

# Public Works (1894) Department.

RAILWAY BRANCH.

G.O., No. 157-58. R

DATED 13<sup>th</sup> March

[Despatch Abstract.]

## Inspection Report

The — of the South Indian Railway, for the half-year ended the 31<sup>st</sup> Decr 1893 communicated to the Agent and a copy of the Procs: ordered to be forwarded to the Govt of India.

Hold a copy of Proceedings passing orders on the — of the S.I.Ry for the half-year ended the 31<sup>st</sup> December 1893

Indexed.

## BACK PAPERS.

[illegible]

## FURTHER PAPERS.

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

**SOUTH INDIAN RAILWAY (METRE GAUGE).**

*Total mileage open for traffic including Pondicherry Branch—1,051 miles.*

Inspection Report by Mr. C. T. R. Scovell, Government Inspector of Railways,  
Madras, for the half-year ending 31st December 1893.

The inspection of the Villupuram-Guntakal section was made between the 11th and 13th January and that of the main line between the 23rd January and 1st February 1894. The Agent, heads of departments, or their deputies and the district officers accompanied the inspection party.

### *Main Line Section and Branches.*

2. **Banks and cuttings.**—Generally the banks and cuttings have been maintained up to their original section; necessary repairs have been carried out as required. The breaches which occurred near Trichinopoly and Gudur and on which a special report has been submitted have now been thoroughly repaired and consolidated.

The bank formation at mile 86/0 to 10, Arkonam branch, and at 268 and 293/1-11 miles, Kirode branch, is low and requires making up.

3. **Bridges and culverts.**—The girders were examined as carefully as circumstances permitted with a view of finding out if there were any signs of overstrain caused by the O class engines. In every case they appeared to be in good order, no sign whatever of overstrain being perceptible. They are well painted or tarred as the case may be. The timbers are in good condition.

(a) 9-30 *feet bridge, mile 71, Arkonam Branch.*—A wire fence 6 feet from centre line forms with the bridge hand rail a foot-way for the public across this bridge and is a great convenience in times of flood. Under the circumstances the infringement might be permitted; a few of the foot-path planks appeared to be rotten.

(b) Six feet girder bridge, mile 36/8.—North abutment badly cracked; should, I think, be under-pinned.

(c) *Pálár bridge, mile 43.*—In No. 1 span a longitudinal crack about 6 inches long was discovered between the fibres of one of the bars of the bottom boom when the bridge was being repainted. It appeared before the O class engines commenced running and is being carefully watched.

(d) The overhead bracing which infringes standard dimensions noticed in the last inspection report has been raised on the Tondayar bridge. Arrangements are in hand for raising it on other bridges and providing it where required.

(c) 17-100 feet girder bridge, mile 105.—Some of the cross girders have unnecessary holes in their top flanges which might with advantage be filled up.

(f) Examined the girders of the 10-20 feet girder bridge at miles 219/9 which are theoretically very weak. No sign of overstrain. As a precautionary measure sleeper cribs have been erected under this type of girder wherever they occur.

(g) In the last inspection report it was noticed that the road is not in the centre of the cross girders on the Erode branch. The Chief Engineer explains that it was decided at the time of the conversion of the gauge, in consultation with the then Consulting Engineer, to leave the line thus.

(h) Arch bridge at mile 278/3.—Slopes require to be pitched.

(i) The question of strengthening the weak cross girders of the Whipple Murphy trusses is one which must be taken up at once. No definite plan has yet been decided upon pending the suggestion of the company's Consulting Engineer Sir G. Bruce.

(j) The minor points referred to in the last inspection report have, unless otherwise stated, been attended to.

4. **Ballast.**—The line is fully ballasted throughout, but appears deficient in the neighbourhood of the 50 lb. renewals owing to the new pot sleepers requiring more ballast than the wooden.

5. **Permanent-way.**—The main line road is generally in excellent running order except as might be expected close behind the 50 lb. renewals.

The section between miles 130 and 145 was rough, the rails evidently not being level transversely.

The 41 lb. road between Tinnerelly and mile 376 was in good order and the running very smooth.

(a) The Stoney locking bars which are provided at Egmore and Chingleput require to be lengthened to suit the new bogie stock.

(b) Some point hand signal lamp posts on the Madras-Chingleput section infringe standard dimensions.

(c) The 50 lb. road has been laid from Madras Beach to mile 340 and also between 342 and 368, 374 and 376, 426 and 444 (Tuticorin).

(d) On the northern division the cast iron pot sleepers, of which there are 7 pairs to the 24 foot rail, have, except on curves where all are so provided, 4 pairs connected with tie bars and 3 without. This arrangement has been found to give trouble when lifting and packing and at all renewals tie bars are now provided to every pair of pots.

(e) The speed of trains over facing points is 10 miles an hour for stopping trains and 5 miles an hour for non-stopping trains. The means of locking facing points was carefully examined. The new pattern in which the bolt passes through a radial arm and the point rod is perhaps the best and the one in more general use. A movement of  $\frac{1}{16}$  to  $\frac{3}{16}$  of an inch was usual. The type known as Armstrong's patent A, which is used on the old broad gauge section, is dangerous without a bolt through the switch and stock rails.

I am of opinion that the bolt and tapering cotter with the hasp hole close up to the bolt should gradually be substituted for the other systems.

6. **Level crossings.**—The gate lodges between Egmore and Guindy should be provided with electric bell communication to warn gate-keepers of approaching trains; not only would this conduce to the greater safety and convenience of the public, but it would minimize the necessity for the amount of whistling which now goes on and which has become a public nuisance.

(a) Four gate lodges on the Arkonam-Conjeeveram section infringe present standard dimensions.

(b) A deputation waited on the Agent at mile 262/13, Negapatam branch, asking that the footpath crossing at this place might be widened into a cart crossing. The Agent promised to comply conditionally on the villagers paying the cost of the alteration.

(c) A number of level crossings on the Negapatam branch and the southern division have very steep approaches. I understand the villagers resent giving up their land for the purpose of lengthening the grade. It is for them to meet the railway half-way if they want better facilities.

7. **Fencing.**—The aloe fence on the northern division is in good order, though for many miles it has had to be wired. South of Madura, however, the aloes do not thrive and give continual trouble. If it is desired that the line should be proof against cattle trespass, I am of opinion that the aloes should be gradually replaced with wire. It is instructive to note that in the quarter ending September 1893, out of 52 cases of cattle trespass, 42 occurred on the fenced line and 10 on the unfenced, the respective lengths being 654 and 388 miles and the average number of trains in both directions being about as 12 : 4.

8. **Rolling-stock.**—(a) Recently 20 O class 4 coupled passenger engines have been received from England, whose axle weights exceed the maximum prescribed by the Government of India. They have, in consequence of the weak cross girders above referred to, been restricted to certain section of the line where there are no weak cross girders. These engines will draw on the mail trains 26 ordinary vehicles at 25 miles an hour.

(b) A complete train of 40 feet bogie stock has been turned out of the shops and is now running. This train is fitted with the vacuum brake, which, however, in consequence of the O class engines not running regularly, is not in use. These carriages have been fitted up with every modern improvement and the complaints against uncomfortable accommodation on the South Indian Railway must soon be a thing of the past.

In consequence of the recent additions to locomotive and carriage stock, the Locomotive Superintendent has been able to withdraw the older stock more frequently for examination and repairs with satisfactory results.

(c) Some of the new carriages have been painted instead of varnished, the invariable practice hitherto. This I understand is by way of experiment.

(d) The condition generally of all the rolling stock on this railway has, of late, been much improved.

9. **Workshops.**—*Locomotive shops at Negapatam.*—(On the date of the inspection these shops were very crowded with work. This possibly is only temporary owing to large amount of 40 bogie stock in course of erection, but in consequence of the continued extension of the railway more accommodation is necessary. The boiler shop, foundry and copper-smiths' shops were particularly noticed as being too small for the work. The copper-smiths' shop especially should, I think, be increased if it is intended that it should carry out the work expected of it.

(a) *Engineering shops at Trichinopoly.*—The scope of these workshops has recently been considerably reduced, but it is not intended at present to entirely abolish them.

10. **Stations.**—The stations are generally clean and neatly kept.

(a) *Egmore.*—The space between the lines to the north of platform might be paved and roofed to give facilities for washing and for the protection of the stock from the weather.

(b) Some complaints have been made by passengers of the want of a proper platform at Perambair. This was possibly justified as the platform was then low, but recently has been finished off to rail level. The station is a trial one and no more than a rail-level platform seems required.

(c) *Mile 101/3.*—A deputation waited on the Agent to ask for a station. A station here would be useful as a crossing station, but the Local Fund Board should arrange with the Agent about the construction of a feeder road, should the latter decide to provide a station.

(d) *Mile 116/7.*—A deputation waited on me at this mileage asking for a trial station and guaranteeing Rs. 5 a day towards the expenses of the staff. This question has been brought up before and refused on the ground that inasmuch as the distance to the adjacent stations is  $5\frac{1}{2}$  and 3 miles respectively, it would only have the effect of withdrawing a portion of the traffic which now finds its way to those stations and moreover it is undesirable to increase the number of stations for the mail to stop at. I agree.

(e) *Station, mile 171.*—The platform at this and at some other similar stations requires to be made up to rail-level.

(f) A plentiful supply of good water for locomotive purposes has been found at Kadambur and Tataparai. It is no longer necessary to run water tanks on trains on this section as heretofore.

(g) Judging by the entries in the remark books, the refreshment rooms appear to have given satisfaction to the public. I have, however, reason to believe that, when the butler thinks a passenger is going to make a complaint, the book is not forthcoming. A dado and some geometrical border on the now plain whitewashed walls would make the rooms appear more comfortable. The crockery, furniture, &c., which is supplied by the contractors, is of the most wretched description.

(h) The following stations situated near steep gradients require safety switches or catch sidings—Ayyalur, Vadamadurai and Ammayanayakanur on the main line and Kaniyambadi, Ramapuram, Mangalampeta, Pulicherla, Kalikerri, Vayalpad, Kurabalakota, Nullacheruvu and Putalapattu on the Villupuram-Guntakal Railway. This at first sight appears a large order, but I am of opinion that a weighted switch interlocked with a small semaphore placed near the end of the loop and kept normally closed to the main line is all that is required. This arrangement would effectually prevent the catch siding being used as a lay-hye line and would moreover avoid additional facing points in the main line. It is of course understood that no hand shunting is permitted at the dangerous end of these station yards.

11. **Staff quarters—Negapatam.**—Many of the European covenanted fitters are obliged to live in native houses in the bazaars for want of proper accommodation.

The hospital at Negapatam is very deficient in accommodation and is moreover a very dull and gloomy building.

12. **General.**—There is a rule in the Company's working time book that the stationmaster must personally see the facing points locked. The loops are now being lengthened and some of the facing points are about 1,200 feet from the station building. It must take the stationmaster 10 minutes to walk there and back to the neglect of his numerous other duties at train time. Had a dead end siding long enough to take a train been laid in extension of the existing loop, the facing points would not need to have been moved, the accommodation would have been the same as with the 2,000 feet loops, and the stationmaster could reasonably be expected to carry out the rule above referred to.

(b) During an enquiry into a case of avoided collision which recently occurred on this railway, it was found that, with the system of signalling trains in vogue, insufficient time is allowed at crossing stations between the arrival and departure of trains from and to the same section. The best way of overcoming this difficulty is to authorize the stationmaster at the crossing station to ask for line clear before the section is clear in the following form as is done, I believe, on some railways in the north of India. "On arrival of — train from your station will line be clear for — train now ready to start?" With the poorly paid class of stationmaster employed, I think the time has arrived for the introduction on the more crowded sections of this railway of the electric tablet or other improved system for working trains on single line.

(c) Booking theoretical as against actual time seems to be a practice ingrained in the subordinate traffic and locomotive running staff. In this respect the train message books are one mass of fabrication and it can only be stopped by the vigilance of the Company's officers and severe punishments when detected.

(d) Many of the Company's traffic subordinates, such as ticket collectors, have no uniform or badge of office. The public would be quite justified in refusing to show their tickets to such individuals.

(e) Under certain conditions, it would be possible for the driver of a South Indian Railway train to mistake the home signal at Erode for the Madras Railway signal; one arm might be removed and the signal shifted to the points.

(f) It is under consideration to run night trains on the Erode branch in response to numerous petitions which have been received from time to time. There is, however, very little through traffic between the Madras Railway and stations beyond Trichinopoly and moreover some of the short distance local traffic will doubtless be lost.

(g) A deputation waited on the Agent at Sikkil station and complained that the fare thence to Negapatam, a distance of three miles, was nine pias. The Agent promised to look into the matter.

(h) Nothing has yet been done as regards keeping properly fitted break-down trains ready for an emergency.

13. **Stores.**—The general stores at Negapatam were particularly neatly and methodically kept, but I would suggest that the ticket printing department be transferred either to the Traffic Manager or Chief Auditor.

A large quantity of construction plant has been accumulated at Trichinopoly amongst which are several girders mostly of weak design; to this must be added the

plant which is now lying at Dharmavaram and which was used for the construction of the Guntakal-Hindupur Railway now transferred to the Southern Mahratta Railway.

### *Villupuram-Dharmavaram Section.]*

14. The banks and cuttings are in good order. The banks between Villupuram and Nellore may be assumed to have become quite consolidated.

15. The shaken bed stones referred to in last report have been reset with cement and no further movement is perceptible. Some timbers which required it have been retarred. Missing and loose rivets have been replaced.

7-40 feet bridge at mile 179.—Timbers cracking badly; I understand arrangements are in hand for renewing the worst. The opportunity might be taken to relay the road which is very rough over this bridge.

4-40 feet bridge at mile 339/3.—Some timbers badly cracked.

20 feet bridge at mile 307/10.—North abutment has come forward during the recent floods. It has been strutted and will be under-pinned.

The wooden bed plates of the Madras Railway overbridge at Renigunta have been sheeted with iron to minimise the risk from sparks.

16. **Permanent-way.**—The following notes were made in reference to the deterioration of the steel sleepers. It would appear that some local chemical influence must have been at work to account for the rapid decay referred to in the last inspection report.

(a) (1) Opened and examined road at 353/4—Dharmavaram section—stone ballast, no signs of any moorum having ever been spread. Sleepers clean and free from rust.

(2) Opened and examined road at 342/15—moorum ballast on moorum bank. After removal of cake from the underside, the sleepers were found to be quite free from rust.

(3) Opened and examined road at 339/10—moorum ballast with stone covering. Sleepers in good condition.

(4) Opened and examined road at mile 330/11—Nellore branch—stone ballast. Sleepers laid 6 years ago. Slight traces of rust on underside; in good condition.

(5) Opened and examined road at mile 241/14—Nellore branch—sand ballast, free from rust.

(b) The road over many of the long 40 feet girder bridges in the Gudur valley would be all the better for rellevelling.

(c) The line between Villupuram and Tirupati may now be said to have quite settled down and was in very good order, as also was the section between Pakala and Mangalampeta, between this and Dharmavaram the road is still a bit rough.

17. **Ballast.**—Some 40 miles of moorum ballast still remain between Pakala and Dharmavaram; this is being gradually replaced by stone.

18. **Stations and Buildings.**—(a) A new station is in course of construction at mile 104 and is about half completed.

(b) A new station has been opened at Nullacheruvu, mile 339-D, chiefly to break the long run between Tanakallu and Kadiri.

(c) The flat roofs of the stations and staff quarters on the Nellore section give much trouble from leaking.

19. The breaches on the Nellore branch have been dealt with in a separate report. They have now been thoroughly repaired.

MADRAS,  
6th February 1894.

(Signed) C. T. R. SCOVELL,  
Government Inspector of Railways.

# NOTE BY SENIOR GOVERNMENT INSPECTOR OF RAILWAYS.

The action of the Locomotive department in putting on locomotives, which infringe the Government standards, without giving any notice to the Railway Engineers, or the Consulting Engineer's department, does not appear to have received sufficient notice.

As the Government Inspector is made under rule 72 of Circular 7 of 1892 responsible that the bridges on the section over which engines are to work are of sufficient strength, I think the matter should not be allowed to rest here.

It will take about 6 or 7 months to put the girders in order to take these engines, during which time they have to remain idle or doing half work; the outcome being much waste of money resulting from want of touch between departments.

The revision of the working of the line-clear system demands the close attention of the Traffic department.

Sufficient time must be allowed to carry out the rules which the company lay down, or the rules should be altered.

The condition of the steel sleepers at Chittoor should be reported on.

It appears that more careful attention has been paid to the renewals of the steel sleepers in the half-year under notice as the returns show only 6 sleepers renewed during January—June 1893, and 155 during July—December 1893.

27th February 1894.

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

## APPENDIX A.

### *Renewals of Permanent-way (excluding sidings).*

|                    |     |     |     |     |     |     | Taken out<br>of line. | Laid on line. |
|--------------------|-----|-----|-----|-----|-----|-----|-----------------------|---------------|
| <b>Rails—</b>      |     |     |     |     |     |     |                       |               |
| Iron, 68 lb        | ... | ... | ... | ... | ... | ... | 169                   | 169           |
| " 40 "             | ... | ... | ... | ... | ... | ... | 7,681                 | Nil.          |
| Steel, 50 "        | ... | ... | ... | ... | ... | ... | 7                     | 5,405         |
| " 41 "             | ... | ... | ... | ... | ... | ... | 686                   | 605           |
| <b>Sleepers—</b>   |     |     |     |     |     |     |                       |               |
| Pine               | ... | ... | ... | ... | ... | ... | 28,549                | 6,456         |
| Pingadu            | ... | ... | ... | ... | ... | ... | 9,917                 | 2,264         |
| Teak               | ... | ... | ... | ... | ... | ... | 151                   | 15            |
| C.I. pot, 68 lb    | ... | ... | ... | ... | ... | ... | 41                    | 41            |
| " " 50 "           | ... | ... | ... | ... | ... | ... | 32                    | 29,437        |
| " " 40 "           | ... | ... | ... | ... | ... | ... | 24                    | 24            |
| Steel transverse   | ... | ... | ... | ... | ... | ... | 155                   | 151           |
| Denham and Opperts | ... | ... | ... | ... | ... | ... | 161                   | 161           |

## APPENDIX B.

### *Renewals, Repairs of Rolling-stock, Negapatam Shops.*

|                          |     |     |     |     |     | Received. | Turned<br>out. | Under going<br>and awaiting<br>repairs. |
|--------------------------|-----|-----|-----|-----|-----|-----------|----------------|-----------------------------------------|
| <b>Coaching vehicles</b> |     |     |     |     |     |           |                |                                         |
| Gouds                    | ... | ... | ... | ... | ... | 277       | 262            | 161                                     |
| "                        | ... | ... | ... | ... | ... | 1,180     | 1,252          | 225                                     |

13TH MARCH 1894, No. 157 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

Report of Inspection of the South Indian Railway for the half-year ended the 31st December 1893.

No. 9.

Endorsement by the Consulting Engineer for Railways, dated Madras, 12th March 1894.

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 13th March 1894, No. 157 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. 156 R., dated 13th March 1894.]

(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 13th March 1894, No. 158 R., Public Works.

Forwarded.

(By Order.)

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Exd. C. A. Muniammay.  
Spare Copies

RAILWAY.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated March, 13th.

Recd.

Encl.

G.O., 13th Mar. 1894, Nos. 157,  
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(a) *Egmore.*—The space between the lines to the north of platform might be paved and roofed to give facilities for washing and for the protection of the stock from the weather.

(b) Some complaints have been made by passengers of the want of a proper platform at Perambair. This was possibly justified as the platform was then low, but recently has been finished off to rail level. The station is a trial one and no more than a rail-level platform seems required.

(c) *Mile 104/3.*—A deputation waited on the Agent to ask for a station. A station here would be useful as a crossing station, but the Local Fund Board should arrange with the Agent about the construction of a feeder road, should the latter decide to provide a station.

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(e) *Station, mile 171.*—The platform at this and at some other similar stations requires to be made up to rail-level.

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plant which is now lying at Dharmavaram and which was used for the construction of the Guntakal-Hindupur Railway now transferred to the Southern Mahratta Railway.

#### *Villupuram-Dharmavaram Section.*

14. The banks and cuttings are in good order. The banks between Villupuram and Nellore may be assumed to have become quite consolidated.

15. The shaken bed stones referred to in last report have been reset with cement and no further movement is perceptible. Some timbers which required it have been retarred. Missing and loose rivets have been replaced.

7-40 feet bridge at mile 179.—Timbers cracking badly; I understand arrangements are in hand for renewing the worst. The opportunity might be taken to relay the road which is very rough over this bridge.

4-40 feet bridge at mile 339/3.—Some timbers badly cracked.

20 feet bridge at mile 307/10.—North abutment has come forward during the recent floods. It has been strutted and will be under-pinned.

The wooden bed plates of the Madras Railway overbridge at Rénigunta have been sheeted with iron to minimise the risk from sparks.

16. **Permanent-way.**—The following notes were made in reference to the deterioration of the steel sleepers. It would appear that some local chemical influence must have been at work to account for the rapid decay referred to in the last inspection report.

(a) (1) Opened and examined road at 353/4—Dharmavaram section—stone ballast, no signs of any moorum having ever been spread. Sleepers clean and free from rust.

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(4) Opened and examined road at mile 330/11—Nellore branch—stone ballast. Sleepers laid 6 years ago. Slight traces of rust on underside; in good condition.

(5) Opened and examined road at mile 241/14—Nellore branch—sand ballast, free from rust.

(b) The road over many of the long 40 feet girder bridges in the Gúdúr valley would be all the better for rellevelling.

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(b) A new station has been opened at Nullacheruvu, mile 339-D, chiefly to break the long run between Tanakallu and Kadiri.

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MADRAS,  
6th February 1894.

(Signed) C. T. R. SCOVELL,  
Government Inspector of Railways.

# NOTE BY SENIOR GOVERNMENT INSPECTOR OF RAILWAYS.

The action of the Locomotive department in putting on locomotives, which infringe the Government standards, without giving any notice to the Railway Engineers, or the Consulting Engineer's department, does not appear to have received sufficient notice.

As the Government Inspector is made under rule 72 of Circular 7 of 1892 responsible that the bridges on the section over which engines are to work are of sufficient strength, I think the matter should not be allowed to rest here.

It will take about 6 or 7 months to put the girders in order to take these engines, during which time they have to remain idle or doing half work; the outcome being much waste of money resulting from want of touch between departments.

The revision of the working of the line-clear system demands the close attention of the Traffic department.

Sufficient time must be allowed to carry out the rules which the company lay down, or the rules should be altered.

The condition of the steel sleepers at Chittoor should be reported on.

It appears that more careful attention has been paid to the renewals of the steel sleepers in the half-year under notice as the returns show only 6 sleepers renewed during January—June 1893, and 155 during July—December 1893.

27th February 1894.

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

## APPENDIX A.

### Renewals of Permanent-way (excluding sidings).

|                    |     |     |     |     |     |     | Taken out<br>of line. | Laid on line. |
|--------------------|-----|-----|-----|-----|-----|-----|-----------------------|---------------|
| Rails—             |     |     |     |     |     |     |                       |               |
| Iron, 68 lb        | ... | ... | ... | ... | ... | ... | 169                   | 169           |
| " 40 "             | ... | ... | ... | ... | ... | ... | 7,661                 | Nil.          |
| Steel, 50 "        | ... | ... | ... | ... | ... | ... | 7                     | 5,405         |
| " 41 "             | ... | ... | ... | ... | ... | ... | 686                   | 605           |
| Sleepers—          |     |     |     |     |     |     |                       |               |
| Pine               | ... | ... | ... | ... | ... | ... | 28,549                | 6,450         |
| Pingadu            | ... | ... | ... | ... | ... | ... | 9,917                 | 2,264         |
| Teak               | ... | ... | ... | ... | ... | ... | 151                   | 15            |
| C.I. pot, 68 lb    | ... | ... | ... | ... | ... | ... | 41                    | 41            |
| " " 50 "           | ... | ... | ... | ... | ... | ... | 32                    | 29,437        |
| " " 40 "           | ... | ... | ... | ... | ... | ... | 24                    | 24            |
| Steel transverse   | ... | ... | ... | ... | ... | ... | 155                   | 151           |
| Denham and Opperts | ... | ... | ... | ... | ... | ... | 161                   | 161           |

## APPENDIX B.

### Renewals, Repairs of Rolling-stock, Negapatam Shops.

|                   |     |     |     |     |     | Received. | Turned<br>out. | Under going<br>and awaiting<br>repairs. |
|-------------------|-----|-----|-----|-----|-----|-----------|----------------|-----------------------------------------|
| Coaching vehicles | ... | ... | ... | ... | ... | 277       | 262            | 161                                     |
| Goods "           | ... | ... | ... | ... | ... | 1,180     | 1,252          | 225                                     |

13TH MARCH 1894, No. 157 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.  
PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

Report of Inspection of the South Indian Railway for the half-year ended the 31st December 1893.

No. 9.

Endorsement by the Consulting Engineer for Railways, dated Madras, 12th March 1894.

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 13th March 1894, No. 157 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. 158 R., dated 13th March 1894.]

(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 13th March 1894, No. 158 R., Public Works.

Forwarded.

(By Order.)

Joint Secy. to Govt., P.W.D.,  
Railway Branch.



RAILWAY.

**Govt. of {1894} Madras.**  
**PUBLIC WORKS.**

*Dated March, 13th.*

*Recd.*

*Encl.*

G.O., 13th Mar. 1894, Nos. 157,  
158 R.

**MARCH.**

**Inspection Report**

Forwarding a copy of Proceedings passing orders on the — of the South Indian Railway for the half-year ended the 31st December 1893.

**SOUTH INDIAN RAILWAY (METRE GAUGE).**

*Total mileage open for traffic including Pondicherry Branch—1,051 miles.*

Inspection Report by Mr. C. T. R. Scovell, Government Inspector of Railways, Madras, for the half-year ending 31st December 1893.

The inspection of the Villupuram-Guntakal section was made between the 11th and 13th January and that of the main line between the 23rd January and 1st February 1894. The Agent, heads of departments, or their deputies and the district officers accompanied the inspection party.

*Main Line Section and Branches.*

2. **Banks and cuttings.**—Generally the banks and cuttings have been maintained up to their original section; necessary repairs have been carried out as required. The breaches which occurred near Trichinopoly and Gudur and on which a special report has been submitted have now been thoroughly repaired and consolidated.

The bank formation at mile 36/0 to 10, Arkonam branch, and at 268 and 293/1-11 miles, Erode branch, is low and requires making up.

3. **Bridges and culverts.**—The girders were examined as carefully as circumstances permitted with a view of finding out if there were any signs of overstrain caused by the O class engines. In every case they appeared to be in good order, no sign whatever of overstrain being perceptible. They are well painted or tarred as the case may be. The timbers are in good condition.

(a) 9-30 feet bridge, mile 71, Arkonam Branch.—A wire fence 6 feet from centre line forms with the bridge hand rail a foot-way for the public across this bridge and is a great convenience in times of flood. Under the circumstances the infringement might be permitted; a few of the foot-path planks appeared to be rotten.

(b) Six feet girder bridge, mile 36/8.—North abutment badly cracked; should, I think, be under-pinned.

(c) Pálar bridge, mile 43.—In No. 1 span a longitudinal crack about 6 inches long was discovered between the fibres of one of the bars of the bottom boom when the bridge was being repainted. It appeared before the O class engines commenced running and is being carefully watched.

(d) The overhead bracing which infringes standard dimensions noticed in the last inspection report has been raised on the Tondayar bridge. Arrangements are in hand for raising it on other bridges and providing it where required.

(e) 17-100 feet girder bridge, mile 105.—Some of the cross girders have unnecessary holes in their top flanges which might with advantage be filled up.

(f) Examined the girders of the 10-20 feet girder bridge at miles 219/9 which are theoretically very weak. No sign of overstrain. As a precautionary measure sleeper cribs have been erected under this type of girder wherever they occur.

(g) In the last inspection report it was noticed that the road is not in the centre of the cross girders on the Erode branch. The Chief Engineer explains that it was decided at the time of the conversion of the gauge, in consultation with the then Consulting Engineer, to leave the line thus.

(h) Arch bridge at mile 278/3.—Slopes require to be pitched.

(i) The question of strengthening the weak cross girders of the Whipple Murphy trusses is one which must be taken up at once. No definite plan has yet been decided upon pending the suggestion of the company's Consulting Engineer Sir G. Bruce.

(j) The minor points referred to in the last inspection report have, unless otherwise stated, been attended to.

4. **Ballast.**—The line is fully ballasted throughout, but appears deficient in the neighbourhood of the 50 lb. renewals owing to the new pot sleepers requiring more ballast than the wooden.

5. **Permanent-way.**—The main line road is generally in excellent running order except as might be expected close behind the 50 lb. renewals.

The section between miles 130 and 145 was rough, the rails evidently not being level transversely.

The 41 lb. road between Tinnevely and mile 376 was in good order and the running very smooth.

(a) The Stoney locking bars which are provided at Egmore and Chingleput require to be lengthened to suit the new bogie stock.

(b) Some point hand signal lamp posts on the Madras-Chingleput section infringe standard dimensions.

(c) The 50 lb. road has been laid from Madras Beach to mile 340 and also between 342 and 368, 374 and 376, 426 and 444 (Tuticorin).

(d) On the northern division the cast iron pot sleepers, of which there are 7 pairs to the 24 foot rail, have, except on curves where all are so provided, 4 pairs connected with tie bars and 3 without. This arrangement has been found to give trouble when lifting and packing and at all renewals tie bars are now provided to every pair of pots.

(e) The speed of trains over facing points is 10 miles an hour for stopping trains and 5 miles an hour for non-stopping trains. The means of locking facing points was carefully examined. The new pattern in which the bolt passes through a radial arm and the point rod is perhaps the best and the one in more general use. A movement of  $\frac{1}{8}$  to  $\frac{3}{8}$  of an inch was usual. The type known as Armstrong's patent A, which is used on the old broad gauge section, is dangerous without a bolt through the switch and stock rails.

I am of opinion that the bolt and tapering cotter with the hasp hole close up to the bolt should gradually be substituted for the other systems.

6. **Level crossings.**—The gate lodges between Egmore and Guindy should be provided with electric bell communication to warn gate-keepers of approaching trains; not only would this conduce to the greater safety and convenience of the public, but it would minimize the necessity for the amount of whistling which now goes on and which has become a public nuisance.

(a) Four gate lodges on the Arkonam-Conjeeveram section infringe present standard dimensions.

(b) A deputation waited on the Agent at mile 262/13, Negapatam branch, asking that the footpath crossing at this place might be widened into a cart crossing. The Agent promised to comply conditionally on the villagers paying the cost of the alteration.

(c) A number of level crossings on the Negapatam branch and the southern division have very steep approaches. I understand the villagers resent giving up their land for the purpose of lengthening the grade. It is for them to meet the railway half-way if they want better facilities.

7. **Fencing.**—The aloe fence on the northern division is in good order, though for many miles it has had to be wired. South of Madura, however, the aloes do not thrive and give continual trouble. If it is desired that the line should be proof against cattle trespass, I am of opinion that the aloes should be gradually replaced with wire. It is instructive to note that in the quarter ending September 1893, out of 52 cases of cattle trespass, 42 occurred on the fenced line and 10 on the unfenced, the respective lengths being 654 and 388 miles and the average number of trains in both directions being about as 12 : 4.

8. **Rolling-stock.**—(a) Recently 20 O class 4 coupled passenger engines have been received from England, whose axle weights exceed the maximum prescribed by the Government of India. They have, in consequence of the weak cross girders above referred to, been restricted to certain section of the line where there are no weak cross girders. These engines will draw on the mail trains 26 ordinary vehicles at 25 miles an hour.

(b) A complete train of 40 feet bogie stock has been turned out of the shops and is now running. This train is fitted with the vacuum brake, which, however, in consequence of the O class engines not running regularly, is not in use. These carriages have been fitted up with every modern improvement and the complaints against uncomfortable accommodation on the South Indian Railway must soon be a thing of the past.

In consequence of the recent additions to locomotive and carriage stock, the Locomotive Superintendent has been able to withdraw the older stock more frequently for examination and repairs with satisfactory results.

(c) Some of the new carriages have been painted instead of varnished, the invariable practice hitherto. This I understand is by way of experiment.

(d) The condition generally of all the rolling stock on this railway has, of late, been much improved.

9. **Workshops.**—*Locomotive shops at Negapatam.*—On the date of the inspection these shops were very crowded with work. This possibly is only temporary owing to large amount of 40 bogie stock in course of erection, but in consequence of the continued extension of the railway more accommodation is necessary. The boiler shop, foundry and coppersmiths' shops were particularly noticed as being too small for the work. The coppersmiths' shop especially should, I think, be increased if it is intended that it should carry out the work expected of it.

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The action of the Locomotive department in putting on locomotives, which infringe the Government standards, without giving any notice to the Railway Engineers, or the Consulting Engineer's department, does not appear to have received sufficient notice.

As the Government Inspector is made under rule 72 of Circular 7 of 1892 responsible that the bridges on the section over which engines are to work are of sufficient strength, I think the matter should not be allowed to rest here.

It will take about 6 or 7 months to put the girders in order to take these engines, during which time they have to remain idle or doing half work; the outcome being much waste of money resulting from want of touch between departments.

The revision of the working of the line-clear system demands the close attention of the Traffic Department.

Sufficient time must be allowed to carry out the rules which the company lay down, or the rules should be altered.

The condition of the steel sleepers at Chittoor should be reported on.

It appears that more careful attention has been paid to the renewals of the steel sleepers in the half-year under notice as the returns show only 6 sleepers renewed during January—June 1893, and 155 during July—December 1893.

27th February 1894.

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

## APPENDIX A.

### Renewals of Permanent-way (excluding sidings).

|                    |     |     |     |     |     |     | Taken out<br>of line. | Laid on line. |
|--------------------|-----|-----|-----|-----|-----|-----|-----------------------|---------------|
| <b>Rails—</b>      |     |     |     |     |     |     |                       |               |
| Iron, 68 lb        | ... | ... | ... | ... | ... | ... | 169                   | 169           |
| " 40 "             | ... | ... | ... | ... | ... | ... | 7,661                 | Nil           |
| Steel, 50 "        | ... | ... | ... | ... | ... | ... | 7                     | 5,405         |
| " 41 "             | ... | ... | ... | ... | ... | ... | 686                   | 605           |
| <b>Sleepers—</b>   |     |     |     |     |     |     |                       |               |
| Pine               | ... | ... | ... | ... | ... | ... | 28,549                | 6,456         |
| Pingadu            | ... | ... | ... | ... | ... | ... | 9,917                 | 2,264         |
| Teak               | ... | ... | ... | ... | ... | ... | 151                   | 15            |
| C.L. post, 68 lb   | ... | ... | ... | ... | ... | ... | 41                    | 41            |
| " " 50 "           | ... | ... | ... | ... | ... | ... | 32                    | 29,437        |
| " " 40 "           | ... | ... | ... | ... | ... | ... | 24                    | 24            |
| Steel transverse   | ... | ... | ... | ... | ... | ... | 155                   | 151           |
| Denham and Opperts | ... | ... | ... | ... | ... | ... | 161                   | 161           |

## APPENDIX B.

### Renewals, Repairs of Rolling-stock, Negapatam Shops.

|                   |     |     |     |     |     | Received. | Turned<br>out. | Under going<br>and awaiting<br>repairs. |
|-------------------|-----|-----|-----|-----|-----|-----------|----------------|-----------------------------------------|
| Coaching vehicles | ... | ... | ... | ... | ... | 277       | 262            | 161                                     |
| Goods "           | ... | ... | ... | ... | ... | 1,180     | 1,252          | 225                                     |

Proc. for approval - 7392

W. E. R.  $\frac{10}{5}$

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89

PUBLIC WORKS DEPARTMENT.

OFFICE OF CONSULTING ENGINEER FOR RAILWAYS,

Madras, 12<sup>th</sup> March 1894

No. 154 R 2 13<sup>th</sup> March 1894.

Print

Report of inspection of the South Indian Railway for the h-y. ended the 31<sup>st</sup> Dec 93

No. 9

SUBMITTED.

For the information of Government.

Print

And for the submission to the Govt of India of 35 Copies of the Report with the orders passed thereon

Subject.

Order

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The report of inspection of the South Indian Railway will be communicated to the Agent for information and necessary action.

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Govt. of India

No. 158 Rg 13 March 94

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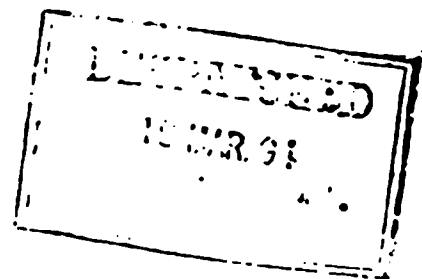
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