

~~Public~~ Works (1895) Department.

RAILWAY BRANCH.

G.O., No. 83 R

DATED 16th September

[Despatch Abstract.]

Girders. — Estimate of Rs 16,154 for obtaining the new seven spans of 30 feet — for the Deamuddy bridge, South Indian Railway, and for strengthening girders on other parts of the line, sanctioned subject to the approval of the Board of Directors.

BACK PAPERS.

[illegible]

FURTHER PAPERS.

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

SOUTH INDIAN RAILWAY.

									M.L.
Main line and branches ..	..	..	..	..	..	..	..	..	667
Māvavaram-Muttupet ..	..	..	..	..	..	..	..	..	54
Villupuram-Dharmavaram ..	..	..	..	..	..	..	..	..	387
									1,108

Metre Gauge.

INSPECTION report by Mr. F. R. UPCOTT, Senior Government Inspector of Railways,
Madras, for half-year ending 31st December 1894.

The inspection was carried out between 14th and 23rd February 1895. The Agent, Chief Engineer, Traffic Manager, and Chief Physician were present throughout. The district officers travelled over their respective lengths.

General.—The upkeep of the line was satisfactory.

General.—The upkeep of the line was satisfactory. The progress made in strengthening the girders, as recommended by Sir George Bruce and myself, was more rapid than anticipated and the adjustment of the axle weights of 15 out of 20 locomotives, O class, was complete. By the end of March it is anticipated that the whole will be finished and the vacuum brake service of new carriages and engines will be at work between Madras and Tuticorin.

The development of goods traffic on the Máyavaram-Muttupet branch cannot be expected to commence until the roads to the stations and goods platforms are complete.

The defects noticed in last half-year's report were remedied except the recementing of loose bed stones under girders.

The re-arrangement of the locomotive running districts, the through running of goods trains without breaking up over the ghât districts and the substitution of a tonnage basis for a vehicle number basis in respect of engine loads with a reasonable relation between empty and loaded wagons will in my view result in economy and efficiency. The Agent has these points under consideration.

A quarry dead end siding has been opened on the main line at mile 262 without notice to the inspecting staff. It is also unprotected by signals. This is contrary to rules and dangerous and involves the management in serious responsibilities. It should be at once taken out and a line laid out from the Kolatur station at mile 261. The quarry can be reached through booking both from Madras and Erode to

A daily through service with the British India steamers to Colombo would be a great convenience to all classes of passengers. One hour and-a-half should be sufficient for the steam launch to ply between pier and steamer. When the new pier is completed, the train should be run down to it.

Banks and Cuttings.—Over the line generally I recommend that grass be allowed to grow up to the toe of ballast. It keeps down the dust almost entirely and I do not think that the objection urged against the practice that grass would grow over the ballast a sound one; as long as it is periodically disturbed by packing, grass will not take root.

Causeways are to be put in on the main line at miles 252 and 253 south of Trichinopoly and on the Erode branch. Estimates for the former await sanction of Government of India. Estimates for the latter are not yet submitted by Agent.

Erode Branch.—The high banks, where scoured by rain, require dressing and additions and at 332 and 333 E the erosion of the toe of slope requires pitching.

Bridges and Culverts.—In the following list is given the programme of strengthening operations with the progress to date of inspection.

Mileage of bridge.	Number of spans.	Span in feet and type of girder.	Portion of bridge to be strengthened.	Method of strengthening.	Main girder.				Cross girder.				Remarks.
					Flange areas square inches.		Flange stresses tons per square inch.		Flange areas square inches.		Flange stresses tons per square inch.		
					Before strengthening.	After strengthening.	Before strengthening.	After strengthening.	Before strengthening.	After strengthening.	Before strengthening.	After strengthening.	
231/16	3	30 B	Do.	..	..	..	..	3.89	6.80	12.23	7.00	Completed.	
232/11	4	30 B	Do.	..	..	..	..	3.89	7.76	12.23	6.13	Do.	
233/3	4	30 B	Do.	..	..	..	..	3.89	7.26	12.23	6.65	Do.	
234/4	4	30 B	Do.	..	..	..	..	3.89	6.42	12.23	7.41	Do.	
235/2	8	30 B	Do.	..	..	..	..	3.89	..	12.23	..	Do.	
236/10 N	5	30 B	Do.	..	..	..	..	3.89	..	12.23	..	Do.	
237/2 N	5	30 B	Do.	..	..	..	..	3.89	..	12.23	..	Do.	
238/3 N	9	30 B	Do.	..	..	..	..	3.89	..	12.23	..	Do.	
247/2 N	2	30 B	Do.	..	..	..	..	3.89	..	12.23	..	Do.	
262/2 N	3	30 B	Do.	..	..	..	..	3.89	..	12.23	..	Do.	
266/5 N	7	30 B	Do.	..	..	..	..	3.89	..	12.23	..	Do.	
189/9	2	20 G	Do.	..	9.75	10.68	5.75	..	..	..	..	Completed.	
219/8	10	20 A	Do.	..	10.01	9.62	4.21	..	3.75	4.67	4.67	Do.	
248/5	1	20 A	Do.	..	6.59	6.39	6.39	3.75	3.75	4.67	4.67	Do.	
248/9	3	20 A	Do.	..	6.59	6.39	6.39	3.75	3.75	4.67	4.67	Do.	
248/5	1	20 A	Do.	..	6.59	6.39	6.39	3.75	3.75	4.67	4.67	Do.	
278/8	1	20 A	Do.	..	6.59	6.39	6.39	3.75	3.75	4.67	4.67	Do.	
57/7 A	1	20 G	Do.	..	9.75	10.68	5.75	..	..	..	..	Completed.	
235/16 N	3	20 A	Do.	..	8.89	9.62	4.74	2.55	4.33	12.38	7.29	Do.	
257/15	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
253/4	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
260/10	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
265/6	4	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
272/8	3	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
279/11	6	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
284/0	2	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
293/4	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
306/13	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
310/2	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
310/15	2	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
313/2	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
316/12	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
323/4	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
329/2	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
340/8	2	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
344/10	1	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
369/10	2	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
378/15	2	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
380/2	4	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
380/4	8	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	
892/17	2	20 D	Do.	..	..	..	..	2.55	4.33	12.38	7.29	Do.	

[illegible]

Mileage of bridge.	Number of spans.	Span in feet and type of girder	Portion of bridge to be strengthened.	Method of strengthening.	Main girder.				Cross girder.				Remarks.	
					Flange areas square inches.		Flange stresses tons per square inch.		Flange areas square inches.		Flange stresses tons per square inch.			
					Before strengthening.	After strengthening.	Before strengthening.	After strengthening.	Before strengthening.	After strengthening.	Before strengthening.	After strengthening.		
392/4	1	12 B	Cross girder	Addition of steel plates 6" X 1/2" to the bottom flanges.	..	..	..	..	2.55	4.33	12.38	7.29		
399/1	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
401/1	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
406/4	2	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
407/15	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
410/9	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
412/7	4	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
422/14	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
440/3	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
442/4	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
426/8 T	2	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
435/1 T	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
435/7 T	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
437/15 T	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
438/2 T	2	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
438/11 T	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
441/6 T	2	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
443/2 T	1	12 B			Do.	..	..	..	..	2.55	4.33	12.38	7.29	
443/11 T	1	12 B	Do.	..	..	..	..	2.55	4.33	12.38	7.29			

Bridges 262/2 N. 3 × 30', 219/8 N. 10 × 20', 231/16 N. 3 × 30', 272/8 3 × 20', 421/8 2 × 15'.—With the exception of the first the work was good, the subsequent work being under the able supervision of the Senior Resident Engineer and great progress has been made. On the completion of the programme above, the substitution of teak sleepers for the T iron cross girders on the 70, 50 and 30 feet spans will be commenced.

The defects noticed in the former report have been put right with the exception of the recementing of the loose bed stones, particularly noticeable on the Villupuram-Dharmavaram section.

266 N. Deva Nuddi bridge at Negapatam 7 × 30'.—This bridge should be scraped and inspected span by span and the Engineers can then decide on its condition; if it is badly corroded, a new bridge is the only remedy.

The overhead bracing of the 70, 120 and 150 feet girders was in progress.

Bridge 102/2.—The abutments are now secured by struts and the wing walls by ties, but this can only be considered a temporary expedient.

The old longitudinal timbers on bridges at 433 T and 442 T will shortly be replaced by teak cross sleepers. With this exception the general condition of the timber on bridges was good. The addition of extra rolled cross beams on girder bridges between Pakala and Dharmavaram at the ends of the main girders is recommended if there are spare ones in stock.

PERMANENT-WAY.

Ballast, Rails and Sleepers.

Ballast.—Scanty on the Arkonam branch and southwards from Chingleput for several miles.

Máyavaram-Muttupet Line has still only sand as settlement is not yet fully complete.

Rails.—The main line rail renewals are in progress at 383 mile; the stock of 50 lb. new rails is nearly consumed. Forty miles more require renewal on the main line; the rails will probably commence arrival in April.

Looking to the attempts to wreck trains on the South Indian Railway in former years, stacks of rails and sleepers should not be placed at other than level crossing hut sites or at stations; those at 295/6 B. and other places should be removed.

Sleepers.—The Chief Engineer has on trial a short length in Trichinopoly yard of pot sleepers with a cast iron in place of a wood packing, the disadvantage of the wood packing being the shrinking of the wood leading to slack wood keying.

The renewal of steel sleepers was only 79 during previous half-year excluding 227 put in to replace wood sleepers. I am doubtful if this is sufficient. Road was opened and examined at 165 G, 289/6 G., 290/7 G., 270/3 G., 321/12 B. The rusting continues, especially of the keys, and wherever the soil has sulphate of sodium efflorescence; the sleepers in Vellore and Kátpádi yards are rusted considerably.

About 50 miles of the Nellore branch is laid with Denham Olpherts cast iron sleepers.

The permanent-way requires attention at 33 A.

Pondicherry Branch.—The joints are down.

212/13 E.—Joints are slack.

263 G.—The road at the south abutment of the bridge wants packing up.

250 G.—The northern portion of the long curve requires realignment.

Level crossings, fencing, &c.—The aloe fencing was generally only in fair order; this live fence is never satisfactory because it is difficult to renew when the plants flower and die. The wire fence was in good order. The Máyavaram-Muttupet and Villupuram-Dharmavaram lines are practically unfenced.

Stations and Station Machinery.—Beach Station.—A committee has been ordered by the Madras Government to consider the question of running both the Madras and South Indian Railways to this place and with sidings to afford facilities for loading and unloading from the ships and canal boats.

Printed time-tables in the vernacular with a red line under the station concerned should be hung in all the third-class passenger sheds which the passengers can read at leisure. The present practice of exhibiting them in the station verandahs only is not sufficient. At the larger stations suitable fruit and refreshment stalls would be an improvement.

Egmore.—The entrances to the goods yard and the main passenger compound are complained of by traders and passengers; remetalling the former and draining the latter will remedy the present state.

Máyavaram.—Is a very inadequate station and will require entire remodelling when the traffic justifies it. The pillars on one side of island platform infringe standard dimensions by 6 inches.

Tanjore.—The three diamond crossings over the main line on a curve are dangerous. I think the line should be run straight across if necessary and the diamond crossings built up on a connected frame of timber.

Many of the ash pits on the line are too deep and might be filled up to the regulation standard.

Chingleput.—Platform wall coping should be set back.

Panruti.—The division of the goods shed as recommended in last report is impracticable according to the Traffic Manager.

Máyavaram-Muttupet Branch.—The stations, platforms and steel paling require putting into shape now that the new banks have settled. A good deal of old plant, pumps and derricks, &c., were noticed lying about; these should be removed or sold at site. The roads to the stations and to the goods platforms are generally in such an unfinished state as to prevent any carts going along.

Tiruvallúr.—A row of trees should be planted down the centre of the platform.

Erode station.—Some waste land here should be acquired to prevent its being used by squatters.

Ayalur 292 and Ammayanayakanur 320.—The delay in completing these catch sidings is due to the Engineering and Traffic departments not having hitherto satisfied themselves as to the kind of siding required. They are now in accord with my proposal that a short level length with derailing space at the end, fitted with a simple lever, weighted for the siding is the best form and that at Kuralkotta station, 294/7 G, will be now altered to the above recommendations and the others constructed on the same lines.

Kalumbur station.—Accommodation for 1st and 2nd class passengers from Arni is here needed.

Gudur station.—Owing to the probable advent of the broad gauge line, the Agent wishes to lay in a siding to the Buckingham canal 7 miles long. I think this siding should be of mixed gauge.

284 B.—The road to goods shed requires rolling.

The Tanjore siding 5 miles long might be extended to Vallam and opened for passengers.

Signals—Chingleput.—Home branch requires easing.

Padalam.—North distant arm should be shortened.

Mailam.—North distant out of order.

Villupuram.—The present arrangement of signals for the Pondicherry branch is unsatisfactory. The wires of both distant and repeating branch signals should be brought to end of platform, so that the station-master has the whole under his immediate control and the light of the repeating or intermediate distant signal should be shaded from the main line.

Negapatam to Tanjore.—Signals require paint.

275/10 B.—A tree obscures the home light.

248/10 G.—A tree obscures the home light.

Staff quarters at Pakala are much needed and the Government of India's sanction is awaited.

Electric train staff block, Webb and Thomson's System.—This should be put up and worked between Trichinopoly Fort and Cantonment to test its efficiency.

Rolling stock.—The locomotives are as usual exceedingly well ordered. The adjusted axle weights on engine 198 O class with boiler $\frac{3}{4}$ full were tested as under:—

Right side.									
Bogie	...	...	...	...	...	...	...	{ 1 18 2	
								{ 1 16 2	
									3 15 0
Driving wheel									4 2 0
Trailing "									4 3 2
Left side.									
Bogie	...	...	...	...	...	...	...	{ 1 17 0	
								{ 1 18 2	
									3 15 2
Driving wheel									4 3 0
Trailing "									4 2 0
								Total {	
								Bogie	7 10 2
								Drivers	8 5 0
								Trailers	8 5 2
									24 1 0

The adjusted weights of 15 of the 20 of the O class are complete.

Steady progress has been made in the outturn of the new 40 feet bogie passenger stock and by the end of the year the mail service Madras to Tuticorin should be running with the vacuum brake.

The female third-class stock fitted with latrines appear insufficient; on two occasions I noticed ordinary thirds in use, the alleged reason being that the usual stock had run hot and there were none in reserve.

The twisting of Jones' buffer due to the volute spring gives the Locomotive department much trouble, and is, I think, a distinct danger tending to part the couplings, the coupling being only one ended also leads to complication noticeable in the way branch line curves have to be laid out, and when the South Indian Railway connects with another metre gauge line, the possibility of the wrong ends coming together will be greater.

An inspection carriage for the separate use of the Consulting Engineer's department should be built. Sanction, it is believed, exists and the Agent concurs.

Workshops.—The Negapatam shops were in good working order. The Locomotive Superintendent complained as usual of want of accommodation; but looking to the increase of expenditure on the repair of rolling stock on the line, I am of opinion that the re-arrangement of his districts and abolition of outside and distant repairing works would result in immediate economy, and until this is considered I cannot support his claim for any increased accommodation at Negapatam. The small works at Nellore ought to be closed at once.

Stores.—The tickets in store at Negapatam are about to be transferred to Trichinopoly and placed in charge of the Audit department. I am of opinion that the printing would be more economically done in India, but the Agent has this under consideration.

MADRAS,
26th February 1895.

(Signed) F. R. UPCOTT,
Senior Govt. Inspector of Railways.

ENGINEER DEPARTMENT.

Statement showing the renewals of rails for half-year ending 31st December 1931

[illegible]

TABLE 1.—The movement of rails for half-year ending 31st December 1894.—*cont.*

Rails replaced.										Steel.														
Iron.										Steel.														
68 lb.					40.8 lb.					35.5 lb.					50 lb.					41 lb.				
21'	18'	Cut.	24'	21'	18'	Cut.	19'	16 1/2'	14'	Cut.	80'	27'	24'	21'	18'	Cut.	24'	21'	18'	Cut.				
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43				
Main Line—cont.																								
8	11	18	11	18	..	2	..	..	..	..	988	..	6	..	..	88'	95	17	2	..				
41	6	1	6	1	..	..	..	..	..	..	488	..	4	..	..	36'	59	19	..	..				
16	..	..	..	..	..	..	..	..	..	..	548	..	5	..	..	6'	149	14	..	..				
4	3	..	3	..	..	1	..	..	..	..	8	..	2	..	..	391'	99	27	..	..				
52	..	..	..	..	..	..	..	..	..	..	14	..	..	..	..	324'	94	24	2	2 1/2				
1	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	355'	140	24	3	2 1/2				
122	5	..	20	27	3	..	..	..	..	..	2,006	2	19	..	..	1,200'	636	155	7	2 1/2				
Sidings—cont.																								
8	25	47	25	47	1	..	..	..	..	..	..	..	..	..	..	..	22	9	8	..				
1	..	60	..	5	..	3	..	..	..	..	..	..	..	..	..	..	19	2	2	..				
5	..	9	..	3	..	..	..	..	..	..	..	..	..	..	..	..	14	62	4	..				
2	2	2	2	2	..	..	..	..	..	..	..	..	..	..	..	..	11	17	6	..				
6	8	2	8	2	..	..	..	..	..	..	..	..	..	..	..	..	38	10	3	..				
22	39	119	4	..	4	..	..	..	..	..	..	..	..	..	..	..	33	16	3	..				
144	6	..	59	146	7	..	..	..	..	..	2,006	2	19	..	..	..	137	116	20	..				
Grand Total																								
Total																								
Total																								

SOUTH INDIAN RAILWAY COMPANY (LIMITED).

ENGINEER DEPARTMENT.

Māyāram-Muttupet Railway.

STATEMENT showing the renewals of rails for the half-year ending 31st December 1894.

		Rails displaced.								Rails replaced.							
		Iron.				Steel.				Iron.				Steel.			
		40-3 lb.				41 lb.				40-3 lb.				41 lb.			
		24'	21'	18'	Cut.	24'	21'	18'	Cut.	24'	21'	18'	Cut.	24'	21'	18'	Cut.
<i>Main Line.</i>																	
July 1894	..	..	..	..	..	132	40	..	..	..	..	..	..	132	40	..	..
August "	..	..	..	..	..	33	..	..	..	..	..	..	..	33	..	..	..
September "	..	..	..	..	..	26	..	..	..	..	..	..	..	26	..	..	..
October "	..	..	..	..	..	122	..	..	..	..	..	..	..	122	..	..	..
November "	..	..	..	..	..	166	21	..	..	..	..	..	..	166	21	..	..
December "	..	..	..	..	..	40	..	..	..	..	..	..	..	40	..	..	..
Total	..	..	..	..	..	519	61	..	..	..	..	..	..	519	61	..	..
<i>Sidings.</i>																	
July 1894	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
August "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
September "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
October "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
November "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
December "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	2	1	..	..	..	..	..	..	2	1	..
Grand Total	..	..	..	..	..	519	63	1	..	..	..	..	..	519	63	1	..

PONDICHERY RAILWAY COMPANY (LIMITED).

ENGINEER DEPARTMENT.

STATEMENT showing the renewals of rails for the half-year ending 31st December 1894.

		Rails displaced.								Rails replaced.							
		Iron.				Steel.				Iron.				Steel.			
		40-3 lb.				41 lb.				40-3 lb.				41 lb.			
		24'	21'	18'	Cut.	24'	21'	18'	Cut.	24'	21'	18'	Cut.	24'	21'	18'	Cut.
<i>Main Line.</i>																	
July 1894	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
August "	..	..	..	..	..	3	..	..	..	..	..	..	..	3	..	..	..
September "	..	..	..	..	..	5	..	..	..	..	..	..	..	5	..	..	..
October "	..	..	..	..	..	10	..	..	..	..	..	..	..	10	..	..	..
November "	..	..	..	..	..	5	..	..	..	..	..	..	..	5	..	..	..
December "	..	..	..	..	..	8	..	..	..	..	..	..	..	8	..	..	..
Total	..	..	..	..	..	31	..	..	..	..	..	..	..	31	..	..	..
<i>Sidings.</i>																	
July 1894	..	..	..	..	..	5	2	..	..	..	..	..	..	5	2	..	..
August "	..	..	..	..	..	2	..	..	..	..	..	..	..	2	..	..	..
September "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
October "	..	..	..	..	..	5	..	..	..	..	..	..	..	5	..	..	..
November "	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..
December "	..	..	..	..	..	5	..	..	..	..	..	..	..	5	..	..	..
Total	..	..	..	..	..	17	8	..	..	..	..	..	..	17	8	..	..
Grand Total	..	..	..	..	..	48	8	..	..	..	..	..	..	48	8	..	..

SOUTH INDIAN RAILWAY COMPANY (LIMITED).

ENGINEER DEPARTMENT.

STATEMENT showing the renewals of sleepers for the half-year ending 31st December 1894.

		Sleepers displaced.								Sleepers replaced.							
		Transverse steel sleepers.				D and O sleepers.				Transverse steel sleepers.				D and O sleepers.			
		Tot 40 lb.				Tot 50 lb.				Tot 40 lb.				Tot 50 lb.			
		Tonk of sizes.	Pot 68 lb.	Pot 50 lb.	Pot 40 lb.	Tonk of sizes.	Pot 68 lb.	Pot 50 lb.	Pot 40 lb.	Tonk of sizes.	Pot 68 lb.	Pot 50 lb.	Pot 40 lb.	Tonk of sizes.	Pot 68 lb.	Pot 50 lb.	Pot 40 lb.
<i>Main Line.</i>																	
July 1894	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
August "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
September "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
October "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
November "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
December "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>Sidings.</i>																	
July 1894	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
August "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
September "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
October "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
November "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
December "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grand Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

* 227 steel transverse sleepers inserted in place of cross-ties.

PONDICHERRY RAILWAY COMPANY (LIMITED).

ENGINEER DEPARTMENT.

STATEMENT showing the renewals of sleepers for the half-year ending 31st December 1894.

		Sleepers displaced.				Sleepers replaced.			
		Creosoted 6'.	Pingadu.	Teak of sizes.	Transverse steel sleepers.	Creosoted 6'.	Pingadu.	Teak of sizes.	Transverse steel sleepers.
<i>Main Line.</i>									
July 1894 ..	NOS.	55	..	..	..	NOS.	55	..	..
August ..	15	..	..	..	..	15	..	..	..
September ..	14	..	..	..	..	14	..	..	..
October ..	3	..	..	..	..	3	..	..	..
November ..	3	..	..	..	..	3	..	..	..
December ..	..	..	..	..	..	..	..	..	..
Total ..	90	..	..	..	..	15	75	..	..
<i>Sidings.</i>									
July 1894 ..	40	..	..	..	..	40	..	..	..
August ..	9	..	..	3	..	9	..	3	..
September ..	10	..	..	..	..	10	..	..	..
October ..	5	..	..	..	..	5	..	..	..
November ..	68	..	..	..	..	68	..	..	..
December ..	40	..	..	..	..	40	..	..	..
Total ..	172	..	3	..	..	40	132	3	..
Grand Total ..	262	..	3	..	..	55	207	3	..

4TH MARCH 1895, No. 120 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

Report of inspection of the South Indian Railway for the half-year ending 31st December 1894.

ORDER—dated 4th March 1895, No. 120 R., Public Works.

Communicated to the Agent, South Indian Railway, for information and necessary action.

2. A copy of these Proceedings will be forwarded for the information of the Government of India.

[Here enter No. 121 R., dated 4th March 1895.]

(True Extract.)

(Signed) F. R. UPCOTT,
Joint Secy. to Govt., P.W.D.,
Railway Branch.To the Agent, South Indian Railway.
,, Local and Municipal Department.

ENDORSEMENT—dated 4th March 1895, No. 121 R., Public Works.

Forwarded.

(By Order.)

(Signed) F. R. UPCOTT,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

Govt. of {1895} Madras
PUBLIC WORKS.

Forwarding copy of Proceedings on the inspection report of the — for the half-year ending 31st December 1894.

Bridges and Culverts.—In the following list is given the programme of strengthening operations with the progress to date of inspection.

Mileage of bridge.	Number of spans.	Span in feet and type of girder	Portion of bridge to be strengthened.	Method of strengthening.	Main girder.				Cross girder.				Remarks.
					Flange areas square inches.		Flange stresses tons per square inch.		Flange areas square inches.		Flange stresses tons per square inch.		
					Before strengthening.	After strengthening.	Before strengthening.	After strengthening.	Before strengthening.	After strengthening.	Before strengthening.	After strengthening.	
392/4	1	12 B	Addition of steel plates 6" X 7" to the bottom flanges.	..	..	..	..	2.55	4.33	12.38	7.29		
399/1	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
401/1	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
406/4	2	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
407/15	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
410/9	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
412/7	4	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
422/14	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
440/3	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
442/4	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
426/8 T	2	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
435/1 T	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
435/7 T	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
437/15 T	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
438/2 T	2	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
438/11 T	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
441/6 T	2	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
443/2 T	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		
443/11 T	1	12 B		..	..	..	..	2.55	4.33	12.38	7.29		

Bridges 262/2 N. 13 x 36', 219/8 N. 10 x 20', 231/16 N. 3 x 30', 272/8 3 x 20', 421/8 2 x 15'.—With the exception of the first the work was good, the subsequent work being under the able supervision of the Senior Resident Engineer and great progress has been made. On the completion of the programme above, the substitution of teak sleepers for the T iron cross girders on the 70, 50 and 30 feet spans will be commenced.

The defects noticed in the former report have been put right with the exception of the recementing of the loose bed stones, particularly noticeable on the Villupuram-Dharmavaram section.

266 N. Deva Nuddi bridge at Negapatam 7 x 30'.—This bridge should be scraped and inspected span by span and the Engineers can then decide on its condition; if it is badly corroded, a new bridge is the only remedy.

The overhead bracing of the 70, 120 and 150 feet girders was in progress.

Bridge 102/2.—The abutments are now secured by struts and the wing walls by ties, but this can only be considered a temporary expedient.

The old longitudinal timbers on bridges at 433 T and 442 T will shortly be replaced by teak cross sleepers. With this exception the general condition of the timber on bridges was good. The addition of extra rolled cross beams on girder bridges between Pakala and Dharmavaram at the ends of the main girders is recommended if there are spare ones in stock.

PERMANENT-WAY.

Ballast, Rails and Sleepers.

Ballast.—Scanty on the Arkonam branch and southwards from Chingleput for several miles.

Máyavaram-Muttupet Line has still only sand as settlement is not yet fully complete.

Rails.—The main line rail renewals are in progress at 383 mile; the stock of 50 lb. new rails is nearly consumed. Forty miles more require renewal on the main line; the rails will probably commence arrival in April.

Looking to the attempts to wreck trains on the South Indian Railway in former years, stacks of rails and sleepers should not be placed at other than level crossing hut sites or at stations; those at 295/6 B. and other places should be removed.

Sleepers.—The Chief Engineer has on trial a short length in Trichinopoly yard of pot sleepers with a cast iron in place of a wood packing, the disadvantage of the wood packing being the shrinking of the wood leading to slack wood keying.

The renewal of steel sleepers was only 79 during previous half-year excluding 227 put in to replace wood sleepers. I am doubtful if this is sufficient. Road was opened and examined at 165 G, 289/6 G., 290/7 G., 270/3 G., 321/12 B. The rusting continues, especially of the keys, and wherever the soil has sulphate of sodium efflorescence; the sleepers in Vellore and Kátpádi yards are rusted considerably.

About 50 miles of the Nellore branch is laid with Denham Olpherts cast iron sleepers.

The permanent-way requires attention at 38 A.

Pondicherry Branch.—The joints are down.

212/13 E.—Joints are slack.

263 G.—The road at the south abutment of the bridge wants packing up.

250 G.—The northern portion of the long curve requires realignment.

Level crossings, fencing, &c.—The aloe fencing was generally only in fair order; this live fence is never satisfactory because it is difficult to renew when the plants flower and die. The wire fence was in good order. The MÁYavaram-Muttupet and Villupuram-Dharmavaram lines are practically unfenced.

Stations and Station Machinery.—Beach Station.—A committee has been ordered by the Madras Government to consider the question of running both the Madras and South Indian Railways to this place and with sidings to afford facilities for loading and unloading from the ships and canal boats.

Printed time-tables in the vernacular with a red line under the station concerned should be hung in all the third-class passenger sheds which the passengers can read at leisure. The present practice of exhibiting them in the station verandahs only is not sufficient. At the larger stations suitable fruit and refreshment stalls would be an improvement.

Egmore.—The entrances to the goods yard and the main passenger compound are complained of by traders and passengers; remetalling the former and draining the latter will remedy the present state.

Máyavaram.—Is a very inadequate station and will require entire remodelling when the traffic justifies it. The pillars on one side of island platform infringe standard dimensions by 6 inches.

Tanjore.—The three diamond crossings over the main line on a curve are dangerous. I think the line should be run straight across if necessary and the diamond crossings built up on a connected frame of timber.

Many of the ash pits on the line are too deep and might be filled up to the regulation standard.

Chingleput.—Platform wall coping should be set back.

Panruti.—The division of the goods shed as recommended in last report is impracticable according to the Traffic Manager.

Máyavaram-Muttupet Branch.—The stations, platforms and steel paling require putting into shape now that the new banks have settled. A good deal of old plant, pumps and derricks, &c., were noticed lying about; these should be removed or sold at site. The roads to the stations and to the goods platforms are generally in such an unfinished state as to prevent any carts going along.

Tiruvádúr.—A row of trees should be planted down the centre of the platform.

Erode station.—Some waste land here should be acquired to prevent its being used by squatters.

Ayalur 292 and Ammayanayakanur 320.—The delay in completing these catch sidings is due to the Engineering and Traffic departments not having hitherto satisfied themselves as to the kind of siding required. They are now in accord with my proposal that a short level length with derailing space at the end, fitted with a simple lever, weighted for the siding is the best form and that at Kurbalkotta station, 294/7 G, will be now altered to the above recommendations and the others constructed on the same lines.

Kolumbar station.—Accommodation for 1st and 2nd class passengers from Arni is here needed.

Gudur station.—Owing to the probable advent of the broad gauge line, the Agent wishes to lay in a siding to the Buckingham canal 7 miles long. I think this siding should be of mixed gauge.

284 B.—The road to goods shed requires rolling.

The Tanjore siding 5 miles long might be extended to Vallam and opened for passengers.

Signals—Chingleput.—Home branch requires easing.

Padalam.—North distant arm should be shortened.

Mailam.—North distant out of order.

Villupuram.—The present arrangement of signals for the Pondicherry branch is unsatisfactory. The wires of both distant and repeating branch signals should be brought to end of platform, so that the station-master has the whole under his immediate control and the light of the repeating or intermediate distant signal should be shaded from the main line.

Negapatam to Tanjore.—Signals require paint.

275/10 B.—A tree obscures the home light.

248/10 G.—A tree obscures the home light.

Staff quarters at Pakala are much needed and the Government of India's sanction is awaited.

Electric train staff block, Webb and Thomson's System.—This should be put up and worked between Trichinopoly Fort and Cantonment to test its efficiency.

Rolling stock.—The locomotives are as usual exceedingly well ordered. The adjusted axle weights on engine 198 O class with boiler $\frac{3}{4}$ full were tested as under:—

Right side.									
Bogie	...	...	...	...	...	...	...	...	...
								1	18 2
								1	16 2
									3 15 0
Driving wheel									4 2 0
Trailing "									4 3 2
Left side.									
Bogie	...	...	...	...	...	...	...	...	...
								1	17 0
								1	18 2
									3 15 2
Driving wheel									4 3 0
Trailing "									4 2 0
Total								Bogie	...
								Drivers	...
								Trailers	...
									7 10 2
									8 5 0
									8 5 2
									24 1 0

The adjusted weights of 15 of the 20 of the O class are complete.

Steady progress has been made in the outturn of the new 40 feet bogie passenger stock and by the end of the year the mail service Madras to Tuticorin should be running with the vacuum brake.

The female third-class stock fitted with latrines appear insufficient; on two occasions I noticed ordinary thirds in use, the alleged reason being that the usual stock had run hot and there were none in reserve.

The twisting of Jones' buffer due to the volute spring gives the Locomotive department much trouble, and is, I think, a distinct danger tending to part the couplings, the coupling being only one ended also leads to complication noticeable in the way branch line curves have to be laid out, and when the South Indian Railway connects with another metre gauge line, the possibility of the wrong ends coming together will be greater.

An inspection carriage for the separate use of the Consulting Engineer's department should be built. Sanction, it is believed, exists and the Agent concurs.

Workshops.—The Negapatam shops were in good working order. The Locomotive Superintendent complained as usual of want of accommodation; but looking to the increase of expenditure on the repair of rolling stock on the line, I am of opinion that the re-arrangement of his districts and abolition of outside and distant repairing works would result in immediate economy, and until this is considered I cannot support his claim for any increased accommodation at Negapatam. The small works at Nellore ought to be closed at once.

Stores.—The tickets in store at Negapatam are about to be transferred to Trichinopoly and placed in charge of the Audit department. I am of opinion that the printing would be more economically done in India, but the Agent has this under consideration.

MADRAS,
26th February 1895.

(Signed) F. R. UPCOTT,
Senior Govt. Inspector of Railways.