

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	816-17	Press
B.P. No.		Mis.
635-638		
637		
Dated	26-3-1874	195

Not to be folded or roughly handled

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*Proceedings of the Madras Government, Public Works Department,
24th March 1874.*

No. 635. 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, 26th February 1874, No. 123 :—

With reference to the Order of Government, dated 5th February 1874, No. 283, I have the honour to transmit a letter from the Agent of the Madras Railway, giving cover to one from the Chief Engineer, in which full information on all the points noticed by the Government of India in their letter dated 24th December 1873, No. 2,229 G. R., is rendered, and it seems only necessary for me to add a few remarks.

2. The apportionment of the charges appears to have been correctly arrived at, Capital being debited only with the difference between the book value of the steel, and the original cost of the iron rails.

3. It will be observed from Mr. Going's letter that the substitution of steel for iron rails on this section of the line was not proposed solely on account of the traffic over it, which is, however, larger than on any other portion of the Company's undertaking, or from the present road having become worn, but chiefly from there being a large number of steel rails on hand, while the stock of iron rails for ordinary renewals has run very low. The steel rails were sent out some years ago for use in the vicinity of stations, and their book value exceeds but little the cost at which iron rails of the same weight could now be obtained from England. In the present state of the iron market, when prices have probably reached a maximum, Mr. Going is anxious to defer as long as possible the despatch of an indent to England, and the proposed measure for substituting steel rails at the points of greatest wear and tear, in order to increase the stock of ordinary rails for renewals is, in my opinion, highly desirable.

4. Mr. Going further states that he purposes submitting estimates for carrying out this principle to its full extent, and with this view I beg that the Government of India may be moved, in sanctioning the estimate now under consideration, to accord their general approval to the measure, so that on receipt by this office of the necessary estimates the work may be put in hand without delay.

From R. B. ELWIN, Esq., Agent and Manager of the Madras Railway Company, to Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, dated Madras, 25th February 1874, No. 176.

With reference to your letter No. 140 of the 9th instant, I have the honour to enclose you a copy of the Acting Chief Engineer's letter, No. 167, dated yesterday, which contains the information required by the Government of India with regard to the proposal to substitute steel for iron rails between Veysarpady Junction and the Central Station.

2. Looking at the large stock of steel rails which we have in store, and to the necessity, as pointed out by Mr. Going, of increasing our reserve stock of iron rails, I think you will agree with me that it is very desirable that we should be authorized to give effect to the proposal.

3. I will forward to you as early as possible the details of the traffic passing between the two points; but from your own knowledge you will recognize the fact that if the amount of traffic on any part of this railway justifies the laying of steel rails, it certainly does between the Central Station and Veysarpady.

*Proceedings of the Madras Government, Public Works Department,
24th March 1874.*

From T. H. GOING, Esq., Acting Chief Engineer, to R. B. ELWIN, Esq., Agent and Manager of the Madras Railway Company, dated Madras, 24th February 1874, No. 167.

In reply to your endorsement on Consulting Engineer's letter, No. 140, of 9th instant, I beg to report as follows.

2. In the first place, with reference to the several points of information sought by the Government of India in their Proceedings under date 24th December 1873, of which a copy accompanied the above correspondence, I have to state—

1st.—The weight per yard of the iron rails in use on the section of road under consideration is 75 lbs., and that of the steel rails which it is proposed to substitute is the same.

2nd.—The price set down for the iron rails to be taken out of road represents their original cost, as *Capital* can only be further charged with the *additional* cost of the steel rails to be substituted in their place. The price given for steel rails represents the book value of stock in hand.

3rd.—The present rate in England of iron rails would be about £12 per ton. The cost delivered in Madras would come to about Rupees 36 per rail, not much below the price of the steel rails in stock.

4th.—With regard to the actual traffic over the section of line in question, I have applied for this information to the Chief Auditor, but it cannot be supplied very readily. I have not therefore thought it desirable to delay the despatch of this letter, and will forward the information when received, only observing for the present that this traffic is greatly in excess of that on all other portions of the Company's system. The present rails have been laid down in two sections, each section at a different period, viz., from Salt Cotaar to Veysarpady, a distance of 1 mile 15 chains, since 1864, a period of ten years, and from Central Station to Salt Cotaar Junction, a distance of 78 chains, since 1873, a period of one year. The rails do not exhibit any very marked symptoms of wear. The proposal to replace them with steel rails was based upon other considerations which I shall detail further on.

5th.—I propose that the iron rails if taken out of the road should be added to the stock available for general renewals on the 1st Division, South-West Line.

3. With reference to the question of expediency in the proposed substitution, and my reasons for thinking it desirable, I have to make the following observations.

4. The balance of the stock of steel rails now on hand is 5,146. These rails were sent out from England in 1867 on the recommendation of the Company's Consulting Engineer. The following extracts from Mr. Hawkshaw's letter which accompanied that from the Secretary of the Company, No. 391, dated 5th April 1867, will explain his views, viz. :—

"As to the advisability of using steel rails I beg to refer you to my report of the 17th May 1866. Since I wrote that report the more general use of steel rails has strengthened my conviction as to the advisability of adopting them more extensively on the Madras Railway.

"To lay down a general rule it might be advisable to state that steel rails should be laid at stations, and for a distance of from quarter to half a mile on each side, this distance being governed by the gradients and circumstances affecting the wear and tear in each particular case."

5. The principle thus laid down by the Consulting Engineer has accordingly guided our practice on all those portions of the Madras Railway which have been constructed subsequently to the arrival of the steel rails from England, and I have acted in accordance with this principle in recommending a substitution of steel for iron over the section of line between Veysarpady and the Central Station, where the wear and tear of rails is likely to be greater than on any other portion of this railway owing to the heavy traffic, frequent necessity for the use of brakes and the number and sharpness of the curves. These causes have only operated since the opening of the Central Station to public traffic, there was thus no previous necessity for the introduction of steel rails,

*Proceedings of the Madras Government, Public Works Department,
24th March 1874.*

but I trust the reasons I have stated may be considered sufficient to show the expediency of introducing them now.

6. I may however state an additional consideration which determined me in recommending this course, which is, the low state at which our stock of iron rails available for ordinary renewals has arrived.

7. We have now only 15 miles of iron rails in stock for this purpose, and when the present high price of iron in England is considered, it appears desirable to keep in advance as far as possible the time of indenting for a further supply of iron rails.

8. Our stock of steel rails amounts to 9 miles, and as I have explained that a portion of these may be advantageously used on the section of line referred to it will be economy in the double aspect of the question to make this application of them.

9. In furtherance of the principle I have thus stated, I am about submitting an application to be allowed to lay down our entire stock of steel rails at such places as seem most to require them owing to special conditions of wear and tear, and to utilize the iron rails which will thus become available for the general renewals of the line.

10. The necessity of adding to our stock of iron rails by indent on England ought to be averted as long as possible, so as to await the fall in the price of iron which, it is believed by competent authorities at home, must result a year or two hence.

No. 636.

ORDER THEREON, 24th March 1874, No. 816.

RAILWAY, No. 71.

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

(Here enter No. 817, dated 24th March 1874.)

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Consulting Engineer for Railways.

Exd. S. T. Austin.

Spare Copies

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PUBLIC WORKS DEPARTMENT,
FORT ST. GEORGE, 24th March 1874.

No. 637.

No. 817.

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. 72.

SIR,—With reference to your letter
No. 2,229 G. R., dated 24th December
1873, asking for further information in

connection with the proposed substitution of steel for iron rails between Veysar-
pady Junction and the Central Station of the Madras Railway, I am directed to
forward the accompanying correspondence which affords full information on the
several points noticed, and, for the reasons given, I am to request the general
approval of the Government of India to the proposal to extend the substitution of
steel rails to other places where the measure may be considered desirable.

I have the honour to be,

Sir,

Your most obedient servant,

Colonel, R.E.,

Secretary to Government.

Exd. S. T. Austin.

Spare Copies

No. 76.

MADRAS RAILWAY.

AGENT AND MANAGERS' OFFICE.

Madras, 25th February 1874.

From

R. D. Clavin Esq.

Agent and Manager, M. R. Co.

To

Mr. J. H. Shaw Stewart, R.E.

Consulting Engineer for Railways.

Sir,

With reference to your letter No. 1140 of the 9th instant, I have the honour to enclose you a copy of the Acting Chief Engineer's letter No. 167 dated yesterday, which contains the information required by the Government of India with regard to the proposal to substitute steel for iron rails between Veyassampady Junction and the Central Station.

2. Looking at the large stock of steel rails which we have in store and to the necessity, expounded out by Mr. Goring, of increasing our reserve stock of iron rails, I think you will agree with me that it is very desirable that we should be authorised to give effect to the proposal.

3. I will forward to you as early as possible the details of the

91
traffic passing between the two points,
but from your own knowledge you
will recognise the fact that if the
amount of traffic on any part of this
railway justifies the laying of steel
rails it certainly does between the
Central Station and Veyraswadey.

I have the honour to be
Sir
Your most Obedient Servt.

W. J. L. W. M.

Agent & Manager.

11
 Madras Railway Company
 Chief Engineer's Office
 Madras 14th February 1874

The Agent and Manager

Dear Sir,

In reply to your endorsement on Consulting Engineer's letter N^o 140 of 9th instant I beg to report as follows:

1st In the first place with reference to the several points of information sought by the Government of India in their Proceedings under date 24th December 1873, of which a copy accompanied the above correspondence, I have to state

1st The weight per yard of the Iron Rails in use on the section of Road under consideration is 75 lbs and that of the steel Rails which it is proposed to substitute is the same.

2nd The price set down for the Iron Rails to be taken out of road represents their original cost as Capital can only be further charged with the additional cost of the steel Rails to be substituted in their place. The price given for steel Rails represents the book value of stock in hand.

3rd The present rate in England of Iron Rails would be about £ 12 per ton. The cost delivered in Madras would come to about Rs 36 per rail not much below the price of the steel Rails in stock.

4th With regard to the actual traffic over

MADRAS RAILWAY.

From The Agent and Manager.

To The Consulting Engineer for Railways.

Dated 25th Feb 1874

Recd 26th Feb 1874

No. 176

Regarding the substitution of steel for iron rails - shown by company number and the new substituted material

P.M. 1207/74

P.S. 2724th March 1874

2. 15. 10. 6. 35.

the section of line in question I have applied for this information to the Chief Auditor but it cannot be supplied very readily. I have not therefore thought it desirable to delay the despatch of this letter and will forward the information when received, only observing for the present that this traffic is greatly in excess of that on all other portions of the Company's system. The present Rails have been laid down in two sections, each section at a different period viz: from Salt Cotaun to Veyserapandy, a distance of 1 mile 15 chains since 1864 a period of 10 years, and from Central Station to Salt Cotaun Junction; a distance of 78 chains since 1873 a period of 1 year.

The Rails do not exhibit any very marked symptoms of wear. The proposal to replace them with steel Rails was based upon other considerations which I shall detail further on.

5th I proposed that the Iron Rails if taken out of the Road should be added to the stock available for general renewals on the 1st Division South West Line.

3 With reference to the question of expediency in the proposed substitution and my reasons for thinking it desirable, I have to make the following observations.

4 The balance of the stock of steel Rails now on hand is 5146. These rails were sent out from England in 1867 on the recommendation of the Company's Consulting Engineer. The following extracts from Mr Hawksshaw's letter which accompanied that from the Secretary of the Company, No 391

dated 5th April 1867, will explain his views, viz:
"As to the advisability of using steel Rails I beg to refer you to my report of the 17th May 1866. Since I wrote that report the more general use of steel Rails has strengthened my conviction as to the advisability of adopting them more extensively on the Madras Railway

x x x x x x x
To lay down a general rule it might be advisable to state that steel Rails should be laid at stations and for a distance of from $\frac{1}{4}$ to $\frac{1}{2}$ a mile on each side, this distance being governed by the gradients and circumstances affecting the wear and tear in each particular case.

5 The principle thus laid down by the Consulting Engineer has accordingly guided our practice on all those portions of the Madras Railway which have been constructed subsequently to the arrival of the steel Rails from England, and I have acted in accordance with this principle in recommending a substitution of steel for Iron over the section of line between Veyserapandy and the Central Station where the wear and tear of Rails is likely to be greater than on any other portion of this Railway owing to the heavy traffic, frequent necessity for the use of Brakes and the number and sharpness of the curves. These causes have only operated since the opening of the Central Station to Public Traffic, there was thus no previous necessity for the introduction of steel Rails, but I trust the reasons I have stated may be considered

sufficient to shew the expediency of introducing them now.

6. I may however state an additional consideration which determined me in recommending this course, which is, the low state at which our stock of Iron Rails available for ordinary renewals has arrived.

7. We have now only 15 miles of Iron Rails in stock for this purpose and when the present high price of Iron in England is considered it appears desirable to keep in advance as far as possible the time of indenting for a further supply of Iron Rails.

8. Our stock of Steel Rails amounts to 9 miles and as I have explained that a portion of these may be advantageously used on the section of Line referred to it will be economy in the double aspect of the question to make this application of them.

9. In furtherance of the principle I have thus stated I am about submitting an application to be allowed to lay down our entire stock of steel Rails at such places as seem most to require them owing to special conditions of wear and tear, and to utilize the Iron Rails which will thus become available for the general renewals of the Line.

10. The necessity of adding to our stock of Iron Rails by Indent on England ought to be averted as long as possible so as to await the fall in the price of Iron which it is believed by competent authorities

at Home must result a year or two hence.

Yours faithfully
/signed/ J. H. Going
Acting Chief Engineer

/True Copy/

W. J. L. W. W.
Agent and Manager

Railway Department.

CONSULTING ENGINEER'S OFFICE.

No. 123

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,

With reference to
the Order of Government dated
5th February 1874, No 283, I have
the honour to transmit a letter
from the Agent of the Madras
Railway giving cover to one
from the Chief Engineer in
which full information on all
the points noticed by the
Government of India in their
letter

No 176 d/
24th Feb. 1874

P.M. 12/1/74
B.C.
B.S. 24th March 1874
In No. 176/35

letter dated 24th December 1873, No 2229 G. R. is rendered, and it seems only necessary for me to add a few remarks.

2. The apportionment of the charges appears to have been correctly arrived at, Capital being debited only with the difference between the book value of the steel and the original cost of the iron rails.

3. It will be observed from Mr. Goring's letter that the substitution of steel for iron rails on this section of the line was not proposed solely on account

account of the traffic over it, ^{PI} which is, however, larger than on any other portion of the Company's undertaking, or from the present road having become worn, but chiefly from there being a large number of steel rails on hand, while the stock of iron rails for ordinary renewals has run very low. The steel rails were sent out some years ago for use in the vicinity of stations, and their book value exceeds but little the cost at which iron rails of the same weight could now be obtained from

from England. In the present
state of the iron market,
when prices have probably
reached a maximum, Mr.
Goring is anxious to defer as
long as possible the despatch of
an indent to England, and
the proposed measure for sub-
stituting steel rails at the points
of greatest wear and tear, in
order to increase the stock of
ordinary rails for renewals, is
in my opinion highly desirable.

4. Mr. Goring further
states that he purposes sub-
mitting estimates for carrying
out

out this principle to its full
extent, and with this view, ²¹
I beg that the Government of
India may be moved, in
sanctioning the estimate now
under consideration, to accord
their general approval to the
measure, so that on receipt
by this office of the necessary
estimates the work may be
put in hand without delay.

I have the honour to be

Sir

Your most obedt Servt.

W. Conner Lt. Col.

Madras
26 Feb
1874

for Mr. Eng. for Railways

W. Conner

1201
P. W. D. 231

816

P. W. D. 231

Proceedings of the Madras Government,

Under date the 187 .

From the Com. Eng. for
Rys.

Read the following:-

HE No 123. 26. Feb/74

Ordered that these
papers be forwarded for
the consideration of the
Govt of India.

Along Engr. Rys.
Despatched 26/3/74

To
The Secy to the
Govt of India
No 817

MA
H

Sir.
With reference to your
letter No. 2227. G. R. dated
24th Decr 1873 asking for
further information in con-
nection with the proposed
substitution of steel for
iron rails between Veyur-
puddy Junction and

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

From
The Consulting Engineer
for Railways,

P. W. D. 231
1874
RAILWAY DEPARTMENT.
1201

Dated 26th February 1874
Recd. 28th Feb/74

No. 123

Letter from the Com. Eng. for
Rys. regarding the substitution
of steel for iron rails
between Veyurpuddy Junction
and Veyurpuddy station

1201
P. W. D. 231

the Central Station of the
Madras Railway, I
am directed to forward
the accompanying cor-
respondence which affords
full information on the
several points noticed,
and, for the reasons given,

I am to request the general
approval of the Govt. of
India to the proposal
to extend the substitution
of steel rails to other
places where the measure
may be considered desirable

G.M.W.

635-637

Dep. Secy to Govt.

Home 816 of 1874, 26/3/74

26

Forwarding cor-
respondence affording
the information in
connection with the
proposed substitution
of steel for iron rails
between Vengalpet and the
Central Station of the
Madras Railway

1201
Govt. of 1874 Madras.

PUBLIC WORKS.

1. The Lamenting Ours for
Railways
&
To the Secretary to the
Govt. of India

Dated

Recd.

Encl. 2

G. O., 24 March 1874 Nos 816 & 817

Nos. 636, 636 & 637

Madras Railway

Ordered that the
papers regarding the
substitution of steel
for iron rails between
Vijayarapady Junction
and the new Central
Station ^{of the Madras Railway} be forwarded
to the Govt. of India