

(1) Number of pages _____

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(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	1053-54	Press	<i>Original</i>
B.P. No.	(Rly)	Mis-	
Dated	24. 4.	195	
		1874	

Not to be folded or roughly handled

No. 299. 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, 24th March 1874, No. 173:—

The instructions from the Government of India, contained in their letter, No. 89 G.R., of the 13th January 1874, were communicated to the Agent of the Madras Railway Company, and I have now the honour to lay before Government, for consideration, two letters* from that officer in reply.

* No. 170, dated 24th Feb. 1874.

No. 235, „ 19th March „ with enclosures.

2. It will be seen that the Chief Engineer states that, according to the latest quotations, the price of pot sleepers is from £5-5-0 to £6 per ton at the works, or about Rupees 3½ per sleeper delivered at Madras. Mr. Going estimates the cost of laying an iron sleeper road at Rupees 17,440 per mile. Taking the life of iron sleepers at fifty years, and the life of creosoted pine sleepers at ten years, Mr. Going compares the cost of the two kinds of sub-way, and shows that the use of creosoted pine sleepers instead of cast iron ones between Palghaut and Beypore would entail a loss upon the Company, in fifty years, of Rupees 33,72,033. Looking to these figures the Agent explains that he is not in a position to submit the indent called for by the Government of India for creosoted pine sleepers sufficient to relay the line between Palghaut and Beypore.

3. It will be observed that Mr. Going has entered in the comparative statement the cost of equipping the line *de novo* with chairs and trenails, the existing road being now fully equipped with them. In the event of the line being laid with iron sleepers, credit could not be taken for these chairs and trenails, except at the price of old iron. Taking Mr. Going's rates, therefore, I submit that the cost of relaying the road between Palghaut and Beypore with sleepers of creosoted pine will be, not Rupees 10,790 per mile, but Rupees 7,536 per mile; and that the cost, as shown by him, of relaying the same portion of road with iron-pot sleepers is subject to a deduction of the value of the old chairs and trenails. Estimating the chairs at Rupees 30 per ton, and the trenails at half their original cost, the expense of relaying with iron sleepers would be reduced from Rupees 17,440 to Rupees 16,120 per mile.

4. It also appears to me that a comparison of the probable financial results of the two operations may be obtained more simply and with a greater approach to accuracy than by the mode of calculation adopted by the Chief Engineer. The appended comparative statement has been based upon the figures given by Mr. Going, and upon his assumption that the life of the iron sleepers will be fifty years. The life of the creosoted pine sleepers has been severally taken at ten, twelve, and fifteen years. It will be seen that the annual charge per mile for the iron road comes to Rupees 1,155; and that the annual charge per mile for the wooden road, assuming a ten years' life, is Rupees 1,131; assuming a twelve years' life, Rupees 1,005; and assuming a fifteen years' life, Rupees 879. These figures seem to show that, if the creosoted pine sleepers have a minimum life of ten years, their adoption will result in a saving to the Company. The climate of Malabar does not

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

materially differ from that of Bengal; and I can see no reason why creosoted sleepers should have a shorter life in Malabar than in Bengal, where experience has shown that they last for ten or twelve years.

I beg, therefore, to repeat the opinion expressed in my letter, dated the 4th October 1873, viz, that the proper course is to extend the scope of the proposed experiment, and to renew the whole line from Palghaut westward with sleepers of creosoted pine.

6. With regard to the suggestion contained in paragraph 4 of the letter from the Government of India under acknowledgment, it will be seen that the Great Southern of India Railway Authorities are not disposed to part with the iron material now in the Negapatam—Erode line.

Comparative Statement showing the approximate annual charge for relaying and renewing the line between Palghaut and Beypore with Creosoted Pine Sleepers, and with Cast-iron Pot Sleepers, the rates being those given by the Chief Engineer of the Madras Railway Company.

Creosoted Pine Sleeper Road.

Cost of road per mile, including 10 per cent. new chairs and 30 per cent. new trenails	Rs.	7,536
Annual charge per mile, the life of sleepers being taken at ten years.		
Interest at 5 per cent. on Rs. 7,536	377	
Renewals at 10 per cent.	754	
	1,131	
Annual charge per mile, the life of sleepers being taken at twelve years.		
Interest as above	377	
Renewal at 8½ per cent.	628	
	1,005	
Annual charge per mile, the life of sleepers being taken at fifteen years.		
Interest as above	377	
Renewals at 6½ per cent.	502	
	879	

Cast-iron Pot Sleeper Road.

Cost of road per mile	17,440
Deduct 35 tons old chairs, at Rupees 30 per ton	1,050
7,392 old trenails, at 7 Pies each	270
	1,320
	16,120
Annual charge per mile, the life of sleepers being taken at fifty years.	
Interest at 5 per cent. on Rupees 16,120	806
Renewals at 2 per cent. on Rupees 17,440	349
	1,155

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

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

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, 24th February 1874, No. 170.

With reference to your letter, No. 167, of the 17th instant, I have the honour to inform you that I have written to the Agent of the Great Southern of India Railway and inquired as to whether there is any probability of his Company being in a position to dispose of the iron-pot sleepers that we shall require in case it is ultimately decided to relay the line to Beypore with iron instead of wooden sleepers. I will inform you of the result of my inquiry in due course.

2. In the meantime I shall be glad if you will cause the enclosed copy of the Acting Chief Engineer's letter of the 19th instant, No. 163, to be submitted to the Government, as it contains the information called for by the Government of India as to the probable cost of importing the pot sleepers required, taking into consideration the present price of iron.

3. Mr. Going also shows in his letter what would be the cost of relaying the road with creosoted pine sleepers, basing his calculation upon the advices we have recently received from England as to the prices of the pine sleepers which the Board have already ordered for ten miles of line.

4. Comparing the two it is shown that in a period of fifty years a pine sleeper road will have cost the Company Rupees 33,72,033-0-3 more than an iron sleeper one, taking into consideration the present high price of iron and allowing to creosoted pine sleepers the same advantages which experience has shown they possess when used in Bengal.

5. It must be borne in mind however that by desire of the Government of India it has only recently been determined to experiment with creosoted pine sleepers on ten miles of line between Palghaut and Beypore with a view to ascertain what advantages they really possess when used in a climate alternately wet and dry such as prevails on the West Coast of Southern India.

6. The opinions of the Railway Officers have throughout been against the use of the creosoted pine sleepers, and the experiment alluded to was very reluctantly agreed to by the Directors. You will therefore readily understand that I am not in a position to submit the indent asked for by the Government of India without further communication with my Board to whom I wrote on the subject by the last mail.

7. I trust however that after consideration of the figures now submitted by the Acting Chief Engineer, the Government of India will no longer withhold their sanction to the proposal to renew the line throughout with iron sleepers, and if it can be arranged that we can purchase from the Great Southern of India Company the necessary materials, the result will be still more advantageous than is shown in Mr. Going's letter.

8. I shall be glad to receive the orders of Government upon this subject as early as possible.

From T. H. GOING, Esq., Acting Chief Engineer, to R. B. ELWIN, Esq., Agent and Manager of the Madras Railway Company, dated Madras, 19th February 1874, No. 163.

With reference to your endorsement on Consulting Engineer's letter, No. 167, of 17th instant, I find the latest English quotation for iron castings, such as chairs and pot sleepers, is from £5-5-0 to £6 per ton at the works.

2. The cost of freight, etc., to Madras would bring up this rate to from £7-13-6 to £8-9-3 per ton.

3. The cost of a pot sleeper delivered at Madras, according to present rates, taking the higher one of £6, would thus be Rupees 3-8-0.

The value of a wrought iron tie-bar is Rupees 2-4-7.

That of two cotters and two gibs is Rupees 0-2-5.

Thus the price we should have to pay at present market rates for a pair of pots united by a tie-bar with cotter and gib fastenings would be Rupees 9-7-0.

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

4. The contract price of a sleeper of creosoted pine delivered at Madras, as per advice from the Board, is Rupees 3-13-1.

That for two cast-iron chairs each 21 lbs. weight, according to rates for castings as quoted above, is Rupees 1-11-8.

That for four wrought-iron trenails is Rupees 0-4-8.

The cost of such a sleeper with its two chairs and four trenails would thus be Rupees 5-13-5.

5. The Government of India estimate the life of a creosoted pine sleeper at ten to twelve years in Bengal (see G. O., No. 2,619, of 7th November 1872, forwarded with Consulting Engineer's letter, No. 939, of 14th idem). I do not think it would be so much in the alternate wet and dry climate of the West Coast; but, in the absence of experience on this head, shall suppose it to be ten years.

6. The life of a pot sleeper cannot certainly be estimated at less than fifty years. After the twelve years during which those on the 1st Division, North-West Line, have been worked over so far as wear and tear are concerned, there is no apparent deterioration, nor is there reason to expect any except to an insignificant extent. The renewals during the above period have been to replace pots broken by accidental causes, and have amounted to Rupees 2,498, or about 1-163th part of the whole.

7. From the data I have thus given the following comparison may be made of the relative advantages of the two kinds of sub-way, viz., one of creosoted pine sleepers on cast-iron chairs, as against one of cast-iron pot sleepers connected with wrought-iron tie-bars, as follows:—

Road laid with Iron-pot Sleepers.

					RS.	A.	P.
Pot Sleepers, 3,696	at Rs. 3-8-0	...	...	...	12,936	0	0
Tie Bars, 1,848	at ,, 2-4-7	...	...	...	4,225	6	0
Cotters, 3,696	at ,, 0-1-2½	...	...	...	279	2	0
Gibs, 3,696							
Cost of one mile...					17,440	8	0
Add interest at 5 per cent. per annum for fifty years ...					43,601	4	0
Total...					61,041	12	0

Road laid with Creosoted Pine Sleepers.

Pine Sleepers, 1,848	at Rs. 3-13-1	...	...	...	7,055	2	0
Cast Iron Chairs, 3,696	at ,, 0-13-10	...	...	...	3,195	8	0
Trenails, 7,392	at ,, 0-1-2	...	...	...	539	0	0
Cost of one mile...					10,789	10	0
Add interest for fifty years ...					26,974	1	0
Cost of relaying after ten years ...					7,536	6	0
Add interest for forty years ...					15,072	12	0
Cost of relaying after ten years ...					7,536	6	0
Add interest for thirty years ...					9,304	9	0
Cost of relaying after ten years ...					7,536	6	0
Add interest for twenty years ...					7,536	6	0
Cost of relaying after ten years ...					7,536	6	0
Add interest for ten years ...					3,768	3	0
Total...					1,03,591	1	0

8. In preparing this statement I have estimated for a complete renewal of the pot sleepers within a period of fifty years, also for renewals of cast-iron chairs and trenails at the rate of 10 per cent. and 30 per cent., respectively, for each renewal of the wooden road, this being the rate which actual experience shows.

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

9. It thus appears, so far as we can judge in estimating all the probabilities, that the substitution of creosoted pine sleepers instead of cast-iron ones between Palghaut and Beypore would cost the Company Rupees 42,549-5-0 per mile, or for the 79½ miles (including sidings and excluding the three miles for which pine sleepers have been already ordered) a sum of Rupees 33,72,033-0-3.

10. I cannot think then that the Board would approve of my submitting the indent for pine sleepers called for by the Government of India.

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, 19th March 1874, No. 235.

In continuation of my letter, No. 170, of the 24th February, I have the honour to enclose you the copy of a letter* received this morning from the Agent of the Great Southern of India Railway

Company in which he informs me that he and the Chief Engineer of that Company concur as to the policy of keeping the iron-pot sleepers now in the road between Erode and Negapatam for the proposed narrow gauge line between those places, and that he will, therefore, be unable to let this Company have a supply of iron sleepers.

From W. S. BETTS, Esq., Agent of the Great Southern of India Railway, to R. B. ELWIN, Esq., Agent and Manager of the Madras Railway Company, dated Negapatam, 18th March 1874, No. 950-733.

In further reply to your letter, No. 516, of the 18th ultimo, I have to inform you that I find our Chief Engineer is in accord with me regarding the policy of keeping the iron-pot sleeper road for the altered gauge. I shall, therefore, be unable to let your Company have a supply of iron sleepers.

No. 300. ORDER THEREON, 24th April 1874, No. 1,053.

RAILWAY, No. 45.

ORDERED that this letter be forwarded to the Government of India.

(Here enter No. 1,054, dated 24th April 1874.)
(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Consulting Engineer for Railways.

Erd. E. C. Shunker.
Spare Copies

Gobt. of 1874 Madras.
PUBLIC WORKS.

To
THE CONSULTING ENGINEER
FOR RAILWAYS.

Dated April 21th.

Encl.

Recd.

G. O., 24th April 1874, No. 1,053

APRIL
Nos. 299-300

Madras Railway.—Ordered that the letter from the Consulting Engineer for Railways on the subject of the relative advantages of laying the line between Palghaut and Beypore of the Madras Railway with creosoted pine instead of cast iron sleepers be forwarded to the Government of India.

PUBLIC WORKS DEPARTMENT,
OOTACAMUND, 24th April 1874.

No. 301.

No. 1,054.

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. 46.

SIR,—Referring to the correspondence ending with the letter from the Government of India, dated 13th

January 1874, No. 89 G.R., I am directed to forward the accompanying communication from the Consulting Engineer for Railways with its accompaniments, regarding the relative advantages of laying the line between Palghaut and Beypore with creosoted pine instead of cast-iron sleepers.

2. Assuming the life of the two descriptions of sleepers at ten and fifty years, respectively, the Railway Authorities estimate the loss by the use of pine sleepers at nearly 34 lakhs of Rupees in fifty years, and looking to this heavy loss, they express their unwillingness to submit the indent required by the Government of India for a further supply of pine sleepers. The Consulting Engineer, however, considers that this result has been erroneously arrived at, and adopting another method of calculating the financial aspect of the question, he shows that, taking the cost of a creosoted pine sleeper and a cast-iron pot sleeper road at Rupees 7,536 and 16,120, respectively, the annual charge for relaying and renewing will be as follows:—

For a cast-iron pot sleeper road, life of sleepers being taken at fifty years	eg.	1,155
For a creosoted pine sleeper road, life being taken at ten years	...	1,131
Do. at twelve years	...	1,005
Do. at fifteen years	...	879

And, according to this calculation, Lieutenant-Colonel J. H. M. Shaw-Stewart, R.E., argues that the adoption of pine sleepers will result in a saving to the Company, and recommends the renewal of the whole line from Palghaut westward with them.

3. With the figures which have thus been put forward by the advocates for the two descriptions of sleepers, His Excellency the Governor in Council will leave the decision of the question to the Government of India. It is only necessary to add with reference to paragraph 4 of the letter from that Government that the Great Southern of India Railway Authorities are not disposed to part with the bowls now in use on their line.

I have the honour to be,

Sir,

Your most obedient servant,

Colonel, R.E.,

Secretary to Government.

Exd. E. C. Shunker.

Spare Copies

Govt. of {1874} Madras

PUBLIC WORKS.

To

THE SECRETARY TO THE GOVERNMENT

of INDIA.

Dated April 24th.

Recd.

Encl.

G. O., 24th April 1874, No. 1,054.

APRIL

No. 301

FORWARDING, with observations, a communication from the Consulting Engineer for Railways with accompaniments, regarding the relative advantages of laying the line between Palghat and Beypore with creosoted pine instead of cast-iron sleepers.

Railway Department.

CONSULTING ENGINEER'S OFFICE.

From

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

Consulting Engineer for Railways.

COLONEL G. W. WALKER, R.E.

Secretary to Government,

Public Works Department,

Fort Saint George.

SIR,

The instructions from the Government of India, contained in their letter No 89 G. O. of the 13 January 1874, were communicated to the Agent of the Madras Railway Company, and I have now the honour to lay before

Government, for consideration, two letters from that officer in reply.

No 170.

24 Feb'y. 1874.

No 235

19 March 1874

with enclosures.

2. It will be seen —
that the Chief Engineer states
that, according to the latest —
quotations, the price of pot sleepers
is from £5.5.0 to £6.0.0 per
ton at the works; or about £3½
per sleeper delivered at Madras.

Mr. Going estimates the cost of
laying an iron sleeper road at
£17,440 per mile. Taking

the life of iron sleepers at 50
years, and the life of creosoted
pine sleepers at 10 years, Mr.

Going compares the cost of the two
kinds of sub-way, and shows that
the

the use of creosoted pine sleepers
instead of cast iron ones between
Palghat and Bexpoor would
entail a loss upon the Company
in fifty years, of Rs 33,72,033.
Looking to these figures the Agent
explains that he is not in a
position to submit the indent
called for by the Government of
India, for creosoted pine sleepers
sufficient to relay the line between
Palghat and Bexpoor.

3. It will be observed
that Mr. Going has entered in the
comparative statement the cost of
equipping

equipping the line de novo with
chairs and kenails, the existing
road being now fully equipped
with them. In the event of
the line being laid with iron
sleepers, credit could not be taken
for these chairs and kenails,
except at the price of old iron.
Taking Mr. Goings rates, therefore,
I submit that the cost of relaying
the road between Palghat and
Beypoor with sleepers of crooked
pine will be, not Rs 10,790 per
mile, but Rs 7,536 per mile: and
that the cost, as shown by him,
of relaying the same portion of
road

road with iron pot sleepers is subject
to a deduction of the value of the
old chairs and kenails: Estimating
the chairs at Rs 30 per ton, and the
kenails at half their original cost,
the expense of relaying with iron
sleepers would be reduced from
Rs 17,440 to Rs 16,120 per mile.

It also appears to me
that a comparison of the probable
financial results of the two
operations may be obtained more
simply and with a greater
approach to accuracy than by
the mode of calculation adopted
by the Chief Engineer. The

appended

appended comparative statement
has been based upon the figures
given by Mr. Goings, and upon his
assumption that the life of the iron
sleepers will be fifty years. The
life of the creosoted pine sleepers
has been severally taken at ten,
twelve, and fifteen years. It will
be seen that the annual charge
per mile for the iron road comes
to £1,155:— and that the
annual charge per mile for the
wooden road, assuming a ten years'
life, is £1,131; assuming a twelve
years' life, £1,005; and assuming a
fifteen

fifteen years' life, £849. These
figures seem to show that, if the
creosoted pine sleepers have a
minimum life of ten years, their
adoption will result in a saving
to the company. The climate of
Malabar does not materially differ
from that of Bengal; and I can
see no reason why creosoted sleepers
should have a shorter life in
Malabar than in Bengal,
where experience has shown that
they last for ten or twelve years.
I beg therefore to
repeat the opinion expressed in
my letter dated the 4th October 1873
namely

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Expenditure for 1874

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Post Made 1874 April 15
1874
1874

From
 1874

To
 The Consulting Engineer
 for Railways,

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

Dated 24/11/1874
 Recd. 24/11/1874

No. 133

Handwritten notes at the bottom of the left page, possibly a list or summary.

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Comparative statement, showing the approximate annual charge for relaying and renewing the line between Palghat and Beypore with creosoted pine sleepers, and with cast-iron pot sleepers, — the rates being those given by the Chief Engineer of the Madras Railway Company.

Creosoted pine sleeper road.

Cost of road per mile, including
10 per cent new chairs, and 30 per
cent new trenails Rs 7,536

Annual charge per mile, the life
of sleepers being taken at ten years.

Interest at 5 per cent
on Rs 7,536 Rs 371
Renewals at 10 per cent 751

Annual charge per mile, the life of
sleepers being taken at twelve years.

Interest as above Rs 311
Renewal at $8\frac{2}{3}$ per cent 628

Annual charge per mile, the life of
sleepers being taken at fifteen years.

Interest as above Rs 274
Renewals at $6\frac{2}{3}$ per cent 502

Cast-iron pot sleeper road.

Cost of road per mile Rs 17,440
Deduct

35 tons old chairs at
Rs 30 per ton 1,050
7392 old trenails
at 7 pice each 270

Rs 13,220
76120

Annual charge per mile, the life of
sleepers being taken at fifty years.

Interest at 5 per cent
on Rupees 16,120 806

Renewals at 2 per cent
on Rupees 17,440 349

Rs 1,155

Wm. H. R. B.

Genl. Engrs for Railways

No. 170

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 24th February 1874.

From

R. B. Clive Esq
Agent and Manager. M. R. Co.

To

Mr J. H. Webb Esq
Consulting Engineer for Railways.

Sir,

With reference to your letter of 16th of the 17th instant, I have the honour to inform you that I have written to the Agent of the Great Southern of India Railway and inquired as to whether there is any probability of his Company being in a position to dispose of the new Pat sleepers that we shall require in case it is ultimately decided to relay the line to Beypore with new instead of wooden sleepers. I will inform you of the result of my inquiry in due course.

In the meantime I shall be glad if you will forward the enclosed copy of the Acting Chief Engineer's letter of the 19th instant to the Government, as it contains the information called for by the Government of India as to the

probable cost of importing the Pat
sleepers required, taking into consideration
the present prices of iron.

3. Mr. Fowling also shows in his
letter what would be the cost of relaying
the road with creosoted Pine sleepers,
having his calculation upon the advice
we have recently received from England
as to the prices of the Pine sleepers which
the Board have already ordered for
ten miles of line.

4. Comparing the two it is
shown that in a period of 50 years
a Pine sleeper road will have cost
the Company Rs. 3372033.0.3 more
than an iron sleeper one, taking into
consideration the present high prices
of iron, and allowing to creosoted
Pine sleepers the same advantages
which experience has shown they
possess when used in Bengal.

5. It must be borne in mind
however that by desire of the Govern-
ment of India it has only recently
been determined to experiment with
creosoted Pine sleepers on 10 miles
of line between Palghat and Beypore
with a view to ascertain what
advantages they really possess when

used in a climate alternately wet and dry such as prevails on the West Coast of Southern India.

6. The opinions of the Railway Officers have throughout been against the use of the Creosoted Timber and the experiment alluded to was very reluctantly agreed to by the Directors. You will therefore readily understand that I am not in a position to submit the Indent asked for by the Government of India without further communication with my Board to whom I wrote on the subject by the last mail.

7. I trust however that after consideration of the figures now submitted by the Acting Chief Engineer the Government of India will no longer withhold their sanction to the proposal to renew the line throughout with new sleepers, and if it can be arranged that we can purchase from the Great Southern of India Company the necessary materials, the result will be still more advantageous than is shown in Mr. Poirer's letter.

I shall be glad to receive

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Dated

187

Recd.

Na

the order of payment upon this
subject as early as possible.

I have the honour to be
Sir
Yours most obedient servant
W. J. K. W.
Agent and Manager.

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways

Date

187

Recd.

No.

N^o 163.

Madras Railway Company
Chief Engineer's Office
Madras 19 February 1874.

The Agent and Manager
Dear Sir,

With reference to your endorsement on consulting Engineer's letter N^o 169 of 17 instant I find the latest English quotation for iron castings such as chairs and Pot sleepers is from £5-5-0 to £6-0-0 per Ton at the works.

2. The cost of freight ^{to} Madras would bring up this rate to from £7-13-6 to £8-9-3 per Ton.

3. The cost of a Pot sleeper delivered at Madras according to present rates taking the higher one of £6 would thus be Rupees 3-8-0.

The value of a Wrought Iron tie-bar is Rs 2-4-7
That of 2 Botten and 2 Gibbs is Rupees 0-2-5
Thus the price we should have to pay at present market rates for a pair of Pots united by a tie-bar with Botten and Gibb fastenings would be Rupees 9-7-0.

4. The contract price of a sleeper of creosoted Pine delivered at Madras as per advice from the Board is Rupees 3-13-1

That for 2 best Iron chairs each 21 lbs weight according to rates for castings as quoted above is Rupees 1-11-8

That for 4 Wrought Iron Treenails is Rs 0-4-8
The cost of such a sleeper with its 2 chairs and 4 treenails would thus be Rupees 5-13-5.

5. The Government of India estimate the life of a creosoted Pine sleeper at 10 to 12 years in

Bengal

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Dated 26th January 1874

Recd 25th Dec.

No 170.

Regarding the substitution
of iron for Madras sleepers

P.W. 1772/74

29.7.24th April
In 18 N^o 299

Bengal (see G.O. N° 2619 of 7 November 1872 forwarded with Consulting Engineer's letter N° 939 of 14th idem) I do not think it would be so much in the alternate wet and dry climate of the West Coast, but in the absence of experience on this head, shall suppose it to be 10 years.

6. The life of a Pot sleeper cannot certainly be estimated at less than 50 years: after the 12 years during which those on the 1st Division North West line have been worked over so far as wear and tear are concerned there is no apparent deterioration, nor is there reason to expect any except to an insignificant extent. The renewals during the above period have been to replace pots broken by accidental causes and have amounted to Rupees 2498 or about 10% part of the whole.

7. From the data I have thus given the following comparison may be made of the relative advantages of the two kinds of sub-way, viz: one of creosoted Pine Sleepers or Cast Iron chairs as against one of Cast Iron Pot Sleepers connected with Wrought Iron tie-bars as follows:

Road laid with Iron Pot Sleepers

Pot Sleepers—3696 at 3/8/—	Rs 12936—
Tie Bars—1848 at 2/4/7—	4225-6-
bolters—3696	
Gibs—3696 } " 1/2 1/2 —	279-2-
Cost of one Mile	Rupees 17440-8-
Add interest at 5 per cent	
per annum for 50 years }	43601-4-
Rupees	61041-12-0

Road laid with Creosoted Pine Sleepers.

Pine Sleepers 1848 at 3/13/1—	Rupees 7055-2-0.
Cast Iron Chairs 3696 at 1/13/10—	3195-8-0.
Trenails—7392 " 1/1/2—	539-4-
Cost of one Mile	Rupees 10789-10-0.
Add interest for 50 years—	26974-1-0.
Cost of relaying after 10 years—	7536-6-0.
Add interest for 40 years—	15072-12-0.
Cost of relaying after 10 years—	7536-6-0.
Add interest for 30 years—	9304-9-0.
Cost of relaying after 10 years—	7536-6-0.
Add interest for 20 years—	7536-6-0.
Cost of relaying after 10 years—	7536-6-0.
Add interest for 10 years—	3768-3-0.
Rupees	103591-1-0.

8. In preparing this statement I have estimated for a complete renewal of the Pot Sleepers within a period of 50 years, also for renewals of Cast Iron chairs and Trenails at the rate of 10% and 30% respectively for each renewal of the Wooden Road this being the rate which actual experience shows.

9. It thus appears, so far as we can judge, in estimating all the probabilities, that the substitution of creosoted Pine Sleepers instead of Cast Iron ones between Palghat and Beypoor would cost the Company Rupees 42,549-5-0 per mile or for the 79 1/2 miles (including sidings and excluding the 3 miles for which Pine Sleepers have been already ordered) a sum of Rupees 33,72,133-0-3.

10. I cannot think then that the Board would approve of my submitting the indent for Pine Sleepers called for by the Government of India.

Yours

Yours faithfully
(Signed) J. H. Young
Ag. Chief Engineer
(True copy)

W. H. K. W. H.
Agent and Manager

P. N. 1772/74
3

Pl. of 24th April/74
In No. 299

No. 2357

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 19th March 1874

From

R. B. Chinn Esq.
Agent and Manager of the M. R. Co.

To

Mr. J. H. Shaw Stewart, R.E.
Consulting Engineer for Railways.

Sir,

In continuation of my letter No. 170
of the 24th February, I have the honour to
enclose you the copy of a letter received
this morning from the Agent of the Great
Southern of India Railway Company in
which he informs me that he and the
Chief Engineer of that Company concur as
to the policy of keeping the iron sleepers
now in the road between Erode and
Kegapintam for the proposed narrow gauge
line between those places, and that he
will therefore be unable to let this Company
have a supply of iron sleepers.

I have the honour to be,
Sir,

Your most obedient servant,

W. H. K. W. H.
Agent & Manager

No. 250
7th
18th March
1874

Sp 950
733.

Great Southern of India Railway
Agents Office
Kegapattam 18th March 1874.

Dear Sir,
In further reply to your letter Sp 516 of the 18th ultimo, I have to inform you that I find our Chief Engineer is in accord with me regarding the policy of keeping the iron post-sleeper road for the altered gauge. I shall therefore be unable to let your Company have a supply of iron sleepers.

Yours faithfully
Wm. S. Petts
Agent

A. D. Edwin Esq.

Yours truly
W. S. Petts
Agent & Manager.

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

Sp. 950
in 887. 299.

Dated 19th March 1874
Recd. 20th March 1874
No. 235-

J. W. 1772

Regarding the iron
post sleepers now in the
road between Pondicherry
and Karaikal belonging
to the G. S. R. Co.

P. G. 24th April/74
In P. N. 299

P. N. 1222/74
5

Proceedings of the Madras Government,
Under date the 187

Read the following:

From
The Consulting Engineer
for Railways } (Memo dated 17th March 1874)

Ordered that this
letter be forwarded to the
Government of India.

To Messrs. Messrs.
Co

The Secretary to the Government
of India
1874

Referring to the Correspondence ending with the
letter

61. Copies of 30 Copies of Previous
Orders despatched 30/4/74

Letter from the Government of
India dated 13 January 1874
No 89 G.R., I am directed
to forward the accompany-
ing Communication from
the Consulting Engineer for
Railways with its accompani-
ments, regarding the relative
advantages of laying the
line between Palghat and
Beyoor with creosoted
pine instead of Cast iron
sleepers.

Assuming the life of
the two descriptions of
sleepers at 10 and 50 years
respectively the Railway
authorities estimate the
loss

loss by the use of pine
sleepers at nearly 31 lakhs
of Rupees in 50 years, and
looking to this heavy loss,
they express their unwilling-
ness to submit the estimate
required by the Government
of India for a further supply
of pine sleepers. The Con-
sulting Engineer however
considers that this result has
been prematurely arrived at,
and adopting another method
of calculating the financial
aspect of the question, he
shows that, taking the cost
of a Creosoted pine sleeper
and a Cast iron sleeper
road.

road at Rs 7536 and 76120
respectively the annual
charge for relaying and
renewing will be as follows:

For a best iron foot sleeper
road, life of sleepers...

being taken at 50 years Rs 1155.

For a cross tied pine sleeper
road.

Life being taken at 50 years Rs 1131

Rs 1005

at 15 years 879

And according to the Calen.

taken at Col. John Stewart

argues that the adoption of

pine sleepers will result

in a saving to the Company

and recommends the renewal

of the whole line from

Palghat

Palghat westward with
them.

With the figures which
have thus been put for-
ward by the advocates for
the two descriptions of sleepers
His Excellency the Governor
in Council will leave the
decision of the question to
the Government of India.

It is only necessary to add
with reference to para 4 of
the letter from that Govern-
ment that the Great
Southern of India Railway
authorities are not disposed
to part with the bows
now in use on their line.

177²

Gobt. of Madras.
PUBLIC WORKS.

To

The Comr. Super for Rys
Secy. to Govt. of India

Dated

Recd.

Encl. 5.

G. O. 24th April 1874, No. 10534

1054

Nos. 299-301.

Madras Railway

Ordered that the
letter from the Comr.
for Railways on the sub-
ject of the relative
advantages of laying
the line between Pal-
ghat & Beypoor, with
crossed pine instead
of cast-iron sleepers
be forwarded to the Secy.

of India:

Forwarding, a Com-
munication from the
Comr. for Rys. with
accompaniments,
regarding the relative
advantages of laying
the line between
Palghat & Beypoor
with cross-cut pine
instead of cast-
iron sleepers —