M.R.O. 1—77,006—8-6-37.

(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. 276-278	2229-30	Press / Mis.
Dated	20. 9.	1842.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 20th September 1872.

No. 276. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 30th August 1872, No. 452:—

In compliance with the instructions conveyed in the Order of Government dated the 23rd April 1872, No. 1,042, I have the honour to submit two letters* from the Agent of the Madras Railway, with enclosures from the Chief Engineer, giving full explanation of the advantages which may be expected from the proposed substitution of an iron for a wooden road upon the 101 miles of the South-West Line between Muddikerry and Beypore.

* No. 283 of 6th May 1872.
„ 605 of 21st August 1872, with Enclosures.

2. It will be seen that Mr. Anderson is unable to give the exact comparison called for by the Government of India in the 3rd paragraph of their letter; but he shows that the cost of maintaining the iron road is less than one-third of the cost of maintaining the wooden road; the exact figures, taking the average of five years from 1867 to 1871 inclusive, being, per mile per annum, Rupees 492 on the former and Rupees 1,506 on the latter.

3. In order to ascertain the comparative economy of renewing the portion of the railway in question with iron sleepers and with wooden sleepers, I requested that the cost of the latter work might be estimated, and the probable sum is shown by the Chief Engineer's estimate to be Rupees 5,47,551. Interest on this outlay at 5 per cent. comes to Rupees 27,388; and the cost of maintaining the wooden road may be taken as 1,506 × 101, or Rupees 1,52,106. The whole annual outlay chargeable to the restoration and maintenance of the wooden road along these 101 miles of line may therefore be said to be Rupees 1,79,484.

4. On the other hand the estimate for the restoration with iron sleepers comes to Rupees 12,67,846, and the interest on this is Rupees 63,392. The annual maintenance may be taken as 492 × 101, or Rupees 49,692; so that the whole annual outlay chargeable to the restoration and maintenance of these 101 miles of road with iron sleepers may be taken to be Rupees 1,13,084.

5. The difference between those amounts is Rupees 66,400, and this sum may fairly be taken to represent the annual saving which will be effected by the substitution of iron for wood.

6. I have the honour, therefore, to request that sanction may be accorded to the estimate amounting to Rupees 12,87,331; of which sum, as mentioned by Major Prendergast in his letter of the 4th March 1872, Rupees 3,18,577 is chargeable to Capital, and Rupees 9,68,804 to Revenue.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 6th May 1872, No. 283.

Adverting to your letter No. 239 of the 25th ultimo, with which was forwarded a copy of G. O., No. 1,042, dated the 23rd idem, I have the honour to invite your attention to the enclosed copy of report from the Chief Engineer* in which are explained the reasons which prevent his furnishing the statistics called for by the Government of India showing the comparative cost

* No. 199, dated 4th May 1872.

of maintenance on the 33 miles of line between Avenashy and Muddikerry before and after the substitution of iron for wooden sleepers.

2. Mr. Anderson observes :—

"I received sanction to undertake this work in November 1870 (*vide* G. O., No. 2,827, dated 23rd November 1870,) and commenced operations in January 1871.

"The average life of a wooden sleeper on that portion of the line has been about four years, so that the renewal with iron sleepers will not be completed under that time, or say the end of 1874. It is only when wooden sleepers become unsound that they are removed and iron sleepers substituted. Up to the present not more than one-fifth of the total number of iron sleepers has been put in, and as these are distributed over the whole 33 miles, it is plain that any statistics I could now give would be of no value whatever."

3. We have had however, as Mr. Anderson remarks, the fullest experience of the use of pot sleepers on other parts of the line, and I trust that the information given in the enclosed report together with that supplied by the Chief Engineer in his letter, No. 458,* dated 4th December 1868, will convince the Government of India of the reduction in the cost of maintenance effected by the use of iron instead of wooden sleepers.

* Copy forwarded to you with my letter No. 545 of 10th December 1868.

4. The estimates which have been submitted for relaying with pot sleepers the line between Muddikerry and Beypore appear to me to contain the fullest possible details, but if you can suggest any additional information which should be supplied, I shall be very happy to forward it to you for transmission to the Government of India.

5. I trust it will not be overlooked that, in consequence of the delay which has taken place in sanctioning the estimates, the Chief Engineer will have to renew the contract for the supply of wooden sleepers, thus entailing upon the Company an expense which, I think, is to be regretted.

From the Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 4th May 1872, No. 199.

YOUR endorsement dated 26th ultimo, on Consulting Engineer's letter No. 289 of 25th idem.

I regret to say I am not yet in a position to furnish a report upon the comparative cost of maintenance on the 33 miles of line between Avenashy and Muddikerry before and after the substitution of iron for wooden sleepers.

2. I received sanction to undertake this work in November 1870 (*vide* G. O., No. 2,827, dated 23rd November 1870,) and commenced operations in January 1871.

3. The average life of a wooden sleeper on that portion of the line has been about four years, so that the renewal with iron sleepers will not be completed under that time, or say the end of 1874. It is only when wooden sleepers become unsound that they are removed and iron sleepers substituted. Up to the present not more than one-fifth of the total number of iron sleepers has been put in, and as these are distributed over the whole 33 miles, it is plain that any statistics I could now give would be of no value whatever.

4. The reduction in the cost of maintenance effected by the use of iron instead of wooden sleepers is, however, no new question on the Madras Railway. We have the fullest experience on the subject.

5. The whole of the North-West Line and the Bangalore Branch were originally laid with iron sleepers, while the South-West Line was laid with wooden sleepers.

6. The great economy resulting from the use of iron sleepers, however, led to their adoption by degrees on the South-West Line, until at present the only portion of our railway where wooden sleepers are used is the length between Muddikerry and Beypore.

7. This question has been so frequently discussed and so thoroughly ventilated that I had looked upon it as quite exhausted.

Proceedings of the Madras Government, Public Works Department, 20th September 1872.

8. From amongst the numerous reports that have been issued from time to time from my office, I would ask particular attention to a letter No. 458 of 4th December 1868, where, in reply to Consulting Engineer's letter No. 394 of 2nd December, forwarding copy of G. O. No. 3,733 of 30th November, I enter into the fullest details with reference to an iron sleeper road, and show that while the cost of maintenance of the 1st Division, North-West Line, laid with iron amounts to Rupees 503-13-5 per mile per annum, the cost of maintenance of the 4th Division, South-West Line, a wooden road, and the one which I now propose to relay wit iron sleepers amounts to Rupees 1,596-7-6 per mile per annum.

9. Knowing that I had but little to add to the information already in the possession of Government, and feeling certain that that information could but result in assuring sanction for my estimate, I requested you to serve a notice upon our sleeper contractors terminating their contract under the usual conditions. Your notice dates from 20th February, and the contract therefore expires on the 22nd of this month. It will now become necessary to take immediate steps to have the contract renewed. Much as I should desire to bring expenditure on account of wooden sleepers to a close, it would manifestly be imprudent to allow the stock of wooden sleepers to run too low.

10. As regards the request that details should be furnished of the estimate submitted, I have only to observe that I am utterly at a loss to imagine what details can possibly be referred to. My estimate gives the number of miles laid with 65 lbs. rails and the number laid with 75 lbs. rails; it gives the quantity and cost of materials per rail length of each description, together with the rate for each article.

Pot Sleepers.
Tie-bars.
Gibs.
Cotters, and
Wooden Keys.

Nothing has been omitted. The estimate is as complete and detailed as it is possible to make it.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 21st August 1872, No. 605.

WITH reference to your letter No. 361 of the 14th May last, I have the honour to enclose you a copy of the Chief Engineer's letter, No. 390, dated the 20th instant, in which Mr. Anderson furnishes further information called for by you with regard to the relative merits of iron and wooden sleepers.

2. I regret to say that I am not in a position to furnish a statement of the number of trains hauled over each division as called for in the last part of paragraph 5 of your letter. The information can be got out if you desire it; but the Traffic Manager tells me that, up to the present time, he has been quite unable with his existing staff to do so, and has suggested that an additional clerk shall be employed for the purpose, adding that it will take him about two-and-a-half months to get out the information for the period you require it. You will readily understand this if you bear in mind that, in addition to going through the time-tables, the records, guards' journals, etc., will have to be gone through for traces of special goods train, etc.

3. With regard to the 7th paragraph of your letter, the Locomotive Superintendent informs me that he has kept no statistics which will enable him to furnish you with the report you ask for.

4. The information which the Chief Engineer has been able to furnish has given him a considerable amount of labour, which will account for the delay that has occurred in replying to your letter. I trust, however, that Mr. Anderson's report, a copy of which is now forwarded, will enable you to dispose of the subject.

From the Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 20th August 1872, No. 390.

Consulting Engineer's letter No. 361 of the 14th May last.

DURING the years 1860 and 1861, 29,807 creosoted pine sleepers were received from England of which nearly the whole were used on the 1st Division, South-West Line, but they cannot be said to have undergone a satisfactory trial, as they were taken up after five or six years to be replaced by iron-pot sleepers.

2. When taken out of the road the sleepers were found to be in a generally sound state, although a large proportion were rendered useless in consequence of the trenail holes having either worked too large or become rotted. The serviceable creosoted sleepers were used for renewals on the 3rd Division, South-West Line, and lasted fairly well until replaced by pots.

3. The experience on the Madras Railway does not enable me to dispute the statement that the average life of creosoted pine sleepers on the Great Southern of India Railway is twelve or thirteen years, provided the ballast is suitable and the climate not extreme.

4. The climate of the Western Coast, however, where I now proposed to introduce iron sleepers is the very most trying on our railway; and I should most strongly object to the use of a material of which we have had no experience under the conditions to which it would have to be exposed.

5. 730 miles of the Madras Railway are laid with iron sleepers, and we know with certainty that they will prove as great a success on the western division as on the rest of our line; there is therefore, not a single argument in favor of our risking an addition to the many costly failures the railway has had to deplore in this matter of sleepers.

6. The expedient proposed with a view to reducing the cost of ballasting is not so "entirely novel" as the Consulting Engineer appears to think. The same plan has been adopted with much success on the 1st Division, South-West Line.

The estimate for renewing the line between Muddikerry and Beypore, forwarded with my letter No. 45 of the 29th January 1872, gives the additional expenditure anticipated under this head.

7. I will now give you in detail the information called for by the Consulting Engineer:—

1*st*.—The cost per mile of maintenance of permanent-way for five years from January 1867 to December 1871.

1ST DIVISION, NORTH-WEST LINE.

	Cost per mile per annum. RS. A. P.
Iron Road.	
Inspectors	40 3 2
Watchmen	74 14 1
Labour	254 8 4
Tools	24 5 0
Materials.	
Rails	7 10 2
Sleepers	16 7 2
Ballast	73 10 3
Total ...	491 10 0

4TH DIVISION, SOUTH-WEST LINE.

	Cost per mile per annum. RS. A. P.
Wooden Road.	
Inspectors	60 5 7
Watchmen	48 1 1
Labour	303 13 5
Tools	31 3 2
Materials.	
Rails	19 11 8
Sleepers	955 5 1
Ballast	87 11 9
Total...	1,506 3 9

This result it will be observed does not materially differ from that given in my letter No. 458 of 4th December 1868, which was as under:—

1st Division, North-West Line, Rupees 503-13-5 per mile per annum.

4th Division, South-West Line, Rupees 1,596-7-6 do. do.

Ballast.—An iron-pot sleeper road requires more ballast in the first instance than a wooden sleeper road, but the latter requires more ballast for maintenance owing to the loss occasioned by the disturbance due to frequent renewals.

Proceedings of the Madras Government, Public Works Department, 20th September 1872.

2*nd*.—The total number of sleepers in way per mile and the number of renewals per mile.

1st Division, North-West Line.

3,101 Pot sleepers in way per mile.

2·15 Renewed per mile per annum.

4th Division, South-West Line.

1,830 Wooden sleepers in way per mile.

329 Renewed per mile per annum.

3*rd*.—The approximate average age of sleepers on each division.

I am not in a position to state the age of sleepers on 1st January 1867, but the age on 1st October 1871 was as under—

	Y. M. D.
1st Division, North-West Line	7 9 7
4th Division, South-West Line	3 6 20

4*th*.—The average cost of sleepers and average lead by rail.

	RS.
1st Division, North-West Line.	
Cost of sleepers	13,47,857
Average lead by rail (102 miles)...	1,45,936
4th Division, South-West Line.	
Cost of sleepers	*5,19,640

Wooden sleepers are delivered on the Western Coast.

5*th*.—The probable average cost and average lead by rail of pot sleepers and creosoted pine sleepers on the section between Muddikerry and Beypore.

	RS.
Cost of pot-sleepers	12,67,846
Average lead by rail (357 miles)	1,31,912
Total...	13,99,758
Cost of pine sleepers	†6,51,808
Average lead by rail (357 miles)...	95,663
Total...	7,47,471

6*th*.—Number of trains hauled over each division.

I have applied to the Traffic Manager for such information as would enable me to answer this question and append a copy of his reply.

8. My estimate of Rupees 12,87,381 represents the entire cost of renewing the permanent-way with iron sleepers; no deduction has been made on account of the expenditure which would have been incurred in renewals with wooden sleepers.

9. I forward, as requested, a detailed estimate of the cost of completely renewing the line with wooden sleepers, amounting to Rupees 5,47,551.

10. The Locomotive Superintendent will best enable you to reply to the last paragraph of the Consulting Engineer's letter; but this question appears to have been dealt with so long ago as February 1866, *vide* Consulting Engineer's letter No. 108 of 17th February 1866, Mr. Smart's

* This amount does not include the cost of chairs and trenails, which is as follows:—

Cast Iron Chairs...	Rs. 372,408
Iron Trenails	,, 77,946
Total Rupees...	450,354

† To this must be added an allowance for breakage of chairs and trenails in renewal.

Chairs, say 10 per cent.	Rs. 34,207
Trenails, say 30 per cent	,, 21,435
Total Rupees...	55,642

letter No. 707, printed in the Proceedings of Government, No. 530 of 15th February 1866, and Mr. Pinson's letter No. 5 of 21st February 1866, sent to you with this Office letter No. 123 of same date. In fact, the whole subject is now thoroughly threadbare, and additional reports, although they entail considerable trouble and loss of time, fail to throw any further light upon the question.

From the Deputy Traffic Manager, to the Chief Engineer, dated Madras, 12th June 1872, No. 1111/17
Your letter No. 536 of 8th instant.

THE information required in your letter of above reference will occupy a clerk about two and a half months to furnish, and as my staff of clerks is very limited I cannot spare a man to compile the information. I shall, however, be glad to engage an extra hand to do the work, if you will kindly consent to pay for his services.

No. 277. ORDER THEREON, 20th September 1872, No. 2,229.

RAILWAY, No. 47.

ORDERED that these papers be forwarded to the Government of India, and in view of the explanation afforded of the comparative cheapness of the iron sleeper road, sanction be requested to the estimate of Rupees 12,87,381 for renewing the line between Muddikerry and Beypore, which was laid before the Government of India with letter, No. 809, dated 21st March 1872.

(Here enter No. 2,230, dated 20th September 1872.)

(True Extract.)

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

To the Consulting Engineer for Railway

Exd. E. C. Shunker.

PUBLIC WORKS DEPARTMENT,
OOTACAMUND, 20*th September* 1872.

No. 278.

No. 2,230.

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

RAILWAY, No. 48.

SIR,—I am now directed to acknowledge the receipt of your letter, No. 518 G. R., dated 9th April 1872, calling for further information in regard to the comparative cost of the maintenance of that portion of the Madras Railway Company's line which has already been renewed with iron-bowl sleepers, before according sanction to the estimate of Rupees 12,87,381 which was forwarded with Colonel Carpendale's letter of the 21st March 1872, No. 809.

2. From the papers now submitted it will be observed that although the figures necessary for instituting the comparison required in paragraph 3 of your letter under reply are not obtainable, the Chief Engineer of the Company shows that the cost of maintaining the iron road amounts to Rupees 492 per mile against Rupees 1,560 for the wooden road; and though unable to controvert the apparent result of the use of creosoted fir sleepers on the Great Southern of India Railway which points to the life of such a sleeper reaching thirteen years, is strongly opposed to their being tried within the influence of the West Coast climate, which is known to be more injurious than that to which the Great Southern of India line is exposed. I am accordingly to request that, under the explanations now submitted, the early sanction of the Government of India may be communicated to the estimated expenditure.

3. The allocation to Capital will be that previously reported.

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

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

Exd. E. C. Shunker.

Railway Department.

Consulting Engineer's Office

No: 452

From

Lieut.t Colo.l J.P.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 conveyed in the Order of Government dated the 23rd April 1872, No: 1042, I have the honour to submit two letters from the Agent of the Madras Railway, with enclosures from the Chief Engineer, giving full explanation of the advantages which may be expected from the proposed substitution of an iron for a wooden road upon the 101 miles of the South-

West

× No: 283 - 6th May 1872.
No: 605 - 21st August 1872
with enclosures.

"Wooden sleepers become unsound that they
"are removed and iron sleepers substituted.
"Up to the present not more than 1/5th of the
"total number of iron sleepers has been put
"in, and as these are distributed over the
"whole 33 miles it is plain that any statistics
"I could now give would be of no value
"whatever."

3. We have had however, as all Anderson's remarks, the fullest experience of the use of Pot sleepers on other parts of the line and I trust that the information given in the enclosed report together with that supplied by the Chief Engineer in his letter No. 458 dated the 4th December 1868, will convince the Government of India of the reduction in the cost of maintenance effected by the use of iron instead of wooden sleepers.

copy forwarded to you with my letter No 545 10 Dec 1868.

4. The Estimates which have been submitted for relaying with Pot sleepers the line between Muddukerry and Beypoor appear to me to contain the fullest possible details, but if you can suggest any additional information which should be supplied I shall be very happy to forward it to you for transmission to the Government of India.

5. I trust it will not be overlooked that in consequence of the delay which has taken place in sanctioning the Estimates the Chief Engineer will have to renew the Contract for the supply of wooden sleepers thus entailing upon the Company an expense

MAIDHEAD RAILWAY.

From

The Secretary and Manager,

The Committee of Engineers,

Dated

Read

No.

which I think is to be regretted.

17

I have the honour to be
Sir
Your most obedient Servt

Agent & Manager.

MADRAS RAILWAY.

From

The Agent and Manager.

To

The Consulting Engineer

for Railways.

No. 2283

Dated 6th May 1872.

Rec.d 7th May 1872. No. 283

2283

P.R. 4265/72.

I have the honor to forward herewith the letter of the Consulting Engineer noted in the margin, calling for explanations regarding the Statement of Sleepers which accompanied my letter No. 199 dated 4th instant, and to request that the information called for by the Consulting Engineer may be furnished as speedily as possible.

I have the honor to be,
Sir,
Your most obedient Servant,
[illegible]
Agent & Manager.

Madras Railway Company,
Chief Engineer's Office,
Madras, 4th May 1872.

No. 199

The Agent and Manager,

Dear Sir,

Your endorsement dated 26th ultimo on Consulting Engineer's letter No. 289 of 25th idem.

I regret to say I am not yet in a position to furnish a report upon the comparative cost of maintenance on the 33 miles of line between Arconum and Muddikunta before and after the substitution of iron for wooden sleepers.

2. I received sanction to undertake this work in November 1870 (vide G.O. No. 2827 dated 23rd November 1870) and commenced operations in January 1871.

3. The average life of a wooden sleeper on that portion of the line has been about 4 years, so that the renewal with iron sleepers will not be completed under that time, or say the end of 1874. It is only when wooden sleepers become unsound that they are removed and iron sleepers substituted. Up to the present not more than 1/5th of the total number of iron sleepers has been put in, and as these are distributed over the whole 33 miles it is plain that any statistics I could now give would be of no value whatever.

4. The reduction in the cost of maintenance effected by the use of iron instead of wooden sleepers is however no new question on the Madras Railway - We have the fullest experience on the subject.

5. The whole of the North West Line

and the Bangalore Branch were originally laid with iron sleepers, while the South West Line was laid with Wooden sleepers.

6. The great economy resulting from the use of iron sleepers however led to their adoption by degrees on the South West Line, until at present the only portion of our Railway where Wooden sleepers are used is the length between Maddikerry and Reyfore.

7. This question has been so frequently discussed and so thoroughly ventilated that I had looked upon it as quite exhausted.

8. From amongst the numerous reports that have been issued from time to time from my office I would ask particular attention to a letter No 458 of 4th December 1868 where, in reply to Consulting Engineer's letter No. 394 of 2d December forwarding copy of G. O. No 3733 of 30th November, I enter into the fullest details with reference to our iron sleeper roads, and show that while the cost of maintenance of the 1st Division S.W. Line, laid with iron, amounts to Rs 503 . 13 . 5 per mile per annum, the cost of maintenance of the 4th Division S. W. Line, a wooden road, and the one which I now propose today with iron sleepers, amounts to Rupees 1596 . 7 . 6 per mile per annum.

9. Knowing that I had but little to add to the information already in the possession of Government and feeling certain that that information could but result in affording sanction for my estimate, I requested you to send a notice upon our sleeper Contractor terminating their Contract under the usual conditions. Your notice dates from 20th February and the Contract therefore expires on the 22d of this month. It will now become necessary to take immediate steps to renew the Contract removed. Much as I should desire to bring expenditure on account of wooden sleepers to a close it would manifestly be imprudent to allow the stock of wooden sleeper to run low.

10. As regards the request that details should be furnished of the estimate submitted I have only to observe that I am utterly at a loss to imagine what details could possibly be referred to. My estimate gives the number of miles laid with 60 lbs rails and the number laid with 75 lbs rails, it gives the quantity and cost of materials per rail length of each description together with the rate for each article.

Pot Sleepers
Tie-Bars
Fibs
Cotters and
Wooden Keys.

Nothing has been omitted. The estimate is as complete and detailed as it is possible to make it.

Yours faithfully,
Jos Beresford Anderson,
Chief Engineer.

True Copy
[illegible]
Agent & Manager.

P. Pr. 42 6/8/92.

No. 605

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 21st August 1892.

From

A. A. Clavis Esqre

Agent and Manager, of the M. R. Co.

To

Lt Col. J. Hell. Shaw Stewart, R.E.

Consulting Engineer for Railways.

SIR,

With reference to your letter No. 361 of the 14th of May last, I have the honour to enclose you a copy of the Chief Engineer's letter No. 390 dated the 20th instant in which the Anderson Furnishes further information called for by you with regard to the relative merits of Iron and Wooden sleepers.

2. I regret to say that I am not in a position to furnish a statement of the number of trains hauled over each Division as called for in the last part of paragraph 5 of your letter - The information can be got out if you desire it but the Traffic Manager tells me that up to the present time he has been quite unable with his existing staff to do so, and has suggested that an additional clerk shall be employed for the purpose, adding that it will take him about 2½ months to get out the information for the period you require.

it. You will readily understand that if you bear in mind that in addition to going through the Time Tables, the Records - Journals Journals &c. - will have to be gone through for traces of special Goods Trains &c &c.

3. With regard to the 7. paragraph of your letter the Locomotive Superintendent informs me that he has kept no statistics which will enable him to furnish you with the Report you ask for.

4. The information which the Chief Engineer has been able to furnish has given him a considerable amount of labour, which will account for the delay that has occurred in replying to your letter. I trust however that Mr Anderson's report, a copy of which is now forwarded, will enable you to dispose of the subject.

I have the honour to be,
Sir,
Your most Obedient Servant,

Agent & Manager.

Madras Railway Company
Chief Engineer's Office
Madras 20th August 1872.

№ 390.

The Agent and Manager,

Dear Sir,

Consulting Engineer's letter №361 of the 14th May last.

1. During the years 1860 and 1861, 29807 Creasoted pine sleepers were received from England, of which nearly the whole were used on the 1st Division, S. M. Line, but they cannot be said to have undergone a satisfactory trial, as they were taken up after five or six years to be replaced by iron pot sleepers.

2. When taken out of the road the sleepers were found to be in a generally sound state although a large proportion were rendered useless in consequence of the treenail holes having either worked too large or become rotted. The serviceable Creasoted sleepers were used for renewals on the 3rd Division S. M. Line and lasted fairly well until replaced by pots.

3. The experience on the Madras Railway does not enable me to dispute the statement that the average life of Creasoted pine sleepers on the Great Southern of India Railway is 12 or 13 years, provided the ballast is suitable, and the climate not extreme.

4. The climate of the Western Coast, however, where I now propose to introduce iron sleepers, is the very most trying on our

MADRAS RAILWAY.

From

The Agent and Manager,

To

The Consulting Engineer

for Railways.

Dated 21st August 1872
Recd. 23rd "

No. 605 Civil

Forwarding by Pa
Letter from Chief
Engineer №390 dat.
= Existing System
= Creasoted
= Pot
to Pot Sleepers

Sleepers.
P. P. 42 68/72

22/29

Railway, and I should most strongly object to the use of a material of which we have had no experience under the conditions to which it would have to be exposed.

5. 730 miles of the Madras Railway are laid with iron sleepers; and we know with certainty that they will prove a great success on the Western Division as on the rest of our line, there is therefore not a single argument in favor of our resorting an addition to the many costly failures the Railway has had to deplore in this matter of sleepers.

6. The expedient proposed with a view to reducing the cost of ballasting is not so "entirely novel" as the Consulting Engineer appears to think. The same plan has been adopted with much success on the 1st Division South West Line.

The estimate for renewing the line between Muddikerry and Beypore forwarded with my letter c/o 45 of 29th January 1872 gives the additional expenditure anticipated under this head.

7. I will now give you in detail the information called for by the Consulting Engineer.

1st The cost per mile of maintenance of Permanent Way for five years from January 1867 to December 1871.

	1st Division S.W. Line Iron Road. Cost per mile per annum			4th Division S.W. Line Wooden Road. Cost per mile per annum		
Inspectors	40.	3.	2	60.	5.	7
Watchmen	74.	14.	1	48.	1.	1
Labor	254.	8.	4	303.	13.	5
Tools	24.	5.	0	31.	3.	2
Materials						
Rails	7.	10.	2	19.	11.	8
Sleepers	16.	7.	0	955.	5.	1
Ballast	73.	10.	3	87.	11.	9
	Rupees 491.	10.	0	Rupees 1506.	3.	9

This result it will be observed does not materially differ from that given in my letter c/o 458 of 4th December 1868 which was as under.

1st Division S.W. Line Rs. 503. 13. 5 Mile per annum.
4th Division S.W. Line Rs. 1596. 7. 6 " "

Ballast. As iron pot sleeper road requires more ballast in the first instance than a wooden sleeper road but the latter requires more ballast for maintenance owing to the loss occasioned by the disturbance due to frequent renewals.

2. The total number of sleepers in way per mile and the number of renewals per mile.

1st Division S.W. Line.

3101 Pot sleepers in way per mile.
2.16 renewed per mile per annum.

4th Division S.W. Line

1830 Wooden sleepers in way per mile.
329 renewed per mile per annum.

3. The approximate average age of sleepers on each Division.

I am not in a position to state the age of sleepers on 1st January 1867 but the age on 1st October 1871 was as under

	Years	Months	Days
1st Division S. M. Line	7.	9.	7
4th Division S. M. Line	3.	6.	20

4th. The average cost of sleepers and average lead by rail.

1st Division S. M. Line:

Cost of sleepers ——— 13.47.857

Average lead by rail (102 miles) — 145.936

4th Division S. M. Line.

Cost of sleepers ——— 579.640

Wooden sleepers are delivered on the Western Coast.

* This amount does not include the cost of chairs and Trenails which is as follows:
C. I. Chairs - 372;408
Screw Trenails - 77,946
Rs. 450 354

5th. The probable average cost and average lead by rail of pot sleepers and creosoted pine sleepers on the section between Muddikeverry and Beypore.

Cost of Pot sleepers ——— 1267.846

Average lead by rail (357 Miles) 131.912

Rs. 1399.758

Cost of Pine sleepers ——— * 651.008

Average lead by rail (357 miles) — 95.663

Rs. 747.471

* To this must be added any allowance for breakage of Chairs and Trenails in renewal.
Chairs - say 10 per cent 34207
Trenails say 30 — " — 21435
Rs. 55642

6th. Number of trains hauled over each Division I have applied to the Traffic Manager for such information as would enable

me to answer this question and append a copy of his reply.

8. My estimate of Rs. 12,87,381 represents the entire cost of renewing the permanent way with iron sleepers - no deduction has been made on account of the expenditure which would have been incurred in renewals with wooden sleepers.

9. I forward, as requested, a detailed estimate of the cost of completely renewing the line with wooden sleepers, amounting to Rs. 5,47,551.

10. The Locomotive Superintendent will be best enable you to reply to the last para of the Consulting Engineer's letter, but this question appears to have been dealt with a long ago as February 1866 - vide Consulting Engineer's letter No 108 of 17th February 1866, Mr Smart's letter No 709 printed in the Proceedings of Government No. 530 of 15th February 1866; and Mr Pinson's letter No 5 of 21st February 1866 sent to you with this Office letter No. 123 of same date. In fact the whole subject is now thoroughly threadbare and additional reports, although they entail considerable trouble and loss of time, fail to throw any further light upon the question.

Yours faithfully,
Beresford Anderson,
Chief Engineer.

Madras

True Copy
for Agent & Manager.

C/27989
16787

Madras Railway Company
Traffic Manager's Office
Madras 12th June 1872

The Chief Engineer
M. R. Co.

My dear Sir,

Your letter No. 536 of 8th instant.

The information required in your letter of above reference will occupy a clerk about 2½ months to furnish, and as my staff of clerks is very limited I cannot spare a man to compile the information. I shall however be glad to engage an extra hand to do the work if you will kindly consent to pay for his services.

Yours faithfully
(Sd) C. L. Moss
Dy. Traffic Manager.

True Copy
(Sd) Beresford Anderson,
Chief Engineer.

True Copy
(Sd) [illegible]
Agent & Manager.

Public Works Departt

No. 2229.

Proceedings of the Madras Government

Read the following

From The Cons. Engineer for Railways. } No. 4820/30th Aug 1872

Ordered that these papers be forwarded to the Government of India, and in view of the explanation afforded of the comparative cheapness of the iron sleeper road, sanction be requested to the estimate of Rs 12,87,381 for renewing the line between Muddiberry and Beypore which was laid before the Government of India

with letter No. 809 dated
21st March 1872.

No. 2220.

To,
The Secretary to the
Government of India.

Sir,

I am now directed
to acknowledge the receipt
of your letter No. 518 G.R.
dated 9th April 1872 calling
for further information
in regard to the comparative
cost of the maintenance of
that portion of the Madras
Railway Company's line
which has already been
renewed with iron
bowl sleepers before according
sanction to the estimate
of Rs 12,87,381 which was
forwarded with Colonel

Carpendale's letter of the 21st
March 1872, No. 809.

From the papers now
submitted it will be ob-
-served that although the
figures necessary for sub-
-stituting the comparison
required in paragraph 3
of your letter under reply
are not obtainable, the
Chief Engineer of the Com-
-pany shows that the
cost of maintaining the
iron road amounts to
Rs 492 per mile against
Rs 1,560 for the wooden
road; and though unable
to controvert the apparent
result of the use of Creoso-
-ted fir sleepers on the
Great Southern of India

Railway which points to the life of such a sleeper reaching 12 years, is strongly opposed to their being tried within the influence by the west coast climate, which is known to be more injurious than that to which the Great Southern of India line is exposed. I am accordingly to request that under the explanations now submitted the early sanction of the Govt. of India may be communicated to the estimated expenditure.

The allocation to Capital will be that previously reported.

Yours

Desp. 25/9/72 with Enclosures
& 354 from Govt of Bo. 2229 of 1872.

No 4268.

Govt. of {1872} Madras.

PUBLIC WORKS. √

To

The Consulting Engineer
for Railways

Dated

Recd. Encl. √

G. O. 20 Sept. No. 2229-223

Nos. 276-277 & 278

Sleepers. Passing orders on letters from the engineer forwarding Correspondence regarding the renewal of the line between Bundikerry & Beypore with iron sleepers & requesting sanction to the estimated expenditure.

Forwarding Correspondence regarding the