

(1) Number of pages 18

(2) Date of repair

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 413 (2) Press
~~Mk~~

Dated 6-2- 18 77

Not to be folded or roughly handled

No. 191. Read the following letter from Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, to Major-General G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Madras, 22nd January 1877, No. 52 :—

ADVERTING to the Proceedings of Government, under date the 13th November 1876, No. 3,037, I have the honor to forward a note by Major Smith, R.E., Deputy Consulting Engineer, with reference to the remarks contained in paragraph 2 of the letter from the Managing Director of the South Indian Railway Company to the Under Secretary of State, No. 237, dated the 21st August 1876.

2. I am of opinion that Major Smith was entirely justified in bringing to notice the defective arrangements upon which he commented, both in the case of the iron well curbs and in that of the girders for the Karangooly bridge. In my opinion he would have failed in his duty if he had neglected to bring these matters to notice.

3. The Directors of the South Indian Railway Company are apparently under an impression that the officers of this department apply for information to subordinate sources, instead of going to the responsible heads of departments. This is altogether a misapprehension. When an officer is making an inspection of works under construction, there are of course many points upon which information is necessary and only to be obtained on the spot. If the inspecting officer is accompanied, as is often the case, by the head of the department, the required information is always asked for through him; but in his absence application is necessarily made to the official in local charge. I cannot see that a change is either desirable or possible.

NOTE.

In their Order No. 3,037, dated 13th November 1876, the Government favored me with the opportunity of replying to paragraph 2 of the letter from the Managing Director of the South Indian Railway Company to the Under Secretary of State, No. 237, dated 21st August 1876.

2. The Government will observe from the enclosed extracts from a letter addressed by the Acting Chief Engineer to the Agent of the South Indian Railway, dated 21st June 1876, No. 14,186/14,114, that the "curbs" referred to in my Note as only to be "moved by special appliances," had to be cut into two sub-sections in this country before they could be transported by cart; this was the whole point of my remark.

3. I was informed as to the weight of the curbs by one of the Engineers, and his statement was endorsed by at least two others; and as the fact was patent that no cartman after some weeks delay could be induced to move them, at a time when all were most anxious for their removal, it did not occur to me to question the accuracy of the information.

4. I have since ascertained that the invoiced weight included bond-rings, tie-rods, and small stores; hence I have little doubt arose the mistake made by the Resident Engineers.

I cannot, however, think that this will, in the opinion of Government, either lessen the force of my remark, or the expediency of my bringing prominently to notice a source of delay so easily obviated, and only requiring to be known *in England* to be prevented in future.

5. As regards the Karangooly girders, the Government will observe that, according to the Acting Chief Engineer's own showing, a good deal of "chipping and drilling" was required.

My information was derived solely from the Resident Engineer in charge of the bridge, who attributed the delay in completing his work to the "chipping and drilling" in question, and gave me to understand that it could, in his opinion, have been obviated in England; in this view I still concur.

6. In my opinion, rivets now in the bridge attest the necessity for some change in system: if the home arrangements, however satisfactory, cannot save rivet-holes being drilled or otherwise made of such a size that the metal in the rivets is insufficient to fill them and furnish heads besides, some change either here or in England is called for. It would seem advisable that rivet-holes intended to coincide, but which are "thrown out" so easily and certainly, as described by the Acting Chief Engineer, should be left to be drilled out in this country.

7. It has been the practice of this office to report all errors of system observed during inspections privately or semi-officially to the Chief Engineer, and only to lay these instances before Government for further support where the former course has failed to secure requisite action, or where it was thought desirable specially to attract the notice of the Consulting Engineer at home.

MADRAS,
19th January 1877.

(Signed) C. J. SMITH, Major, R.E.,
Dy. Cons. Engr. for Railways.

EXTRACT from a letter from the Acting Chief Engineer, to the Agent, South Indian Railway, dated Trichinopoly, 21st June 1876, No. 14,186/14,114.

A great deal of fitting and drilling was necessary at the *Adyar* bridge, but I have since learned that much of this work was caused by misplacement, which would have been avoided if the right and left hand girders had been painted distinctive colours. There was nothing in the girders to show which was the right and which the left, and unfortunately they were misplaced, and the expense of fitting incurred before the explanation of their position was received.

A skew bridge on the Southern Extension had the bracing and superstructure of the one side painted red, the other black, and the erection was greatly facilitated thereby.

The pieces of the main girders of the *Karangudi* bridge fitted together very well, and it was evident that they must have been put together in England. A good deal of chipping and drilling was required in fitting on the cross girders and shoe plates. I observed considerable variation in the distances apart of the holes in the bottom flange of the cross girders, and it was in bringing these holes to agree with the corresponding ones in the top flange of the main girders that a good deal of work was involved. It has been customary to fit and number each cross girder in the maker's yard, and in practice a certain amount of fitting is always done in this country. I question if this could be avoided altogether even by accurately fitting and numbering the cross girders before they leave England, because an almost imperceptible lateral bend in the main girders (and few girders are absolutely straight) would upset the most accurate spacing of the holes in the cross girders. I attribute a great deal of the required chipping to the small size of the rivet-holes, an error of say $\frac{1}{4}$ th of an inch in the coincidence of holes $\frac{1}{4}$ ths of an inch in diameter can be overcome by drifting; but an error to the same extent, if the holes are only half an inch in diameter, necessitates chipping.

In paragraph 17 of the above Note, the Deputy Consulting Engineer says he was told that each section of the iron curbs weighed 2 tons. I regret he should have been misinformed; they only weigh 15 cwt. The curbs delivered at Cuddalore were conveyed to their destination by boat. The sections of the 12 curbs which were landed at Madras were with little trouble cut into two and transported by cart. I may state that these curbs were made from the State Railway type drawing which was sent home to the Consulting Engineers.

MADRAS,
23rd January 1877.

(True Extract.)
(Signed) J. H. M. SHAW-STEWART, Lt.-Col, R.E.,
Consulting Engineer for Railways.

No. 192.

ORDER THEREON, 6th February 1877, No. 413.

RAILWAY, No. 13-A.

ORDERED to be recorded.

2. His Grace the Governor in Council observes that Major Smith performed his duty properly, and that in bringing to notice what he considered to be and which were defective arrangements, he was in no way transgressing the limits of his legitimate duty.

(True Extract.)

Lieut.-Colonel, R.E.,
Joint Secretary to Government.

To the Consulting Engineer for Railways.

Exd. S. T. Austin.
Spare Copies

Note.

In their order N° 3037- 13th
November 1876 the Government favored
me with the opportunity of replying to
paragraph 2 of the letter from the
Managing Director of the South Indian
Railway Company to the Under Secre-
tary of State N° 237 dated 21st August
1876.

2. The Government will observe,
from the enclosed extracts from a letter
addressed by the Acting Chief Engineer
to the Agent of the South Indian Rail-
way, dated 21st June 1876 N° 14186
that the "embos" referred to in my note
as only to be "moved by special appli-
ances" had to be cut into two sub-sections
in this country before they could be trans-
ported by cart; this was the whole
point of my remark.

I am informed as to the
weight of the ends by one of the Engineers,
that the statement was intended by a
last time officer, and as the fact was
false, that an error was caused.
The delay could be induced to move
them, as a time when all were made in
order for their removal, it did not
occur to me to question the accuracy
of the information.

I have since ascertained that
the increased weight included hand-rings,
ties, and small stores, hence I have
little doubt as to the mistake made by
the Resident Engineer.

I cannot, however, think that this will,
in the opinion of Government, either lessen
the force of my remark, or the expediency
of my bringing prominently to notice
a source of delay so easily obviated and only
requiring to be known in England to
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completing his work to the "chipping
and drilling" in question, and gave
me to understand that it could, in
his opinion, have been obviated in
England; in this view I still concur.

In my opinion, rivets
now in the bridge attest the necessity
for some change in system; if the
home arrangements, however satisfactory,
cannot save rivet holes being drifted
or otherwise made of such a size that
the metal in the rivets is insufficient
to fill them and furnish heads besides,

some change either here or in England
is called for. It would seem advisable
that rivet holes intended to coincide,
but which are "thrown out" so easily and
certainly, as described by the Acting
Chief Engineer, should be left to be drilled
out in this country.

14. It has been the practice
of this office to report all errors of system
observed during inspections privately
or semi-officially to the Chief Engineer,
and only to lay those instances before
Government for further report where
the former course has failed to secure
requisite action or where it was thought
desirable specially to attract the
notice of the governing Engineers at
home.

C. Smith

Major R.E.

Ry. for Eng. for Railways

Madras
19 January
1874

P.W.D.
1 FEB 77
No. 1002

9-1-5.
Extract from a letter from the Acting
Chief Engineer to the Agent, South
Indian Railway, dated Trichinopoly
July 21st June 1876 No. 14186.
14114

A great deal of fitting and
drilling was necessary at the Adyar
bridge, but I have since learned that
much of this work was caused by mis-
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ed if the right and left hand girders
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There was nothing in the girders to show
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Question if this could be avoided altogether even by accurately fitting and numbering the cross Girders before

before they leave England, because an almost imperceptible lateral bend in the main Girders (and few Girders are absolutely straight) would upset the most accurate spacing of the holes in the cross Girders. I attribute a great deal of the required chipping to the small size of the rivet holes and error of say $\frac{1}{8}$ of an inch in the coincidence of holes $\frac{3}{4}$ of an inch in diameter can be overcome by drifting, but an error to the same extent if the holes are only $\frac{1}{2}$ inch in diameter necessitates chipping.

In paragraph 17 of the above Note the Deputy Consulting Engineer says he was told that each section of the iron curbs weighed 2 tons. I regret he should have been misinformed, they only weigh 15 cwt. The curbs delivered at Fuddalore

were

Major

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 were landed at Madras were with
 little trouble cut into two and trans-
 ported by cart. I may state that these
 cords were made from the State Rail-
 way type Drawing which was sent
 home to the forwarding Engineer.

P.W.D.

1 FEB 77

No 1062

(Type Extract)

(Menthor)

J. H. R. E.

Madras
 23rd January
 1876

191092

RAILWAY DEPARTMENT.

CONSULTING ENGINEER'S OFFICE,

Madras, 22nd Jan'y 1876.

No. 52

From

LIEUT. COLONEL J. H. M. SHAW-STEWART, R.E.,
 Consulting Engineer for Railways,

To

MAJOR-GENERAL G. W. WALKER, R.E.,
 Secretary to Government,
 Public Works Department,
 Fort Saint George.

SIR,

Adverting to the Proceed-
 ings of Government under date the
 13th November 1876, No 3037, I
 have the honour to forward a
 note by Major Smith R.E. Deputy
 Consulting Engineer, with reference
 to the remarks contained in para-
 graph 2 of the letter from the
 Managing Director of the South
 Indian Railway Company to the
 Under Secretary of State, No 237,
 dated the 21st August 1876.

2

I am of opinion that
 Major

Major Smith was entirely justified in bringing to notice the defective arrangements upon which he commented, both in the case of the iron well curbs, and in that of the girders for the Karangooly bridge. In my opinion, he would have failed in his duty if he had neglected to bring these matters to notice.

3 The Directors of the South Indian Railway Company are apparently under an impression that the Officers of this Department apply for information to subordinate sources instead of going to the responsible heads of departments. This is altogether a misapprehension. When an officer is making an inspection of works under construction, there are of course many points upon which in-

be

152
be obtained on the spot. If the inspecting officer is accompanied, as is often the case, by the head of the Department, the required information is always asked for through him; but, in his absence, application is necessarily made to the official in local Charge. I cannot see that a change is either desirable or possible.

I have the honour to be,

Sir,

Your Most Obedt. Servant,

Wm. Montagu
H. E. R. C.

Genl. Engrs. & Railway

Letter to Board of Govt. etc 7-2
 16-6-76
 Epd No 1366-7-1-6-76
 " 3037-13-11-76

P.W.D.
 1 FEB 77
 1062

No 413

Public Works Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the 6th Feb 1877.

Read the following :-

From the Consulting Engineer
 Railways (No 52722 Jan 1877)

Ordered to be recorded.

2. His Grace the Governor in Council observes that the remarks made by Major Smith were fully warranted by the information supplied to him, that this information was obtained from proper sources, and that in bringing to notice what he considered to be defective arrangements he was not transgressing the limits of his legitimate duty.

Consulting Eng
 22-2-77

Wth.
 22/7

See 3-2-77
 a note by Major Smith, to Govt. Secretary, with reference to the new appo containing in para 2 of the letter from the Consulting Engineer of the P.W.D. Company

Dated 22nd Jan 1877
 Received No. 527

To
 The Secretary to Government,
 P. W. Department,
 Fort Saint George.

From
 The Consulting Engineer
 for Railways,
 RAILWAY DEPARTMENT.

1877

Govt. of 1877 Madras.
PUBLIC WORKS.

To the Secy to Govt for P.W.

Dated

Issued

Recd.

Encl.

G. O. *1st Feb* 1877, No. 413

Nos. 191-92

Encl. in P.W.

Supply of graders for the
S.P.W. Letter from the Comd.
forwarding note by the Secy to Govt.
with reference to the remarks
contained in paragraph 2 of the
letter from the Managing
Director of the S.P.W. Co regarding
the defective arrangements
at home in the —, ordered
to be recorded.