Public Works (1898) Department.

G.O., No. 9472

Dated 6-4-1898.

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[Despatch Abstract.]

South Indian Railway: P. W. Pros: in the Railway Branch on the Govt Inspector's report of inspection of the — (including the Mayavaram Mutupet and Pondicherry Railways) for the half year ending 31st December 1897 recorded with the remark that the subject of para 40 of the report is one for Consideration in the Marine Dept.

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6/4/98

[P. W. 28. 1,000—2-3-98]

Indexed. 16/4

## BACK PAPERS.

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

## FURTHER PAPERS.

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

Public works (1898) department

Current No: 2827

RAILWAY.

# Government {1898} of Madras.

## PUBLIC WORKS.

*Recd.* 28. 3. } 1898.
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*Enclosures*

*Spare copies* 10

**G.O., No. 428 Ry., 18th March 1898.**

**MARCH.**

Recorded, with the remarks that the subject of para 40 of the report is one for consideration in the Marine Dept.

Clerk 14.4.98.

**Report of Inspection of the South Indian Railway (Including the Mayavaram-Mutupet and Pondicherry Railways)**

The Government Inspector's — for the half-year ending the 31st December 1897, communicated to the Agent for information and necessary action; and copy of the proceedings forwarded to the Government of India.

To the Marine Dept
& Railway Board
9/4/98

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper :—

# SOUTH INDIAN RAILWAY (INCLUDING THE MAYAVARAM-MUTUPET AND PONDICHERRY RAILWAYS).

METRE GAUGE.

*Total mileage open for traffic*, 1,104 *miles.*

Inspection Report for the half-year ending 31st December 1897.

The inspection was carried out between the 24th January and 5th February. The Agent and heads of departments were present; the District officers accompanied the train over their respective divisions.

2. The road generally is in good running order; the Pakala-Dharmavaram section was perhaps the best. The Pondicherry branch was rather rough, also the main line between Madura and Virudupati, and the Erode branch between 328–29.

3. Banks and cuttings are in good order throughout.

4. Bridges and Culverts.—The bridges generally are in excellent order, and there is a pleasing absence of packing and chips.

5. The revised calculations of girder stresses are nearly completed and the Chief Engineer will submit them very shortly.

6. An estimate amounting to Rs. 8,000 was prepared some time ago for removing the earth which now obstructs the waterway at Ginjee bridge (22 spans of 30 feet, mile 85–86) referred to in the last inspection report; the method proposed is to cut several narrow channels through it and to assist the scouring action of the water by making a temporary dam some distance upstream. As the money spent in lengthening the bridge is practically thrown away until the obstruction is removed, I think this work should be put in hand at once. The same remarks apply, though in less degree, to the bridge of four 100-feet, mile 84–85.

7. The longitudinal sleepers of the Vennar bridge, six 50-feet, at mile 214–15, should be replaced with cross-sleepers. The masonry of a one span 40-feet girder bridge at mile 214/10 is badly cracked all over and must be renewed. I understand that both these bridges will be taken in hand at once.

8. An estimate of Rs. 10,000 has been prepared for adding ten 30-feet girders to the existing bridge at mile 253, Erode branch, to carry off land flood water into the Cauvery, but it is useless to start this work until the Local Board lengthen their road bridge, which I understand they have agreed to do.

9. A 40-feet girder, mile 325/5, Gudur-Nellore section, is being altered from metre to broad gauge. The broad gauge girders are to be placed on a trestle alongside and moved into position as soon as the abutments have been altered to receive them and the metre gauge girders have been removed. Stop signals should be erected and all trains brought to a stand while the work on the abutments is in progress.



10. A laminated crack, 10 inches long, was noticed in December last in the outer link of the second bay of the bottom boom at the north end of bridge—one 120 feet, mile 131–32, Villupuram-Pakala section. This is the member that is theoretically weakest. Coverplates should be rivetted on to both sides of the tie. The bridge wants painting.

11. The following also require painting: main line, fifteen 100-feet, mile 124–25 (in places only). Fourteen 150-feet at mile 155–56 (vertical links of end bays). Villupuram-Pakala section, thirteen 150-feet at mile 194–95; nine 40-feet, mile 228. Pakala-Nellore section, three 120-feet, mile 254–55. Some of the rivets which connect the overhead bracing with the main girders are very defective in this bridge. The red oxide paint does not seem to last very well. I think tar thinned down sufficiently with kerosine oil is better and cheaper.

12. The longitudinal sleepers, fifteen 100-feet, mile 124–25, are kept in position by holding down bolts only: in the other bridges of this type there are chubs rivetted to the cross-girders; unless it is intended to cross-sleeper the bridge shortly, ties and transoms should be added.

13. The villagers ask that the waterway of a culvert at mile 33/18, Villupuram-Nellore section, may be increased to prevent the tank bund between the road and the railway from being breached. The request seems reasonable.

14. Level Crossings.—No action has been taken with regard to protection of level-crossing gates in the neighbourhood of Madras and Trichinopoly. All, or nearly all, of these gates are situated between the station and one or other distant signal. It would cost little to fit each gate with a detector, so that the distant signal could not be pulled off until the gates are closed to the road. This might be tried in the Madras district in the first instance and, if it works well, extended to all gates so situated over the whole line.

15. Fencing.—The Chief Engineer has recently introduced a system of rewards to be given to the gangs which have the best record for preventing cattle-trespass and for keeping up their fencing. It is hoped this may reduce the large number of cases of cattle run over. A regular programme for erecting annually so many miles of wire fence in the worst places should be worked to.

16. The wire fencing at Tuticorin should be renewed at once, and that at Cuddalore abolished.

17. Ballast.—Is sufficient and of good quality, except on the Gudur-Nellore section which is being converted to broad gauge and where a lot more is required.

18. Permanent-way.—The old creosoted pine sleepers, Pondicherry branch, are being renewed as fast as new sleepers can be got; many of the pyngadu sleepers with which renewals have been made are in nearly as bad a condition as the creosoted pine.

19. A reserve of wooden sleepers should be kept up at a few central points for use in emergencies. I understand that there are practically no wooden sleepers in stock.

20. The renewals on the main line with 50 lb. rails and cast iron pots have now been completed.

21. Stations—General.—Plans and estimates have been prepared for a number of works more or less urgently required. Among these are improvements to station yards and buildings at Egmore, Tanjore, Máyavaram, station yard at Trichinopoly, additions and alterations to workshops and station yard and buildings at Negapatam, removal of home signals from the platform to points at 42 stations, additional staff quarters rendered necessary by the new engine-running scheme. To these should be added a proper system of interlocked points and signals at all junction stations. At present Villupuram and Tiruvallúr are the only junctions interlocked, and that only at one end. Two other ordinary wayside stations—Vandalur and Guduvancheri—are also interlocked. It is to be hoped that some at least of these works will be commenced in the present half-year. The notice boards at most stations require to be covered with tin. A sample barrier was erected at Trichinopoly outside the ticket window. The design seems suitable though rather too heavy, and is very much better than the cumbrous arrangements, which have been erected hitherto and which it is understood are to be removed. A type latrine has also been designed, which will be tried shortly and adopted if found satisfactory.

22. *Particular Stations—Egmore.*—It was arranged to place sliding gates in the arch between the verandah and the platform, and to block up with palisading the space between the verandah pillars so as to give separate entrance and exit for incoming and out-going passengers. *Perambair.*—Petitions have been received to convert this station, which has a thatched roof and sleeper walls, into a pucca station with a platform. I think it would probably save money in repairs if this and several other old construction stations were replaced by pucca buildings. *Villupuram.*—The native refreshment-room which was opened as a trial a short time ago has been decidedly popular. *Cuddalore Old Town.*—A drawing and estimate have been prepared for rodding the points of the cross-over road between main and beach lines as suggested in a previous report. *Killé.*—The temporary station-house might be replaced by a pucca building. *Kumbakónam.*—An extension of the third-class waiting shed is needed; the existing waiting-shed will be utilized for first and second class waiting rooms, parcels room, and booking office. Name boards are required over the doors of the different rooms. *Trichinopoly.*—A new kitchen has been built on the roof over the refreshment-room; the walls are faced for a height of 6 feet with white glazed Minton tiles, the same as at Chingleput. An institute was opened last November. The municipal water-supply had failed at the end of January, and I was informed it was not likely to be available again for another month. Several cases of cholera had occurred among the Company's employés which were attributed to their having recourse to old wells and tanks which had been thrown out of use since the new water-works were opened. *Dindigul.*—The ticket window is of an obsolete and inconvenient pattern. It is essential that there should be a projecting ledge outside the window, so that the passenger may easily gather up his change; many of the ticket windows were defective in this respect. *Ammayanayakanúr.*—The Traffic Department ask that the sides of the waiting-shed may be filled in to keep out the rain; this should, I think, be done. *Tinnevelly.*—New matting is wanted in the waiting rooms. Good coir matting would be cheaper in the long run and look nicer than what is now used. *Villiyampakkam-Arkonam branch.*—The old station hut might be replaced by a pucca building as soon as new repairs are wanted. *Venkatagiri.*—The dead end should be joined into the loop to facilitate working. *Vellore.*—An engine-shed is to be transferred from Kátpádi where it is not required. *Kadiri.*—Extension of third-class waiting-shed, goods-shed and lay-bye are said to be required; the latter might be made with permanent-way from Chinna Tippasamudram which has far more siding room than it is ever to likely require. A new station is wanted at mile 222/11, Negapatam branch. *Kodumudi, Erode branch.*—A deputation asked when the new station at Nóyil would be commenced. The station seems likely to do a good business and should, I think, be built shortly. *Negapatam.*—The carriage turn-table at the wharf needs repair.

23. Signals and Station-Yards.—The signals throughout the line were in excellent working order. I understand that Dutton's system, as worked at Vandalur and Guduvanchéri, is to be used at the 42 stations where removal of home signals from platform to points has been sanctioned. Before putting the work in hand, it would be well to consider whether the home signals would not be better placed 150 feet to 200 feet outside the facing points instead of opposite to them, so that shunting operations may be carried out under the protection of the home signal: additional rodding would be required which would increase the cost.

24. At Villupuram the fast train No. 24 has to pass round the ordinary mail No. 8: the points leading to the loop are not more than 20 yards from the tail of the standing train and are not interlocked in any way with any signal, and the in-coming driver has no knowledge of how they are set. A bracket signal should be attached to the main distant, on its right-hand side coming in; both signals should be detected with these points, the left-hand signal referring to the main line and the right hand to the loop. The Pondicherry branch distant signal should be similarly detected with the facing point beyond the level-crossing, but this is not so urgent.

25. At Villupuram an estimate (Rs. 4,940) has been prepared for disconnecting the engine-shed from the loop on which branch line trains come in. By the proposed arrangement engines from the locomotive lines come on to the traffic lines at one point only, on the 5th line, where a *disc* signal will be erected to control them when coming on to main line. The fuel stacks will be removed from the main line to the sick siding and fifth line. These alterations will very much improve the yard.



26. *Máyavaram.*—It is suggested that where the cross-over from the main line runs into the Mutupet main line, the latter should be diverted to one side and run into the loops, and the old Mutupet main line be converted into a shunting neck for a suitable distance. Pending proper interlocking alluded to above, this would make the working of the station safer. A new siding might also be given at the other end of the yard on the station building side.

27. *Tanjore.*—The cross-over road with diamond crossings is very much worn and should be replaced as soon as possible, ordinary points and crossings being used.

28. *Trichinopoly.*—A design for remodelling this yard was got out and approved by the Consulting Engineer: the estimated cost was Rs. 20,500 exclusive of interlocking; nothing has been done as yet towards carrying it out except that the locomotive stop signal is interlocked with the main line distant. In the meantime, the entrance from the locomotive yard to the Erode line should be cut off. Points No. 36 should be taken out and left close to the line for re-insertion in case the other entrance gets blocked.

29. *Madura.*—The locomotive sidings should be trapped at both ends.

30. *Tuticorin.*—Estimates have been submitted for carrying out the improvements to points and signals suggested in previous reports.

31. *Tirupati West.*—The catch siding is still used as an ordinary siding; a number of vehicles were standing on it the day I passed through. A sand siding, as described in *Engineering* of December 4th, 1897, might well be tried here; the cost would not be more than Rs. 2,000.

32. *Mangalampeta.*—This station is at the foot of a long 1/100 grade; it has no catch siding. The same arrangement should be adopted as recommended for Tirupati West.

33. *Tiruvallúr.*—Traffic working is hampered for want of more siding space. This can be given as arranged with the Chief Engineer by straightening out the second line outside the island platform and moving a cross-over between the two lines inside the island platform further out.

34. Rolling-Stock.—Four trains have been fitted with Winter's electric communication, and all the engines; the work of fitting all trains should be completed in six months. Communication is made by means of a handle to be pulled down instead of a glass-covered knob to be pressed; a tell-tale *disc* is also fitted to each carriage, so that the carriage from which communication was made may readily be identified.

35. The question of break-down trains alluded to in the inspection report for half-year ending June 1896 was discussed by a special committee. I understand that it was decided to have an ambulance carriage at Trichinopoly and four wagons with cranes at different points of the system. A design for the ambulance carriage is being prepared, but nothing seems to have been done towards carrying out the other recommendations of the Committee. In the event of a bad accident the want of a properly organized system would be much felt (see also remarks under Permanent-way).

36. Twenty-five engines out of a total of 69 passenger O class engines, and 208 engines of all kinds, have been fitted with the vacuum brake; 101 coaches have been fitted out of a total of 911. The sanctioned estimate has not been fully worked up to. I understand that the Agent does not contemplate fitting the brake to suburban trains, but it should be remembered that the saving of time on the local service between Pallavaram and Madras was one of the considerations put forward when the first estimate was submitted (*vide* Agent's No. 543 of 1893) and recognized by Government when sanction was given (*vide* paragraph 3 of G.O., No. 2375 R). I think a better rate of progress in fitting the brake should be aimed at not only for saving time to suburban trains but in the interests of public safety.

37. Workshops and Stores.—Large reductions of obsolete and surplus stores have been made during the half-year, but more may still be effected.

38. A project and estimate have been prepared for extending the shops at Negapatam. Additional accommodation will be given in the carriage painting shop, erecting shop, boiler shop and foundery; a new locomotive office will also be built. A pattern store is much needed.

39. Traffic.—The new system of train-loads has been introduced, but up to date has resulted I understand in a good deal of late running. This will doubtless be rectified as the staff get accustomed to it.

40. Passengers from Colombo to Tuticorin suffer great inconvenience and unnecessary expense on landing at the pier. This is a matter that might be considered in the Public Works and Marine Departments. The main obstacle to passengers using this route is the 6-mile trip to the steamer in a small and inconvenient launch; but the abolition of the worries of pier tolls and luggage would do much to make the route more popular.

41. Two models were tried of an automatic line-clear apparatus, one similar to that used on the Madras Railway, the other arranged to engage with a rod attached to the foot-plate. The latter seems the neater contrivance of the two. A trial of it should be made on a portion of the main line.

42. The system of crossing trains seems capable of improvement. The train which arrives first is admitted to the platform, discharges and takes in passengers, backs out, and comes in again on the loop, where it waits till the second train is admitted to the platform or runs through. It would seem more expeditious and less dangerous to admit the second train on the loop as soon as the first has come to a stand, run it to the other end of the station and back it into the platform as soon as the first train moves out, or run it through, as the case may be. This cannot be done at present, because the switches are only made to be locked for main line, but I understand that it has been decided to alter them so as to remove this difficulty. There are doubtless other reasons why the existing system, which causes considerably greater delay to trains, is adhered to. It would be interesting to know them.

43. Winter's new block and ticket instrument which was introduced at stations between Tanjore and Máyavaram on the occasion of the great Mahamagam festival at Kumbakónam worked most satisfactorily, the exceedingly heavy traffic being worked in a manner that would have been impossible with the ordinary arrangements. The efficiency of the apparatus having been thus satisfactorily proved, it is hoped that it may now be introduced in the near future over the main line, and later over the whole system.

Madras,
24th February 1898.

F. D. FOWLER,
Government Inspector of Railways.

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*Remarks by Senior Government Inspector.*

The Agent should report what action he proposes to take with reference to the several matters which have been brought to notice by Mr. Fowler as requiring attention.

The absence, brought to notice in paragraph 19, of any reserve of wooden sleepers is not satisfactory; I am aware that just now there is a tightness in the market, or a scarcity of the supply, of wooden sleepers. The use of a traffic siding at Tirupati West as a catch siding, referred to in paragraph 31, was noticed in the reports of last half-year. The whole question of the regulation of catch sidings in this circle of inspection is under consideration; the Madras Railway Company have submitted a valuable report on the subject, but the South Indian Railway Company have not yet reported. The matter should receive early attention. The system of regulating train loads by weights instead of by vehicles, referred to in paragraph 39, ought, I think, to result in an appreciable reduction of working expenses if the departments concerned will determine to give it a fair trial.

The improvement of the Tuticorin-Colombo service was, I understand, the principal object of the Company's Agent's recent visit to Calcutta. A report should be submitted on the subject referred to in paragraph 42. I agree with Mr. Fowler about the importance of the steady, if gradual, extension of the use of Winter's block and ticket instrument. Junction stations ought to be fitted with interlocking arrangements as opportunity and funds permit.

Madras,
28th February 1898.

Francis J. E. Spring,
Senior Govt. Inspector of Railways.



Order—No. 428 Ry., dated 18th March 1898.

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

2. The difficulty referred to in paragraph 40 of the report will be considered in the Marine and Public Works Departments.

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

[Here enter No. 429 Ry., dated 18th March 1898.]

(True Extract.)

Under Secretary.

To the Agent, South Indian Railway.
" Consulting Engineer for Railways.
" Marine Department.
" Public Works Department, General Branch.
" Local and Municipal Department.

Exd. W. D'Moss.