Urgent

Public Works (1898) Department.

RAILWAY BRANCH.

G.O., No. 1516-17 Ry.

DATED 9th Decr 1898

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[Despatch Abstract.]

Report of an Inspection, prior to opening of the Begoda - Nellore Section of the B & N.Ry.

Ordered that the —— by the Govt Inspector of Rys, together with the Senior Govt Inspector's Remarks thereon be forwarded to the Govt of India with the recommendation that the section may be opened for passenger traffic in time for Christmas holidays, on certain conditions & restrictions.

Forwarding Copy of Proc, containing the —— by the Govt Inspector of Rys together with the Senior Govt Inspector's ~~remarks on the conditions & restrictions~~ remarks thereon ——

Indexed

BACK PAPERS.

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

FURTHER PAPERS.

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

RAILWAY.

Government {1898} of Madras.

PUBLIC WORKS.

Recd. }1898. *Enclosures*

Regd. *Spare copies*

Letter, No. 1517 Ry., 9th December 1898.

DECEMBER.

Report of an Inspection, prior to opening, of the Bezwada-Nellore Section of the Bezwada-Madras Railway

Forwarding copy of Proceedings, containing the — by the Government Inspector of Railways, together with the Senior Government Inspector's remarks thereon.

PUBLIC WORKS DEPARTMENT.

Railway.

LETTER—from

FRANCIS J. E. SPRING, ESQ., C.I.E.,
Joint Secretary to the Government of Madras,
Public Works Department,
Railway Branch,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

SIR,

With reference to the final paragraph of the report on the Bezwada-Madras Railway which reached you under cover of my No. 1376 Ry., dated the 8th November 1898, I am instructed to forward a copy of this Government's Proceedings, No. 1516 Ry., dated 9th December 1898, containing a report of an inspection, prior to opening, of the Bezwada-Nellore section of that railway, with the Senior Government Inspector's recommendations thereon.

2. As there is known to be a public demand for the opening of this section in time for the Christmas holidays, I am desired to express the hope that, on the receipt of the report, the Government of India may find themselves able to order its opening for traffic on the conditions and with the restrictions recommended by the Senior Government Inspector.

I have the honour to be,
Sir,
Your most obedient servant,

FRANCIS J. E. SPRING,
Joint Secretary.

FORT ST. GEORGE,
9th December 1898.

Exd. T. K. Narayana Aiyangar.

RAILWAY.

Government {1898} of Madras.

PUBLIC WORKS.

Recd. } 1898. *Enclosures*
Regd. *Spare copies*

G.O., No. 1516 Ry., 9th December 1898.

DECEMBER.

Report of an Inspection, prior to opening, of the Bezwada-Nellore Section of the Bezwada-Madras Railway.

Ordered that the — by the Government Inspector of Railways, together with the Senior Government Inspector's remarks thereon, be forwarded to the Government of India with the recommendation that the section may be opened for passenger traffic in time for Christmas holidays.

and Bapatla, the signals have for the most part been erected, but the levers are in many cases not set and the wires are not attached. At Kavali and Uluvupad there were no distant signals and at Tettu only temporary distant signals.

In this connection I would mention that it was my intention to ascertain on the inspection if the station-masters at the several stations were thoroughly acquainted with the working of the List-Morse signals. I was, however, informed that at the request of the Traffic Department, East Coast Railway, all the construction station-masters had been served with one month's notice and that it was the intention of the Traffic Department to appoint new station-masters as soon as the line was opened for passenger traffic. A special man is then to be sent to spend some days at each station in turn and acquaint the station-masters with the List-Morse system of signalling. Meanwhile the signals are not, as a rule, being interlocked with the points. It would have been better policy, I consider, to have taught the station-masters their duties prior to opening for passenger traffic, and there must be some good men already on the Bezwada-Madras Railway, men who have seen and taken an interest in the erection of the signals and are already fairly conversant with the details. Personally I should not be prepared to recommend that night running be allowed till I had satisfied myself that the station-masters had mastered their duties.

13. *Points and crossings.*—I have little to say about these; they appeared to be all in good working order, and we passed over them smoothly except in one or two places where the new earthwork had evidently settled. The points will be interlocked with the signals and the levers are parallel to the line.

14. *Engine-turning at Gudur.*—As, pending the opening of the extension southwards, it would not be worth while to erect a turntable at Gudur, a triangle here is necessary and should be laid in before opening.

15. *Station yards.*—Sufficient siding accommodation appears to have been provided in all station yards. No scotch blocks are in use. The points of dead ends are supposed to be kept locked under the List-Morse locking arrangements; the same key that opens the through siding also opens the corresponding dead end, but these locks have not yet been fitted. What is required is an understanding between the Traffic Department of the East Coast Railway and the Engineers of the Bezwada-Madras Railway as to what is required for working the yards. Until the Traffic Department have authority to make their rules for working the yards and to say what they require in the way of scotch blocks, locks, &c., no satisfactory working is possible.

16. *Rolling-stock.*—The rolling-stock provided consists of 20 engines, 30 third-class carriages, 200 covered goods wagons, and 80 low-sided wagons. I am not prepared to say that this is sufficient, but as the line is a continuation of the East Coast Railway, I understand that the equipment has been made to suit their requirements. The inspection train consisted of a third-class Bezwada-Madras Railway carriage converted into an inspection carriage, an East Coast Railway composite and a covered goods. The travelling was exceedingly smooth and pleasant.

17. *Recommendations.*—It will be seen that a good deal of small work remains to be done before the section can be considered to have been satisfactorily completed. The following works must, in my opinion, be carried out before the line is opened.

(*a*) a triangle must be laid and be ready for use at Gudur.
(*b*) the remaining level-crossings must have guard rails.
(*c*) all platforms must be properly topped and cleared for a length of 300 feet in front of the station building, *i.e.*, all lever pits and signal wire drains must be completed properly, slabbed over and covered with earth.
(*d*) all temporary watering arrangements must be removed from platforms.
(*e*) either all signals must be completed, or the points must be spiked over to the platform line and the station treated as a non-crossing station.

18. I recommend that on the completion of the above works the Nellore-Bezwada section be opened for the public carriage of passengers subject to the following restrictions:—

(i) Speed never to exceed 25 miles an hour.
(ii) The running of passenger trains to be restricted to daylight only.

19. Before these restrictions are removed I consider that the following works should be completed:—

(*a*) The girders of bridges to be properly secured to their bedplates.
(*b*) The line to be more fully ballasted between Nellore and Bitragunta.
(*c*) All signals to be completed and properly interlocked with the points.
(*d*) All station-masters to be thoroughly familiar with their duties and with the working of the List-Morse signals.
(*e*) All station-houses to be completed and properly furnished.

20. The forms and certificates required to be furnished under Circular No. 6 Ry., dated 7th September 1893, are attached to this report, both for the Nellore-Kistna canal junction of the Bezwada-Madras Railway and for the Kistna canal junction-Bezwada section of the East Coast Railway.

J. C. LYLE,
Govt. Inspector of Railways.

Madras,
7th December 1898.

Remarks by the Senior Government Inspector of Railways, Madras.

I recommend that the Bezwada-Nellore section be opened for all traffic subject to the following proviso and restrictions:—

1*st*—That permission to open be not accorded until a certificate shall have been furnished by the Engineer-in-Chief to the effect that the matters enumerated in the Inspecting officer's paragraph 17, as essential for opening, have been actually completed.
2*nd*—The section will be opened for daylight running only for the present.
3*rd*—Maximum speed at any point must, for the present, be limited to 25 miles per hour.

Speed restrictions cannot be removed until the matters forming the subject of the Inspector's paragraph 19 have been attended to.

This recommendation covers also the short section of the East Coast (standard gauge) Railway lying between the opened East Coast and Nizam's (Bezwada extension) terminus at Bezwada, and mile 262·67 of the Bezwada-Madras Railway working section,— a point situated 2·74 miles from the centre of Bezwada passenger platform.

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

Madras,
7th December 1898.

Order—No. 1516 Ry., dated 9th December 1898.

The report will be forwarded to the Government of India.

[Here enter No. 1517 Ry., dated 9th December 1898.]

(True Extract.)

Francis J. E. Spring,
Joint Secretary.

To the Engineer-in-Chief, Bezwada-Madras Railway.
" Manager, East Coast Railway.
" Agent, Madras Railway.
" " South Indian Railway.
" Consulting Engineer for Railways.

Exd. T. K. Narayana Aiyangar.

Form No. 29.

Letter from

No.

Dated

To E. R.

Note of an Inspection of the Beyvada Madras Railway prior to opening for passenger traffic

The inspection was made on the 1st, 2nd, 3rd, 4th & 5th of December in company with Mr. Bartlett the Engineer in Chief and the Executive Engineers throughout their respective divisions.

Section

2. The railway for the purpose of this report may be divided into three sections

The Ennore - Gudur section
" Gudur Nellore "
" Nellore Beyvada "

Branch - Nellore Section

3. As my inspection proved that the first of these sections is totally unfit for present passenger traffic at present and as the Gudur - Nellore section has already been opened passed for passenger traffic I shall confine my remarks to the Nellore - Beyvada or more properly the Nellore - Kistna Canal - Junction Section.

4. Earthwork.

The earthwork is generally light there being no heavy banks & only two or three cuttings through laterite. In spite of the heavy rain which had fallen a few days previously the banks were in good order; this is partly ~~due~~ ascribable to the amount of sand which had been trained out for topping & ballasting purposes & partly to the care which had evidently been taken to drain the water away.

Very little water was lying in the side drains of the cuttings though naturally the recent heavy rain had caused some silting up.

Banks through tanks, or where water is likely to be pounded up, have, as a rule, been pitched & appeared to be efficiently protected.

5. Bridges & Culverts.

All bridges were complete with the exception of safety platforms for workmen & holding down bolts or some other device for preventing the girders from moving about on their bedplates.

I do not consider hand rails or parapets necessary, the public are not permitted to make use of any of the bridges.

Form No. 29.

Letter from

No.

Dated

To E. R.

The girders are supposed to be fastened down to their bedplates by holding down bolts passing through slotted holes thus leaving the girders free to move on the bedplates when expansion or contraction takes place.

These holding down bolts have however been omitted in some cases altogether & in some cases from one end of the girder. I understand that they were put in in the case of the girders first erected, but it was found that they did not allow the girders to expand freely & consequently the masonry suffered. Probably the nuts were too tightly screwed down or care was not taken to properly place the bolts in the centre of the slotted holes in the booms. It will be a very difficult matter to insert the missing bolts now, as some of them have been sawn off flush with the bedstone.

I am of opinion that an angle iron on each side of the boom firmly bolted to the bedstone would prevent the girders from moving laterally on the bedplates.

Ample facilities for the escape of ~~workmen~~ workmen from an approaching train are being given in the shape of safety platforms on the longer bridges, though they are not by any means complete yet. I am however of opinion that these are unnecessary as the piers themselves afford refuges for workmen on short spans (the longest span on the Railway is 70 ft.) & I found no difficulty in jumping down on to the piers while we were testing the girders.

All arched or slabbed bridges & culverts have a cushion of earth of not less than 18 inches.

The subject of waterway for bridges has been very thoroughly investigated on this section & although differences of opinion still exist I am of opinion that the waterway is sufficient always provided that tanks do not ~~breach~~ burst.

The main girders of the bridges are all properly braced together

Form No. 29.

Letter from

No.

Dated

To E. R.

6. Fencing.

There is no fencing on the line.

7. Level Crossings.

There being no fencing, gates ~~would be superfluous~~ & have not been provided though they will be, I believe, provided at crossings of the main road. Gate lodges are in many cases completed & in others in progress. At about twelve level crossings guard rails have not yet been laid, sleepers doing duty instead. I was told that the guard rails are ready & will be in position in a few days.

8. Mile & Gradient posts.

Temporary mile posts have been placed alongside the line. The permanent stones will be erected as soon as it is settled from what point the mileage should count. At present it is reckoned from a point on the Madras & 1.4 miles from the Central Station a very confusing point to choose. It appears

From the same reason the telegraph poles have not yet, except for a short length at the Northern end, been numbered, gradient posts mark I understand all changes of gradient.

9. Ballast & Permanent Way.
Nearly all the section has had a large quantity of sand ballast laid. Very little stone ballast has as yet been put on the line though a very large quantity has been collected, broken & stacked at depots. Some more ballast of some kind is required near the Bellore end before restriction of speed can be removed.

Sleepers.
10. The sleepers are of timber, mostly pynkado with several miles of sal. They appeared to me to be of excellent quality especially the pynkado.
No bearing plates are used, the sleepers next the joints are double spiked. The rails were properly fished, all fish bolts in place & the road was in excellent running order.

11. Station buildings, platforms etc.
The following notes taken on inspection will show that much still remains to be done.
Padugopad Platform more or less

Form No. 29.

Letter from
No.
Dated

To E. R.

complete but the excavation of the lever pit & drains for signal wires not filled in.
Tatamanchi. Platform half finished. Station House & Quarters just roofed in.
Allur Road Platform & nearly finished but there is a large hole where the excavation of the lever pit etc is in progress. Station house roofed in.
Temporary watering arrangement near the centre of & on the platform.
Bitragunta. Platform wall complete Platform requires some dressing off & levelling. Station House ready for roof, several quarters finished. Signal lever pit ready but levers not yet in place.
The above notes give an idea of the state of stations between Bellore & Bapatla. At Bapatla mile 220 & North to Kistna Canal junction the stations are very much further advanced in

fact practically complete.

At Kolanukonda, some three miles out South of Kistna Canal Junction there is a large ballast depot with a through siding and two lines off this to serve the depot. There is a telegraph hut & instrument & a very ~~Kaccha~~ temporary signal. It is proposed to ~~make~~ keep this as a block station when the line is opened. I think one set of points should be removed, they are not required. This will simplify signalling arrangements. A home signal for a main line trains & a starting signal for ballast trains coming out of the siding should, if ~~time clear~~ block working is strictly adhered to, ensure safe working.

12. Signals

The Dist. Morse system of signals is in course of erection & a few days should see all signals complete at most of the stations. At Bellore the signals are erected & working. ~~Similarly~~ At Bapatla & stations North ~~of~~ there the signals are either working or only require the attachments made.

At stations between Bellore & Bapatla, the signals have for the most part been erected but the

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Letter from

No. 51

Dated

To E. R.

levers are in many cases not set and the wires are not attached.

At Kavali & Ichavapad there were no distant signals & at Tetta only temporary distant signals.

In this connection I would mention that it was my intention on the inspection if the station masters at the several stations were thoroughly acquainted with the working of the Dist Morse signals. I was however informed that at the request of the Traffic Dept E. C. Rly all the construction station masters had been served with one months notice & that it was the intention of the Traffic Dept to appoint new station Masters as soon as the line was opened for passenger traffic. A special man is then to be sent to spend some days at

Last practically complete.

each station in turn & acquaint the Station Masters with the Dist Morse system of signalling. Meanwhile the signals are not, as a rule, being interlocked with the points. It would have been better policy, I consider, to have taught the Station Masters their duties prior to opening for passenger traffic, & there must be some good men already on the B. M. R^y, men who have seen & taken an interest in the erection of the signals & are already fairly conversant with the ~~by~~ details. Personally I should not be prepared to recommend that night running be allowed till I had satisfied myself that the Station Masters had mastered their duties.

13. Points & Crossings.

I have little to say about these they appeared to be all in good working order & we passed over them smoothly except in one or two places where the new earthwork had evidently settled. The points will be interlocked with the signals & the levers are parallel to the line.

Form No. 29.

Letter from

No.

Dated

To E. R.

14. Engine turning at Gruden.

In giving the opening of the extension onwards it would not be worth while to erect a turntable at Gruden, a triangle here is necessary and should be laid in before opening.

14 Turntables. There are should be turntables at Watton Canal Road Junction, and Bitragunta & Gruden. They have been provided at the two former stations but not at Gruden. Before the line is opened a triangle for turning Engines will have to be laid in at Gruden.

15. Station Yards.

Sufficient siding accommodation appears to have been provided in all station yards.

No scotch blocks are in use. The points of dead ends are supposed to be kept locked under the dist- Morse locking arrangements, the same key that opens the through siding also opens the corresponding dead end, but these locks have not yet been fitted. What is required is an understanding between the Traffic Dep^t of the E. C. R^y & the Engineers of the B. M. R^y as to what is required for working the

yards. ~~Until~~ the Traffic Dept have authority to make their rules for working the yards and to say what they require in the way of scotch blocks, locks etc no satisfactory working is possible.

16 Rolling Stock. The rolling stock provided consists of 20 Engines 30 3rd class carriages, 200 covered goods wagons 80 low sided wagons. I am not prepared to say that this is sufficient, but as the line is a continuation of the E. E. R.y I understand that the equipment has been made to suit their requirements. ~~I travelled in an E. L. R.y composite carriage some part of the way & sometimes in a B. M. R.y 3rd class~~ The inspection train consisted of a 3rd class B. M. R.y converted carriage, made into an Inspection carriage, an E. E. R.y composite & a covered goods. The travelling was exceedingly smooth & pleasant. ~~The Engineers are greatly pleased with the new B. M. R.y rolling stock.~~

Letter from

No.

Dated

To E. R.

17. Recommendations It will be seen that ~~It will be~~ a good deal of small work remains to be done before the section can be considered to ~~be~~ have been in working satisfactory ~~basis~~.

The following works must in my opinion be carried out before the line is opened at all.

(a) a triangle must be laid & be ready for use at Gudum.

(b) the remaining level crossings must have guard rails

(c) all platforms must be properly topped & cleared for a length of 300 feet in front of the station building i.e all level pits & signal wire drains must be completed properly slabbed over & covered with earth.

(d) all temporary watering arrangements must be removed from station platforms.

(e) either all signals must be completed or the points must be spiked over to the platform line, at the stations & non-crossing stations

Remarks by the Senior Government Inspector of Railways, Madras.

I recommend that the Bezwada Nellore section be opened for all traffic subject to the following provisions and restrictions.

1st. That permission to open be not accorded until a certificate shall have been furnished by the Engineer in Chief to the effect that the matters enumerated in the Inspecting Officer's para. —, as essential for opening, have been actually completed.

2nd. The section will be opened for daylight running only, for the present.

3rd. The maximum speed at any point must, for the present be limited to 25 miles per hour.

Speed restrictions cannot be removed until the matters forming the subject of the Inspector's paras — have been attended to.

This recommendation covers also the short portion of the East Coast Railway (standard gauge) lying between the ground Rock Cut on Nizam's (Branch extension) terminus at Bezwada, and mile 262.67 of the Branch Madras Railway working section — a joint section 2.74 miles from the centre of Bezwada passenger platform.

J. H. Spring
Senior Government Inspector of Railways

Madras
7-12-98

Subject to the carrying out of the above works I recommend that the Nellore Beyswada section be opened for the public carriage of passengers subject to the following restrictions.

(i) Speed never to exceed 25 miles an hour.

(ii) The running of passenger trains to be restricted to daylight only.

Before these restrictions are removed, I consider that the following works should be completed.

(a) The girders of bridges be properly secured to their bedplates.

(b) The line be more fully ballasted between Nellore & Bitragunta.

(c) All signals be completed & properly interlocked with the points.

(d) All Station Masters be thoroughly familiar with their duties & with the working of the dist. Morse signals.

(e) All Station houses be completed & properly furnished.

The forms & certificates required to be furnished under Circular No. 6 Railway of 7th September 1893 are attached to this report both for the Nellore-Kistna Canal Junction of the B. & N. Rys & the Kistna Canal Junction-Bezwada section of the E.C. Rly.

I recommend that on the completion of the above work

Secunderabad
7th Nov 98

J.C. Syle
Consulting Inspector of Railways

Madras
7th Nov 98

PUBLIC WORKS DEPARTMENT,

RAILWAY BRANCH.

Form No. 1.

Papers to be read in Proceedings:—

Again G.O., dated 8th November 1898, No. 1375-1376

Again G.O., dated 189 , No

Current No. of 189 , dated , from

" " " 189 , " , "

" " " 189 , " , "

Read also the following (Print in full D.'s report, and my remarks, on the Bezwada-Nellore section.

ORDER. No. 1516. Ry. dated 9/12/98.

The Report will be forwarded to the Govt. of India.

F.K.S.

No. 1517. Ry. dated 9/12/98

Letter to Govt. of India

Sir

With reference to the final paragraph of the report on the Bezwada-Nellore Ry. which reached you under cover of my No. 1376-Ry. dated the 8th Nov. 98, I am instructed to forward a copy of this Govt. Proceedings No. 1516 Ry. dated 9th Dec. 98, containing a report of an inspection, prior to opening, of the Bezwada-Nellore section of the Railway, with the Govt. Inspector's recommendations thereon.

2.— As there is known to be a public demand for the opening of this section in time for the Christmas Holidays, I am desired to express the

COP. forwarded Letter

Nellore-Krishna Canal Junction of the ... section ...

No. 1516 Ry., December 1898.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read again the following paper :—

G.O., Nos. 1375-76 Ry., dated 8th November 1898.

Read also the following paper :—

NOTE OF AN INSPECTION OF THE BEZWADA-NELLORE SECTION OF THE BEZWADA MADRAS RAILWAY PRIOR TO OPENING FOR PASSENGER TRAFFIC.

Length, 154½ *Miles. Gauge, Standard* 5′ 6″.

1. *General.*—The inspection was made on the 1st, 3rd, 4th and 5th of December in Company with Mr. Bartlett the Engineer-in-Chief and the Executive Engineers throughout their respective divisions.

2. *Section.*—The railway for the purpose of this report may be divided into three sections.

The Ennur-Gudur Section.
„ Gudur-Nellore „
„ Nellore-Bezwada „

3. *Bezwada-Nellore Section.*—As my inspection proved that the first of these sections is totally unfit for passenger traffic at present and as the Gudur-Nellore section has already been opened for passenger traffic I shall confine my remarks to the Bezwada-Nellore or more properly the Kistna Canal-Nellore section.

4. *Earthwork.*—The earthwork is generally light there being no heavy banks and only two or three cuttings through laterite. In spite of the heavy rain which had fallen a few days previously the banks were in good order; this is partly ascribable to the amount of sand which had been trained out for topping and ballasting purposes and partly to the care which had evidently been taken to drain away the water. Very little water was lying in the side drains of the cuttings though naturally the recent heavy rain had caused some silting up. Banks through tanks, or where water is likely to be pounded up, have, as a rule, been pitched and appeared to be efficiently protected.

5. *Bridges and Culverts.*—All bridges were complete with the exception of safety platforms for workmen and holding down bolts or some other device for preventing the girders from moving about on their bedplates. I do not consider hand rails or parapets necessary, the public are not permitted to make use of any of the bridges.

The girders are supposed to be fastened down to their bedplates by holding down bolts passing through slotted holes, thus leaving the girders free to move lengthways when expansion or contraction takes place. These holding down bolts have however been omitted in some cases altogether and in some cases from one end of the girder. I understand that they were put in in the case of the girders first erected, but whether from the nuts being too tightly screwed down or from care not being taken to properly centre the bolts in the slotted holes in the booms, it was found that they did not allow the girders to expand freely and consequently the masonry suffered. It will be a difficult matter to insert the missing bolts now, as some of them

have been sawn off flush with the bedstone but it has been explained to the Engineer-in-Chief how in other ways the girders may be prevented from moving laterally on their bedplates.

The main girders of the bridges are all properly braced together; ample facilities for the escape of workmen from an approaching train are being given in the shape of safety platforms on the longer bridges, though these are not by any means complete yet. I am, however, of opinion that escape platforms are not really necessary, as the piers themselves afford refuges for workmen on short spans (the longest span on the railway is 70 ft.) and I found no difficulty in jumping down on to the piers while we were testing the girders.

All arched or slabbed bridges and culverts have a cushion of earth of not less than 18 inches. The subject of waterway for bridges has been very thoroughly investigated on this section and although differences of opinion still exist, I am of opinion that the waterway is sufficient always provided that tanks do not burst.

6. *Fencing.*—There is no fencing on the line.

7. *Level crossings.*—There being no fencing, gates have not been provided though they will, I believe, be provided at crossings of the main road. Gate lodges are in many cases completed and in others are in progress. At about twelve level crossings guard rails have not yet been laid, sleepers doing duty instead. I was told that the guard rails are ready and will be in position in a few days.

8. *Mile and gradient posts.*—Temporary mile posts have been placed alongside the line. The permanent stones will be erected as soon as it is settled from what point the mileage should count. At present it is reckoned from a point on the Madras Railway, 1·4 miles from the Central Station, a very confusing point to choose. It ought to be reckoned from whatever point is the Madras Railway zero. For the same reason the telegraph poles have not yet been numbered, except for a short length at the northern end; gradient posts mark, I understand, all changes of gradient.

9. *Ballast and Permanent-way.*—Nearly all the section has had a large quantity of sand ballast laid. Very little stone ballast has as yet been put on the line though a very large quantity has been collected, broken and stacked at depots. Some more ballast of some kind is required near the Nellore end before restriction of speed can be removed.

10. *Sleepers.*—The sleepers are of timber, mostly pynkado with several miles of sal. They appeared to me to be of excellent quality especially the pynkado.

No bearing plates are used, the sleepers next the joints are double spiked. The rails were properly fished, all fish bolts in place and the road was in excellent running order.

11. *Station buildings, platforms, etc.*—The following notes taken on inspection will show that much still remains to be done.

Padugopad.—Platform more or less complete but the excavation of the lever pit and drains for signal wires not filled in.

Talamanchi.—Platform half finished. Station-house and quarters just roofed in.

Allur road.—Platform nearly finished, but there is a large hole where the excavation of the lever pit, etc., is in progress. Station-house roofed in.

Temporary watering arrangement near the centre of and on the platform.

Bitragunta.—Platform wall complete. Platform requires some dressing off and levelling. Station-house ready for roof, several quarters finished. Signal lever pit ready, but levers not yet in place.

The above notes give an idea of the state of stations between Nellore and Bapatla. At Bapatla mile 220 and north to Kistna canal junction the stations are very much farther advanced, in fact practically complete.

At *Kolanukonda*, some three miles south of Kistna canal junction, there is a large ballast depot with a through siding and two lines off this to serve the depot. There is a telegraph hut and instrument and a very rough temporary signal. It is proposed to keep this as a block station when the line is opened. I think one set of points should be removed, they are not required. This will simplify signalling arrangements. A home signal for main line trains and a starting signal for ballast trains coming out of the siding should ensure safe working if block working is strictly adhered to.

12. *Signals.*—The List-Morse system of signals is in course of erection, and a few days should see all signals complete at most of the stations. At Nellore the signals are erected and working. At Bapatla, and stations north of it the signals are either working or only require the attachments made.

At stations between Nellore and Bapatla, the signals have for the most part been erected, but the levers are in many cases not set and the wires are not attached. At Kavali and Uluvupad there were no distant signals and at Tetta only temporary distant signals.

In this connection I would mention that it was my intention to ascertain on the inspection if the station-masters at the several stations were thoroughly acquainted with the working of the List-Morse signals. I was, however, informed that at the request of the Traffic Department, East Coast Railway, all the construction station-masters had been served with one month's notice and that it was the intention of the Traffic Department to appoint new station-masters as soon as the line was opened for passenger traffic. A special man is then to be sent to spend some days at each station in turn and acquaint the station-masters with the List-Morse system of signalling. Meanwhile, the signals are not, as a rule, being interlocked with the points. It would have been better policy, I consider, to have taught the station-masters their duties prior to opening for passenger traffic, and there must be some good men already on the Bezwada-Madras Railway, men who have seen and taken an interest in the erection of the signals and are already fairly conversant with the details. Personally I should not be prepared to recommend that night running be allowed till I had satisfied myself that the station-masters had mastered their duties.

13. *Points and crossings.*—I have little to say about these; they appeared to be all in good working order, and we passed over them smoothly except in one or two places where the new earthwork had evidently settled. The points will be interlocked with the signals and the levers are parallel to the line.

14. *Engine-turning at Gudur.*—As pending the opening of the extension southwards, it would not be worth while to erect a turntable at Gudur, a triangle here is necessary and should be laid in before opening.

15. *Station yards.*—Sufficient siding accommodation appears to have been provided in all station yards. No Scotch blocks are in use. The points of dead ends are supposed to be kept locked under the List-Morse locking arrangements; the same key that opens the through siding also opens the corresponding dead end, but these locks have not yet been fitted. What is required is an understanding between the Traffic Department of the East Coast Railway and the Engineers of the Bezwada-Madras Railway as to what is required for working the yards. Until the Traffic Department have authority to make their rules for working the yards and to say what they require in the way of Scotch blocks, locks, &c., no satisfactory working is possible.

16. *Rolling-stock.*—The rolling-stock provided consists of 20 engines, 30 third-class carriages, 200 covered goods wagons, and 80 low-sided wagons. I am not prepared to say that this is sufficient, but as the line is a continuation of the East Coast Railway, I understand that the equipment has been made to suit their requirements. The inspection train consisted of a third-class Bezwada-Madras Railway carriage converted into an inspection carriage, an East Coast Railway composite and a covered goods. The travelling was exceedingly smooth and pleasant.

17. *Recommendations.*—It will be seen that a good deal of small work remains to be done before the section can be considered to have been satisfactorily completed. The following works must, in my opinion, be carried out before the line is opened at all:—

(*a*) a triangle must be laid and be ready for use at Gudur.
(*b*) the remaining level-crossings must have guard rails.
(*c*) all platforms must be properly topped and cleared for a length of 300 feet in front of the station building, *i.e.*, all lever pits and signal wire drains must be completed properly, slabbed over and covered with earth.
(*d*) all temporary watering arrangements must be removed from station platforms.
(*e*) either all signals must be completed or the points must be spiked over to the platform line, and the station treated as a non-crossing station.

18. I recommend that on the completion of the above works the Nellore-Bezwada section be opened for the public carriage of passengers subject to the following restrictions:—

(i) Speed never to exceed 25 miles an hour.
(ii) The running of passenger trains to be restricted to daylight only.

19. Before these restrictions are removed I consider that the following works should be completed:—

(*a*) The girders of bridges be properly secured to their bedplates.
(*b*) The line be more fully ballasted between Nellore and Bitragunta.
(*c*) All signals be completed and properly interlocked with the points.
(*d*) All station-masters be thoroughly familiar with their duties and with the working of the list (Morse signals).
(*e*) All station-houses be completed and properly furnished.

20. The forms and certificates required to be furnished under Circular No. 6 Ry., dated 7th September 1893, are attached to this report both for the Nellore-Kistna canal junction of the Bezwada-Madras Railway and the Kistna canal junction-Bezwada section of the East Coast Railway.

J. C. LYLE,
Govt. Inspector of Railways.

Madras,
7th December 1898.

Remarks by the Senior Government Inspector of Railways, Madras.

I recommend that the Bezwada-Nellore section be opened for all traffic subject to the following proviso and restrictions:—

1*st*—That permission to open be not accorded until a certificate shall have been furnished by the Engineer-in-Chief to the effect that the matters enumerated in the Inspecting officer's paragraph , as essential for opening, have been actually completed.

2*nd*—The section will be opened for daylight running only for the present.

3*rd*—Maximum speed at any point must, for the present, be limited to 25 miles per hour.

Speed restrictions cannot be removed until the matters forming the subject of the Inspector's paragraph have been attended to.

This recommendation covers also the short section of the East Coast Railway (standard gauge) lying between the opened East Coast and Nizam's (Bezwada extension) terminus at Bezwada, and mile 262·67 of the Bezwada-Madras Railway working section,— a point situated 2·74 miles from the centre of Bezwada passenger platform.

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

Madras,
7th December 1898.

Order—No. Ry., dated December 1898.

The report will be forwarded to the Government of India.

[Here enter No. Ry., dated December 1898.]

(True Extract.)

Under Secretary.

Exd. T. K. Narayana Aiyangar.

To the Engineer-in-Chief, Bezwada. Madras Railway
" Manager, East Coast Railway
" Agent, Madras Railway
" " South Indian Railway
" Consg Engr for Rys

No. 1617 Ry., December 1898.

PUBLIC WORKS DEPARTMENT.

Railway.

Letter—from

Francis J. E. Spring, Esq., c.i.e.,
Joint Secretary to the Government of Madras,
Public Works Department,
Railway Branch,

To

The SECRETARY to the GOVERNMENT of INDIA,
Public Works Department.

Sir,

With reference to the final paragraph of the report on the Bezwada-Madras Railway which reached you under cover of my No. 1376 Ry., dated the 8th November 1898, I am instructed to forward a copy of this Government's Proceedings, No. 1616 Ry., dated 9th December 1898, containing a report of an inspection, prior to opening, of the Bezwada-Nellore section of that railway, with the Senior Government Inspector's recommendations thereon.

2. As there is known to be a public demand for the opening of this section in time for the Christmas holidays, I am desired to express the hope that, on the receipt of the report, the Government of India may find themselves able to order its opening for traffic on the conditions and with the restrictions recommended by the Consulting Engineer.

I have the honour to be,
Sir,
Your most obedient servant,

Joint Secretary.

Fort St. George,
December 1898.

Exd. T. K. Narayana Aiyangar.

Documents accompanying:

Two sets of the following (both for the Kistna Canal junction & the Kistna Canal junction Bezwada section)

I. Tabulated details forms I to VII
II. Index plan & section (in separate parcel)
III. Certificates forms I to V
IV. Diagram of Testing Train (one only).

Despatched on 10/12/98