Tramways.* (1) *Services Operated.* The system controlled by the Melbourne and Metropolitan Tramways Board at 30th June, 1928, consisted of the six services taken over from the various controlling authorities at the date of the formation of the Board, viz. (a) The Prahran and Malvern Tramways; (b) The Hawthorn Tramways; (c) The Melbourne, Brunswick and Coburg Tramways; (d) The Fitzroy, Northcote, and Preston Tramways; (e) The Footscray Tramways; and (f) the North Melbourne-Essendon Tramway, which, together with various extensions and conversions from cable to electric traction on the St. Kilda, Brighton Road, Prahran and Toorak and Richmond lines, make an aggregate route mileage of 108.74 miles, all of 4 ft. 8½ in. gauge.

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

MELBOURNE TRAMWAYS BOARD.—ELECTRIC SERVICES.—OPERATIONS, 1924 TO 1928.

Year ended 30th June—	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment	Current used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	£	£
1924 ..	72.19	2,409,281	16,900,525	7,267,966	74,091,564	692,220	576,427	85,856	29,937
1925 ..	82.50	3,242,485	20,297,259	8,426,519	80,435,686	756,163	649,644	79,482	27,037
1926 ..	91.98	4,040,492	27,041,867	10,657,728	99,017,938	1,007,210	816,178	147,997	43,035
1927 ..	102.14	4,647,497	34,393,346	13,387,869	118,853,967	1,429,015	963,558	240,922	224,535
1928 ..	108.74	5,221,586	45,086,642	15,215,696	132,805,672	1,602,068	1,057,060	654,175	-109,173

(-) Indicates loss.

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

Particulars of the operations of these tramways for the years 1923-24 to 1927-28 are contained in the tables hereunder.

ELECTRIC TRAMWAY.—ST. KILDA-BRIGHTON.—1924 TO 1928.

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.	£	£	£	£
1924 ..	190,501	1,433,904	523,950	5,709,684	54,381	45,497	8,937	— 53
1925 ..	193,316	1,524,151	562,220	5,737,101	58,038	48,942	8,911	185
1926 ..	193,607	1,580,233	564,085	5,910,741	56,533	48,534	9,277	— 1,278
1927 ..	195,403	1,640,932	568,184	5,856,796	55,594	48,079	9,347	— 1,832
1928 ..	202,182	1,677,880	566,243	5,561,619	55,202	46,661	9,525	— 984

(-) Indicates loss.

ELECTRIC TRAMWAY.—SANDRINGHAM-BEAUMARIS (a).—1924 TO 1928.

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.	£	£	£	£
1924 ..	94,390	301,850	126,436	1,459,239	12,971	12,023	5,148	— 4,800
1925 ..	101,417	335,140	127,962	1,475,261	13,048	10,699	5,326	— 2,977
1926 ..	99,677	330,390	127,368	1,371,558	12,061	13,233	5,514	— 6,686
1927 ..	134,024	464,356	182,331	1,809,880	15,209	15,198	6,556	— 6,645
1928 ..	134,033	473,968	189,785	1,716,524	15,076	14,834	6,817	— 6,575

(-) Indicates loss.

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

(iv) *Private Tramways.* Two systems of tramways are owned and operated by private companies, viz., Ballarat and Bendigo (21.25 miles) and Geelong (9.48 miles); giving a total route mileage of 30.73 miles. Electrical traction is used on each of these lines which are constructed to the 4-ft. 8½-in. gauge.

(v) *Summary for all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1924 to 1928 inclusive:—

**ELECTRIC TRAMWAYS.—VICTORIA.—SUMMARY, 1924 TO 1928.**

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.
1924	107.47	3,046,443	20,390,335	9,192,499	88,902,067	844,189	709,293	353	2,729
1925	117.69	3,913,353	24,114,494	10,472,995	95,806,588	910,601	785,175	421	3,003
1926	127.17	4,716,775	31,020,604	12,709,671	114,692,993	1,159,557	960,485	492	3,607
1927	139.53	5,389,654	38,582,105	15,504,164	135,153,262	1,583,838	1,108,664	530	4,087
1928	149.26	6,016,926	49,649,967	17,461,458	149,372,032	1,762,079	1,209,175	596	4,018

4. *Queensland.*—(i) *General.* The electric tramways in the city and suburbs of Brisbane were controlled by a private company, with head office in London, until the 31st December, 1922, on which date they were purchased by the Queensland Government which, under the provisions of the Brisbane Tramway Trust Act 1922, appointed a Trust to control and operate the system until 1st December, 1925, on which date the control passed to the Brisbane City Council. Under the provisions of the Brisbane City Council Act, 1925, the Council took over the liabilities of the Tramway Trust to the extent of £2,000,000 which had been incurred in London, and assumed complete control of the system. The total length of the Brisbane tramways was 55.41 route miles at 31st December, 1928. A steam tramway having a length of 6.65 route miles is in operation at Rockhampton.

(ii) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. Cost of construction and equipment to the end of the year 1928 was £2,195,340, the gauge of line being 4-ft. 8½-in. The following table gives a summary for the calendar years 1924 to 1928:—

**ELECTRIC TRAMWAYS.—BRISBANE.—SUMMARY, 1924 TO 1928.**

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.
1924	47.13	1,615,282	12,656,077	5,457,800	78,367,194	663,747	503,131	201	1,731
1925	50.33	1,846,029	14,800,033	5,915,844	82,514,079	707,500	564,584	225	1,837
1926	52.25	2,053,318	15,683,288	6,301,126	81,802,945	767,708	588,262	248	1,821
1927	53.53	2,050,155	17,409,241	6,535,833	78,057,620	814,312	613,285	260	1,859
1928	55.41	2,195,340	19,992,514	6,570,228	77,703,264	810,954	594,126	275	1,611

(a) Includes motor omnibuses.

(iii) *Rockhampton Municipal Tramway.* This tramway was opened for traffic in 1909, the motive power being steam. The length of line is 6.65 route miles, and the gauge 3 ft. 6 in. The capital cost to 31st December, 1928, was £53,129. During the year 1928, 1,752,936 passengers were carried, the revenue being £16,403 and working expenses £16,158. The number of the staff at the end of the year was 42.

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

5. *South Australia.*—(i) *Electric Tramways.* The tramways in Adelaide and suburbs are controlled by a Municipal Tramways Trust created in 1907. Prior to this year, the system was run with horse-traction by several private companies. Electric traction was inaugurated in 1909, and at the 31st July, 1928, the Tramways Trust operated a total route mileage of 74.17 miles of 4-ft. 8½-in. gauge. A summary for the years 1924 to 1928 is given in the subjoined table :—

## ELECTRIC TRAMWAYS.—ADELAIDE.—SUMMARY, 1924 TO 1928.

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.
1924	73.83	2,742,985	15,705,191	6,568,985	61,737,665	638,277	463,481	231	1,583
1925	72.20	2,874,037	18,456,574	7,222,292	63,152,810	640,335	467,751	249	1,563
1926	73.05	2,997,976	19,303,228	7,393,122	66,207,356	661,058	472,412	255	1,556
1927	73.05	3,073,359	19,956,323	7,386,620	67,569,749	674,884	483,939	259	1,690
1928	74.17	3,176,738	20,327,743	7,440,540	68,546,189	695,649	496,194	260	1,781

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

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

(b) *Steam and Horse Tramways.* The capital cost of the Government steam or horse tramways up to the 30th June, 1928, was £70,337, the gross revenue for 1927–28 being £19,629, and the working expenses £10,864. These amounts are in some instances inclusive of revenue from jetty charges and of working expenses in connexion with such services.

(c) *Perth Electric Tramways.* These tramways were opened for traffic by a private company on the 24th September, 1899, and the system was subsequently extended to many of the suburbs. Control was taken over by the Government on the 1st July, 1913, and the tramways are now worked in conjunction with the Government railways. The gauge of line is 3 ft. 6 in. The following table shows particulars of working for the years ended 30th June, 1924 to 1928 :—

## ELECTRIC TRAMWAYS.—PERTH.—1923–24 TO 1927–28.

Year ended 30th June—	Mileage open for Traffic.	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
		£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1924	34.24	879,277	8,061,920	2,989,039	27,893,315	274,583	231,895	103	529
1925	34.28	899,741	8,296,746	3,040,505	28,894,525	281,612	236,003	113	566
1926	34.34	949,929	8,246,630	3,010,253	29,599,785	286,707	240,953	113	536
1927	36.68	983,140	8,371,890	2,995,769	30,541,079	294,068	241,280	113	725
1928	39.28	1,060,247	9,002,660	3,188,087	32,657,626	318,957	259,677	123	724

(ii) *Private Tramways.* Electric Tramways with a route mileage at 31st August, 1928, of 8.61 miles, and controlled by the municipal authorities, are in operation in Fremantle. In Kalgoorlie and Boulder a private company controls the electric tramways, of which at the end of 1928 the length of line was 14.04 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 1924 to 1928 :—

**ELECTRIC TRAMWAYS.—WESTERN AUSTRALIA.—SUMMARY, 1924 TO 1928.**

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.
1924	57.67	1,477,033	10,117,198	3,939,689	36,484,855	360,883	301,920	160	702
1925	57.55	1,504,845	10,389,250	3,975,699	37,237,791	365,156	306,378	173	751
1926	57.61	1,559,483	10,311,919	3,940,741	37,841,434	368,290	311,772	173	709
1927	59.60	1,599,105	10,237,513	3,939,061	38,924,077	376,578	301,967	173	891
1928	61.93	1,669,242	10,989,904	4,141,242	41,040,909	403,845	330,705	183	897

7. *Tasmania.*—(i) *Electric Tramways.* In Hobart there is a system of electric tramways consisting of 18.50 route miles of 3-ft. 6-in. gauge controlled by the Hobart Municipal Council. The Launceston City Council operates tramways in Launceston having a length of 10.26 miles of 3-ft. 6-in. gauge.

The following table gives a summary of the working of the two systems for the years 1924 to 1928 :—

**ELECTRIC TRAMWAYS.—TASMANIA.—SUMMARY, 1924 TO 1928.**

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.
1924	26.64	541,941	3,439,420	1,890,882	17,683,824	192,772	144,841	82	430
1925	26.75	566,717	3,510,994	1,886,231	17,725,007	180,345	137,002	90	399
1926	26.86	542,309	3,310,493	1,776,052	16,972,174	178,191	142,141	89	385
1927	26.86	561,857	3,332,102	1,791,276	17,009,211	181,445	140,366	89	367
1928	28.76	558,323	3,623,468	1,805,339	17,206,196	182,769	132,813	90	377

(ii) *Other Tramways.* There are several lines of privately-owned steam tramways. 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 1928.* The subjoined table gives details regarding all electric tramways in Australia. The returns for tramways in Ballarat and Bendigo, in Brisbane, in Kalgoorlie, and in Hobart are for the calendar year 1928; for other tramways they refer generally to the financial year 1927-28.

**ELECTRIC TRAMWAYS.—AUSTRALIA.—SUMMARY, 1927-28.**

State.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current used for Traction purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue.	Cars, Motors and Trailers.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	%	No.	No.
N.S.W. . .	185.80	10,894,890	127,168,518	34,030,395	341,365,203	4,495,093	3,840,549	85.44	1,578	10,911
Victoria . .	149.26	6,016,926	49,649,907	17,461,458	149,372,032	1,762,079	1,209,175	68.62	596	4,018
Q'land . . .	55.41	2,193,340	19,982,514	6,570,228	77,703,264	810,954	594,126	73.26	275	1,611
S. Aust. . .	74.17	3,176,738	20,327,743	7,440,540	68,546,189	695,649	496,194	71.33	260	1,781
W. Aust. . .	61.93	1,069,242	10,989,904	4,141,242	41,040,909	403,845	330,705	81.89	183	897
Tasmania . .	28.76	558,323	3,623,468	1,805,339	17,206,196	182,769	132,813	72.66	90	377
All States	555.33	24,511,459	231,752,114	71,449,202	695,233,793	8,350,389	6,603,562	79.08	2,082	19,595

The percentage of working expenses on gross revenue for all electric tramways in Australia was 79.08, ranging from 68.62 in the case of Victoria to 85.44 in the case of New South Wales.

(ii) *Summary for Years 1924 to 1928.* The following table gives particulars of the operations of electric tramways in Australia for the years 1924 to 1928 :—

**ELECTRIC TRAMWAYS.—AUSTRALIA.—1924 TO 1928.**

Particulars.	1924.	1925.	1926.	1927.	1928.
Mileage open for Traffic (Route) Miles	482.24	502.66	519.06	538.42	555.33
Total Cost of Construction and Equipment	£ 19,206,509	21,007,915	22,444,569	23,453,826	24,511,459
Current used for Traction Purposes	Kil. hrs. 158,756,941	189,302,481	188,761,134	212,714,880	231,752,114
Tram-miles run	No. 57,725,334	61,941,856	65,302,995	68,726,257	71,449,202
Passengers carried	£ 606,673,314	621,691,985	647,351,333	677,716,965	695,233,793
Gross Revenue	£ 6,123,275	6,248,686	6,633,563	7,364,964	8,350,389
Working Expenses	£ 4,930,302	5,170,814	5,510,118	5,941,835	6,603,562
Percentage of Working Expenses on Gross Revenue	% 80.51	82.75	83.06	80.68	79.08
Cars, Motors and Trailers	No. 2,598	2,720	2,824	2,905	2,982
Persons Employed	17,783	17,808	19,208	20,206	19,595

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 83.06 in 1926, but in 1927 and 1928 the figures declined, the percentage in the latter year being the lowest recorded over the period. The average over the whole period was 81.09 per cent.

**D. AIRCRAFT.**

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

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

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

3. **Activities of Civil Aviation Department.**—(i) *Aerodromes and Landing Grounds.* Amongst the various activities have been the acquisition and preparation of civil aviation landing grounds, which have now been established over the following approved routes :— (a) Perth to Derby (1,467 miles); (b) Perth to Adelaide (1,453 miles); (c) Adelaide to Sydney (790 miles); (d) Sydney to Brisbane (550 miles); (e) Brisbane to Charleville (444 miles); (f) Charleville to Camooweal (825 miles); (g) Camooweal to Daly Waters (475 miles); (h) Cloncurry to Normanton (215 miles); (i) Melbourne to Hay (233 miles); (j) Mildura to Broken Hill (189 miles); and (k) Melbourne to Charleville via Cootamundra (900 miles). The preparation of landing grounds between Derby and Wyndham (550 miles) will be completed before the end of 1929.

Preliminary surveys of the following routes also have been made, but no expenditure has yet been incurred in the preparation of landing grounds in connexion therewith :— (a) Adelaide to Port Lincoln, via Yorke Peninsula (for seaplanes), (200 miles); (b) Melbourne to Launceston via (1) Flinders Island and North-East coast of Tasmania (293 nautical miles), and (2) via King Island and North-West coast (299 nautical miles).

Up to the present 167 landing grounds have been acquired or leased, and prepared for civil aviation purposes. There are 17 private licensed aerodromes also in use.

A very encouraging interest is being evinced by municipal councils and other local authorities in the Government's appeal for the provision and preparation of sites for use as landing grounds throughout the country districts. The Government has assumed responsibility for providing and maintaining all necessary aerodromes and emergency landing grounds on routes over which contracts for regular air services have been granted, but, in regard to the provision of landing facilities at other centres, the Government's attitude is that such action is a responsibility which local governing authorities should undertake. The services of the Government's technical officers are available to assist local authorities in selecting suitable sites for landing grounds, and to advise regarding the works which may be necessary to prepare such areas for use by aircraft.

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

At 30th April, 1929, three subsidized contractors were operating under contracts which, with the exception of the Adelaide-Perth service, provided that up to 100 lb. of mail is to be carried free on each trip, the letters for transmission being surcharged 3d. per  $\frac{1}{2}$  ounce. The total route mileage of these services is 5,404 miles.

The various regular air services over prepared routes have completed 2,483,000 passenger-miles, and carried 18,100 paying passengers over various stages. Over 1,677,000 letters have also been carried.

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

(b) *Aerial Mail Services at 30th April, 1929.* The following aerial mail services were in operation at 30th April, 1929.

(1) *Perth to Derby—Western Australia.*

This service, covering a distance of 1,467 miles, is carried out by the West Australian Airways Limited, machines leaving Perth on Saturdays and returning on Thursdays. Landing places for mails are—Perth, Geraldton, Carnarvon, Onslow, Roebourne, Whim Creek, Port Hedland, Broome, and Derby.

This service has been in operation for more than seven years and is of incalculable value to residents of the north-west coast who freely avail themselves of the facilities for transport and communication which it provides.

The number of letters carried during the first month's operations was 577, but it has increased to about 20,000 per month.

(2) *Charleville to Camooweal and Cloncurry to Normanton—Queensland.*

These services are operated by the Queensland and Northern Territory Aerial Services Limited. The former route covers 1,269 miles, and links up the western terminals of three main railway lines in Western Queensland, viz., Charleville, Longreach, and Cloncurry. The recent extension of the service from Charleville to Brisbane also provides through communication by air between these two points. The latter route (215 miles in length) links up with the main Charleville-Camooweal service at Cloncurry. The landing places for passengers, mails, and freight are—Brisbane, Toowoomba, Roma, Charleville, Tambo, Blackall, Longreach, Winton, McKinlay, Cloncurry, Mt. Isa, and Camooweal.

Services are maintained weekly in each direction.

The original service between Charleville and Cloncurry (577 miles) was commenced on 2nd November, 1922, an extension to Camooweal (additional 248 miles) being made on 7th February, 1925. On the 17th April, 1929, a further extension of 444 miles from Charleville to Brisbane was made.



The service has been maintained successfully since its inception, and is greatly appreciated by residents of Western Queensland and the Northern Territory. The extension of the service to Brisbane will result in placing the North-West within 15 hours flying time of the capital of the State.

(3) *Adelaide-Cootamundra, Hay-Melbourne and Mildura-Broken Hill Services.*

Services have been regularly maintained over these routes since July, 1925, by the Larkin Aircraft Supply Co. Ltd., which previously operated a service between Adelaide and Sydney (790 miles) for a period of twelve months. The current contract with the company provides for (a) a weekly service in each direction between Adelaide and Cootamundra (578 miles) via Mildura, Hay and Narrandera; (b) a service twice a week in each direction between Hay and Melbourne (233 miles) via Deniliquin and Echuca; and (c) a service twice a week in each direction between Mildura and Broken Hill (189 miles).

(4) *Adelaide-Perth.*

This service, covering a distance of 1,453 miles, was inaugurated on the 2nd June, 1929, by West Australian Airways Ltd., and may be regarded as the most progressive enterprise yet undertaken by a civil aviation company in Australia. The service is maintained to a weekly schedule in each direction, the Adelaide-Perth trips being flown on Sundays and Mondays and the Perth-Adelaide trips on Tuesdays and Wednesdays. The machines employed on the service are 14-passenger D.H. 66 "Hercules," each of which is fitted with three 450 h.p. "Jupiter" engines. Night flying equipment has been installed along the route, but all flying will be completed during daylight hours excepting when delays are occasioned by the late arrival of connecting trains or oversea steamers at the terminal points.

The landing places are Adelaide, Ceduna, Forrest, Kalgoorlie, and Perth. The half-way stopping place is Forrest, where an up-to-date hostel for the convenience of passengers and aircraft crews is established. The contracting company is paid at a poundage rate for mails carried. All items of mail matter whether overseas or articles for delivery within the Commonwealth, must bear a special surcharge fee of 3d. per half ounce as in the case of other air services.

With the inauguration of this new service a special air mail stamp was printed and will be used henceforth on all air mail routes for surcharge purposes.

By co-ordinating the existing railway and steamship services oversea correspondents in the Eastern States are enabled to gain one week in the conveyance of their English mails.

(c) *Future Services.* Several additional services have been approved or are under consideration, viz., (i) Camooweal-Daly Waters (475 miles); (ii) Derby-Wyndham (550 miles); (iii) Melbourne-Hobart (425 miles); and (iv) Sydney-Brisbane (550 miles). A contract was granted to the Larkin Aircraft Supply Co. Ltd. towards the end of 1928 for a service between Camooweal and Daly Waters but, owing to the difficulty of obtaining engines from overseas, the commencement of the service has been delayed. The Derby-Wyndham service will be an extension of that at present operating between Perth and Derby, and will probably be established towards the end of 1929. Services over the other two routes above-mentioned are not yet authorized, but the matter is receiving consideration and it is expected that they will be commenced at no distant date.

(d) *Aerial Ambulance Service.* Following an agreement made between the Queensland and Northern Territory Aerial Services Ltd. and the Australian Inland Mission, an aerial ambulance service to provide medical service where required in Western and Northern Queensland and operating from a base at Cloncurry was inaugurated on the 17th May, 1928. The aircraft company agreed to provide the aircraft and pilot and the mission

authorities the doctor. The scheme has proved most successful and many instances are recorded of lives being saved by the services thus made available. During the first twelve months from the inception of the service approximately 18,000 miles were flown.

(e) *Reliability.* During 1928 over 400,000 miles were flown by the three companies operating regular air services without a fatal accident. The total mileage flown by all civil aircraft during the same period was upwards of 1,500,000 miles and three fatal accidents occurred, an average of one fatal accident for every 500,000 miles flown.

4. *Aircraft Construction.*—The manufacture of aircraft in Australia, though yet in its infancy, is making substantial progress. Two of the subsidized aerial mail contracting companies in addition to effecting major repairs have, under permit of the de Havilland Aircraft Co., constructed some D.H. 50A machines for use on their respective routes, the engines and certain metal parts being the only accessories imported.

The Commonwealth Government purchased the right of manufacture of "Moth" Aircraft from the de Havilland Company and recently called tenders for the manufacture of machines of this type. The Larkin Aircraft Supply Co. Ltd. secured the contract and the preliminary work is now in progress. This company has also completed the building of a four passenger commercial type monoplane of metal fuselage construction.

Several companies are exploring the possibilities of local manufacture of approved types of aircraft already in production overseas, and there is every indication that a steady development of manufacturing activities will take place concurrently with the increase in general flying operations.

Messrs. Harkness and Hillier, a Sydney firm, have manufactured a locally designed air-cooled aero engine of 100 h.p. suitable for installation in light aircraft. This engine will shortly be submitted to official tests.

5. *Training of Air Pilots.*—(i) *The Australian Aero Club.* The Australian Aero Club provides facilities for flying instruction and practice at a considerably lower cost than was possible prior to the advent of the light aeroplane. Active training is carried on in Brisbane, Sydney, Melbourne, and Adelaide under the auspices of the several State Sections of the Aero Club, and activities are likely to commence shortly in Launceston under the control of the Tasmanian Section.

Assistance to the following extent is being provided each section by the Commonwealth Government:—(a) The loan of de Havilland "Moth" aeroplanes with spare engines and parts; (b) Bonus of £20 per pupil trained (*ab initio*) to a standard that will enable the pupil to obtain a "Private Pilot's" licence; (c) Bonus for instructional and practice flying at the rate of 10s. per hour for the first 1,000 hours, 7s. 6d. per hour for the second 1,000 hours, and 5s. per hour for third 1,000 hours, up to a limit of £1,200 per annum for any one club; and (d) Free hangar accommodation and free use of aerodrome for clubs' activities. The Sydney body (the Aero Club of New South Wales) is a most successful organization and its progress has been notable. The total personnel employed numbers 15, which includes two instructors and four ground engineers. Over 100 pupils, including several lady members, have graduated and been issued with Class "A" licences. Furthermore, many graduates have completed advanced courses of training and gained their Class "B" (Commercial) licences and are now owners of aircraft.

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

(ii) *Other Organizations.* Similar developments have also taken place in Perth and Brisbane under the agency of the aerial mail contractors. In the latter centre flying training has recently been made the responsibility of the Queensland Section of the Australian Aero Club, the Staff of Q.A.N.T.A.S. supplying the instructional personnel. In Perth, operations are carried on by West-Australian Airways Ltd., and a bonus of £40 per pupil is paid to the company which provides the necessary aircraft, instructors, and hangars.

Flying training on the above lines is also carried out in Goulburn, N.S.W., under the auspices of the Goulburn Aero Club. This organization is entering into an agreement with the Commonwealth Government along similar lines to that with the West Australian Airways in Perth, *i.e.*, the club provides its own equipment and is paid a bonus of £40 per pupil. Many representations during the past year have been made by various bodies and individuals throughout the Commonwealth for Government assistance towards the establishment of flying training schools and the extension of the scheme to towns and districts outside the capital cities is receiving consideration.

At the end of April, 1929, there were 325 pilots holding licences under the Air Navigation Regulations. This number included 111 "B," or commercial pilots, and 214 "A," or private pilots.

**6. Notable Flights.**—Since the end of the European war several notable flights from England to Australia have been carried out by Australian pilots.

The first was at the end of 1919 when Sir Ross and Sir Keith Smith, together with Sergeants J. M. Bennett and W. H. Shiers, completed the journey by air in 29 days, thereby winning the Commonwealth Government grant of £10,000 offered to the first pilot or pilots who should make the flight within a period of 30 days. The brothers Smith received knighthoods, and Sergeants Bennett and Shiers were each awarded the Air Force Cross and honorary commissions in the Royal Australian Air Force in recognition of their performance.

Lieuts. R. J. Parer and J. C. McIntosh also completed the journey by air shortly afterwards, but not within the specified time, and Captain G. C. Matthews, A.F.C., and Sergeant T. D. Kay flew as far as Bali, where a serious mishap to the machine caused them to abandon the flight.

The fastest flight of all, however, was that of Mr. B. Hinkler who, in an Avro "Avian" machine, made the journey alone in 16 days. He left the Croydon Aerodrome at 4 a.m. on 7th February, 1928, and, after 15 successive flying days, arrived at Darwin at 5 p.m. on the 22nd February. As a mark of appreciation for his excellent performance the Commonwealth Government granted him a sum of £2,000, while his Majesty the King awarded him the Air Force Cross.

A further successful venture was that of Captain W. R. Lancaster and Mrs. K. Miller who also made their flight in an Avro "Avian" machine, leaving England on 14th October, 1927, and arriving at Darwin on 20th March, 1928, after a journey beset with numerous hardships.

In 1926 Mr. Alan Cobham, an English pilot, reached Darwin 40 days after leaving England, and returned to England by aeroplane in 34 days.

Captain Kingsford Smith, accompanied by Mr. C. P. Ulm as relief pilot, Lieut. H. Lyon (America) as navigator, and Mr. J. Warner (America) as wireless officer, left San Francisco on 31st May, 1928, in a Fokker monoplane (the "Southern Cross") fitted with three 220 h.p. Wright "Whirlwind" engines on a flight across the Pacific Ocean to Brisbane. He arrived at Honolulu (2,100 miles) on 1st June, left Honolulu on 3rd June, and arrived at Suva (Fiji), a distance of 3,128 miles, on 5th June. He left Suva on 8th June and arrived at Brisbane on 9th June. The total distance covered in the flight was about 6,848 miles, and the flying time approximately 83 hours. The Commonwealth Government presented the aviators with a gift of £5,000, while the New South Wales Government provided £7,000 in recognition of this remarkable achievement. Each pilot was also awarded the Air Force Cross and granted honorary rank in the Royal Australian Air Force. Shortly after the trans-Pacific flight, the same two aviators, on this occasion accompanied by Mr. H. A. Litchfield as navigator and Mr. T. McWilliams as radio operator, made the first successful flight to New Zealand and back. They took off from Mascot Aerodrome, Sydney, at 5.30 p.m. on the 10th September, 1928, and landed at Christchurch, New Zealand, 14 hours 12 minutes later, having made the flight almost entirely between sunset and sunrise. The return flight from New Zealand to Australia was successfully accomplished during the following month.

7. **Statistical Summary.**—The collection and compilation of aircraft statistics were undertaken by the Commonwealth Bureau of Census and Statistics on the 1st July, 1922. The subjoined table gives a summary of operations for the years ended 30th June, 1924 to 1928 :—

**CIVIL AIRCRAFT.—SUMMARY, 1923-24 TO 1927-28.**

Particulars.	Year ended 30th June.				
	1924.	1925.	1926.	1927.	1928.
Registered Aircraft Owners					
(a) .. .. . No.	22	25	23	29	37
Registered Aircraft (a) No.	48	57	54	84	90
Licensed Pilots—(a)					
Private .. .. . No.	} 36	} 34	} 41	{ 48	{ 127
Commercial .. . No.					
Licensed Ground Engineers (a) .. .. . No.	93	110	116	148	163
Aerodromes—(a)					
Government .. . No.	35	43	44	45	46
Public .. .. . No.	10	11	11	11	13
Government Emergency Grounds .. . No.	55	88	90	91	94
Flights carried out No.	4,354	4,893	5,838	17,284	56,216
	h. m.	h. m.	h. m.	h. m.	h. m.
Hours flown .. .. .	3,703 27	5,302 44	6,426 35	10,447 24	15,783 30
Approx. Mileage .. . Miles	269,909	404,420	487,603	772,643	1,153,572
Passengers carried—					
Paying .. .. . No.	3,453	3,663	4,174	13,984	36,397
Non-paying .. . No.	1,308	2,428	2,830	3,222	5,629
<b>Total .. .. . No.</b>	<b>4,761</b>	<b>6,091</b>	<b>7,004</b>	<b>17,206</b>	<b>42,026</b>
Goods, weight carried lbs.	8,456	11,132	62,873	125,924	116,373
Mails, letters carried No.	174,691	225,128	272,707	290,746	301,677
Accidents—					
Persons killed No.	..	1	..	4	2
Persons injured No.	1	3	1	3	5

(a) At 30th June.

In previous issues of the Year Book, particulars of flying carried out in the various States have been shown, but, owing to the extension of interstate flying both by the subsidized companies and private pilots, it has been found impracticable to obtain complete details for the several States separately for the year ended 30th June, 1928. The figures shown in the above table are therefore for the Commonwealth as a whole.

Particulars regarding aviation in New Guinea will be found in Chapter XV.

**E. MOTOR VEHICLES.**

1. **The Motor Car and Motor Industry.**—(i) *Evolution of the Motor Car.* In the issue of the Year Book for 1927 (No. 20, p. 275) a short history of the evolution of the motor car is given, but consideration of space precludes its repetition in the current issue.

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

Although, as yet, motor cars are not entirely manufactured in Australia, the money invested in assembling and body building plants has assumed considerable proportions during recent years, and some idea of the value of Australia as a market for the motor trade is instanced by the fact that during the year 1927-28 the value of 9,583 motor bodies imported was £1,115,303, and of the 67,875 chassis, £6,758,255. The value of 58,955 bodies built in Australia to equip the chassis for which bodies were not imported was approximately £3,436,674. The value of the tyre equipment, both locally produced and imported, for which figures are not, however, available, must also be taken into consideration, particularly as the prevailing practice is for distributors to retail cars on a five-tyre basis. Fuels imported during the year for use in motor vehicles were—Crude petroleum, 74 million gallons, valued at £791,766, and petroleum, etc., 178 million gallons, valued at £6,087,217. Spares, batteries, accessories, etc., also are additional factors contributing to the potentialities of Australia as a market.

At the 30th June, 1928, the number of motor cars per 1,000 of population was nearly 90, which, however, is not as high as that recorded in New Zealand, viz., 123, so that it would appear that the saturation point has yet to be reached, and until that time, provided economic conditions maintain their stability, the marketing prospects remain at least as good as during the past decade.

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

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

**4. Motor Omnibuses.**—Motor omnibus traffic, both in urban and provincial centres, has assumed considerable proportions during recent years, and prior to the constitution of Boards empowered to allocate routes over which omnibuses may operate, had a very marked effect on Railway and Tramway services. By regulating the licensing of motor omnibuses the economic waste arising from duplication of routes and services parallel with or contiguous to existing railway and tramway systems is avoided. The general principle governing the allocation of routes is that omnibus services should act as feeders to existing transport utilities. Revenue from licence fees is devoted principally to the maintenance or construction of roadways to enable them to withstand the wear and tear caused by the heavy traffic. Complete statistics regarding motor omnibus operations are, however, not at present available, but some indication of the effect unrestricted motor omnibus services would have on the railways and tramways may be obtained from the operations of some services conducted by Railway and Tramway systems as adjuncts to their main services during the year 1927-28. Such services are conducted in Victoria by the Victorian Railways Commissioners and by the Melbourne and Metropolitan Tramways Board, and in South Australia by the South Australian Railways Commissioners and by the Municipal Tramway Trust, Adelaide, the number of passengers carried by these services during the year 1927-28 being 497,314, 4,542,902, 1,341,404 and 6,184,693 respectively.

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

5. Motor Vehicles Registered, etc.—(i) Year 1927–28. Particulars of the registration of motor vehicles, etc., for the year 1927–28 are contained in the subjoined table :—

MOTOR VEHICLES.—SUMMARY, 1927–28.

States and Territories.	Motor Vehicles Registered.					Drivers' and Riders' Licences Issued.	Revenue derived from—		
	Motor Cars.	Motor Cycles.	Commercial Vehicles.	Total.	Per 1,000 of population.		Vehicle Registrations and Motor Tax.	Drivers' and Riders' Licences.	Total.
	No.	No.	No.	No.	No.		£	£	£
New South Wales	141,329	29,038	37,197	207,564	85.7	287,173	1,314,751	134,728	1,449,479
Victoria	126,120	24,015	2,208	150,343	85.9	188,057	898,843	47,009	945,852
Queensland	65,444	8,088	62,457	75,989	83.3	46,696	375,647	19,075	394,722
South Australia	51,753	12,741	11,517	76,011	131.6	92,198	492,676	31,922	523,698
Western Australia	23,644	6,071	8,665	38,380	96.0	47,112	203,789	11,778	215,567
Tasmania	9,730	3,887	1,559	15,176	72.1	17,940	71,458	5,403	76,861
Central Australia	27	1	13	41	95.9	54	34	13	47
North Australia	168	41	157	366		410	88	96	184
Federal Capital Territory	916	135	233	1,284	160.3	1,597	13,135	840	13,975
Australia	419,131	84,017	62,006	565,154	89.9	681,237	3,370,421	249,964	3,620,385

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

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

The number of all motor vehicles per 1,000 of population shows that Federal Capital Territory with 160.3 had the greatest density, followed in order of importance by South Australia (131.6), Western Australia (96.0), North and Central Australia (95.9), Victoria (85.9), New South Wales (85.7), Queensland (83.3), and Tasmania least with 72.1; the figure for the Commonwealth being 89.9.

(ii) *Quinquennium 1924–1928*. The following table shows the number of vehicles registered, licences issued, and revenue received therefrom during each of the years 1923–24 to 1927–28 :—

MOTOR VEHICLES.—REGISTRATIONS, ETC., 1923-24 TO 1927-28.

Year	Motor Vehicles Registered.					Drivers' and Riders' Licences Issued.	Revenue derived from—		
	Motor Cars.	Motor Cycles.	Commercial Vehicles. (a)	Total.	Per 1,000 of Population.		Vehicle Registration and Motor Tax.	Drivers' and Riders' Licences.	Total.
	£	£	£	£	£		£	£	£
1923–24	171,680	52,133	18,056	241,869	41.7	296,177	801,701	62,001	863,702
1924–25	221,444	58,079	26,116	305,639	51.5	310,150	1,326,672	85,508	1,415,180
1925–26	282,199	70,209	37,892	390,300	64.6	496,311	2,098,112	137,639	2,235,751
1926–27	364,384	86,242	59,914	495,540	80.3	608,585	2,636,506	208,857	2,845,363
1927–28	419,131	84,017	62,006	565,154	89.9	681,237	3,370,421	249,964	3,620,385

(a) Incomplete, partly included with Motor Cars.

During the period dealt with, the number of motor vehicles showed an average annual increase of almost 24 %; the greatest increase (28%) being recorded during 1925–26 and the least (14 %) during 1927–28. The number of vehicles per 1,000 of population increased from 41.7 to 89.9.

6. **Comparative Motor Vehicle Statistics, 1929.**—The result of the 1929 World Motor Census, conducted by the "American Automobile" magazine, from which the following particulars have been extracted, shows that there were approximately 32,000,000 motor cars, trucks, and buses registered in the various countries of the world at 1st January, 1929.

**COMPARATIVE MOTOR VEHICLE STATISTICS, 1st JANUARY, 1929.**

Country.	Motor Cars, Trucks, and Buses.	Motor Cycles.
Australia .. .. .	515,851	90,000
Argentine .. .. .	299,839	2,592
Belgium .. .. .	108,225	40,000
Brazil .. .. .	155,000	1,500
Canada .. .. .	1,061,828	7,903
Cuba .. .. .	45,604	364
Denmark .. .. .	88,898	21,554
France .. .. .	1,108,900	250,000
Germany .. .. .	545,100	491,000
Great Britain .. .. .	1,372,109	715,481
India .. .. .	131,500	25,000
Irish Free State .. .. .	40,198	7,853
Italy .. .. .	172,000	80,000
Japanese Empire .. .. .	72,878	17,500
Mexico .. .. .	62,500	(a)
Netherlands .. .. .	85,500	30,593
Netherlands East Indies .. .. .	55,823	2,093
New Zealand .. .. .	151,454	36,130
Union of South Africa .. .. .	125,850	37,500
Spain .. .. .	156,501	35,000
Sweden .. .. .	126,898	45,270
Switzerland .. .. .	61,000	39,500
United States of America .. .. .	24,494,580	117,085

(a) Not available.

The foregoing figures are in some cases approximately stated, being based on estimates furnished by Trade Commissioners or representative motor trade organizations in the several countries. The figures for Australia are estimated at 31st December, 1928, and differ from those stated in para. 5, which are actual registrations at 30th June, 1928.

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

**F. POSTS, TELEGRAPHS AND TELEPHONES.**

**§ 1. Posts.**

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

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

2. **Postal Matter Dealt With.**—(i) *Australia.* The following table gives a summary of the postal matter dealt with in Australia during the five years 1924 to 1928. Although mail matter posted in Australia for delivery therein is necessarily handled at least twice, only the numbers dispatched are included in the table following, which consequently gives the number of distinct articles handled. Owing to the non-completion of an investigation which is being made by the Postmaster-General's Department into the system of recording postal matter dealt with, particulars of the numbers of letters and postcards, newspapers and packets dealt with during the year 1927–28 are not available.

POSTAL MATTER DEALT WITH.—AUSTRALIA, 1923–24 TO 1927–28.

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.

1924 <sup>a</sup> ..	579,679	99,883	143,429	24,714	93,575	16,124	9,387	1,617	5,959	1,027
1925 ..	616,804	114,027	151,484	25,548	106,089	17,892	10,615	1,790	6,147	1,037
1926 ..	649,697	108,426	154,169	25,729	118,106	19,710	11,413	1,905	6,302	1,052
1927 ..	695,902	113,886	161,140	26,371	121,536	19,890	12,166	1,991	7,315	1,197
1928 ..	(a)	(a)	(a)	(a)	(a)	(a)	14,028	2,250	7,023	1,126

OVERSEA RECEIVED.

1924 ..	34,708	5,980	13,662	2,354	4,273	736	447	77	475	82
1925 ..	40,911	6,900	14,824	2,500	5,262	887	446	75	475	80
1926 ..	42,708	7,127	16,135	2,693	6,333	1,057	454	76	518	86
1927 ..	49,958	8,176	17,731	2,902	7,586	1,241	508	83	566	93
1928 ..	(a)	(a)	(a)	(a)	(a)	(a)	467	75	577	93

OVERSEA DISPATCHED.

1924 ..	29,016	5,000	5,681	979	2,283	393	190	33	341	59
1925 ..	34,328	5,790	6,839	1,153	2,617	441	169	28	388	65
1926 ..	42,440	7,083	8,290	1,383	2,964	495	212	35	415	69
1927 ..	50,285	8,229	9,844	1,611	3,607	590	229	37	466	76
1928 ..	(a)	(a)	(a)	(a)	(a)	(a)	209	33	473	76

TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL DEPARTMENT.

1924 ..	643,403	110,863	162,772	28,047	100,131	17,253	10,024	1,727	6,775	1,168
1925 ..	692,043	126,717	173,147	29,201	113,968	19,220	11,230	1,893	7,010	1,182
1926 ..	734,845	122,636	178,594	29,805	127,403	21,262	12,079	2,016	7,235	1,207
1927 ..	796,145	130,291	188,715	30,884	132,729	21,721	12,903	2,111	8,347	1,366
1928 ..	(a)	(a)	(a)	(a)	(a)	(a)	14,704	2,358	8,073	1,295

(a) Not available.

3. **Postal Facilities.**—(i) *Relation to Area and Population.* The subjoined statement shows the number of post offices, the area in square miles and the number of inhabitants to each post office (including non-official offices) in each State and in Australia at the end of the year 1927–28. In order to judge clearly the relative postal facilities provided in each State, the area of country to each office, as well as the number of inhabitants per office, should be taken into account. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory, while the returns for the Federal Capital Territory are included in those for New South Wales.



**POSTAL FACILITIES.—RELATION TO AREA AND POPULATION,  
at 30th JUNE, 1928.**

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.
Number of post offices(a) .. ..	2,683	2,748	1,279	803	689	518	8,720
Number of square miles of territory to each office in State .. ..	116	32	524	1,125	1,416	51	341
Number of inhabitants to each office	906	637	713	725	580	406	721
Number of inhabitants per 100 square miles .. ..	783	1,991	136	64	41	803	211

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

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

(ii) *Number of Offices.* The following table shows the number of post offices in each year from 1923-24 to 1927-28 inclusive :—

**POST OFFICES AT 30th JUNE, 1924 TO 1928.**

State.	At 30th June—									
	1924.		1925.		1926.		1927.		1928.	
	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)	Official and Semi-Official Post Offices.	Non-Official Post Offices. (a)
New South Wales	460	2,183	459	2,205	458	2,221	456	2,226	455	2,228
Victoria ..	273	2,399	280	2,428	285	2,429	284	2,445	286	2,462
Queensland ..	215	1,044	215	1,072	216	1,068	216	1,069	215	1,064
South Australia ..	143	662	147	660	148	660	150	657	146	657
Western Australia ..	137	709	138	582	139	593	132	583	130	559
Tasmania ..	47	495	48	466	48	475	48	473	47	471
Australia ..	1,275	7,492	1,287	7,413	1,294	7,446	1,286	7,453	1,279	7,441

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

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

**POSTAL EMPLOYEES AND MAIL CONTRACTORS, 1924 TO 1928.**

State.	At 30th June—									
	1924.		1925.		1926.		1927.		1928.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
Central Office ..	100	..	110	..	130	..	149	..	170	..
New South Wales	13,947	1,791	14,413	1,915	14,244	1,924	14,214	1,933	13,856	1,947
Victoria ..	10,279	1,133	11,140	1,139	11,226	1,156	11,607	1,145	10,950	1,142
Queensland ..	6,220	819	6,322	839	6,181	850	5,953	860	5,504	870
South Australia ..	4,014	354	3,926	430	4,275	424	4,388	402	4,144	413
Western Australia ..	2,450	382	3,271	319	2,986	379	3,061	357	2,883	358
Tasmania ..	1,582	206	1,551	243	1,615	247	1,555	247	1,509	236
Australia ..	38,592	4,685	40,733	4,885	40,657	4,080	40,927	4,944	39,016	4,966

4. Registered Letters, Packets, etc.—Particulars regarding registered articles for the year 1927-28 are given in the table hereunder :—

REGISTERED ARTICLES POSTED AND RECEIVED, 1927-28.

State.	Posted in each State for Delivery within Australia.		Posted in each State for Delivery Overseas.		Total Posted.		Received in each State from Overseas.	
	Number ( <small>000 omitted</small> ).	Per 1,000 of Population.	Number ( <small>000 omitted</small> ).	Per 1,000 of Population.	Number ( <small>000 omitted</small> ).	Per 1,000 of Population.	Number ( <small>000 omitted</small> ).	Per 1,000 of Population.
New South Wales ..	2,715	1,128	206	86	2,921	1,214	248	103
Victoria ..	1,911	1,098	124	71	2,035	1,169	188	108
Queensland ..	979	1,089	50	55	1,029	1,144	47	53
South Australia ..	593	1,022	37	63	630	1,085	35	61
Western Australia ..	541	1,379	52	133	593	1,513	48	123
Tasmania ..	285	1,318	4	22	289	1,340	11	50
Australia ..	7,024	1,126	473	75	7,497	1,202	577	93

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

(ii) *Summary of Business.* The next statement gives particulars regarding the value-payable post in each State for the years 1924 to 1928 :—

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1924 TO 1928.

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.
1924 .. ..	165,360	6,421	225,040	2,456	63,393	292	462,962
1925 .. ..	209,265	8,397	199,752	3,559	69,065	387	490,425
1926 .. ..	236,900	11,508	204,819	5,033	69,970	316	528,546
1927 .. ..	252,300	11,801	216,418	8,132	71,473	446	560,570
1928 .. ..	296,391	20,005	236,040	11,789	79,761	505	644,491
VALUE COLLECTED.							
	£	£	£	£	£	£	£
1924 .. ..	277,087	11,310	364,965	3,406	101,515	715	758,998
1925 .. ..	347,902	15,440	331,280	5,728	108,193	1,055	809,598
1926 .. ..	397,283	22,035	328,954	6,327	109,671	811	865,081
1927 .. ..	402,186	21,617	334,619	10,939	112,276	1,075	882,712
1928 .. ..	462,794	35,699	350,712	17,095	114,035	1,040	981,375

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1924 TO 1928—*continued.*

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

	£	£	£	£	£	£	£
1924 .. ..	23,026	855	30,318	263	8,277	42	62,781
1925 .. ..	31,324	1,138	25,908	469	8,951	53	67,843
1926 .. ..	32,232	1,564	26,539	634	8,872	44	69,885
1927 .. ..	32,450	1,569	28,108	864	8,720	58	71,769
1928 .. ..	36,318	2,547	30,700	1,264	8,939	62	79,830

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

6. *Sea-borne Mail Services.*—(i) *Summary.* In earlier 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 information in respect of sea-borne mail services as at 1st April, 1929 :—

## SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES, 1929.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. <i>To and from Ports in New South Wales—</i>			
(i) N.S. WALES—Q'LAND	Weekly	Sydney and Brisbane	Poundage rates
(ii) NORTHERN PORTS— (a) North Coast S.N. Co.	Once weekly	Sydney and Clarence River, Byron Bay, and Richmond River	" "
(b) " "	Fortnightly	Sydney and South Solitary Island	" "
(iii) SOUTH COAST PORTS— Illawarra and S. Coast S.N. Co.	Fortnightly	Sydney, Montague Island	" "
2. <i>To and from Northern Ports of Queensland—</i>			
(a) Hayles Magnetic Island Limited	Weekly	From Cairns to Cooktown via Port Douglas	Subsidized from 1st January, 1928, for three years. Amount of subsidy, £2,200 per annum.
(b) 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.
<b>3. To and from Ports in South Australia—</b>			
(a) Coast Steamship Co. Ltd.	Weekly	Port Adelaide and Kingscote	Subsidized to 31st December, 1931. Amount of subsidy, £1,000
(b) Adelaide Steamship Co. . .	Twice weekly	Port Adelaide and Port Lincoln	Subsidized to 31st December, 1931. Amount of subsidy, £3,500
(c) " " " " . . .	Weekly	Port Adelaide and Port Lincoln	Poundage rates
(d) " " " " " " . . .	"	Port Adelaide and Arno Bay	" "
(e) " " " " " " . . .	"	Walleroo and Cowell . .	" "
(f) Coast Steamships Ltd. . .	Fortnightly	Port Adelaide to Streaky Bay	" "
(g) " " " " " " . . .	Weekly during summer months (Thursdays)	Port Adelaide to Kingscote	" "
(h) McIlwraith, McEacharn Line	Monthly	Port Adelaide to Albany	" "
<b>4. Western Australia— TO AND FROM PORTS ON N.W. COAST—</b>			
(a) State Shipping Service	Monthly	Fremantle and Derby . .	Subsidized 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 Poundage rates
(b) " " " " " " . . .	Once each sixty days	Fremantle and Darwin . .	
(c) West Australian S.N. Co.	About fortnightly	Fremantle and Singapore, via N.W. Ports	
(d) State Shipping Service	Irregularly, during the cattle season	Fremantle, Derby, Wyndham, Java and Singapore	
<b>5. Tasmania—</b>			
(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.	Weekly	Sydney and Hobart† . .	Poundage rates
(d) Union Steamship Co. . .	"	Sydney, Launceston, and Devonport	" "
(e) Holyman and Sons Pty. Ltd.	"	Melbourne—Launceston	" "
(f) " " " " " " . . .	"	Melbourne, Launceston*	" "
(g) " " " " " " . . .	"	Melbourne, Burnie, etc., via King Island	" "
(h) Huon Channel and Peninsula Co.	Thrice a week	Hobart and Kelly's Point, via Pearson's Point	Subsidized by agreement dated 1st January, 1928, for three years. Amount of subsidy, £63 per annum
(i) " " " " " " . . .	Four times a week	Hobart and Altonnah . .	Subsidized by agreement dated 1st January, 1928, for three years. Amount of subsidy, £75 per annum
(j) The Commissioner, Tasmanian Government Railways	Every two weeks	Launceston and Furneaux Group of Islands	Subsidized by agreement dated 1st January, 1928, for three years. Amount of subsidy, £375 per annum
(k) " " " " " " . . .	Fortnightly	Launceston and Currie, King Island	Subsidized by agreement dated 1st January, 1928, for three years. Amount of subsidy, £400 per annum
(l) Holyman and Sons Pty. Ltd.	Weekly	Burnie and Melbourne, via Fraser River, King Island	Poundage rates

\* Not operative during winter months, as under that time-table the contract vessel leaves on the same day during this period.

† Not operative during winter months.

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

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
<b>6. To and from Northern Territory—</b>			
(a) Burns, Philp and Co. . .	Monthly	To and from Melbourne and Sydney, via Queensland ports	Poundage rates
(b) State Steamship Service of Western Australia	Once each sixty days	Fremantle and Darwin . .	See Item 4 (b)
<b>7. To and from New Zealand—</b>			
(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) Canadian - Australasian and Union Line . .	Fortnightly	Sydney, Auckland, and Wellington	" "
(d) Union S.S. Co. . .	About every three weeks	Melbourne and Wellington, or Bluff	" "
<b>8. Pacific Islands—</b>			
(a) Burns, Philp and Co. . .	Every five weeks	Sydney to Lord Howe and Norfolk Islands and New Hebrides	Subsidized by Commonwealth Government]
(b) British Phos. Commission and London Missionary Society's vessel <i>John Williams</i>	Irregularly	Sydney to Nauru and Ocean Islands, Gilbert and Ellice Groups	" "
(c) Burns, Philp and Co. . .	Monthly	Sydney to Papua, via Brisbane	" "
(d) " " . .	Every three weeks	Sydney to Rabaul, via Brisbane	" "
(e) " " . .	Every five weeks	Sydney to Solomon Islands, via Brisbane	" "
(f) " " . .	"	Sydney and Santa Cruz, via Brisbane and Tulagi	" "
<b>9. New Caledonia and New Hebrides—</b>			
(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
(c) A.U.S.N. Co. . .	Every three weeks	Sydney and Noumea . .	" "
<b>10. Fiji, Friendly Islands, and Samoa—</b>			
(a) Union S.S. Co. . .	Every four weeks	Sydney and Suva . .	" "
(b) " " . .	"	Sydney, Suva, Tonga, and Samoa	" "
(c) A.U.S.N. Co. . .	Every three weeks	Sydney and Suva . .	" "
(d) Oceanic S.S. Co. . .	"	Sydney, Suva, and Samoa	" "
<b>11. To Eastern Ports—</b>			
(a) Burns, Philp and Co. . .	Monthly	Melbourne and Sydney to Java and Singapore, via Queensland Ports and Darwin	Subsidized by Commonwealth Govt. Mails at poundage rates
(b) Aust.-Oriental Line . .	About once a month	Melbourne and Sydney to Hong Kong, Manila, China, via Queensland Ports	Poundage rates
(c) Eastern and Aus'n. Line	Monthly	Sydney to Manila, China, Japan, via Brisbane	" "
(d) Nippon Yusen Kaisha . .	Every four weeks	Melbourne and Sydney to Manila, China, and Japan, via Queensland Ports	Postal Union rates
(e) Osaka Shosen Kaisha . .	Monthly	Melbourne and Sydney to Japan, via Brisbane	Poundage rates
(f) Japan-Australia Line . .	"	Melbourne and Sydney to Japan via Brisbane	" "
(g) Royal Dutch Packet S.N. Co.	"	Melbourne to Java and Singapore, via Sydney and Queensland Ports	" "
(h) Various other steamers	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, Japan, and Malay Peninsula	" "
(i) Western Australian S.N. Co.	About fortnightly	W.A. Ports, Java, and Singapore	" "
(j) Austral East Indies Line of steamers	Monthly	Sydney, Melbourne, Adelaide, Fremantle, Java, and Singapore	" "

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

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
12. <i>South Africa</i> — Blue Funnel, White Star, P. and O. Branch Service, and other Companies	Irregularly	Sydney, Melbourne, Adelaide, and Fremantle to Durban and Capetown	Poundage rates
13. <i>To and from Europe, via Suez</i> — (a) Orient Steam Navigation Co.	Fortnightly from September to May and every four weeks from June to August	Brisbane, Sydney, Melbourne, Adelaide, Fremantle, and London, <i>via Suez</i>	Subsidy, £130,000. Commenced 20th September 1921. Terminable on twelve months' notice by either party
(b) Peninsular and Oriental S.N. Co. Ltd.	Fortnightly	Sydney, Melbourne, Adelaide, Fremantle, and London, <i>via Suez</i>	Postal Union rates
(c) Peninsular and Oriental Branch Line	See footnote*	" " "	Poundage rates
(d) Aberdeen and Commonwealth Line	About every four weeks	" " "	" "
14. <i>To and from Europe, via Vancouver</i> — (a) Canadian-Aust. Line ..	Irregularly	Sydney and Vancouver, B.C., <i>via</i> Auckland, Fiji, Honolulu	" "
15. <i>To and from Europe, via San Francisco</i> — (a) Union Steamship Company	"	Sydney, Wellington, Raratonga, Tahiti, and San Francisco	Subsidized by New Zealand Govt., Mails from Aust. at Postal Union rates
(b) Oceanic Steamship Co...	"	Sydney, Suva, Pago Pago (Samoa), Honolulu, and San Francisco	Poundage rates
16. <i>North America</i> — (a) Union S.S. Co. ..	Every four weeks	Sydney, Wellington, Tahiti, and San Francisco	" "
(b) Canadian-Aust. Line ..	"	Sydney, Auckland, Fiji, Honolulu, and Vancouver	" "
(c) Oceanic S.S. Co. ..	Every three weeks	Sydney, Suva, Pago Pago (Samoa), Honolulu, and San Francisco	" "
17. <i>South America</i> — (a) { Oceanic S.S. Co. .. { Union S.S. Co. ..	Thrice a month	Sydney, <i>via</i> San Francisco to ports in Chile, Brazil, Peru, Uruguay, and Argentine	" "
(b) Various other steamers	Irregularly	<i>Via</i> Newcastle and Sydney to various ports	" "

\* In addition to the fortnightly service provided by Peninsular and Oriental contract steamers, four extra voyages are run by P. and O. Branch vessels. This arrangement operating in conjunction with Orient Line sailings provides a weekly mail service between Australia and the United Kingdom and Europe.

(ii) *Average and Fastest Time of Mails to and from London. (a) Via Suez Canal.*

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 1928-29:—

## AVERAGE AND FASTEST TIME.—MAILS VIA SUEZ CANAL, LONDON TO FREMANTLE, AND VICE VERSA DURING 1928-29.

Period.	London to Fremantle.		Fremantle to London.	
	Average Time.	Fastest Time.	Average Time.	Fastest Time.
	Days. Hours.	Days. Hours.	Days. Hours.	Days. Hours.
1.3.28 to 2.5.29 .. ..	25 19½	24 18	26 11	25 1¼

(b) *Via America.* The average and fastest times occupied in the conveyance of mails between London and Sydney via America during 1928 were :—

**AVERAGE AND FASTEST TIME.—MAILS VIA AMERICA, DURING 1928.**

Service.	Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.
London to Sydney	via Vancouver .. .. .	(a)	(a)	—
	via San Francisco .. .. .	34	8	33
Sydney to London	via Vancouver .. .. .	37	9	34
	via San Francisco .. .. .	33	19	32

(a) No mails received from London in 1928 via Vancouver.

(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, 1928 :—

**MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1927–28.**

Service.	Orient S.N. Co.	Queensland Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
Annual subsidy .. .. .	£ 130,000	£ 2,662	£ 4,120	£ 5,166	£ 30,000

During the year 1927–28 the amount paid for conveyance of mails at poundage rates by non-contract vessels was £44,722; by road services, £691,087; and by railways services, £514,696. The total expenditure during the financial year 1927–28 on the carriage of mails, as disclosed by the Profit and Loss Account, amounted to £1,404,740.

7. *Transactions of the Dead Letter Offices.*—The table hereunder shows the number of letters, postcards and letter-cards, and packets and circulars, including Inland, Interstate, and International, dealt with by the Dead Letter Offices in 1927–28, and the methods adopted in the disposal thereof :—

**DEAD LETTER OFFICES.—SUMMARY, 1927–28.**

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

Returned direct to writers or delivered	1,028,731	371,105	206,752	118,179	142,251	98,874	1,965,892
Destroyed in accordance with Act. . .	119,561	98,985	34,198	16,753	11,183	11,940	292,570
Returned to other States or Countries as unclaimed .. .. .	64,672	36,923	24,260	10,796	18,432	1,140	156,223
<b>Total .. .. .</b>	<b>1,212,964</b>	<b>506,963</b>	<b>265,210</b>	<b>145,728</b>	<b>171,866</b>	<b>111,954</b>	<b>2,414,685</b>

**PACKETS AND CIRCULARS.**

Returned direct to writers or delivered	911,279	223,281	167,027	80,054	99,072	12,708	1,493,421
Destroyed in accordance with Act. . .	184,082	114,927	56,931	91,295	1,709	102	449,046
Returned to other States or Countries as unclaimed .. .. .	3,457	32,398	9,336	5,065	710	2,772	53,738
<b>Total .. .. .</b>	<b>1,098,818</b>	<b>370,606</b>	<b>233,294</b>	<b>176,414</b>	<b>101,491</b>	<b>15,582</b>	<b>1,996,205</b>
<b>Grand Total (letters, packets, etc.) .. .. .</b>	<b>2,311,782</b>	<b>877,569</b>	<b>498,504</b>	<b>322,142</b>	<b>273,357</b>	<b>127,536</b>	<b>4,410,890</b>

During the year 1927-28 money and valuables to the amount of £137,894 were found in undeliverable postal articles, while 44,750 postal articles were posted without address, including 430 which contained money and valuables to the extent of £3,687.

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

(ii) *Summary for States, 1927-28.* Particulars regarding the business transacted in each State for the year 1927-28 are given hereunder :—

**MONEY ORDERS AND POSTAL NOTES.—SUMMARY, 1927-28.**

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ..	7,852,117	7,665,839	52,299	2,459,298	55,183
Victoria ..	3,372,876	3,520,857	23,200	1,704,911	38,458
Queensland..	2,628,053	2,383,784	17,753	584,056	12,955
South Australia ..	1,145,735	1,036,301	8,631	386,838	8,708
Western Australia ..	1,427,316	1,258,823	9,591	300,958	6,467
Tasmania ..	584,784	545,776	3,929	143,913	3,267
Australia ..	17,010,881	16,411,380	115,403	5,579,974	125,038

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

(iii) *Summary, Australia, 1924 to 1928.* The next table shows the total number and value of money orders and postal notes issued and paid in Australia from 1923-24 to 1927-28 :—

**MONEY ORDERS AND POSTAL NOTES.—SUMMARY, AUSTRALIA, 1923-24 TO 1927-28.**

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).
1924 ..	2,832	14,377	2,686	13,913	13,382	4,350	13,240	4,311
1925 ..	2,976	15,155	2,835	14,728	13,437	4,634	13,370	4,616
1926 ..	3,081	15,845	2,911	15,366	14,237	4,946	14,044	4,862
1927 ..	3,225	16,500	3,043	15,925	14,502	5,300	14,360	5,270
1928 ..	3,349	17,011	3,188	16,411	15,402	5,579	15,357	5,568

(iv) *Classification of Money Orders Issued and Paid.* (a) *Orders Issued.* The next table shows the number and value of money orders issued in each State during the year 1927-28, classified according to the country where payable :—



## MONEY ORDERS ISSUED.—COUNTRY WHERE PAYABLE, 1927-28.

State in which Issued.	Where Payable.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
NUMBER.					
New South Wales ..	1,407,538	15,509	103,798	24,991	1,551,836
Victoria ..	582,339	6,848	60,010	17,674	666,871
Queensland..	462,352	2,023	29,224	11,795	505,394
South Australia ..	205,244	1,141	20,651	7,738	234,774
Western Australia ..	230,212	941	27,650	5,377	264,180
Tasmania ..	117,964	1,340	5,548	1,551	126,403
Australia ..	3,005,649	27,802	246,881	69,126	3,349,458
VALUE.					
New South Wales ..	£ 7,353,908	£ 69,309	£ 312,043	£ 116,857	£ 7,852,117
Victoria ..	3,092,527	26,267	173,451	80,631	3,372,876
Queensland..	2,473,755	8,780	85,396	60,122	2,628,053
South Australia ..	1,043,204	4,679	62,031	35,821	1,145,735
Western Australia ..	1,316,567	4,711	75,048	30,990	1,427,316
Tasmania ..	563,517	5,884	12,114	3,269	584,784
Australia ..	15,843,478	119,630	720,083	327,690	17,010,881

(b) *Orders Paid.* The number and value of money orders paid in each State during the year 1927-28, classified according to the country where issued, are given hereunder :—

## MONEY ORDERS PAID.—COUNTRY OF ISSUE, 1927-28.

State in which Paid.	Where Issued.				Total.
	In Australia.	In New Zealand.	In Great Britain and Ireland.	In Other Countries.	
NUMBER.					
New South Wales ..	1,448,848	37,954	19,988	14,323	1,521,113
Victoria ..	639,826	19,043	12,637	5,688	677,194
Queensland..	429,713	2,390	5,978	4,032	442,113
South Australia ..	199,073	1,183	3,424	1,149	204,829
Western Australia ..	217,566	1,517	5,685	1,602	226,370
Tasmania ..	109,842	3,112	1,382	2,084	116,420
Australia ..	3,044,868	65,199	49,094	28,878	3,188,039
VALUE.					
New South Wales ..	£ 7,379,979	£ 137,964	£ 92,229	£ 55,667	£ 7,665,839
Victoria ..	3,382,976	59,544	56,960	21,377	3,520,857
Queensland..	2,334,779	9,985	25,914	13,106	2,383,784
South Australia ..	1,012,443	4,279	14,565	5,014	1,036,301
Western Australia ..	1,216,921	6,185	27,990	7,727	1,258,823
Tasmania ..	529,053	7,657	4,392	4,674	545,776
Australia ..	15,850,151	225,614	222,050	107,565	16,411,380

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

(v) *Classification of Postal Notes Paid.* The subjoined table shows the number and value of postal notes paid during the year 1927-28, 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, 1927-28.**

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
<b>NUMBER.</b>							
Issued in same State	4,542,985	3,013,348	1,266,127	687,839	688,753	316,533	10,515,585
Issued in other States	596,520	432,192	1,211,483	67,325	28,908	2,504,657	4,841,085
<b>Total</b> ..	<b>5,139,505</b>	<b>3,445,540</b>	<b>2,477,610</b>	<b>755,164</b>	<b>717,661</b>	<b>2,821,190</b>	<b>15,356,670</b>
<b>VALUE.</b>							
Issued in same State	£ 1,747,175	£ 1,137,816	£ 467,409	£ 236,201	£ 257,745	£ 108,003	£ 3,954,349
Issued in other States	207,031	164,025	350,665	29,027	11,794	851,450	1,613,992
<b>Total</b> ..	<b>1,954,206</b>	<b>1,301,841</b>	<b>818,074</b>	<b>265,228</b>	<b>269,539</b>	<b>959,453</b>	<b>5,568,341</b>

The number and value of postal notes paid in Australia during the year showed an increase of 7 and 6 per cent. respectively over the corresponding figures for the year 1926-27.

9. **Profit or Loss, Postmaster-General's Department.**—(i) *Revenue (a) Analysis, States, 1927-28.* The following table shows the gross revenue classified according to Branches in each State for the year 1927-28. The figures are supplied by the Treasury, and represent the actual collections for the year.

**GROSS REVENUE, POSTMASTER-GENERAL'S DEPT., ANALYSIS, 1927-28.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
Postage ..	£ 2,043,241	£ 1,404,827	£ 700,864	£ 406,668	£ 302,752	£ 147,667	£ 5,006,019
Money order commission ..	} 107,454	} 60,872	} 31,132	} 17,339	} 16,317	} 7,278	} 240,392
Poundage on postal notes ..							
Private boxes and bags ..	20,885	12,701	12,645	8,325	4,371	2,419	61,346
Miscellaneous ..	168,810	149,740	69,714	36,545	57,221	13,095	495,125
<b>Total Postal</b> ..	<b>2,340,390</b>	<b>1,628,140</b>	<b>814,355</b>	<b>468,877</b>	<b>380,661</b>	<b>170,459</b>	<b>5,802,882</b>
Telegraphs (ordinary)	514,873	321,104	227,134	181,570	129,615	47,883	1,422,179
Telegraphs (radio) ..	12,532	23,421	4,069	3,748	602	658	45,030
<b>Total Telegraphs</b>	<b>527,405</b>	<b>344,525</b>	<b>231,203</b>	<b>185,318</b>	<b>130,217</b>	<b>48,541</b>	<b>1,467,209</b>
Telephones ..	1,932,584	1,412,763	707,484	561,279	288,153	131,788	5,034,051
<b>Grand Total</b> ..	<b>4,800,379</b>	<b>3,385,428</b>	<b>1,753,042</b>	<b>1,215,474</b>	<b>799,031</b>	<b>350,788</b>	<b>12,304,142</b>

Increased telephone revenue (£457,188) largely contributed to the total increase of £697,323 over the revenue for 1926-27.

(b) *Branches, 1924 to 1928.* The gross revenue collected in respect of each Branch of the Department during each of the past five years was as stated in the table hereunder:—

**GROSS REVENUE, POSTMASTER-GENERAL'S DEPT., 1924 TO 1928.**

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1924 .. .. .	5,024,816	(c)1,430,554	3,301,651	9,757,021
1925 .. .. .	4,944,546	(d)1,500,076	3,599,864	10,044,486
1926 .. .. .	5,215,684	(e)1,511,658	4,044,414	10,771,756
1927 .. .. .	5,505,985	(a)1,523,971	4,576,863	11,606,819
1928 .. .. .	5,802,882	(b)1,467,209	5,034,051	12,304,142

Includes radio receipts (a) £35,815, (b) £45,030, (c) £4,012, (d) £18,292, and (e) £21,178.

As compared with the corresponding figures for the previous year, an increase of 6.01 per cent. is shown. The figures for Postal and Telephone Branches increased by 5.39 and 9.99 per cent. respectively, while those for the Telegraph Branch decreased by 3.72 per cent.

(ii) *Working Expenses (a) Analysis, States, 1927–28.* Particulars of the working expenses of each Branch of the Department by States during 1927–28 are shown in the following table. As in the case of Gross Revenue, the figures have been furnished by the Treasury and represent actual payments during the financial year.

**WORKING EXPENSES, POSTMASTER-GENERAL'S DEPARTMENT, 1927–28.**

Branch.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postal ..	2,059,968	1,369,699	695,213	408,080	355,327	194,960	5,083,247
Telegraph ..	612,850	357,725	295,767	200,563	176,764	63,201	1,706,870
Telephone ..	1,503,342	1,187,404	597,332	532,428	257,270	160,739	4,238,515
All Branches	4,176,160	2,914,828	1,588,312	1,141,071	789,361	418,900	11,028,632

The working expenses of the Postal Branch represented 46 per cent. of the total, Telegraph Branch, 16 per cent., and the Telephone Branch, 38 per cent.

(b) *Branches, 1924 to 1928.* The appended table shows the working expenses of each Branch for the period 1923–24 to 1927–28.

**WORKING EXPENSES, POSTMASTER-GENERAL'S DEPARTMENT, 1924 TO 1928.**

Year ended 30th June—	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1924 .. .. .	4,278,917	1,546,021	2,623,839	8,448,777
1925 .. .. .	4,488,021	1,613,695	3,128,914	9,230,630
1926 .. .. .	4,637,126	1,704,705	3,487,234	9,829,065
1927 .. .. .	4,868,929	1,678,372	3,864,207	10,411,508
1928 .. .. .	5,083,247	1,706,870	4,238,515	11,028,632

The working expenses for the Department as a whole have increased by £2,579,855 (31 per cent.) during the four years, the percentage increase in regard to each Branch being, Postal, 19 per cent.; Telegraph, 10 per cent.; and Telephone, 62 per cent.

(iii) *Interest Charges.*—(a) *States and Branches, 1927–28.* The interest payable on capital expenditure for the three Branches in each State during 1927–28 was as follows :—

**INTEREST CHARGES, POSTMASTER-GENERAL'S DEPARTMENT, 1927–28.**

Branch.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postal ..	54,394	37,254	15,320	13,284	13,483	3,306	137,041
Telegraph ..	56,057	25,671	31,680	19,833	21,526	3,232	157,999
Telephone ..	438,809	340,987	190,738	152,111	76,827	32,601	1,232,073
All branches	549,260	403,912	237,738	185,228	111,836	39,139	1,527,113

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

(b) *Branches, 1924 to 1928.* For the five years, 1924 to 1928, each Branch was debited with the following amounts in respect of interest on capital expenditure :—

Year ended 30th June.	Postal Branch.	Telegraph Branch.	Telephone Branch.	All Branches.
	£	£	£	£
1924 .. ..	116,534	157,029	638,109	911,672
1925 .. ..	122,442	173,288	790,816	1,086,546
1926 .. ..	129,084	187,714	942,391	1,259,189
1927 .. ..	136,583	162,458	1,111,777	1,410,818
1928 .. ..	137,041	157,999	1,232,073	1,527,113

(iv) *Profit or Loss.*—(a) *States, 1927–28.* The operations of each Branch of the Department in the several States after providing for Working Expenses, Depreciation, and Interest Charges during the year 1927–28, showed the following results :—

**PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1927–28.**

Branch.	—	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
		£	£	£	£	£	£	£
Postal ..	{ Profit	197,204	141,419	78,922	36,260	20,501	29,454	403,850
	{ Loss	..	..	..	..	..	..	..
Telegraph ..	{ Profit	121,103	36,502	67,545	28,380	46,207	12,338	312,075
	{ Loss	..	..	..	..	..	..	..
Telephone ..	{ Profit	23,022	80,887	63,455	108,702	33,274	59,142	322,438
	{ Loss	..	..	..	..	..	..	..
All Branches	{ Profit	99,123	24,030	..	100,822	99,982	100,934	230,663
	{ Loss	..	..	52,078	..	..	..	..

After providing for depreciation, pensions and retiring allowances and interest on capital, the year 1927–28 closed with a loss of £230,663, which represents a decrease of £58,602 on the result for the year 1926–27, when the deficit was £172,061. The main cause of the increased deficit was the considerably increased payments to the staffs of the several branches consequent on (a) the re-classification of the staffs by the Public Service Board, (b) variations on account of cost of living increases as from 1st July,

1927, and (c) the amended basis of payment to non-official postmasters as from 1st January, 1927. Increased payments by the postal branch to the Railways for the carriage of mails and the decrease in cable earnings of the telegraph branch also contributed to the reductions of £42,079 and £33,355 respectively in the results for these branches. The telephone branch was the only one to show an improvement, the deficit being reduced by £16,832. This result was brought about by an increase in the earnings consequent on the continuing growth of the service.

(b) *Branches, 1924 to 1928.* The following statement gives particulars of the operating results of each Branch for the period 1924 to 1928 :—

**PROFIT OR LOSS, POSTMASTER-GENERAL'S DEPARTMENT, 1924-28.**

Year Ended 30th June.	Branch.							
	Postal.		Telegraph.		Telephone.		All Branches.	
	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£	£	£	£
1924 ..	502,667	..	..	183,982	50,667	..	364,352	..
1925 ..	248,472	..	..	227,175	..	258,619	..	242,322
1926 ..	319,979	..	..	308,632	..	296,684	..	285,337
1927 ..	445,929	..	..	278,720	..	339,270	..	172,061
1928 ..	403,850	..	..	312,075	..	322,438	..	230,663

10. *Expenditure, Postmaster-General's Department.*—(i) *Distribution.* The following table shows, as far as possible, the distribution of expenditure on various items in each State during the year ended 30th June, 1928. The table must not be regarded as a statement of the working expenses of the Department, since items relating to new works, interest, etc., are included therein.

**EXPENDITURE, POSTMASTER-GENERAL'S DEPT.—DISTRIBUTION, 1927-28.**

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£	£
Salaries and contingencies—								
Salaries ..	69,759	2,293,391	1,044,354	856,500	633,823	459,078	203,099	6,160,004
Conveyance of mails ..	..	518,445	276,503	244,028	102,995	108,592	42,822	1,293,385
Contingencies ..	7,710	959,252	593,267	291,215	293,264	169,248	91,970	2,305,926
Ocean mails ..	130,000	..	..	..	..	..	..	130,000
Miscellaneous ..	2,937	30,241	24,411	10,428	10,448	4,908	6,202	89,575
Pensions and retiring allowances ..	..	35,159	52,793	..	..	14,221	..	102,173
Rent, repairs, maintenance ..	1,605	50,006	41,981	20,582	18,208	8,785	3,941	151,108
Supervision of works ..	..	..	..	..	..	..	299	299
Proportion of Audit Office expenses ..	..	4,302	3,114	1,608	1,037	702	386	11,149
New works—								
Telegraph and telephone ..	630	1,210,236	897,240	468,018	518,986	169,944	92,942	3,357,996
New buildings, etc. ..	..	123,005	49,834	69,536	21,037	5,794	23,599	297,805
Interest on transferred properties ..	..	114,647	61,362	45,575	37,523	21,869	9,024	290,909
Other ..	1,908,457	..	..	..	..	..	..	1,908,457
(a)								
Total ..	2,121,098	5,249,684	3,644,859	2,007,490	1,637,321	963,141	475,184	16,098,777

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

The increase of £635,077 in the expenditure on salaries was the principal factor governing the increase of £817,091 in the total expenditure, as compared with the year 1926-27.

(ii) *Total, 1924 to 1928.* The next table gives the actual payments made as shown by records kept for Treasury purposes in respect of the Postal Department for each of the years ended 30th June, 1924 to 1928 inclusive.

## EXPENDITURE, POSTMASTER-GENERAL'S DEPT., 1924 TO 1928.

Expenditure.	Year ended 30th June—				
	1924.	1925.	1926.	1927.	1928.
Total .. ..	£ 13,487,891	£ 14,887,929	£ 16,270,117	£ 15,281,686	£ 16,098,777

The total expenditure for 1927–28 increased by 19 per cent. on the amount for 1923–24.

11. **Capital Account.**—The appended statement shows particulars of the fixed assets of the Postmaster-General's Department at 30th June, 1928.

## DETAILS OF FIXED ASSETS, 30th JUNE, 1928.

Particulars.	Net Value, 1st July, 1927. (b)	Capital Expenditure, 1927–28.	Gross Value, 30th June, 1928.	Less Deprecia- tion, &c. 1927–28. (a)	Net Value, 30th June, 1928.
	£	£	£	£	£
Telephone Lines and equipment	24,542,814	3,271,129	27,813,943	669,259	27,144,684
Telegraph Lines and Trunk Line equipment .. ..	8,635,825	675,664	9,311,489	133,678	9,177,811
Telegraph equipment .. ..	412,393	71,520	483,913	13,752	470,161
Postal equipment .. ..	177,825	51,982	229,807	4,266	225,541
Sites, Buildings, Furniture, and Office equipment .. ..	8,554,750	335,365	8,890,115	44,145	8,845,970
Miscellaneous .. ..	564,641	58,304	622,945	36,097	586,848
Total .. ..	42,888,248	4,463,964	47,352,212	901,197	46,451,015

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

(b) The variations between the figures shown in this column and those shown on page 337 of *Year-Book No. 21* are due to a re-arrangement of the Asset Accounts from 1st July, 1927. The total is not affected.

During the past quinquennium the value of the fixed assets has nearly doubled, the net value at 30th June, 1923, having been £23,801,628.

## § 2. Telegraphs.

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

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

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

(b) *Interstate Traffic.* The service and economic advantages offered by the "carrier wave" system have been recognized by the establishment of carrier transmission between Melbourne and Sydney, and Melbourne and Adelaide. As indicating the economic advantages of this system, one existing pair of wires between Melbourne and Sydney has been utilized to provide a present number of 22 telegraph channels in addition to the telephone trunk line service. The telegraph channels thus provided are adequate to meet all present requirements, but the number can be readily extended without erecting additional wires between Melbourne and Sydney in harmony with the increment in telegraph load for a number of years. The advantages are such that the establishment of telegraph carrier transmission between Perth and Adelaide has been proposed, and its introduction between Sydney and Brisbane is now being considered. The telegraph route between Melbourne and Adelaide and Perth has been reconstructed and an additional channel provided between Adelaide and Perth. The circuits have been fitted with the latest repeater and other fast speed equipment, and as a result the service between Western Australia and the Eastern States has been greatly improved. An important development has been the provision of an additional repeater at Adelaide, thus providing direct communication between Melbourne and Perth. This system is now working satisfactorily, not only materially reducing the time of transit for traffic between Melbourne and Perth, but permitting staff economies in Adelaide by the elimination of manual repetition at that office.

(c) *Erection of New Buildings.* In Sydney a new Chief Telegraph Office has been established, and the equipment and general organization of the Branch brought up to date. In Melbourne, the Chief Telegraph Office has been transferred to a new building. This transfer has been marked by the establishment of modern facilities for the speedy and accurate transmission of public telegraph business. The Chief Telegraph Offices in Melbourne and Sydney in point of equipment, layout and organization are now amongst the most modern in the world. In Brisbane, the Chief Telegraph Office has been so re-organized as to provide accommodation to meet expansion for many years. The office has been renovated throughout, and adequate provision made for natural and artificial lighting. A new Chief Telegraph Office has also been established in Perth, and the work of re-organizing the Chief Telegraph Office in Adelaide, bringing it into line with those established in the other capitals, is practically completed. The Chief Telegraph Office in Hobart has also been re-organized. The conditions in so far as the employees are concerned have been substantially improved by the establishment of properly equipped retiring, meal and locker rooms. The telegraph offices in country districts have not been overlooked, and in a number of instances both accommodation and equipment have been re-organized to provide good service and better conditions for the traffic personnel.

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

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

(f) *Publicity.* In common with other branches of the Department, the Telegraph Service is being given adequate publicity so that it may be rendered more profitable. As indicating the effect of the campaign the telegraph business dealt with last Christmas represented an increase of 12,000 telegrams over that handled during the preceding Christmas.

(g) *Cable Traffic Originating in Tasmania.* With effect from 1st March, 1927, the extra charge previously borne by Tasmania on cablegrams destined for certain countries was discontinued, and Tasmania was thereby placed on the same footing as that of the other States of the Commonwealth.

2. **Telegraph Offices, Length of Lines and Wire.**—(i) *Summary for Australia.* The following table shows the number of telegraph offices and the length of telegraph lines and of telegraph wire available for use in Australia in each year from 1924 to 1928 :—

**TELEGRAPHS.—AUSTRALIA, SUMMARY, 30th JUNE, 1924 TO 1928.**

Particulars.	1924.	1925.	1926.	1927.	1928.
Number of offices .. .. .	7,709	8,576	8,904	9,111	9,136
Length of wire (miles)—					
Telegraph purposes only .. .. .	63,528	66,702	65,471	70,563	73,303
Telegraph and telephone purposes .. .. .	105,351	126,086	149,989	158,470	87,376
Length of line (miles)—					
Conductors in Morse cable .. .. .	2,201	2,399	3,123	3,280	6,715
Conductors in submarine cable .. .. .	2,415	2,919	3,598	4,251	4,505
Pole routes (miles) .. .. .	71,828	80,399	85,547	93,237	97,110

(ii) *Particulars for each State.* The following table gives corresponding particulars for each State for the year 1927–28 :—

**TELEGRAPHS.—STATES, SUMMARY, 30th JUNE, 1928.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Aus- trafia.
Number of offices .. .. .	3,041	2,365	1,434	773	977	546	9,136
Length of wire (miles)—							
Telegraph purposes only .. .. .	21,318	8,463	19,088	9,776	13,832	826	73,303
Telegraph and telephone purposes .. .. .	32,624	15,489	23,227	11,669	1,951	2,416	87,376
Length of line (miles)—							
Conductors in Morse cable .. .. .	4,723	1,384	453	..	141	14	6,715
Conductors in submarine cable (statute miles) .. .. .	3,149	468	286	224	..	378	4,505
Pole routes (miles) .. .. .	34,040	18,062	15,449	14,709	11,526	3,324	97,110

A total length of 160,679 miles of wire is available for telegraph purposes, of which 87,376 miles are also used for telephone purposes, and the figures show decreases of 63,354 (30 per cent.) and of 71,094 miles (45 per cent.) respectively over the corresponding mileages for the previous year. The decreases in the mileage figures are due to a revision of the basis of apportioning the annual charges on wire used jointly for telegraph and telephone purposes. Under the revised method approximately 25 per cent. only of the mileage of lines used for dual purposes (telegraph and telephone) is regarded as being chargeable for telegraph purposes instead of 50 per cent. The reduction in the mileage of wires in use for telegraph purposes is, therefore, more apparent than real.

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

**TELEGRAMS DISPATCHED.—AUSTRALIA, 1924 TO 1928.**

Telegrams.	Year ended 30th June—				
	1924.	1925.	1926.	1927.	1928.
Number (a) .. .. .	16,699,199	17,132,145	17,637,716	17,274,289	16,608,226

(a) Including interstate cablegrams.



(ii) *Totals for each State.* The appended table shows the total number of telegrams dispatched in each State in 1927-28 according to the class of message transmitted:—

## TELEGRAMS DISPATCHED.—STATES, 1927-28.

Class of Message Transmitted within the Commonwealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
<b>Paid and Collect—</b>							
Ordinary ..	4,530,317	3,262,242	2,296,068	1,162,848	1,490,997	318,932	13,061,404
Urgent ..	698,546	249,385	188,100	85,676	81,053	16,311	1,319,071
Press ..	250,350	146,237	119,636	63,995	36,874	56,468	673,560
Lettergram ..	86,077	68,375	89,807	40,651	59,762	29,299	373,971
Radiogram ..	24,986	7,019	5,084	3,928	3,544	5,353	49,914
<b>Total ..</b>	<b>5,590,276</b>	<b>3,733,258</b>	<b>2,698,695</b>	<b>1,357,098</b>	<b>1,672,230</b>	<b>426,363</b>	<b>15,477,920</b>
<b>Unpaid—</b>							
Service ..	114,744	62,669	38,729	53,762	55,666	14,128	339,698
Shipping ..	60,320	122,857	19,049	6,197	20,205	9,479	238,107
Meteorological ..	177,572	81,143	81,367	78,542	106,498	27,379	552,501
<b>Total ..</b>	<b>352,636</b>	<b>266,669</b>	<b>139,145</b>	<b>138,501</b>	<b>182,369</b>	<b>50,986</b>	<b>1,130,306</b>
<b>Grand Total ..</b>	<b>5,942,912</b>	<b>3,999,927</b>	<b>2,837,840</b>	<b>1,495,599</b>	<b>1,854,599</b>	<b>477,349</b>	<b>16,608,226</b>

The figures in the foregoing table show a decrease in the total volume of telegraph business of 666,063 messages as compared with the previous year. During the year, however, large blocks of press traffic previously transacted over the Department's channels were transferred to circuits leased to newspaper undertakings. The volume represented approximately 46,949 press telegrams which are not included in the above statement. During the year, also, vigorous action to reduce the volume of free telegraph load sent in connexion with the various activities of the Department resulted in a reduction of 282,578 telegrams of this nature.

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

5. **Revenue and Expenditure.**—Particulars of the revenue and expenditure of the telegraph systems for the years 1923-24 to 1927-28 are given in earlier pages.

### § 3. Submarine Cables.

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

2. **The Tasmania-Victoria Cables.**—These cables were opened to the public on the 1st May, 1909. 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 Tasmania-Victoria 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 Banjoewanjie (two lines); Fremantle to Durban; Fremantle to Adelaide; Java to Cocos Island, which provides another route between Australia and South Africa. A cable partly owned by this Company connects 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, which consists of two representatives each from the Imperial, Canadian and Australian Governments and one from New Zealand. The main cable route known as the "All Red" runs from Southport in Queensland to Bamfield (Vancouver Is.), thence overland to Montreal. From this point messages are

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 used for either homeward or outward messages. 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 assent of each of the Governments interested was obtained for the duplication of the system south of Fiji, and a contract for the submarine cables was placed with the Telegraph Construction and Maintenance Company of Greenwich. The laying of the Sydney-Southport cable was completed on 11th July, 1923, and the Auckland-Suva cable on 12th August, 1923. The duplication of the Suva (Fiji)-Bamfield (Vancouver Island) cable was completed in November, 1926. The total cost of duplication, including the cables laid south of Fiji in 1923, approximated £2,750,000.

(ii) *Financial Summary.* The receipts for the year 1927-28 amounted to £397,730 and exceeded the ordinary working expenses by £129,653. After payment of the annuity of £77,545 in respect of interest and repayment of the capital of £2,000,000, and transferring £10,000 to the Reserve and Renewal Fund, there remained a surplus of £42,108.

5. *New Zealand Cables.*—A submarine cable, 1,191 miles in length, from New Zealand to Australia, was laid in 1876. 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, whence another cable, 109 miles in length, is laid to Wanganui in the North Island. A second cable was laid between Sydney and New Zealand in 1890, and a third cable, Auckland to Sydney, was opened for traffic on the 31st December, 1912, by the Pacific Cable Board.

6. *The New Caledonia Cable.*—This 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, but the agreement expired on 17th October, 1923, thus bringing to an end the payment by the Commonwealth Government of subsidies for cable services. On 13th September, 1923, there was an interruption in the cable, and, pending restoration, the traffic is being dealt with by wireless.

7. *Length of Cable Routes.*—The following statement shows the length of the several cable routes providing communication between Australia and Great Britain:—

#### LENGTH OF CABLE ROUTES.

VIA SOUTH AFRICA.		VIA VANCOUVER.	
	miles.		miles.
Sydney to Adelaide (land line) ..	960	Sydney to Southport (Q'ld.) ..	510
Adelaide to Perth .. ..	1,546	Southport (Q'ld.) to Norfolk Is. ..	837
Perth to Mauritius .. ..	4,274	Norfolk Is. to Suva .. ..	982
Mauritius to Durban .. ..	1,731	Suva to Fanning Is. .. ..	2,043
Durban to Cape Town .. ..	1,114	Fanning Is. to Bamfield .. ..	3,458
Cape Town to Madeira .. ..	5,590	Across Canada (land line) .. ..	3,400
Madeira to Port Curnow .. ..	1,344	Canada to Great Britain .. ..	3,477
Port Curnow to London (land line) ..	320		
<b>Total .. ..</b>	<b>16,879</b>	<b>Total .. ..</b>	<b>14,707</b>

#### VIA DARWIN.

Adelaide to Darwin (land line) .. ..	2,134
Darwin to Banjoewanjie .. ..	1,444
Banjoewanjie to London .. ..	9,947
	<b>13,525</b>

8. Cable Business.—(i) *Australia.* The subjoined table shows the number of cablegrams received and dispatched in Australia from 1925–26 to 1927–28 :—

**CABLEGRAMS.—AUSTRALIA, 1925–26 TO 1927–28.**

Cablegrams.	Cablegrams Received.			Cablegrams Dispatched.			Total Cablegrams Received and Dispatched.		
	1925–26.	1926–27.	1927–28.	1925–26.	1926–27.	1927–28.	1925–26.	1926–27.	1927–28
Number ..	671,047	690,625	710,501	696,208	720,496	759,823	1,367,255	1,411,121	1,470,324

(ii) *States.* The number of cablegrams received and dispatched in each State during the year 1927–28 is given hereunder :—

**CABLEGRAMS.—STATES, 1927–28.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.(a)	Australia.
Number received ..	376,491	224,530	29,073	37,084	34,406	8,917	710,501
Number dispatched	385,179	242,991	35,526	42,788	41,407	11,932	759,823
Total ..	761,670	467,521	64,599	79,872	75,813	20,849	1,470,324

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

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

**CABLEGRAM AND RADIOGRAM RATES, JUNE, 1928.**

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

On 1st March, 1927, the extra charge on cablegrams between Tasmania and oversea countries was removed, so that charges are now uniform throughout the States.

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

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

(iv) *Week-end Messages.* Week-end messages may be exchanged with certain specified countries at the rates indicated hereunder. Messages—which may be lodged at any post office—are forwarded to reach the transmitting station by post or telegraph by midnight on Saturdays and are deliverable to the addressees on Tuesday mornings. The rates per word for messages (20 word minimum) to the following countries are:—Great Britain, by cable 7½d., by wireless 5d.; Holland, 9d.; Canada, 5½d. and 5½d.; Newfoundland, 7½d. and 7d.; Fanning Island, 6d.; Italy, 9d.; Denmark, 7½d.; France, 8d.; Germany, 7½d.; Norway, 8d.; and Sweden, 7½d.

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

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

#### § 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, 1926 to 1928:—

TELEPHONE LINES.—AUSTRALIA, 30th JUNE, 1926 TO 1928.

Particulars.	1926.	1927.	1928.
<b>Ordinary Lines—</b>			
Conduits .. .. duct miles	4,519	4,903	5,268
.. .. route miles	2,420	2,631	2,908
.. .. loop mileage	11,351	7,441	7,254
Conductors in aerial cables .. .. "	517,868	576,298	632,890
Conductors in underground cables .. .. "	80,325	88,188	93,936
Conductors in cables for junction circuits .. .. "			
Open conductors .. .. single wire mileage	296,024	344,370	383,352
<b>Trunk Lines—</b>			
Telephone trunk lines only .. .. miles	104,480	120,282	211,133
Telegraph and telephone purposes .. .. "	149,989	158,470	87,376

(ii) *Comparison with Other Countries.* Australia is steadily improving its position in the list of countries showing the most rapid advance in the use of the telephone, and it now occupies sixth place, with 758 telephones per 1,000 of population. This position may be considered highly satisfactory in view of the area and distribution of population in Australia and the average length of wire required to provide a subscriber's service. The average length of wire per telephone in Australia is 4.4 miles, as compared with 3.3 miles in the United States of America, 3.4 miles in New Zealand, and 2.8 miles in Canada.

(iii) *Government Policy.* A vigorous policy is pursued by the Government in providing telephone facilities, with the result that the system has developed rapidly during recent years. Many of the concessions have been of such a character as to render the services unremunerative, but it is considered that they are justified from the standpoint of national development. The adoption of the present policy has been the means of making telephone

services available to a very large number of people, and particularly to those living in isolated localities. In providing facilities to meet present and future growth, full advantage is being taken of the best modern practices as adopted in other parts of the world.

(iv) *Trunk Line System.* The trunk line system of the Commonwealth aims to make the telephone service in Australia a nation-wide service and to improve long distance communication so that each subscriber may communicate with every other subscriber to the system. Notwithstanding the great distances separating the capital cities of the various States, commercial speech is now provided between all of the cities in the Eastern States, and satisfactory communication is available between Cairns (Queensland) and Adelaide (South Australia), a circuit distance of 2,770 miles. Plans are in hand to provide a service between Adelaide and Perth (Western Australia), and this will be the final link in a chain of communication extending from Cairns round the coast to Geraldton (Western Australia), the total distance being 4,672 miles. It is also proposed to link Tasmania with the Mainland by means of wireless telephony.

(v) *Automatic Exchanges.*—At 30th June, 1928, there were 51 automatic or semi-automatic exchanges in operation providing facilities for 115,622 subscribers, 112,578 of whom were in the metropolitan areas. Steady progress is being made with the work of converting the whole of the exchanges in the metropolitan networks to machine switching. Trials are being made with a specially constructed automatic unit for use at country exchanges, and the results at present are promising. The purpose of this equipment is to provide an economic day and night service at country exchanges, and it is hoped that the introduction of small automatic units will enable the benefits of continuous service to be more widely extended.

(vi) *Summary for States.* Particulars relating to the telephone service in each State for the years ended 30th June, 1926 to 1928, will be found in the following table:—

## TELEPHONE SERVICES.—SUMMARY, 1926 TO 1928.

Particulars.	Year (30th June).	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
No. of Exchanges ..	1926	1,621	1,426	743	462	519	324	5,095
	1927	1,740	1,518	821	495	574	334	5,482
	1928	1,811	1,573	844	522	610	338	5,698
No. of Telephone Offices (Including Exchanges)	1926	2,756	2,226	1,380	729	934	520	8,545
	1927	2,870	2,129	1,413	739	955	523	8,629
	1928	2,857	2,287	1,408	759	956	521	8,788
No. of lines connected ..	1926	117,249	93,215	39,382	33,547	18,998	9,415	309,206
	1927	127,784	101,891	42,911	37,132	18,232	10,051	338,001
	1928	137,602	108,678	45,549	40,407	20,039	10,801	363,076
No. of instruments con- nected	1926	152,969	127,000	48,729	42,580	20,819	11,519	403,616
	1927	167,301	138,609	53,505	47,300	23,277	12,370	442,362
	1928	181,484	147,788	56,996	51,546	25,596	13,290	476,700
(a) No. of subscribers' instruments	1926	148,681	124,682	46,928	41,558	19,906	10,816	392,571
	1927	163,104	135,867	51,468	46,200	22,366	11,634	430,639
	1928	177,150	144,746	54,907	50,349	24,606	12,568	464,326
(b) No. of public tele- phones	1926	2,379	1,914	1,302	666	841	522	7,624
	1927	2,555	2,112	1,458	697	868	565	8,255
	1928	2,651	2,203	1,471	736	948	531	8,545
(c) No. of other local instruments	1926	1,909	404	499	356	72	181	3,421
	1927	1,642	630	579	403	43	171	3,468
	1928	1,683	834	618	461	42	191	3,829
Instruments per 100 of population	1926	6.58	7.49	5.54	7.57	5.55	5.50	6.68
	1927	7.03	8.03	5.98	8.22	6.05	5.94	7.17
	1928	7.46	8.39	6.25	8.86	6.41	6.31	7.58
Earnings ..		£	£	£	£	£	£	£
	1926	1,584,153	1,179,788	568,936	459,084	230,019	110,961	4,132,941
	1927	1,771,611	1,320,005	639,882	521,867	262,679	120,670	4,636,714
1928	1,965,173	1,447,504	724,615	575,837	300,823	134,198	5,148,150	
Working expenses ..	1926	1,298,084	969,963	498,543	384,075	203,720	132,849	3,487,234
	1927	1,437,290	1,012,961	590,284	444,825	239,528	139,319	3,864,207
	1928	1,503,342	1,187,404	597,332	532,428	257,270	160,739	4,238,515
Percentage of working ex- penses to earnings	1926	% 81.94	% 82.22	% 87.63	% 83.66	% 88.57	% 119.73	% 84.38
	1927	81.13	76.74	92.25	85.24	91.19	115.45	83.34
	1928	76.50	82.03	82.43	92.46	85.52	119.40	82.32

The number of instruments per 100 of population has increased from 6.68 in 1925-26 to 7.58 in 1927-28. The actual number of instruments has increased from 403,616 to 476,700, an increase of 18 per cent. Of the 476,700 instruments connected at 30th June, 1928, 209,034, or 43.8 per cent., were served by exchanges situated beyond the limits of the telephone networks of the six State capital cities. As a general rule, the metropolitan networks are limited to a radius of 10 miles from the General Post Office.

(vii) *Systems in Use.* The following table shows the percentage of Automatic, Common Battery, and Magneto Telephone lines at 30th June, 1926 to 1928 :—

PERCENTAGE OF AUTOMATIC, COMMON BATTERY, AND MAGNETO LINES,  
1926 TO 1928.

System.	30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Automatic .. ..	1926	34.5	23.5	7.8	18.2	33.4	..	24.8
	1927	37.2	24.4	16.5	18.3	32.8	..	27.2
	1928	40.9	30.3	18.3	28.4	33.1	..	31.8
Common Battery .. ..	1926	6.5	25.9	15.8	25.0	7.4	48.7	16.5
	1927	6.2	24.3	15.3	23.3	7.1	47.4	16.0
	1928	3.1	21.1	14.7	19.4	6.7	46.7	13.3
Magneto .. ..	1926	59.0	50.6	76.4	56.8	59.2	51.3	58.7
	1927	56.6	51.3	68.2	58.4	60.1	52.6	56.8
	1928	56.0	48.6	67.0	52.2	60.2	53.3	54.9

(viii) *Subscribers' Lines and Calling Rates.* The next table gives the number of subscribers' lines and the daily calling rate at central, suburban, and country telephone exchanges in the several States for the year 1927-28 :—

TELEPHONES.—SUBSCRIBERS' LINES AND DAILY CALLING RATE, 1927-28.

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	14,695	10.14	60,834	3.67	58,062	2.15	131,591	3.74
Victoria ..	8,620	11.17	52,335	3.80	44,030	1.74	104,985	3.54
Queensland ..	6,601	8.64	10,700	3.21	27,743	2.53	45,044	3.59
South Australia	7,615	8.16	14,251	2.77	17,601	1.66	39,467	3.31
Western Australia	6,199	6.32	3,517	4.00	9,255	1.56	18,971	3.57
Tasmania ..	2,615	4.55	932	2.41	6,785	2.03	10,332	2.70
Australia ..	46,345	8.97	142,569	3.59	161,476	2.01	350,390	3.57

A comparison of the daily calling rates for each class of exchange shows that Victoria registered the greatest number per line at central exchanges, Western Australia at suburban exchanges, and Queensland at country exchanges. For Australia as a whole, the average number of calls per line at central exchanges was 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.

(ix) *Trunk Line Calls and Revenue.* In the following table the number of telephone trunk line calls recorded, the amount of revenue received, and the average revenue per call are shown for each of the States for the years 1925-26 to 1927-28 :—

**TELEPHONES.—TRUNK LINE CALLS AND REVENUE FOR THE YEARS 1925-26 TO 1927-28.**

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	No.	No.	No.	No.	No.	No.	No.
Total Calls for Year—							
1925-26 ..	9,278,995	6,894,247	4,273,321	3,009,375	1,365,845	1,263,448	26,085,281
1926-27 ..	10,333,612	7,555,055	4,763,831	3,395,557	1,644,292	1,329,783	29,022,130
1927-28 ..	11,174,761	8,142,637	5,530,691	3,815,309	1,874,344	1,464,328	32,002,070
Total Revenue for Year—							
	£	£	£	£	£	£	£
1925-26 ..	323,492	225,243	191,880	116,462	62,884	35,641	955,602
1926-27 ..	382,489	258,635	221,337	131,932	77,512	39,197	1,111,102
1927-28 ..	422,195	287,783	266,950	149,390	89,370	43,502	1,259,190
Average Revenue per Call—							
	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
1925-26 ..	8.37	7.84	10.77	9.29	11.95	6.77	8.39
1926-27 ..	8.88	8.22	11.15	9.32	11.31	7.07	9.18
1927-28 ..	9.06	8.48	11.58	9.39	11.44	7.12	9.44

The number of trunk line calls recorded during 1927-28 increased by nearly 3 millions over the figures for the previous year, and the average revenue per call increased by 0.26d.

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

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

**§ 5. Radio Telegraphy and Telephony.**

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

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

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

The Department took over a private station at Maria Island, Tasmania, on 1st June, 1927, and now operates it in conjunction with the Post Office at that point. During 1927, stations were erected by Amalgamated Wireless (Australasia) Ltd. at Salamoia and Bulolo, on the New Guinea gold-fields, and, in 1928, at Marienberg, New Guinea, while the station at Morobe was closed.

Regulations under the Navigation Act require that all ships registered in Australia of 1,600 tons or more registered tonnage, or carrying more than 12 passengers, shall be fitted with an efficient radio telegraphy installation. At the end of June, 1929, there were 109 vessels so equipped.

Two Class "A" broadcasting stations are in operation in New South Wales and in Victoria and 1 each in the other States. Class "B" stations are in operation as follows, viz. :—New South Wales, 7; Victoria and South Australia, 2 each; and Queensland, 1.

On 28th January, 1927, a Royal Commission was appointed to report upon—

- (1) Wireless broadcasting within the Commonwealth in all its aspects, with power to recommend any alterations deemed necessary in the policy and practices at present in force, and
- (2) the development and utilization of wireless services for public requirements within the Commonwealth.

The Commission presented its report to the Governor-General on 14th July, 1927. The main results have been (a) an amendment to the agreement between the Commonwealth and Amalgamated Wireless (Australasia) Ltd. and (b) a reduction in listeners' licence-fees. The amending agreement provides, *inter alia*, that Amalgamated Wireless (Australasia) Ltd. shall make its patents available free of charge for a period of five years to broadcasters, traders and listeners, in return for which the Government undertakes to pay to the Company the sum of 3s. per annum on each listener's licence. The total amount received by the Company in this way is considerably less than was previously due to it, the intention of the agreement being that the listeners and the traders should benefit by the reduced royalty payments. The Postmaster-General's proportion of the licence-fee was also reduced.

(ii) *Broadcasting. (a) Licences, etc.* The regulations issued in 1924 as amended to date prescribe the licence-fees to be paid by owners of receiving sets and by experimenters. As a result of the amended agreement above-mentioned, the broadcast listeners' annual licence-fee was reduced from 27s. 6d. to 24s. in Zone 1, and from 22s. 6d. to 17s. 6d. in Zone 2, the fee for Zone 3 being unaltered. In addition a uniform receiving licence was introduced, and dealers' licences, special licences and temporary licences were abolished. The amended rates and conditions became operative from 1st January, 1928. The annual fees and the distances from the capital city of the respective zones are as follows :—

Class of Licence.	Zone 1.	Zone 2.	Zone 3.
	Up to 250 Miles.	250 to 400 Miles.	Beyond 400 Miles.
	£ s. d.	£ s. d.	£ s. d.
Broadcast listeners' licences .. ..	1 4 0	0 17 6	0 17 6
Experimental licences .. ..	1 0 0	0 17 6	0 15 0

Of the revenue obtained from these licence fees, the Postal Department retains 4s. for each broadcast listener's licence and 13s. for each experimental licence. Of these amounts, 3s. is paid to Amalgamated Wireless (Australasia) Ltd. The remainder of the revenue is available for distribution to the broadcasting company or companies in the State in which the revenue is collected. The companies must supply a satisfactory programme, use the authorized power, and provide effective transmission.

Two classes of broadcasting stations may operate, viz. :—Class "A"—which receive portion of the receiving licence fees, and Class "B"—in respect of which no receiving licence revenue is payable. In New South Wales and Victoria two Class "A" stations only may be licensed. In New South Wales the licensees of these stations receive 60 per cent. and 40 per cent. and in Victoria 70 per cent. and 30 per cent. respectively of the licence fees available for distribution. In the other States one Class "A" station only may be licensed, and the whole of the "available revenue" for the particular State will be payable in respect of the station. The fees payable to the Department for Class "A" licences are £15, and for Class "B" £5, the licence being valid for a period of 5 years.



In July, 1928, the Commonwealth Government decided to form a National Broadcasting Service. On the expiration of the existing licences for Class "A" stations, the Postmaster-General's Department will take over the control of these stations, and the Regulations have been amended to provide that no Class "A" Station Licences will then be issued. The Department will be responsible for the technical services, whilst the programmes will be provided by a contractor. The dates on which the various stations will be taken over by the Department are:—Sydney, 2.F.C., 17th July, 1929, and 2.B.L., 22nd July, 1929; Melbourne, 3.L.O., 22nd July, 1929, and 3.A.R., 8th August, 1929; Brisbane, 4.Q.G., 30th January, 1930; Adelaide, 5.C.L., 14th January, 1930; and Hobart, 7.Z.L., 14th December, 1930. The Perth station, 6 W.F., was taken over by the Department on 20th December, 1928.

In addition to the licences referred to above, the regulations provide for the issue of the following licences, for which the respective fees per annum, payable in advance, are £1, viz. :—(a) Coast Station, (b) Ship Station, (c) Land Station, (d) Portable Station, and (e) Aircraft Station.

Licences have also been issued to permit of the installation of wireless sets on trawlers, aircraft, and police patrol cars.

The following tables show the number of each class of licence issued in each State, etc., during the years 1927-28 and 1928-29 :—

WIRELESS LICENCES, 1927-28.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	Aust.	Papua.	Grand Total.
Coast .. ..	1	1	5	1	5	3	1	17	3	20
Ship .. ..	24	56	12	18	5	..	..	115	..	115
Land .. ..	4	3	2	..	..	..	..	9	3	12
Broadcasting—										
" A " .. ..	2	2	1	1	1	1	..	8	..	8
" B " .. ..	7	2	1	2	..	..	..	12	..	12
Broadcast listeners'	79,931	137,503	25,172	20,247	3,727	3,141	..	269,721	39	269,760
Experimental—										
Transmitting and										
receiving ..	140	154	58	58	30	25	..	465	2	467
Receiving only ..	128	101	14	14	17	6	..	278	2	280
Portable .. ..	6	2	6	1	..	..	..	15	..	15
Aircraft .. ..	..	..	..	..	..	..	..	..	..	..
Special .. ..	16	7	..	..	..	..	..	23	..	23
Total Licences issued	80,257	137,831	25,271	20,342	3,785	3,176	1	270,663	49	270,712

WIRELESS LICENCES, 1928-29.

Station Licence.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	Aust.	Papua.	Grand Total.
Coast .. ..	1	1	6	1	5	3	1	18	2	20
Ship .. ..	11	59	12	20	6	1	..	109	..	109
Land .. ..	6	3	2	..	1	..	..	12	1	13
Broadcasting—										
" A " .. ..	2	2	1	1	1	1	..	8	..	8
" B " .. ..	7	2	1	2	..	..	..	12	..	12
Broadcast listeners'	100,793	142,534	24,636	23,927	3,841	4,751	17	300,504	24	300,528
Experimental—										
Transmitting and										
receiving ..	193	184	68	71	43	26	..	585	4	589
Receiving only ..	21	32	12	6	6	5	..	82	..	82
Portable .. ..	6	2	6	1	..	..	..	15	..	15
Aircraft .. ..	1	..	..	..	..	..	..	1	..	1
Special .. ..	20	6	..	..	..	..	..	26	..	26
Total Licences issued	101,066	142,825	24,744	24,029	3,903	4,787	18	301,372	31	301,403

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.

Licences for the Territory of New Guinea are issued by the Administrator at Rabaul.

(b) *Simultaneous Delivery.* A development of some importance was the linking-up of several radio broadcasting stations for simultaneous broadcasting, which was successfully accomplished for the first time on 20th August, 1925, to enable an address to be delivered on the War Conversion Loan then being floated.

The speech was delivered at the Central Telephone Exchange, Melbourne, and by means of the telephone trunk lines and amplifying apparatus, was distributed to the studios of broadcasting stations in Brisbane (1,243 miles), Sydney (592 miles), Melbourne and Adelaide (485 miles). The audience was estimated at 250,000 persons, and the area covered about two million square miles.

On the occasion of the opening of Federal Parliament at Canberra on 9th May 1927, by H.R.H. the Duke of York, the speeches and ceremonies were again similarly broadcast. Receiving sets and loud speakers were set up in schools, halls, and other public places, and voice projectors were issued in some of the principal streets of capital cities. A speech by Mr. L. S. Amery, the British Secretary of State for Dominions, was also similarly broadcast from Canberra in November, 1927.

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

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

(v) *Radiotelegraphic Traffic.* (a) *International.* The following statement shows particulars of international traffic "via Beam" to and from United Kingdom and other places during the year ended 30th June, 1928:—

**RADIO TRAFFIC.—INTERNATIONAL, YEAR ENDED 30th JUNE, 1928.**

Class of Traffic.	Number of Words Transmitted.			Number of Words Received.		
	United Kingdom.	Other Places.	Total.	United Kingdom.	Other Places.	Total.
Ordinary .. ..	650,473	130,520	780,993	455,642	52,241	507,883
Deferred .. ..	376,049	171,512	547,561	330,443	54,858	385,301
Government .. ..	49,537	1,113	50,650	52,918	291	53,209
Press (including Deferred press)	208,528	54	208,582	722,996	463	723,459
Daily letter and week-end telegrams(a)	3,304,276	30,899	3,335,175	1,971,499	3,153	1,974,652
Total .. ..	4,588,863	334,098	4,922,961	3,533,498	111,006	3,644,504

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

(b) *Coast Stations.* Particulars of the traffic handled by the several coast stations during the year 1927-28 are as follows:—

RADIO TRAFFIC.—COAST STATIONS, 1927-28.

State or Territory.	Particulars.				
	Total, Paying Words.	Messages.			
		Paying.	Service.	Weather.	Total.
	No.	No.	No.	No.	No.
New South Wales .. .. .	683,783	36,613	1,441	5,253	43,307
Victoria .. .. .	93,885	8,569	9	1,423	10,001
Queensland .. .. .	1,075,316	54,217	1,327	4,952	60,496
South Australia .. .. .	80,729	6,319	342	1,049	7,710
Western Australia .. .. .	280,436	18,332	319	3,368	22,019
Tasmania .. .. .	167,429	10,182	354	552	11,088
Northern Territory .. .. .	15,937	972	(a)	(a)	(b) 972
<b>Australia .. .. .</b>	<b>2,397,515</b>	<b>135,204</b>	<b>3,792</b>	<b>16,597</b>	<b>155,593</b>
<b>Papua .. .. .</b>	<b>326,186</b>	<b>17,066</b>	<b>742</b>	<b>1,169</b>	<b>18,977</b>
<b>Grand Total .. .. .</b>	<b>2,723,701</b>	<b>152,270</b>	<b>4,534</b>	<b>17,766</b>	<b>174,570</b>

(a) Not available.

(b) Incomplete.

(c) *Island Stations.* Particulars of the island radio traffic dealt with during the year 1927-28 are given hereunder:—

RADIO TRAFFIC.—ISLAND STATIONS, 1927-28.

Particulars.	To Australia.	From Australia.	Inter- Island.	Ship.	Service.	Total.
Messages .. .. .	22,163	12,137	9,621	1,376	..	45,297
Words .. .. .	363,702	206,486	157,463	24,235	..	751,886

(vi) *Proficiency Certificates.* Proficiency certificates for commercial wireless operators are issued by the Minister to individuals who pass the specified tests. Amateur operators' certificates and watchers' certificates are, in addition, issued to successful candidates at the prescribed 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 30th June, 1929, 1,090 first-class and 51 second-class commercial and 527 amateur proficiency certificates, in addition to 96 watchers' certificates, had been issued.

## § 6. Research and Transmission Sections.—Chief Engineer's Branch.

1. *General.*—The Postmaster-General's Department, in pursuance of its policy of improving and extending the system of electrical communication in Australia, established in 1924 as part of its engineering branch, the nucleus of a Research Section. This section not only carried out investigatory work, but also installed and maintained all new types of transmission equipment, particularly the types required for long distance communication.

Owing to the very great increase in the amount of such plant as carrier telephones and telegraph systems, telephone repeaters, etc., it has been found advisable to remove the work of its installation and maintenance from the Research Section. The new section which now carries out this work was formed in September, 1928, and is known as the Transmission Section. In addition to the work previously mentioned, it is responsible generally for the transmission design of the trunk line network of the Commonwealth.

2. *Functions of the Research Section.*—The present functions of the Research Section are included under the following headings :—

- (i) Investigation of technical problems arising during the operation of the telephone, telegraph and radio systems of the Department, or under its control.
- (ii) Determination of fundamental telephone transmission data for application by the Transmission Section.
- (iii) Co-operative work with other bodies in research into the propagation of radio waves and factors influencing radio communication generally.
- (iv) Investigation of new forms of communication apparatus to determine their suitability for the Department's use, and, in conjunction with the Transmission Section, the supervision of the initial installation of such systems.

The strength of the staff at the 30th June, 1928, was 16, with laboratory equipment valued at £12,846.

3. *Functions of the Transmission Section.*—The functions of the Transmission Section are indicated hereunder :—

- (i) Supervision of the installation and maintenance of all long distance transmission equipment.
- (ii) Responsibility for the maintenance of the standard of transmission throughout the trunk line system and the telephone network.
- (iii) The economic design of multi-exchange networks.
- (iv) Technical supervision of broadcast programme transmission lines and network.

The strength of the staff at the inception of the section was 5.