

(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. 152-53

Press  
Mis.

300-302

Dated 17

18/2

Not to be folded or roughly handled

(1)

*Proceedings of the Madras Government, Public Works Department,  
17th January 1872.*

No. 300. Read the following letter from the Deputy Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 18th December 1871, No. 556:—

With reference to G. O., No. 3,098 of the 8th December 1871, I have the honour to submit the data forwarded by the Chief Engineer of the Carnatic Railway in support of his opinion as to the economy of wooden as compared with iron sleepers.

From the Agent, Carnatic Railway, No. 266, dated 25th November 1871.  
Do. No. 275, dated 7th December 1871, (with enclosure).  
Do. No. 284, dated 15th December 1871.

2. The Chief Engineer of the Great Southern of India Railway, on the other hand, as stated in paragraph 10 of this office letter of the 11th October 1871, No. 439, is in favour of creosoted fir sleepers on the score of economy, and the data upon which this opinion has been formed I beg herewith to enclose.

From the Agent and Manager of the Carnatic Railway Company, to the Acting Consulting Engineer for Railways, dated Madras, 25th November 1871, No. 266.

With reference to your letter without No (272?) dated the 17th November 1871, I have the honour to submit herewith a memorandum showing the data on which the Chief Engineer's estimate of an iron sleeper (*De Bergue's*) road as compared with a wooden sleeper road was based. The experience we have had in India proves that the former can be maintained with great facility and economy, and this, together with the greater durability of iron as compared with wooden sleepers, confirms the opinion of the Directors and the Company's Consulting Engineer in London that it should be recommended to the Government for the construction of this railway.

| MEMORANDUM.                                                                 |     |     |     |     | £.  | s. | d. |
|-----------------------------------------------------------------------------|-----|-----|-----|-----|-----|----|----|
| One mile iron sleepers, with fastenings, complete, weight 100 tons, at £500 | ... | ... | ... | ... | 500 | 0  | 0  |
| Freight, say 33 s. per ton...                                               | ... | ... | ... | ... | 165 | 0  | 0  |
| Insurance and Custom charges, say 4 per cent...                             | ... | ... | ... | ... | 26  | 12 | 0  |
| Landing, 2 s. per ton ...                                                   | ... | ... | ... | ... | 10  | 0  | 0  |
|                                                                             |     |     |     |     | 701 | 12 | 0  |

| Wooden Sleepers.               |     |     |     |     | Rs.   |       |  |
|--------------------------------|-----|-----|-----|-----|-------|-------|--|
| 2,112 Sleepers, at 3 Rupees... | ... | ... | ... | ... | ...   | 6,336 |  |
| 19 Cwt. Spikes ...             | ... | ... | ... | ... | ...   | 145   |  |
|                                |     |     |     |     | 6,481 |       |  |

(Signed) J. T. FISHER,  
Agent and Manager.

From the Agent and Manager of the Carnatic Railway Company, to the Acting Consulting Engineer for Railways, dated Madras, 7th December 1871, No. 275.

With reference to this office letter No. 266 and in reply to your No. 278, I have the honour to submit herewith a copy of a further report and estimate by the Chief Engineer on the relative cost of wooden fir sleepers as compared with iron, (*De Bergue's* patent), which my Board are desirous should be adopted for this railway, and I would ask you to be good enough to submit

*Proceedings of the Madras Government, Public Works Department,  
17th January 1872.*

this further opinion for the consideration of Government, with a view to the wishes of my Directors being fairly and fully understood. I may mention that a considerable number of the wooden sleepers used upon the open portion of our line have had to be renewed already, and a further number must be renewed immediately at a large cost, although they have only been laid down during a period of six years, and the traffic passing over them has been much lighter than that which will certainly be carried over the new line.

From the Chief Engineer, to the Agent and Manager of the Carnatic Railway Company, dated Madras, 6th December 1871, No. 962.

REFERRING to the Consulting Engineer's letter No. 273, with its enclosure, and to our conversation on the subject.

The cause of Mr. Logan's estimate for permanent way with wooden sleepers differing from mine may not be apparent without some explanation. I therefore hand you herewith a memorandum showing what I consider similar material would cost if used on our railway, calculated in such a manner as to compare easily with my former estimate, i.e., allowing the same charges, quantities, etc., in the wooden as in the iron permanent way.

The principal points of difference are (1) that Mr. Logan proposed creosoted fir while I estimated for teakwood; (2) he proposed 2,000 sleepers per mile. I considered that 2,112 would be required.

I estimated for teakwood, and I would recommend its use if wooden sleepers are adopted, on the ground that I think it will be found much more durable in permanent way such as is proposed soft texture of the firwood will cause the rail to crush into the sleeper and thereby become loose in the fastenings. I think therefore that ordinary spikes are unsuitable, and in the memorandum I now send you I estimate for bolts and nuts instead of spikes such as could be used with teak.

From my calculation it will appear that 2,194 Rupees saving in first cost will be effected by using creosoted fir instead of iron sleepers, and the interest on this saving for ten years (the extreme life of fir sleepers) will be 1,097 Rupees. If these two sums be added together (the saving and the interest on it, Rupees 3,291) it will be seen that this amount will not be sufficient to renew the permanent way, and thus in ten years the wooden road will have cost much more than if iron sleepers had been originally used without taking into account the extra cost of maintaining wooden permanent way and the serious inconvenience of being obliged to renew sleepers.

On the above grounds I am of opinion that the iron sleepers will be found more economical than wood even if creosoted fir be used as proposed for the Great Southern.

Memorandum showing cost of timber sleepers with fastenings per mile using creosoted fir. Sleepers 6 feet by 8 inches by 4 inches, calculated from cubic measurement at price of those used on the Great Southern (of larger size) 1 Rupee each. Extra labour in saving Annas 3 each.

|                                                                 | RS.   | RS.   |
|-----------------------------------------------------------------|-------|-------|
| 2,112 Sleepers, at, say Rupees 1-3-0 each...                    | 2,508 |       |
| 58 Tons of bolts and nuts, at Rupees 15 ...                     | 870   |       |
| Insurance and Customs charges, at 4 per cent. ...               | 135   | 3,378 |
| Freight of 70 tons (measurement) of sleepers, at Rs. 16-8-0 ... | 1,155 |       |
| Do. of 5-8 tons bolts and nuts, at Rupees 16-8-0 ...            | 96    |       |
| Landing charges on 70 tons sleepers, at Rupees 0-12-0 ...       | 52    |       |
| Do. 5-8 bolts, at Rupee 1 ...                                   | 6     |       |
|                                                                 | 1,444 |       |
|                                                                 | 4,822 |       |

(Signed) F. L. DIEBLEE.

*Proceedings of the Madras Government, Public Works Department,  
17th January 1872.*

From the Agent and Manager of the Carnatic Railway Company, to the Acting Consulting Engineer for Railways, dated Madras, 15th December 1871, No. 284.

In reply to your office letter No. 289, I have the honour to state that the description of wooden sleeper the Chief Engineer estimated at Rupees 3 is stated in his letter No. 962 of the 6th instant (a copy of which was submitted to you in this office letter No. 275) to be teak.

2. I have the honour to state further that the sleepers which are being renewed on the open line are Palghaut teak, and stand in our books at a value of Rupees 2-4-0 each, the dimensions being smaller than those prescribed in G. O., No. 2,624.

From the Chief Engineer of the Great Southern of India Railway, to the Acting Consulting Engineer for Railways, dated Frichin-poly, 21st November 1871, No. 4,085.

In answer to your letter No. 978 of 18th instant, I have the honour to enclose a statement giving details of the data upon which I estimated that creosoted timber sleepers would be less costly than iron ones for the Southern Extension.

*Great Southern of India Railway, Southern Extension.*

Comparison between the cost of one mile laid with timber sleepers and one mile laid with pot sleepers.

*Timber Sleepers.—*

|                                                                 |            | Cost                             |
|-----------------------------------------------------------------|------------|----------------------------------|
|                                                                 | C. ft.     | Per at Home.<br>Ton. s. d.       |
| Creosoted sleepers on Negapatam line, 9' x 10" x 5" = 3.12 = 20 |            | 4 7½                             |
| Do. do. for narrow gauge, 6' x 8" x 4" = 1.33 = 47 say 2        |            | 0                                |
| Home price, say Rupees                                          | 1 0 0      |                                  |
| Add exchange ... ..                                             | 0 1 4      |                                  |
| Freight, Insurance, etc. ..                                     | 0 6 0      |                                  |
|                                                                 | 1 7 4      | Cost at Negapatam, say Rs. 1 8 0 |
| Sleepers, 2,000 per mile, at Rs. 1 8 0 = Rupees 3,000           | 0 0        |                                  |
| Fang bolts, 2.79 tons, at .. 120 0 0 = ..                       | 334 12 9   |                                  |
| Add rails, fish-plates, and bolts as before = ..                | 6,088 12 4 |                                  |
| Total per mile Rs....                                           | 9,423 9 1  |                                  |

*Iron Pot Sleepers.—*

|                                                            |                                |
|------------------------------------------------------------|--------------------------------|
| 4,000, at 45 lbs. each = 80.36 tons, at Rupees 70 = Rupees | 5,625 3 2                      |
| 4,000 x ¾ tie-bars = 2,285, at 9½ lbs.                     |                                |
| each = 9.69 tons ... .. 110 = ..                           | 1,065 14 0                     |
| 2,285 x 2 cotters = 99.2 sq. ft. at 10 lbs. = 44 ton.      |                                |
| ————— Gibs = 59.5 sq. ft. ————— = .26 ..                   |                                |
|                                                            | 70 ton, at 250-0-0 Rs. 175 0 0 |
| 8,000½" Bolts 4" long to cover head and nut,               |                                |
| 22 lbs. = 79 tons, at Rupees 165 ... .. Rupees             | 130 6 0                        |
| 4,000 Cushions 6" x 1" x 1" = 55 cubic feet,               |                                |
| at Rupees 3-8-0 ... ..                                     | 192 8 0                        |
| Add rails, fish-plates, and bolts as before ... ..         | 6,088 12 4                     |
| Total per mile Rs....                                      | 13,277 11 6                    |
| Timber-sleepered road ... .. Rupees                        | 9,423 per mile                 |
| Iron pot do. do. ... ..                                    | 13,277 per ..                  |
| Difference in favour of timber-sleepered road ... ..       | 3,854                          |

*Proceedings of the Madras Government, Public Works Department,  
17th January 1872.*

From the Chief Engineer of the Great Southern of India Railway, to the Consulting Engineer for Railways, dated Trichinopoly, 15th December 1871, No. 5,012.

I HAVE the honour to acknowledge receipt of your letter No. 1,059 of 13th December, and to inform you that it should have been stated in my memorandum that the estimated cost of the iron-pot sleeper way included freight, insurance, and landing charges to Negapatam or Tuticorin.

No. 301.

ORDER THEREON, 17th January 1872, No. 152.

RAILWAY, No. 43.

ORDERED that these papers be forwarded to the Government of India.

(True Extract.)

(Signed) J. CARPENDALE, Colonel, R.E.,  
Secretary to Government.

No. 302.

(DOCKET No. 153, dated 17th January 1872.)

FORWARDED to the Government of India, with reference to paragraph 3 of letter No. 3,099, dated 8th December 1871.

• (True Extract.)

Colonel, R.E.,

Secretary to Government.

Ed. E. C. Shunker.

CARNATIC RAILWAY CO., (LIMITED.)

AGENT AND MANAGER'S OFFICE.

MADRAS, *25th November* 1871.

No. 266

FROM

*J. J. Fisher Esq.*

AGENT AND MANAGER, CARNATIC RAILWAY CO.,  
Madras.

TO

*Major H. P. Spendergast. R.E.*

*Ag.* CONSULTING ENGINEER FOR RAILWAYS,  
Madras.

SIR,

*With reference to your letter without N<sup>o</sup>.  
(? 272) dated the 17 November 1871. I have the honor  
to submit herewith a Memorandum shewing  
the data on which the Chief Engineer's estimate  
of an Iron sleeper (De Bergues) road as com-  
pared with a wooden sleeper road was based.  
The experience we have had in India proves  
that the former can be maintained with great  
facility and economy & this together with the  
greater durability of iron as compared with wooden  
sleepers, confirms the opinion of the Directors &  
the Civil Consulting Engineer in London, that  
it should be recommended to the Govt. for the  
Construction of this Railway..*

*I have the honor to be.*

*Sir.*

*Your most Obedt. Servant.*

*J. J. Fisher*  
Agent & Manager.

46

Wooden Sleepers  
 2112 Sleepers @  $\frac{R}{3}$  \_\_\_\_\_ R 6336.  
 19 Cwt. Spikes \_\_\_\_\_ 145.  
 Repaid 6481.

for J. Fisher  
Agent & Manager.

**From**

## The Agent and Manager,

CARNATIC RAILWAY COMPANY.

(LIMITED.)

**MADRAS.**

## The Consulting Engineer

for Railways.

DATE: 11/1/68

RECD.

What

No. 266

the  
forwards state in the  
the copy of the West  
West in 1861.

Dr. Dodd,

CARNATIC RAILWAY CO., (LIMITED.)

AGENT AND MANAGER'S OFFICE,

MADRAS, 7<sup>th</sup> December, 1871.

No. 275

FROM

J. J. Fisher Esq<sup>r</sup>.

AGENT AND MANAGER, CARNATIC RAILWAY CO.,  
Madras.

TO

Major H. L. Spendergaet R.E.

Ag: CONSULTING ENGINEER FOR RAILWAYS,  
Madras.

SIR,

With reference to this office letter No. 266. and in reply to your No. 278, I have the honor to submit herewith a copy of a further report and estimate by the Chief Engineer, on the relative cost of wooden vs sleepers as compared with Iron (De Bergues' patent) which my Board are desirous should be adopted for this Railway, and I would ask you to be good enough to submit this further opinion for the consideration of Government, with a view to the wishes of my Directors being fairly and fully understood. I may mention that a considerable No. of the wooden sleepers used upon the open portions of our line have had to be renewed already, and a further No must be renewed immediately at a large cost, although they have only been laid down during a period of 6 years and the traffic

P. H. 8066/71

traffic passing over them, has been much lighter than that which will certainly be carried over the new line..

I have the honor to be,  
Sir,

Your most Obedt Servant.

for T. Fisher  
Agent & Manager

For the Honble and Hon  
Brill

RECD.  
DATED 17th Dec 1871

To  
The Consulting Engineer  
for Railways.

The Agent and Manager,  
CARNATIC RAILWAY COMPANY,  
(LIMITED),  
MADRAS.

Front

Carnatic Railway Co. Ltd.  
Chief Engineer's Office  
Madras 6<sup>th</sup> Decr 1871

N<sup>o</sup> 962

J. T. Fisher Esq.  
Agent & Manager

My dear Sir

Referring to the Consulting Engineer's letter N<sup>o</sup> 278 with its enclosure and to our conversation on the subject.

The cause of Mr. Logan's Estimate for Permanent Way with wooden sleepers differing from mine may not be apparent without some explanation. I therefore hand you herewith a Memorandum showing what I consider similar material would cost, if used on our Railway, calculated in such a manner as to compare easily with my former Estimate, i.e. allowing the same charges, quantities &c. in the Wooden as in the Iron Permanent Way.

The principal points of difference are:- (1) that Mr. Logan proposed Creosoted fir while I estimated for teakwood. (2) he proposed 2,000 sleepers per mile. I considered that 2,112 would be required.

I estimated for teakwood and I would recommend its use, if wooden sleepers are adopted, on the ground that I think it will

will be found much more durable in Per-  
manent Way such as is proposed for our line.  
The sleepers are to be 4 inches deep and the  
rail is to be laid without chairs; the soft  
texture of the fir wood will cause the rail  
to crush into the sleeper and thereby become  
loose in the fastenings; I think therefore  
that ordinary spikes are unsuitable, and in  
the Memorandum I now send you I estimate  
for bolts and nuts instead of spikes such  
as could be used with oak.

From my calculation it will  
appear that 2194 Rs. saving in first cost, will  
be effected by using creosoted fir instead of  
iron sleepers and the interest on this saving  
for 10 years (the extreme life of fir sleepers) will  
be 1097 Rs. If these two sums be added together  
(the saving and the interest on it Rs. 3291) it  
will be seen that this amount will not be  
sufficient to renew the Permanent Way and thus  
in 10 years the wooden road will have cost much  
more than if iron sleepers had been originally  
used, without taking into account the extra  
cost of maintaining wooden Permanent Way  
and the serious inconvenience of being obliged  
to renew sleepers.

On the above grounds I am of the  
opinion

137  
opinion that the iron sleepers will be found  
more economical than wood even if, creosoted  
fir be used as proposed for the Great Southern.

Yours truly  
Signed / J. L. Dibblee  
Chief Engineer

True copy

Jos. T. Fisher  
Agent & Manager

Memo: Showing Cost of Timber Sleepers with fastenings per Mile - wing Crossed for.

Sleepers 6' x 8' x 4' Calculated from cubic measurement at price of those used on the Great Southern (of larger size) Rs 1/10 @ Extra labor in saving 1/3

2112 Sleepers @ say 1/3 . . . . . 2,508 . . . .

5.8 Tons of bolts and nuts @ 150/- . . . . . 870 . . . . 3378 . . . .

Insurance and Customs Charges at 4 per cent . . . . . 135 . . . .

Freight of 70 tons (measurement) of sleepers @ 16/8 . . . . . 1155 . . . .

do 5.8 tons Bolts & Nuts @ 16/8 . . . . . 96 . . . .

Landing Charges on 70 tons Sleepers @ 1/12 . . . . . 52 . . . .

do 5.8 Bolts @ 1/1 . . . . . 6 . . . .

1444 . . . .

Rs 4822 . . . .

Signed / J. L. Dibble

Mr. C. J. Fisher  
Agent & Manager

P. M. 6066/71

CARNATIC RAILWAY CO., (LIMITED)  
AGENT AND MANAGER'S OFFICE,  
MADRAS, 15<sup>th</sup> December 1871.

(15)

No 2814

FROM

J. J. Fisher Esq.

AGENT AND MANAGER, CARNATIC RAILWAY CO.,  
Madras.

TO

Mayer H. L. Spendergast. R.E.

By Consulting Engineer for Railways,  
Madras.

SIR,

In reply to your office letter No 289. I have the honor to state that the description of Wooden sleeper the Chief Engineer estimated at Rs 3, is stated in his letter No 962. of the 6<sup>th</sup> Inst. (a copy of which was submitted to you in this office letter No 275). to be leak.

2. I have the honor to state further that the sleepers which are being renewed on the new line are Paulghant Leak and stand in our books at a value of Rs 2.4.0. each the dimensions being smaller than those prescribed in G.O. No 2624.

I have the honor to be,

Yours most Obedt. Servant.  
J. J. Fisher  
Agent & Manager.

Great Southern of India Railway  
Southern Extension  
comparison between the cost of one mile laid  
with sleepers and one mile laid with

No. 4085

Great Southern of India Railway.

Chief Engineer OFFICE.

Tichinopoly 21<sup>st</sup> Nov. 1871

From

David Logan Esquire  
Chief Engineer

To.

Major H. L. Prendergast R.E.  
Mys. Consulting Eng. for Railways  
Madras.

Sir,

In answer to your letter No. 978  
of 18<sup>th</sup> instant. I have the honor to enclose  
a statement giving details of the data  
upon which I estimated that crooked  
timber sleepers would be less costly than  
iron ones for the South Extension

I have the honor to be

Sir

Your most obedt Servt  
David Logan

Chief Engineer

21.11.71

From

The Agent and Manager,

CARNATIC RAILWAY COMPANY,

(LIMITED.)

MADRAS.

To

The Consulting Engineer  
for Railways.

DATED 15<sup>th</sup> Decr

Recd. 16 -

1871

No. 984

P. P. 606/71

Estimate that the length  
of sleepers estimated  
at 1000 ft 3/4 in each -

655

# Great Southern of India Railway

## Southern Extension

Comparison between the cost of one mile laid with Timber Sleepers and one mile laid with cast sleepers.

### Timber Sleepers

Greatest sleeper on Nagapatnam line  $9' \times 10" \times 5" = 3.12 = 20 - 4.7\frac{1}{2}$  Cost per ton Cost at

" " " for narrow gauge  $6' \times 8" \times 4" = 1.33 = 47 \text{ Lg } 2.0$

Home price Lay - Rs. 1-0-0

Add exchange " 0-1-4

Fright, Insurance &c. " 0-6-0

" 1-7-4 Cost at Nagapatnam Lay Rs 1-8-0

Sleepers 2000 per mile @ 1-8-0 = Rs 3,000-0-0

Ang bolts 2.79 tons @ 120. = " 334-12-9

Add Rails, fish plates & bolts as before = " 6,088-12-4

Total per mile. 9,423. 9-1

### Iron cast sleepers

4,000 @ 45 lbs each = 80.36 tons @ Rs 70 = Rs 5,625. 3-2

4,000 x  $\frac{7}{8}$  tie bar = 2,200 @  $9\frac{1}{2}$  lbs ea = 9.67 tons @ 110 = 1,065-14-0

2,200 x 2 Cottars = 99.2 cwt @ 10 lbs = 44 tons

" 4 lbs = 59.5 " = 26 "

" 70 " @ 257  $\frac{1}{2}$  175-0-0

8,000  $\frac{1}{2}$  " bolts 4" long to cover head & nut. 22 lbs = 79 tons @ 165 Rs. } 130-6-0

4,000 Cushions  $6" \times 4" \times 1" = 55 \text{ cwt} @ 3/4 \text{ } = 192-8-0$

Add Rails, fish plates & bolts as before = 6,088-12-4

Total per mile. 13,277. 11-6

Timber Sleepers Road Rs 9,423 per mile

Iron cast " " 13,277 - 8-

Difference Rs. 3,854.

in favor of Timber  
Slapana Road

21.11.71

Manager,  
Railways.  
MADRAS.  
(LIMITED.)  
The Secy.  
MADRAS.  
MADRAS.

N: 5012. Trichinopoly 15<sup>th</sup> December  
1871.

From David Logan Esq.  
Chief Engineer  
Great Southern of India R.<sup>r</sup>.

To Captain C. J. Smith  
Consulting Engineer in Railway  
Madras.

Sir I have the honor to acknowledge  
receipt of your letter N: 1059 of 13 Dec:  
and to inform you that it should  
have been stated in my Memo that  
the estimated cost of the iron. post  
sleepers way, included freight, insurance  
and landing Charges to Negapatnam or  
Tuticorin.

I have the honor to be

Sir  
Your most Obedt Servant.  
David Logan  
Chief Engineer.

P. M. 6066/71

CONSULTING ENGINEER'S OFFICE.

Railway Department.

No. 556

From

Captain L. J. Smith M.E.,  
S'y. Consulting Engineer for Railways,

To

Colonel J. Carpenter M.E.  
Secretary to Government,  
Public Works Department,  
Fort Saint George.

Sir,

With reference to G.O. No. 3098  
of the 8th December 1911, I have the  
pleasure to submit the data forwarded by the  
Chief Engineer of the Carnatic Railway  
in support of his opinion as to the eco-  
nomy of wooden as compared with iron  
sleepers.

2. The Chief Engineer of the  
Great Southern of India Railway on the  
other hand, as stated in paragraph 10 of this

Office

P. R. 6066/11  
11/7/11  
11/7/11

2  
25

Office letter of the 11<sup>th</sup> October 1871, N: 439,  
is in favour of provided five sleepers on  
the score of economy, and the data upon  
which this opinion has been formed, I  
beg herewith to enclose.

From  
The Chief Eng. of the  
M. L. S. & N. R. Co.  
No. 12 of 15. Dec. 1871.

I have the honour to be

Sir

Your most obedient servant

*W. Smith* Captain  
Dy. Genl. Engineer for Railways.

Madras  
18<sup>th</sup> December  
1871

Oct 1872

Ordered that these papers  
be forwarded to the Govt of India

CC for Report

Sept 18/72 H. G. No. 153 of

Forwarded to the Govt of India  
with reference to paragraph 3 of letter No  
3099 dated 8th Decem. 1871.

Sept 18/72 with 3099-153.

W. J. 28 Dec

Sept 14 "Rocky" 1918 242  
"175" & "136-137-243"

J. W. 1871 Report

RAILWAY DEPARTMENT.

From

The Consulting Engineer  
for Railways,

To

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

Dated 18th December 1872.

Received 28.

Enc. 8. No. 556

Submitting data

furnished by the Railway  
Engineers and 1, 1871

of W. J. in support of  
economy & wider use  
compared with iron

Report with order

C 105066  
Govt of 1872 Madras.  
PUBLIC WORKS.

To The Honble Member  
for Railways.  
in the Secretariat to the Govt  
of India  
Dated: 17 Aug 1872  
F. 105066

G. O. 17 Aug 1872 No. 105066

Nos. 105066-105067

Subject: Paper on the  
State of the Railways for the  
present year. Correspondence  
regarding the economy in  
the use of material for  
the Railways.

Examination of Correspondence  
regarding the economy in  
the use of material for  
the Railways.