

(1) Number of pages 4(2) Date of repair 6-4-1943

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 1458	Press ~~Mis.~~
326-27	
Dated 14. 5	1867 .

Not to be folded or roughly handled

10/11

119

*Proceedings of the Madras Government, Public Works Department,
14th May 1867.*

No. 336. Read the following Circular from the Government of India, Public Works Department, (Railway,) dated Fort William, 25th April 1867,
No. 5 :—

Madras, P. W. D. and Railway.
Bombay, P. W. D.
Bengal, P. W. D. and Railway
North-Western Provinces, P. W. D.
Punjab, P. W. D. and Railway.
Chief Commissioners of Central Provinces, British
Burmah, and Oudh
Commissioner of Mysore.
Resident at Hyderabad.
Governor General's Agents, Central India, and
Rajpootana

a repetition of the corrosion of the wrought-iron ties and braces of the iron-bridges of the Bombay, Baroda, and Central India Railway, is forwarded for information to the Local Governments and Administrations named in the margin, in the Public Works Department and Railway Branches.

(By order)

(Signed) C. H. DICKENS, Colonel, R. A.,
Secretary to the Government of India.

From the Secretary to the Government of Bombay, in the Public Works Department, Railway Branch, to the Secretary to the Government of India, Public Works Department, dated 9th April 1867, No 695.

With reference to your letter No. 1,069, dated 24th October 1866, requesting that the Government of India may be informed of the steps taken to prevent a repetition of the corrosion of the wrought-iron ties and braces of the iron-bridges of the Bombay, Baroda, and Central India Railway, I am directed by His Excellency the Governor in Council to forward copies of the reports on the subject, No. 795, dated 14th March 1867, of the Consulting Engineer for Railways, and the reply to it by Government, No. 593, dated 25th March 1867.

From the Consulting Engineer for Railways, Bombay, to the Secretary to the Government of Bombay, in the Public Works Department, Railway Branch, dated 14th March 1867, No 795

1. In continuation of my letter No. 571, dated 23rd ultimo, I have the honour to forward copy of a report from the Chief Resident Engineer, Bombay, Baroda, and Central India Railway Company, on the subject of the corrosion of the wrought-iron bolts and braces in the bridges

2. The bolts in the Mhye and Watruck, where the water is fresh, do not suffer; and in cases where the water is salt or brackish, it is found that the bolts inside the piles, which are protected from the water by the concrete filling, last very well.

3. In future designs it will be desirable to employ socket joints and inside flanges; but as regards the existing bridges on the Baroda Railway, all that can be done at present is to have them constantly examined by divers, and re-place the bolts as fast as they corrode. Meanwhile further experiments are being made with a view to obtain some material that will last

From the Chief Resident Engineer, to Agent, Bombay, Baroda, and Central India Railway, dated 27th February 1867, No. 680.

1. With reference to your Memorandum No. 921 of the 25th instant, and its accompaniments, I have the honour to report that means have not yet been found to prevent the corrosion of the wrought-iron bracings and bolts which are in use in contact with the cast-iron piles in the bridge piers of this line in the salt-water creeks

2. Galvanized bolts and bracings have been tried, but without satisfactory results, and the rapidity with which the wrought-iron has been affected in the portions of the piers under water in the Vyturnee and the Bassem Creek bridges, as well as in the Dhanoo and other smaller bridges similarly circumstanced, has continued to be remarkable

*Proceedings of the Madras Government, Public Works Department,
14th May 1867.*

3. The safe course so far appears to be to have the bolts and all the smaller fastenings re-placed as often as can be necessary. This as regards bolts and nuts, gibs and cotters, in the creek bridges, is about once in every two years. The bracings may be counted on for four years, and as double-bracings are being put in with an ordinary amount of care, there should not be any risk.

4 In the re-placement of pile bolts, much care will continue to be required, and the Resident Engineers have instructions to omit no precaution, to have frequent examination by divers, to ascertain when repairs are necessary, and to give careful attention, so as to ensure as far as possible perfect safety in all fastenings, but it continues to be a matter of much importance to obtain for the creek bridges fastenings of an enduring description. With this view, I lately indented for Bessomer steel bolts, nuts, washers, and cotters

5 In the Mhye and in the Watruck, as well as in all the other bridges along the line, except on the salt-water crossings, the wrought-iron has not been affected to any appreciable extent. In no case has the cast-iron in the piles appeared to have been deteriorated, so with proper care in maintaining the creek-bridges there are no reasons to suppose that the maintenance of the iron-bridges on this line generally will, after the bridges have been completed as proposed, be expensive or difficult.

From the Secretary to Government of Bombay, in the Public Works Department, Railway Branch,
to the Consulting Engineer for Railways, dated 25th March 1867, No. 593

I have the honour to acknowledge the receipt of your No 795, dated 14th March 1867, and its accompaniments, on the subject of the action of sea-water on the iron-work of some of the bridges on the Bombay, Baroda, and Central India Railway.

The subject is a most important one, and no precaution ought to be omitted either on the part of Government, or on the part of the Company, to prevent the occurrence of the fearful disaster that would ensue, should these structures give way suddenly under the weight of a passing train.

I am therefore directed to point out that the bolts and braces, &c., should be regularly, and periodically, and thoroughly, inspected, and regular survey reports submitted of their state, with a view to such constant and timely renewals as may be found requisite.

It should also be more fully established than has yet been done that the cast-iron piles have not suffered. It has been stated that cast-iron long exposed to the action of sea-water undergoes a chemical change without loss of substance, and I am directed to state that it appears to Government advisable that some pile which has been a long time in the water should be taken up, and a portion of it submitted to the Chemical Analyser for his report, whether the cast-iron has undergone any and what material change. It may then be determined whether it is still capable of bearing the strains it was originally intended to carry.

Your particular attention to this order is requested

No. 337.

ORDER THEREON, 14th May 1867, No. 1,458.

RAILWAY, No. 23

Communicated to the Consulting
Engineer for Railways.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

To the Consulting Engineer for Railways.

Exd. S. T Augustin

Cu

1658

№ 1458.

Commd. to the
Consulting Engineer
for Railways.

2015/1 Pp. 1
Furt. & Leage
14m May 1867 }

Recd? 15/5/67