RAILWAYS.

Necessity for railways in Australasia.

IN a country such as Australasia, ill supplied with navigable rivers, the furtherance of railway construction is absolutely necessary to its proper development. This was recognized from an early period, but the difficulty of obtaining money at anything but a prohibitory interest long stood in the way of railway construction. Nevertheless, as will be seen, very considerable progress has been made, especially of late years, and by far the greater portion of the Public Debt of Australasia has been contracted for railway purposes. As the extent of territory in Australasia almost equals that of Europe or the United States of America, while the population numbers less than four millions, it is almost needless to say that many of the lines run through districts very sparsely peopled. This is particularly the case with Queensland, South Australia, and Western Australia, where there are vast tracts of territory in which little in the nature of permanent settlement has yet been accomplished; and in none of the Colonies can it be said that the railway lines traverse thickly settled areas.

Return yielded by Australasian railways.

Notwithstanding these drawbacks the Railways of Australasia collectively yield a net return equal to 3 per cent. on the outlay.

Railways managed by Commissioners.

The colonies of Victoria, South Australia, New Zealand, New South Wales, and Queensland have found it expedient to place the management and maintenance of railways under the control of Commissioners. Victoria, in 1883, was the first colony to adopt this system; four years later South Australia and New Zealand saw the wisdom of the change, while New South Wales and Queensland followed in 1888. Each of these colonies has appointed three officials as Commissioners, and has conferred upon them by law large executive powers, amounting to almost independent control, the object aimed at being to obtain economic management free from political interference.

Parliamentary Committees on proposed railways.

In New South Wales and Victoria an additional safeguard in railway construction prevails. All proposed new lines before being sanctioned are submitted to a committee selected from Members of both Houses of Parliament. These committees take evidence as to the suitability of the route proposed, the prospect of the line paying, and the plan of construction, and upon the evidence taken draw up reports for or against the schemes proposed. This careful supervision of railway development has already been attended with success, and, as it is a matter of regret, that such committees were not earlier constituted, as probably the colonies would have been saved much useless railway construction.

Introduction of Railways.

The question of establishing railway communication with the interior from Sydney was agitated as far back as 1846, but it was not until the enormous accession to the population of these lands, which followed upon the discoveries of gold, that the matter was carried to a successful issue. The earliest railways were begun almost at the same time in New South Wales and Victoria. The works were, indeed, actually first commenced in New South Wales, but the first railway line opened for traffic was the Melbourne and Hobson's Bay line in 1854, 2½ miles in length. No further extensions were opened in Victoria until 1857. In the first instance in both Colonies the construction of the lines was undertaken by private enterprise; but the companies that pioneered the way in regard to railway construction soon found the magnitude of the undertaking beyond the scope of their funds, and it was apparent that only the Government could hope to keep pace with the needs of the country in this direction. The private works already begun in New SouthWales were, therefore, bought up by the Government in 1854, and all such lines fell into Government hands in Victoria one year later; the Hobson's Bay railway, however, was not acquired till 1878. From 1855 the Governments of the two Colonies undertook and carried on the work of railway extension.

History of Railway construction.

In New South Wales 14 miles of railway were placed under traffic in 1855. This was the line from Sydney to Parramatta,

and a further length of 9 miles was added in the following year. The first State railway-works in South Australia were undertaken in 1857; they were begun in New Zealand in 1860; in Queensland in 1864; in Tasmania in 1868; and in Western Australia in 1874.

Increase of railway mileage.

From the humble beginnings mentioned above the mileage of the various systems throughout Australasia had increased to 12,405 in 1892, of which 11,665 miles belong to the State, and 740 miles are under private control. From 1854 to 1863 the mileage opened yearly averaged 40; for the succeeding ten years the average was 110 miles; from 1874 to 1883 it averaged 509 miles; and for the ten years ended with 1892 the average yearly addition was 623 miles. The total mileage opened in Australasia, and the extensions during each year since railways were first undertaken, will be found below :—

Year.	Miles opened.		Year.	Miles opened.	
	Total.	During each year.		Total.	During each year.
1854	2½	2½	1874	1,700	202
1855	16½	14	1875	2,144	444
1856	32½	16	1876	2,678	535
1857	117	84½	1877	3,447	769
1858	132	15	1878	3,976	529
1859	171	39	1879	4,393	417
1860	215	44	1880	4,933	540
1861	242	28	1881	5,526	593
1862	372	130	1882	6,169	643
1863	399	27	1883	6,587	418
1864	474	74	1884	7,425	838
1865	494	21	1885	7,881	456
1866	524	29	1886	8,669	788
1867	718	194	1887	9,498	829
1868	789	71	1888	10,230	732
1869	918	129	1889	11,074	844
1870	1,040	122	1890	11,713	639
1871	1,135	95	1891	12,174	461
1872	1,273	138	1892	12,405	231
1873	1,498	225			

Main Inter-colonial lines.

In 1883 a junction was effected between the New South Wales and Victorian lines at the river Murray; three years later direct

communication was established between Victoria and South Australia, and in 1888 the last mile of line connecting Sydney with the northern colony was completed, thus placing the four Capitals, Brisbane, Sydney, Melbourne, and Adelaide in direct communiation with each other. Proposals have been made to the Government of Western Australia to construct a railway upon the land grant system, connecting the eastern districts of the Colony with South Australia. It is proposed to extend the lines to Eucla, close to the South Australian border, and when that Colony has extended her railways to the same point, Perth will be connected with all the capitals of the Australian Colonies. Should this be carried out, the European mails will, in all likelihood, be landed at Freemantle, and sent overland to the various destinations throughout the continent.

Question of gauge.

Unfortunately no prior agreement was arrived at between the Colonies as to the adoption of an uniform gauge. The Government of New South Wales constructed all their lines upon the English standard gauge of 4 ft. 8½ in., while the Victorian Government adopted the 5ft. 3 in. gauge. Until the lines of the two Colonies met on the boundary no discomfort was of course experienced; but since then the break of gauge, and the consequent change of trains has been a source of irritation and inconvenience. The South Australian Government adopted at the outset the 5 ft. 3 in. gauge of Victoria; but finding that the construction of lines of this gauge involved a heavier expense than they were prepared to face, the more recent lines were built on a gauge of 3 ft. 6 in. In that Colony there are 488 miles laid with the 5 ft. 3 in. gauge, and 1,319 with that of 3 ft. 6 in. The line joining Adelaide with the Victorian border, as well as several of the other trunk-lines have been constructed on the wide gauge, so that the line from Melbourne to Adelaide is uniform. The private line, which prolongs the South Australian system into New South Wales as far as Broken Hill, is on the 3 ft. 6 in. gauge. All the Queensland lines are built on the gauge of 3 ft. 6 in., so that transhipment is necessary on the boundary between that Colony

Evils of diversity of gauge.

and New South Wales. The difficulty caused by this diversity of gauge is already found to be troublesome. It is admitted on all hands that the trouble can be got over only by establishing uniformity of gauge, and every year in which action is delayed will make the establishment of that uniformity more costly. Tasmania, Western Australia, and New Zealand have adopted the 3 ft. 6 in. gauge. The first line laid down in Tasmania was on the 5 ft. 3 in. gauge, but it was soon altered to 3 ft. 6 in. The total length of line in Australasia laid down to a gauge of 5 ft. 3 in. is 3,391 miles; there are 2,185 miles of the 4 ft. 8½ in. gauge, and 6,089 miles of the 3 ft. 6 in. gauge. By the purchase of the Main Line Company's property in 1890, the Tasmanian Government now controls a system of 377 miles of railway open for traffic.

Proportion of miles of line to population and area.

The population and area of territory per mile of line open varies considerably. As regards population per mile of line open, Western Australia, South Australia, and Queensland—the most extensive Colonies—show most favourably; but, in comparison per mile of line open to the area of the territory, Victoria, New Zealand, and Tasmania take the lead. The annexed table shows the relation of the railway mileage to population and to the area of each Colony for the year 1891–92 :—

Colony.	Per mile of line open.	
	Population.	Square miles of territory.
New South Wales	522	137
Victoria	400	30
Queensland	186	288
South Australia	182	500
Western Australia	81	1,613
Tasmania	359	62
New Zealand	315	52
Australasia	317	255

Proportion in other countries.

In the following table are shown the population and area of territory per mile of line open in other countries. Of course a comparison can only be made fairly between Australasia and other young countries in process of development :—

Countries.	Length of Railway.	Population per Mile of Line.	Area per Mile of Line.
	miles.		sq. miles.
United Kingdom	20,191	1,876	6
France	20,666	1,849	10
Germany	25,411	1,945	8
Austria-Hungary	15,854	2,608	15
Belgium	2,810	2,160	4
Netherlands	1,715	2,630	7
Switzerland	1,951	1,503	8
Sweden and Norway	5,869	1,156	50
Spain	5,951	2,948	33
Italy	7,619	4,062	14
India (British)	17,283	12,797	56
Canada (Dominion of)	14,009	345	247
Cape Colony	2,067	739	107
Argentine Republic	7,201	486	155
Brazil	5,546	2,525	580
Chili	1,801	1,403	161
Mexico	4,825	2,411	156
United States of America	171,048	366	21
Australasia	12,405	317	255

Progress of railway construction.

The progress of railway construction, except, perhaps, in the case of Victoria, was anything but rapid during the earlier years. This was in a great measure owing to the sparseness of the population, and the natural fear that the income would not justify the expense of widely extended lines. It was also due in some degree to the low estimation in which Australasian securities were held in London, and the consequent high rate of interest at which money for railway construction had to be borrowed. The initial difficulties attendant on railway construction may be said to have ended about 1871, for since that year progress has been made by all the colonies. The mileage under State and private control for each Colony during each period shown was :—

Colony.	1861.	1866.	1871.	1876.	1881.	1886.	1891-92.
New South Wales	73	143	358	554	1,040	1,941	2,266
Victoria	114	275	276	718	1,247	1,754	2,903
Queensland	*	50	218	298	800	1,433	2,320
South Australia	56	56	133	308	845	1,226	1,823
Western Australia.....	*	*	*	38	92	202	657
Tasmania	*	*	45	45	168	303	425
New Zealand	*	*	105	718	1,334	1,810	2,011
Australasia	243	524	1,135	2,679	5,526	8,669	12,405

* Railways not in existence.

The following table shews the length of Government Railways under construction during 1892 :—

	Miles.		Miles.
New South Wales ...	333	Tasmania	47
Victoria	103	New Zealand	170
Queensland	102		——
South Australia	56	Total.....	922
Western Australia...	111		

The figure given above for New South Wales includes the Nyngan to Cobar line, a length of 81 miles, which was opened for traffic in July, 1892.

Notwithstanding the energetic expansion of the railway systems throughout Australasia since 1881, there is still room for considerable extension. In South Australia railway construction is entirely confined to the south-eastern corner and to the extension of the Northern Line, which has its present terminus at Oodnadatta, 686 miles from Adelaide. It is proposed to eventually extend this line as far north as Pine Creek, the southern terminus of the Port Darwin line. When this railway is completed direct overland communication will be established between the northern and southern portions of the continent. The length of the gap between the terminus at Oodnadatta and that at Pine Creek is 1,140 miles on the telegraph route. An English syndicate has lately offered to complete this railway on the land grant system, but so far no decision has been arrived at. In New South Wales the railway extensions will be chiefly confined to perfecting the various systems now constructed. In Queensland, with its vast expanse of partly settled territory and extensive seaboard, the railways are being constructed in separate systems. The lines commence from each of the principal ports and run inland, but there is no doubt that not many years will elapse before these systems will become branches of a main trunk line which in all likelihood will be the Brisbane-Charleville line extended as far as Normanton at the Gulf of Carpentaria. Lately a motion was carried in the Queensland Parliament affirming the desirability of allowing private enterprise to construct in the South, Central, and Northern divisions of the Colony eleven railway lines under the provisions of the Railway Construction Land Subsidy Act.

South Australian Railways.

New South Wales Railways.

Queensland Railways.

In Victoria, Tasmania, and New Zealand, the railways are well developed compared with size of territory, and any future extensions in these colonies will hardly be on as large a scale as those of the other colonies. It is the established policy of each colony to keep the railways under State control, and only in extreme circumstances is that policy departed from. In two of

Victoria, Tasmania, and New Zealand.

the colonies—Victoria and Queensland—the lines are entirely in the hands of the Government, although such was not the case always in the former colony, and in none of the colonies except Western Australia is the extent of private lines considerable when compared with that administered by the State. The following statement shows the gauge and length of the private railways of Australasia :—

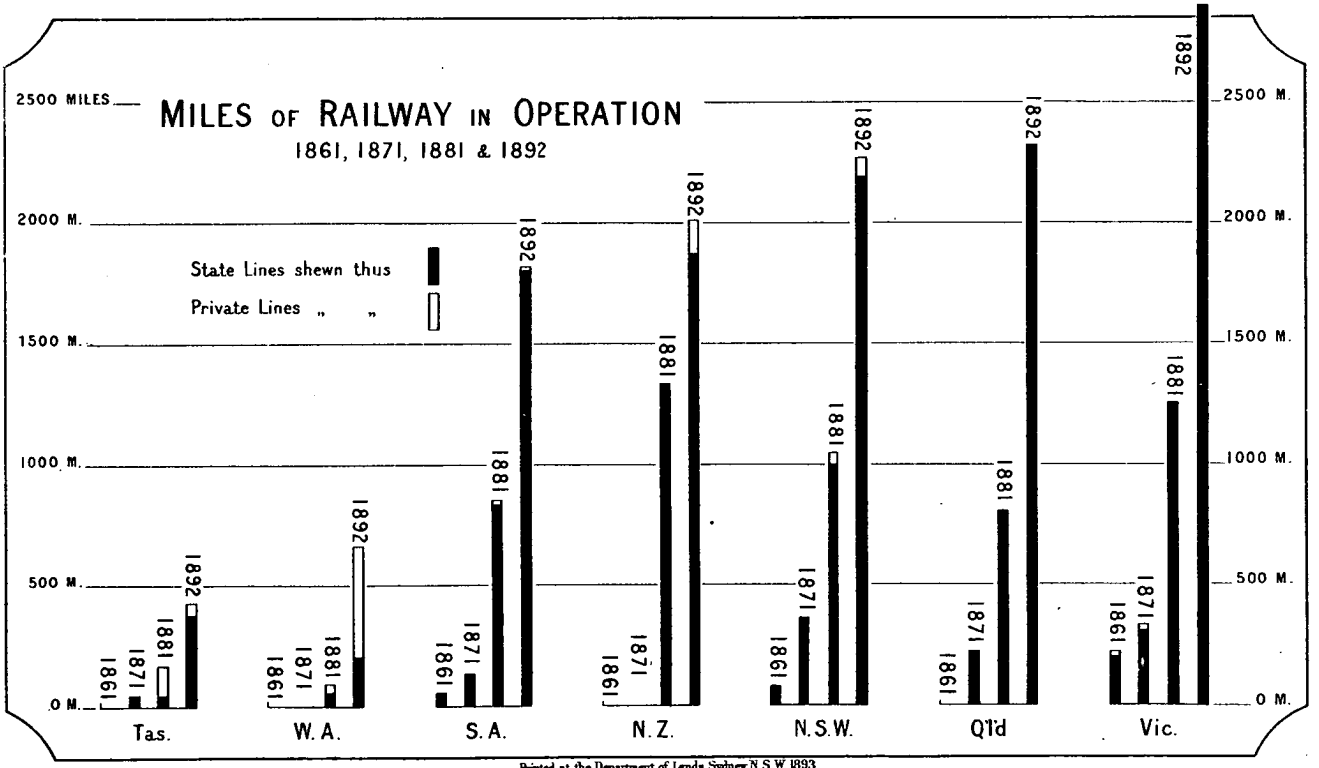
Private Lines.

Colony.	Line of Railway.	Gauge.	Length.
		ft. in.	ms. ch.
New South Wales...	Deniliquin-Moama	5 3	45 0
	Broken Hill-Cockburn	3 6	35 54
South Australia ...	Woodville-Grange	5 3	3 40
	Adelaide-Glenelg (two routes)	3 6	13 0
Western Australia..	Albany-Beverley	3 6	244 0
	Guildford-Walkaway	3 6	100 0
	Great Southern Railway-Torbay	3 6	12 0
	Guildford-Darling Range	3 6	19 62
	Rockingham-Jarrahdale & Inland	3 6	33 0
	Flinders Bay-Inland	3 6	26 0
	Locheville-Timber Stations	3 6	18 0
Tasmania	Emu Bay—Mount Bischoff	3 6	48 0
New Zealand	North Island,—		
	Wellington-Longburn	3 6	84 0
	Stirling-Kaitangata	3 6	4 0
	Middle Island,—		
	Midland Railway Co's. Line	3 6	54 0
	Total	.....	739 76

A proviso has been inserted in the charters of the companies owning the private lines in New South Wales, whereby after a certain date the Government can, if disposed, acquire the lines at a valuation. Similar conditions are found in most of the charters granted by the other Colonies permitting the construction of private lines.

Government railways.

The length of lines under the control of the Governments of Australasia is 11,665 miles, constructed and equipped at a cost of £117,968,937 or an average of £10,113 per mile. The cheapest constructed lines were those of Western Australia, where the average rate has not exceeded £4,441 per mile. In Victoria the



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figures stand at £12,775, and in New South Wales at £15,246 per mile. The following are the details of the Government railways in Australasia :—

Colony.	Length.	Gauge.	Total cost of construction and equipment.	Average cost per mile.
	miles.	ft. in.	£	£
New South Wales	2,185	4 8½	33,312,608	15,246
Victoria	2,903	5 3	37,085,309	12,775
Queensland	2,320	3 6	16,046,851	6,917
South Australia	1,807	5 3 / 3 6	12,868,467	7,121
Western Australia	204	3 6	905,974	4,441
Tasmania	377	3 6	3,093,037	8,209
New Zealand	1,869	3 6	14,656,691	7,842
Australasia	11,665	.....	117,968,937	10,113

Cost of construction.

It would hardly be fair to institute comparisons between the cost of construction per mile in Australasia and in the densely populated countries of Europe, for while in Europe the resumption of valuable ground is, perhaps, the heaviest expense in connection with the building of railways, in the colonies this item of expenditure is not of leading importance. The cost per mile in certain sparsely settled countries is given thus :—

India (State lines)	£7,116
Canada	11,483
Cape Colony	8,968
United States	11,205

while for Australasia it is £10,113.

Revenue and working expenditure.

Every Colony shows a surplus of revenue over working expenditure, notwithstanding that the avowed object of railway construction in the colonies has been to promote settlement, apart from considerations of profitably working the lines. At the same time the principle has been kept in view that in the main the Railways should be self-supporting.

The net revenue for 1891–92 was as follows :—

Colony.	Gross Revenue.	Working Expenses.	Net Revenue.
	£	£	£
New South Wales	3,107,296	1,914,252	1,193,044
Victoria	3,095,122	2,138,139	956,983
Queensland	1,052,536	639,502	413,034
South Australia	1,228,511	664,606	563,905
Western Australia	67,760	63,884	3,876
Tasmania	169,050	147,944	21,106
New Zealand	1,115,432	706,517	408,915
Australasia	9,835,707	6,274,844	3,560,863

The returns for the first four Colonies are for the year ending 30th June, 1892; New Zealand for 31st March, 1892; and Western Australia and Tasmania for 31st December, 1891.

Proportion of expenses to revenue.

The following table shows the proportion of working expenses to gross revenue for each Colony in 1891–2. In South Australia, New South Wales, and New Zealand the proportion of the working expenses to gross revenue was below the average for Australasia, while all the other Colonies are largely in excess of that figure. In South Australia the lines are now worked at a cost of a little more than one half the receipts, while in Western Australia and Tasmania for every £100 earned the working expenses amount to over £94 and £87 respectively :—

Colony.	Working expenses—Proportion to gross revenue. 1891–92.
	per cent.
New South Wales	61·6
Victoria	69·1
Queensland	60·8
South Australia	54·1
Western Australia	94·3
Tasmania	87·5
New Zealand	63·3
Australasia	63·8

The average interest payable on all Australasian loans is 3·99 per cent., and the returns yielded by the railways is 3·02 per cent., showing a loss in working of 0·97 per cent., equivalent to £1,144,300. The figures are :— Returns yielded by railways.

Colony.	Interest returned on Capital.	Average interest payable on Capital Expenditure.	Average loss.
	per cent.	per cent.	per cent.
New South Wales	3·58	3·82	0·24
Victoria	2·58	3·99	1·41
Queensland	2·57	3·93	1·36
South Australia	4·38	4·08	0·30†
Western Australia.....	0·43	4·09	3·66
Tasmania.....	0·68	4·19	3·51
New Zealand	2·79	4·16	1·37
Australasia	3·02	3·99	0·97

† Represents profit.

The rate of return on capital which is shown in the foregoing table represents the interest on the gross cost of the lines. In some cases the nominal amount of outstanding debentures is less than the actual expenditure on construction and equipment, owing to the fact that in these cases some loans have been redeemed, but as the redemption has been effected by means of fresh loans charged to general services, or by payments from the general revenue, and not out of railway earnings, no allowance on this account can reasonably be made.

South Australia is the only colony showing a net profit after paying for interest on construction, while the loss in the other colonies ranges from 0·24 per cent. in New South Wales to 3·66 in Western Australia. The Victorian railways in 1886 yielded 4·18 per cent., but through the extension of unprofitable lines the rate for the year ending June, 1892, had declined to 2·58 per cent. It is expected by the Victorian Commissioners that, with a rest in construction for some years, the equilibrium between net revenue and the interest payable would be accomplished. Profit and loss on railways.

The subjoined table shows the rate per cent. realized on capital expenditure for the last five years for those colonies where the management is under the administration of Commissioners :—

Colony.	1887-8.	1888-9.	1889-90.	1890-1.	1891-2.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
New South Wales	2·85	3·14	3·18	3·60	3·58
Victoria	3·56	3·73	2·91	2·72	2·58
Queensland	2·75	0·84	1·70	1·74	2·57
South Australia	4·80	4·05	5·03	5·32	4·38
New Zealand	2·30	2·60	2·97	2·95	2·79

The following table shows the gross earnings, expenditure, and net profit per average mile open. In 1881 the New South Wales railways yielded 5·31 per cent.—a higher rate of interest on the capital cost than was ever reached before or since. In the same year the Victorian lines yielded a return of 4·04 per cent., which is the highest on record with the exception of 4·18 in the year 1886, as already mentioned. The decline in the net profits is largely due to the extension of the lines in sparsely populated districts. There is no doubt that with more limited extensions of this class, before long the Colonies will equalise the difference between net revenue and the interest on capital cost. The returns per average mile open were :—

Returns per mile open.

Colony.	Gross Earnings.		Expenditure.		Net Profit per Average Mile open.	
	1886.	1891-2.	1886.	1891-2.	1886.	1891-2.
	£	£	£	£	£	£
New South Wales	1,207	1,423	834	877	373	546
Victoria	1,377	1,094	775	756	602	338
Queensland	447	458	308	278	139	180
South Australia	505	679	341	368	164	311
Western Australia	238	334	295	315	—57	19
Tasmania	433	458	358	401	75	57
New Zealand	649	598	428	379	221	219
Australasia	859	851	517	543	342	308

NOTE. (—) denotes loss.

The following is a co-relative table showing the returns per train mile :— Returns per train mile.

Colony.	Gross Earnings.		Expenditure.		Net Profit per Train Mile.	
	1886.	1891-2.	1886.	1891-2.	1886.	1891-2.
	d.	d.	d.	d.	d.	d.
New South Wales	80·01	89·25	55·30	54·98	24·71	34·27
Victoria	77·03	62·91	33·69	43·45	43·34	19·46
Queensland	62·50	63·75	43·00	38·75	19·50	25·00
South Australia	67·52	70·04	45·57	37·79	21·95	32·25
Western Australia	30·52	48·48	37·90	45·70	—7·38	2·78
Tasmania	49·10	44·64	40·60	39·07	8·50	5·57
New Zealand	83·22	88·92	54·85	56·32	28·37	32·60
Australasia	75·26	72·42	45·33	46·20	29·93	26·22

NOTE. (—) denotes loss.

In some of the colonies the railways pass through heavy and mountainous country, involving steep gradients. This is particularly the case in New South Wales, where the lines are most exceptional in their character, having been constructed with an unusual proportion of steep gradients, the worst being on the trunk lines, and so situated that the whole of the traffic has to pass over them. In the Southern system the line at Cooma reaches an altitude of 2,659 feet above the sea-level; on the Western, at the Clarence station, Blue Mountains, a height of 3,658 feet is attained; while on the Northern line the highest point, 4,471 feet, is reached at Ben Lomond. In no other colony of the group do the lines attain such an altitude. In Queensland the maximum height is 3,008 feet; in Victoria, 2,452 feet; in South Australia, 1,970 feet; and in New Zealand, 1,252 feet. In the colonies where heavy gradients prevail the working expenditure must necessarily be heavier than in the colonies where the surface configuration is more level. Railways through difficult country.

The interest on capital cost, the proportion of working expenses to the gross revenue, and the returns per train mile for some of Returns from railway compared.

the principal countries, is given below. The figures refer either to the years 1890 or 1891 :—

Country.	Capital Cost.			Working Expenses : Proportion to Gross Revenue.	Per Train Mile.		
	Total.	Per Mile Open.	Return Per Cent.		Gross Revenue.	Working Expenses.	Net Revenue.
	£	£	P. Cent	Per Cent.	s. d.	s. d.	s. d.
United Kingdom.	919,425,421	45,536	4·0	55·0	5 0¾	2 9½	2 3¼
France	569,080,000	27,375	3·9	52·5	6 0	3 2	2 10
Germany	512,951,000	20,201	5·6	55·3	6 6½	3 6½	3 0
Austria-Hungary	305,042,000	19,516	3·4	53·1	6 2¾	3 3½	2 11¼
Belgium	57,157,721	28,271	4·0	59·2	4 7	2 8¾	1 10¼
United States ..	1,831,088,000	11,205	3·9	68·5	5 8¼	3 10½	1 10
Canada	168,034,518	11,483	1·6	73·0	4 6¾	3 3¾	1 3
Cape Colony	16,949,722	8,968	4·6	58·9	6 6	3 10	2 8
Australasia	117,968,937	10,113	3·0	63·8	6 0½	3 10¼	2 2¼

Number of passengers carried.

The number of passengers carried on the Victorian lines is largely in excess of that of New South Wales, due in a large measure to the complete suburban system prevailing in the former Colony, which places the principal suburbs in direct communication with the metropolis. In the year ending June, 1892, the number of passengers carried on the suburban lines of Victoria was 34,396,325, while for the corresponding service in New South Wales for the same period it was only 16,966,855.

Passenger traffic of each Colony.

The following table shows the number of passengers carried on the Government lines of each of the colonies in 1881 and 1891–92, and are quoted from the official returns of the various railway departments :—

Colony.	Passengers carried.	
	1881.	1891-92.
	Number.	Number.
New South Wales	6,907,312	19,918,916
Victoria	18,973,070	69,546,921
Queensland	247,284	2,370,219
South Australia	3,032,714	5,749,028
Western Australia	67,144	508,304
Tasmania	102,495	725,724
New Zealand	2,911,477	3,555,764
Australasia	32,241,496	102,374,876

The Queensland and New Zealand returns do not include passengers with season tickets.

The amount of goods tonnage is shown in the subjoined table. In the period from 1881 to 1891 there was an increase of about 156 per cent., varying from 71 per cent. in South Australia to 377 per cent. in Queensland :— Proportion of goods traffic.

Colony.	1881.	1891-2.
	Tons.	Tons.
New South Wales	2,033,850	4,296,713
Victoria	1,249,049	3,431,578
Queensland	161,009	768,527
South Australia	646,625	1,106,839
Western Australia	27,816	94,476
Tasmania	44,396	161,141
New Zealand	523,099	2,122,987
Australasia	4,685,844	11,982,261

The percentage of receipts from coaching traffic to the total receipts is about the same in the Australasian Colonies as in Europe. The proportion in the United Kingdom for 1891 was 42·9 per cent. for coaching traffic to 52·8 per cent. for goods traffic, besides which there was 4·3 per cent for miscellaneous receipts, which could not properly be classed under either of the above heads; so that the proportion of receipts from coaching traffic to goods traffic was 44·8 per cent. against 55·2 per cent. The figures for the various colonies are given below :— Receipts from passenger traffic.

Colony.	Coaching Traffic.	Goods Traffic.
	Per cent.	Per cent.
New South Wales	38·3	61·7
Victoria	53·1	46·9
Queensland	33·1	66·9
South Australia	27·8	72·2
Western Australia	42·3	57·7
Tasmania	54·5	45·5
New Zealand	36·4	63·6
Australasia	41·2	58·8

The following table gives the different classes of rolling stock in the possession of the several Australasian Governments during Quantity of rolling stock.

1891–92; and, considerable as are the numbers of each class, they could with advantage be largely increased :—

Colony.	Locomotives.	Passenger Carriages.	Goods Waggons.
New South Wales	489	1,054	10,455
Victoria	462	1,114	8,642
Queensland	271	323	3,885
South Australia	247	338	5,825
Western Australia	28	53	442
Tasmania	52	147	931
New Zealand	266	490	8,257
Australasia	1,815	3,519	38,437

RAILWAY ACCIDENTS.

Classification of casualities.

The persons meeting with accidents on railway lines may be grouped under three heads—passengers, servants of the railways, and trespassers; and the accidents themselves may be classified into those arising from causes beyond the control of the person injured, and those due to misconduct or want of caution. Adopting this classification the accidents during 1891–92 in those Colonies for which returns are available are enumerated below :—

Colony.	Passengers.		Railway Employés.		Trespassers, &c.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	17	58	26	163	7	7	50	228
Victoria	6	123	15	178	31	41	52	342
South Australia	2	6	4	32	10	3	16	41
New Zealand	2	9	3	108	4	54	9	171

Comparative freedom from accidents.

The railways of Australasia have been as free from accidents of a serious character as the lines of most other countries. In order

to obtain a common basis of comparison it is usual to find the proportion which the number of persons killed or injured bears to the total passengers carried. There is, however, no necessary connection between the two, for it is obvious that accidents may occur on lines chiefly devoted to goods traffic, and a more reasonable basis would be the accidents to passengers only compared with the number of passengers carried. The data from which such a comparison could be made are wanting for most countries; the following table, therefore, shows the number of all descriptions, including not only passengers and employés, but trespassers, killed or injured on the lines of the most important countries, per million passengers carried :—

Countries.	Average per million passengers carried.	
	Killed.	Injured.
United Kingdom	1·11	8·53
Russia in Europe	11·36	17·60
France	1·71	3·09
Germany	1·65	6·33
Austria-Hungary	4·40	10·43
Belgium	1·98	10·15
Netherlands	2·15	1·64
Switzerland	1·75	5·65
Sweden	3·34	4·51
Norway	1·28	0·90
Denmark	1·28	5·96
Italy	2·29	21·48
India	4·62	8·18
Canada	17·13	65·31
United States	1·5	6·1
New South Wales	2·7	9·0
Victoria	0·9	4·8
South Australia	2·1	4·9
New Zealand	2·9	45·5

Colonial average satisfactory.

It will be seen that the Australasian Colonies stand on a level with the average of the principal European countries. If, however, the more legitimate comparison be made of the proportion of casualties amongst passengers only, fewer countries are available for reference. These are given in the following table: the

figures represent in most cases an average of the last five years for which returns are available:—

Countries.	Average per million passengers.	
	Killed.	Injured.
United Kingdom	0·14	1·89
Russia in Europe	0·63	2·33
France	0·16	0·70
Germany	0·10	0·38
Austria-Hungary	0·10	0·83
Belgium	0·12	1·18
Netherlands	0·08	0·23
Switzerland	0·20	0·63
Sweden	0·16	0·14
Norway	.....	0·07
Italy	0·21	1·84
Canada	1·52	6·18
New South Wales	0·5	2·7
Victoria	0·1	1·8
South Australia	0·3	0·8
New Zealand	0·7	2·3

TRAMWAYS.

Tramways in New South Wales.

In all the Australasian Colonies tramways are in operation, but it is chiefly in Sydney and Melbourne, the inhabitants of which numbered at the latest date 411,710 and 474,810 respectively, that the density of settlement has necessitated the general adoption of this mode of transit. In New South Wales steam motors are mostly used, though there is a length of 1½ miles of cable tram at North Shore, and another cable line is being constructed from King-street, Sydney, to Ocean-street, Woollahra. The length of tram lines open on the 30th June, 1892, was 48 miles, which had cost for construction the sum of £1,099,659. The receipts for the year ended on the same date were £305,090, and the working expenses £248,591, leaving a profit of £56,499, or 5·14 per cent.

Victoria. In Victoria the cable system is in operation in the metropolitan area, the lines having been constructed by a municipal trust at a cost of £1,671,966. The tramways are leased to a company, and the receipts for the year ending 31st December, 1891, were £511,915. In addition to these lines, there are 19¼ miles of horse tramway in Victoria.

Queensland. In Queensland there is a system of horse trams, controlled by a private company. The liabilities at the 30th September, 1891, were £148,901, and the assets £147,546; the receipts for the year ending in the same date were £17,998, and the expenses £19,081. The number of horses owned by the company was 387, and cars 51.

South Australia. In South Australia there are no Government tramways, but horse trams are run in the principal streets of Adelaide by private companies. No particulars have been collected respecting the length of these lines, nor of the returns therefrom.

Western Australia. The Western Australian Government owns a line of horse tramway between Roeburne and Cossack, a length of 8 miles. The total receipts for 1891 were £2,603 and the expenditure amounted to £2,108.

Tasmania. In Tasmania a private company maintains a line of horse tramway, 11 miles in length, between Don and Barrington, on the north-west coast. The cost was £9,926, the receipts in 1891 came to £1,169, and the expenditure £1,194. Passengers are carried free of charge on this line. The average number of horses employed was 10 and vehicles 9.

New Zealand. There are also tramways in existence in New Zealand under private management, but no particulars are at present available.