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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	2852	Press
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Not to be folded or roughly handled

No. 390. Read the following endorsement of the Government of India in the Public Works Department, (Railway,) dated Simla, 10th October 1876, No. 2,719 R. :—

Extract from the Proceedings of the Government of India, Military Department, under date, Simla, 25th September 1876, No. 892-S.

Memorandum from the Officiating Accountant-General, Military Department, to the Secretary to the Government of India, Military Department, Accounts Branch, dated Simla, 18th September 1876, No. 507 F.

THE undersigned has the honor to submit, for the consideration of the Government of India, the following observations regarding the rates now charged for extra troop trains by the chief Railway Companies. These are as shown below, and were fixed about ten years ago experimentally, and subject to modification hereafter :—

	RS.	A.	P.
1st-class carriage, per mile	0	9	0
Composite	0	9	0
2nd-class	0	9	0
3rd-class (five compartments)	0	9	0
3rd-class (seven compartments)	0	12	0
Covered wagon... ..	0	8	0
Cattle "	0	3	0
Horse-box (single)	0	4	0
" (double)	0	8	0
Powder-van	1	0	0
Invalid carriage	1	0	0

2. The State in guaranteeing 5 per cent. interest on the capital outlay of the Indian Railway Companies reserved for itself (see clause 19 of the contracts) the privilege of free transport of mails and of the transport of troops at lower than the ordinary rates, and the question now raised is whether the Railway Companies have dealt with Government in conformity with the spirit and intention of that clause in maintaining the charges quoted in paragraph 1 of this memorandum.

3. For a proper estimation of this question it is necessary to investigate somewhat closely the working and traffic of the railways. In this memorandum the inquiry will be limited to the East Indian Railway, but the facts and the results evolved will apply with more or less force to the other guaranteed railways.

4. The Revenue Accounts and Reviews of the Revenue Accounts of the East Indian Railway main line give the following particulars of the coaching or passenger traffic of that line.

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26th October 1876. No. 2,852.

				Train Mileage.	Total Earnings.	Earnings per Train Mile.
				MILES.	RS.	RS. A. P.
1st-half, 1873	...	Ordinary coaching	...	1,026,563	40,41,211	3 14 11
	...	Special trains (public)	...	3,657	26,931	7 5 10
	...	Extra troop trains	...	6,689	81,598	12 3 2
2nd-half, 1873	...	Ordinary coaching	...	987,418	38,97,030	3 15 2
	...	Special trains (public)	...	4,549	25,358	5 9 2
	...	Extra troop trains	...	7,927	99,219	12 8 3
1st-half, 1874	...	Ordinary coaching	...	942,778	40,07,378	4 4 0
	...	Special trains (public)	...	1,218	8,631	7 1 4
	...	Extra troop trains	...	8,826	1,31,373	14 14 2
2nd-half, 1874	...	Ordinary coaching	...	893,649	38,65,017	4 5 2
	...	Special trains (public)	...	2,888	17,644	6 1 9
	...	Extra troop trains	...	5,054	69,043	13 10 9
Years 1873 and 1874.	...	Ordinary coaching	...	3,850,438	1,58,10,666	4 1 8
	...	Special trains (public)	...	12,312	78,564	6 6 1
	...	Extra troop trains	...	28,496	3,81,233	13 6 1
Total ...				3,891,246	1,62,70,463	4 2 10

N.B.—The Railway Revenue Accounts for 1875 do not show the figures for troop trains separately.

5. These figures show that the East Indian Railway Company has earned on the average during these two years the sum of Rupees 4-2-10 per train mile from the entire coaching traffic, but that while its earnings from ordinary passenger traffic have ranged from only Rupees 3-14-11 to Rupees 4-5-2 per train mile, and its earnings from special trains supplied to the public from only Rupees 5-9-2 to Rupees 7-5-10, its earnings from troop trains have ranged from Rupees 12-3-2 to Rupees 14-14-2 per train mile.

6. To make the argument under this head complete, it may be noted here that the earnings from goods trains during these periods were as follow:—

Half-years.				Train Mileage.	Total Earnings.	Earnings per Train Mile.
				MILES.	RS.	RS. A. P.
1st-half, 1873...	...	...	...	1,986,300	97,55,623	4 14 7
2nd " "...	...	...	...	1,936,426	91,77,703	4 11 10
1st " 1874...	...	...	...	3,579,341	1,65,36,723	4 9 11
2nd " "...	...	...	...	2,017,516	91,09,986	4 8 3
Years 1873 and 1874...				9,519,583	4,45,80,045	4 10 11

Taking both goods and coaching traffic together, it will be seen that the Railway Company earns per train mile from troop trains about three times as much as it does from any other kind of traffic, and that the troop traffic as at present worked is per mile run the most paying section of the entire railway business.

7. On the other hand, it may be urged that troop trains consist of a large number of carriages than ordinary passenger trains, and are therefore heavier and mor

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expensive to work. To estimate the force of this objection it is necessary to turn to the reviews of the revenue accounts which give the cost of working passenger trains and goods trains for these half-years and the average number of vehicles making up the trains. The figures thus obtained are given in the following statement:—

Half-years.	PASSENGER TRAINS.		GOODS TRAINS.	
	Average number of vehicles attached to each train.	Total cost of working per train mile.	Average number of vehicles attached to each train.	Total cost of working per train mile.
	No.	RS. A. P.	No.	RS. A. P.
1st-half, 1873	16.5	1 7 10	28.5	1 14 3
2nd " "	16.2	1 7 10	29.3	1 14 7
1st " 1874	16.3	1 5 10	31.2	1 8 9
2nd " "	19.8	1 9 11	26.7	1 14 8
Average ...		1 8 6	...	1 14 6

* Half-year of famine traffic. The results were somewhat exceptional. In the average the figures for this half-year have been excluded.

8. These figures show that while in 1873 it cost Rupees 1-7-10 per mile for working trains consisting on the average of 16½ vehicles, in the 2nd-half of 1874 it cost Rupees 1-9-11 to work trains consisting on the average of 19¾ vehicles, or in other words that the additional expense of putting 3¼ more carriages to each train amounted to Rupee 0-2-1, or about 8 Pies per vehicle. From this it may be concluded that the expenditure incurred in running an additional number of carriages is small. And indeed it is obviously so, for after allowing the total first cost of a train of say 16 vehicles, the addition of extra carriages involves no addition to the fixed supervising establishment charges of the several departments of the railway, but only causes some additional expenditure in wear and tear, consumption of fuel, grease, small stores, &c. The cost per vehicle per mile of the several items of charge that could presumably be increased by the extra vehicles were as follow in 1873:—

	COST PER VEHICLE PER MILE.	
	1st-half, 1873.	2nd-half, 1873.
	Pies.	Pies.
Maintenance of way, including repairs of roads, bridges, stations and buildings, and other miscellaneous charges	2.3	2.0
Locomotive expenses, including wages of drivers and firemen, coal, repairs and renewals of engines, &c., &c.	3.5	3.6
Repairs of carriages and wagons, cleaning, oiling, &c.	1.1	1.2
Traffic expenses, including train staff, fuel, lighting, water, general stores, clothing, printing of tickets, stationery, &c., &c.	1.1	1.2
Total ..	8.0	8.0

This also gives 8 Pies as the additional cost per vehicle per mile of extra carriages attached to trains on the East Indian Railway, corresponding exactly to the calculation given in the first part of this paragraph.

9. From a statement received from the Examiner of Commissariat Accounts, it appears that in the case of thirteen extra troop trains run from Allahabad to Jubbulpore, the average number of vehicles attached to each train was 26.5, and taking into consideration the fact that troop trains during 1873 and 1874 earned Rupees 13-6-1 per train mile on a scale of charges averaging 8 to 9 Annas per vehicle per mile, it may fairly be assumed that troop trains on the East Indian Railway consist on an average of about 25 vehicles.

10. Now if for $16\frac{1}{2}$ carriages per train the working cost amounted to Rupees 1-7-10 per mile, and the cost of $8\frac{1}{2}$ additional carriages at 8 Pies per vehicle per mile amounts to 5 Annas 8 Pies, the cost of working an extra troop train of 25 vehicles would amount to Rupees 1-13-6. To this if 2 Annas 8 Pies per train mile be added for any special arrangements that the Company may find it necessary to make for the working of a special troop train, a total cost of Rupees 2 per train mile is obtained as the expenditure on working troop trains. That this is not an under-estimate may be inferred from the fact that the cost of working goods trains of 28 to 31 vehicles was not more than Rupees 1-14-7 per train mile.

11. To arrive however at the whole of the cost to the Railway Company of running these troop trains, it has to be remembered that the vehicles composing them have in whole or in part to be hauled back empty to the place from which they were started. This hauling back of empty vehicles is an ordinary contingency of railway working, for in all cases in which there is more traffic running in one direction than in the other, the vehicles have to be brought back whether a return freight is available or not. In the case of troop trains, the empty vehicles would not necessarily be worked back as an entire train of empties by a special engine. The usual practice in these cases is to return the vehicles by attaching five or six of them to each train that may be running at the time in the required direction. In this way the return of such of the vehicles of the troop train as were not utilized for return traffic would not cost more than 8 Pies per vehicle, and the entire cost would not in any case exceed 1 Rupee per mile. Adding this to the cost Rupees 2 already arrived at, the total cost of working troop trains would amount as a *maximum* to Rupees 3 per mile.

12. In the following statement a comparison is made of the earnings, expenses, and profits per train mile of ordinary passenger trains, goods trains, and special trains. The figures taken being those that have already been employed in the memorandum:—

	Earnings per Train Mile.			Expenses per Train Mile.			Profits per Train Mile.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Ordinary passenger trains	4	1	8	1	7	10	2	9	10
Ordinary special trains	6	6	1	2	0	0	4	6	1
Special troop trains	13	6	1	3	0	0	10	6	1
Goods trains	4	10	11	1	14	6	2	12	5

* Includes the maximum allowance for working back empty vehicles.

13. From these figures it may fairly be inferred that though it costs the Railway Company more to work the special troop trains, the profits derived from them exceed

out of all proportion the profits from the ordinary passenger and goods traffic. It appears, therefore, to the undersigned that there can be but one answer to the question as to whether the Railway Companies have acted in conformity with the intentions of the contract in charging for troop trains rates that leave them such an exceptionally high rate of profit, and as to whether a reduction of rates should be called for. These rates instead of being higher than those charged to the public should be considerably less.

14. Apart from the right of the Government under the contracts to have its troops and mails carried at reduced rates, it is a well understood principle in railway management that reduced charges should be levied in the case of large customers. But this principle, though it has been liberally and properly applied by the East Indian Railway Company in its dealings with the general public, has not as yet been extended by them to troop trains.

15. For instance, the ordinary rate for edible grains and seeds (see Goods Tariff, East Indian Railway) is $\frac{1}{3}$ rd Pie per maund per mile, that is 33.3 Pies per 100 maunds per mile, but for large consignments sent long distances, there is a graduated diminishing scale of charges terminating in a rate of 18.7 Pies per 100 maunds per mile for Cawnpore and stations above it sending goods to Howrah and Jubbulpore. This gives for large consignments a reduction of 44 per cent. on the lowest ordinary rates.

16. There are of course obvious reasons for these concessions. The Railway Company can afford to carry at cheaper rates when it obtains full train loads, for the maximum carrying power of each train is then fully utilized. And it lowers rates, not only because it can carry at a cheaper rate per ton a large traffic than a small traffic, but because by so doing it attracts to the railway traffic that would otherwise have gone by road or river.

17. For passenger traffic the East Indian Railway has three classes—

1st class at 18 Pies per mile.

2nd „ at 9 „ „ „

3rd „ at 3 „ „ „

and an intermediate class at $4\frac{1}{2}$ Pies per mile. To prevent overcrowding the carriages for these classes have a maximum carrying limit assigned to them. For instance, it has been determined that a 3rd-class carriage shall not at any time have more than ten passengers per compartment; a 2nd-class carriage not more than eight per compartment, and so on. The Railway Company has found, however, that in practice a 3rd-class compartment that can carry a maximum of ten men does not on the average carry even five. The Company therefore allows a 3rd-class compartment to be reserved for six fares, which is in fact more than a compartment earns on the average. The public can therefore reserve a 3rd-class carriage consisting of five compartments for 5×6 fares = 30 fares = $7\frac{1}{2}$ Annas per mile.

18. For similar reasons the Railway Company allows a 2nd-class carriage, consisting of two compartments of six sleeping berths each, to be reserved for twelve fares, or at the rate of one fare for each sleeping berth, and a 1st-class carriage of the new pattern, consisting of two compartments of six sleeping berths each, to be reserved for twelve fares.

19. The Company finds it can do this under the present condition of the traffic which admits of trains being run with only about 16 or 17 carriages not even half filled. If by any means it could increase the passenger traffic to such an extent as to enable it to run trains with 24 or 25 better filled carriages, it could reduce the charges proportionately. That this view is correct both in theory and in practice may be gathered from the fact that in England the Railway Companies can afford to run excursion trains on holidays or special occasions at a considerably reduced rate of charge, the reduction in rate being more than counterbalanced by the increased numbers that travel. If by means of any large increase to the population or otherwise the English Railway Companies could reckon on a normal daily traffic equal to that obtained on these holiday occasions, they could afford to carry always at excursion rates, that is, they could afford to permanently reduce the charges.

20. For troop trains there are therefore two grounds for expecting specially advantageous rates. One is that the contracts provide that troops shall be carried at the rates for the next lower classes, and the other is that the troop trains are of the magnitude of excursion trains, and that this forms a reason for expecting a substantial reduction apart from the stipulations of the contracts.

21. The question, however, is one which need not be discussed in further detail. When the rates were fixed they were understood to be experimental. At that time the operation of the railway rates and fares were not sufficiently understood, as the statistics necessary for estimating them were not then recorded. Since then by recording the statistics of the working of railways in greater detail, the Railway Companies have ascertained with more or less accuracy the cost of conveying traffic, the average earnings and expenses per vehicle, &c. As a consequence they have latterly made large reductions in the public rates for food grains, coal, and the like. They have also made numerous concessions in regard to reserved accommodation for passengers, and there is therefore no reason to doubt but that when the subject is brought fairly to their notice, they will consent to a readjustment of the rates for extra troop trains.

22. There seems further to be no real necessity for keeping up varying charges for the several classes of vehicles required for troop trains. It would be a convenience and tend to the simplification of accounts if an all round average rate were adopted for all carriages, and in this view and bearing in mind the fact that it costs the Railway Company no more (probably less) than Rupees 3 per mile for working troop trains of twenty-five vehicles, it might be arranged that an all round rate not exceeding 4 Annas per vehicle per mile should be charged for extra troop trains for the first twenty vehicles (exclusive of the two brake-vans allowed free) and 3 Annas per mile for each additional vehicle, the minimum charge being for twenty vehicles. This would give a return of Rupees 5 per mile as the earnings of an average troop train of twenty-five vehicles, leaving per mile as the earnings of an average troop train of twenty-five vehicles, leaving Rupees 2-15-0 at least as profits, which exceeds the profits per mile from ordinary passenger and goods traffic.

23. As the time for the movements of troops is drawing near, the Public Works Department might be invited to take the subject into very early consideration,

so that the reduction on all lines may be made to have effect during the current official year.

(Signed) O. R. NEWMARCH, Major,
Offg. Accountant-General, Military Dept.

ORDER.—Ordered that a copy of the foregoing be forwarded to the Public Works Department, for very early consideration.

(Signed) W. M. LEES, Lieut.-Colonel,
Offg. Dy. Secy. to Govt. of India.

COPY forwarded to the Government of Madras, Public Works Department, (Railway,) for communication to the several Railway Agents for consideration and early reply.

By order,
(Signed) H. DRUMMOND, Colonel, R.E.,
Dy. Secy. to the Govt. of India.

No. 391.

ORDER THEREON, 26th October 1876, No. 2,852.

RAILWAY, No. 29.

COMMUNICATED to the Consulting Engineer for consideration and early reply by the Railway Authorities.

(True Extract.)

Major-General, R.E.,
Secretary to Government.

To the Consulting Engineer for Railways.

Exd. E. C. Shunker.
Spare Copies

Forwarding Copy of letter
containing observations regarding
the rates now charged
extra hoop trains by the
Chief Railway Companies

No. 2852 of 26 Oct 76

Communicated to the
consulting Engineer for considera-
tion and early reply by the
Railway Authorities.

C.M.C.

12/12 to 14-17-18-76

For the 30-10-76

7459

Govt. of Madras.

PUBLIC WORKS.

To the Comd^g Eng^r for R^{ds}

Dist.

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Recd.

Encl.

G. O. 28th Feb 1870, No 2842

Nos. 1 & 2

Quotⁿ to be charged for
Extra Troop Grant

Endowment of the Govt of
India regarding the
reduction in the

may be made within the
current official year,
in all cases, communication
to the Comd^g Eng^r for R^{ds}
for every reply -

Sub^d in Mst
21-10-70