

Public Works (1893) Department.

RAILWAY BRANCH.

G.O., No. 1241-2R

DATED 23rd September

[Despatch Abstract.]

Inspection report. — Order on the — of the South Indian Railway (including the Villupuram-Sivamangalam section and the More branch) for half-year ended 30th June 1893.

Forwarding Copy of Proceedings on the — of the South Indian Railway for half year ended 30th June 1893.

[illegible]

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

It would be a good thing for plate girders of 40 feet and 60 feet span if camber plates were rivetted on for the cross sleepers.

Mile 239/14.—Culvert requires face wall rebuilt.

Miles 232 to 235.—Iron bed plates should be substituted for the wooden ones under the continuous 30-foot girders.

Mile 373/8—9 by 30 feet.—The wood sleepers are unnecessarily large. The iron cross beams supporting the old gangway might be removed.

Mile 442—2 by 30 feet near Tinnevely.—Re-timbering being done piecemeal. This is not desirable as the difference of heights necessitates packing pieces under bridge sleepers which are prohibited.

Mile 296½, Amravati bridge—20 by 50 feet.—The rails should be laid in the centre of the bridge. One timber here requires renewing.

The painting of the girders is fairly maintained but some of the older girders which have been tarred should be properly scraped before a fresh coat is put on.

Permanent Way.—The 50-lb. rail on cast iron pot sleepers is now laid as under:—

Madras, 0 to mile 323.

342 to „ 367.

425 to „ 444.

56 to 74, Arkonam branch.

257 to 266, Negapatam branch.

This road is generally in good running order. In some parts 6 pots per rail have tie bars and 3 pots have none. From 215 to 255 the joints are rather slack, the renewals progress at an average rate of 5 miles per month.

The joints of the road Conjeeveram to Chingleput, 40-lb. F. F. rails on wood sleepers were rather down. The insertion of three pingadu sleepers in this and other lengths is practically completed. It would have been better had the old sleepers been allowed to remain.

Villupuram, mile 100 to Pondicherry, mile 122, road is 40-lb. F. F. rails on wood sleepers and is suited for low speeds and light traffic.

The road from 323 to 342 and 367 to 425 and the Tinnevely branch is also of 40-lb. rails on wood sleepers with 3 pingadu sleepers inserted at joints and in the middle of rail.

It is in fair condition except near mile 374 which is not as good as the rest.

Also miles 242-243, Negapatam branch, some wooden keys were loose and the pot sleepers were not at right angles to the line.

The Erode branch, miles 250 to 236, is of 68-lb. rails on cast iron pots; these rails are a good deal worn on the outer edge possibly from excess of cant in the chair, they are 21 feet long and have 4 tied and 3 untied pot sleepers. In these latter there is no hole for a tie bar.

Ballast is of full section and varying material mostly sand.

There are 2½ maintenance men per mile.

Level crossing. They live in the adjacent villages.

Level crossings are in fair order.

Fencing is continuous and in good order.

Stations—*Madras, Beach*.—Some land is required from Harbour Trust to erect a small booking office.

Egmore.—When the new bogie stock is running, a 500 feet examining pit will be needed here.

St. Thomas' Mount.—Platform is too narrow and short, and a siding should be laid in.

Conjeeveram.—The station house shows no further settlement.

Padalam.—An assistant station master's house is asked for.

Perambair.—Inhabitants complain of want of a platform. The earth should be raised to the rail level till passenger traffic is larger at this and Kalligudi station.

Villupuram.—Addition to engine shed and extension of loading platform wanted.

Cuddalore, New Town.—The traffic department ask for an extension of waiting shed and parcels office and new latrine.

Chedambaram.—A large pilgrim traffic here requires additional accommodation for them.

Mayaveram.—The island platform here was only made 36 feet wide; this is too narrow to admit of a future station being built thereon without infringing standard dimensions.

Tanjore.—This station needs enlargement but must wait till funds are available. The immediate and reasonable requirements of the Locomotive department are additional ashpits.

Negapatam.—A comprehensive plan should be sent up showing what are the present requirements for staff quarters, &c.

As regards the harbour, opinions vary as to the best way of keeping it open. It is unlikely that anything can be done for want of funds.

Mile 222.—A deputation waited on Agent to ask for a station here.

Ammayanayakanur.—Native first and second class passengers should have a waiting room here. A catch-siding beyond shunting limits is required at the commencement of the 1 in 100 grade.

Madura.—A weigh-bridge and some staff quarters are needed.

Trichinopoly.—A third bay to engine shed is required.

Tuticorin.—The second level crossing gate on the salt siding requires widening. The Municipality will possibly pay for this.

An extension of the railway to the new pier was urged by the B. I. S. N. Agent. This question should be discussed by a General Committee.

Stations generally.—The extension of the sidings to standard length is still proceeding.

The stations are generally neat and clean and properly fenced.

The Postal department might be asked to paint their letter cans and the railway should fix them up properly.

The Refreshment rooms should have a complaint-book.

Station Machinery.—The signals were all in order except the north distant signal at Kalligudi.

The distant signals are all worked from the points.

Rule 13 in the working Time Table which lays down that the home signal is not for the drivers' guidance, should be at once altered.

The stop blocks on the main sidings seem to me to be a source of danger rather than safety. Wagons should not as a rule be allowed to stand on the main siding. Also the three throw points might be gradually eliminated.

The old pattern water cranes infringe standard dimensions—they are to be altered by an additional cast iron piece between the column standard and revolving arm to raise it to clear the wagons and bringing the handle of the valve in a line with the arm to the back of the column standard.

Watering arrangements.—These are defective at Egmore where a steam pump and well is to be erected near the Cooum, and the present tank raised to 30 feet at Padalam, mile 43, where complete water station is needed.

Tanjore.—Where a steam pump is needed and raising of the present tank.

At mile 381, where a trial well should be put down.

At mile 434, to supply Tataparai station.

And at Trichinopoly where the present temporary supply waits the completion of the permanent water works undertaken by the Municipality.

Workshops.—In order to meet the repairs to rolling stock a new boiler shop, paint shop and foundry are much wanted at Negapatam.

The present store building might be used for the boiler shop and the stores transferred to a new building.

The Locomotive Superintendent's office is also cramped and the drawing office quite inadequate for the purpose.

Until these extensions are made the repairs and renewals to the rolling stock must be hampered. The matter has been urged for many years.

Stores.—The accumulation of miscellaneous engineering stores at Trichinopoly is very large. Some appear under the custody of General Store department, and some under the engineers—and these are again subdivided into those belonging to the main line, branches and construction districts.

Economy would result by a proper stock-taking of the entire engineering stores of the line to be afterwards examined by a district officer's Committee and dealt with by sale or otherwise.

Shops—Engineering.—These at Trichinopoly have served their purpose during the construction of the lines undertaken by the South Indian Railway and might with advantage be reduced and the stores therein treated as abovementioned.

Rolling-stock.—The progress of renewals from January to June to the engines and rolling stock is as under:—

10 of O class locomotives and tenders 4 wheels coupled.

4 composite carriages.

17 ordinary thirds from the Madras Railway.

30 iron covered goods wagons.

20 low side iron bogie wagons.

1 oil tank.

The breaking of axles and parting of tires from wheels calls for attention; they are as under:—

3 axles broken.

2 loose tyres.

One pair of wheels was in the Negapatam shops that had been running for a short time. The tire of one being quite loose on the wheel; this was of a type

in which the tire after being shrunk on to the wheel is closed by a dovetailed ring. The Locomotive Superintendent reports this due to bad manufacture by the English contractor.

Jones' couplings are being fitted to the stock as under, between January and June—

216 vehicles and 29 vehicles were fitted with side chains.

At Tinnevely one covered goods marked to carry 6 tons—tare 3-12 was weighed and found 9-14 being an overload of 2 cwt.

In view of the recent sanction to increase the loads on certain goods vehicles, great attention should be given to prevent overloading.

There are no break-down trains on this Railway, nor are the ambulance carriages marked with a red cross. The Agent is requested to take these matters up.

The carriages reserved for Native women were found to be provided with efficient latrine accommodation and clean.

VILLUPURAM-DHARMAVARAM AND NELLORE BRANCH.

MILEAGE 389. GAGE 3' 3 1/2".

Banks and Cuttings were generally of full standard width in good general section and repair; the grass is not fully grown on the bank slopes.

Mile 203/10.—Pitching required here to guard against scour.

Mile 232 and mile 236/8.—Bank requires raising.

Mile 295/17.—Requires intercepting drain or level culvert to guard against a wash out.

On the length between Renigunta and Nellore the banks were being raised.

Bridges.—The girder bedstones of many of the bridges are shaken and the joints should be raked out and filled with neat Portland cement.

Mile 131/10, Turungi bridge, 1 by 120 feet and 8 by 40 feet.—Bedstones shaken.

Mile 158, Cheyair bridge, 5 by 120 feet.—Some cross sleepers require binding at ends with hoop iron.

Mile 193/8, Palár bridge, 13 by 150 feet.—Some timbers require binding at ends and the holding-down bolts should be cut off; bedstones require grouting.

Mile 224/3—6 by 60 feet and 2 by 40 feet.—Some rivets missing.

Mile 374/3, Chittravatti bridge, 13 by 60 feet.—Bedstones shaken, require grouting. Several fish bolts loose; timber only fair.

Mile 370/8—3 by 60 feet and mile 368/3—1 by 60 feet and at mile 366/4—1 by 40 feet.—Footway wanted on one span.

In this length of line there are several 25 feet spans, the upper edge of whose top booms clear cowcatcher by 6 inches only. The line should be raised.

Mile 318/8, Papaghi bridge, 8 by 60 feet.—Bedstones shaken and many fish bolts have been bent by a derailed wagon; they should be replaced.

Mile 308/5 by 60 feet—Buttapapuram bridge.—Angle knees are not close to longitudinal timbers.

Mile 279/3—8 by 60 feet.—Continuous girders hook bolts require squaring. Sleepers have been much damaged by permanent way men, and have not been tarred underneath.

Mile 262/8—Pile bridge, 7 by 60 feet.—2 girders have 4 rivets out in bottom flange. The ends of some of the horizontal rail timbers require bolting to prevent splitting. Former reports draw attention to the vertical cross bracing being bent, but as this bridge has horizontal diagonal bracing on bottom boom and cross girders rivetted on top boom, I do not think any movement can take place. Two or three of the vertical cross bracings only need be cut and re-riveted.

A centre plank should be provided on all single and double 25 feet and 40 feet to enable the road men to easily tighten up fish bolts, &c.

Mile 242/7—5 by 40 feet.—Timbers require ends bound.

Mile 254/6, Beemavaram bridge, 3 by 120 feet.—Top boom requires painting inside.

Mile 269/8, Renigunta bridge over Madras Railway.—The wood bed plate of the triple 40 feet supporting the main girders should be covered with sheet iron against fire.

Mile 276/6.—New 12-feet bridge is nearly ready. The Chief Engineer will open this.

On many of the 40-feet bridges the cowcatcher of engine is too close to the side refuge planks; they should be put back.

Permanent Way.—The Villupuram-Dharmavaram branch is laid with 41-lb. steel rails on steel sleepers with the exception of 27 miles laid with 40-lb. iron rails on steel sleepers; this road has been in work since 1892.

The Nellore branch is of 41-lb. steel rails on steel sleepers, and also the same class rail on D. O. cast iron sleepers. Most of this line was opened in 1887.

The condition of the steel sleepers demands great attention.

The road was opened out at several places on Nellore branch.

Mile 334.—Five steel sleepers had been taken out. At one place after 6 years' wear three were absolutely useless and two were not fit for the main line.

Mile 330.—Opened road and found rail seat on sleeper bent down about $\frac{1}{2}$ inch and keys loose and edges of sleepers rusted away.

Mile 325.—Five sleepers taken out of road at one place after 6 years were corroded and split at rail seat.

Mile 320.—8 steel sleepers had been removed at an unknown date, they were quite useless.

At Chittoor, on the Villupuram-Dharmavaram branch, a length of road was opened and the sleepers and keys were found to be much rusted although only in road for $3\frac{1}{2}$ years. Chief Engineer has arranged to have a number taken out, cleaned, weighed and marked and put back.

Mile 256/4, Villupuram-Dharmavaram.—Road opened and found in good order.

The minor defects requiring attention on the Villupuram-Dharmavaram branch are as follows:—

Mile 159.—Wants straightening and packing and on many curves the super-elevation is not run out on the straight sufficiently.

On the gradients between miles 270 and 305 the road might be improved by an extra sleeper. The joints are weak for fast running.

Mile 252/4, Villupuram-Dharmavaram.—Curve is too flat in centre and too sharp at entrance.

Mile 268/10.—North curve wants attention.

Mile 295, Kurabalakota.—Ashpit entrance requires packing up.

The D. O. cast iron sleepers on the Nellore branch break a good deal.

Ballast.—This is generally light on banks but full section of 10 cubic feet in cuttings. From the examination I made, I believe the steel sleepers were almost always first packed with the material of the banks, and when ballast was subsequently put on, the earth under the sleeper remained.

To this, I attribute the rapid corrosion of the steel sleeper, and in my opinion the whole of the Villupuram-Dharmavaram section should be fully ballasted at a cost of about 1 lakh. This will prolong the life of the steel sleepers.

The question of renewals on the Nellore branch would, I think, be best solved by using the D. O. sleepers.

There are 2½ men per mile for maintenance who live in the adjacent villages.

Fencing.—The line is unfenced.

Stations.—Tirukoilur station requires extension of platform and outside booking office and fencing.

Vellore station.—Larger goods shed asked for.

Pakala station.—Staff quarters for Eurasians and Natives are much needed here. The dispensary was not in good order and requires furniture—nor do the latrines appear to be inspected and controlled efficiently by the medical department.

A room for a school should be added to the recreation room now under erection.

Dharmavaram station.—The joint agreement not having been signed has led to some friction between the Southern Mahratta Railway and South Indian Railway regarding watering arrangements. It would be preferable for the two Companies to have all their quarters on opposite sides of the Railway.

Chinnakuntapalli station.—Latrine requires completion.

Mile 330/11.—Trial station opened. Water is not available.

Buttalapuram, Kalikiri and Pulicherla stations require a goods shed.

Nellore station.—The staff quarters are ill-kept and untidy. The dispensary is in an open verandah, and medicine almirahs exposed to rain and dust.

Gudur station.—Traffic ask that the salt siding to the Buckingham Canal be re-opened.

The stations are in good general order and fenced.

At many stations the corrugated iron is painted with Arabic—an Australian patent which reduces the temperature considerably.

Station Machinery.—Signals were in good order, the distant signals are all worked from the points. At Pálár station, south points and signal levers should be placed on top of the cutting from whence the pointsman can see the distant signal.

A wheel lathe, and screwing machine and small tools are very much required at Pákala as well as a lean-to shed to house them in.

The water columns are to be altered on these branches as before mentioned.

The engine shed at Nellore requires a lean-to verandah.

Watering arrangements at mile 321/15, Nellore branch near Gudur station are imperative.

Stores.—The large collection of engineer's stores at Pákala and Dharmavaram should be dealt with as before mentioned.

OOTACAMUND,
12th September 1893.

F. R. UPCOTT,
Consulting Engineer for Railways
and Senior Inspector.

APPENDIX I.—SOUTH INDIAN RAILWAY COMPANY, (LIMITED)—ENGINEER DEPARTMENT.

STATEMENT showing the renewals of Rails for half-year ending 30th June 1893.

		RAILS DISPLACED.									
		Iron.					Steel.				
		68 lb.		40-3 lb.			60 lb.		41 lb.		56 lb.
		24 ft.	21 ft.	18 ft.	15 ft.	Cwt. Lft.	30 ft.	27 ft.	24 ft.	21 ft.	18 ft.
Main Line.	January 1893	69	2	2,540	343	12	17	...	110	16	2
	February "	106	9	2,209	184	26	66	...	321	22	22
	March "	110	2	258	87	29	12	...	340	29	10
	April "	115	2	69	33	2	15	...	4	6	...
	May "	30	2	135	30	2	7	...	...	...	...
	June "	104	4	370	183	2	...	...	...	...	...
	Total	532	21	5,876	810	74	117	1	787	130	34
Sidings.	January 1893	28	2	...	...	5	...	...	...	...	...
	February "	17	...	33	27	10	...	...	1	...	...
	March "	...	...	18	6	3	245	...	...	...	...
	April "	12	2	31	28	4	...	...	...	...	...
	May "	3	1	6	5	...	...	...	...	...	...
	June "	22	1	24	10	4	...	...	...	...	...
	Total	82	7	114	84	20	245	...	1	...	...
Grand Total		614	28	5,990	894	100	362	1	788	139	34

RAILS REPLACED.																													
Iron.												Steel.																	
68 lb.						40 3 lb.						60 lb.						41 lb.						66 lb.					
24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.						
Main Line.																													
January 1893	...	69	2	...	141	84	2	11'	2,437	...	...	...	...	...	...	16	3	...	...	...	...	...	...						
February	...	106	9	...	65	19	1	...	2,110	...	...	...	...	...	...	69	21	3	...	...	...	...	...						
March	...	119	2	...	85	66	16	30'	450	...	...	...	...	...	...	19	14	...	...	...	...	...	...						
April	...	116	2	...	59	27	3	15'	18	...	...	...	...	...	...	2	...	...	...	...	...	...	...						
May	...	39	2	...	132	20	2	7'	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...						
June	...	104	4	27'	370	131	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...						
Total	...	552	21	27'	842	327	20	63'	5,018	...	...	...	...	...	...	109	40	2	...	...	...	...	...						
Sidings.																													
January 1893	...	28	2	...	2	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
February	...	17	...	...	27	12	7	...	...	...	...	...	...	...	...	7	15	3	...	...	...	...	...						
March	...	...	...	...	16	6	3	245'	...	...	...	...	...	...	...	2	3	...	...	...	...	...	...						
April	...	12	3	121'	31	29	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
May	...	3	1	...	6	3	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...						
June	...	22	1	...	24	16	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Total	...	82	7	121'	106	64	21	245'	...	...	...	...	...	...	...	9	20	6	...	...	...	...	...						
Grand Total	...	634	29	143'	948	421	47	308'	5,016	...	...	...	...	...	...	118	60	7	...	...	...	...	...						

	Sleepers Displaced.							Sleepers Replaced.									
	Creo. C.	Creo. P.	Pingda.	Teak of size.	Pot 68 lbs. pairs.	Pot 60 lbs. pairs.	Pot 40 lbs. pairs.	Transverse sleepers.	D and O sleepers.	Creo. C.	Creo. P.	Pingda.	Teak of size.	Pot 60 lbs.	Pot 40 lbs.	Transverse sleepers.	D and O sleepers.
Main Line.																	
January 1893	13,400	...	1,912	57	3	2	6	...	45	439	...	1,323	...	3	13,390	6	45
February "	11,735	...	3,869	145	5	12	4	...	20	300	...	3,313	...	5	11,028	4	29
March "	3,062	...	800	1	31	10	5	...	30	840	...	515	1	31	2,454	6	38
April "	1,243	...	8	...	10	10	3	...	27	591	...	633	...	10	35	2	27
May "	103	1	...	4	10	5	2	4	62	558	1	347	4	10	5	2	62
June "	658	...	24	4	6	28	3	6	43	305	...	270	4	6	24	2	43
Total...	31,000	1	6,519	211	65	67	20	10	232	3,123	1	6,421	9	66	27,626	50	232
Sidings.																	
January 1893	121	...	23	...	1	...	...	...	...	76	...	69	...	1	...	...	...
February "	433	...	12	...	4	...	...	...	...	300	...	145	...	4	...	...	...
March "	467	...	32	4	...	...	...	...	...	461	...	93	4	...	...	...	...
April "	661	...	36	7	9	...	...	...	...	565	...	115	7	30	...	...	...
May "	324	...	16	3	...	...	...	2	...	319	...	21	3	...	...	2	...
June "	214	...	9	3	...	...	...	...	...	214	...	9	3	...	...	...	...
Total...	2,220	...	128	17	14	...	...	2	...	1,890	...	451	17	31	...	...	...
Grand Total...	83,220	1	6,747	224	79	67	20	12	232	5,003	1	6,872	26	96	27,626	20	232

APPENDIX III.

SOUTH INDIAN RAILWAY—ENGINEERING DEPARTMENT.

Statement showing all works completed from January to June 1893.

Item No.	Authority.	Description of work.	Amount sanctioned.	Date of completion.
CAPITAL.			Rs.	
1	Consulting Engineer's No. 1799 of 22-12-91.	Constructing 2 blocks of Europeans and 2 blocks of Native drivers' quarters at Villupuram station.	19,256	31-1-93
2	Do. No. 650 of 30-5-92.	Flooring and pitching the three 40 feet girder bridge at 103/8 mile	2,815	28-2-93
3	Do. No. 955 of 4-8-92.	Constructing an Apothecary's quarter and dispensary at Trichinopoly junction station.	5,266	23-2-93
4	Do. No. 956 of 5-8-92.	Providing home signals at 36* stations.	12,306	31-3-93
5	Do. No. 1270 of 7-10-92.	Providing quarters for running Native drivers and cleaners at Trichinopoly junction station.	1,069	31-3-93
6	Do. No. 1416 of 8-11-92.	Enclosing an additional bay of the existing goods godown at Vellore station to form a room.	252	31-3-93
7	Do. No. 1205 of 26-9-92.	Providing two 4-unit blocks of temporary quarters for guards at Dharmavaram station.	1,076	30-4-93
8	Do. No. 140 of 8-2-93.	Constructing a latrine for Locomotive purposes at Pakala.	1,299	30-4-93
9	Do. No. 1291 of 12-10-92.	Constructing an additional water column, dripwell, drain, and piping at north end of Kadambur station.	2,608	31-5-93
10	Do. No. 1441 of 12-11-92.	Constructing a hut for the driver of the steam pump at Pakala Locomotive well.	613	31-5-93
11	Do. No. 1418 of 8-11-92.	Enclosing two additional bays of 3rd class goods godown at Kadiri station.	551	31-5-93
12	Do. No. 528 of 13-5-93.	Providing additional land for a recreation ground at Pakala station.	184	31-5-93
13	Do. No. 1470 of 15-10-91.	Constructing a shed for sheltering carriages when the present shelter line is converted into run-round at Trichinopoly junction station.	9,897	30-6-93
14	Do. No. 1422 of 8-11-92.	Enclosing a bay of the existing goods godown at Chandragiri station to form a room.	408	30-6-93

* This work is completed on Divisions 1, 2, and 3 and 2½ remains to be done on Division 4 at end of June 1893.

Statement showing all works completed from January to June 1893,—(Continued.)

Item No.	Authority.	Description of work.	Amount sanctioned.	Date of completion.
CAPITAL AND REVENUE.			Rs.	
15	Consulting Engineer's No. 202 of 16-2-92.	Raising 600 ft. of the platform to one foot above rail level at Titte station.	1,309	31-1-93
16	Do. No. 1754 of 14-12-91.	Adding a 3rd class waiting shed at south end of station house at Cuddalore Old Town station.	1,570	31-1-93
17	Do. No. 966 of 9-8-92.	Lengthening through siding at Sātur station.	1,199	31-1-93
18	Do. No. 1334 of 20-10-92.	Lengthening through siding on the south side 516 ft. at Vandalur station.	1,091	31-1-93
19	Do. No. 563 of 10-5-92.	Providing permanent watering arrangements from a well about ½ mile west of Kadambur station.	11,109	23-2-93
20	Do. No. 1536 of 14-12-92.	Providing an additional water column dripwell and drain at Manaparai station.	2,541	28-2-93
21	Do. No. 1156 of 17-8-91.	Lengthening through siding 167 L. yds. at Saidapet station.	1,886	31-3-93
22	Do. No. 841 of 2-7-92.	Lengthening through siding at Kumbakonam station.	1,412	31-3-93
23	Do. No. 1248 of 4-10-92.	Constructing a mortuary at Chingleput station.	1,310	31-3-93
24	Do. No. 1370 of 31-10-92.	Laying a siding for Messrs. Parry & Co. at Tinnevely station.	3,119	31-3-93
25	Do. No. 1311 of 12-9-91.	Lengthening through siding and platform at Kille station.	3,284	30-4-93
26	Do. No. 1579 of 13-12-92.	Extending siding by 187 ft. on north side and on south side 332 ft. at Kadambur station.	1,155	30-4-93
27	G.O. No. 2717-R of 15-11-92.	Erecting a permanent shed for rolling stock at Negapatam.	31,509	31-5-93
28	Consulting Engineer's No. 1562 of 9-12-92.	Extending the lay-bye siding and goods loading bank at Tirukóilúr station.	1,386	30-6-93
REVENUE, NEW MINOR WORKS.				
29	Do. No. 1206 of 26-9-92.	Widening the goods shed platform at Trichinopoly Fort station.	441	31-1-93
30	Do. No. 1362 of 28-10-92.	Widening the passengers' platform at south end of Kumbakonam station.	265	31-1-93
31	Do. No. 1363 of 28-10-92.	Erecting an additional distant semaphore signal at south end of Conjeevaram station.	401	31-1-93

Statement showing all works completed from January to June 1893.—(Continued.)

Item No.	Authority.	Description of work.	Amount sanctioned.	Date of completion.
		REVENUE, NEW &c., (Contd.)	Rs.	
32	Consulting Engineer's No. 1465 of 16-11-92.	Providing a brick drain from new to old weigh-bridge at Negapatam station.	326	31-1-93
33	Do. No. 567 of 10-5-92.	Draining ashpit and turn-table at Tuticorin station.	604	28-2-93
34	Do. No. 1492 of 4-11-92.	Providing a temporary refreshment room and cook house at Chinna Tippasamudram.	291	28-2-93
35	Do. No. 1413 of 30-9-91.	Providing 9-ft. gates in lieu of the existing 6-ft. gate at 124/11 mile.	308	31-3-93
36	Do. No. 404 of 28-3-92.	Furnishing staff quarters at Villupuram station.	875	30-4-93
37	Do. No. 1079 of 31-8-92.	Alterations and additions to existing urinal of the running bungalow at Cuddalore Old Town station.	399	30-4-93
38	Do. No. 1393 of 4-11-92.	Extending by 100 ft. the passengers' platform on the north-east side at Trichinopoly junction.	307	30-4-93
39	Do. No. 1635 of 23-12-92.	Extending gravel and laterite siding at Kumbakonam station.	284	30-4-93
40	Do. No. 147 of 8-2-93.	Converting the refreshment room into sitting and bath room for Officers at Negapatam station.	200	30-4-93
41	Do. No. 1614 of 24-12-92.	Providing a waiting room for 1st and 2nd class passengers by enclosing one bay of the 3rd class waiting shed at Kalahasti station.	394	31-5-93
42	Do. No. 905 of 21-7-92.	Constructing a double 4-ft. span rail covered culvert in the station yard at Tirumangalam.	583	30-6-93
43	Do. No. 1558 of 8-12-92.	Constructing 2 trial masonry tanks for storage of tar at two of the Public Works Inspectors' head quarters on division No. 2	212	30-6-93
44	Do. No. 1604 of 17-12-92.	Lengthening through siding on north side 345 ft. at Dindigul station.	892	30-6-93
45	Do. No. 89 of 25-1-93.	Providing temporary watering arrangements in the Cooum river near Madras.	242	30-6-93
		REVENUE.		
46	Do. No. 328 of 11-3-92.	Constructing a weigh-bridge and house in lieu of existing weigh-bridge at Tuticorin station.	3,293	31-1-93

23RD SEPTEMBER 1893, No. 1241 R, PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

REPORT of inspection of the South Indian Railway (including the Villupuram-Dharmavaram section and the Nellore branch) for the half-year ended 30th June 1893.

No. 279.

Endorsement by the Consulting Engineer for Railways, dated Ootacamund, 21st September 1893.

Submitted for the information of Government and for the submission to the Government of India of 35 copies of the report with the orders passed thereon.

ORDER—dated 23rd September 1893, No. 1241 R., Public Works.

The report of inspection of the South Indian Railway will be communicated to the Agent 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. 1242 R., Public Works, dated 23rd September 1893.]

(True Extract.)

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

To the Agent, South Indian Railway,
through the Consulting Engineer for Railways.

ENDORSEMENT—dated 23rd September 1893, No. 1242 R., Public Works.

Forwarded.

(By Order.)

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

RAILWAY.

Govt. of {1893} Madras.

PUBLIC WORKS.

Dated September 23rd.

Recd.

Encl.

G.O., 23rd September 1893,
Nos. 1241-1242 R.

SEPTEMBER.

Inspection Report.

Orders on the—of the South Indian Railway (including the Villupuram-Dharmavaram section and Nellore branch) for the half-year ended 30th June 1893.

SOUTH INDIAN RAILWAY.

METRE GAUGE 3' 3 1/4".

Total Miles 1,051.

Main Line and Branches.
Erode Branch.
Villupuram-Dharmavaram Branch.
Pakala-Nellore Branch.

INSPECTION REPORT BY F. R. UPCOTT, GOVERNMENT INSPECTOR OF RAILWAYS, MADRAS, FOR THE HALF-YEAR ENDING 30th JUNE 1893.

The inspection was carried out between 1st and 15th August. The Agent, Heads of Departments and district officers were present.

The condition of the line is fairly satisfactory except on the Nellore branch where the rapid decay of the steel sleepers requires very careful attention.

The catch-siding at Ammayanayakanur should be ~~at once~~ put in.

In view of the increased loads sanctioned for certain wagon stock, the sizes and condition of their axles should be carefully examined, as also the wheels, &c.

MAIN LINE AND ERODE BRANCH.

Banks and Cuttings were generally in good order. On the old section of the line, the banks were originally 12 feet wide; they have been gradually enlarged to 14 feet while the width of cuttings remains at 16 feet.

Miles 103/12 and 240/14.—Some pitching required to prevent erosion of bank.

Bridges.—Karanguli bridge 49/2.—The long timbers are in good order.

At mile 54/6 the 30-foot girder bridge ~~abuts~~ ^{leans} inwards a few inches and the wing walls are cracked. There are timber struts between the abutments. I understand this bridge has been in this condition many years.

The 100-foot girders on the (Toondien, Punniar, Gudalur, Old Coleroon, Madagu and Vellaru require overhead bracing in whole ~~and~~ in part. The bracing should be put in to bring them up to the 12 1/2 feet standard, now ordered by Government of India and an estimate should be forwarded to raise all existing bracing to this height.

The ~~long~~ beams of the Punniar bridge require attention. The girders have a tendency to move sideways, there being no high flanges on the bedplates to check this. A block of wood should be inserted between the roller frame and pier wall.

Same remarks apply to Gudalur bridge.

At mile 168 bridge—1 by 25 feet.—Wing wall cracked should be strutted and examined.

It would be a good thing for plate girders of 40 feet and 60 feet span if camber plates were rivetted on for the cross sleepers.

Mile 239/14.—Culvert requires face wall rebuilt.

Miles 237 to 235.—Iron bed plates should be substituted for the wooden ones under the continuous 30-foot girders.

Mile 373/8—9 by 30 feet.—The wood sleepers are unnecessarily large. The T iron cross beams supporting the old gangway might be removed.

Mile 442—2 by 30 feet near Tinnevely.—Retimbering being done piecemeal. This is not desirable as the difference of heights necessitates packing pieces under bridge sleepers which are prohibited.

Mile 296½, Amravati bridge—20 by 50 feet.—The rails should be laid in the centre of the bridge. One timber here requires renewing.

The painting of the girders is fairly maintained but some of the older girders which have been tarred should be properly scraped before a fresh coat is put on.

Permanent Way.—The 50-lb. rail on cast iron pot sleepers is now laid as under:—

Madras, 0 to mile 323.

342 to „ 367.

425 to „ 444.

56 to 74, Arkonam branch.

257 to 266, Negapatam branch.

This road is generally in good running order. In some parts 6 pots per rail have tie bars and 3 pots have none. From 215 to 255 the joints are rather slack, the renewals progress at an average rate of 5 miles per month.

The joints of the road Conjeeveram to Chingleput, 40-lb. F. F. rails on wood sleepers were ~~run~~ down. The insertion of three pingadu sleepers in this and other lengths is practically completed. It would have been better had the old sleepers been allowed to remain.

Villupuram, mile 100 to Pondicherry, mile 122, road is 40-lb. F. F. rails on wood sleepers and is suited for low sheds and light traffic.

The road from 323 to 342 and 367 to 425 and the Tinnevely branch is also of 40-lb. rails on wood sleepers with 3 pingadu sleepers inserted at joints and in the middle of rail.

It is in fair condition except near mile 374 which is not as good as the rest.

Also miles 242-243, Negapatam branch, some wooden keys were loose and the pot sleepers were not at right angles to the line.

The Erode branch, Miles 250 to 236, is of 68-lb. rails on cast iron pots; these rails are a good deal worn on the outer edge possibly from excess of ~~in~~ in the ~~chain~~, they are 21 feet long and have 4 tied and 3 untied pot sleepers. In these latter there is no hole for a tie bar.

Ballast is of full section and varying material, mostly sand.

There are 2½ maintenance men per mile. They live in the adjacent villages.

Level crossings are in fair order.

Fencing is continuous and in good order.

Stations—Madras, Beach.—Some land is required from Harbour Trust to erect a small booking office.

Egmore.—When the new bogie stock is running, a 500 feet examining pit will be needed here.

St. Thomas' Mount.—Platform is too narrow and short, and a siding should be laid in.

Conjeeveram.—The station house shows no further settlement.

Padalam.—An assistant stationmaster's house is asked for.

Perambair.—Inhabitants complain of want of a platform. The earth should be raised to the rail level till passenger traffic is larger at this and Kalligudi station.

Villupuram.—Addition to engine shed and extension of loading platform wanted.

Cuddalore, New Town.—The traffic department ask for an extension of waiting shed and parcels office and new latrine.

Chedumbaram.—A large pilgrim traffic here requires additional accommodation for them.

Mayaveram.—The island platform here was only made 36 feet wide; this is too narrow to admit of a future station being built thereon without infringing standard dimensions.

Tanjore.—This station needs enlargement but must wait till funds are available. The immediate and reasonable requirements of the Locomotive department are additional ash pits.

Negapatam.—A comprehensive plan should be sent up showing what are the present requirements for staff quarters, &c.

As regards the harbour, opinions vary as to the best way of keeping it open. ~~The best solution would be to send down an expert to report on it.~~ *it is unlikely that anything can be done for want of funds.*

Mile 222.—A deputation waited on Agent to ask for a station here.

Ammayanayakanur.—Native first and second class passengers should have a waiting room here. A catch-siding beyond shunting limits is required at the commencement of the 1 in 100 grade.

Madura.—A weigh-bridge and some staff quarters are needed.

Trichinopoly.—A third bay to engine shed is required.

Tuticorin.—The second level crossing gate on the salt siding requires widening. The Municipality will possibly pay for this.

An extension of the railway to the new pier was urged by the B. I. S. N. Agent. This question should be discussed by a General Committee.

Stations generally.—The extension of the sidings and standard length is still proceeding.

The stations are generally neat and clean and properly fenced.

The Postal department might be asked to paint their letter cans and the railway should fix them up properly.

The Refreshment rooms should have a complaint-book.

Station Machinery.—The signals were all in order except the north distant signal at Kalligudi.

The distant signals are all worked from the points.

Rule 13 in the working Time Table which lays down that the home signal is not for the drivers' guidance, should be at once altered.

4
The stop blocks on the main sidings seem to me to be a source of danger rather than safety. Wagons should not as a rule be allowed to stand on the main siding. Also the three throw points might be gradually eliminated.

The old pattern water cranes, infringe standard dimensions—they are to be altered by an additional cast iron piece between the column standard and revolving arm to raise it to clear the wagons and bringing the handle of the valve in a line with the arm to the back of the column standard.

Watering arrangements.—These are defective at Egmore where a steam pump and well is to be erected near the Coom, and the present tank raised to 30 feet at Padalam, mile 43, where complete water station is needed.

Tanjore.—Where a steam pump is needed and raising of the present tank.

At mile 381, where a trial well should be put down.

At mile 434, to supply Tataparai station.

And at Trichinopoly where the present temporary supply waits the completion of the permanent water works undertaken for the Municipality.

Workshops.—In order to meet the repairs to rolling stock a new boiler shop, paint shop and foundry are much wanted at Negapatam.

The present store building might be used for the boiler shop and the stores transferred to a new building.

The Locomotive Superintendent's office is also cramped and the drawing office quite inadequate for the purpose.

Until these extensions are made the repairs and renewals to the rolling stock must be hampered. The matter has been urged for many years.

Stores.—The accumulation of miscellaneous engineering stores at Trichinopoly is very large. Some appear under the custody of General Store department, and some under the engineers—and these are again subdivided into those belonging to the main line, branches and construction districts.

Economy would result by a proper stocktaking of the entire engineering stores of the line to be afterwards examined by a district officer's Committee and dealt with by sale or otherwise.

Shops—Engineering.—These at Trichinopoly have served their purpose during the construction of the lines undertaken by the South Indian Railway and might with advantage be reduced and the stores therein treated as abovementioned.

Rolling-stock.—The progress of renewals and repairs to the engines and rolling stock is as under:—

from Jan'y to June
10 of 0 class locos & tenders & wheels coupled
4 composite carriages
17 ordinary trucks from the Madras Ry.

The breaking of axles and parting of tires from wheels calls for attention; they are as under:—

3 axles broken
2 loose tyres

One pair of wheels was in the Negapatam shops that had been running for a short time. The tyre of one wheel being quite loose on the wheel; this was of a type

30 ton covered goods wagons
20 ton side van bogie wagons
1 oil tank

*The Locomotive Superintendent reports
this due to bad manufacture by the
English Contractor*
in which the tyre after being shrunk on to the wheel is closed by a dovetailed ring. It is not established whether it came out like this from home or became loose subsequently. The Locomotive Superintendent will take this matter up.

Jones' couplings are being fitted to the stock as under:—

216 between Jan'y & June
and 29 vehicles were fitted with side chains

At Tinnevely one covered goods marked to carry 6 tons—tare 3-12 was weighed and found 9-14 being an overload of 2 cwt.

In view of the recent sanction to increase the loads on certain goods vehicles, great attention should be given to prevent overloading.

There are no break down trains on this Railway, nor are the ambulance carriages marked with a red cross. The Agent is requested to take these matters up.

The carriages reserved for Native women were found to be provided with efficient latrine accommodation and clean.

VILUPCHAM-DHARMAVARAM AND NELLORE BRANCH.

MILEAGE 389 GAOE 3' 31"

Banks and Cuttings.—were generally of full standard width in good general section and repair; the grass is not fully grown on the bank slopes.

Mile 203/10.—Pitching required here to guard against scour.

Mile 232 and mile 286/8.—Bank requires raising.

Mile 295/17.—Requires intercepting drain or level culvert to guard against a wash out.

On the length between Renigunta and Nellore the banks were being raised.

Bridges.—The girder bedstones of many of the bridges are shaken and the joints should be raked out and filled with neat Portland cement.

Mile 131/10, Turungi bridge—1 by 120 feet and 8 by 40 feet.—Bedstones shaken.

Mile 158, Cheyair bridge, 5 by 120 feet.—Some cross sleepers require binding at ends with hoop iron.

Mile 193/8, Palár bridge, 13 by 150 feet.—Some timbers require binding at ends and the holding down bolts should be cut off, bedstones require grouting.

Mile 224/3—6 by 60 feet and 2 by 40 feet.—Some rivets missing.

Mile 374/3, Chittavatti bridge, 13 by 60 feet.—Bedstones shaken, require grouting. Several fish bolts loose; timber only fair.

Mile 370/8—3 by 60 feet and mile 369/3—1 by 60 feet and at mile 366/4—1 by 40 feet.—Footway wanted on one span.

In this length of line there are several 25 feet spans the upper edge of whose top booms clear cowcatcher by 6 inches only. The line should be raised.

Mile 318/8—Papagiri bridge, 8 by 60 feet.—Bedstones shaken and many fish bolts have been bent by a derailed wagon; they should be replaced.

Mile 308⁵/5 by 60 feet—Buttapapuram bridge.—Angle knees are not close to longitudinal timbers.

Mile 279/3—8 by 60 feet—Continuous girders, hook bolts require squaring. Sleepers have been much damaged by permanent way men—and have not been tarred underneath.

Mile 262/3—Piler bridge—7 by 60 feet.—2 girders have 4 rivets out in bottom flange. The ends of some of the horizontal rail timbers require bolting to prevent splitting. Former reports draw attention to the vertical cross bracing being bent, but as this bridge has horizontal diagonal bracing on bottom boom and cross girders rivetted on top boom, I do not think any movement can take place. Two or three of the vertical cross bracing only need be cut and rivetted.

A centre plank should be provided on all single and double 25 feet and 40 feet to enable the road men to easily tighten up fish bolts, &c.

Mile 242/7—5 by 40 feet.—Timbers require ends bound.

Mile 254/6, ^{a/}Barmavaram bridge—3 by 120 feet.—Top boom requires painting inside.

Mile 269/8, Renigunta bridge over Madras Railway.—The wood bedplate of the triple 40 feet supporting the main girders should be covered with sheet iron against fire.

Mile 276/6.—New 12-feet bridge is nearly ready. The Chief Engineer will open this.

On many of the 40-feet bridges the cowcatcher of engine is too close to the side refuge planks; they should be put back.

Permanent Way.—The Villupuram-Dharmavaram branch is laid with 41-lb. steel rails on steel sleepers with the exception of 27 miles laid with 40-lb. iron rails on steel sleepers, this road has been in work since 1892.

The Nellore branch is of 41-lb. steel rails on steel sleepers, and also the same class rail on D. O. cast iron sleepers. Most of this line was opened in 1887.

The condition of the steel sleepers demands great attention.

The road was opened out at several places on Nellore branch.

Mile 334.—Five steel sleepers had been taken out. At one place after 6 years wear three were absolutely useless and two were not fit for the main line.

Mile 330.—Opened road and found rail ~~slut~~ on sleeper bent down about $\frac{1}{4}$ inch and keys loose and edges of sleepers rusted away.

Mile 325.—Five sleepers taken out of road at one place after 6 years were corroded and split at rail ~~slut~~ ^{seat}.

Mile 320.—8 steel sleepers had been removed at an unknown date, they were quite useless.

At Chittoor on the Villupuram-Dharmavaram branch a length of road was opened and the sleepers and keys were found to be much rusted although only in road for 3 $\frac{1}{2}$ years. Chief Engineer has arranged to have a number taken out cleaned, weighed and marked and put back.

Mile 256/4, Villupuram-Dharmavaram.—Road opened and found in good order.

^uThe minor defects requiring attention on the Villupuram-Dharmavaram branch, ^{are as follows}

Mile 159.—Wants straightening and packing and on many curves the super-elevation is not run out on the straight sufficiently.

On the gradients between miles 270 and 306 the road might be improved by an extra sleeper. The joints are weak for fast running.

Mile 252/4, Villupuram-Dharmavaram.—Curve is too flat in centre and too sharp at entrance.

Mile 268/10.—North curve wants attention.

^{9/}Mile 275, Kurabalakota.—Ashpit entrance requires packing up.

The D. O. cast iron sleepers on the Nellore branch break a good deal.

Ballast.—This is generally light on banks but full section of 10 cubic feet in cuttings. From the examination I made, I believe, the steel sleepers were almost always first packed with the material of the banks and when ballast was subsequently put on the earth under the sleeper remained.

To this, I attribute the rapid corrosion of the steel sleeper, and in my opinion the whole of the Villupuram-Dharmavaram section should be fully ballasted at a cost of about 1 lakh. This will prolong the life of the steel sleepers.

The question of renewals on the Nellore branch would, I think, be best solved by using the D. O. sleepers.

There are 2 $\frac{1}{2}$ men per mile for maintenance who live in the adjacent villages.

Fencing.—The line is unfenced.

Stations.—Tirukoilur station requires extension of platform and outside booking office and fencing.

⁼ Vellore station.—Larger goods shed asked for.

Pakala station.—Staff quarters for Eurasians and Natives are much needed here. The dispensary was not in good order and requires furniture—nor do the latrines appear to be inspected and controlled efficiently by the medical department.

A room for a school should be added to the recreation room now under erection.

Dharmavaram station.—The joint agreement not having been signed has led to some friction between the Southern Mahratta Railway and South Indian Railway ^{regarding} watering arrangements. It would be preferable, for the two Companies to have all their ^{all} ~~on~~ opposite sides of the Railway.

^{e/} Chinnakuntapalle station.—Latrine ^{all} require completion.

Mile 330/11.—Trial station opened. Water is not available.

^u ~~Batalapuram~~, Kalikiri and ^u ~~Pilipparla~~ stations require a goods shed.

Nellore station.—The staff quarters are ill-kept and untidy. The dispensary is in an open verandah, and medicine almirahs exposed to rain and dust.

^u **Gudur station.**—Traffic ask that the salt siding to the Buckingham Canal be re-opened.

The stations are in general good order and fenced.

At many stations the corrugated iron is painted with arabic—an Australian practise which reduces the temperature considerably.

Station Machinery.—Signals were in good order, the distant signals are all worked from the points at Palar station, south points and signal levers should be placed on top of the cutting from whence the pointsman can see the distant signal.

The water columns are to be altered on these branches as before mentioned. The engine shed at Nellore requires a lean-to verandah.

Watering arrangements.—At mile 321/15, Nellore branch near Gudur station are imperative.

A wheel lathe, and screwing machine and small tools are very much required at Pakala as well as a lean-to shed to house them in.

Stores.—The large collection of engineer's stores at Pakala and Dharmavaram should be dealt with as before mentioned.

OOTACAMUND,
12 Sept. 1893.

F. R. UPCOTT,
Consulting Engineer for Railways
and Senior Inspector

APPENDIX I.—SOUTH INDIAN RAILWAY COMPANY, (LIMITED)—ENGINEER
STATEMENT showing the renewals of Rails for half-year ending 30th J

		RAILS DISPLACED.											
		Iron.											
		68 lb.			40 3 lb.			50 lb.					
		24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	30 ft.	27 ft.	24 ft.	21 ft.
Main Line.													
January 1893	...	...	...	...	...	...	...	...	...	...	...	...	...
February "	...	...	60	2	...	2,340	343	12	17'	...	...	...	...
March "	...	...	106	9	...	2,209	184	28	46'	...	...	...	...
April "	...	...	119	2	...	253	87	29	12'	...	...	...	...
May "	...	...	115	2	...	69	33	3	15'	...	...	...	...
June "	...	...	39	2	...	135	30	2	7'	...	...	...	...
Total	...	104	4	27'	...	770	133	2	...	...	...	...	...
Branches.													
January 1893	...	...	...	...	...	...	...	...	...	...	...	...	...
February "	...	...	28	2	...	2	...	6	...	...	...	...	...
March "	...	...	17	...	...	33	27	10	...	...	...	...	...
April "	...	...	...	...	...	18	8	3	245'	...	...	...	...
May "	...	...	12	3	121'	31	28	4	...	...	...	...	...
June "	...	...	3	1	...	6	5	...	...	...	...	...	...
Total	...	22	1	...	...	24	16	4	...	...	...	...	...
Grand Total	...	82	7	121'	...	114	84	20	...	...	...	...	...
		634	28	148'	...	5,920	694	...	...	...	...	...	...

APPENDIX II.—SOUTH INDIAN RAILWAY COMPANY, (LIMITED)—ENGLA
STATEMENT showing the renewals of Sleepers for the half-year ending 30th

	SLEEPERS DISPLACED.												
	Creo. 6'.	Creo. 9'.	Pingda.	Teak n f size.	Pot 68 lbs. pairs.	Pot 60 lbs. pairs.	Pot 40 lbs. pairs.	Transverse steel sleep- ers.	D and O sleepers.	Creo. 6'.	Creo. 9'.	Pingda.	
Main Line.													
January 1903	13,400		1,912	57	3	2	3		45	438		1,323	
February ..	11,735		3,809	145	6	12	4		20	300		3,313	
March ..	3,062		806	1	31	10	5		36	840		515	
April ..	1,242		8		10	10	2		27	591		633	
May ..	903	1		4	10	8	2	4	62	656	1	347	
June ..	658		24	4	6	23	2	6	43	398		230	
Total ..	31,000	1	6,619	211	66	67	20	10	232	3,123	1	6,421	
Sidings.													
January 1903	121		23		1					76		68	
February ..	433		12		4					300		145	
March ..	467		32	4						401		93	
April ..	661		38	7	9					865		115	
May ..	324		16	3				2		819		21	
June ..	214		9	3						214			
Total ..	2,220		128	17	14								
Grand Total ..	33,220	1	6,747	228	79	67	20	12	232				

CHIEF ENGINEER'S OFFICE,
Trichinopoly, 8th August 1893.

CHIEF ENGINEER'S OFFICE,
Trichinopoly, 8th August 1893.

	SLEEPERS DISPLACED.												
	Creo. 6'.	Creo. 9'.	Pingda.	Teak n f size.	Pot 68 lbs. pairs.	Pot 60 lbs. pairs.	Pot 40 lbs. pairs.	Transverse steel sleep- ers.	D and O sleepers.	Creo. 6'.	Creo. 9'.	Pingda.	
Main Line.													
January 1903	141	64	141	64	141	64	141	64	141	64	141	64	141
February ..	119	65	119	65	119	65	119	65	119	65	119	65	119
March ..	115	69	115	69	115	69	115	69	115	69	115	69	115
April ..	89	131	89	131	89	131	89	131	89	131	89	131	89
May ..	104	106	104	106	104	106	104	106	104	106	104	106	104
June ..	653	21	653	21	653	21	653	21	653	21	653	21	653
Total ..	653	21	653	21	653	21	653	21	653	21	653	21	653
Sidings.													
January 1903	141	64	141	64	141	64	141	64	141	64	141	64	141
February ..	119	65	119	65	119	65	119	65	119	65	119	65	119
March ..	115	69	115	69	115	69	115	69	115	69	115	69	115
April ..	89	131	89	131	89	131	89	131	89	131	89	131	89
May ..	104	106	104	106	104	106	104	106	104	106	104	106	104
June ..	653	21	653	21	653	21	653	21	653	21	653	21	653
Total ..	653	21	653	21	653	21	653	21	653	21	653	21	653

STATEMENT showing the renewals of Rail.

	Engineer's 2-12-91.	Constructing 2 blocks of Native drivers' quarters at Villupuram station.		
	No. 656 of	Flooring and pitching the three 40 feet girder bridge at 103/8 mile	2,815	29-2-93
	955 of	Constructing an Apothecary's quarter and dispensary at Trichinopoly junction station.	5,266	29-2-93
	pract. 956 of	Providing home signals at 36* stations.	12,306	31-3-93
	1170 of	Providing quarters for running Native drivers and cleaners at Trichinopoly junction station.	1,009	31-3-93
	Do. No. 1416 of 8-11-92.	Enclosing an additional bay of the existing goods godown at Vellore station to form a room.	252	31-3-93
7	Do. No. 1205 of 26-9-92.	Providing two 4-unit blocks of temporary quarters for guards at Dharmavaram station.	1,076	30-4-93
8	Do. No. 146 of 8-2-93.	Constructing a latrine for Locomotive purposes at Pakala.	1,299	30-4-93
9	Do. No. 1291 of 12-10-92.	Constructing an additional water column, dripwell, drain, and piping at north end of Kadambur station.	2,808	31-5-93
10	Do. No. 1441 of 12-11-92.	Constructing a hut for the driver of the steam pump at Pakala Locomotive well.	613	31-5-93
11	Do. No. 1418 of 8-11-92.	Enclosing two additional bays of 3rd class goods godown at Kadambur station.	551	31-5-93
12	Do. No. 528 of 13-5-92.	Providing additional land for a recreation ground at Pakala station.	184	31-5-93
13	Do. No. 1470 of 15-10-91.	Constructing a shed for sheltering carriages when the present shelter line is converted into run-round at Trichinopoly junction station.	9,897	30-6-93
14	Do. No. 1422 of 8-11-92.	Enclosing a bay of the existing goods godown at Chandragiri station to form a room.	408	30-6-93

* This work is completed on Divisions 1, 2, and 3 and 2* remains to be done on Division 4 at end of June 1893.

Statement showing all works completed from January to June, 1893.—(Continued)

23rd SEPTEMBER 1893, No. 124/R, PUBLIC WORKS.

Item No.	Authority.	Description of work.	Amount sanctioned.	Date completed.
		REVENUE, NEW &c., (Contd.)	Rs.	
32	Consulting Engineer's No. 1465 of 16-11-92.	Providing a brick drain from new to old weigh bridge at Negapatam station.	326	31-1-93
33	Do. No. 567 of 10-5-92.	Draining ashpit and turn-table at Tuticorin station.	004	28-2-93
34	Do. No. 1892 of 4-11-92.	Providing a temporary refreshment room and cook house at Chinna Tippasamudram.	291	28-2-93
35	Do. No. 1413 of 30-9-91.	Providing 9-ft. gates in lieu of the existing 8-ft. gate at 124/11 mile.	308	31-3-93
36	Do. No. 404 of 28-3-92.	Furnishing staff quarters at Villupuram station.	875	10-4-93
37	Do. No. 1079 of 31-8-92.	Alterations and additions to existing urinal of the running bungalow at Cuddalore, Old Town station.	399	30-4-93
38	Do. No. 1393 of 4-11-92.	Extending by 100 ft. the passengers' platform on the north-east side at Trichinopoly junction.	307	30-4-93
39	Do. No. 1635 of 23-12-92.	Extending gravel and laterite siding at Kumbakonam station.	284	30-4-93
40	Do. No. 147 of 8-2-93.	Converting the refreshment room into sitting and bath room for Officer's at Negapatam station.	200	30-4-93
41	Do. No. 1644 of 24-12-92	Providing a waiting room for 1st and 2nd class passengers by enclosing one bay of the 3rd class waiting shed at Kalahasti station.	394	31-5-93
42	Do. No. 903 of 21-7-92.	Constructing a double 4-ft. span rail covered culvert in the station yard at Tirumangalam.	563	30-6-93
43	Do. No. 1558 of 8-12-92.	Constructing 2 trial masonry tanks for storage of tar at 2 of the Public Works Inspector's head quarters on division No. 2	212	30-6-93
44	Do. No. 1604 of 17-12-92.	Lengthening through siding on north side 345 ft. at Dindigul station.	892	30-6-93
45	Do. No. 89 of 25-1-93.	Providing temporary watering arrangements in the Cooum river near Madras.	242	30-6-93
		REVENUE.		
46	Do. No. 328 of 11-3-92.	Constructing a weigh-bridge and house in lieu of existing weigh-bridge at Tuticorin station.	3,293	31

CHIEF ENGINEER'S OFFICE,
Trichinopoly, 9th August 1893.FRANCIS F. SM
for Offg. Chief

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

REPORT inspection of the South Indian Railway (including the Villupuram-Dharmavaram section and the Nellore branch) for the half-year ended 30th June 1893.

No. 279

Endorsement by the Consulting Engineer for Railways, dated Ootacamund, 21st September 1893.

Submitted for the information of Government and for the submission to the Government of India of 35 copies of the report with the orders passed thereon.

ORDER—dated 23rd September 1893, No. 124/R, Public Works.

The report of inspection of the South Indian Railway will be communicated to the Agent 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. 124/R, Public Works, dated 23rd September, 1893.]

(True Extract.)

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

To the Agent, (through the Consulting Engineer for Railways.)

ENDORSEMENT—dated 23rd September 1893, No. 1242 R., Public Works.

Forwarded.

(By Order.)

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

RAILWAY.

Govt. of {1893} Madras.
PUBLIC WORKS.

SOUTH INDIAN RAILWAY.

METRE GAUGE 3' 3 1/2".

Total Miles 1,051. { Main Line and Branches.
Erode Branch.
Villupuram-Dharmavaram Branch.
Pakala-Nellore Branch.

INSPECTION REPORT BY MR. F. R. UPCOTT, GOVERNMENT INSPECTOR
OF RAILWAYS, MADRAS, FOR THE HALF-YEAR ENDING
30th JUNE 1893.

The inspection was carried out between 1st and 15th August. The Agent, Heads of Departments and district officers were present.

The condition of the line is fairly satisfactory except on the Nellore branch where the rapid decay of the steel sleepers requires very careful attention.

The catch-siding at Ammayanayakanur should be put in.

In view of the increased loads sanctioned for certain wagon stock, the sizes and condition of their axles should be carefully examined, as also the wheels, &c.

MAIN LINE AND ERODE BRANCH.

Banks and Cuttings were generally in good order. On the old sections of the line, the banks were originally 12 feet wide; they have been gradually enlarged to 14 feet while the width of cuttings remains at 16 feet.

Miles 103/12 and 240/14.—Some pitching required to prevent erosion of bank.

Bridges.—Karanguli bridge 49/2.—The longitudinal timbers are in good order.

At mile 54/6 the 30-foot girder bridge abuts lean inwards a few inches and the wing walls are cracked. There are timber struts between the abutments. I understand this bridge has been in this condition many years.

The 100-foot girders on the Tondiar, Punniar, Gudalur, Old Coleroon, Madagu and Vellaru require overhead bracing in whole or in part. The bracing should be put in to bring them up to the 12 1/2 feet standard, now ordered by Government of India and an estimate should be forwarded to raise all existing bracing to this height.

The longitudinal beams of the Punniar bridge require attention. The girders have a tendency to move sideways, there being no high flanges on the bed plates to check this. A block of wood should be inserted between the roller frame and pier wall.

Same remarks apply to Gudalur bridge.

At mile 168 bridge—1 by 25 feet.—Wing wall cracked should be strutted and examined.

It would be a good thing for plate girders of 40 feet and 60 feet span if camber plates were rivetted on for the cross sleepers.

Dated September th.

Recd.

Encl.

G.O. 23rd September 1893, No. 1241R

SEPTEMBER.

*Received proof of
Inspection Report
S. I. Railway for
approval.*

Inspection Report.

Orders on the—of the South Indian Railway (including the Villupuram-Dharmavaram section and Nellore branch) for the half-year ended 30th June 1893.

*may now be finally
printed
14/9*

Mile 239/14.—Culvert requires face wall rebuilt.

Miles 232 to 235.—Iron bed plates should be substituted for the wooden ones under the continuous 30-foot girders.

Mile 373/8—9 by 30 feet.—The wood sleepers are unnecessarily large. The iron cross beams supporting the old gangway might be removed.

Mile 442—2 by 30 feet near Tinnevely.—Re-timbering being done piecemeal. This is not desirable as the difference of heights necessitates packing pieces under bridge sleepers which are prohibited.

Mile 296½, Amravati bridge—20 by 50 feet.—The rails should be laid in the centre of the bridge. One timber here requires renewing.

The painting of the girders is fairly maintained but some of the older girders which have been tarred should be properly scraped before a fresh coat is put on.

Permanent Way.—The 50-lb. rail on cast iron pot sleepers is now laid as under:—

Madras, 0 to mile 323.

342 to „ 367.

425 to „ 444.

56 to 74, Arkonam branch.

257 to 266, Negapatam branch.

This road is generally in good running order. In some parts 6 pots per rail have tie bars and 3 pots have none. From 215 to 255 the joints are rather slack, the renewals progress at an average rate of 5 miles per month.

The joints of the road Conjeeveram to Chingleput, 40-lb. F. F. rails on wood sleepers were rather down. The insertion of three pingadu sleepers in this and other lengths is practically completed. It would have been better had the old sleepers been allowed to remain.

9 miles Villupuram, mile 100 to Pondicherry, mile 122, road is 40-lb. F. F. rails on wood sleepers and is suited for low speed and light traffic.

The road from 323 to 342 and 367 to 425 and the Tinnevely branch is also of 40-lb. rails on wood sleepers with 3 pingadu sleepers inserted at joints and in the middle of rail.

It is in fair condition except near mile 374 which is not as good as the rest.

Also miles 242-243, Negapatam branch, some wooden keys were loose and the pot sleepers were not at right angles to the line.

The Erode branch, miles 250 to 236, is of 63-lb. rails on cast iron pots; these rails are a good deal worn on the outer edge possibly from excess of cant in the chair, they are 21 feet long and have 4 tied and 3 untied pot sleepers. In these latter there is no hole for a tie bar.

Ballast is of full section and varying material mostly sand.

There are 2½ maintenance men per mile. They live in the adjacent villages.

Level crossings are in fair order.

Fencing is continuous and in good order.

Stations—Madras, Beach.—Some land is required from Harbour Trust to erect a small booking office.

Egmore.—When the new bogie stock is running, a 500 feet examining pit will be needed here.

St. Thomas' Mount.—Platform is too narrow and short, and a siding should be laid in.

Conjeeveram.—The station house shows no further settlement.

Padalam.—An assistant station master's house is asked for.

Perambair.—Inhabitants complain of want of a platform. The earth should be raised to the rail level till passenger traffic is larger at this and Kalligudi station.

Villupuram.—Addition to engine shed and extension of loading platform wanted.

Cuddalore, New Town.—The traffic department ask for an extension of waiting shed and parcels office and new latrine.

Ohedambaram.—A large pilgrim traffic here requires additional accommodation for them.

Mayaveram.—The island platform here was only made 36 feet wide; this is too narrow to admit of a future station being built thereon without infringing standard dimensions.

Tanjore.—This station needs enlargement but must wait till funds are available. The immediate and reasonable requirements of the Locomotive department are additional ashpits.

Negapatam.—A comprehensive plan should be sent up showing what are the present requirements for staff quarters, &c.

As regards the harbour, opinions vary as to the best way of keeping it open. It is unlikely that anything can be done for want of funds.

Mile 222.—A deputation waited on Agent to ask for a station here.

Ammayanayakanur.—Native first and second class passengers should have a waiting room here. A catch-siding beyond shunting limits is required at the commencement of the 1 in 100 grade.

Madura.—A weigh-bridge and some staff quarters are needed.

Trichinopoly.—A third bay to engine shed is required.

Tuticorin.—The second level crossing gate on the salt siding requires widening. The Municipality will possibly pay for this.

An extension of the railway to the new pier was urged by the B. I. S. N. Agent. This question should be discussed by a General Committee.

Stations generally.—The extension of the sidings to standard length is still proceeding.

The stations are generally neat and clean and properly fenced.

The Postal department might be asked to paint their letter cans and the railway should fix them up properly.

The Refreshment rooms should have a complaint-book.

Station Machinery.—The signals were all in order except the north distant signal at Kalligudi.

The distant signals are all worked from the points.

Rule 13 in the working Time Table which lays down that the home signal is not for the drivers' guidance, should be at once altered.

The stop blocks on the main sidings seem to me to be a source of danger rather than safety. Wagons should not as a rule be allowed to stand on the main siding. Also the three throw points might be gradually eliminated.

The old pattern water cranes infringe standard dimensions—they are to be altered by an additional cast iron piece between the column standard and revolving arm to raise it to clear the wagons and bringing the handle of the valve in a line with the arm to the back of the column standard.

Watering arrangements.—These are defective at Egmore where a steam pump and well is to be erected near the Cooum, and the present tank raised to 30 feet at Padalam, mile 43, where complete water station is needed.

Tanjore.—Where a steam pump is needed and raising of the present tank.

At mile 381, where a trial well should be put down.

At mile 434, to supply Tataparai station.

And at Trichinopoly where the present temporary supply waits the completion of the permanent water works undertaken by the Municipality.

Workshops.—In order to meet the repairs to rolling stock a new boiler shop, paint shop and foundry are much wanted at Negapatam.

The present store building might be used for the boiler shop and the stores transferred to a new building.

The Locomotive Superintendent's office is also cramped and the drawing office quite inadequate for the purpose.

Until these extensions are made the repairs and renewals to the rolling stock must be hampered. The matter has been urged for many years.

Stores.—The accumulation of miscellaneous engineering stores at Trichinopoly is very large. Some appear under the custody of General Store department, and some under the engineers—and these are again subdivided into those belonging to the main line, branches and construction districts.

Economy would result by a proper stock-taking of the entire engineering stores of the line to be afterwards examined by a district officer's Committee and dealt with by sale or otherwise.

Shops—Engineering.—These at Trichinopoly have served their purpose during the construction of the lines undertaken by the South Indian Railway and might with advantage be reduced and the stores therein treated as abovementioned.

Rolling-stock.—The progress of renewals from January to June to the engines and rolling stock is as under:—

10 of O class locomotives and tenders 4 wheels coupled.

4 composite carriages.

17 ordinary thirds from the Madras Railway.

30 iron covered goods wagons.

20 low side iron bogie wagons.

1 oil tank.

The breaking of axles and parting of tires from wheels calls for attention; they are as under:—

3 axles broken.

2 loose tyres.

One pair of wheels was in the Negapatam shops that had been running for a short time. The tire of one being quite loose on the wheel; this was of a type

in which the tire after being shrunk on to the wheel is closed by a dovetailed ring. The Locomotive Superintendent reports this due to bad manufacture by the English contractor.

Jones' couplings are being fitted to the stock as under, between January and June—

216 vehicles and 29 vehicles were fitted with side chains.

At Tinnevely one covered goods marked to carry 6 tons—tare 3-12 was weighed and found 9-14 being an overload of 2 cwt.

In view of the recent sanction to increase the loads on certain goods vehicles, great attention should be given to prevent overloading.

There are no break-down trains on this Railway, nor are the ambulance carriages marked with a red cross. The Agent is requested to take these matters up.

The carriages reserved for Native women were found to be provided with efficient latrine accommodation and clean.

VILLUPURAM-DHARMAVARAM AND NELLORE BRANCH.

MILEAGE 389. GAUGE 3' 3".

Banks and Cuttings were generally of full standard width in good general section and repair; the grass is not fully grown on the bank slopes.

Mile 203/10.—Pitching required here to guard against scour.

Mile 232 and mile 236/8.—Bank requires raising.

Mile 295/17.—Requires intercepting drain or level culvert to guard against a wash out.

On the length between Renigunta and Nellore the banks were being raised.

Bridges.—The girder bedstones of many of the bridges are shaken and the joints should be raked out and filled with neat Portland cement.

Mile 131/10, Turungi bridge, 1 by 120 feet and 8 by 40 feet.—Bedstones shaken.

Mile 158, Cheyair bridge, 5 by 120 feet.—Some cross sleepers require binding at ends with hoop iron.

Mile 193/8, Palár bridge, 13 by 150 feet.—Some timbers require binding at ends and the holding-down bolts should be cut off; bedstones require grouting.

Mile 224/3—6 by 60 feet and 2 by 40 feet.—Some rivets missing.

Mile 374/3, Chittravatti bridge, 13 by 60 feet.—Bedstones shaken, require grouting. Several fish bolts loose; timber only fair.

Mile 370/8—3 by 60 feet and mile 368/3—1 by 60 feet and at mile 366/4—1 by 40 feet.—Footway wanted on one span.

In this length of line there are several 25 feet spans, the upper edge of whose top booms clear cowcatcher by 6 inches only. The line should be raised.

Mile 318/8, Papaghni bridge, 8 by 60 feet.—Bedstones shaken and many fish bolts have been bent by a derailed wagon; they should be replaced.

Mile 308/5 by 60 feet—Buttapapuram bridge.—Angle knees are not close to longitudinal timbers.

Mile 279/3—8 by 60 feet.—Continuous girders hook bolts require squaring. Sleepers have been much damaged by permanent way men, and have not been tarred underneath.

Mile 262/8—Pier bridge, 7 by 60 feet.—2 girders have 4 rivets out in bottom flange. The ends of some of the horizontal rail timbers require bolting to prevent splitting. Former reports draw attention to the vertical cross bracing being bent, but as this bridge has horizontal diagonal bracing on bottom boom and cross girders rivetted on top boom, I do not think any movement can take place. Two or three of the vertical cross bracings only need be cut and re-rivetted.

A centre plank should be provided on all single and double 25 feet and 40 feet to enable the road men to easily tighten up fish bolts, &c.

Mile 242/7—5 by 40 feet.—Timbers require ends bound.

Mile 254/6, Beemavaram bridge, 3 by 120 feet.—Top boom requires painting inside.

Mile 269/8, Renigunta bridge over Madras Railway.—The wood bed plate of the triple 40 feet supporting the main girders should be covered with sheet iron against fire.

Mile 276/6.—New 12-feet bridge is nearly ready. The Chief Engineer will open this.

On many of the 40-feet bridges the cowcatcher of engine is too close to the side refuge planks; they should be put back.

Permanent Way.—The Villupuram-Dharmavaram branch is laid with 41-lb. steel rails on steel sleepers with the exception of 27 miles laid with 40-lb. iron rails on steel sleepers; this road has been in work since 1892.

The Nellore branch is of 41-lb. steel rails on steel sleepers, and also the same class rail on D. O. cast iron sleepers. Most of this line was opened in 1887.

The condition of the steel sleepers demands great attention.

The road was opened out at several places on Nellore branch.

Mile 334.—Five steel sleepers had been taken out. At one place after 6 years' wear three were absolutely useless and two were not fit for the main line.

Mile 330.—Opened road and found rail seat on sleeper bent down about $\frac{1}{4}$ inch and keys loose and edges of sleepers rusted away.

Mile 325.—Five sleepers taken out of road at one place after 6 years were corroded and split at rail seat.

Mile 320.—8 steel sleepers had been removed at an unknown date, they were quite useless.

At Chittoor, on the Villupuram-Dharmavaram branch, a length of road was opened and the sleepers and keys were found to be much rusted although only in road for $3\frac{1}{2}$ years. Chief Engineer has arranged to have a number taken out, cleaned, weighed and marked and put back.

Mile 256/4, Villupuram-Dharmavaram.—Road opened and found in good order.

The minor defects requiring attention on the Villupuram-Dharmavaram branch are as follows:—

Mile 159.—Wants straightening and packing and on many curves the super-elevation is not run out on the straight sufficiently.

On the gradients between miles 270 and 305 the road might be improved by an extra sleeper. The joints are weak for fast running.

Mile 252/4, Villupuram-Dharmavaram.—Curve is too flat in centre and too sharp at entrance.

Mile 268/10.—North curve wants attention.

Mile 295, Kurabalakota.—Ashpit entrance requires packing up.

The D. O. cast iron sleepers on the Nellore branch break a good deal.

Ballast.—This is generally light on banks but full section of 10 cubic feet in cuttings. From the examination I made, I believe the steel sleepers were almost always first packed with the material of the banks, and when ballast was subsequently put on, the earth under the sleeper remained.

To this, I attribute the rapid corrosion of the steel sleeper, and in my opinion the whole of the Villupuram-Dharmavaram section should be fully ballasted at a cost of about 1 lakh. This will prolong the life of the steel sleepers.

The question of renewals on the Nellore branch would, I think, be best solved by using the D. O. sleepers.

There are $2\frac{1}{2}$ men per mile for maintenance who live in the adjacent villages.

Fencing.—The line is unfenced.

Stations.—Tirukoilur station requires extension of platform and outside booking office and fencing.

Vellore station.—Larger goods shed asked for.

Pakala station.—Staff quarters for Eurasians and Natives are much needed here. The dispensary was not in good order and requires furniture—nor do the latrines appear to be inspected and controlled efficiently by the medical department.

A room for a school should be added to the recreation room now under erection.

Dharmavaram station.—The joint agreement not having been signed has led to some friction between the Southern Mahratta Railway and South Indian Railway regarding watering arrangements. It would be preferable for the two Companies to have all their quarters on opposite sides of the Railway.

Chinnakuntapalli station.—Latrine requires completion.

Mile 330/11.—Trial station opened. Water is not available.

Buttalapuram, Kalikiri and Pulicherla stations require a goods shed.

Nellore station.—The staff quarters are ill-kept and untidy. The dispensary is in an open verandah, and medicine almirahs exposed to rain and dust.

Gudur station.—Traffic ask that the salt siding to the Buckingham Canal be re-opened.

The stations are in good general order and fenced.

At many stations the corrugated iron is painted with Arabic—an Australian patent which reduces the temperature considerably.

Station Machinery.—Signals were in good order, the distant signals are all worked from the points. At Palār station, south points and signal levers should be placed on top of the cutting from whence the pointsman can see the distant signal.

A wheel lathe, and screwing machine and small tools are very much required at Pākala as well as a lean-to shed to house them in.

The water columns are to be altered on these branches as before mentioned.

The engine shed at Nellore requires a lean-to verandah.

Watering arrangements at mile 321/15, Nellore branch near Gudur station are imperative.

Stores.—The large collection of engineer's stores at Pākala and Dharmavaram should be dealt with as before mentioned.

OOTACAMUND,
12th September 1893.

F. R. UPCOTT,
Consulting Engineer for Railways
and Senior Inspector.

R.
As the report mentions
a 10 ft. girder bridge. please
say if this report may be
corrected from 12 to 10.

*no its 12' over
all a 10' above
within is correct
20/9*

APPENDIX I.—SOUTH INDIAN RAILWAY COMPANY, (LIMITED)—ENGINEER DEPARTMENT
Statement showing the renewals of Rails for half-year ending 30th June 1893.

RAILS DISPLAYED.

Iron.										Steel.														
68 lb.					40 3 lb.					50 lb.					41 lb.					50 lb.				
24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	30 ft.	27 ft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.	Cwt. Lft.	24 ft.	21 ft.	18 ft.
Main Line.																								
...	60	2	...	2,840	343	13	17'	...	...	...	...	1	...	...	116	10	2	...	...	...	...	...	...	...
January 1893	...	106	9	...	3,208	184	26	40'	...	...	...	...	...	...	321	64	22	...	...	...	...	...	...	...
February "	...	119	2	...	253	87	29	12'	...	...	...	...	...	...	346	29	10	408	...	...	...	...	...	...
March "	...	115	2	...	60	33	8	15'	...	...	...	...	...	...	4	6	...	...	...	...	...	...	...	...
April "	...	89	2	...	135	30	2	7'	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May "	...	104	4	27	370	133	2	...	...	...	...	...	...	...	787	139	34	408'	...	...	...	...	...	...
June "	...	553	21	27	6,870	910	74	117'	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sidings.																								
January 1893	...	28	2	...	2	...	6	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
February "	...	17	...	...	33	27	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March "	...	...	...	...	18	8	3	245'	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April "	...	12	3	121'	31	28	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May "	...	3	1	...	6	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June "	...	22	1	...	24	16	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	82	7	121'	114	84	26	245'	...	...	...	1	...	...	...	784	139	34	468'	...	...	...	...	...
Grand Total	...	634	28	148'	5,980	854	100	302'	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

APPENDIX III.

SOUTH INDIAN RAILWAY—ENGINEERING DEPARTMENT.

Statement showing all works completed from January to June 1893.

Item No.	Authority.	Description of work.	Amount sanctioned.	Date of completion.
CAPITAL.				
1	Consulting Engineer's No. 1799 of 22-12-91.	Constructing 2 blocks of Europeans and 2 blocks of Native drivers' quarters at Villupuram station.	Rs 19,256	31-1-93
2	Do. No. 656 of 30-5-92.	Flooring and pitching the three 40 feet girder bridge at 103/8 mile	2,815	28-2-93
3	Do. No. 955 of 4-8-92.	Constructing an Apothecary's quarter and dispensary at Trichinopoly junction station.	5,266	38-2-93
4	Do. No. 956 of 5-8-92.	Providing home signals at 36* stations.	12,306	31-3-93
5	Do. No. 1270 of 7-10-92.	Providing quarters for running Native drivers and cleaners at Trichinopoly junction station.	1,009	31-3-93
6	Do. No. 1416 of 8-11-92.	Enclosing an additional bay of the existing goods godown at Vellore station to form a room.	252	31-3-93
7	Do. No. 1205 of 26-9-92.	Providing two 4-unit blocks of temporary quarters for guards at Dharmavaram station.	1,076	30-4-93
8	Do. No. 146 of 8-2-93.	Constructing a latrine for Locomotive purposes at Pakala.	1,209	30-4-93
9	Do. No. 1291 of 12-10-92.	Constructing an additional water column, dripwell, drain, and piping at north end of Kadambur station.	2,608	31-5-93
10	Do. No. 1441 of 12-11-92.	Constructing a hut for the driver of the steam pump at Pakala Locomotive well.	613	31-5-93
11	Do. No. 1418 of 8-11-92.	Enclosing two additional bays of 3rd class goods godown at Kadiri station.	551	31-5-93
12	Do. No. 528 of 13-5-93.	Providing additional land for a recreation ground at Pakala station.	184	31-5-93
13	Do. No. 1470 of 15-10-91.	Constructing a shed for sheltering carriages when the present shelter line is converted into run-round at Trichinopoly junction station.	9,897	30-6-93
14	Do. No. 1422 of 8-11-92.	Enclosing a bay of the existing goods godown at Chandragiri station to form a room.	408	30-6-93

Statement showing all works completed from January to June 1893,—(Continued.)

Item No.	Authority.	Description of work.	Amount sanctioned.	Date of completion.
CAPITAL AND REVENUE.				
15	Consulting Engineer's No. 202 of 16-2-92.	Raising 600 ft. of the platform to one foot above rail level at Titte station.	Rs. 1,309	31-1-93
16	Do. No. 1754 of 14-12-91.	Adding a 3rd class waiting shed at south end of station house at Cuddalore Old Town station.	1,570	31-1-93
17	Do. No. 956 of 9-8-92.	Lengthening through siding at Sātur station.	1,199	31-1-93
18	Do. No. 1334 of 20-10-92.	Lengthening through siding on the south side 516 ft. at Vandalur station.	1,091	31-1-93
19	Do. No. 563 of 10-5-92.	Providing permanent watering arrangements from a well about ½ mile west of Kadambur station.	11,109	29-2-93
20	Do. No. 1586 of 14-12-92.	Providing an additional water column dripwell and drain at Manaparai station.	2,541	28-2-93
21	Do. No. 1156 of 17-8-91.	Lengthening through siding 167 L. yds. at Saidapet station.	1,896	31-3-93
22	Do. No. 891 of 2-7-92.	Lengthening through siding at Kumbakonam station.	1,412	31-3-93
23	Do. No. 1248 of 4-10-92.	Constructing a mortuary at Chingleput station.	1,310	31-3-93
	Do. No. 1370 of 31-10-92.	Laying a siding for Messrs. Parry & Co. at Tinnevely station.	3,119	31-3-93
	Do. No. 1311 of 12-9-91.	Lengthening through siding and platform at Kille station.	3,284	30-4-93
26	Do. No. 1579 of 13-12-92.	Extending siding by 187 ft. on north side and on south side 352 ft. at Kadambur station.	1,155	30-4-93
27	G.O. No. 2717-R of 15-11-92.	Erecting a permanent shed for rolling stock at Negapatam.	31,503	31-5-93
28	Consulting Engineer's No. 1562 of 9-12-92.	Extending the lay-hye siding and goods loading bank at Tirukōlūr station.	1,396	30-6-93
REVENUE, NEW MINOR WORKS.				
29	Do. No. 1206 of 26-9-92.	Widening the goods shed platform at Trichinopoly Fort station.	441	31-1-93
	Do. No. 1362 of 29-10-92.	Widening the passengers' platform at south end of Kumbakonam station.	265	31-1-93
	Do. No. 1363 of 23-10-92.	Erecting an additional distant semaphore signal at south end of Conjeeveram station.	401	31-1-93

* This work is completed on Divisions 1, 2, and 3 and 2% remains to be done on Division 4 at end of June.

Statement showing all works completed from January to June 1893.—(Continued.)

Item No.	Authority.	Description of work.	Amount sanctioned.	Date of completion.
		REVENUE, NEW &c., (Contd.)	Rs.	
32	Consulting Engineer's No. 1465 of 16-11-92.	Providing a brick drain from new to old weigh-bridge at Negapatam station.	326	31-1-93
33	Do. No. 567 of 10-5-92.	Draining ashpit and turn-table at Tuticorin station.	604	28-2-93
34	Do. No. 1392 of 4-11-92.	Providing a temporary refreshment room and cook house at Chinna Tippasamudram.	291	28-2-93
35	Do. No. 1413 of 30-9-91.	Providing 9-ft. gates in lieu of the existing 6-ft. gate at 124/11 mile.	308	31-3-93
36	Do. No. 404 of 28-3-92.	Furnishing staff quarters at Villupuram station.	875	30-4-93
37	Do. No. 1079 of 31-8-92.	Alterations and additions to existing urinal of the running bungalow at Cuddalore Old Town station.	399	30-4-93
38	Do. No. 1393 of 4-11-92.	Extending by 100 ft. the passengers' platform on the north-east side at Trichinopoly junction.	307	30-4-93
39	Do. No. 1635 of 23-12-92.	Extending gravel and laterite siding at Kumbakonam station.	284	30-4-93
40	Do. No. 147 of 8-2-93.	Converting the refreshment room into sitting and bath room for Officers at Negapatam station.	200	30-4-93
41	Do. No. 1644 of 24-12-92.	Providing a waiting room for 1st and 2nd class passengers by enclosing one bay of the 3rd class waiting shed at Kalahasti station.	394	31-3-93
42	Do. No. 905 of 21-7-92.	Constructing a double 4-ft. span rail covered culvert in the station yard at Tirumangalam.	533	30-6-93
43	Do. No. 1558 of 8-12-92.	Constructing 2 trial masonry tanks for storage of tar at two of the Public Works Inspectors' head quarters on division No. 2	212	30-6-93
44	Do. No. 1604 of 17-12-92.	Lengthening through siding on north side 345 ft. at Dindigul station.	892	30-6-93
45	Do. No. 89 of 25-1-93.	Providing temporary watering arrangements in the Cooum river near Madras.	242	30-6-93
		REVENUE.		
46	Do. No. 328 of 11-3-92.	Constructing a weigh-bridge and house in lieu of existing weigh-bridge at Tuticorin station.	3,293	31-1-93

Chief Engineer's Office,
Trichinopoly, 24th August 1893.

FRANCIS P. SMITH
for Off. Chief Engineer.

a new man in Fitter Outon's place, I should deem it advisable to ask that the pay of the appointment should be enhanced, as I am satisfied that owing to the increased cost to Europeans of living in India, the salary fixed for the appointment is not sufficiently high to induce really good men to offer themselves as candidates for the post, and unless Fitter Outon's salary is increased, we cannot reasonably expect him to remain in the service of the Department.

"Fitter Outon received an excellent training in England before joining the service of this Railway and while at Perambur Works he has proved himself to be a very capable workman and well qualified to have the control of men. He has, on several occasions, acted for Foremen to the entire satisfaction of the officers of the Department and I consider him very deserving of the allowance for which I now recommend him."

I have the honor to be,
Sir,

Your most obedient servant,

[Signature]
for Agent and Manager

8.2.
ars



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OFFICE OF CONSULTING ENGINEER FOR RAILWAYS,

Madras, 5th July 1893.

No. 1482

OFFICE NOTE.

Letter from the Agent and Manager ^{Madras} Railway, No. ⁵⁸¹⁴ 578

Subject.

dated 3rd July 1893, forwarded to the Examiner of Railway

Accounts. for favour of remarks.

Person of pay
Mr. E. Oulton
Loco Dept.

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Dated

1893

Recd.

No.

ms will
Consulting Engineer for Railways.

EXAMINER'S REPLY.

As the grant of the personal allowance will make up the pay of the individual over Rs 250/-, the sanction of the Government of India is necessary to the proposal.

7.7.93.

Curly
C. R.

*Submt. to Govt.
for transmission
to India for sanction
with recommendation*
Jms
97

*5.2
6201/93*

14/7. R 157.

Madras, 12th July 1893.

From AM. No. 5814
578
13th July 1893

Endorsed by the Chief Engineer for Railways, Madras, 13th July 1893.
No. 239 for approval.
Submitted to Government.

for transmission to the Government of India.

2. The Agent & Manager Madras Railway requests sanction to raise the pay of Fitter E. Outon of the Locomotive Department from Rs 236.5.7 to Rs 270/- per annum by grant him a personal allowance of Rs 33.10.5.

3. Fitter Outon entered the Service of the Company in January 1889, under an agreement for a term of 6 years which expired on the 15th January 1893.

Mr. Outon is highly spoken of by the AG Loco. Superintendent as having received an excellent training in England, & as being a very capable workman, & very deserving of the allowance.

H.M.

U.S.
13 July

8.1
6/20/93

12/7
14/7 R 15/7

for which the undersigned
recommends for
the sanction of the Govt.
of India with effect from
the 15th July 1893.
A similar application
was sanctioned by the Govt.
of India in its letter
No 3248 G. O. dt 21st November
1889.

Imm
11/7

File
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7

Encls 2
Recd: 12.7.93

No 1021 R 9 18 July 1893

PUBLIC WORKS DEPARTMENT,
RAILWAY BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

Endorsement from
the Comptroller for Rys. } H.C. No: 239 of 12 July 1893.

Ordered that the
Government of India be
addressed...

To the Secy. to the Govt. of India
at the Comptroller for Rys. } 11/7
To the Secy. to the Govt. of India

H.C. No 1022 R 9 18 July 1893

To the Secy. to the Govt. of India
P. W. Department

Sir,

I am directed to
forward copy of Prop. of
this Govt. No 1021 R dated 18
July 1893, and to request
the sanction of the Govt. of
India to the application
for

for an increase of salary
of Fitter E. Outon of the
Locomotive Department,
Madras Railway, from
Rs 236-5-7 to Rs 270 per
mensem by granting
him a personal allowance
of Rs 33-10-5 with effect
from 1st July 1893.

Yours

17
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R

B

No. 1021-22 R 9 18 July/93.

Inf. despatch
with 1st Gen.
19/7/93.

All communications
should be addressed
to the Secretary.

No. 2118 G.
GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
GENERAL.

17/12/93

To
The Joint Secretary to the Government of Madras,
Public Works Department, Railway Branch.

Simla, the 11th August 1893.

Sir,

In reply to your letter No. 1022 R. dated 18th ultimo,
I am directed to communicate the sanction of the Govern-
ment of India, to the grant of a personal allowance of
Rs. 33-10-5 to Fitter E. Outon, Locomotive Department of the
Madras Railway, raising his salary from Rs. 236-5-7 to Rs. 270
per mensem, with effect from the 1st July 1893.

I have the honour to be,

Sir,

Your most obedient servant,

G. H. D. Walker

Under Secy. to the Govt. of India.

Documents accompanying.

Nil.

MR

2. C. 24/11

4
A. No 1130 R.D. 25 Aug 93
PUBLIC WORKS DEPARTMENT,
RAILWAY BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

Letter from the Govt.
of India, P.W. Dept. No 2118 G. dt Aug 11. 93

Ans: 15.8.93

Communicated
to the Agent & Manager
Madras Railway with
reference to his letter
No 5814 dt July 3. 1893.
578

A.
No 1130 R.D. 25-8-93

19/8.

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DISPATCHED
6 SEP 93

To A.M. thro' C.R.
C.R. ✓ 8
89

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19.8

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Railway.

Read again the following:—

G.O., dated 24th October 1889, No. 1151 R., Public Works.

From the Consulting Engineer for Railways, dated Madras, 4th October 1889, No. 377.

Letter from the Agent and Manager, Madras Railway, No. 6455/1038, dated 14th September 1889, with enclosure.

Letter from the Agent and Manager, Madras Railway, No. 6455/1070, dated 25th September 1889.

Submitted to Government for transmission to the Government of India.

2. The Agent and Manager, Madras Railway, requests sanction to the salary of Mr. Morse, Covenanted Carriage Builder, being increased from Rs. 237, his present salary, to Rs. 270 per mensem, the increase being purely a personal one and not intended to increase the maximum sanctioned for the grade.

3. Mr. Morse entered the Company's service in March 1885 on a salary of Rs. 237 per mensem under an agreement for four years, which expired in March last.

4. From the enclosure to letter No. 1038, dated 14th September 1889, it will be seen that Mr. Morse is highly spoken of by the Acting Locomotive Superintendent as one who has always done his work with the greatest zeal and willingness, that he is a good workman, and that his conduct has throughout the time of his service been unexceptionable.

5. The proposal is recommended for the sanction of the Government of India.

Order—dated 24th October 1889, No. 1151 R., Public Works.

.Ordered to be forwarded for the sanction of the Government of India.

(Here enter No. 1152 R., dated 24th October 1889.)

(True Extract.)

(Signed) C. J. SMITH, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

Endorsement—dated 24th October 1889, No. 1152 R., Public Works.

Forwarded.

(By Order.)

(Signed) C. J. SMITH, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

7TH DECEMBER 1889, No. 1359 R., PUBLIC WORKS.

Read also the following paper:—

From J. E. DALLAS, Esq., Assistant Secretary to the Government of India, Public Works Department (General), to the Joint Secretary to the Government of Madras, Public Works Department, Railway Branch, dated Calcutta, 21st November 1889, No. 3248 G.

I am directed to acknowledge the receipt of your No. 1152 R., dated 24th October 1889, and, in reply, to communicate the sanction of the Government of India to the grant of a personal allowance of Rs. 33 per mensem to Mr. Morse, Covenanted Carriage Builder, Madras Railway.

ORDER—dated 7th December 1889, No. 1359 R., Public Works.

Communicated to the Consulting Engineer for Railways with reference to his endorsement No. 377, dated 4th October 1889.

(True Extract.)

(Signed) C. J. SMITH, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

To the Consulting Engineer for Railways.
„ Examiner, Guaranteed Railway Accounts.

RAILWAY.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated December, 7th.

Recd.

Encl.

G.O., 7th Dec. 1889, No. 1359 R.

DECEMBER.

Mr. Morse, Carriage Builder,
Madras Railway

Sanction of the Government of India to
the grant of a personal allowance of Rs. 33
per mensem to —, communicated to the
Consulting Engineer for Railways.