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MADRAS RECORD OFFICE.

Government of Madras.

Publishing DEPARTMENT.

7.4.37

G.O. No. 626 Press Mis.

6263

Dated 4-4- 1837

Not to be folded or roughly handled

18/6/37

Fort Saint George, Public Works Consultation of 7th April 1857.

No. 62. Read the following Extract from the Minutes of Consultation in the Financial (Railway) Department, dated 27th March 1857, No. 161.

Read the following letter from the Consulting Engineer for Railways.

Submits a Report of the traffic operations on the Madras Railway, during the 3 months ending 31st December 1856. } (Here enter 4th March 1857, No. 76.)

1. Resolved that a copy of the enclosure of the foregoing letter be furnished to the Government of India with reference to their letter of 31st October 1856, No. 5107.

2. Colonel Pears will, as he proposes, submit these reports half yearly for the future.

3. The Government consider it also very desirable that a correct account of the traffic on the Western road should also be regularly furnished half yearly; orders to this effect will be issued in the Department of Public Works.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

No. 63. ORDER THEREON, No. 626; dated 4th April 1857.

Ordered to be communicated to the Chief Engineer, who will, with reference to para. 3, of the order above recorded, adopt the necessary measures for obtaining a correct half yearly return of traffic on the Western road commencing from May 1857, and submit it to Government at the close of each half year.

(Signed) H. FORBES,
Acting Secretary to Government.

RAILWAY DEPARTMENT. CONSULTING ENGINEER'S OFFICE.

No. 76.

From

LIEUTENANT COLONEL T. T. PEARS, C.B.,

Consulting Engineer for Railways.

To

T. PYCROFT, ESQUIRE,

Chief Secretary to Government,

Fort Saint George.

SIR,

I have the honor to lay before Government the report called for in Extract Minutes of Consultation, No. 430, of the 26th November 1856.

2. I propose, with the sanction of Government, to submit the same half-yearly in future.

I have the honor to be,

Sir,

Your most obedient Servant,

MADRAS,
4th March 1857.

T. T. PEARS,
Consulting Engineer for Railways.

MEMORANDUM.

The following analysis of the traffic operations on the Madras Railway, during the three months ending 31st of December, has been attempted in obedince to the orders of Government, conveyed in an Extract from Minutes of Consultation, No. 430, dated 26th November 1856.

2. I have been under the necessity of confining the analysis to the operations of these three months, though the line was open from the 1st of July, from the absence of various returns during the earlier period, which I did not consider it expedient to call upon the Railway authorities to furnish; inasmuch as the most important result to be hoped from a report of this nature at the very outset of our operations—a result as attainable on three months as on a half-yearly investigation—is the establishment of a complete and practical system of analysis.

3. This is greatly wanted; for without this it is impossible to arrive at any satisfactory conclusion, regarding either the actual cost, or the actual profit, due to each article of transport; and while such is the case, and data drawn from other countries are either not available, or not accepted as guides in this, all arguments regarding rates and fares must be based either on pure theory, or pure assumption.

4. I trust the analysis now submitted, if it serves no other purpose, may, as an object of discussion and criticism, lead to the introduction of a sound system of analysis by, and among, the men engaged in the management of the Railways of this Presidency.

5. I have divided the traffic for the three months into "Passenger" and "Goods" traffic. The expenses, which are given under four heads, Traffic, Carriage Department, Locomotive, Agency and Management, are divided thus by the Railway authorities in all periodical bills, &c., between "Goods" and "Passengers."

6. The question as to the system on which the expenses should be divided, among the units of traffic, is one not easily determined.

7. That which I have adopted is as follows;—The Locomotive expenses have been divided according to the actual weight due to each unit. Thus, if there were only two or three passengers, on the average, in a first-class carriage, those two or three bear the Locomotive expenses due to the traction of the whole carriage.

8. The repair of carriages is divided over the work done, and reduced to the mile run by each carriage.

9. The Traffic Department appeared to me to consist of two distinct portions, viz., that which is not sensibly affected by the number of passengers, so long as the trains and carriages remained the same, and that which might be considered directly proportional to the number of passengers booked.

10. For the latter, I have taken in a round sum the whole of the booking clerks, placing the remainder under the former head.

11. The one sum, which I call "general expenses", I divide over the mileage of vehicles; the other, or "special expenses", equally among passengers of all classes, the cost per mile in the latter case varying with the average distance travelled by each class. Of these special expenses, I have charged nothing to the miscellaneous traffic—horses, carriages &c.—thus slightly enhancing the cost to the passengers.

12. The "special expenses", thus charged to each passenger per mile, become $\frac{1}{10}$ths of a pie. This is very high, and cannot be considered in any degree fixed; since, doubtless, the same establishment would have served to book many more passengers, and keep all the accounts connected with them. It is difficult, with the data furnished by ordinary traffic returns, to attain to perfect accuracy in these matters, and I have endeavoured to err, when some error was unavoidable, on the right side.

13. It will be seen that I have adopted in this matter a different system from that followed by Colonel Baker, in his Memorandum on the traffic on the Bengal Railway. There, that Officer divides the entire expenditure, in the traffic and general management departments, equally among all travellers, of whatever class, or whatever the amount of accommodation given. I cannot think this a correct mode of proceeding. However far the system I propose may be from absolute accuracy, I think, when we see a train composed thus—

Dated 7th October 1856, Extract Minutes of Consultation, No. 430, dated 26th November 1856.

1—1st class carriage with 3 passengers.
1—2d do. „ 4 do.
4—3d do. „ 30 do. each.
1—Horse box „ 1 horse.
1—Parcel van „ ½ a ton of luggage, &c.
1—Carriage truck „ 1 carriage.

to divide the whole of the expenses, in the Traffic department, equally among the passengers, so situated, so accommodated, appears still further removed from a just distribution of those expenses.

15. The general management is similarly reduced to the vehicle mileage, and thus spread among the units constituting the average load of each carriage.

16. With regard to "Goods", the same general principles are followed; but not being able to class the goods on different vehicles, I am obliged to give an average load, whether of 1st, 2d and 3d class goods, to each [illegible] vehicle, whatever its description.

17. The results are as follows:—

Passenger Traffic.

Total number booked 3 months,

Appendix C.

1st..... 376
2d..... 1,562
3d. ... .34,184

Receipts. { From Passengers.....Rupees 32,905 2 4
From Miscellaneous..... „ 4,131 3 7

Total Rupees 37,036 5 11

Expenses... .....16,564 14 0

Profit.....Rupees 20,471 7 11

18. Statement showing the average mileage cost, in each department, of passenger vehicles, during the three months ending December 1856, and the profits arising from each:

		1st Class.			2d Class.			3d Class.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Appendix C. Traffic Dept.	Special.	0	0	0·3456	0	0	0·82467	0	0	5·91658
	General	0	1	0·68	0	1	0·68	0	1	0·68
B. Locomotive.....		0	1	1·6076	0	1	0·97016	0	1	0·20408
E. General Management..		0	0	5·086	0	0	5·086	0	0	5·086
D. Carriage.....		0	0	2·99	0	0	0·82	0	0	0·96
Total of each.....		0	2	10·8	0	2	8·38	0	3	0·84
Average earnings per vehicle per mile		0	3	5·	0	3	1·7	0	9	9
Profit.....		0	0	6·2	0	0	5·32	0	6	8·16
Mileage.....		8,663			15,023			45,922		
Total profits on each class.....		279	11	10	416	4	2	19,172	6	11
							Total profits.....	19,868	6	11

Note.—In the returns rendered by the Railway Company, there are discrepancies between the mileage of passengers and the receipts from the same, in each class—discrepancies which, though trifling, are sufficient to cause a disagreement between the profits upon each class, as shown by the carriages on the one hand, and by the average receipts per passenger on the other. In calculating the profits upon each passenger mile, I thought it better to give as the charge the regulated rate, though, assuming this not to be known, the obvious mode of getting the "mileage charge" would be to divide the actual receipt by the actual mileage. The discrepancy, above mentioned, would not then have appeared.

19. Statement showing the average mileage cost (in each department) of passengers in each class, during the above period, the profits arising from each per mile, and total profits from each class.

		1st Class.			2d Class.			3d Class.		
		Rs.	A.	P.	R.	A.	P.	R.	A.	P.
Appendix B.	Locomotive Dept	0	0	5·706	0	0	2·941	0	0	0·416
D.	Carriage..... ...	0	0	1·245	0	0	0·186	0	0	0·032
C.	Taffic.....	0	0	5·424	0	0	3·057	0	0	0·632
E.	Management.....	0	0	2·11	0	0	1·15	0	0	0·17
Total of each.....		0	1	2·485	0	0	7·334	0	0	1·25
Mileage charge.....		0	1	6·	0	0	9·	0	0	4·
Profit.....		0	0	3·515	0	0	1·666	0	0	2·75
Mileage.....		20,805			66,276			13,45,094		
Total profit of each class...		380	14	1	575	1	3	19,265	10	8
							Total Profits.....	20,221	10	0

Goods.

20. Statement showing the average mileage cost of each maund of goods carried, with the average charge for each and profits.

		Pies.
Appendix H.	Traffic Department	0·0802
G.	Locomotive do.	0·1042
L.	General Management	0·0137
K.	Carriage	0·0095
	Total	0·2076
	Average mileage charge	0·3875
	Profits	0·1799

Total mileage of Goods,.....Maunds 1,69,16,344

Total Profits,...Rupees 15,850 4 1

21. It would be premature, at this very early stage in the operations of the Railway, to criticise very closely either the amount of traffic or the working detail.

22. The amount of Traffic has been small; and it is well known that the Rail had not, during the period under consideration, attracted more than a small portion of the general traffic of the country, whether in Passengers or Goods.

23. Not only is the line open too short, relatively; but the time, during which it has been at work, is insufficient to render it probable that any considerable effect has been produced on the business of the country, generally, whether on Goods or Passengers. It is probable there has been some such increase, however, since it is asserted that, while some of the goods traffic has taken to the rail, that travelling on the high Western Road, during the same period, has been larger than ever.

24. In looking through reports of this nature, among the points most worthy of note, seem to be the following;—

1. The completeness of load in each carriage.
2. The amount of dead weight moved with each passenger or maund of goods.
3. The size of the trains.
4. The number of such trains.
5. The expenditure of fuel.
6. The relative expenses in the several departments.
7. The weight of stock.

25. The average loads, it will be seen, were as follows:

Appendix C.

Passengers.—1st Class Carriage.....2·4
2d do. do..... 4·4
3d do. do.....29·29

Appendix G.

Goods—Average of all classes,...maunds 87·5

The latter is reduced much, in consequence of the traffic being almost wholly one way—eastward.

26. With regard to the Passengers, it seems that there has not been a sufficient number of the higher classes to fill even one carriage. Improvement may fairly be looked for, in this respect, as the line extends; otherwise, some change will be necessary, either in the rates or in the nature of accommodation.

27. Of the 3d class it may be hoped that, when the nature and requirements of the traffic become better known, the average load will be increased.

28. The amount of dead weight is shown by the gross weight due to each passenger, viz. for

Appendix C.

1st class.....101·91 maunds.
2d do. ..... 52·52 do.
3d do. ..... 7·4 do.

assuming each passenger at 1½ maund, the unprofitable weight carried about with each is in the case of the

1st class... 68 times his own weight.
2d do.... 34 do. do.
3d do.... 4 do. do.

29. The passenger trains were small—consisting, on an average, of 7·508 carriages. The Engines, with the staff &c., were consequently worked below their power.

Appendix H.

30. The Goods' trains were also light, averaging 19·1 carriages, and 5,578 maunds of gross weight.

31. The average weight of train, in the latter case, is greatly reduced, by the peculiar nature of the traffic, which is, at present, almost wholly in one direction—eastward.

32. The number of regular trains is small—one each way every day for Passengers, and the same for Goods every day, except Sundays. The stock, it will be seen, is very heavy.

33. The expenditure of fuel is not easily reduced to a standard, as it depends so much, not only on the character of the Engine, but on that of the line. On the Madras line there is a continued fall in one direction, and in that direction is the great bulk of the traffic. The expenditure does not appear to have been heavy; but I imagine it is susceptible yet of reduction, and, considering its cost here, this point is one deserving of close attention.

34. It will be seen, from the above, that the Madras Railway is yet in the condition of an expensive machine which has not work enough to do.

35. This may be due to any, or in a measure to each, of the following causes:—

1st. The people may require further time to become acquainted with the line, and to adopt this new mode of transport for themselves and their goods.

2dly. The line may not have extended far enough to make it worth the while of carriers from a distance to tranship their loads. Such has certainly been the case to a great extent.

3dly. The obvious difficulty in diverting the owners of common carts from their old employment on the trunk road to that of feeders to the Railway.

4thly. The charge may be too high, or

Lastly, some imperfection in the management may, for a time, tend to discourage the traffic.

36. It is quite clear that, to work an expensive instrument of this nature profitably, it must be kept fully, or at all events abundantly, supplied with work.

37. It does not seem to be in the nature of things—it certainly is neither to be expected nor desired—that capital lying idle—whether as rails or engines, or in any other form—for several days in the week, or for 20 hours out of the 24, should yield a satisfactory return to its proprietors.

38. It will be seen, at a glance, that, if the work to be done were by any means increased on such a line as this, the actual cost of doing each unit of that work would be diminished.

39. The first effect of increased work would be increased loads to vehicles, involving additional expenditure so small as to be hardly appreciable. The next effect would be an increase in the number of vehicles per train, still causing an increase in only a portion of the expenditure; and, lastly, an increase in the number of trains would take place, attended with similar results.

40. In very brief illustration of this, and referring to the details in the Appendices, I will assume that the 3d-class travellers had been 45 to a carriage, instead of 29·29, the total mileage would have been..... 20,66,490
instead of..... 13,45,094

Difference..... 7,21,396

41. The only additional charge would have been coke and special traffic expenses, which are—the former pies ·023,* the latter pies 0·2† per mile—total ·223 pies per mile; the profit, therefore, would have been upon each passenger pies 4—·223 = 3·77 pies per mile, or 7,21,396 × 3·77 = Rs. 14,164-14-6.

* Appendix B.
† C.

42. The charges on each of the 3d-class passengers, thus increased in number, would have been as follows:—

	Pies.
Locomotive Expenses.....	0·3
Carriage.....	0·02
Traffic Department.....	0·48
Management.....	0·113
Total.....	0·913

43. In other words, the average cost per mile of each passenger would have fallen upon such an increase of passengers per vehicle, and the average profits upon each would have increased considerably.

44. It would make this Memo. too long, were I to enter further into the subject; but I have endeavoured to give, in the Appendix, the whole of the details necessary, to enable those who are interested, in such questions, to calculate for themselves what would be the probable effect of any increase in traffic, in whichever of the above three modes it affected the working, whether by filling the vehicles better, completing the trains, or increasing the number of them.

45. It will be observed that no charge is made for "maintenance of way" during the period in question, the Expenditure in that department not coming upon Revenue until the line has been open one year. It will be seen also, that the charge for repairs to stock is light for this period—Engines and Carriages being new.

46. In considering to what extent the actual cost, per unit of work, will hereafter be increased on this account, it must be borne in mind that, in both the Locomotive and Traffic departments, while every effort has, I believe, been made to conduct the working operations as economically as possible, the general expenses have been relatively high, in consequence of the shortness of the line and present lightness of the traffic. A reduction in these, or rather their distribution over a greater length of line, and a greater amount of traffic, will do more, I believe, than compensate for the addition of "maintenance of way" charges.

MADRAS,
4th March 1857.

T. T. PEARS,
Consulting Engineer for Railways.

APPENDIX A.

MADRAS RAILWAY.

PASSENGER TRAFFIC.

Open 65 Miles from Madras to Arcot.

Revenue Account (Three Months) from 1st October to 31st December 1856.

PAYMENTS.						
To Locomotive Department.—Salary of Superintendent and Office expenses	580	4	8			
Foremen, Enginemen, and Firemen's Wages	1,604	14	6			
Wages of Laborers, Cleaners, &c.	225	9	1			
Coke and Coal consumed	2,584	11	11			
Oil, Tallow, waste, &c.	287	12	9			
Materials for repairs of Engines and Tenders	267	13	9			
Wages for do.	453	3	8			
				6,004	6	4
REPAIRS OF CARRIAGES AND WAGONS.						
Superintendence	63	2	7			
Wages	237	9	6			
Stores	215	6	11			
				516	3	0
TO TRAFFIC DEPARTMENT.						
Salaries of Traffic Manager and Assistant Station Masters and Clerks	4,038	1	7			
Salaries of Guards	264	14	2			
Wages of Porters, Greasemen, &c.	1,222	14	1			
Wages of Gatemen, Pointsmen, &c.	509	9	0			
Cost of Tallow, Grease, and Waste	172	6	0			
Cost of Oil, in lighting Stations and Signals, and for the use of Pointsmen, &c.	271	12	0			
Cost of Tickets issued	28	7	6			
Advertising, Printing, and Stationery	839	1	8			
Cost of Stores not otherwise classified	47	6	4			
Travelling expenses and Allowances	199	13	4			
Contingent Charges and Petty Disbursements	4	4	8			
				7,598	10	4
TO GENERAL CHARGES.						
Agent and Manager, Cashier, Audit and Accountant, and Office expenses				* 2,445	10	4
Total Expenditure				16,564	14	0
Receipts for three months				37,036	5	11
Profit Rupees				20,471	7	11

T. T. PEARS,
Consulting Engineer for Railways.

* The total expenditure is Rupees 3,668-7-5, of which sum one-third has been charged to Goods and two-thirds to Passengers, in accordance with the arrangement adopted by the Agent and Manager in the Half-yearly Revenue Account.

APPENDIX B.

PASSENGER TRAFFIC.

3 months, October November and December 1856.

LOCOMOTIVE DEPARTMENT.

Locomotive Engines.

Miles run with trains	12,491¼
Piloting and Shunting	269
Total	12,760¼

Expenses.

					per Cent.
Foremen, Enginemen, and Firemen's wages				1,604 14 6	26·7
Cleaners, Cokemen, and Watermen				225 9 1	3·7
Coke, cwt. 1,805				2,526 15 11	43·0
Coal do. 52¼				57 12 0	
Oil, tallow, &c.				287 12 9	4·8
Engines. Material			264 9 3		
Engines. Wages			445 3 6		
				709 12 9	
Tenders. Material			3 4 6		12·0
Tenders. Wages			8 0 2		
				11 4 8	
Superintendence, &c.				580 4 8	9·8
Total Locomotive Expenses, Rupees				6,004 6 4	100·0

Total per train mile	R.	0	7	8·29
Fuel per train mile	lbs.		—	16·65
Do. per Engine mile	„		—	16·13
Cost of fuel per train mile	R.	0	3	3·72
Do. per Engine mile	„	0	3	2·89
Average weight of train gross	Maunds			1,643·38
Do. do. do. inclusive of Engine and Tender	„			2,465·07
Average Locomotive expenses per maund gross per mile	Pies.			0·056
Do. do. do. including Engine and Tender				0·037
Do. cost of fuel per maund gross per mile				0·023
Do. do. do. including Engine and Tender				0·015
Repairs of Engine and Tender per mile run, exclusive of Office expenses and Superintendence				10·8

Average gross weight of each Vehicle.

1st	244·6	maunds.
2d	231·61	do.
3d	217·03	do.
Luggage Van	196	do.
Break do.	196	do.
Horse Box	240	do.
Carriage Truck	148	do.

Locomotive expenses per Vehicle per mile.

1st Class.	Pies	13·6976
2d do.	„	12·97016
3d do.	„	12·20408
Luggage Van	„	10·976
Break do.	„	10·976
Horse Box	„	13·440
Carriage Truck	„	6·288

Locomotive expenses per passenger mile.

1st Class	Pies	5·70696
2d do.	„	2·94112
3d do.	„	0·41664

Note—82⅔ lbs. Avoirdupois = 1 Maund.
27·219 Maunds = 1 Ton.

T. T. PEARS,
Consulting Engineer for Railways.

APPENDIX C.

PASSENGER TRAFFIC.

3 months—October, November and December 1856.

TRAFFIC DEPARTMENT.

Booked.

1st Class Passengers	376
2d do.	1,562
3d do.	34,184
Total	36,122

AVERAGE DISTANCE TRAVELLED BY EACH.

1st Class	Miles 55·33
2d do.	42·43
3d do.	39·34

Mileage.

1st Class	20,805
2d do.	66,276
3d do.	13,45,094
Total Mileage	14,32,175

Receipts.

1st Class	Rupees 1,856—14—6
2d do	„ 2,954—5—6
3d do	„ 28,093—14—4
Total Passengers	32,905—2—4
Miscellaneous	4,131—3—7

Receipts per Passenger booked.

	Rs. A. P.
1st Class	4–15–0·2
2d do	1–14–3·14
3d do	0–13–1·79

Trains.

Mileage of trains	12,289
Average number of Vehicles per train	7·508
Receipt per train mile	Rupees 3·01

Average constitution of train.

1st Class Carriage	0·481
2d do	0·775
Composite	0·67
3d Class	3·736
Luggage Van	0·935
Break Van	0·095
Horse Box	0·554
Carriage Truck	0·262
	7·508

Average lead of train	Passengers	116·54	
Average weight of train	Gross	1,643·38	Maunds
	Net	194·81	do.

Vehicles.

Mileage of

1st Class Carriage	5,915
2d do	9,529
Composite	8,242
3d Class	45,922
Luggage Van	11,491
Break Van	1,170
Horse Box	6,814
Carriage Truck	3,225
	92,308

Average load of each Vehicle.

1st Class	Passenger	2·4
2d do	do	4·41
3d do	do	29·29

Average earnings per Vehicle per mile.

	R. A. P.
1st	0—3—5
2d	0—3—1·7
3d	0—9—9
Luggage Van, Break Van, Horse Box, Carriage Truck — Average Earnings	0—2—10·94

Average gross weight due to each Passenger

1st Class	101·91	Maunds.
2d do	52·52	do.
3d do	7·44	do.

Total expenditure	General,...Rupees	6,098-10—0
	Special, ... do	1,500—0—0
	Rupees	7,598-10—0

Total mileage of Vehicles	92,308
General ... Rupees	6,098–10—0
Per Vehicle per mile	0—1—0 68

Mileage Charge per Passenger.

1st Class passenger	Pies	5·28
2d do.	„	2·87
3d do.	„	0·43
Special ... Rupees	1,500 0 0	

Mileage Charge per Passenger

1st Class	Pies	·111
2d do.	„	·187
3d do.	„	·202

Total Mileage Charge of Traffic Department.

1st Class	Pies	5·28 + ·111 = 5·424
2d do.	„	2·87 + ·187 = 3·057
3d do.	„	0·43 + ·202 = 0·632

T. T. PEARS,
Consulting Engineer for Railways.

NOTE.—82⅔lbs. Avoirdupois = 1 Maund.
27·219 Maunds = 1 Ton.

13

APPENDIX D.

PASSENGER TRAFFIC.

CARRIAGE DEPARTMENT.

Statement showing the mileage of Vehicles and cost of Repairs, for three months, October November and December 1856.

NAMES OF VEHICLES.	Mileage.	Cost of Repairs for 6 months.			Cost of Repairs for 3 months.			Cost of Repairs per mile.			REMARKS.
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
1st Class Carriage	8,663	217	0	11	134	15	9	0	0	2·99	
2d do.	15,023	105	3	2	64	6	1	0	0	0·82	
3d do.	45,922	369	2	3	230	8	2	0	0	0·96	
Luggage Van	11,491	83	11	1	34	6	8	0	0	0·5	
Break Van	1,170										
Horse Box	6,814	55	11	6	51	14	4	0	0	1·4	
Carriage Truck	3,225	0	0	0	0	0	0	0	0	0	
					516	3	0				

NOTE.—The Mileage (8,242), and cost of repairs (Rupees 95-10-6), of composites have been distributed between the 1st and 2nd class vehicles, one third for the 1st, and two-thirds for the 2d. In this Statement the actual cost of repairing the several description of carriages has been given for the six months, but for three months the aggregate cost only is known. This latter has been distributed over the several description of vehicles, in the same proportion as is shown to have obtained during the six months.

T. T. PEARS,
Consulting Engineer for Railways.

APPENDIX E.

PASSENGER TRAFFIC.

GENERAL MANAGEMENT.

Total Expenditure	Rupees 2,445–10–4
Total Mileage of vehicles	92,308
Average cost per vehicle per mile	Pies 5·086

Mileage charge per passenger.

1st Class	Pies	2·11
2d do.	„	1·15
3d do.	„	0·17

T. T. PEARS,
Consulting Engineer for Railways.

APPENDIX F.

MADRAS RAILWAY.

GOODS TRAFFIC.

Open 65 miles from Madras to Arcot.

Revenue Account (Three Months) from 1st October to 31st December 1856.

"PAYMENTS."	Rs.	As.	P.	Rs.	As.	P.
To Locomotive Department.—Salary of Superintendent and Office expenses	876	1	0			
Foremen, Enginemen, and Firemen's wages	2,194	8	4			
Wages of Laborers, Cleaners, &c	297	7	2			
Coke and Coal consumed	4,144	6	4			
Oil, Tallow, Waste, &c	293	2	11			
Materials for repairs of Engines and Tenders	421	11	0			
Wages for do.	951	14	10			
REPAIRS OF CARRIAGES AND WAGONS.				9,179	3	7
Superintendence	103	6	5			
Wages	404	14	0			
Stores	330	11	5			
TO TRAFFIC DEPARTMENT.				838	15	10
Salaries of Traffic Manager and Assistant Station Masters and Clerks	2,019	0	9			
Salaries of Guards	449	11	4			
Wages of Porters, Greasemen, &c	1,270	9	10			
Wages of Gatemen, Pointsmen, &c	376	0	2			
Cost of Tallow, Grease, and Waste	2,277	0	0			
Cost of Oil in lighting Stations and Signals, and for the use of Pointsmen, &c	135	14	0			
Advertising, Printing and Stationery	419	8	8			
Cost of Stores not otherwise classified	23	11	2			
Travelling expenses and allowances	99	14	8			
Contingent charges and Petty Disbursements	2	2	4			
				7,073	8	11
TO GENERAL CHARGES.						
Agent and Manager, Cashier, Audit and Accountant, and Office expenses				1,222	13	1
Total Expenditure				18,314	9	5
Receipts for three months				34,141	2	5
Profit Rupees				15,826	9	0

T. T. PEARS,

Consulting Engineer for Railways.

APPENDIX G.

GOODS TRAFFIC.

3 Months, October November and December 1856.

LOCOMOTIVE DEPARTMENT.

LOCOMOTIVE ENGINES.

Miles run with trains	10,088¼
Piloting and Shunting	266¼
Total	10,354½

Expenses.

Foremen, Enginemen, and Firemen's Wages		2,194—8—4
Cleaners, Cokemen and Watermen		297—7—2
Coke, cwt. 2,901		4,061—5—7
Coal, do. 75½		83—0—9
Oil, Tallow, &c		293—2—11

Repairs.

Engines	Material	420—2—4	
	Wages	949—13—7	1,369—15—11
Tenders	Material	1—8—8	
	Wages	2—1—3	3—9—11
Superintendence, &c		876—1—0	
Total Locomotive Expenses, Rupees			9,179 3 7

Total per train mile	Rupees	0 14 6·69
Fuel per train mile	lbs.	33·04
Do. per Engine mile	lbs.	32·19
Cost of Fuel per train mile	Rupees	0 6 6·87
Do. per Engine mile	„	0 6 4·84
Average weight of train gross	Maunds	557·8
Do. do. do. inclusive of Engine and Tender	Maunds	639·5
Average Locomotive Expenses per maund gross per mile	Pies.	0·031
Average Locomotive expenses per maund gross per mile, including Engine and Tender		0·027
Average cost of fuel per maund gross per mile		0·014
Average cost of fuel per maund gross per mile, including Engine and Tender		0·012
Repairs of Engine and Tender per mile run, exclusive of Office expenses and Superintendence		25·4

Average gross weight of each Vehicle.

	Weight of Vehicle.	Average load.	Gross Weight.
Covered Goods Wagons	218	87·5	305·5 Maunds.
Open Sided do.	150	87·5	237·5 „
Open Goods do.	150	87·5	237·5 „
Platform do.	136	87·5	223·5 „
Hopper Coal do.	170	87·5	257·5 „
Coke do.	177	87·5	264·5 „
Cattle do.	204	87·5	291·5 „
Timber Trucks	136	87·5	223·5 „

Locomotive expenses per Vehicle per mile.

Covered Goods	Wagons	
Open Sided	do.	
Open Goods	do.	
Platform	do.	
Hopper Coal	do.	
Coke	do.	
Cattle	do.	
Timber Trucks		

Locomotive expenses per maund net per mile.

T. T. PEARS,
Consulting Engineer J

NOTE.—82⅔ lbs. Avoirdupois = 1 Maund.
27·219 Maunds = 1 Ton.

APPENDIX II.

GOODS TRAFFIC.

3 Months, October November and December 1856.

TRAFFIC DEPARTMENT.

BOOKED.

1st Class Goods		Maunds 3,72,022
2d	do.	„ 33,305
3d	do.	„ 8,435
	Total	4,13,762

Average distance travelled by each.

1st Class	Miles 38·85
2d do.	„ 58·24
3d do.	„ 61·94

Mileage.

1st Class	1,44,54,164
2d do.	19,39,708
3d do.	5,22,472
Total Mileage	1,69,16,344

Receipts.

1st Class	Rupees 25,537—7—4
2d do.	„ 5,834–13—5
3d do.	„ 2,597—0—5
Total Goods, Rupees	33,969—5—2
Miscellaneous	171–13—3

Receipt per maund booked.

1st Class	Anna 1—1·18
2d do.	Annas 2—9·6
3d do.	„ 4–11·11

Trains.

Mileage of trains	10,083
Average number of Vehicles per train	19·169
Receipt per train mile	Rs. 3·38

Average constitution of Train.

Covered Goods	Wagons	10·19
Open Sided	do.	1·30
Open Goods	do.	5 37
Platform	do.	0·75
Hopper Coal	do.	0·02
Coke	do.	0·09
Cattle	do.	1·13
Timber Trucks		0·29
Ballast	do.	0 029
		19·169

Average load of train	1677·7 Maunds.
Average weight of train	5578· „

Vehicles.

MILEAGE OF

Covered Goods Wagons	1,02,756
Open Sided do.	13,151
Open Goods do.	54,111
Platform do.	7,558
Hopper Coal do.	197
Coke do.	917
Cattle do.	11,365
Timber Trucks	2,980
Ballast do.	290
	1,93,325

Average load of each Vehicle	87·5
Average earnings per Vehicle per mile	As. 2 10
Total Expenditure	Rupees 7,073 8 11
Total Mileage of Maunds	169,16,314
Total Mileage charge of Goods per maund net	Pie ·0802

T. T. PEARS,

Consulting Engineer for Railways.

NOTE.—82⅔ lbs. Avoirdupois = 1 Maund.
27·219 Maunds = 1 Ton.

GOODS TRAFFIC.

CARRIAGE DEPARTMENT.

Statement showing the Mileage of Vehicles, and Cost of Repairs for the 3 Months of October, November, and December, 1856.

Name of Vehicles.	Mileage.	Cost of 6 months. Rs.	A.	P.	Repairs for 3 months. Rs.	A.	P.	Average Cost of Repairs per Md. mile.. Pies.	Remarks.
Covered Goods Wagons...	1,02,756	562	0	4	377	1	8	·0095	
Opened Goods Wagons....	67,262	257	15	10	171	8	8		
Cattle Wagons...	11,365	76	14	9	51	1	5		
Coke Wagons.....	917	17	1	11	11	6	6		
Coal Wagons...	197	71	1	2	47	10	3		
Platform Trucks.....	7,558	12	6	10	8	1	3		
Timber Trucks..... ...	2,980	2	4	5	1	5	11		
Goods Break Vans...	...	253	1	10	169	12	2		
Ballast Trucks.....	290	...	...	...	...	...	...		
					838	15	10		

T. T. PEARS,

Consulting Engineer for Railways.

NOTE.—Vide Note to Appendix D.

APPENDIX L.

GOODS TRAFFIC.

GENERAL MANAGEMENT.

Total Expenditure	Rupees 1,222–13–1
Total Mileage of vehicles	1,93,325
Average cost per vehicle per mile	1·2 pie.
Average mileage charge per maund net	·0137 pie.

T. T. PEARS,

Consulting Engineer for Railways.

APPENDIX M.

Statement showing the description, weight, and capacity of Rolling Stock, in use on the Madras Railway.

	Weight Maunds.	Full load Passengers.	Full load Maunds.	Capacity Cubic feet.	
Engine with tender Passenger,	1,091	0	0	0	
Tank Engine do.	682	0	0	0	
Engine with tender goods, ...	1,091	0	0	0	
Tank do.	682	0	0	0	
1st Class Carriage, ...	241	24*	36	0	* 1½ maund weight of a passenger.
Composite, ...	237	A	0	0	
2d Class Carriage, ...	225	40	60	0	
3d do.	174	60	90	0	
Passenger break Van, ...	184	0	0	663	
Horse box, ...	231	0	3 Horses=27 mds.	0	
Open sided goods Wagon, ...	150	0	163	800	
Covered do.	218	0	191	623	
Open do.	150	0	163	800	
Goods break Van, ...	272	0	0	614	
Cattle Wagon, ...	204	0	191	796	
Carriage Truck, ...	136	0	Four wheel=15 mds.	0	
Coke Wagon, ...	171	0	191	478	
Coal Wagon, ...	170	0	163	463	
Open or Ballast Wagon, ...	150	0	0	0	
Platform, ...	136	0	163	0	

T. T. PEARS,
Consulting Engineer for Railways.

NOTE.—82⅔ lbs. Avoirdupois=1 Maund.
27·219 Maunds =1 Ton.
A—load varies with the description of Carriages.

Asylum Press, WILLIAM THOMAS, Printer.

P.W. 650/57

Financial Railway Depart.
No. 161.

Extract from the Minutes of Consultation
Dated 27. March 1857.

Read the following letter from the Consulting Engineer for Railways

Submits a Report of the Traffic operations on the Madras Railway, during the 3 months ending 31st December 1856.— } Received 4th March 1857 No. 76

1 Resolved that a copy of the Enclosure of the foregoing letters be furnished to the Government of India with reference to their letter of 31st October 1856 No. 5107.—

2 Colonel Pears will, as he proposes, submit these reports half yearly for the future

3 The Government consider it also very desirable that a correct account of the traffic on the Western Road should also be regularly furnished half yearly.— Orders

to

to this effect will be issued in
the Department of Public Works-

/Jme Extract/

Chief Secretary

To The Public Works Department.
with a Printed copy of Lt. Pratt's letter & Enclosures.

E. & O. E.
Jas. A. Wilson

John Lyttle

From the Offg. Chief Engr. E.I.R. 12th Sept. 58
Con. 1829 on Cons.
31-13-14

From 1st 28th Febry 1859
C.Rs 475 Cons.
State of traffic for the 1st half of 1858-59
Cons: 22 March 59
Back No 9-10.

No. 62. & 63.

Public Works 1857 Dept.
Rd. to Cons. 7th April

No. 650

Extract from the Mins of Cons: in the Financl. Railway Dept.
Dated 27th March
Recd. 31st

No. 161

Enclo: from Chief Engr. Dy. 26th Feby. 58
Chief Engr. Railway 16 Rcd. 4th
Requesting that a Copy of the Consulting Engrs. Report of the Traffic Operations in the Madras Railway be furnished to the Govt. of India & that a correct account of the traffic on the Western Road be hereafter regularly furnished half yearly.

with an order
No. 626 - 4 April

L

No. 626

Ordered to be communicated to the Chief Engineer, who will, with reference to Para 3. of the order above recorded, adopt the necessary measures for obtaining a correct half yearly return of traffic on the Western road commencing from May 1857 and submit it to Government at the close of each half year.

Fort St. George
4th April 1857

J. R.

1 Copy to the Chief Engr. Offs.