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MADRAS RECORD OFFICE

Government of Madras

Public works DEPARTMENT

G.O. No. 2554-55	Press
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316-317-318	
Dated 18-10-1873. 195.	

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
18th October 1873.*

No. 316. Read the following letter from Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Madras, 22nd September 1873, No. 508:—

In compliance with the instructions contained in the Order of Government, dated the 4th instant, No. 2,200, I have the honour to submit, for the consideration of His Excellency the Governor in Council, a letter* from the Agent of the Madras Railway Company, explaining the delay which has occurred in the construction of the cooling apparatus designed by Mr. Stoney.

2. It will be seen that the working drawings of the apparatus were received in the Locomotive Workshops in March last, and that its construction was begun then, and finished in July. The apparatus was tried by Mr. Stoney in August, when some defects were apparent which have rendered further work necessary. It is expected that the apparatus will be ready for a second trial before the end of this month, but it will be seen that Mr. Stoney does not desire the presence of a Government officer until the preliminary trials have been satisfactorily gone through.

M. J. 3. In the letters forwarded by the Agent from Mr. Stoney and Mr. Boodle, the Assistant Locomotive Superintendent, some of the causes are mentioned which have led to so long delay in the completion of the apparatus; but in justice to both of those gentlemen, I think it right to mention that the chief cause has lain in the great difficulty of constructing from drawings a mechanical apparatus of a novel nature designed by another, when the designer is able to inspect the progress of the work only at rare and brief intervals. During the last six months Mr. Stoney has been in charge of the most important engineering work in progress on the Madras Railway, the rebuilding of the bridge over the Cheyaur River. Owing to the department being short-handed, it was impossible to relieve him; indeed during part of the time it was found necessary to place Mr. Stoney in charge of the open line between Arcunum and Cuddapah in addition to his own work. This will show how impossible it was for Mr. Stoney to give any personal supervision to the construction of his apparatus at Perambore; and Mr. Boodle's difficulties in carrying out the design, when his only communication with the designer has been by letter, can be understood.

4. It is much to be regretted that the delay in completing the apparatus has prevented it from being tested during the last hot months; but the delay has been caused by circumstances connected with Mr. Stoney's official position as Engineer in charge of the Cheyaur Bridge, and could not have been obviated without injury to that important work.

*Proceedings of the Madras Government, Public Works Department,
18th October 1873.*

From J. W. MELLIS, Esq., for Acting Agent and Manager of the Madras Railway Company, to Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, dated Madras, 20th September 1873, No. 745.

With reference to your letter, No. 817, dated the 8th instant, I have the honour to enclose you copies of the two reports noted in the margin, in which explanations are offered by Mr. Stoney, and by Mr. Boodle of the Locomotive Department, as to the delay that has occurred in perfecting the carriage cooling apparatus designed by the first-named gentleman.

2. Mr. Boodle expects to have the apparatus completed in about a week's time, and although, as explained by Mr. Stoney, a trial now will not be so satisfactory as during the hot weather, notice will, in accordance with your request, be given to you when the day for trial is decided upon, in order that an officer of your department may be present.

3. I have written to the Locomotive Superintendent requesting that the work may be completed with as little delay as possible, and that an early day may be fixed for the trial.

• From E. W. STONEY, Esq., Resident Engineer, Cheyaur Bridge, to T. H. GOING, Esq., Acting Chief Engineer of the Madras Railway Company, dated Cheyaur Bridge, 11th September 1873, No. 269.

With reference to the enclosure forwarded with your letter, No. 1,124, I beg to say that I believe the revised plan of my cooling apparatus was received by the Locomotive Superintendent on the 5th of March last, from that time up to the present both the workmen and machine tools of the Locomotive Establishment were, I understand, fully occupied with pressing work connected with engines and rolling stock, so that it was with difficulty any men, or the time of the lathes, etc., necessary to manufacture my apparatus could be spared for that purpose.

2. Mr. Boodle, the Assistant Locomotive Superintendent, was so busy that he could only devote a very small portion of his time to show his men how to make models, etc., necessary for such a new and to them novel machine, so that the progress was necessarily slow.

I beg to take this opportunity of expressing my thanks to Mr. Boodle for kindly assisting me by looking after the making of the apparatus when otherwise so fully occupied.

3. As the work proceeded, some alterations of detail as well as some slight additions suggested themselves, and these required further time, while as it became clear that it could not be finished for trial before the hot season ended, hurry was no longer necessary.

The apparatus was ready for its first trial on the 29th of July; I was then engaged in putting in foundations here, so that I was unable to leave this till the 11th of August.

4. On the 12th, I ran the carriage from Perambore to Trivalore, and found that the damping roller only touched the cooling cylinder during a portion of the revolution of the latter, and so only partially damped it. The blast from the fan was also not as strong as desirable; on my return here, I requested that the fan might be slightly enlarged, and that the damping roller should have its axle-boxes on springs, so as to ensure it always pressing against the revolving cylinder. I also asked that it might be made to dip in water, instead of allowing water into its interior as at present. These alterations are now being made, and on their completion the apparatus will be again tried.

5. The present season is quite unsuitable to the trial of any cooling apparatus depending on evaporation, as the air is now cool and damp, so that any trials made before next hot season will only be useful to test the working of the various parts of the machine, and to point out any defects there may be in these, as well as the mode of remedying them.

It would, I think, be undesirable for a Government officer to attend such preliminary trials as are necessary to test the proper working of the mechanism, so that I would suggest that after

*Proceedings of the Madras Government, Public Works Department,
18th October 1873.*

these are made, notice be given to the Consulting Engineer that the carriage is ready for his inspection and trial.

I have recently designed a very much simpler Cooler; in which the damping roller, fan, and tank are dispensed with, the perforated zinc cooling cylinder only being retained.

This design can be made at from one-third to one-fourth the cost of the original one.

I shall be glad to lay it before the Agent if permitted to do so by him.

From E. C. BOODLE, Esq., Assistant Locomotive Superintendent, to W. B. WRIGHT, Esq., Acting Agent and Manager of the Madras Railway Company, dated Perambore Works, 19th September 1873, No. 206.

With reference to copy of letter, No. 817, dated 8th September 1873, from the Consulting Engineer, I beg to inform you that the first working drawing was received here on the 6th of March, and a tracing completed and sent into the shops on the 18th.

2. The apparatus was finally completed and sent out in July, and on the 11th of August Mr. Stoney took it to Arcunum.

3. On trial it was found that the fan was not sufficiently large to create a draught, and the method of damping the bottom roller was faulty. The water being admitted into the centre of the roller through a conical bearing which was kept water-tight by screwing up a set-screw on which the roller revolved at the other end; this caused the brass to seize in the cone and so prevented the roller from revolving.

4. Mr. Stoney has since sent a revised drawing of an entirely new method of damping the roller which was received here on September 3rd, this work is now being carried out.

5. The causes of the apparatus being so long under construction were these:

1st.—The difficulty in carrying out Mr. Stoney's designs according to the drawing.

2nd.—Our workmen are Natives and East Indians who had not been accustomed to work to drawing on a small scale.

3rd.—The work was strange to the men, being very different to any they had hitherto done.

4th.—Many alterations were found necessary as the work progressed.

6. I hope to have the alterations of the apparatus completed and ready for trial next week.

No. 317. ORDER THEREON, 18th October 1873, No. 2,554.

RAILWAY, No. 52.

ORDERED that these papers be forwarded for the information of the Government of India.

(Here enter No. 2,555, dated 18th October 1873.)

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,

Secretary to Government.

To the Consulting Engineer for Railways.

Exd. W. H. French.

Spare Copies.

PUBLIC WORKS DEPARTMENT,
OOTACAMUND, 18th October 1873.

No. 318.

No. 2,555.

FROM

COLONEL G. W. WALKER, R.E.,

Secretary to the Government of Madras,

Public Works Department.

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,

Public Works Department.

RAILWAY, No. 53.

SIR,—Adverting to your letter,
No. 1,210-G.R., dated 15th July 1873,
intimating that the Government of

India will await the receipt of a report showing the cost and comparative efficiency of the apparatus invented by Mr. Stoney for cooling railway carriages, I am directed by His Excellency the Governor in Council to forward the accompanying correspondence from which it will be observed that from unavoidable circumstances the apparatus was not completed in time to be tried during the last hot season, but it is hoped that arrangements will shortly be made for testing its efficiency so far as can be judged from a trial under atmospheric conditions different from those under which the capabilities of the machine can alone be fully evidenced.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) G. W. WALKER, Colonel, R.E.,

Secretary to Government.

Exd. W. H. French.

Spare Copies.

No. 746

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 20th September 1873.

From

The acting Agent and Manager of the M.R.C.

To

Lieut Col. W. H. Shaw Stewart R.E.

Consulting Engineer for Railways.

SIR,

With reference to your letter No 817 dated the 8th instant, I have the honour to enclose you copies of the two Reports noted in the margin in which explanations are offered by Mr. Stoney, and by Mr. Doelle of the Locomotive Department, as to the delay that has occurred in perfecting the carriage cooling apparatus designed by the first named gentleman.

2. Mr. Doelle expects to have the apparatus completed in about a weeks time and although, as explained by Mr. Stoney, a trial now will not be

X
From Mr. Stoney to
ag. Chief Engineer
dated 11th Sept/73
From Mr. Doelle
to ag. Chief Engineer
no 256 - 19th Sept/73

so satisfactory as during the hot
weather notice will in accordance
with your request be given to
you when the day for trial is
decided upon in order that an
officer of your Department may
be present.

3. I have written to the Dis-
-trict Superintendent requesting
that the work may be completed
with as little delay as possible
and that an early day may be
fixed for the trial -

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

J. W. Ellis.
for the agentellanage

Railway Department.

CONSULTING ENGINEER'S OFFICE.

No. 508

From

LIEUT.-COLONEL J. H. M. SHAW STEWART, R.E.,

Consulting Engineer for Railways,

To

COLONEL G. W. WALKER, R.E.,

Secretary to Government,

Public Works Department,

Fort Saint George.

SIR,

In compliance with the instructions contained in the order of Government dated the 4th instant, No. 2200, I have the honour to submit, for the consideration of His Excellency the Governor in Council, a letter from the Agent of the Madras Railway Company, explaining the delay which has occurred in the construction of the cooling apparatus designed by Mr. Stoney.

It will be seen that the working drawings of the apparatus were received in

No. 745
20th September 1873.
with enclosures.

26099

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Dated 20th Sept 1873.
Recd. 22.3

No. 745

Regarding copies of reports from Mr. Stoney & Mr. Dooley forwarding copies of the same to the Government, the delay which has occurred in the completion of the cooling apparatus designed by Mr. Stoney.

P.M. 5212/73.

in the Locomotive Workshops in March last, and that its construction was begun then, and finished in July. The apparatus was tried by Mr. Stoney in August, when some defects were apparent which have rendered further work necessary. It is expected that the apparatus will be ready for a second trial before the end of this month, but it will be seen that Mr. Stoney does not desire the presence of a Government Officer until the preliminary trials have been satisfactorily gone through.

In the letters forwarded by the Agent, from Mr. Stoney and Mr. Boodle, the Assistant Locomotive Superintendent, some of the causes are mentioned which have led to so long delay in the completion of the apparatus; but in justice to both of those gentlemen, I think it right to mention that the chief cause has lain in the great difficulty of constructing from drawings a mechanical apparatus

apparatus of a novel nature designed by another, when the designer is able to inspect the progress of the work only at rare and brief intervals. During the last six months Mr. Stoney has been in charge of the most important engineering work in progress on the Madras Railway, the rebuilding of the bridge over the Chygair river. Owing to the Department being short-handed, it was impossible to relieve him; indeed during part of the time it was found necessary to place Mr. Stoney in charge of the open line between Arcot and Buddapah in addition to his own work. This will show how impossible it was for Mr. Stoney to give any personal supervision to the construction of his apparatus at Channarayana and Mr. Boodle's difficulties in carrying out the design, when his only communication with the designer has been by letter, can be understood.

4.

It is much to be regretted that

that the delay in completing the apparatus
has prevented it from being tested during the
hot months, but the delay has been caused by
circumstances connected with Mr. Stanger's
official position as Engineer in charge of the
Cheyair bridge, and could not have been obviated
without injury to that important work.

I have the honour to be

Sir,

Your most obedient servant

Macartney

Lieut. Col. R.E.

Consulting Engineer for
Railways

Madras
22nd September 1873
J. Macartney
2555-180/14

Submitting a letter
from the Agent in Charge,
explaining the delay which
has occurred in the con-
struction of the existing
app. as the designed by
Mr. Stanger.

From
The Consulting Engineer
for Railways,
The Secretary to Government,
P. W. Department,
Fort Saint George.
No. 508
Dated 22nd September 1873.
Recd. 23rd September 1873.

1873. 10/24/73
J. Macartney

No. 2555 P.W. Dept. P. W.

Proceedings of the Madras Government
Under date the September 1873.

Read the following

From the Cons. Engineer
for Railways.

(For order No. 508 of 22nd Sept. 1873)

Ordered that

these papers be forwarded
for the information of the
Government of India.

Macartney

To The Cons. Engineer
for Railways
S.C. order 28/10/73

No. 2555

The Secretary to the
Government of India.

Adverting to your
letter

letter No 1210 G.P. dated
15th July 1873, intimating
that the Government of
India will await the
receipt of a report showing
the cost and comparative
efficiency of the Apparatus
invented by Mr Stoney
for cooling Railway Car-
riages, I am directed by
His Excellency the Governor
in Council to forward
the accompanying cor-
respondence from which it
will be observed that from
unavoidable circumstances
the Apparatus was not
completed in time to be
tried during the last hot
season, but it is hoped that

arrangements will shortly
be made for testing its
efficiency so far as can
be judged from a trial
under atmospheric con-
ditions different from
those ^{under} to which the
~~Machine is adapted~~
capabilities of the
Machine can
at once be fully
evidenced -

G.M.W.

C. dated with the
previous etc 28/10/73
The previous being
also sent to the

125212
Govt. of 1873 Madras.
PUBLIC WORKS.

To The Hon. the Commr. of
the Railways
&
To The Secretary to the
Govt of India

Dated

Recd.

Encl. 3

G. O. 18th Act, No 2554
2555

No. 316-317-1318

Railway Cooling Apparatus

Paying order in letter from
the Engineer submitting
correspondence explanatory
of the delay caused
in the construction of
the apparatus designed
by Mr. Stoney.

Forward correspondence
explanatory of the delay caused
in the construction of Mr. Stoney's
apparatus for cooling railway carriages.