

- (1) Number of pages _____
- (2) Date of repair _____
- (3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	30-31	Press
B.P. No.		Misr
Dated	7. 1.	195
		1875

Original

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
7th January 1875.*

No. 58. Read the following letter from Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E, Consulting Engineer for Railways, to Colonel G. W. WALKER, R E, Secretary to Government, Public Works Department, dated Madras, 12th December 1874, No. 751 —

I HAVE the honor to forward, herewith, the Analysis of the Revenue Account of the Madras Railway for the half-year ended 31st December 1873.

2. The details differ but little from those of the corresponding period of the previous year, except in the greatly enhanced working expenses, which raise the charges per train mile in nearly all departments, and increase the cost of haulage of each item of traffic as shown in Table M-V. The causes of this excess were explained in the note which accompanied the Revenue Account.

3. The remarks by the Government of India on former reviews have been, as far as possible, attended to, but the following omissions and discrepancies will still be found :—

Table B.—Owing to some misunderstanding the numbers of excess fares have not been recorded, so that although the total mileages are known, it is impossible to obtain the individual mileages under this head of traffic.

Table F-I.—The mileages entered in Table D-I and in Form XIV of the Revenue Account agree; but owing, in the Locomotive Department, to a misapprehension of the orders of Government on the subject, engine miles have again been recorded instead of train miles. This was pointed out some time back, and the figures received for the half-year ended 30th June last have been correctly computed.

Table E-I.—The information required to obtain the necessary particulars under heads 7 and 8 is now nearly complete, and approximate figures will be given for the next half-year.

4. I request that this review may be printed in pamphlet form as usual.

No. 59. ORDER THEREON, 7th January 1875, No. 30.

RAILWAY, No. 7.

ORDERED that this Review be forwarded to the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R E,
Secretary to Government.

No. 60. (DOCKET No. 31, dated 7th January 1875.)
COPY of the above forwarded to the Government of India.
(True Extract.)

Colonel, R.E.,
Secretary to Government.

Exd. E. C. Shunker.
Spare Copies

TABLE A. (Continued.)
GENERAL STATEMENT of Working of half-year ending 31st Dec 1873—(Continued)

HAULAGE	Passenger	Goods	Mixed	Total.
Number of Trains run for public traffic	63	3241	6021	9325
Train mileage (D I, 1, page 4.)	4968	219,463	750,414	974,045
Gross ton mileage (M I, 22, page 13)	"	"	"	173,713, 670

AVERAGE COMPOSITION OF TRAINS	AVERAGE NUMBER OF VEHICLES			AVERAGE NUMBER OF SEATS PER VEHICLE		AVERAGE WEIGHT OF TRAINS	
	Passenger trains.	Goods trains	Mixed trains	Provided	Used	Freight or live load	Dead load, exclusive of engine and Tender, and Brakes
1st Class	0 832	0 013	0 668	14 543	1 960	5000	33 029
2nd "	3 871	0 046	1 050	37 885	2 597		
3rd "	4 868	0 366	3 057	54 436	23 752		
4th "	0 058	0 165	0 528	50 000	23 631		
Others (including Brakes)	2 753	0 463	1 440	"	"		
Goods (Vehicles of all kinds including brakes)	0 955	17 910	7 630	2 to 9 tons according to nature of goods carried		32 512	52 765
	13 337	18 963	14 373			37 520	85 794

(N B—For average load per vehicle see page 24, MI)

TABLE B.

Statement showing in comparison the Coaching Traffic of the half-years ending 31st December and 31st December 1873.

Reference to Revenue Account		Details	Number		Fare per Mile		Receipts		Average Mile	
Table and Main-head	Sub-head		2 Half 1872.	2 Half 1873	2 Half 1872	2 Half 1873	2 Half 1872	2 Half 1873	2 Half 1872	2 Half 1873
					Pies	Pies	Rs	Rs		
X II I	...	1st Class Passengers—								
		Single Journey	2,582	2,931	17 66	15 21	45 468	42 088	191 46	160
		Excess Fares	"	"	20 00	15 00	3 69	3 92	"	"
		Return Journey	2,244	2,908	11 48	9 50	18 258	20 052	136 10	130
		Troops and Police	66	31	"	13 87	1 389	7 97	"	35
		Total	4,892	5,870	15 85	12 76	65 484	63 329	164 21	163
		Season Tickets	42	55	9 36	7 03	1 351	1 611	65 862	79
1	...	2nd Class—								
		Single Journey	50,948	17,880	4 89	5 63	64 632	40 651	47 55	7
		Excess Fares	"	"	8 50	6 50	2 98	3 35	"	"
		Return Journey	3,916	4,256	4 01	4 07	9 384	12 826	114 63	14
		Troops and Police	444	306	"	6 75	3 046	2 413	"	2
		Total	55,300	22,442	4 96	5 21	74 360	56 225	52 03	9
		Season Tickets	56	71	3 98	3 05	7 00	7 95	602 63	70
1	...	3rd Class—								
		Single Journey	883,881	945,934	2 98	3 10	7 25891	7 54928	52 88	4
		Excess Fares	"	"	3 50	3 50	1 934	2 746	"	"
		Return Journey	87,386	98,492	1 86	1 89	65 465	83 979	77 27	8
		Troops and Police	10,009	10,698	"	3 22	28 371	26 969	"	15
		Total	981,276	1,055,124	2 95	2 93	82 1661	86 8622	54 62	5
		Season Tickets	"	"	"	"	"	"	"	"
1	...	4th Class—								
		Single Journey	200,500	268,471	2 04	2 03	80 497	108 074	37 80	3
		Excess Fares	"	"	"	"	"	"	"	"
		Return Journey	"	"	"	"	"	"	"	"
		Troops and Police	"	"	"	"	"	"	"	"

OPEN MILEAGE ON			Mean mileage worked	Average number of stations main turned	Capital expended on open mileage, inclusive of Rolling Stock	Cost per mile open	TOTAL LENGTH OF THE FOLLOWING GRADIENTS —			STEEPEST GRADIENTS WORKED BY			
Single	Double	Total					1 to 100 and less	101 to 200	201 to 300	Fixed power		Locomotives	
										Length	Inclination	Length	Inclination
					£	£	M. Ch	M. Ch	M. Ch	M. Ch		M. Ch	
854 1/4	2 1/4	856 1/2	849 1/4	83	9,644,244	11,260	66-32	208-52	125-60			0-64	1 in 60

Rolling Stock
Ranchow Station
Establishment
Contingencies
Plant

111,62,000-14-5
4,30,137-6-11
8,16,865-10-6
1,20,147-10-3
11,50,494-15-8
1041,84,604-10-2

Expenditure in England not included in the above £ 95,50,255-8-5
Total expenditure per statement 20 1/4 of the half-yearly accounts £ 9,644,244-1-4

Madras Railway

TABLE A.
GENERAL STATEMENT of Working of half-year ending 31 December 1873

TRAFFIC		PASSENGERS OR TONS OF GOODS CARRIED		EARNINGS		Percentage of total earnings contributed by each description of traffic
		Number	Per cent of total number and total tonnage	Amount	Per cent of total earnings from Coaching and from Goods	
COACHING	1st Class	5925	0.44	Rs 64,940	5.31	39.24
	2nd "	22,513	1.66	57,020	4.66	
	3rd "	1055,124	78.04	868,622	70.99	
	4th "	268,477	19.86	1,08,074	8.83	
	Miscellaneous earnings			1,24,818	10.21	
TOTAL		1,352,039	100.00	12,23,474	100.00	"
GOODS	Tons					57.02
	Special	90,504	46.17	6,22,120	34.99	
	1st Class	66,566	33.96	5,73,769	32.20	
	2nd "	20,205	10.31	2,16,151	12.16	
	3rd "	9,221	4.70	1,30,284	7.33	
	4th "	3,862	1.97	89,166	5.01	
	5th "	2,642	1.35	73,349	4.12	
	Government stores	2,245	1.15	54,864	3.09	
	Railway Materials	758	0.39	3,775	0.21	
	Minerals	"	"	"	"	
	Miscellaneous earnings			14,364	0.81	
Total		196,003	100.00	17,77,842	100.00	"
Miscellaneous, including electric telegraph, and sundries		"	"	1,16,726	"	3.74
Grand Total		"	"	31,18,042	"	"
Less outstandings irrecoverable		"	"	"	"	"
Grand Total		"	"	31,18,042	"	100.00

FINANCIAL RESULTS	COACHING			GOODS			TOTAL (INCLUDING MISCELLANEOUS EARNINGS) AND LESS IRRECOVERABLE OUTSTANDINGS			Percentage of profits on paid up Capital
	Total	Per passenger mile	Per open mile per week	Total	Per goods train mile	Per open mile per week	Total	Per total train mile	Per open mile per week	
Earnings	Rs 12,23,474	Rs A P 3-2-11	Rs 55.41	Rs 17,77,842	Rs A P 3-6-6	Rs 80.52	Rs 31,18,042	Rs A P 3-7-1	Rs 141.21	0.43
Expenses (M II, page 14)	7,76,281	2-0-4	35.16	13,28,932	2-8-9	60.19	21,05,213	2-5-2	95.34	
Profits	4,47,193	1-2-7	20.25	4,48,910	0-13-9	20.33	10,12,829	1-1-11	45.87	
Percentage of expenses to earnings	63.45			74.75			67.52			

N.B.—Where "ton mileage" is mentioned, it invariably refers to the total ton mileage (Table M I, 22, page 13).
 * These divisions include mixed train mileage, which is obtained by dividing the total number of Passenger vehicles miles run in mixed trains, by the average number of vehicles in a Passenger Train, and the total number of goods vehicle miles in such trains by the average number of vehicles in a Goods Train.
 A similar process will enable composite vehicles to be represented in terms of the vehicles of each class by taking into consideration the number of compartments of each class in such composite vehicles. Thus, a carriage containing one 1st and two 2nd Class compartments is reckoned as 1 of a 1st Class carriage and 2 of a 2nd Class carriage. Vehicles of which a portion is given up to Post Office purposes, are to be treated in the same way.

See note to Table D I { Coaching train
 Goods do — 521,400
 Total 905,760

1) 1873—(Continued)

Total
9,325
945
?

TABLE B.

Statement showing in comparison the Coaching Traffic of the half-years ending 31st December 1872 and 31st December 1873.

Reference to Revenue Account		Details	Number		Fare per Mile		Receipts		Average Mile	
Table and Main-head	Sub-head		2 Half 1872	2 Half 1873.	2 Half 1872	2 Half 1873	2 Half 1872	2 Half 1873.	2 Half 1872.	2 Half 1873.
					Pies	Pies	Rs	Rs		
X II 1	..	1st Class Passengers—								
		Single Journey	2,582	2,931	17 66	15 21	45,468	42,088	191 46	18
		Excess Fares	"	"	20 00	15 00	3 69	3 92	"	
		Return Journey	2,244	2,908	11 48	9 50	18,258	20,052	136 10	13
		Troops and Police .	66	31	"	13 87	1,389	797	"	35
		Total	4,892	5,870	15 85	12 76	65,484	63,329	164 21	16
		Season Tickets	42	55	9 36	7 03	1,351	1,611	65 86	77
		2nd Class—								
		Single Journey ..	50,948	17,880	4 89	5 63	61,632	40,651	47 55	7
		Excess Fares	"	"	8 50	6 50	2 98	3 35	"	
Return Journey	3,916	4,256	4 01	4 07	9,384	12,826	114 63	14		
Troops and Police	444	306	"	6 75	3,046	2,413	"	22		
Total	55,308	22,442	4 96	5 21	74,360	56,225	52 03	9		
Season Tickets	56	71	3 98	3 05	700	795	602 63	70		
3rd Class—										
Single Journey .	883,881	945,934	2 98	3 10	7,258 91	7,54,928	52 88	4		
Excess Fares .	"	"	3 50	3 50	1,934	2,746	"			
Return Journey	87,386	98,492	1 86	1 89	65,465	83,979	77 27	8		
Troops and Police .	10,009	10,698	"	3 22	28,371	26,969	"	15		
Total	981,276	1,055,124	2 95	2 93	82,166 1	8,68,622	54 62	5		
Season Tickets	"	"	"	"	"	"	"	"		
4th Class—										
Single Journey	200,500	268,477	2 04	2 03	80,497	1,08,074	37 80	3		
Excess Fares	"	"	"	"	"	"	"			
Return Journey	"	"	"	"	"	"	"			
Troops and Police .	"	"	"	"	"	"	"			
Total .		200,500	268,477	2 04	2 03	80,497	1,08,074	37 80	3	
Season Tickets .		"	"	"	"	"	"	"	"	

TABLE B.—(Continued.)

Statement showing in comparison the Coaching Traffic of the half-years ending 31st December 1872 and 31st December 1873

Reference to Table and Main head	Sub-head	Details	Number		Fare per Mile		Receipts		Average Mileage	
			2 Half 1872	2 Half 1873	2 Half 1872	2 Half 1873	2 Half 1872	2 Half 1873	2 Half 1872	2 Half 1873
			Ton Miles	Ton Miles	Pies	Pies				
2		Passengers' Luggage	52,795	55,512	57.01	57.00	15,670	16,743	150.84	146.94
3		Military Baggage	47,250	25,740	29.24	28.62	7,197	3,035	263.97	231.89
4	1	Carriages	No	No						
	2	Horses	350	339	26.11	26.39	9,750	9,088	184.02	195.06
	3	Dogs	1,242	1,360	14.68	14.65	19,369	21,722	203.90	209.29
			1,448	1,537	1.67	1.67	2,016	2,156	159.89	161.77
5	1	Carriages ..	5	"	20.03	"	122	"	233.60	"
	2	Horses	33	63	15.63	16.28	783	1,550	291.51	290.19
	3	Dogs ..	146	67	0.34	0.51	75	74	293.33	415.10
6		Parcels	Ton Miles	Ton Miles						
			114,250	132,550	70.31	60.64	41,839	41,900	166.70	163.44
7		Special Trains	No	No						
			4,443	3,574	9.66	7.47	42,904	26,679	201.95	123.24
8		Post Office	4	2	96.00	115.20	157	21	70.50	17.50
8		Haulage and hire of Post Office Vehicles								
	1	Special Trains	"	"	"	"	"	"	"	"
	2	Parcels	"	"	"	"	"	"	"	"
	3		"	"	"	"	14.63	10.50	"	"
Total							1,40,361	1,24,810		
Grand Total							1,104,414	1,223,474		

TABLE C.

Statement showing in comparison the Goods Traffic of the half-year ending 31st December 1872 and 31st December 1873

Reference to Table and Main head	Sub-head	QUANTITY				RATE PER TON MILE		RECEIPTS		AVERAGE MILEAGE	
		2 half of 1872		2 half of 1873		2 half of 1872	2 half of 1873	2 half of 1872	2 half of 1873	2 half of 1872	2 half of 1873
		Up	Down	Up	Down						
(1)	GENERAL MERCHANDISE—	Tons	Tons	Tons	Tons	Pies	Pies	rs	rs		
	Special Class	8,822,454	3,831,404	9,933,675	4,858,501	7.77	8.08	5,119.37	6,221.20	146.83	163.45
	1st "	5,150,298	4,787,062	5,061,026	5,191,762	10.63	10.75	5,604.85	5,737.69	145.75	154.03
	2nd "	1,287,469	2,430,006	869,666	2,102,330	13.89	13.60	2,69.03	2,16.15	170.29	151.05
	3rd "	652,527	1,069,502	644,888	828,219	17.27	16.90	1,54.87	1,30.20	174.15	159.76
	4th "	315,355	305,372	710,323	69,532	24.55	21.95	79.397	89.16	173.80	201.93
	5th "	309,192	341,754	297,561	130,799	33.99	32.27	115.264	73.349	181.57	165.16
	TOTAL	16,537,295	12,765,300	17,517,339	13,269,143	11.00	10.63	16,909.99	17,048.39	160.22	159.52
	MILITARY STORES	419,506	704.1	54,064	55,105	21.94	17.68	4,074.5	5,486.4	256.50	265.35
	RAILWAY MATERIALS FOR CONSTRUCTION	47,832	231,155	155,572	23,325	4.84	4.00	7,045	3,775	160.77	238.65
	MINERALS—										
2	For the public	"	"	"	"	"	"	"	"	"	"
3	Company	"	"	"	"	"	"	"	"	"	"
6	(Construction only)	"	"	"	"	"	"	"	"	"	"
TOTAL		467,418	232,146	696,176	80,430	"	"	55,790	58,639	"	"
GRAND TOTAL		"	"	"	"	"	"	17,591.86	17,778.62	"	"
4	LIVE STOCK—	No	No	No	No	Rate per animal per mile					
	Horses	"	19	142	104	8.83	7.64	10.43	2,925	268.91	298.89
	Cattle	193	248	224	302	3.88	4.06	14.89	1,774	166.75	159.44
	Sheep	621	2,856	2,579	564	0.58	0.63	11.06	948	105.16	93.19
5	MILITARY LIVE STOCK—										
	Horses	194	275	202	326	7.32	7.30	5,019	6,042	200.75	300.80
	Cattle	1	19	"	5	5.58	4.80	12.8	80	220.15	182.0
	Sheep	"	"	"	"	"	"	"	"	"	"
Rents, Ammunition, wharfage, and storage		"	"	"	"	"	"	3,416	2,615	"	"
Interest on outstanding bills		"	"	"	"	"	"	205	"	"	"
TOTAL		"	"	"	"	"	"	12,406	14,364	"	"

TABLE C-(1).
Comparative Statement showing the weight and earnings of the principal commodities carried during the above half-year

Refere Revenue	DESCRIPTION	QUANTITY		RECEIPTS		Increase in Quantity	Decrease in Quantity	Increase in Receipts	Decrease in Receipts
		2 half, 18 72	2 half, 18 73	2 half, 18 72	2 half, 18 73				
	(Machinery and stones)	Tons	Tons	Ra.	Ra.	Tons	Tons	Ra.	Ra.
Baggage		65	70	1,001	1,005	5			76
Ballast		505	3,110	2,145	7,537	2,625		5,392	
Bamboo		1705	2,290	9,192	10,004	593		1,812	
Beer		447	335	7,174	5,656		82		1,518
Belit m		3,502	3,652	4,4315	39,700	150			4,615
Braes an		279	441	3,360	5,600	162		2,240	
Charcoal		297	478	1,532	3,002	181		1,450	
Chilies		1,316	1,269	12,040	10,357		47		1,703
Chunam		676	507	1,501	1,372		169		209
Clothes and		2,611	3,020	50,300	67,760	409		9,460	
Coccamula		814	1,523	8,399	10,244	709		1,845	
Coffee		354	981	6,701	12,102	627		5,321	
Cornmeal		1,114	1,641	25,973	34,175	527		8,202	
Cotton		1,917	1,939	42,230	21,119	22			21,119
do		663		13,626			368		13,626
do		22	130	19,765	3,739		525		16,026
do		2371	2	526	21		20		505
do		2,222	2,090	43,030	37,002	281			5,956
do		1,842	715	34,860	12,240			07,000	
do		7,027	3,875	8,367	12,240	4,926			4,490
Firewood		2,107	3,875	23,373	12,896		927		10,477
Fruits and		51	2,292	20,135	19,472	165			663
Gummit		863	156	12,93	3,228	105		1,935	
Ghee		9100	606	16,961	12,469		157		4,492
Grain			11073	65,684	75,279	1093		9,595	
Grains		1,175	4,742	7,015	45,110	3,361		34,772	
Ground		976	593	6,273	3,261		303		3,000
Gummit		1,045	2,254	21,497	24,997	409		3,500	
Hay			11		76			76	
Indigo		638	442	9,952	6,703		196		3,249
Iron ore		2,250	2,799	30,007	34,227	549		4,220	
Jaggree		2,631	5,265	14,981	40,173	2,634		25,192	
Loggins		368	493	8,099	9,589	125		1,490	
Oil of all		3,045	3,133	32,421	29,170	88			3,251
Ordinance		485	534	20,891	10,805	49			2,006
Radoby		2,967	1,925	16,234	6,309		1,042		9,925
Petroleum		140	103	1,913	1,515		37		398
Potatoes		1,930	1,909	25,041	26,012		21		171
Powder and		4	47	306	2,962	43		2,656	
Raggy		3,971	11,680	26,807	81,085	7,709		54,258	
Rice		46,250	43,287	343,474	308,041		2,963		35,433
Salt		21,580	23,101	143,532	156,436	1,573		10,904	
Salt fish		1,719	1,063	17,353	9,127		856		8,226
do		10,130	254	6,225	3,569		127		2,867
Seeds of all		4,186	5,180	87,346	36,691		4,950		50,655
Shoes		3,267	2,210	62,839	51,971		670		10,868
Sugar of all		10,266	13,301	24,170	17,050		1,057		7,120
Timber		2,865	3,442	24,716	17,673		5,015		68,343
Tobacco		5,609	8,826	15,770	18,432	577		2,654	
Wheat		2,197	7,364	27,620	53,012	3,137		25,384	
Wine and		1,905	2,221	13,332	14,675	242		1,343	
		678	916	46,206	49,749	377		3,552	
				12,512	18,545	238		6,033	
Total		184,559	195,246	1739,735	1859,704	34,332	23,645	310,791	290,822

X Included
X Included

1661 Tons } on account of material for the Mysore State Railway
17522 Rs

TABLE E-I.
MAINTENANCE of Way.
RAILS

Number	DETAILS	Double headed				Bridges	Total
		65th	75th	84th	1875th		
1	Miles of rail in way, including sidings (miles and decimals of a mile)	M 674 58 1009 24 Ys	M 140 45 Ys	M 67-72 Ys	M 0-16 Ys	M 1892-15 Ys	
2	Average age of rails in way at the middle of the half-year (years and decimals of a year)	10-63	7 40	10-53	4-27	2 19	8-67
3	Rails inverted { Number Miles (and decimals of a mile)	629 2 39	387 1-47	272 1 02	15 0-06	"	1303 4-94
4	Proportion inverted per mile of (1) rail	0 00554	0 00145	0 00726	0 00089	"	0 00261
5	Rails renewed { Number Miles (and decimals of a mile)	188 0 71	112 0 43	143 0 54	84 0 32	"	527 2 00
6	Proportion renewed per mile of (1) rail	0 00105	0 00043	0 00384	0 00473	"	0 00106
7	Average number of tons hauled over each kind of rail in the half year						
8	Thousands of tons hauled on an average over each kind of rail during the average age of rails in way (2)	The information under these heads is still under preparation					

N.B.—One of the objects of this Table is to endeavour to ascertain the relation between the lives of different kinds of rails and the duty done by them. Other Tables show the speed of trains and the greatest weight brought on any point of the rails. By an accurate record of these facts, it is hoped that useful deductions may be made. The average age of the rails in the way (2) must be, in the first instance, calculated by noting the dates on which the different lengths of line were opened and the subsequent renewals of each kind of rail in each half year, supposing the latter to have taken place in the middle of each half year. After this has once been ascertained, the entries for future periods can be easily calculated. The entries for the different kinds of rails under (7) will agree or vary according as the train service over the line is uniform or not. Where the of ton mileage is kept in districts, the absolute facts are available. Where this is not done, but the traffic is nevertheless variable, the weight over any part of the line can be approximately found by noting the number of trains that have been run on it, and multiplying this by the gross weight of a train including the engine and tender. The average of these district results will give the general figures for each kind of rail. The entries under (8) will be the sums of the weights recorded for the immediately preceding half years.

TABLE E-II.
MAINTENANCE of Way
SLEEPERS

Number	DETAILS	Wood						Do Steel un iron wood	Do Steel un iron wood	Do Steel un iron wood
		16'x12"x6"	14'x12"x6"	12'x12"x6"	10'x12"x6"	10'x10"x5"	10'x12"x5"			
1	Number of sleepers in way, including sidings	No 504 Ys	No 340 Ys	No 11,386 Ys	No 739 Ys	No 6,971 Ys	No 767 Ys	No 2,205 Ys	No 24 Ys	No 1,258 Ys
2	Average age of sleepers in way at the middle of half-year (years and decimals of a year)	4 07	3 00	6 70	2 90	6 55	2 10	5 67	5 72	7 25
3	Number renewed	"	"	57	"	216	102	10040	16	415
4	Ditto per cent of (1)	"	"	0 501	"	3 099	13 299	4 552	16	317

TABLE F.
Locomotive Department Expenses.

REFERENCE TO REVENUE ACCOUNT		Locomotive Department Expenses.					
Table and Main head.	Sub-head	2 HALF OF 1872		2 HALF OF 1873			
		Total	Total	Increase	Decrease		
XIV		Train Mileage (D 2, I p 7) Ton Mileage (M I 22, p 16)					
		885,225	974,845	89,619	"		
		163,463,079	173,713,670	102,50,591	"		
		DETAILS		2 HALF OF 1873		Per Train Mile	Per 1,000 Ton Miles
		Total	Total	Increase	Decrease		
		Rs	Rs	Rs	Rs	AS	Rs
	1 & 2	GENERAL SUPERINTENDENCE—					
		12,127	4,927	"	7,200	0 081	0 028
	3 to 5	Salaries of Locomotive Superintendents and Assistants, including allowances					
		25,447	25,909	762	"	0 425	0 149
	6	Ditto of Foremen, including allowances and overtime					
		12,485	13,626	1,141	"	0 224	0 078
		Office Expenses					
		RUNNING EXPENSES—					
	1 & 2	Wages of Drivers and Firemen, including overtime					
		86,137	90,377	4,240	"	1 483	0 521
	3	Frelling, cleaning, and looking after Engines					
		15,194	15,192	"	2	0 249	0 087
	4	Contingent Expenses					
		284	1,441	1,157	"	0 024	0 008
		FUEL—					
	1	Coal					
		53,101	94,795	41,694	"	1 556	0 547
	2	Coke					
		30,448	13,234	"	17,214	0 217	0 076
	3	Patent Fuel					
		31,172	30,434	"	738	0 500	0 175
	4	Wood					
		1,11,870	12,6710	14,840	"	2 080	0 730
	1,2 & 3	WATER—					
		12,630	13,616	986	"	0 223	0 078
		9,890	12,726	2,836	"	0 209	0 073
		OIL, TALLOW, &c —					
		MAINTENANCE AND RENEWALS—					
	1 & 2	Wages, including overtime					
		74,392	82,697	8,305	"	1 357	0 476
	3	Materials					
		51,806	76,736	24,930	"	1 259	0 442
		SERVICES OF OTHER LINES—					
		"	"	"	"	"	"
		UNCLASSIFIED EXPENDITURE—					
		"	"	"	"	"	"
		TOTAL					
		526,683	602,420	75,737	"	2 887	3 468
		1872 Total Quantity	1873 Total Quantity	Increase	Decrease	Quantity per Train Mile	Quantity per 1,000 Ton Miles
		Tons	Tons	Tons	Tons	lbs	lbs
	1	2,950	4,140	1,190	"	10 891	61 118
	2	952	414	"	538	0 930	5 333
	3	1,355	1,268	"	87	2 914	16 351

TABLE D.
Statement of mileage maintained from Revenue Funds.

REFERENCE TO REVENUE ACCOUNT		DETAILS	2 nd HALF OF 1872			2 nd HALF OF 1873				
Table and main-head	Sub head		Depart monthly	By Contract	Total	Depart monthly	By Contract	Total	Total Increase	Total Decrease
IX (A)		1 } Mean miles of line maintained { Single	719 $\frac{1}{2}$	"	719 $\frac{1}{2}$	832	"	832	112 $\frac{1}{2}$	"
		2 } " " " " " Double	"	"	"	"	"	"	"	"
		*3 } " " " " " Total	719 $\frac{1}{2}$	"	719 $\frac{1}{2}$	832	"	832	112 $\frac{1}{2}$	"
		4 " Sidings maintained, Total	801 $\frac{1}{4}$	-	801 $\frac{1}{4}$	914	"	914	112 $\frac{1}{3}$	"
		5 " Single Track Total including Sidings	801 $\frac{1}{3}$	"	801 $\frac{1}{3}$	914	"	914	112 $\frac{1}{3}$	"

TABLE D—I.
Statement of Train Mileage

DETAILS		TRAIN MILES RUN FOR			HOURS OF		
		Traffic Department.	Locomotive Department	Maintenance Department.	Assisting Engines	Shunting, Piloting, &c	Miscellaneous Services
Reference to Revenue Account/		XIV 1	XIV 2.	XIV 3	XIV 4	XIV 5	XIV 6
2 half, 1872	Passenger	7901	14,304	37,484	7	20,829	2,326
	Goods	201,060					
	Mixed	676,185					
	TOTAL		885,226	14,304	37,484	7	20,829
2 half, 1873	Passenger	4,968	14,401	38,376	36	22,904	1,904
	Goods	219,463					
	Mixed	750,414					
	TOTAL		974,845	14,401	38,376	36	22,904
Increase in 1873	Passenger	"	97	892	29	2,075	"
	Goods	18,403					
	Mixed	74,229					
	TOTAL		92,632	97	892	29	2,075
Decrease in 1873	Passenger	3,013	"	"	"	"	4,22
	Goods	"					
	Mixed	"					
	TOTAL		3,013	"	"	"	"

TABLE F.
Expenses.

TABLE D.

Statement of mileage maintained from Revenue Funds.

REFERENCE TO REVENUE ACCOUNT		DETAILS	2 nd HALF OF 1872			2 nd HALF OF 1873				
Table and main head	Sub head		Depart-mentally	By Con-tract	Total	Depart-mentally	By Con-tract	Total	Total Increase	Total Decrease
IX (A)	1	Mean miles of line maintained {	719 $\frac{1}{2}$	"	719 $\frac{1}{2}$	832	"	832	112 $\frac{1}{2}$	"
	2		"	"	"	"	"	"	"	"
	3		719 $\frac{1}{2}$	"	719 $\frac{1}{2}$	832	"	832	112 $\frac{1}{2}$	"
	4	" Sidings maintained, Total	81 $\frac{1}{4}$	"	81 $\frac{1}{4}$	82	"	82	$\frac{1}{4}$	"
	5	" Single Track Total includ- ing Sidings	801 $\frac{2}{3}$	"	801 $\frac{2}{3}$	914	"	914	112 $\frac{1}{3}$	"

TABLE D-I.

Statement of Train Mileage

DETAILS	TRAIN MILES RUN FOR			HOURS OF		
	*Traffic Department	Locomotive Department	Maintenance Department	Assisting Engines	Shunting, Piloting, &c	Miscellaneous Services
Reference to Revenue Account/	XIV 1	XIV 2.	XIV 3	XIV 4	XIV 5	XIV 6
2 half, 1872 {	Passenger	7901				
	Goods	201,060	14,304	37,484	7	2,0829
	Mixed	676,185				2,32
	TOTAL	885,226	14,304	37,484	7	2,0829
2 half, 1873 {	Passenger.	4,968				
	Goods	219,463	14,401	38,376	36	22,904
	Mixed	750,414				1,90
	TOTAL	974,845	14,401	38,376	36	22,904
Increase in 1873 {	Passenger	"				
	Goods	18,403	97	892	29	2,075
	Mixed	74,229				"
	TOTAL	92,632	97	892	29	2,075
Decrease in 1873 {	Passenger	3,013				
	Goods	"	"	"	"	4
	Mixed	"				
	TOTAL	3,013	"	"	"	4

to be divided by the number of days in the month, which is the train mileage to be used for the purpose of calculation.

Proportion of mixed train miles due to Passengers 379,392
 Passenger train mileage 4,968
 Total passenger train miles 384,360
 Proportion of mixed train miles due to Goods 301,945
 Goods train mileage 219,463
 Total goods train miles 521,408

TABLE E.
MAINTENANCE of Way, Works, and Stations

Re- venue Account Head Sub head	DETAILS	2 HALF OF 1872				2 HALF OF 1873				Per mile of line main- tained D 3	Per mile of Track includ- ing Sid- ings D 5	Per Train Mile D 5	Per 1 000 Ton Miles D 5
		Total	Total	Increase	Decrease	Total	Total	Increase	Decrease				
XIV	Train Mileage run for Traffic Dep D I xiv	885,226	974,845	89,619	"								
	Ton Mileage do do M I	163,463,079	173,713,670	10,250,591	"								
IX (A) 1	SUIERINTENDENCE—	Rs	Rs	Rs.	Rs	Rs	Rs	As	Rs				
1 & 2	Engineer's salaries & allowances	4,814	6,942	2,131	"	83,439	78,953	1,139	0.400				
3 to 5	Inspectors' and Plate-layers' sala- ries and allowances, including over-time	2,177	2,518	4,011	"	30,270	27,550	0.413	0.145				
6	Office expenses	2,532	2,917	3,845	"	35,087	31,921	0.479	0.168				
2	MAINTENANCE AND RENEWALS OF PER- MANENT WAY—												
1	Wages	11,629	1,52,800	31,565	"	183,655	1,67,170	2,508	0.880				
2	Materials	111,333	1,59,869	4,836	"	1,92,151	1,74,912	2,624	0.920				
3	REPAIRS OF BRIDGES, &c, WAGES AND MATERIALS—												
1	Bridges and Tunnels	51,338	59,735	8,397	"	71,790	65,356	0.980	0.344				
2	Miscellaneous	29,105	33,082	23,977	"	63,802	58,077	0.871	0.306				
4	REPAIRS OF STATIONS AND BUILDINGS WAGES AND MATERIALS—												
1	Repairs of all except Staff Quar- ters	20,261	33,919	5,658	"	40,768	37,110	0.558	0.195				
2	Repairs of Staff Quarters	5,996	8,050	2,062	"	9,685	8,816	0.132	0.046				
5	MAINTENANCE BY CONTRACT—	"	"	"	"	"	"	"	"				
6	UNCLASSIFIED EXPENDITURE—												
1	Plantations	"	"	"	"	"	"	"	"				
2	Tools and Plant	"	"	"	"	"	"	"	"				
3	Loss on Stores, &c	4,072	8,001	3,929	"	9,617	8,754	0.131	0.046				
TOTAL		443,013	520,250	77,237									

TABLE F-I
Locomotive Power.

REFERENCE TO REVENUE ACCOUNT		DESCRIPTION	Passenger	Passenger	Goods	Tank	TOTAL
Table and Main head	Sub head						
		LOCOMOTIVES					
		Wheels coupled		1400 tons	10 1/2 tons to 12 3/4 tons	4 wheels	
		Weight on driving axle	tons	1400 tons	10 1/2 tons to 12 3/4 tons	8 1/2 tons	
		Total weight in steam, exclusive of tender	tons	2475 tons	27 1/2 tons to 34 1/2 tons	"	
XII		1—Number of Locomotives erected and made over to Locomotive Depart- ment		2	104	20	126
		2—Average number of Locomotives con- stantly under repairs		1	34	5	40
		3—Average number of Locomotives at work (1-2)		1	70	15	86
		4—Train miles hauled by each class of Locomotives at work (3)		23,895	9,775,541	2,643	1,027,060
		5—Average train miles hauled by each Locomotive at work (3)					
		Per half year		23,895	13,965	1,762	11,952
		Per day		130	76	10	65
		6—Average speed between stations of trains					22 16 1/2 19
		7—Average through speed of trains					10 1/2 16 17
		8—Weight of coal, &c, used per train mile		43.99	29.94	9.00	25.64
		9—Weight of wood used—per train mile		74.10	89.54	50.11	87.83
		10—Average gross weight of the trains hauled by each class of Locomotive					* 172.334

* This includes the weight of engine and tender

	TOTAL	1,22,564	1,12,937	" -	9,627	1854	7.954
--	-------	----------	----------	-----	-------	------	-------

The vehicle mileage is defined (Table M I) as that of all vehicles running on the line. The cost of repairs and renewals will, however, depend on the mileage of home vehicles whether running on the parent line or on foreign lines. If this foreign mileage of home vehicles is greatly in excess of the home mileage of foreign vehicles, (a) and (b) should be shown in terms of 1,000 vehicles miles of home vehicle run on both the parent and foreign lines, and thus vehicle mileage should be stated.

(a) (a) least be 1000 Coaching vehicle miles --- (b) (b) least be 1000 vehicle miles ---

ANALYSIS OF CARRYING COST

TABLE M-1

	<i>Definitions</i>
The unit of passenger traffic	is—1 passenger plus free luggage
" " carriages	is—1 carriage.
" " horses	is—1 horse
" " luggage	is—1 ton
" " post-office vehicles	is—1 "
" " goods	is—1 "
" " cattle	is—1 "

The approximate weight of units adopted in these calculations	
Cowling	
1st-class Passenger with free luggage	1 75 = 0
2nd "	1 75 = 0
3rd "	1 25 = 0
4th "	1 25 = 0
A carriage (average for two and four-wheeled)	6 75 = 0

Coaching—(Conc'd)
 A horse
 A dog
Goods—
 A head of horned cattle
 A head of sheep, goats, etc.

wt	
75	0.4375
20	0.0100
00	0.2500
50	0.0250

Data for calculating the incidence of carrying cost per unit per mile for each class of Passenger Traffic and for goods and Minerals

		Total mileage of each description of Rolling Stock		Total mileage of units of traffic		AVERAGE CONTENTS IN UNITS OF EACH VEHICLE		Average weight of Rolling Stock in Tons		Total average weight included in contents of each Vehicle in Tons		Tons of Vehicles and freight per ton of freight		TON MILEAGE		TOTAL TON MI. PER AN-	
		(a)	(b)	(c)	Weight in Tons (d)	(e)	(f)	(g)	(h)	(i)	On freight (j)	On dead weight (k)	Excluding Engines and Tenders and Brake Vans (l)	Including Engines and Tenders and Brake Vans (m)			
COACHING—																	
1	1st Class	509,339	996,558	1,960	0.172	6,700	6,872	40,061	87,199	3,405,012	3,493,071						
2	2nd "	816,880	2,121,735	2,597	0.227	6,781	7,008	30,836	185,652	5,539,264	5,724,916						
3	3rd "	2,398,898	5,697,083	23,752	1.484	6,034	7,518	5,664	3,561,147	14,474,952	18,036,097						
4	4th "	432,785	1,227,120	23,631	1.477	6,000	7,477	5,062	639,196	2,596,710	3,235,906						
5	Carrage Trucks	...	...	...	...	5,652	5,286	23,157	12,318	4,946,505	516,102						
6	Horse Boxes	977,67	661,26	0,676	0.228	7,090	7,557	16,172	132,539	2,011,036	2,143,575						
7	Luggage including parcels & clubs Vans	2,683,644	3,029,946	1,068	0.467	7,195	8,003	9,904	246,597	1,928,627	2,145,224						
7	Post Office Vehicles †	2,53,604	216,597	"	*0.150	6,829	6,979	46,527	38,840	1,745,515	1,783,855						
8																	
9	Total	5,061,940	"	"	"	"	"	"	4,882,988	32,196,479	37,079,467						
10	Passenger Engines and Tenders	347,557	"	"	"	41,876	"	"	"	14,554,313	"						
	Passenger Brake Vans †	290,566	"	"	"	7,136	"	"	"	2,073,621	"						
11	Total Coaching Ton mileage	"	"	"	"	"	"	"	"	48,024,413	"					53,707,401	

TABLE K.

DETAILS		Table and Sub			Main head		
2		Total		Increase		Decrease	
Working vessels		"		"		"	
Repairs		"		"		"	
Fuel		"		"		"	
Household stores		"		"		"	
Steam traffic expenses		"		"		"	
Miscellaneous expenditure		"		"		"	
Total		Total		Increase		Decrease	

TABLE I

Special and Miscellaneous Expenditure

LAW CHARGES—		COMPENSATION—		For goods lost or damaged		Personal Injury		For other claims		RATES AND TAXES—		CONTRIBUTIONS TO SPECIAL FUNDS—		Fire Insurance Fund		P W Renewal Fund		Casualty Fund		Subsidium chargeable to Fire Insurance Fund		TOTAL	
Rs	136	Rs	1,321	Rs	270	Rs	20,242	Rs	7,705	Rs	243	Rs	12,457	Rs	20,727	Rs	30,566	Rs	12,130	Rs	1,034	Rs	41,416
Rs	1,202	Rs	609	Rs	27	Rs	7,705	Rs	243	Rs	12,457	Rs	20,727	Rs	30,566	Rs	12,130	Rs	1,034	Rs	41,416	Rs	30,320

TABLE H.
Traffic Expenses

Traffic Expenses									
REFERENCE TO REVENUE ACCOUNT		DETAILS	2 HALF OF 1872		2 HALF OF 1873				
Table and Main head	Sub head		Total	Total	Increase	Decrease			
XIV		Train Mileage (run for Traffic Dept D I)	885,226	974,845	89,619	"			
		Vehicle mileage run for Traffic Dept D I { Coaching (M I) Goods (M I 14,)	4,915,253	5,061,968	146,715	"			
			8,756,169	9,136,075	379,906	"			
		Total	13,671,422	14,999,043	526,821	"			
			2 HALF OF 1872		2 HALF OF 1873			Cost per Train Mile	Cost per 1,000 Vehicle Miles
			Total	Total	Increase	Decrease			
			RS	RS	RS	RS	AS.	RS	
IX (D) I	a (1 & 3)	SALARIES, WAGES, &c —							
		General Superintendence, including travelling allowances . .	25,680	27,608	1,928	"	0.453	1.945	
	a (2 & 4)	Office Establishment and contingencies	24,126	27,007	2,961	"	0.445	1.908	
	b	Station Staff	117,308	125,046	7,738	"	2.052	8.807	
	c	Train Staff	28,567	31,206	2,639	"	0.512	2.190	
	2 I to 3	FUEL, LIGHTING, WATER, AND GENERAL STORES	42,139	45,510	3,371	"	0.747	3.205	
	3	CLOTHING,	1,181	4,164	2,983	"	0.068	0.293	
	4	PRINTING, STATIONERY, AND TICKETS	20,948	25,315	4,367	"	0.415	1.783	
	5	CATTLE USED FOR TRAFFIC PURPOSES, AND DELIVERY AND COLLECTION OF GOODS	"	"	"	"	"	"	
	6	MISCELLANEOUS EXPENSES	465	"	"	465	"	"	
		PAYMENTS TO OTHER LINES—							
	1	Hire of Vehicles	"	"	"	"	"	"	
	7 2	Mileage of Foreign Stock	256	4,958	4,702	"	0.002	0.349	
	3	Expenses at joint stations	"	"	"	"	"	"	
8	UNCLASSIFIED EXPENDITURE	"	"	"	"	"	"		
TOTAL			2,626,700	2,900,994	50,224	"	4.774	2.0488	

REFERENCE TO REVENUE ACCOUNT		DETAILS	2 HALF OF 1872	2 HALF OF 1873			
Table and Main head	Sub head		Total	Total	Increase	Decrease	Cost per Train Mile
IX (E) 1		HOME EXPENDITURE	Rs 23,291	Rs 35,324	Rs 12,033	Rs "	As 0.580
		INDIAN MANAGEMENT—					
	1	Agent's Office, including travelling and other allowances	16,400	27,380	10,980	"	0.449
	2	Auditor's Office ditto	21,096	30,223	9,127	"	0.496
	3	Accounts Office ditto	5,106	8,936	3,830	"	0.147
2	4	Pay Master's Office ditto	15,346	18,229	2,885	"	0.299
	5	Store Department ditto	11,452	12,136	684	"	0.199
	6	Medical Department ditto	10,490	11,819	1,329	"	0.295
	7	Rents	189	4,572	4,383	"	0.075
	8-10	Contingencies, Stationery and Medicine	6,141	1,670	515	"	0.110
3		POLICE (Total Charges)	10,481	11,781	1,300	"	0.193
4		ADVERTISING	481	1,356	875	"	0.022
		ELECTRIC TELEGRAPH—					
5	1 to 4	Salaries, &c	21,292	29,135	7,843	"	0.478
	5	Maintenance (labour and Stores)	10,693	40,049	29,356	"	0.657
6		CLEARING ACCOUNTS WITH OTHER LINES	"	"	"	"	"
7		UNCLASSIFIED EXPENDITURE					
		Loss on Stores	"	"	"	"	"

¶ Mail carrying vehicles, whether specially constructed sorting carriages or not, are reckoned as Post Office Vehicles. When only portions of vehicles are used for carrying mail, the mileage is apportioned as directed in the foot-note to Table A.

† The average weight of the contents (including the Post Office servants) of a Post Office Vehicle is assumed on the best data available.

‡ Whenever Brake Vans are loaded with luggage or parcels, the results are included with No. 7 Luggage Vans.

§ This is shown separately when minerals are carried entirely in special vehicles. If not so carried, it will be incorporated with goods.

(a) This includes the mileage of all vehicles, home and foreign, running on the line, and excludes the mileage of home vehicles on foreign lines

(b) taken from station to station returns, or, in default of these, arrived at by dividing the receipts from each class of traffic by the average rate or fare per unit per mile

$(v) = \sum_a (v) \text{ for coaching} = e \times \sum_a \text{ by weights of units as per definitions, and for goods and luggage} = \sum_a \text{ measurement goods being converted to weight at an arbitrary rate, } (e) \text{ from returns furnished by Railway Companies, } (f) = d + e, (g) = \sum_d (h) = a \times \sum_d, (i) = a \times \sum_d, (j) \text{ or } (l) = h + i$
 (k) is the ton mileage used for purposes of calculation in analysing expenditure of departments

Account & Name	101,652
bottle	21,568
ship	7,252

Classified cost of working over one mile a vehicle including its freight, also Total cost of car ying over one mile unit of each Description of Traffic.

* The cost as per M—III to be divided by the Vehicle mileage for each Class of traffic [$M_{-I}^{+I}(\alpha)$].
† The above totals to be divided by the average contents of each Vehicle [$M_{-I}^{-I}(\alpha)$] (for numbers) & [for weights].

* The cost as per M---III to be divided by the Vehicle mileage for each Class of traffic [M---I (a)]
† The above totals to be divided by the average contents of each Vehicle [M---I (c) (for numbers) & (for weights)].

M-V.

Statement showing in comparison the receipts and the carrying cost per unit per mile of Coaching and Merchandise Traffic.

March 1st 1812

(c) Total receipts under each class as per Revenue Account divided by the total mileage of that Class [*M.—I. b.*]

(b) To be taken from $M - IV$,

Uladao
13 December 1974

13. *Acridothera* 1874

Costs of the Maintenance of Departments

(a) Divided in terms of the total ton mileage ($M-1$, 11, 17), (b) Long-haulive express and other freight trains are divided in terms of the foot-mile to Table A
of reports etc., are kept separate for coal, iron, and goods stock-carrying and passenger and all point trains are divided in terms of the ton mileage, and (g) divided in terms of the train mileage
(c) divided in terms of the train mileage, (f) converted to passenger and goods train mileage, as directed in the foot-note in terms of the vehicle mileage ($M-1$, 8, 14), (e) converted to passenger and goods train mileage is converted to ton mileage ($M-1$, 11, 17), and that of the other columns in terms of the vehicle mileage ($M-1$, 8, 14)

* R.—When mixed, as well as passenger and goods trains are run, the mixed train mileage is made in terms of the ton mileage ($M-1$, 11, 17), and that of the other columns in terms of the vehicle mileage ($M-1$, 8, 14)

* R.—Under No. 251, 77330m account of "Chicago Bridge/Railroad -ration"

Rate of each class including Freight

[illegible]

Railway Department

CONSULTING ENGINEER'S OFFICE.

No

From

LIEUT.-COLONEL J H M, SHAW STEWART, RE,

Consulting Engineer for Railways,

To

COLONEL G. W. WALKER, R E

Secretary to Government,

Public Works Department.

Fort Saint George.

SIR,

I have the honour to forward herewith the Analysis of the Revenue Account of the Madras Railway for the half year ended 31st December 1873.

2. The details differ but little from those of the corresponding period of the previous year, except in the greatly enhanced working expenses, which raise the charges per train mile

5/6/88

Pro: 7. May 1855. No. 58.

approximate figures will be
 given for the next half-year.
 I request that this
 Review may be printed in
 pamphlet form as usual.

I have the honour to
 Sir

Your most obt servant

Madras 2
 12th December
 1874

W. H. M. M. M.
 L. L. L. L. L.

As per 12th Dec 1874

For: Eng. & Fort Railways

Order for 12th Dec 1874
 at my acc^{ts} City of Madras
 4th Dec 1874
 Order that the 12th Dec 1874 be forwarded to the

P. H. 1874
 No. 7837
 RAILWAY DEPARTMENT

From
 The Consulting Engineer
 for Railways,
 To
 The Secretary to Government,
 P. W. Department,
 Fort Saint George.

Dated 12th December 1874
 Recd 14th December 1874
 No 751

W. H. M. M. M.
 L. L. L. L. L.
 31st December 1874
 With an order

7637
abt. of 1875 Madras.
PUBLIC WORKS.

The undersigned
Secy. to Govt. of India
1576 No 31

Nos. 58-60

Forwarding the
Review of the
Revenue Account
of the Madras Railway
for the half year
ended 31st Dec
1873 —

Account - (Railway)

The Review of the Re:
venue Account of
the Madras Ry for
the half year ended
31st Dec/73, ordered
to be forwarded to
the Govt. of India —