

Public Works (1893) Department.

RAILWAY BRANCH.

G.O., No. 1178 R

DATED 4th September

[Despatch Abstract.]

His Highness the Nizam's Guaranteed State Railway.

Inspection report of— including the Bezwada extension and the open sanction of the East Coast Railway for half-year ending 30th June 1893, with remarks thereon by the senior Cont. Inspector, Communicated to the Political Department and to the Railway administrations concerned.

BACK PAPERS.

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

FURTHER PAPERS.

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

REPORT ON THE INSPECTION OF HIS HIGHNESS THE NIZAM'S GUARANTEED STATE RAILWAY INCLUDING THE BEZWADA EXTENSION AND THE OPEN SECTION OF THE EAST COAST RAILWAY FOR THE HALF-YEAR ENDING 30TH JUNE 1893.

NIZAM'S GUARANTEED STATE RAILWAY AND BEZWADA EXTENSION (STANDARD GAUGE).

[Total mileage—338 miles.]

The inspection was made in company with the Agent and Manager, the Chief Engineer and Resident Engineers over their respective sections. It commenced on the 10th July and was completed on the 13th.

2. **Earthwork.**—The banks and cuttings are, with the exceptions noted below, in good order throughout. The necessary repairs to keep them up to proper section are executed as required.

3. Some cuttings appear to be too narrow and the sand ballast with which they are mostly ballasted is liable to be washed away. This was particularly noticeable in the cutting at mile 183/3. In such cuttings ballast walls should be built, but I see no necessity to build them in mortar as has been done on the Secunderabad-Bez-wada section. Dry walls have been used with success on the Villupuram-Guntakal Railway.

4. **Bridgework.**—Some of the cover stones of 8 slab drain openings near Wadi, which were found to be cracked, have been replaced with new stones. The cause of their cracking seems to have been the insufficient cushion of earth below the rails.

5. The dry stone return wall of arch at mile 9/12, which was badly bulged, has been rebuilt in mortar.

6. **Cracked arches.**—There are several cracked arches in the Wadi-Secunderabad section which have been commented upon in previous reports. The cause no doubt is the black-cotton soil foundations. None have, however, got any worse, but the 6 foot arch at mile 48/2, which is the worst, is about to be rebuilt.

7. **2 × 4' arch, mile 76/3.**—Return wings are badly cracked and the waterway is considered insufficient. It is proposed to dismantle the wings, rebuild them splayed, and at the same time increase the height of the abutments.

8. It has previously been brought to notice that holding down bolts connecting the bed plates of some 20 foot girders with the timber seats were missing. These have been provided.

9. On the 10th July a very high flood passed through the Wira bridge (8 spans of 60 feet, mile 301). The water reached the bottom flanges of the girders and disturbed the pitching round the abutments. Repairs will be put in hand at once.

10. In many minor bridges and culverts the down-stream aprons have been partially washed away by the recent floods, but will receive immediate attention.

11. **Sixty-foot Warren girders.**—These girders have been already fully dealt with in a special report by Captain Shelley, R.E. The Chief Engineer informs me that estimates are now under preparation for substituting plate girders. The full number of

girders will not have to be replaced as some of the spans will be blocked up, the waterway originally provided being in excess of requirement. A full report with data and calculations should be submitted to the Consulting Engineer before any action is taken. It would be interesting to know how the waterways were originally calculated.

The following are the proposals regarding reduction of waterways:—

Four spans at mile 28½ to be abolished altogether. This bridge is not of any use for the purpose for which it was intended, viz., to take a portion of the flood water which now passes entirely through the next bridge at mile 29. Water merely heads up from the down-stream side of the railway.

Thirteen spans at mile 29.—Four spans to be closed up. The waterway for this river will thus be reduced by 8 spans.

Fifteen spans at mile 40½.—No reduction.

Five spans at mile 47½.—Two to be closed up.

Six spans at mile 53½.—Two to be closed up.

Two spans at mile 97.—The drainage area is reported to be 2½ square miles. It is proposed to replace the bridge with one span of 20 feet.

One span at mile 100½
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The waterway of those near Hyderabad will not be reduced owing to the difficulty of sinking foundations in the bed of the Houssain Saugor tank, which is seldom, if ever, dry.

12. *Ballast.*—The line is as a rule sufficiently ballasted either with stone or sand. In places however, it is deficient particularly on the Bezvada extension where it is chiefly moorum and should be replaced by either sand or stone.

13. *Permanent-way.*—The first 20 miles out of Wapi are somewhat rough owing to the black-cotton soil of which the banks are made and also to the old iron road; the remainder of the line is in excellent order throughout; the running being particularly smooth. It is proposed to complete the renewal of the remaining 47 miles of iron rails with bull-headed steel rails laid in the old pot sleepers at the rate of 12 miles a year.

14. Some curves require realignment, particularly in the section east of Kasipet.

15. In places some trees on the bank are dangerously close to the line and their branches touch the carriages of passing trains. They should be removed.

16. *Trimulgherry branch.*—This branch is merely a troop siding and is used not more than twelve times a year. The wooden sleepers are in a very bad state and will soon require renewing.

17. *Stations and buildings.*—*Golaguda.*—The platform should be lengthened and the walls, which are bulged, should at the same time be rebuilt plumb. I understand the work will be put in hand immediately.

18. *Seram.*—A third loop siding has been laid.

19. *Vikrabud.*—This station, the highest point on the line, is becoming a hot weather sanitarium for the Hyderabad nobles and residents of Secunderabad. A third loop siding has been laid and a larger refreshment room is being built, the present small one will be converted into a ladies' waiting room.

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21. *Alur.*—At this station and also at several others between it and Bezvada the passenger waiting sheds were blocked up with goods and the police guards were of necessity encamped in them also. This practice is objectionable not only on account of the inconvenience to passengers but also on sanitary grounds.

22. *Kondupally.*—The contractor who repaired the wash-aways at this station, which were referred to in the previous inspection report, has not yet been paid pending a decision as to whether the Revenue authorities or the railway are to incur the cost. The cause of the tank breaching seems to have been that the owner of the tank threw up the bund across a cart track and the cartmen in order to gain access to the station cut a ramp through the bund. A proper calingula with which the tank was then unprovided is now in hand.

23. *Dornakal junction.*—The mineral branch distant signal was found to be within standard dimension and is about to be shifted. A refreshment room has been added to suit the new timing of trains rendered necessary by the opening of the East Coast Railway.

24. The stations are generally neat, many of them boasting of pretty gardens for which prizes are annually given. The staff quarters and compounds are in a clean and sanitary condition. At some stations the wood work requires painting.

25. The platform fencing, especially where of wire, requires attention.

26. *Workshops.*—The Company's workshops are at present in the Secunderabad station and consist of one small shed and a number of scattered temporary buildings constructed of old sleepers and corrugated iron sheeting. The Locomotive Superintendent deserves great credit for the efficient state of repair in which he has been able to keep his rolling-stock. All erecting work has to be done in the open and the machinery in the shed is very cramped for space. The new shops and running shed in course of construction at Lallagooda, two miles east of Secunderabad, are well in hand. The earthwork and masonry is practically finished and it is hoped the shops will be complete in every respect by the end of the year. They have been designed to comply with the terms of the Indian Government Factory Act, although there is no such Act in force in the Nizam's territory.

27. *Rolling-stock.*—The rolling-stock is in good order, but more attention should be paid to the cleaning and lighting of passenger vehicles.

28. The catch arrangement for raising and lowering windows is very complicated and unsatisfactory. Unless a new system is adopted instructions for using the present one should be displayed inside the carriages.

29. *Fencing.*—The fencing, where it exists, is generally in good order.

30. *Train service.*—To meet the convenience of passengers to and from the East Coast a through service has been established between Gódávári and Wadi.

31. *Breaches.*—On the 15th June and again on the 10th July the line was breached in many places happily without any accident occurring. In most cases the cause was the breaching of tanks situated above the railway. These tanks are, I understand, under the control of the Tank Department of the Nizam's Government. The efficient repair and maintenance of tanks endangering the railway and the safety of life and property should receive the prompt attention of that Department. It is impossible for the Railway officials to inspect the condition of tank bunds, which in many instances may be several miles from the railway. This is obviously the duty of the Tank Department. This source of danger to the public is one over which the Railway authorities have no control and which can only be guarded against by a system of patrolling which is not always to be trusted to.

32. The following are the more important breaches:—

Mile 177.—Scour round east abutment of 4×20 bridge. *Cause:* tank bursting.

Mile 179/18.—Bank about 3 feet high washed away for a length of 60 feet and the ballast scoured out for a distance of two chains. *Cause:* a tank through which the line passes at mile 180½ and whose real overflow is on the down-stream side of the line bursting on the up-stream side.

Mile 192.—2×20' girder bridge.—The water flowed two feet over the girders, the east abutment being partially knocked to pieces by floating trees. It is proposed to increase the waterway by two additional spans. *Cause:* insufficient waterway.

Mile 225/11.—A gap, 100 feet in length, scoured out of a 10-foot bank. *Cause:* seven tanks bursting.

Mile 229/10.—Earthwork washed away for a distance of five chains. *Cause:* tanks bursting.

Mile 258.—Here the water accumulated and topped the bank. A channel which should have taken the water will be widened.

Mile 279/6.—The water topped a 10-foot bank owing to its being bunded up by an old breached bund and washed away a length of 180 feet. Bank and bridge should be raised two feet and a channel cut through the old bund.

Mile 281/16.—Owing to a large tank bursting a length of about ten chains of 10-foot bank partially washed away. The present 10-foot girder bridge does not appear to give sufficient waterway to take the ordinary drainage. The traffic was on the date of the inspection passed on a diversion which was in good order.

33. The railway continues to be ably and economically managed considering the difficulties to be faced and the paucity of traffic. It is hoped that the line will be no longer a financial burden on the Nizam's Government when the extension now under survey from Hyderabad to Munmar is constructed.

APPENDIX.

MAINTENANCE OF WAY.

Rails.

Details.	IRON.					STEEL.			
	Double headed weighing 66 lb. per yard.	Double headed weighing 1b per yard.	Bridge weighing per yard.	Others.	Total.	Flat footed steel weighing 66½ lb. per yard.	Double headed steel weighing 66 lb. per yard.	Total.	Total, iron and steel.
1. Miles of rail in way including sidings ..	99.02	..	..	38.25	137.27	920.72	18.38	639.10	776.37
2. Rails removed .. Mls.	..25	..	..	3.83	3.08	..05	..	..05	3.14
3. New rails laid .. "	1.83	..	..	1.27	3.00	..04	..01	..05	3.14

* Expressed in miles and decimals of a mile.

Sleepers.

Details.	Woods.			Iron.	Steel.	Total.
	Transverse.					
	Jungle 10' X 6" X 6".	Others.	Total.	Pairs of cast-iron posts.	Steel post-pod.	
1. Number of sleepers in way including sidings at the commencement of the half-year ..	..	35,958	35,958	246,129	636,196	817,283
2. Average age of sleepers in way at the end of the half-year Yrs.	..	13.39	13.39	19.37	8.49	10.46
3. Number removed	..	1,941	1,941	224	113	2,278
4. Number laid	..	293	293	1,611	374	2,278
5. Percentage of removals on total of each class ..	..	5.39	5.39	0.99	0.02	.27
6. Number of sleepers in way including sidings at the end of the half-year	..	34,310	34,310	246,616	636,467	817,283

EAST COAST RAILWAY OPEN SECTION—BEZWADA TO GODAVARI SOUTH BANK (STANDARD GAUGE).

[Total mileage—91 miles.]

The inspection was made on the 13th and 14th July in company with the Agent and Manager, His Highness the Nizam's Railway, the Engineer-in-Chief, East Coast Railway, and the District Engineers over their respective divisions.

2. **Earthwork.**—The practically continuous bank on which the railway runs was, in spite of recent heavy rain, in good order throughout though naturally soft; the slopes were somewhat gutted, but repairs were in hand where necessary.

3. **Bridgework.**—The bridges and culverts are complete with the exception of coping and in a few instances pitching. The latter is in hand, but the coping is postponed until more money is available.

4. **Ballast.**—There are about 20 miles ballasted with stone, the remaining distance being ballasted with either gravel moorum or sand. About $\frac{2}{3}$ of the total quantity of stone ballast has been collected and is mostly stacked on cess along the line, but it is not intended to spread this until the banks have become thoroughly consolidated except in those places where stone is already laid. Generally the ballast of its kind is quite sufficient though not up to full section.

5. **Permanent-way.**—The road was in very fair order in spite of recent heavy rain, the only bad portion being the nine miles between Thadapiligudam, mile 67, and mile 76, where the ballast is moorum. On the return journey the inspection train ran at 40 miles an hour comfortably except over the nine-mile section referred to.

6. **Stations and buildings.**—The station-houses, staff quarters, platforms, sidings, goods loading banks, lighting arrangements, latrines, watering arrangements, ashpits, wells, locomotive tanks, &c., are all complete so far as is intended in the present programme with the exceptions noted below. Platform fencing does not exist at any station.

7. **Bezwada.**—The sanction for construction of the works for accommodating the metre gauge in this yard has been obtained and the work is about to be put in hand at once.

8. **Gunnataram.**—The permanent station building has been stopped at ground level.

9. **Nuzvid.**—Approach roads are the only incomplete works at this station.

10. **Ellore.**—The goods shed and the metalling of the approach roads are well in hand; other works all complete.

11. **Bhimadol.**—Permanent station building has been stopped at platform level. The third loop siding is nearly ready.

12. **Chebrol.**—Temporary station-house complete.

13. **Thadapiligudam.**—The goods loading bank is in hand. There is a temporary station building here as well as at Nidavol.

14. **Kovur.**—Temporary buildings of all kinds. There is not sufficient breadth of platform here. Its present condition is dangerous as the station is in high bank and it has recently been found necessary to run passenger trains at night. A proper platform with fencing and lamps should be provided at once.

15. **Goddavari ferry.**—All buildings here are temporary except the station-master's house. The foundations for a turn-table were in hand.

16. **Goddavari bridge (ferry).**—The slip and pontoons for transporting goods wagons across to the north bank were nearly ready. A large number of temporary buildings originally built in anticipation of the bridge being constructed serve to accommodate the train staff. There is a triangle for reversing locomotives near the station.

17. Signals.—The signals are in good working order.

18. Fencing.—Except through Ellore town the line is unfenced. At all important level crossings, temporary gate lodges have been built, but as yet no gates have been erected.

19. Rolling-stock.—For traffic purposes the rolling-stock is supplied by the Nizam's Railway Company. The East Coast Railway stock is on this section used for construction only.

20. I understand when the trains run late the carriages are not lighted. This matter should be attended to.

21. Night running.—Owing to the breaches on the Nizam's Railway, the up-passenger train due at Gódvári ferry at 17-45 has been allowed to complete its journey after dark. As the breaches have now been repaired, there is no longer any necessity for night running.

22. Train service.—I understand the trains from Bezwada very often arrive late at Gódvári south bank and seldom to time. This necessitates the ferry being run at night—a most objectionable and dangerous proceeding. I consider every effort should be made to ensure the arrival of this train at its advertised time.

23. General.—At some of the stations feeder roads are required towards the west. Owing to the competition with the canal there appeared to be absolutely no goods traffic on this section. The only station at which any goods were to be seen was Ellore. These, which had come from the Nizam's Railway and were destined for Cocanada, had been unloaded only to continue their journey parallel with the railway by canal for the 50 miles to the Gódvári.

MADRAS,
2nd August 1893.

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

REMARKS BY THE SENIOR GOVERNMENT INSPECTOR.

The inspection report is on the whole satisfactory.

The chief points requiring attention are the inspection and control of the tanks which have caused the breaching of the Nizam's Guaranteed State Railway bank noted in paragraphs 31 and 32. This should be referred to the Political Department.

The reduction of the waterways mentioned in paragraph 11 is a matter demanding serious consideration and the report is awaited before any decision can be arrived at.

The proper fencing and lighting of platforms on the Bezwada-Gódvári section of the East Coast Railway is urgent if night running is necessary.

But the present time-table does not appear (paragraph 22) to be adhered to from some cause, and the attention of the Agent is asked to this point in view of the desirability of altering the timing as soon as the precautions noted in the preceding paragraph have been carried out. In any case the ferry should not be run at night.

A copy of this report and note to be forwarded to the Agent of the Nizam's State Railway and the Engineer-in-Chief of the East Coast Railway.

OOTACAMUND,
17th August 1893,

(Signed) F. R. UPCOTT,
Senior Government Inspector.

4TH SEPTEMBER 1893, No. 1178 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

Report on the inspection of His Highness the Nizam's Guaranteed State Railway including the Bezwada extension and the open section of the East Coast Railway for the half-year ending 30th June 1893.

ORDER—dated 4th September 1893, No. 1178 R., Public Works.

The above report with the remarks by the Senior Government Inspector will be communicated to the Political Department and to the railway administrations concerned for information and necessary action.

(True Extract.)

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

To the Agent and Manager, His Highness the Nizam's
Guaranteed State Railway, through the Consulting Engineer for Railways.
„ Engineer-in-Chief, East Coast Railway.
„ Political Department.

End C. A. Muniswamy.
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RAILWAY.

Govt. of (1893) Madras.
PUBLIC WORKS.

Dated September, 4th.

Recd.

Encl.

G.O., 4th Sept. 1893, No. 1178 R.

SEPTEMBER.

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Send to ER for approval

I want to see it again before it goes to

Pres - CM 9/8

Returned from 20/5 19/5/93

*Pres
Please send
two more fresh
proofs.
25/8*

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Mile 281/16.—Owing to a large tank bursting a length of about ten chains of 10-foot bank partially washed away. The present 10-foot girder bridge does not appear to give sufficient waterway to take the ordinary drainage. The traffic was on the date of the inspection passed on a diversion which was in good order.

33. The railway continues to be ably and economically managed considering the difficulties to be faced and the paucity of traffic. It is hoped that the line will be no longer a financial burden on the Nizam's Government when the extension now under survey from Hyderabad to Munmar is constructed.

APPENDIX.

MAINTENANCE OF WAY.

Rails.

Details.	IRON.					STEEL.			
	Double headed weighing 68 lb. per yard.	Double headed weighing 1b per yard.	Bridge weighing per yard.	Others.	Total.	Flat footed steel weighing 66 lb. per yard.	Double headed steel weighing 68 lb. per yard.	Total.	Total iron and steel.
1. Miles of rail in way including sidings ..	99-02	..	..	28 25	137-27	520-72	18-28	539-10	778-37
2. Rails removed * .. Mls.	25	..	..	8 83	2-09	08	..	08	8-14
3. New rails laid ..	1-83	..	..	1-27	3 09	04	01	05	3-14

* Expressed in miles and decimals of a mile.

MAINTENANCE OF WAY.

Sleepers.

Details.	Wood.			Iron. Pairs of cast-iron pots.	Steel. Steel pos-pod.	Total
	Transverse.					
	Jungle 10' x 6" x 6"	Others.	Total.			
1. Number of sleepers in way including sidings at the commencement of the half-year.	..	35,958	35,958	245,128	536,196	817,282
2. Average age of sleepers in way at the end of the half-year .. Yrs.	..	13-39	13-39	19-37	6-49	10-46
3. Number removed ..	..	1,941	1,941	224	112	2,278
4. Number laid ..	..	293	293	1,611	374	2,278
5. Percentage of removals on total of each class..	..	5-39	5-39	0-09	0-02	0-27
6. Number of sleepers in way including sidings at the end of the half-year ..	..	34,310	34,310	246,616	536,457	817,283

EAST COAST RAILWAY OPEN SECTION—BEZWADA TO GODAVARI SOUTH BANK

Total mileage 91 miles

The inspection was made on the 13th and 14th July in company with the Agent and Manager, His Highness the Nizam's Railway, the Engineer-in-Chief, East Coast Railway, and the District Engineers over their respective divisions.

2. Earthwork.—The practically continuous bank on which the railway runs was, in spite of recent heavy rain, in good order throughout though naturally soft; the slopes were somewhat gutted, but repairs were in hand where necessary.

3. Bridgework.—The bridges and culverts are complete with the exception of coping and in a few instances pitching. The latter is in hand, but the coping is postponed until more money is available.

4. Ballast.—There are about 20 miles ballasted with stone, the remaining distance being ballasted with either gravel moorum or sand. About $\frac{3}{4}$ of the total quantity of stone ballast has been collected and is mostly stacked on cess along the line, but it is not intended to spread this until the banks have become thoroughly consolidated except in those places where stone is already laid. Generally the ballast of its kind is quite sufficient though not up to full section.

5. Permanent-way.—The road was in very fair order in spite of recent heavy rain, the only bad portion being the nine miles between Thadapiligidam, mile 67, and mile 73, where the ballast is moorum. On the return journey the inspection train ran at 40 miles an hour comfortably except over the nine-mile section referred to.

6. Stations and buildings.—The station-houses, staff quarters, platforms, sidings, goods loading banks, lighting arrangements, latrines, watering arrangements, ashpits, wells, locomotive tanks, &c., are all complete so far as is intended in the present programme with the exceptions noted below. Platform fencing does not exist at any station.

7. Bezwada.—The sanction for construction of the works for accommodating the metre gauge in this yard has been obtained and the work is about to be put in hand at once.

8. Gunnavaram.—The permanent station building has been stopped at ground level.

9. Nazrid.—Approach roads are the only incomplete works at this station.

10. Ellore.—The goods shed and the metalling of the approach roads are well in hand; other works all complete.

11. Bhimadol.—Permanent station building has been stopped at platform level. The third loop siding is nearly ready.

12. Chibrol.—Temporary station-house complete.

13. Thadapiligidam.—The goods loading bank is in hand. There is a temporary station building here as well as at Nidavol.

14. Korur.—Temporary buildings of all kinds. There is not sufficient breadth of platform here. Its present condition is dangerous as the station is in high bank and it has recently been found necessary to run passenger trains at night. A proper platform with fencing and lumps should be provided at once.

15. Gōdāvari ferry.—All buildings here are temporary except the station-master's house. The foundations for a turn-table were in hand.

16. Gōdāvari bridge (ferry).—The slip and pontoons for transporting goods wagons across to the north bank were nearly ready. A large number of temporary buildings originally built in anticipation of the bridge being constructed serve to accommodate the train staff. There is a triangle for reversing locomotives near the station.

17. Signals.—The signals are in good working order.
 18. Fencing.—Except through Ellore town the line is unfenced. At all important level crossings, temporary gate lodges have been built, but as yet no gates have been erected.

19. Rolling-stock.—For traffic purposes the rolling-stock is supplied by the Nizam's Railway Company. The East Coast Railway stock is on this section used for construction only.

20. I understand when the trains run late the carriages are not lighted. This matter should be attended to.

21. Night running.—Owing to the breaches on the Nizam's Railway, the up-passenger train due at Gódvári ferry at 17.45 ^{has been} allowed to complete its journey after dark. As the breaches have now been repaired, there is no longer any necessity for night running.

22. Train service.—I understand the trains from Bezvada very often arrive late at Gódvári south bank and seldom to time. This necessitates the ferry being run at night—a most objectionable and dangerous proceeding. I consider every effort should be made to ensure the arrival of this train at its advertised time.

23. General.—At some of the stations feeder roads are required towards the west. Owing to the competition with the canal there appeared to be absolutely no goods traffic on this section. The only station at which any goods were to be seen was Ellore ^{These} and ~~in this~~ ^{the} goods, which had come from the Nizam's Railway and were destined for Cocanada, had been unloaded here only to continue their journey parallel with the railway by canal for the 50 miles to the Gódvári.

MADRAS,
 2nd August 1893.

(Signed) C. T. R. SCOVELL,
 Consulting Engineer for Railways.
 Government Inspector

Remarks by the Senior Government Inspector

The inspection report is on the whole satisfactory—

The chief points requiring attention are the inspection & control of the ^{main f.s.} tanks which have caused the breaching of the Railway bank noted in paras 31 and 32—

This should be referred to the Political Department—

The reduction of the waterways mentioned in para 11 is a matter demanding serious consideration and the report is awaited before any decision can be arrived at—

The proper fencing & lighting of platform on the Bezvada Gódvári section of the East Coast Ry is urgent if night running is necessary—

See Principal

But the present time table does not appear para 22. The addition to from some cause and the attention of the agent is called to this point in view of the desirability of altering the timing as soon as the precautions noted in last para have been carried out— In any case the ferry should not be run at night—

A copy of this report & note to be forwarded to the agent of the Nizam State Ry & the Engr. in Chief of the East Coast Ry.

F. Prescott
 Senior Govt. Inspector
 F 93

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REPORT ON THE INSPECTION OF HIS HIGHNESS THE NIZAM'S
GUARANTEED STATE RAILWAY INCLUDING THE BEZWADA
EXTENSION AND THE OPEN SECTION OF THE EAST COAST
RAILWAY FOR THE HALF-YEAR ENDING 30th JUNE 1893.

NIZAM'S GUARANTEED STATE RAILWAY AND BEZWADA EXTENSION (STANDARD GAUGE).

[Total mileage—338 miles.]

The inspection was made in company with the Agent and Manager, the Chief Engineer and Resident Engineers over their respective sections. It commenced on the 10th July and was completed on the 13th.

2. *Earthwork.*—The banks and cuttings are, with the exceptions noted below, in good order throughout. The necessary repairs to keep them up to proper section are executed as required.

3. Some cuttings appear to be too narrow and the sand ballast with which they are mostly ballasted is liable to be washed away. This was particularly noticeable in the cutting at mile 183/3. In such cuttings ballast walls should be built, but I see no necessity to build them in mortar as has been done on the Secunderabad-Bez-wada section. Dry walls have been used with success on the Villupuram-Guntakal Railway.

4. *Bridgework.*—Some of the cover stones of 8 slab drain openings near Wadi, which were found to be cracked, have been replaced with new stones. The cause of their cracking seems to have been the insufficient cushion of earth below the rails.

5. The dry stone return wall of arch at mile 9/12, which was badly bulged, has been rebuilt in mortar.

6. *Cracked arches.*—There are several cracked arches in the Wadi-Secunderabad section which have been commented upon in previous reports. The cause no doubt is the black-cotton soil foundations. None have, however, got any worse, but the 6 foot arch at mile 48/2, which is the worst, is about to be rebuilt.

7. *2 x 4' arch, mile 76/3.*—Return wings are badly cracked and the waterway is considered insufficient. It is proposed to dismantle the wings, rebuild them splayed, and at the same time increase the height of the abutments.

8. It has previously been brought to notice that holding down bolts connecting the bed plates of some 20 foot girders with the timber seats were missing. These have been provided.

9. On the 10th July a very high flood passed through the Wira bridge (8 spans of 60 feet, mile 301). The water reached the bottom flanges of the girders and disturbed the pitching round the abutments. Repairs will be put in hand at once.

10. In many minor bridges and culverts the down-stream aprons have been partially washed away by the recent floods, but will receive immediate attention.

11. *Sixty foot Warren girders.*—These girders have been already fully dealt with in a special report by Captain Shelley, R.E. The Chief Engineer informs me that estimates are now under preparation for substituting plate girders. The full number of

girders will not have to be replaced as some of the spans will be blocked up, the waterway originally provided being in excess of requirement. A full report with data and calculations should be submitted to the Consulting Engineer before any action is taken. It would be interesting to know how the waterways were originally calculated.

The following are the proposals regarding reduction of waterways:—

Four spans at mile 28½ to be abolished altogether. This bridge is not of any use for the purpose for which it was intended, viz., to take a portion of the flood water which now passes entirely through the next bridge at mile 29. Water merely heads up from the down-stream side of the railway.

Thirteen spans at mile 29.—Four spans to be closed up. The waterway for this river will thus be reduced by 8 spans.

Fifteen spans at mile 40½.—No reduction.

Five spans at mile 47½.—Two to be closed up.

Six spans at mile 53½.—Two to be closed up.

Two spans at mile 97.—The drainage area is reported to be 2½ square miles. It is proposed to replace the bridge with one span of 20 feet.

One span at mile 100½
do. do. 111 }.—Each to be replaced with one span of 20 feet.

The waterway of those near Hyderabad will not be reduced owing to the difficulty of sinking foundations in the bed of the Houssain Saugor tank, which is seldom, if ever, dry.

12. **Ballast**.—The line is as a rule sufficiently ballasted either with stone or sand. In places however, it is deficient particularly on the Bezvada extension where it is chiefly moorum and should be replaced by either sand or stone.

13. **Permanent-way**.—The first 20 miles out of Wadi are somewhat rough owing to the black-cotton soil of which the banks are made and also to the old iron road; the remainder of the line is in excellent order throughout; the running being particularly smooth. It is proposed to complete the renewal of the remaining 47 miles of iron rails with bull-headed steel rails laid in the old pot sleepers at the rate of 12 miles a year.

14. Some curves require realignment, particularly in the section east of Kasipet.

15. In places some trees on the bank are dangerously close to the ~~centre~~ line and their branches touch the carriages of passing trains. They should be removed.

16. **Trimulgherry branch**.—This branch is merely a troop siding and is used not more than twelve times a year. The wooden sleepers are in a very bad state and will soon require renewing.

17. **Stations and buildings—Golaguda**.—The platform should be lengthened and the walls, which are bulged, should at the same time be rebuilt plumb. I understand the work will be put in hand immediately.

18. **Seram**.—A third loop siding has been laid.

19. **Vikrabud**.—This station, the highest point on the line, is becoming a hot weather sanitarium for the Hyderabad nobles and residents of Secunderabad. A third loop siding has been laid and a larger refreshment room is being built, the present small one will be converted into a ladies' waiting room.

20. **Hyderabad**.—An estimate has been prepared and now awaits sanction for the construction of a verandah over the platform in front of the station-house. The goods shed roof has been extended, but apparently a further extension will soon be required as on the day of the inspection the covered space was quite choked up and a large quantity of goods were lying out in the rain covered with tarpaulins.

21. **Alur**.—At this station and also at several others between it and Bezvada the passenger waiting sheds were blocked up with goods and the police guards were of necessity cramped in them also. This practice is objectionable not only on account of the inconvenience to passengers but also on sanitary grounds.

22. **Kondupally**.—The contractor who repaired the wash-aways at this station, which were referred to in the previous inspection report, has not yet been paid pending a decision as to whether the Revenue authorities or the railway are to incur the cost. The cause of the tank breaching seems to have been that the owner of the tank threw up the bund across a cart track and the cartmen in order to gain access to the station cut a ramp through the bund. A proper culingula with which the tank was then unprovided is now in hand.

23. **Dornakal junction**.—The mineral branch distant signal was found to be within standard dimension and is about to be shifted. A refreshment room has been added to suit the new timing of trains rendered necessary by the opening of the East Coast Railway.

24. The stations are generally neat, many of them boasting of pretty gardens for which prizes are annually given. The staff quarters and compounds are in a clean and sanitary condition. At some stations the wood work requires painting.

25. The platform fencing, especially where of wire, requires attention.

26. **Workshops**.—The Company's workshops are at present in the Secunderabad station and consist of one small shed and a number of scattered temporary buildings constructed of old sleepers and corrugated iron sheeting. The Locomotive Superintendent deserves great credit for the efficient state of repair in which he has been able to keep his rolling-stock. All erecting work has to be done in the open and the machinery in the shed is very cramped for space. The new shops and running shed in course of construction at Lallagooda, two miles east of Secunderabad, are well in hand. The earthwork and masonry is practically finished and it is hoped the shops will be complete in every respect by the end of the year. They have been designed to comply with the terms of the Indian Government Factory Act, although there is no such Act in force in the Nizam's territory.

27. **Rolling-stock**.—The rolling-stock is in good order, but more attention should be paid to the cleaning and lighting of passenger vehicles.

28. The catch arrangement for raising and lowering windows is very complicated and unsatisfactory. Unless a new system is adopted instructions for using the present one should be displayed inside the carriages.

29. **Fencing**.—The fencing, where it exists, is generally in good order.

30. **Train service**.—To meet the convenience of passengers to and from the East Coast a through service has been established between Gódvári and Wadi.

31. **Breaches**.—On the 15th June and again on the 10th July the line was breached in many places happily without any accident occurring. In most cases the cause was the breaching of tanks situated above the railway. These tanks are, I understand, under the control of the Tank Department of the Nizam's Government. The efficient repair and maintenance of tanks endangering the railway and the safety of life and property should receive the prompt attention of that Department. It is impossible for the Railway officials to inspect the condition of tank bunds, which in many instances may be several miles from the railway. This is obviously the duty of the Tank Department. This source of danger to the public is one over which the Railway authorities have no control and which can only be guarded against by a system of patrolling which is not always to be trusted to.

32. The following are the more important breaches:—

Mile 177.—Scour round east abutment of 4×20 bridge. *Cause*: tank bursting.

Mile 179/18.—Bank about 3 feet high washed away for a length of 60 feet and the ballast scoured out for a distance of two chains. *Cause*: a tank through which the line passes at mile 180½ and whose real overflow is on the down-stream side of the line bursting on the up-stream side.

Mile 192—2×20' girder bridge.—The water flowed two feet over the girders, the east abutment being partially knocked to pieces by floating trees. It is proposed to increase the waterway by two additional spans. *Cause*: insufficient waterway.

Mile 225/11.—A gap, 100 feet in length, scoured out of a 10-foot bank. Cause: seven tanks bursting.

Mile 229/10.—Earthwork washed away for a distance of five chains. Cause: tanks bursting.

Mile 258.—Here the water accumulated and topped the bank. A channel which should have taken the water will be widened.

Mile 279/6.—The water topped a 10-foot bank owing to its being bunded up by an old breached bund and washed away a length of 180 feet. Bank and bridge should be raised two feet and a channel cut through the old bund.

Mile 281/16.—Owing to a large tank bursting a length of about ten chains of 10-foot bank partially washed away. The present 10-foot girder bridge does not appear to give sufficient waterway to take the ordinary drainage. The traffic was on the date of the inspection passed on a diversion which was in good order.

33. The railway continues to be ably and economically managed considering the difficulties to be faced and the paucity of traffic. It is hoped that the line will be no longer a financial burden on the Nizam's Government when the extension now under survey from Hyderabad to Munmar is constructed.

APPENDIX.

MAINTENANCE OF WAY.

Rails.

Details.	IRON.					STEEL.			
	Double headed weighing 68 lb. per yard.	Double headed weighing 1b per yard.	Bridge weighing per yard.	Others.	Total.	Flat footed steel weighing 66½ lb. per yard.	Double headed steel weighing 68 lb. per yard.	Total.	Total, iron and steel.
1. Miles of rail in way including sidings ..	99.01	..	..	38.25	137.27	920.72	18.88	639.10	776.37
2. Rails removed * .. Mls.	25	..	..	2.83	3.09	05	..	05	8.14
3. New rails laid .. "	1.83	..	..	1.27	3.00	04	01	05	3.14

* Expressed in miles and decimals of a mile.

Sleepers.

Details.	Wood.			Iron.	Steel.	Total.
	Transverse.			Pair of cast-iron pos.	Steel pos-pod.	
	Jungle 10' x 9' x 8".	Others.	Total.			
1. Number of sleepers in way including sidings at the commencement of the half-year.	..	35,958	35,958	245,129	536,196	817,283
2. Average age of sleepers in way at the end of the half-year Yrs.	..	13.39	13.39	19.37	6.49	10.46
3. Number removed	..	1,941	1,941	224	113	2,278
4. Number laid	..	293	293	1,611	374	2,278
5. Percentage of removals on total of each class..	..	5.39	5.39	0.09	0.02	.27
6. Number of sleepers in way including sidings at the end of the half-year	..	34,310	34,310	246,516	536,467	817,283

EAST COAST RAILWAY OPEN SECTION—BEZWADA TO GODAVARI SOUTH BANK (STANDARD GAUGE).

[Total mileage—91 miles.]

The inspection was made on the 13th and 14th July in company with the Agent and Manager, His Highness the Nizam's Railway, the Engineer-in-Chief, East Coast Railway, and the District Engineers over their respective divisions.

2. **Earthwork.**—The practically continuous bank on which the railway runs was, in spite of recent heavy rain, in good order throughout though naturally soft; the slopes were somewhat gutted, but repairs were in hand where necessary.

3. **Bridgework.**—The bridges and culverts are complete with the exception of coping and in a few instances pitching. The latter is in hand, but the coping is postponed until more money is available.

4. **Ballast.**—There are about 20 miles ballasted with stone, the remaining distance being ballasted with either gravel moorum or sand. About ¾ of the total quantity of stone ballast has been collected and is mostly stacked on cess along the line, but it is not intended to spread this until the banks have become thoroughly consolidated except in those places where stone is already laid. Generally the ballast of its kind is quite sufficient though not up to full section.

5. **Permanent-way.**—The road was in very fair order in spite of recent heavy rain, the only bad portion being the nine miles between Thadapiligudam, mile 67, and mile 76, where the ballast is moorum. On the return journey the inspection train ran at 40 miles an hour comfortably except over the nine-mile section referred to.

6. **Stations and buildings.**—The station-houses, staff quarters, platforms, sidings, goods loading banks, lighting arrangements, latrines, watering arrangements, ashpits, wells, locomotive tanks, &c., are all complete so far as is intended in the present programme with the exceptions noted below. Platform fencing does not exist at any station.

7. **Bezwada.**—The sanction for construction of the works for accommodating the metre gauge in this yard has been obtained and the work is about to be put in hand at once.

8. **Gunnavaram.**—The permanent station building has been stopped at ground level.

9. **Nuzvid.**—Approach roads are the only incomplete works at this station.

10. **Ellore.**—The goods shed and the metalling of the approach roads are well in hand; other works all complete.

11. **Bhimadol.**—Permanent station building has been stopped at platform level. The third loop siding is nearly ready.

12. **Chebrol.**—Temporary station-house complete.

13. **Thadapiligudam.**—The goods loading bank is in hand. There is a temporary station building here as well as at Nidavol.

14. **Kovur.**—Temporary buildings of all kinds. There is not sufficient breadth of platform here. Its present condition is dangerous as the station is in high bank and it has recently been found necessary to run passenger trains at night. A proper platform with fencing and lamps should be provided at once.

15. **Gódvári ferry.**—All buildings here are temporary except the station-master's house. The foundations for a turn-table were in hand.

16. **Gódvári bridge (ferry).**—The slip and pontoons for transporting goods wagons across to the north bank were nearly ready. A large number of temporary buildings originally built in anticipation of the bridge being constructed serve to accommodate the train staff. There is a triangle for reversing locomotives near the station.

Recd. 6. 9. 93.

6

17. Signals.—The signals are in good working order.

18. Fencing.—Except through Ellore town the line is unfenced. At all important level crossings, temporary gate lodges have been built, but as yet no gates have been erected.

19. Rolling-stock.—For traffic purposes the rolling-stock is supplied by the Nizam's Railway Company. The East Coast Railway stock is on this section used for construction only.

20. I understand when the trains run late the carriages are not lighted. This matter should be attended to.

21. Night running.—Owing to the breaches on the Nizam's Railway, the up-passenger train due at Gódvári ferry at 17-45 has been allowed to complete its journey after dark. As the breaches have now been repaired, there is no longer any necessity for night running.

22. Train service.—I understand the trains from Bezvada very often arrive late at Gódvári south bank and seldom to time. This necessitates the ferry being run at night—a most objectionable and dangerous proceeding. I consider every effort should be made to ensure the arrival of this train at its advertised time.

23. General.—At some of the stations feeder roads are required towards the west. Owing to the competition with the canal there appeared to be absolutely no goods traffic on this section. The only station at which any goods were to be seen was Ellore. These, which had come from the Nizam's Railway and were destined for Cocanada, had been unloaded ~~here~~ only to continue their journey parallel with the railway by canal for the 50 miles to the Gódvári.MADRAS,
2nd August 1893.(Signed) C. T. R. SCOVELL,
Government Inspector for Railways.

REMARKS BY THE SENIOR GOVERNMENT INSPECTOR.

The inspection report is on the whole satisfactory.

The chief points requiring attention are the inspection and control of the tanks which have caused the breaching of the Nizam's Guaranteed State Railway bank noted in paragraphs 31 and 32. This should be referred to the Political Department.

The reduction of the waterways mentioned in paragraph 11 is a matter demanding serious consideration and the report is awaited before any decision can be arrived at.

The proper fencing and lighting of platforms on the Bezvada-Gódvári section of the East Coast Railway is urgent if night running is necessary.

But the present time-table does not appear (paragraph 22) to be adhered to from some cause, and the attention of the Agent is asked to this point in view of the desirability of altering the timing as soon as the precautions noted in ~~last~~ paragraph have been carried out. In any case the ferry should not be run at night.

A copy of this report and note to be forwarded to the Agent of the Nizam's State Railway and the Engineer-in-Chief of the East Coast Railway.

OUTACAMUND,
17th August 1893.(Signed) F. R. UPCOTT,
Senior Government Inspector.Print
MM 28/8

No. 1178 R 9 of 28th Aug 93.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

CHIEF SECRETARY
29 AUG 93
RECEIVED

Read the following

*Report on the Inspection of His Highness
the Nizam's Guaranteed State Railway including
the Bezvada Extension & the open section of the
East Coast Railway for the half year ending
30th June 1893.*

*The above report
with the remarks by
the Senior Government In-
spector will be communi-
cated to the Political Dept.
the railway adminis-
tration concerned for
information necessary
action.*

DESPATCHED
12 SEP. 93

*To The Agent & Messrs H.N. & N.C.S.R. Co. ER
- Engr. in Chief S.C.R.
- Political Dept.*

*22/8 32/8 R 3/8
25/8 25/8 R 3/8*

*PUTS
28. 29. 93
30/8 93
30/8 93*

MADRAS, 13th September 1893.

To

The Secretary to the
Railways Department
P.O. Salarium.

No. 1966 Reply No. , dated

Sir,

I have the honor
to forward herewith, for infor-
mation, five copies of the
Report on the inspection of
H. H. the Vizianagar Guaranteed
State Ry Co including the Bogie
Extension and the Open Section
of the East Coast Railway, for
the half year ending 30th June
1893. ^{together with} ~~and~~ thirty-five addi-
tional copies for transmission
to the Government of India.

Jmm
12/9.

Reminders.

Subject.

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