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MADRAS RECORD OFFICE

Government of Madras

Public works

DEPARTMENT

G.O. No.	1973-74	Press
B.P. No.		Mis.
486-489		
Dated	22-7-1874	185.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
22nd July 1874.*

Read the following papers:—

No. 486. Endorsement of the Consulting Engineer for Railways, dated Madras, 8th June 1874, No. 340.

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, 4th June 1874, No. 489.

IN continuation of my letter No. 170, of the 24th of February last, I have the honor to enclose, for submission to Government, copy of paragraph 6 of a letter from my Board, No. 530, dated London, the 24th of April 1874, in which the views of the Directors are expressed as to the value of pine sleepers as compared with iron pot sleepers for renewing the line on the Western Coast.

2. I also enclose you a copy of Sir John Hawkshaw's Report upon the same subject referred to by the Board.

3. I trust that I may be favored with the orders of Government upon this subject as early as possible.

EASTERN BENGAL RAILWAY,
33, Great George Street,
Westminster, 24th March 1874.

DEAR SIR,—I beg to report on your letter of the 12th ultimo, with enclosure, relating to the decay of wood sleepers.

2. It appears from Mr. Benedict's letter, dated 1st November, that there have been 255,020 sleepers laid down on the main line, of which 51,711 have been renewed, and he is of opinion that the whole of the remainder, viz., 203,309, will have to be renewed within the next twenty-four months.

3. Surprise has been expressed that so many sleepers should require renewal at about the same time. It is true, as a rule, that such does not happen. It only shows that the sleepers have been of a generally uniform quality, and that they have been good is shown, I think, from the fact that they will last on an average about twelve years, and it may be taken that the average life of the best creosoted sleepers in India on a railway like the Eastern Bengal is about that time.

4. From the fact that so many sleepers will be required in the next two years, I have thought it right to investigate the comparative cost of a road lined with iron bowl sleepers and with creosoted wood sleepers.

5. The estimate is as follows at present prices:—

The estimate is as follows at present prices.						Delivered in Calcutta.	
Iron Sleeper Road.						s.	d.
2 Bowl sleepers, 92 lbs. each	...	...	...	...	...	13	0
1 Wrought iron tie bar, 31½ lbs	...	...	...	...	...	4	8
2 Gibs, 44 lbs.	1-62 lbs.	...	...	...	...	0	3
2 Cotters, 1-18 "							
Total						17	11

say 18s. ∴ 1848 at 18s. = say £1,663 cost per mile.

<i>Creosoted Wood Sleeper Road.</i>						Delivered in Calcutta.	
						s.	d.
1 Creosoted wood sleeper	...	...	...	...	...	8	0
2 Chairs, 35 lbs. each	...	...	...	...	...	5	0
4 Fang Bolts and Nuts, 2½ lbs. each	...	...	...	...	...	2	1
Total						15	1

say 15s. ∴ 1848 at 15s. = £1,386 cost per mile.

*Proceedings of the Madras Government, Public Works Department,
22nd July 1874.*

6. It therefore appears that assuming none of the chairs and fang bolts can be used again, the cost of an iron sleeper road at present prices is about £277 per mile more than a creosoted wood sleeper road.

7. The average life of iron sleepers ought to be twice that of creosoted wood sleepers.

8. Probably, however, the present chairs can be used again, or a great number of them. In the absence of information on this head I am unable to make the comparison as it affects the present renewals of the Eastern Bengal Railway, but with the estimates before them the officers in India will be able to judge whether it would or would not be desirable to send out a supply of bowl sleepers so that some of the renewals may be made with them. In this they will be guided to a great degree by the experience as to how the bowl sleepers already sent out have answered.

9. In arriving at the comparative value of wood and iron, it must not be forgotten that an iron sleeper has value after it is no longer serviceable for the road, whilst a wood sleeper is of comparatively little value. Probably, however, in India old iron would be less valuable than in England where it can more readily be disposed of to be re-manufactured.

J. T. WOODS, Esq.

(Signed) JOHN HAWKSHAW.

Extract from a letter from the Secretary, Madras Railway Company, No. 530, dated London, the 4th April 1874.

PARAGRAPH 6.—*Renewal of line on West Coast with Iron and Wooden Sleepers.*—The Board regretted to learn from paragraph 35 of 1,091 that the Government of India consider it desirable that a further indent providing for pine sleepers for the remaining seventy-one miles between Beypore and Palghaut should be submitted for consideration in conjunction with the information called for as to the prices at which iron pot sleepers can be procured and laid. With your subsequent communication, No. 1,093, is forwarded a copy of the Acting Chief Engineer's letter of the 19th February, giving an estimate of the relative expense of the two descriptions of road for the next fifty years, from which it would appear that the substitution of creosoted pine sleepers instead of cast iron ones on the length of line in question would entail an additional expense of Rupees 42,519-5-0 per mile. The Directors, however, trust that the Government of India, on consideration of the figures submitted by the Acting Chief Engineer, will no longer decline to sanction the renewal with iron sleepers of the whole of the line on the Western Coast, with the exception of the ten miles on which, in deference to their wishes, it has been agreed to experiment with creosoted pine sleepers. In his report, dated 24th ultimo, to the Eastern Bengal Railway Company, of which we have been favored with a copy, and a transcript of which is forwarded herewith, Sir John Hawkshaw estimates the cost at present prices of a road lined with iron bowl sleepers and creosoted wood sleepers at £1,663 and £1,386 per mile, respectively. He considers that on a railway like the Eastern Bengal the average life of the best creosoted sleepers is about twelve years, and that the average life of iron sleepers ought to be twice that of creosoted wood sleepers; and he adds that, in arriving at the comparative value of wood and iron, it must not be forgotten that an iron sleeper has value after it is no longer serviceable for the road, whilst a wood sleeper is of comparatively little value.

FORWARDED for the consideration of Government in continuation of the papers embodied in their Proceedings under date the 24th April 1874, No. 1,053.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

*Proceedings of the Madras Government, Public Works Department,
22nd July 1874.*

No. 487. 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, 24th June 1874, No. 368.

In acknowledging the receipt of the Proceedings of Government, under date the 13th instant, No. 1,573, I have the honor to request that His Excellency the Governor in Council will be pleased to point out to the Government of India that in the memorandum prepared in the Public Works Department, which accompanied the letter from that Government, dated the 21st May 1874, No. 1,109-R, there is an omission which seriously vitiates the comparison between the relative advantages of laying the line between Palghaut and Beypore with sleepers of creosoted pine and of cast iron respectively.

2. Taking the life of the wooden road at ten years, and that of the iron road at twenty-five years, it is shown that there is a difference in annual charge in favor of the wooden road of Rupees 373 per mile, but, in proceeding with the comparison, this annual saving is taken for twenty-five years but for one mile only, whereas the sales of iron are taken to credit over the whole distance of 79½ miles.

3. Enclosed is a revised memorandum in which, taking the data as assumed by the Government of India, the result at the end of the twenty-five years term is shown to be largely in favor of the wooden road.

4. I hope to be able to furnish shortly the information called for by the Government of India in their letter No. 1,109-R.

Revised memorandum on relative advantages of relaying the line between Palghaut and Beypore with sleepers of creosoted pine and of cast iron respectively, the figures as to cost and life of each description of road being those assumed in the memorandum forwarded with letter from the Government of India, No. 1,109-R of the 21st May 1874.

<i>Wooden Road, Life 10 years.</i>						RS.	RS.
Cost per mile	...	...	...	...	...	377	7,536
Interest at 5 per cent	...	...	...	...	...	754	
Renewals at 1½ per annum	...	...	...	...	...		
Annual charge per mile	...	...	...	...	...		1,131
<i>Iron Road, Life 25 years.</i>							
Cost per mile, less chairs, etc., in hand	...	...	...	...	...	806	16,120
Interest at 5 per cent	...	...	...	...	...	698	
Renewals at 1½ per annum	...	...	...	...	...		
Annual charge per mile	...	...	...	...	...		1,504
Difference in annual charge in favor of wooden road per mile	...	...	...	...	...	373	
Do. for 25 years and for 79½ miles	...	...	...	...	...		7,39,006
Credit sales of iron, 35 tons per mile, at Rupees 30 per ton for 79½ miles	...	...	...	...	...	83,212	
	...	...	...	...	...		8,22,218

*Proceedings of the Madras Government, Public Works Department,
22nd July 1874.*

Sale of iron road, 103 tons per m.le, at Rupees 30 per ton for	rs.
79½ miles	2,44,882
Balance in favor of wooden road after 25 years	5,77,336

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

No. 488.

ORDER THEREON, 22nd July 1874, No. 1,973.

RAILWAY, No. 52.

ORDERED that this letter,* together with extract from the Board's letter and the letter from the Agent of the Company submitted with Consulting Engineer's endorsement, No. 340, of 8th June 1874, be communicated to the Government of India, with reference to their letter of the 21st May 1874, No. 1,109-R.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 489.

(DOCKET No. 1,974, dated 22nd July 1874.)

Copy of the above forwarded to the Government of India.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

Exd. S. T. Austin.
Spare Copies

N. 340

*Forwarded for the consideration
of Government, in continuation of
the papers embodied in their Pro-
ceedings under date the 24th April
1874, N. 1053.*

Mantworth

Lieut. Col. R.E.,

Consulting Engineer for Railways

*Madras
8th June 1874*

*To The Secretary to Government
Public Works Department
Fort. Saint George.*

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interdicted or otherwise
be maintained or in any way
of the said land and water / and
the same

2022.10.10
interdicted or otherwise
be maintained or in any way
of the said land and water / and
the same

P. M. 1874 Dept.
Gen. of the Dept.
No: 3485
The Consulting Engineer
for the Railway
The Secretary to Govt.
P. M. Dept.
Govt. St. George
Dated 8th June 1874
No. 3485
Incl. 3
Submitting for
the consideration of
Govt. letter with en-
closure from the
M. & C. Comp. over the
value of the ship
with that of iron
ships for the
line in the coast

At 485
Recd to C. & J. 11 June 74

Annual charge per

Revised Memorandum on
relative advantages of relaying the line
between Palghat and Beypore with
sleepers of creosoted pine and of
cast iron respectively, — the
figures as to cost and life of each
description of road being those
assumed in the Memorandum
forwarded with letter from the
Government of India No. 1109 R, of
the 21st May 1874.

Wooden road. Life 10 years

Cost per mile

Rs
4,536

Interest at 5 per cent — 377

Repairs at 1/10 per annum — 454

Annual charge per mile. 1,131

Iron road. Life 25 years.

Cost per mile, less chains, &c., in hand — 16,120

Interest at 5 per cent — 806

Renewals at 1/25 per annum — 698

Annual charge per mile 1,504

Difference in annual charge in
favour of wooden road per mile — 373

Do — for 25 years and for 79 1/4 miles — 7,39,006.
Credit sales of iron, 35 tons per mile,
at Rs 30 per ton for 79 1/4 miles — 83,212.

8,22,218

Cost of iron road, 103 tons per mile,
at Rs 30 per ton for 79 1/4 miles — 2,44,882

Balance in favour of wooden road
after 25 years — 5,77,336.

Wm. Stewart Esq. R.E.
Cons. Engineer for Railways

Railway Department

CONSULTING ENGINEER'S OFFICE.

No. 368

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 acknowledging the
receipt of the Proceedings of Government
under date the 13th instant, No 1573, I
have the honour to request that His
Excellency the Governor in Council
will be pleased to point out to the
Government of India that, the memo-
randum prepared in the Public
Works Department which accompanied
the letter from that Government dated the

the 21st May 1874, No 1109 R, there
is an omission which seriously
vitiates the comparison between the
relative advantages of laying the line
between Palghat and Bysore -
with sleepers of creosoted pine and
of cast-iron respectively.

2. Taking the life of
the wooden road at ten years, and
that of the iron road at twenty-
five years, it is shown that there
is a difference in annual charge in
favour of the wooden road of Rs.
343 per mile; but, in proceeding
with the comparison, this annual
saving is taken for 25 years, but for
one

136 8
one mile only; whereas the sales of iron cut
are taken to credit over the whole
distance of $79\frac{1}{4}$ miles.

3. Enclosed is a revised
Memorandum in which, taking the
data as assumed by the Government
of India, the result at the end of
the 25 years' term is shown to be
largely in favour of the wooden road.

4. I hope to be able to
furnish shortly the information
called for by the Government of
India in their letter No 1109 R.

I have the honour to be,
Sir,
Your most obedient servant,
Wm. H. R.
Cons. Engineer for Railways

Madras
21st June 1874
Sd/ R. H. R.

Letter of the 21 May 1974
No. 1109 R.

H. E. No. 1974 dated

Copy of the above
forwarded to the Govt.
of India -

mm

To for Engr
1. Copies despatched 31/7/74.

30 1. Copies despatched 31/7/74.

486 - 489.

On 2/7/74 to 6/7/74

3880
3485

Govt. of 1874 Madras.

PUBLIC WORKS.

To

The Chief Engineer
Sey. to the Govt of Madras

Dated

Recd.

Encl 4

G. O. 22 July 1874, No. 1973
1974

Nos. 486-489

Sleepers, - Madras Railway

Passing orders on papers
from the Com. Engr. for P.W.
regarding the relative
advantages of ~~relaying~~
relaying the line between
Palghat and Belpore
with sleepers of creosoted
pine & of cast iron re-
spectively —

Forwarding, encl.
~~orders~~ relating
advantages of
the line between
Palghat & Belpore
sleepers of creosoted
pine & of cast iron
respectively —

Recd 21/7/74 G.O. 4/7/74