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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	1176-77	Press
B.P. No.		Mis.
Dated	4-5-	1874 -195-

Not to be folded or roughly handled

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*Proceedings of the Madras Government, Public Works Department,
4th May 1874.*

No. 76. 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, 1st April 1874, No. 208:—

I HAVE the honour to forward herewith a review of the Revenue Account of the Madras Railway Company for the half-year ended 30th June 1873, accompanied by a brief note on the same, and to request that you will be good enough to issue instructions for the printing of the tables on separate pages as was done with the review for the half-year ended 31st December 1872.

No. 77. ORDER THEREON, 4th May 1874, No. 1,176.

RAILWAY, No. 12.

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

(True Extract.)

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

No. 78. (DOCKET No. 1,177, dated 4th May 1874.)
Copy of the above forwarded to the Government of India.
(True Extract.)

Colonel, R.E.,
Secretary to Government.

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Note on the Revenue Analysis of the
Madras Railway for the Half-year ending
30th June 1873.

The better results shown generally in the half-year now under review as compared with previous periods is due to the carriage of permanent way materials sold to the Government of India for the Vizagapatnam State Railway. On this account the sum of Rs. 5,64,971 was earned and as the working expenses were only slightly increased thereby, the extra train mileage run has resulted in a decrease of the cost per mile in nearly all Departments. The actual carrying cost shown in M-V has also been reduced from the same cause.

Table A. The receipts per train mile from coaching and goods separately show results unduly high as compared with the receipts per total train mile. This arises from the average number of vehicles in mixed being somewhat less than in passenger or goods trains, and by dividing the vehicles of either

either class run in mixed trains by the average number in passenger and goods trains respectively. The resulting total is less than the actual train mileage run by mixed trains. The number of train miles works out by this method as follows: -

Passenger train miles in mixed trains	2,82,311
Goods	3,11,510
	<u>5,93,821</u>

as compared with 667,884.

This also affects to some extent the division of the working expenses in Table M. II.

It is thought that a better plan would be to divide the mixed train mileage in the proportion of the resulting figures 2,82,311, and 3,11,510, so that the total mileage of these trains may be accounted for. Instructions on this point are requested.

Table B. The mileage of excess fares is not obtainable, but steps have been taken for recording this in future. The mileage of season tickets has been calculated at three-fourths the return journey rate.

Table C. I.

Table C. I. The following items of traffic shew a falling off, viz: cotton, Sundries, iron, oil and jagree. The cause of the first named was explained in the note accompanying the Revenue Account; the decrease under iron is due to enhanced prices, and under oil and jagree to an indifferent season.

Table D-1 The train mileage shown here does not correspond with that given in Table E. 1, or with that entered in Form No. XIV. of the Revenue Account. This arises from different methods of computation having been adopted in the Traffic, and Locomotive Departments. An endeavour was made to reconcile these figures, but as it was found that this would be a work of considerable time, it has been thought better not to undertake it for the half year under review but for the following half year steps have been taken for recording the train mileage strictly in accordance with the Orders of Government on the subject.

Table E. 1. The particulars under heads 7 and 8, are not at present ascertainable, but the Railway Authorities are endeavouring to obtain approximate figures. The average number of tons handed

These remarks apply also to head 100 of
Table F. 1. W. C. Conner
Lieut. R. E.
Deputy Assoc. Engineer
for Railways

1874
 1874
 1874

W. C. Conklin
Denton, Pa.
for Consulting Engineer for Railways.

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Division between Coaching and Goods of the Expenditure of Departments.

Details.	SPECIAL AND MISCELLANEOUS.						Total.	
	Maintenance.	Locomotive.	Carrage and Waggon.	Traffic.	General.	P. W. Renewal Fund.		Other items.
	(a)	(b)	(c)	(d)	(e)	(f)		(g)
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Expences due to Coaching	144,542	188,107	32,539	88,051	56,544	"	8889	518,672
" " to Goods	366,332	433,117	68,936	185,380	130,192	"	20466	1204423
Total.	510,874	621,224	101,475	273,431	186,736	"	29355	1723,095 X

(a) Divided in terms of the total ton mileage (M.—I, 11, 17); (b) Locomotive expenses are kept separate, joint items being divided in terms of the train mileage; (c) The expenses of repairs, etc., are kept separate for coaching and goods stock—oiling and greasing and all joint items are divided in terms of the vehicle mileage (M.—I, 8, 14); (d) to be divided in terms of the vehicle mileage (M.—I, 8, 14); (e) divided in terms of the train mileage; (f) divided in terms of the ton mileage; and (g) divided in terms of the train mileage.

N. B.—When mixed, as well as passenger and goods trains are run, the mixed train mileage is converted to passenger and goods train mileage, as directed in the foot-note to Table A. When both passenger and goods trains are not run, the division of (a) and (b) in this table is made in terms of the ton mileage (M.—I, 11, 17), and that of the other columns in terms of the vehicle mileage of coaching and goods respectively.

** Expenditure on new coaches (R.R. 91070-3-8) on new coaches*

Distributed Cost of carrying the Vehicles of each class including Freight.

Details.	First-class Carriages.	Second-class Carriages.	Third-class Carriages.	Fourth-class Carriages.	Carriage Trucks.	Horse Boxes.	Luggage Vans.	Post Office Vehicles.	TOTAL COACHING STOCK.	Goods Vehicles.	Cattle Vans.	Mineral Trucks.	TOTAL GOODS STOCK.
Maintenance (a) ...	RS. 12,648	RS. 22,751	RS. 71,485	RS. 115,18	RS. 2,470	RS. 8,307	RS. 7887	RS. 7,476	RS. 144,542	RS. 363097	RS. 3,235	"	RS. 366332
Locomotive (b) ...	16,459	29,603	43,031	14,991	3,215	10,810	10,264	9,729	184,107	429,193	3,814	"	433,117
Carriage and Waggon (c) ...	3,036	5,340	15,652	2576	771	1,814	1,588	1,762	32,539	18,177	819	"	89,936
Traffic (d) ...	8,216	14,450	42,355	6950	2,686	4,910	4,298	4,766	88,051	183,177	2,203	"	185,380
General (e) ...	5,276	9,279	27,199	4676	1,360	3,153	2,760	3,061	56,544	126,645	1,547	"	130,192
Special and Miscel- laneous.	P. W. Renewal Fund (f) ... Other Items (g) ...												
Total ...	46,464	82,887	253,998	41,235	10,092	2,960	27,231	27,275	518,672	1,192,552	11,871	"	1,204,623

[illegible]

Goods															
12	Goods Vehicles	...	...	...	10848026	41589961	"	3.834	5.509	9.343	2.437	41589961	59773914	101363873	
12A	Cattle Vans	...	...	...	130460	111086	"	0.851	6.070	6.921	8.126	111086	791896	902982	
13	Mineral Trucks	...	...	...	"	"	"	"	"	"	"	"	"	"	
14	Total...				10978486	"	"	"	"	"	"	41701045	60565810	102266885	1
15	Goods Engines and Tenders	...	...	...	725182	"	"	"	41.732	"	"	"	30263875	"	
16	Goods Brakes	...	...	...	582265	"	"	"	9.261	"	"	"	5391774	"	
17	Total Goods Ton mileage...				"	"	"	"	"	"	"	"	96221459	"	137,912,504
MISCELLANEOUS FOR STORES CARRIED FREE ON REVENUE ACCOUNT.															
18	For Traffic Department	...	...	...	8832	6041	"	0.684	8.720	9.404	13.749	6041	77015	83056	"
19	" Locomotive Department	...	...	...	118739	619052	"	5.214	5.719	16.933	2.004	619052	679067	1298119	"
20	" Engineering Department	...	...	...	220315	521254	"	2.366	5.899	8.1265	3.493	521254	1299638	1820892	"
20A	Total...				347886	"	"	"	"	"	"	1146347	2056720	3202067	"
20B	Engines and Tenders	...	...	...	50266	"	"	"	38.303	"	"	"	1925357	"	"
20C	Brake Vans	...	...	...	"	"	"	"	"	"	"	"	"	"	"
21	Total Miscellaneous Ton mileage.				"	"	"	"	"	"	"	"	3981077	"	5,127,424
22	Total Ton mileage...				"	"	"	"	"	"	"	"	"	"	197,469,235

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|| 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 mails, 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.

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

* Assumed weight:
 & Horses — 87,643
 Cattle — 16,330
 Sheep — 7,113
 111,086

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TABLE A.

GENERAL STATEMENT of Working of half-year ending 30th June 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 ...	0.33	Rs. 65,218	5.01	34.51
	2nd " ...	3.76	75,737	5.82	
	3rd " ...	79.00	8,93,911	68.81	
	4th " ...	16.91	1,93,641	7.21	
	Miscellaneous earnings		1,70,736	13.15	
	Total ...	100.00	12,99,243	100.00	
GOODS.	Tons.				63.03
	97,361	46.20	10,96,134	46.19	
	69,056	32.77	5,79,095	24.40	
	22,761	10.60	2,56,615	10.81	
	12,115	5.75	1,85,283	7.80	
	3,285	1.55	75,683	3.19	
	2,394	1.14	83,708	3.52	
	2,846	1.35	79,307	3.34	
	917	0.44	13,664	0.17	
	"	"	13,855	0.58	
	Total ...	100.00	23,73,339	100.00	
Miscellaneous, including electric telegraph, and sundries.					
			92,726		2.46
Grand Total ...					
			37,65,308		
Less outstandings irrecoverable ...					
			37,65,308		100.00
Grand Total ...					

FINANCIAL RESULTS.	COACHING.		GOODS.		TOTAL (INCLUDING MISCELLANEOUS EARNINGS) AND LESS IRRECOVERABLE OUTSTANDING.		Percentage of profits on paid up Capital.
	Total.	Per passengers train mile.	Per open mile per week.	Per goods train mile.	Per open mile per week.	Per total train mile.	
Earnings ...	Rs. 12,99,243	Rs. A. P. 4-7-1	Rs. 59-8	Rs. 23,73,339	Rs. 109-2	Rs. A. P. 5-9-4	Rs. 178.2
Expenses (M II., page 14.)	5,21,874	1-12-7	24-0	1,70,721	55-2	1-11-11	83.5
Profits ...	7,77,369	2-10-6	35-8	11,72,110	54-0	1-14-11	89.7
Percentage of expenses to earnings ...	40.1			50.6		48.2	
							1.759

N. B.—Where "ton mileage" is mentioned, it invariably refers to the total ton mileage (Table M. I., 22nd, 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 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 $\frac{1}{3}$ of a 1st Class carriage and $\frac{2}{3}$ 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 mileage 2,92,495
 Goods do 6,73,473
 Total 9,65,968

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for Consulting Engineer for Railways.

W. H. Conker

D. H. H. H.

Feb 1874

$$25 \frac{1}{1}$$

—

Barney, edward
in love
1.5 to 2.0 tons
occasionally to native
of great interest.

8. 1971/74
8. 1971/74

Dec 74
 Spring 1874
 Jan 1871-76

$$\begin{array}{r} 151,898 \\ \hline 9,463,985 \end{array}$$

Cwt.
8 75 = 0.4375
0.20 = 0.0100
£.00 = 0.2500
0.50 = 0.0250

TABLE B.

Statement showing in comparison the Coaching Traffic of the half-years ending

30th June 1872

and

30th June 1873

Reference to Revenue Account.	Details.	Number.		Fare per Mile.	Receipts.		Average Mileage.	
		1 st Half 1872.	1 st Half 1873.		1 st Half 1872.	1 st Half 1873.	1 st Half 1872.	1 st Half 1873.
X. II. 1	1st Class Passengers—			Pies. Pies.	Ra.	Ra.		
	Single Journey ...	2,897	2,745		46,839	46,839	176.35	173.94
	Excess Fares ...				426	475		
	Return Journey ...	1,934	1,962		17,565	14,661	160.13	124.55
	Troops and Police...	52	64		1,228	1,897		323.64
	Total...	4,883	4,771		66,610	63,872	166.01	155.76
	Season Tickets...	23	30		900	1,346	835	957
1	2nd Class—							
	Single Journey ...	54,669	49,082		77,208	63,582	51.84	47.79
	Excess Fares ...				305	568		
	Return Journey ...	2,244	3,124		3,090	6,963	73.14	94.71
	Troops and Police...	389	359		2,939	3,168		246.44
	Total...	57,302	52,565		83,542	74,281	52.67	51.73
	Season Tickets...	33	56		827	1,456	120.3	124.8
1	3rd Class—							
	Single Journey ...	949,196	965,003		7,74,025	7,90,524	52.27	51.16
	Excess Fares ...				2,447	2,708		
	Return Journey ...	79,896	123,038		28,252	61,529	34.05	54.73
	Troops and Police...	12,505	11,544		33,839	39,150		205.15
	Total...	1,041,597	1,099,585		8,38,555	8,93,911	50.87	53.19
	Season Tickets...							
1	4th Class—							
	Single Journey ...	149,532	234,755		58,182	93,641	36.95	37.80
	Excess Fares ...							
	Return Journey ...							
	Troops and Police...							
	Total...	149,532	234,755		58,182	93,641	36.95	37.80
	Season Tickets...							

TABLE B.—(Continued.)

Statement showing in comparison the Coaching Traffic of the half-years ending

30th June 1872.and 30th June 1873.

Reference to Revenue Account.	Sub- head.	Details.	Number.		Fare per Mile.	Receipts.		Average Mileage.	
			1 st Half 1872	1 st Half 1873.	1 st Half 1872	1 st Half 1872.	1 st Half 1873.	1 st Half 1872.	1 st Half 1873.
2		Passengers' Luggage...	Ton Miles.	Ton Miles.					
			57,611	57,120		17,160	16,977	15404	15127
3		Military Baggage...	No.	No.		6,176	6,983	24367	37641
			2,1687	48,933					
		Carriages...	285	359		7294	9,960	19317	30444
		Horses...	1730	1,259		18,870	20,406	21465	21262
		Dogs...	1,525	1,541		2,218	2,200	17267	16471
			No.	No.					
		Carriages...	"	1		"	18	"	19200
		Horses...	27	58		504	1361	23359	31608
		Dogs...	25	103		14	66	32672	35787
5		Military...							
			Ton Miles.	Ton Miles.		43098	50203	16224	17773
		Parcels...	191106	33558					
6									
7		Special Trains	No. Miles	No. Miles					
			5472	7721		47531	61,263	17652	17548
		Post Office...	20	5		124	249	12450	9900
8		Haulage and hire of Post Office Vehicles...							
		Special Trains							
		Parcels...				1050	1050		
8									
		Total...				144939	170736		
		Grand Total...				1495555	1299243		

attached to Returns Analysis for half year ended 31st Dec 1872

Whole list

Statement showing in comparison the Goods Traffic of the half-year ending
30th June 1872 and 30th June 1873.

TABLE C.

REFERENCE TO REVENUE ACCOUNT.		QUANTITY.				RATE PER TON MILE.		RECEIPTS.		AVERAGE MILEAGE.			
Table and Main head.	Sub- head.	1 st half of 1872.		2 nd half of 1873.		1 st half of 1872.		2 nd half of 1873.		1 st half of 1872.		2 nd half of 1873.	
		Up.	Down.	Up.	Down.	1 st half of 1872.	2 nd half of 1872.	1 st half of 1873.	2 nd half of 1873.	1 st half of 1872.	2 nd half of 1873.		
GENERAL MERCHANDISE—		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
Special Class		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
1st		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
2nd		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
3rd		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
4th		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
5th		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
TOTAL		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
MILITARY STORES		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
RAILWAY MATERIALS FOR CONSTRUCTION		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
MINERALS—		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
For the public		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
" Company		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
(Construction only)		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
TOTAL		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
GRAND TOTAL		Tons.		Tons.		Pics.		Pics.		Rs.		Rs.	
LIVE STOCK—		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	
Horses...		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	
Cattle ...		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	
Sheep ...		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	
MILITARY LIVE STOCK—		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	
Horses ..		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	
Cattle ...		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	
Sheep ...		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	
TOTAL		No.		No.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.		Rate per animal per mile.	

* Includes 10845772 Tons miles and 14971 on account of materials for H. & N. the Vizianagore Railway.

TABLE C-(1):

Comparative Statement showing the weight and earnings of the principal commodities carried during the above half-year.

DESCRIPTION	QUANTITY		RECEIPTS		Increase in Quantity	Decrease in Quantity	Increase in Receipts	Decrease in Receipts
	1 st half, 1972	1 st half, 1973	1 st half, 1972	1 st half, 1973				
Baggage (Military)	14.5	6.0	3,547	2,348	"	83	"	1,199
Ballistic and other	1,302	2,575	5,291	2,165	"	649	"	3,325
Bombard	2,162	2,597	10,154	10,905	4.35	"	751	1068
Direct mail	39.8	39.3	7,437	6,369	"	"	"	"
Passes and papers	2,513	2,742	17,039	30,758	429	"	3799	"
General cargo and mail	327	407	4,485	5,391	80	"	906	"
Ballistics	540	839	4,056	1,750	"	201	"	2,325
Human and lime	1469	2,272	10,228	20,036	803	"	10,608	"
Arms and piece good	641	639	1,203	1,830	"	2	627	"
Arms and piece good	2050	2,446	52,068	58,763	396	"	4,695	"
Arms and piece good	806	870	12,785	7,649	64	"	"	5,734
Arms and piece good	3,540	4,269	55,419	71,971	729	"	16,552	"
Arms and piece good	742	2,115	17,368	59,226	1,421	"	32,858	"
Arms and piece good	3,640	2,073	60,606	24,307	"	567	"	26,499
Arms and piece good	1,692	173	70,102	6,626	"	1,519	"	64,456
Arms and piece good	689	607	2,199	15,215	"	182	"	6,783
Arms and piece good	23	53	696	969	30	"	273	"
Arms and piece good	2361	1,573	45,378	26,172	"	848	"	19,206
Arms and piece good	1491	3692	25,147	63,014	4201	"	34,867	"
Arms and piece good	1757	708	10,688	3,330	"	1,029	"	7,558
Arms and piece good	685	6571	20,522	22,334	713	"	1,812	"
Arms and piece good	4213	2,319	10,842	2,3408	1,106	"	12,586	"
Arms and piece good	46	112	1,253	2,439	66	"	1,184	"
Arms and piece good	734	649	13,319	11,385	"	85	"	1,934
Arms and piece good	12,034	11,685	78,969	76,000	"	479	"	1,949
Arms and piece good	3,130	1,991	17,947	13,728	"	1,139	"	4,219
Arms and piece good	1,614	1,452	11,041	2,724	"	1,164	"	6,317
Arms and piece good	1,854	2,071	23,163	24,554	217	"	1,191	"
Arms and piece good	12	"	38	3	"	12	"	35
Arms and piece good	585	1043	10,684	18,875	408	"	9,131	"
Arms and piece good	-3025	2,700	44,980	34,468	"	325	"	10,572
Arms and piece good	3396	2,479	24,612	16,585	"	917	"	8,047
Arms and piece good	321	409	8,119	6,241	88	"	122	"
Arms and piece good	3,277	3086	38,178	24,925	"	191	"	11,253
Arms and piece good	335	622	17,837	9,353	287	"	8396	"
Arms and piece good	2,173	7385	15,464	9,353	61	"	570	"
Arms and piece good	61	112	696	1,206	"	788	"	4,111
Arms and piece good	1,358	1917	17,385	24,162	559	"	6,777	"
Arms and piece good	12	8	887	659	"	4	"	228
Arms and piece good	4,800	4,322	3,6768	4,009	1,522	"	1,301	"
Arms and piece good	38,140	39,385	310,950	323,033	1,195	"	12,083	"
Arms and piece good	21,695	23,712	157,368	162,197	2,017	"	10,829	"
Arms and piece good	1,828	1,502	13,067	14,330	74	"	1,263	"
Arms and piece good	585	239	10,272	3,840	"	316	"	6,432
Arms and piece good	5,415	7,105	45,253	60,282	1,690	"	15,029	"
Arms and piece good	3,357	4,438	4,506	67,316	1,81	"	18,820	"
Arms and piece good	2,026	2,194	23,819	17,708	"	632	"	6,111
Arms and piece good	18,628	18,358	352,456	20,007	"	272	"	42,369
Arms and piece good	3,735	4,817	20,002	25,632	1,082	"	4,730	"
Arms and piece good	6,841	7,510	42,277	43,873	1,669	"	1,596	"
Arms and piece good	2,432	3,839	18,383	19,390	407	"	1,997	"
Arms and piece good	1,446	1,577	35,457	36,677	151	"	1,226	"
Arms and piece good	841	669	11,894	13,020	26	"	1,126	"
Arms and piece good	"	21308	"	560,971	21,308	"	5,6497	"
Total...	1,78,776	2,09,818	18,19,116	23,54,820	3,10,42	"	535,704	"

TABLE D.
Statement of mileage maintained from Revenue Funds.

REFERENCE TO REVENUE ACCOUNT.	DETAILS.		1 st HALF OF 1872		1 st HALF OF 1873.	
Table and main-head.	Sub-head.		Depart-mentally	By Con-tract.	Total.	Total Increase.
IX. (A.)	1.	Mean miles of line maintained { Single ... Double ... Total ...	707 1/4	"	707 1/4	82 1/4
	2.	"	"	"	"	"
	3.	"	707 1/4	"	707 1/4	82 1/4
	4.	" Sidings maintained, Total.	8 1/4	"	8 1/4	8 3/8
	5.	" Single Track Total includ- ing Sidings	788 1/2	"	788 1/2	905 1/2
						116 1/2

TABLE D-I.
Statement of Train Mileage.

DETAILS.	TRAIN MILES RUN FOR				HOURS OF		
Reference to Revenue Account.	*Traffic Department.	Locomotive Department.	Maintenance Department.	Assisting Engines.	Shunting, Piloting, &c.	Miscellaneous Services.	
	XIV. 1.	XIV. 2.	XIV. 3.	XIV. 4.	XIV. 5.	XIV. 6.	
1 1 st half, 1872. { Passenger. 15,857 Goods 177,891 Mixed 659,796 TOTAL 853,544		24,137	37,433	18	19,074	2,298	
2 1 st half, 1873. { Passenger. 10,184 Goods 361,963 Mixed 667,884 TOTAL 1,040,031		24,137	37,433	18	19,074	2,298	
3 Increase in 1873. { Passenger. 54,713 Goods 182,072 Mixed 8,088 TOTAL 244,873		76,732	32,371	38	21,664	2,429	
Decrease in 1873. { Passenger. 5,673 Goods 7,405 Mixed 5,062 TOTAL 18,140		16,732	32,371	38	21,664	2,429	
				20	2,590	131	
				20	2,590	131	

* The division between Passenger, Goods and Mixed Trains need only be carried out, unless desired for local purposes, in the Train-mileage run for the Traffic Department, which is the Train mileage to be used for the purposes of calculation.

* Proportion of mixed trains due to Passengers 282,311
 Passenger train mileage 10,184
 Total Passenger train miles 292,495
 Proportion of mixed trains due to Goods 311,510
 Goods train mileage 361,963
 Total Goods train miles 673,473

TABLE E.
MAINTENANCE of Way, Works, and Stations.

REFERENCE TO REVENUE ACCOUNT.		1 st HALF OF 1872.		2 nd HALF OF 1873.		Per mile of line maintained. D. 3.		Per mile of track including Sidings. D. 5.		Per Train Mile.		Per 1,000 Ton Miles.	
Table and Main head.	Sub-head.	Total.	Total.	Increase.	Decrease.								
XIV.	Train Mileage run for Traffic Dep. D. I xiv. 1.	853,544	1,040,031	186,487									
	Ton Mileage do. do. M. I....	147,804.15	177,469.25	85,765.79									
	DETAILS.												
	HALF OF 1872.												
	1 st HALF OF 1873.												
	Total.												
	Total.												
	Increase.												
	Decrease.												
	D. 3.												
D. 5.													
Per Train Mile.													
Per 1,000 Ton Miles.													
IX. (A.) 1.													
SUPERINTENDENCE—													
1 & 2	Engineer's salaries & allowances.	47,768	57,847	10,079	"	70-395	13,944	890	0.293.				
3 to 5	Inspectors' and Plate-layers' salaries and allowances, including overtime	19,360	24,655	5,295	"	30-023	27,241	379	0.125				
6	Office expenses	22,604	26,137	3,533	"	31-807	28,678	402	0.132				
MAINTENANCE AND RENEWALS OF PERMANENT WAY—													
1	Wages	125,711	156,620	31,509	"	190-594	173,044	2,410	0.793				
2	Materials	94,033	124,809	26,776	"	151-882	137,098	1,920	0.632				
REPAIRS OF BRIDGES, &c., WAGES AND MATERIALS—													
1	Bridges and Tunnels	78,205	49,159	"	29,046	59-823	54,344	703	0.249				
2	Miscellaneous	23,643	25,854	2,211	"	31-442	28,565	398	0.131				
REPAIRS OF STATIONS AND BUILDINGS: WAGES AND MATERIALS—													
1	Repairs of all except Staff Quarters	23,152	30,251	7,099	"	36-813	33,424	465	0.153				
2	Repairs of Staff Quarters	53,544	92,338	38,894	"	112-42	118,297	142	0.047				
MAINTENANCE BY CONTRACT—													
UNCLASSIFIED EXPENDITURE—													
1	Plantations	"	"	"	"	"	"	"	"				
2	Tools and Plant	7,441	6,302	"	1,137	7-671	6,965	97	0.032				
3	Loss on Stores, &c.	"	"	"	"	"	"	"	"				
TOTAL		450,671	510,874	60,203	"	621-992	564,450	7,609	2.587.				

IF DONE DEPARTMENTALLY.

604,362

113.

TABLE E-I.
MAINTENANCE of Way.
RAILS.

Number.	DETAILS.	Double headed.					Total.
		M.	M.	M.	M.	Bridge.	
1	Miles of rail in way, including sidings (miles and decimals of a mile) ...	675.48	962.02	140.48	16.06	M. 0.896 Ya.	M. 1844.94 Ya.
2	Average age of rails in way at the middle of the half-year (years and decimals of a year) ...	10.139	7.250	10.036	3.864	M. 1.694 Ya.	M. 1262 Ya.
3	Rails inverted { Number ... Miles (and decimals of a mile) ...	M. 717 Ya. 2.72	M. 331 Ya. 1.25	M. 214 Ya. 0.81	M. 43 Ya. 0.17	M. 1.42 Ya.	M. 1.42 Ya.
4	Proportion inverted per mile of (1) rail ...	0.0403	0.0129	0.0576	0.0052	M. 0.0258 Ya.	M. 0.0258 Ya.
5	Rails renewed { Number ... Miles (and decimals of a mile) ...	M. 93 Ya. 0.35	M. 142 Ya. 0.54	M. 96 Ya. 0.36	M. 43 Ya. 0.17	M. 1.42 Ya.	M. 1.42 Ya.
6	Proportion renewed per mile of (1) rail ...	0.0052	0.0056	0.0258	0.00258	M. 0.0077 Ya.	M. 0.0077 Ya.
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) ...						236207

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 ascertained 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 been ascertained, the entries for each half-year can be easily calculated. The entries for the different kinds of rails under (7) will agree with the entries for the train service, as the line is uniform or not. Where the record 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 hauled 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 average 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				Iron			
		Lark	Wood	Jungle	Patent	Iron	Patent	Iron	Patent
1	Number of sleepers in way, including sidings ...	No. 280 Ya. 3.58	No. 340 Ya. 2.50	No. 739 Ya. 6.83	No. 12304 Ya. 6.25	No. 769 Ya. 1.83	No. 235098 Ya. 5.42	No. 2557788 Ya. 7.03	No. 2004 Ya.
2	Average age of sleepers in way at the middle of half-year (years and decimals of a year) ...	No. 2.80 Ya. 3.58	No. 2.50 Ya. 2.50	No. 6.83 Ya. 6.83	No. 6.25 Ya. 6.25	No. 1.83 Ya. 1.83	No. 5.42 Ya. 5.42	No. 7.03 Ya. 7.03	No. 2.004 Ya.
3	Number renewed ...								
4	Ditto per cent. of (1).								

* Since receipt by Store Department.

Now

35

TABLE F.
Locomotive Department Expenses.

REFERENCE TO REVENUE ACCOUNT.		1 st HALF OF 1873.						
Table and Main head.	Sub- head.	Total.	Total.	Increase.	Decrease.			
XIV.	...	Train Mileage (D. 2, I. p. 7) Ton Mileage (M. I. 22, p. 16)	653544 11750445	1040031 19740925	103407 35715790	"		
		DETAILS.	1 st HALF OF 1873					
			Total.	Total.	Increase.	Decrease.	Per 1,000 Train Ton Miles.	
		GENERAL SUPERINTENDENCE—	Rs.	Rs.	Rs.	Rs.	As Rs.	
1 & 2		Salaries of Locomotive Superintendents and Assistants, including allowances.	13299	11681	"	1618	100 059	
3 to 5		Ditto of Foremen, including allowances and overtime	29209	27981	"	1228	430 142	
6		Office Expenses	13908	14671	763	"	226 074	
1 & 2		TRAINING EXPENSES— Wages of Drivers and Firemen, in- cluding overtime	85693	92420	6727	"	1422 468	
3		Fuelling, cleaning, and looking after Engines	16214	14280	"	1934	220 072	
4		Contingent Expenses	340	1534	1694	"	023 008	
1		FUEL— Coal	58708	97914	39206	"	1506 298	
2		Coke	24807	16577	"	8230	255 084	
3		Patent Fuel	31298	29238	"	2060	450 148	
4		Wood	108990	136352	27362	"	2098 690	
1, 2 & 3		WATER—	13446	13179	"	267	203 067	
5		OIL, TALLOW, &c.—	10869	11448	579	"	176 058	
1 & 2		MAINTENANCE AND REPAIRS— Wages, including overtime	78228	71136	"	7092	1094 360	
3		Materials	67495	82813	15318	"	1274 419	
...		SERVICES OF OTHER LINES—	"	"	"	"	"	
8		UNCLASSIFIED EXPENDITURE—	"	"	"	"	"	
TOTAL			652504	621224	68720		95573146	
			Total Quantity. 1872 Tons.	Total Quantity. 1873 Tons.	Increase Tons.	Quantity per Train Ton Miles.	Quantity per 1,000 Ton Miles.	
1		Coal consumed	3262	4257	995	"	9.169	46.290
2		Coke do.	775	518	"	257	1.116	5.876
3		Patent Fuel do.	1304	1271	"	23	2.737	14.418
4		Wood do.	24328	30435	6107	"	65.550	345.243

XI. (B) 3

Locomotive Power.

N, B, C, 8, 9, and 10 are first absolutely prescribed as there may be at first some difficulty in furnishing the information for all lines; but the facts should be given if possible.

x Engines burning coal only

* Engines burning wood only.

Approximately.

TABLE G.
Carriage and Wagon Expenses.

REFERENCE TO REVENUE ACCOUNT.		DETAILS.		1 st HALF OF 1872		1 st HALF OF 1873.				
Table and Main head.	Sub- head.			Total.		Total.	Increase.	Decrease.		
XIV.	..	Train mileage run for Traffic Dept. (DL XIV. 1)	853,544	1,049,931	186,487	"				
			Coaching (M. I. 8, 7, 4, 3)	4,509,003	5,214,493	705,490	"			
			Vehicle mileage run for Traffic Dept.	898,287	1,097,848	199,561	"			
			Goods (M. I. 14,)	13,498,21	16,192,979	2,704,768	"			
			Total	13,498,21	16,192,979	2,704,768	"			
		GENERAL SUPERINTENDENCE—	RS.	RS.	RS.	RS.	RS.	RS.		
			Salaries of Superintendents and allowances	2,306	1,781	"	525	.028	.110	
			Salaries of Foremen and allowances, including overtime,	5,048	4,689	"	359	.072	.290	
			Office expenses	2,412	2,367	"	45	.036	.146	
			REPAIRS AND RENEWALS OF VEHICLES AND MACHINERY—							
IX. (C) 1	1 & 2 3 to 5 6	1 to 3 1 to 3 1 to 3 1 2 3 4 ...	COACHING VEHICLES. Wages, including overtime. Materials ... GOODS VEHICLES. Wages, including overtime. Materials ... CLEANING AND OILING— Labour, including wages of oilers, &c. Stores ... UNCLASSIFIED EXPENDITURE— TOTAL ...	7,265	7,663	398	"	.118	1.479	
				8,763	11,459	2,696	"	.176	2.193	
				12,858	13,341	483	"	.205	1.215	
				26,604	27,348	744	"	.421	2.491	
				6,947	7,500	553	"	.115	.463	
				22,751	25,327	2,576	"	.390	1.584	
				94,954	101,475	6,521	"	1.561	6.267	

The vehicle mileage is defined (Table M. 1) 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 the 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 vehicle miles of home-vehicle run on both the parent and foreign lines, and this vehicle mileage should be stated.

By boat for 1000 Coaching Vehicle mile. By boat for 1000 Goods Vehicle mile

TABLE H.
Traffic Expenses

REFERENCE TO REVENUE ACCOUNT.		DETAILS				1 st HALF OF 1872.		1 st HALF OF 1873.			
Table and Main head	Sub-head.		Total.	Increase.	Decrease.	Total.	Increase.	Decrease.	Total.	Increase.	Decrease.
XIV.	...	Train Mileage (run for Traffic Dept. D. I.)	853,544	104,003	186,487	1,040,031	186,487	"	1,040,031	186,487	"
		Vehicle mileage run for Traffic Dept. D. I.	4,509,003	521,493	705,490	5,214,493	705,490	"	5,214,493	705,490	"
		Goods (M. I. 14).	898,2818	1097,486	1995,688	1097,486	1995,688	"	1097,486	1995,688	"
		Total ...	13491821	14192,979	2,701,158	14192,979	2,701,158	"	14192,979	2,701,158	"
			1 st HALF OF 1872.		1 st HALF OF 1873.						
			Total.	Total.	Total.	Total.	Increase.	Decrease.	Total.	Increase.	Decrease.
			RS.	RS.	RS.	RS.	RS.	RS.	RS.	AS.	RS.
			28414	28,096	"	318	432	1735	28,096	318	432
			23015	21,891	"	1,124	337	1352	21,891	1,124	337
			115757	121,284	5527	"	1886	7490	121,284	1886	7490
			28685	32,306	3,621	"	497	1995	32,306	497	1995
			45102	38,929	"	6173	599	2404	38,929	6173	599
			1477	3,492	2,015	"	254	0.216	3,492	254	0.216
			19849	23,628	3779	"	363	1459	23,628	363	1459
			"	"	"	"	"	"	"	"	"
			122	"	"	122	"	"	"	"	"
			"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"
			346	3805	3459	"	059	233	3805	059	233
			"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"
			262767	273431	10,664	"	4207	16,886	273431	4207	16,886
			TOTAL		TOTAL						

TABLE J.
General Charges.

REFERENCE TO REVENUE ACCOUNT.		DETAILS.	1 st HALF OF 1872.		1 st HALF OF 1873.		
Table and Main head.	Sub-head.		Total.	Total.	Increase.	Decrease.	Cost per Train Mile.
IX. (E.) 1	1	HOME EXPENDITURE	Rs. 28655	Rs. 34144	Rs. 5489	Rs. "	As. 525
	1	INDIAN MANAGEMENT					
	1	Agent's Office, including travelling and other allowances	14207	19215	5008	"	296
	2	Auditor's Office ditto	20458	26177	5719	"	403
	3	Accounts Office ditto	4256	6923	2667	"	106
	4	Pay Master's Office ditto	13842	17497	3655	"	269
	5	Store Department ditto	11532	14609	3077	"	225
	6	Medical Department ditto	10571	10996	425	"	169
	7	Rents	845	360	"	485	006
	8.10	Contingencies, Stationery and Medicine	6405	9775	3370	"	151
	8	Police (Total Charges)	10672	12058	1386	"	185
	4	ADVERTISING	1428	1421	"	7	022
	5	ELECTRIC TELEGRAPH—					
	1 to 4	Salaries, &c.	19438	23079	3641	"	355
	5	Maintenance (labour and Stores)	10770	10482	"	288	161
	6	CLEANING ACCOUNTS WITH OTHER LINES	"	"	"	"	"
	7	UNCLASSIFIED EXPENDITURE	"	"	"	"	"
	7	Loss on Stores	54	"	"	54	"
	7	Total	153133	186736	33603	"	2873

TABLE K.
Steam Boat Service.

REFERENCE TO REVENUE ACCOUNT.		1 st HALF OF 1872. 2 ^d HALF OF 1873.			
Table and Main head.	Sub head.	1872.		1873.	
		Total.	Total.	Increase.	Decrease.
IX(F) 1		"	"	"	"
	Working materials	"	"	"	"
	Repairs	"	"	"	"
	Fuel	"	"	"	"
	Miscellaneous stores	"	"	"	"
	Steam traffic agencies	"	"	"	"
2		"	"	"	"
3		"	"	"	"
4		"	"	"	"
5		"	"	"	"
6	Unclassified expenditure	"	"	"	"
	TOTAL	"	"	"	"

TABLE L.
Special and Miscellaneous Expenditure.

IX (G.) 1	...	JAW CHARGES—	Rs.	Rs.	Rs.	Rs.
	1	COMPENSATION—	556	191	"	365
	2	For goods lost or damaged	152	1871	1719	"
	3	Personal Injury	23455	5356	"	18099
		For other claims	210	772	562	"
	3	RATES AND TAXES—	20470	514	"	19956
		CONTRIBUTIONS TO SPECIAL FUNDS—				
	1	Fire Insurance Fund	20630	20657	21	"
	2	P. W. Renewal Fund	"	"	"	"
	3	Casualty Fund	"	"	"	"
		TOTAL	65473	29355	"	36118

ANALYSIS OF CARRYING COST.

TABLE M-1.

The approximate weight of units adopted in these calculations.

Coaching—

ПОЛ

Coaching—(Concld)

A horse

А дог

— 3000 —
A head

A head of horned cattle

A head of sheep, goats, etc.

$$0.50 = 0.0250$$
$$0.002 = 0.002$$
$$8/3 \approx 0.43/3$$

Cwt. 8.75 = 0.4375

Definitions.

The unit of passenger traffic	is—1	passenger plus free luggage.
" "	is—1	carriage.
" "	is—1	horse.
" "	is—1 ton.	
" "	is—1	post-office vehicle.
" "	is—1	"
" "	is—1	goods
" "	is—1	cattle

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

COACHING—													
Details.													
Total mileage of each description of Rolling Stock.	(a)	Total mileage of units of traffic.	(b)	AVERAGE CONTENTS IN UNITS OF EACH VEHICLE.		(c)	(d)	Average Rolling Stock in Tons.	(e)	Total average weight including contents of each Vehicle in Tons.	(f)	TON MILEAGE.	
				No.	Weight in Tons.							Of freight.	Of dead weight
1st Class	...	...	...	1.604	0.140	6.713	6.840	18.725	68.308	32.60168	3,328,476	5,987,491	14,812,689
2nd "	...	...	...	3.279	0.287	6.041	7.501	5.137	3,662,782	15,494,907	2,476,763	3,031,432	650,057
3rd "	...	...	...	23.364	1.460	6.000	7.344	5.466	354,669	2,476,763	2,061,446	2,186,092	2,075,658
4th "	...	...	...	21.799	1.344	5.061	5.262	26.152	248,660	625,197	124,646	2,061,446	2,075,658
Carriage Trucks	...	...	...	123.552	0.596	7.090	7.519	17.539	124,646	2,061,446	1,812,324	2,186,092	2,075,658
Horse Boxes	...	...	...	290,754	0.980	7.124	8.159	7.887	265,514	1,812,324	1,925,034	1,967,373	1,967,373
Luggage including parcels & clubs Vans	...	...	...	254,540	0.429	6.820	6.970	46.467	42,339	1,925,034	1,967,373	1,967,373	1,967,373
Post Office Vehicles &	...	...	...	282.263	0.150	41.732	7.122	4.986,432	33,052,816	38,039,248.	38,039,248.	38,039,248.	38,039,248.
Total	...	...	...	5,214,493	"	"	"	"	"	"	"	"	"
Passenger Engines and Tenders	...	...	...	344,444	"	41.732	"	"	"	"	"	"	"
Passenger Brake Vans &	...	...	...	281,673	"	7.122	"	"	"	"	"	"	"
Total Coaching Ton mileage	...	...	...	"	"	"	"	"	"	"	"	"	"

Classified cost of working over one mile a vehicle including its freight, also

Details.	First Class.	Second Class.	Third Class.	Fourth Class.
	Pies.	Pies.	Pies.	Pies.
Maintenance	4.998	5.105	5.472	5.357
Locomotive	6.494	6.643	7.122	6.970
Carriage and Wagon	1.198	1.198	1.198	1.198
* Traffic	3.242	3.242	3.242	3.242
General	2.082	2.082	2.082	2.082
Special and { Permanent Way Renewal				
Miscellaneous, { Fund	0.327	0.327	0.327	0.327
Other items				
Total...	18.334	18.597	19.443	19.179
† Cost per unit ...	11.428	5.672	0.832	0.892

* 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 o (for numbers) d (for weights)

M

Statement showing in comparison the receipts and the car

Details.	Average receipt per mile (a)
	Pies.
COACHING.—	
1st Class	16.041
2nd „	5.183
3rd „	2.420
4th „	2.1
Carriages	26.6
Horses	14.1
Luggage	5.5
Post Office Vehicles	
GOODS.—	
Merchandise, including Government Stores and Railway materials	10.1
Cattle	18.1
Minerals	

(a.) Total receipts under each class as per Revenue Account divided by the total mileage of that Class [

(b.) To be taken from M—IV.

2.18.01

April 1874

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W. Conker

Diary, 1874

for Consulting Engineer for Railways

Railway Department.

Consulting Engineers' Office

№ 2008

$$45^{-\frac{1}{2}}$$

From,

Lieut. Col. J. F. M. Shaw Stewart, Q. A.,
Consulting Engineer for Railways

J.

Colonel J. W. Walker, D.,

Secretary to Government

Public Works Department

Fort Saint George.

Sir,

I have the honour to forward
herewith a Review of the Revenue Account of
the Madras Railway Company for the half-year
ended 30th June 1873, accompanied by a brief
note on the same, and to request that you will
be good enough to issue instructions for the
printing of the tables on separate pages as was
done with the Review for the half year ended
31st December 1872.

I have the honour to be
Sir

your most obedient servant

Удсуду

Diary, 99

for Consulting Engineer for Railways.

Washoe. 9

1st April 1874

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Beut. 7.

OF 118741 311215

PUBLIC WORKS.

Chief Engineer

London & the Great Eastern

London

Encl 2

1874, No 1174

1177

Nos. 764178.

Railway

Ordered that the Re

view of the Revenue

Account of the Machine

Patent Company

for the half year ended

30 June 1873 be forwarded

to the House of Commons

S. H. 1872 1873

From 28-1991

The Council of Engineers

for Railway

for the Secretary to the

1777 1873

and the Company

Dated 1st of June 1874

Remo 1874

1874 1875

1875

Subcommittee

of the Revenue

of the 1873 for the

half-year ending

30 June 1873

1873 1874

1874 1875

1875 1876