

Public Works ¹⁸⁹⁰ (1900) Department.

RAILWAY BRANCH.

G.O., No. 1234 Ry.

DATED 21st August 1900.

[Despatch Abstract.]

Administration report on Indian Railways for 1889.

Resolution of the Govt of India on the — Submitted
by the Director-General of Railways, Communi-
-cated to the Consulting Engineer for Railways.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

No. 424 R. T.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY TRAFFIC.

Simla, the 31st July 1890.

Administration Report on Indian Railways for 1889.

Read—

Letter No. 95 (Statistical), of the 5th June 1890, from the Director General of Railways, submitting the Administration Report on the Railways in India for the year 1889, Part I.

OBSERVATIONS.—The Annual Administration Report for 1889 was submitted on the 5th June by the Director General of Railways. As in last year's report, the first chapter furnishes an interesting and useful summary of the principal results of the year's working.

2. The principal events which occurred during the year were the amalgamation of the Southern Mahratta and Mysore Railways into one system, the passing into law in March 1890 of the new Indian Railways Bill as Act IX of 1890, and the completion of the bridge over the Chenab river near Sher Shah, which was opened for traffic on the 1st February 1890. On the 31st March 1890 the distance remaining to be driven to unite the east and west advanced headings of the tunnel through the Khwaja-Amran mountains was only 91 feet; a later report has shown that the boring was through on the 17th of April.

3. The capital expended directly by the State to the end of the calendar year 1889 upon railways was Rs. 1,22,94,96,927 against Rs. 1,12,01,06,776 at the end of the calendar year 1888, while that expended by Companies at the same dates was respectively Rs. 82,97,96,707 and Rs. 80,69,19,877. This does not include expenditure in Native States, which was Rs. 7,37,44,938 and Rs. 6,23,65,740 to the end of 1889 and 1888 respectively.

4. The main facts related in Chapter I of the Report may for general convenience be briefly recapitulated thus:

During the twelve months ending the 31st March 1890, there were opened for public traffic 869 miles of railway, as compared with 886 miles during 1888-89; the total open mileage at the end of 1889-90 was 16,095 miles.

The gross earnings on all railways during 1889 (inclusive of Steam-boat Services, but exclusive of the West of India Portuguese Railway) amounted to Rs. 20,49,36,629 against Rs. 19,76,44,749 during 1888.

During 1889 the number of passengers carried was 110,402,383, the coaching earnings being Rs. 6,89,86,147, and the passenger mileage 4,673,304,103; while during 1888, 103,156,013 passengers were carried, the coaching earnings being Rs. 6,43,50,321, and passenger mileage 4,349,054,980 miles.

The aggregate tonnage of goods, material, and live-stock carried was 22,155,164 tons, which earned Rs. 13,02,66,102, the ton-mileage being 3,639,462,392. In 1888 the totals were 22,393,202 tons, with an earning of Rs. 12,79,03,904 and a ton-mileage of 3,576,997,334.

The total working expenses amounted in 1889 to Rs. 10,37,74,007, or 50·64 per cent. of the gross earnings, as compared with Rs. 9,87,43,474, or 49·96 per cent., in 1888, the distribution under the several departmental heads of expenditure being as under :

		1888.	1889.
Maintenance	...	14.12 per cent.	14.65 per cent.
Locomotive	...	16.15 "	16.29 "
Carriage and Wagon	...	4.35 "	4.53 "
Traffic	...	7.98 "	7.86 "
General	...	5.26 "	5.26 "
Steam-boat	...	0.52 "	0.49 "
Special and Miscellaneous	...	1.58 "	1.56 "
TOTAL	...	49.96 "	50.64 "

The net earnings realised were Rs. 10,11,62,622 against Rs. 9,89,01,275 in 1888, giving a return on the capital expenditure on open lines, including Steam-boat Services and Suspense Accounts, of 4·93 per cent. against 5·12 per cent. in the previous year.

5. The financial results to the State of the working of the year 1889-90 are Financial results of railway working. not yet accurately known, but the following statement gives the figures of the Revised Estimate for (See page 5.) this year as compared with the actual figures for the preceding year 1888-89. These last-named figures are given in paragraph 17 of Chapter I of the Report now under review; the figures for 1889-90 are those from which the tables at pages 94-95 of the Report have been compiled :

		1888-89.	1889-90.
			Revised Estimate.
<i>Losses—</i>			
Guaranteed Railways	...	Rs. 87,84,950	Rs. 73,51,000
State lines leased to Companies, open and unopen		69,81,766	72,95,000
State Railways, Military, open	...	48,18,507	50,60,000
State Railways, Commercial, open	...	24,13,879	...
State Railways, Military, unopen	...	3,42,646	6,34,000
State Railways, Commercial, unopen	...	8,21,696	10,45,000
		<u>2,36,63,444</u>	<u>2,13,85,000</u>
<i>Gains—</i>			
East Indian Railway	...	27,59,990	43,68,000
State Railways, Commercial, open	...	...	5,94,000
		<u>27,59,990</u>	<u>49,60,000</u>
Net loss	...	2,09,03,454	1,64,25,000

It will be seen from the above that the loss on unopen State Railways, commercial and military, was about 11 $\frac{3}{4}$ lakhs in 1888-89 and 16 $\frac{3}{4}$ lakhs in 1889-90. The loss on unopen sections of State lines leased to Companies cannot be accurately stated, but it may be roughly estimated at 44 $\frac{1}{4}$ lakhs and 23 $\frac{3}{4}$ lakhs respectively in the two years, raising the total charges for interest on unopen lines to about 56 lakhs in 1888-89 and 40 $\frac{1}{4}$ lakhs in 1889-90.

The interest charges for the East Indian, Eastern Bengal, and North-Western Railways consist partly of annuities paid in England, which include a contribution of about 25* lakhs of rupees for a sinking fund that is meant to reproduce the capital at the expiry of the period for which the annuity is to run.

Deducting this figure, and the 40 lakhs of interest on unopen lines, the conclusion to be drawn is that the true net loss incurred in working the entire Indian Railway system *during the year 1889-90* may be taken at something under 100

* East Indian	...	...	...	...	about 16 lakhs.
Eastern Bengal and North Western	...	...	...	...	" 9 "

lakhs of rupees. This loss is distributed as follows in round numbers:

Guaranteed Railways	...	...	—73½	lakhs.
State lines leased to Companies	...	...	—49¼	”
State Railways, Military	...	...	—50½	”
	Total loss	...	...	—173¼ lakhs.
East Indian Railway	...	...	+59½	”
State Railways, Commercial	...	...	+15	”
				+74½ ”
	Net loss	...	...	—98¾ ”

About three-quarters of the net loss is due to Guaranteed Railways, and the rest to military State Railways which were never expected to be remunerative. The purely commercial Railways have produced a gain of about 25 lakhs.

The loss on Guaranteed Railways is mainly attributable to the comparatively high* rate at which the guaranteed interest has to be paid. Under its contracts with Guaranteed Railway Companies, the State has to pay interest at this rate until the contracts terminate, and it is consequently unable to obtain any advantage from the easier condition of the money market; that is to say, where the State could now raise money at $3\frac{1}{4}$, or even 3 per cent., to pay off loans raised at higher rates of interest, it has still to continue to pay interest at or near the high average rate of $4\frac{3}{4}$ per cent. in gold on the capital raised by the Guaranteed Companies; and now, owing to the low rate of exchange during the year, the amount of rupees which had to be remitted to England to pay the sterling interest charges is equivalent to a payment of interest of nearly 7 per cent. on the paid up capital at par.

6. The results of the working of the year 1889, the last complete year for which actuals are available, are given in the following table. This table shows the capital expended on construction up to the 31st December 1889, and for the year 1889 the interest in rupees (sterling being converted at standard rates of exchange, not at contract rates in the case of Guaranteed Railways) and the actual net earnings, as well as that portion of the net earnings which passed into the Government Treasury :

	East Indian.	State, Commer- cial.	State, Military.	State Lines leased to Companies.	Guaranteed Railways.	TOTAL.
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
Capital outlay to the 31st December 1889 ...	39,49,87,413	44,61,71,406	40,65,09,647	26,50,43,443	53,57,55,242	2,04,84,67,151
Interest for the year ...	2,49,58,239	2,02,60,694	1,96,82,116	1,00,05,901	3,42,80,704	10,91,87,654
Net earnings ...	2,91,14,970	2,49,91,554	1,01,86,760	24,68,165	3,10,53,280	9,78,14,729
Surplus or deficit ...	41,56,731	47,30,860	—94,95,356	—75,37,736	—32,27,424	—1,13,72,925
Percentage of net earn- ings on capital ...	7·37	5·60	2·51	0·93	5·80	4·78
Net receipts of the State ...	2,80,70,061	2,45,87,931	95,43,353	25,65,582	2,66,89,021	9,14,55,948
Surplus or deficit ...	31,11,322	43,27,237	—1,01,38,763	—74,40,319	—75,91,683	—1,77,31,706
Percentage of net State receipts on capital ...	7·11	5·51	2·35	0·97	4·98	4·47

The net earnings of the railways were less than the interest which had to

High interest the cause of the State loss on its railways. be paid on them by about 113 $\frac{3}{4}$ lakhs of rupees. Of this sum over 75 $\frac{1}{4}$ lakhs accrued on the "State Railways leased to Companies," which are only partially open and far from their full working power. The rest of the deficit is due to the Military Railways and to the loss on the Guaranteed Railways, which, at the average rate of exchange obtained by the Secretary of State during the year, have to earn nearly 6·4 per cent. on the paid up capital at par to pay the guaranteed interest in sterling in England. It will be observed that the total interest of the year amounts to nearly 5·33 per cent. on the capital outlay. This is accounted for partly by the high rate on the Guaranteed Railways, partly by the purchase of three of the old Guaranteed Railways at a considerable premium, and partly by the fact that the figure shown as interest contains about 25 lakhs of rupees which really are a sinking fund towards the extinction of the capital debt raised to purchase these three lines. The cardinal fact to be noticed is that, after all deductions have been made, the railways earned 4·78 per cent. on their capital, of which the State received 4·47 per cent.; so that had the whole debt been raised at 4 per cent., which is the rate at which the Government can now borrow in silver in India, there would have been a profit of about 95 lakhs of

* Above 4½ per cent. in gold on an interest-bearing capital of £49,262,688.

rupees. That this profit was turned into a loss of about 177½ lakhs of rupees is due to the fact that in past years the credit of the State was not so good, and it was forced to borrow at higher rates in gold instead of silver, and through Guaranteed Companies instead of coming directly on the market.

7. The main results in gross earnings and working expenses on all railways for the last five years are compared in the following table, excepting the West of India Portuguese Railway for which complete statistics are not available:

Comparative figures of five years.
(See Chapter VII, page 86, and Statements Nos. 26 and 27, pages 102-109.)*

	1885.	1886.	1887.	1888.	1889.*
	Miles.	Miles.	Miles.	Miles.	Miles.
Open mileage on the 31st December ...	12,210.48	12,870.39	14,059.34	14,459.97	15,766.52
Mean mileage worked during the year ...	12,044.91	12,508.36	13,532.74	14,378.54	15,331.39
Gross Earnings—					
	Rs.	Rs.	Rs.	Rs.	Rs.
Coaching ...	5,55,67,338	5,80,96,624	6,02,83,498	6,43,50,321	6,89,86,147
Goods ...	11,93,84,143	12,39,16,556	11,92,70,989	12,79,03,904	13,02,66,102
Steam-boat, Telegraph, and Miscellaneous	53,86,775	50,51,504	50,93,460	53,90,524	56,94,380
TOTAL ...	18,03,38,255	18,70,64,684	18,46,47,937	19,76,44,749	20,49,36,629
Earnings per mean mile worked ...	14,972.15	14,955.17	13,644.53	13,745.81	13,367.13
Working Expenses—					
Maintenance ...	2,44,52,857	2,52,09,000	2,54,66,307	2,79,14,081	3,00,12,610
Locomotive ...	2,92,46,660	2,90,40,683	2,91,82,754	3,19,07,256	3,33,84,941
Carriage and Wagon ...	89,88,424	86,53,837	83,03,003	86,00,132	92,80,710
Traffic ...	1,36,24,519	1,43,11,902	1,49,67,886	1,57,70,452	1,61,18,716
General ...	92,34,982	92,67,743	1,01,14,513	1,03,98,112	1,07,73,502
Steam-boat, Special and Miscellaneous, and rent of leased lines	41,10,038	35,01,293	35,34,796	41,53,441	41,98,523
TOTAL ...	8,96,57,480	(a) 9,00,20,422	9,15,68,849	9,87,43,474	10,37,74,007
Expenses per mean mile worked ...	7,443.60	7,196.82	6,766.47	6,867.42	6,768.73
Ratio of expenses to earnings ...	49.72	48.12	49.59	49.96	50.64
Ratio of net earnings to Capital outlay ...	5.60	5.69	5.09	5.12	4.93

8. The gross earnings from all sources show a steady improvement between 1885 and 1889, with the exception of 1887. The falling off in 1887, as already explained in the Resolution on the last Report, was due to a deficient wheat crop in the spring of that year and to the failure of the cotton crop of 1886. The gross earnings in 1889 show improvement as compared with 1888, due principally to increased coaching earnings and to increased traffic in cotton exported

(a) Including Rs. 35,964 on account of the Mervi State Railway not shown in the details.

from Berar; but they do not compare favourably with the figures for the years 1885 to 1888, when the additional mean mileage worked is considered, the earnings per mean mile being lower in 1889 than in any of the four preceding years. This may partly be accounted for by the fact that the late rapid extension of new lines with their traffic undeveloped has reduced the general average.

9. The following table shows the gross earnings, working expenses, and net earnings during 1889, and gives also figures per train-mile, excluding steam-boat, of all railways under the following grouping:

	GROSS EARNINGS.		WORKING EXPENSES.		NET EARNINGS.	
	Total.	Per train-mile.	Total.	Per train-mile.	Total.	Per train-mile.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
East Indian Railway ...	4,49,13,645	5.46	1,57,85,623	1.92	2,91,28,022	3.54
State Railways (Commercial) ...	7,07,97,344	3.51	3,57,05,360	1.77	3,50,91,984	1.74
Ditto (Military) ...	37,13,969	2.70	39,84,668	2.90	—2,70,699	—0.20
State lines leased to Companies (a) ...	1,07,75,270	2.85	83,32,031	2.20	24,43,239	0.65
Guaranteed Railways (b) ...	6,51,14,954	4.34	3,40,45,643	2.27	3,10,69,311	2.07
Assisted Companies ...	37,68,196	3.30	21,18,583	1.86	16,49,613	1.44
Native States ...	46,20,965	3.35	28,07,289	2.03	18,13,676	1.32

In 1888 the results per train-mile were—

	Gross Earnings.	Working Expenses.	Net Earnings.
	Rs.	Rs.	Rs.
East Indian Railway ...	5.45	1.84	3.61
State Railways (Commercial) ...	3.21	1.61	1.60
Ditto (Military) ...	3.46	2.33	1.13
State lines leased to Companies ...	2.40	1.77	0.63
Guaranteed Railways ...	4.15	2.09	2.06
Assisted Companies ...	3.24	1.83	1.41
Native States ...	3.26	1.83	1.43

10. Under working expenses, the cost per mean mile worked shows favourably in comparison with 1888, but not so the ratio of expenses to earnings, which is higher than it has been for some years. The increase in the proportion of expenses is attributable to some extent to the opening of new lines which have not yet proved remunerative, and to some extent also to the decrease in the proportion of charges formerly debited to Capital; further, to special adjustments in respect

(a) Includes the Bhopal-Itarsi State Railway.

(b) Includes the Pondicherry Railway.

of Home expenditure relating to previous years, and to heavy charges on account of maintenance.

11. The gross earnings of the chief railways per mile per week (excluding Steam-boat earnings) in five-yearly periods from the commencement up to the year 1888 and for 1889 are given in the following table, the lines being arranged in the order of their receipts per mile in 1889:

Railways (including branches and leased lines).	1853.	1858.	1863.	1868.	1873.	1878.	1883.	1888.	1889.
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
Bombay, Baroda and Central India.	...	...	138	287	260	298	407	532	552
East Indian ...	...	279	222	346	382	499	585	525	534
Great Indian Peninsula ...	119	173	175	357	282	391	467	526	494
Eastern Bengal (a) ...	...	...	130	259	331	254	288	283	282
Rajputana-Malwa (b) ...	...	...	...	...	32	129	197	215	230
North-Western ...	...	...	171	112	154	193	228	202	225
Oudh and Rohilkhand ...	...	...	...	120	56	163	192	197	209
Madras ...	...	93	110	181	157	148	148	195	209
Burma ...	...	...	...	...	...	115	187	178	169
South Indian (c) ...	...	...	74	90	120	102	149	158	165
Bengal and North-Western ...	...	...	...	...	...	...	...	102	103

12. The following table shows the gross earnings per mile open per week and the percentage of working expenses to gross earnings on the principal railways for 1888 and 1889:

Railways (including branches and leased lines).	1888.		1889.	
	Gross earnings per mile open per week (excluding Steam-boat).	Percentage of working expenses to gross earnings (excluding Steam-boat).	Gross earnings per mile open per week (excluding Steam-boat).	Percentage of working expenses to gross earnings (excluding Steam-boat).
	<i>Rs.</i>		<i>Rs.</i>	
Bombay, Baroda and Central India	532	44.11	552	42.44
East Indian	525	34.16	534	35.44
Great Indian Peninsula	526	46.96	494	51.42
Eastern Bengal (a)	283	45.77	282	42.23
Rajputana-Malwa (b)	215	48.26	230	45.82
North-Western	202	67.27	225	63.44
Oudh and Rohilkhand	197	57.38	209	44.24
Madras	195	58.72	209	58.97
Burma	178	62.33	169	66.45
South Indian (c)	158	68.98	165	70.11
Bengal and North-Western	102	53.50	103	51.96

(a) Excluding the Bengal Central Railway.
(b) Excluding the Gaekwar's Mehsana Railway.
(c) Excluding the Villupuram-Guntakal State Railway.

13. The average statistical cost of carrying one passenger one mile on the principal railways during 1889 was as follows:

Cost per passenger.
(See Statement No. 28, pages 110 and 111.)

	<i>Pies.</i>
Standard gauge.	
East Indian (a) ...	0.78
Oudh and Rohilkhand ...	0.90
Madras ...	1.03
Bombay, Baroda and Central India (a) ...	1.14
Eastern Bengal ...	1.42
North-Western (a) ...	1.44
Great Indian Peninsula (a) ...	1.56
Metre gauge.	
Rajputana-Malwa ...	0.75
Bengal and North-Western ...	0.84
South Indian, including Pondicherry ...	1.02
Burma, including the Toungoo-Mandalay Extension ...	1.32
Southern Mahratta, including the Mysore Section ...	1.75

14. The average statistical cost of hauling one ton of goods one mile during the year was:

	<i>Pies.</i>
Standard gauge.	
East Indian (a) ...	2.14
Oudh and Rohilkhand ...	2.72
Bombay, Baroda and Central India (a) ...	3.32
Eastern Bengal ...	3.47
North-Western (a) ...	3.82
Great Indian Peninsula (a) ...	4.39
Madras ...	4.81
Metre gauge.	
Bengal and North-Western ...	3.24
Rajputana-Malwa ...	3.31
Burma, including the Toungoo-Mandalay Extension ...	5.96
South Indian, including Pondicherry ...	6.56
Southern Mahratta, including the Mysore Section ...	7.16

15. On Maintenance of Way and Works the average expenditure for the year per mean mile maintained on the principal standard gauge lines is Rs. 2,610, and on the metre gauge Rs. 1,344. Excluding the cost of permanent-way, the cost of maintenance per mile of track, including sidings, on standard gauge lines is the lowest on the Oudh and Rohilkhand Railway with a mean age of 14.72 years. Of the metre gauge lines, the Bengal and North-Western Railway is the lowest. The details are given in the following table:

Railways (including branches and leased lines).	COST PER MILE OF TRACK, INCLUDING SIDINGS.			Cost per mean mile maintained.	Ton-mileage per mean mile worked.	Total cost of maintenance per 1,000 gross ton-miles.
	Mean age in years.	Excluding permanent-way.	Permanent-way.			
		<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>		<i>Rs.</i>
<i>Standard Gauge.</i>						
East Indian	24.13	543	1,679	3,432	1,915,065	1.75
North-Western	11.34	832	1,255	2,448	1,092,044	2.23
Oudh and Rohilkhand	14.72	396	646	1,216	887,277	1.37
Eastern Bengal (b)	11.76	499	830	1,678	805,913	1.90
Great Indian Peninsula	23.92	1,089	1,126	3,221	1,585,208	2.04
Bombay, Baroda and Central India	23.34	1,395	1,267	3,593	1,735,894	2.07
Madras	25.70	1,036	511	1,833	777,492	2.36
<i>Metre Gauge.</i>						
Rajputana-Malwa (c)	10.30	381	505	1,011	753,159	1.34
Southern Mahratta, including the Mysore Section	3.70	490	505	1,074	258,211	4.16
Burma, including the Toungoo-Mandalay Extension	5.78	541	1,327	2,161	568,450	3.80
South Indian (d)	16.41	873	1,259	2,383	495,060	4.81
Bengal and North-Western	4.73	361	209	631	402,559	1.57

(a) Including branches and leased lines.
(b) Excluding the Bengal Central Railway, excepting in two last columns.
(c) Excluding the Gaekwar's Mehsana Railway.
(d) Excluding the Villupuram-Guntakal State Railway.

16. The differences in the average prices of coal per ton on various lines render any comparison of working on the basis of Locomotive cost misleading. A better comparison can be made if the cost of fuel be deducted from the Locomotive expenses. Excluding the cost of fuel, the Locomotive expenses per 1,000 gross ton-miles on the principal standard and metre gauge lines compare as follows:

Standard Gauge.			
1888.	Rs.	1889.	Rs.
East Indian (a) ...	1.04	East Indian (a) ...	1.05
Oudh and Rohilkhand ...	1.18	Oudh and Rohilkhand ...	1.05
Eastern Bengal (a) ...	1.36	Eastern Bengal (a) ...	1.46
Bombay, Baroda and Central India (a) ...	1.42	Bombay, Baroda and Central India (a) ...	1.58
Madras ...	1.69	Madras ...	1.59
North-Western (a) ...	1.87	North-Western (a) ...	1.70
Great Indian Peninsula (a) ...	1.90	Great Indian Peninsula (a) ...	2.16

Metre Gauge.			
Bengal and North-Western ...	1.29	Bengal and North-Western ...	1.18
Rajputana-Malwa ...	1.68	Burma ...	1.64
Burma ...	1.69	Rajputana-Malwa ...	1.66
Southern Mahratta (b) ...	2.02	Southern Mahratta, including the Mysore Section ...	2.14
South Indian (a) ...	2.21	South Indian (a) ...	2.32

17. Particulars of the fuel consumption and supply are given in Chapter IX of the Report under review. Compared with 1888, the consumption of coal on all railways was greater by about 4 per cent. The quantity of English coal decreased by 5½ per cent., while the quantity of country coal consumed rose by 8 per cent. The total consumption of coke and wood increased by 5 per cent. and about 3 per cent. respectively, and that of patent fuel decreased by 12 per cent.

18. The Carriage and Wagon expenses for the principal standard and metre gauge lines open for traffic show the following comparison of cost per 1,000 vehicle miles run by home vehicles:

Standard Gauge.			
1888.	Rs.	1889.	Rs.
Oudh and Rohilkhand ...	4.26	Oudh and Rohilkhand ...	4.68
East Indian (a) ...	4.47	East Indian (a) ...	5.04
Eastern Bengal (a) ...	8.46	Eastern Bengal (a) ...	5.53
Bombay, Baroda and Central India (a) ...	9.80	Bombay, Baroda and Central India (a) ...	8.55
North-Western (a) ...	10.96	North-Western (a) ...	10.78
Great Indian Peninsula (a) ...	11.70	Great Indian Peninsula (a) ...	14.21
Madras ...	13.64	Madras ...	14.64

Metre Gauge.			
Bengal and North-Western ...	2.08	Bengal and North-Western ...	2.51
Southern Mahratta (b) ...	3.98	Burma (a) ...	3.77
Burma ...	4.62	Southern Mahratta, including the Mysore Section ...	4.86
Rajputana-Malwa ...	5.00	Rajputana-Malwa ...	5.95
South Indian (a) ...	6.27	South Indian (a) ...	7.48

(a) Including branches and leased lines.
(b) Excludes the Southern Mahratta, Mysore Section.

19. The following table compares the cost of train staff per train-mile, the lines being arranged in order of cheapness:

Railways (including branches and leased lines).	Cost per train-mile.
	<i>Annas.</i>
South Indian ...	0.352
Bengal and North-Western ...	0.472
Bombay, Baroda and Central India ...	0.534
Rajputana-Malwa ...	0.553
Southern Mahratta, including the Mysore Section ...	0.604
Madras ...	0.626
Eastern Bengal ...	0.655
Oudh and Rohilkhand ...	0.699
Burma ...	0.766
North-Western ...	0.900
East Indian ...	0.997
Great Indian Peninsula ...	1.415

20. The Traffic expenses per train-mile are given in the following table; the cost is highest on the Eastern Bengal State Railway, and lowest on the Rajputana-Malwa Railway:

Railways (including branches and leased lines).	Train-mileage per mean mile worked.	Average distance between stations in miles.	Cost per train-mile.*
		<i>Miles.</i>	<i>Annas.</i>
North-Western ...	3,250	7.59	4.51
Oudh and Rohilkhand ...	3,116	6.86	5.02
Great Indian Peninsula ...	5,729	7.20	5.30
Bombay, Baroda and Central India ...	5,026	5.55	5.49
Madras ...	2,825	6.61	5.40
East Indian ...	5,101	8.51	5.69
Eastern Bengal (a) ...	3,760	5.04	6.65
Rajputana-Malwa (b) ...	3,782	7.24	3.58
South Indian (c) ...	3,091	6.37	3.74
Bengal and North-Western ...	2,001	6.27	4.16
Southern Mahratta, including the Mysore Section ...	1,686	7.68	5.10
Burma ...	2,663	6.43	6.43

21. The General Charges on the basis of percentage on gross earnings vary as follows on the principal standard and metre gauge lines:

Standard Gauge.			
1888.	Per cent.	1889.	Per cent.†
(27,346) Great Indian Peninsula (d) ...	3.11	(25,672) Great Indian Peninsula (d) ...	3.46
(27,639) Bombay, Baroda and Central India (d) ...	4.13	(28,714) Bombay, Baroda and Central India (d) ...	3.87
(27,333) East Indian (d) ...	4.22	(15,756) Eastern Bengal ...	4.12
(15,698) Eastern Bengal ...	4.26	(11,794) North-Western (d) ...	4.26
(10,531) North-Western (d) ...	5.30	(27,772) East Indian (d) ...	4.27
(10,165) Madras ...	5.83	(10,887) Oudh and Rohilkhand ...	5.78
(10,220) Oudh and Rohilkhand ...	7.55	(10,855) Madras ...	5.83

(a) Excluding the Bengal Central Railway.
(b) Excluding the Gackwar's Mehsana Railway.
(c) Excluding the Villupuram-Guntakal State Railway.
(d) Including branches and leased lines.
(e) The figures in parentheses represent the gross earnings (including Steam-boat) per mean mile worked.

Metre Gauge.

Rs. (a)	1888.	Per cent.	Rs. (a)	1889.	Per cent.
(11,184) Rajputana-Malwa	...	6.09	(11,956) Rajputana-Malwa	...	5.54
(7,618) South Indian (b)	...	6.88	(8,606) South Indian (c)	...	6.46
(9,269) Burma	...	7.02	(8,770) Burma	...	6.76
(5,876) Bengal and North-Western	11.68		(5,883) Bengal and North-Western	11.56	
(4,495) Southern Mahratta (d)	12.73		(4,386) Southern Mahratta, including the Mysore Section	13.23	

22. The figures in the various tables are for the most part the bare results of the working as shown in the published Revenue Accounts of the various lines. When contrasting the results, the Government of India is fully aware how much the varying conditions under which the traffic is worked on the different lines affect these results. The amount of the earnings per mile per week, the want of balance in the up and down traffic, the fluctuations in the amount of traffic at different periods of the year, the gradients, the price of fuel,—all these, together with other varying local conditions, greatly influence the results of the working and account to a great extent for the divergences shown.

23. The quantity of goods carried for the public only was 15,695,184 tons, or 3 per cent. more than in 1888, and the freight received aggregated Rs. 12,11,58,812, being more by 2 per cent. Including materials and stores carried for home lines and live-stock for the public, the gross weight lifted, however, showed a decrease of 238,038 tons, or 1 per cent., but the earnings were better by Rs. 23,62,198, or 2 per cent.

The decrease in the gross weight was mainly due to a decrease in the quantity of construction materials carried owing to the completion of work on new lines.

The improvement in public traffic principally took place under "Coal" and "Cotton, raw," the former showing an increase of 275,481 tons, or 15 per cent., in quantity and Rs. 10,21,250, or 14 per cent., in earnings, and the latter of 176,085 tons, or 39 per cent., in quantity and Rs. 33,85,823, or 42 per cent., in earnings. The earnings from "Provisions" were also better by Rs. 4,07,847, or 8 per cent.

There was a falling off under "Grains" of 240,372 tons, or 6 per cent., in weight and Rs. 11,47,294, or 4 per cent., in earnings, and under "Oil-seeds" of 67,897 tons, or 4 per cent., in weight and Rs. 9,65,087, or 8 per cent., in earnings. Under "Railway Plant and Rolling Stock," with an increase of 9,040 tons, or 2 per cent. in weight, the earnings were less by Rs. 16,58,955, or 37 per cent.

24. The following table shows the average distances over which a ton of goods and a passenger were carried on some of the principal railways:

Railways (including branches and leased lines).	Mean mileage worked during the year 1889.	Average distance over which a ton of goods was hauled.	Average distance travelled by a passenger.
	Miles.	Miles.	Mile.
East Indian	1,652.02	205.29	66.66
Eastern Bengal	709.34	117.07	28.94
Bengal and North-Western	376.00	122.13	34.34
Oudh and Rohilkhand	692.55	116.57	45.02
North-Western	2,383.31	219.30	55.38
Rajputana-Malwa (d)	1,666.99	287.38	55.47
Bombay, Baroda and Central India	460.90	173.38	20.81
Great Indian Peninsula	1,443.92	223.69	42.92
Southern Mahratta, including the Mysore Section	1,123.59	92.51	41.92
Madras	839.30	117.43	37.45
South Indian (c)	662.44	53.53	34.46
Burma	534.78	100.55	34.65

(a) The figures in parentheses represent the gross earnings (including Steam-boat) per mean mile worked.

(b) Including branches and leased lines.

(c) Includes the Pondicherry Railway, but excludes the Villuparam-Guntakal State Railway.

(d) Excluding the Gackwar's Melsana Railway.

25. The number of persons of all races employed on open lines during 1889 was 238,217 against 243,585 in 1888. The distribution is shown in the following table:

Year ending	NUMBER OF EMPLOYÉS.				Number of miles open.	Number of stations.
	Europeans.	East Indians.	Natives.	Total.		
31st December 1888 ...	4,674	5,604	233,307	243,585	14,463	2,096
31st December 1889 ...	4,769	5,525	227,923	238,217	15,762 (a)	2,250

(a) Excludes the Deoghur Railway (4½ miles) and the West of India Portuguese Railway (51 miles).

The Native Staff represented 95.68 per cent. of the entire body of railway employés. Under the head of Europeans, there was an increase of 2.03 per cent., under East Indians a decrease of 1.41 per cent., and under Natives a decrease of 2.31 per cent.

The large decrease under Natives was principally due to a decrease in the number employed on the East Indian and Bengal-Nágpur Railways. On the Bengal-Nágpur Railway the decrease is attributed to the conversion of the metre gauge portion of the line having been completed. A large number of natives were employed on this work during 1888.

26. The total number of persons killed and injured during the year 1889 was 1,558 as compared with 1,334 during 1888. The number killed was 534 as against 482. Of these 59 were killed from causes beyond their own control, 178 from their own want of caution, 14 at level crossings, 259 while trespassing and by suicide, and 24 from miscellaneous causes.

The number of accidents to trains increased from 3,252 in 1888 to 3,313 in 1889, or by about 2 per cent. The number of train accidents per 1,000 train-miles was 0.03, which is the same as in 1888. Twenty-nine passengers were killed, being an average of one per 3½ millions of passengers travelling; 158 passengers were injured, or an average of one per 1½ millions. From the total number of passengers killed and injured, it would appear that an average of 25 millions of miles were travelled for each casualty.

RESOLUTION.—The thanks of the Government of India are due to Lieutenant-Colonel L. Conway-Gordon, R.E., C.I.E., for the preparation and submission of this Report, which is very satisfactory, and is in many respects superior, both as regards form and as regards contents, to the Reports of previous years.

The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab.
The Chief Commissioners of the Central Provinces, Burma, and Assam.
The Residents at Hyderabad and Mysore.
The Agents to the Governor General for Central India, Rajputana, and Baluchistan.
The Accountant General, Public Works Department.
The Director General of Railways.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Central Division.

ORDER.—Ordered, that this Resolution be communicated for information to the Local Governments, Administrations, and Officers noted in the margin.

Ordered also, that this Resolution be published in the Supplement to the Gazette of India.

Colonel, R.E.,
Secretary.

Documents accompanying.

Nil.

[G. C. F.]

G. C. Press Simla,—No. 1341 P. W. D.—3-8-90—400.

In the joint Secretary to the Government of Madras,
Railway Branch, Public Works Department.

36-5-90

Am. Co. of Engineers

PW C No. 7621

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No. 1234 R of 21st Aug 90.

JMS 11/17/90

Communicated to
the Consulting Engineer
for Railways for information

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To
The Comg Engr for Rys
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