

(1) Number of pages 97
(2) Date of repair 10.5.67
(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. <u>2400-2401</u>	Press ~~Mis.~~
<u>70-71-72</u>	
Dated <u>5-10-</u>	<u>1870.</u>

Not to be folded or roughly handled

Gr

15

*Proceedings of the Madras Government, Public Works Department,
5th October 1870.*

No. 70. Read the following letter from the Acting Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 14th September 1870, No. 368:—

WITH reference to the orders as per margin, I have the honour to submit, for the sanction of the Government of India, an estimate of Rupees 4,16,623 received from the Agent of the Madras Railway, for renewing the line between Avenashy and Muddikerray with iron 'pot-sleepers. The distance between these two stations is 33 miles, and adding 5 miles more on account of sidings at Avenashy, Somanoor, Poothanoor, and Muddikerray stations, the total length estimated for is 38 miles.

2. It was originally proposed to extend the iron sleeper road to Palghaut, 24 miles beyond Muddikerray; but the Acting Chief Engineer, in his last report for the half-year ending 30th June 1870, considers it advisable to defer for the present any further extension.

The Deputy Chief Engineer, in his report for the last quarter of 1868, wrote as follows regarding the heavy cost of renewals of wooden sleepers on the 4th Division:—

“A comparison of the expenditure on the 4th Division during the present and preceding quarters exhibits a very alarming increase, and a glance at the ab-

		Per mile per annum.	
1st Division—Pots renewed during quarter,	No. 167 or 5.07.		“stract in the column
2nd Do.—	Do. do. } 170 or 4.68.		“Materials, and also
3rd Do.—	Do. do. } 119 or 9.71.		“at paragraph 33 of
Shevaroy Hills to Cauvery...	... } 3,396 or 224.5.		“this report,” (margin-
Do.—	Do. do. } 13,344 or 512.0.		ally noted,) “will show
Wooden sleepers, Cauvery to Coimbatore	Do. do. ...		“that this is due to the
4th Do.—	Do. do. ...		

“very heavy renewals of wooden sleepers. During the September quarter they amounted to 304 per mile per annum, but they have now attained the unprecedented figure of 512 per mile per annum, making the life of a sleeper equivalent to but little more than 3½ years. We have done our best to select tried and approved woods, and neither I nor the Engineer in charge, (who has been in the district for many years,) can assign any reason for such an extraordinary decay.

January 1868.	1,736	July 1868.	2,553	“A reference to the marginal table will
February ”	2,123	Aug. ”	2,324	“show that during the past year it has
March ”	2,144	Sept. ”	2,709	“been in a constantly increasing ratio.
April ”	2,505	Oct. ”	2,887	“In the 31st paragraph of my report
May ”	2,492	Nov. ”	4,478	“for the quarter ending December 1866,
June ”	2,858	Dec. ”	5,979	“I advocated the extension of the
	13,858		20,930	“iron road (on the Greave's system) to

“Palghaut, where we have ballast adapted to it. I would now propose to lay down iron in lieu of timber on the entire line between the Cauvery and Bey-pore, adopting beyond Palghaut some system suitable to rough and nodular ballast. I am convinced that until we do this, we shall never be able to bring our expenditure within reasonable limits; and as I think that your views upon this subject agree with mine, I trust that you will bring the matter forward, and endeavour to obtain some immediate action.”

3. The Chief Engineer's observations on the above are to the following effect:—

"It will be seen from the quarterly report of the Deputy Chief Engineer, that the expenditure for renewals of wooden sleepers on the western division of the South-west Line has reached an unprecedentedly high figure. The rate of decay of our wooden sleepers has been steadily progressive, despite the care that has been observed in selecting none but the most approved woods. I can only account for this unsatisfactory state of things on the supposition that when the demand for sleepers arose in the forests adjacent to our line, the largest and best trees were first selected for felling, and, as these became exhausted, our contractors have had to fall back upon younger and inferior ones. After much anxious thought the conclusion has been forced upon me that the road cannot be maintained at a reasonable cost until we replace the wooden sleepers by iron. I shall therefore prepare an indent for the number of Greave's bowl-sleepers required to relay the line between Erode and Palghaut, as the ballast on that length is suitable. From Palghaut to Beypore, however, the ballast is principally pally rough laterite, and for this portion a different form of sleeper must be adopted."

4. The wooden sleepers between Avanashy and Muddikerray were laid in 1867, and, as it is shown that the average life of a sleeper is little more than 3½ years, it seems very desirable that the renewal of the line should not be delayed much longer. As also the wooden sleepers will have been on the line for about the average period of their life when the renewal begins, no deductions have been made in the estimate for old materials.

In further reference to paragraph 6 of the letter from the Government of India, No. 223 R., dated 4th February 1870, I beg to submit the following analysis, prepared by the Chief Engineer, showing the comparison between the saving in maintenance and increase of interest on additional capital in the 3rd Division:—

Average expenditure in maintenance of 3rd Division, per mensem, during the six months which preceded the renewal with pots, over 49½ miles of iron road and 60½ of wooden road	Rs.
Do. do. for three months, December, January, and February, since the renewal was completed, there being 82½ miles of iron road, and 27½ of wooden road	11,171
	8,035
Difference	3,136
	12
Being an annual saving of	
Estimated expenditure on Capital	37,632
Less value of old materials credited to Capital	2,13,643
	24,950
	1,88,693
The interest on which at 5 per cent. per annum amounts to	9,431

5. The saving in maintenance is thus shown to exceed considerably the increased charge for interest on additional capital. Of the total amount of the estimate now submitted; namely, Rupees 4,16,623, Rupees 1,21,214 is chargeable to Capital, and Rupees 2,95,409 to Revenue.

The allocation to Capital is arrived at by assuming the renewals to extend over a period of about four years, and taking the per-centage of the cost of sleepers chargeable to Capital as given in the tabular statement prepared under the Orders of Government, Nos. 155 and 495, dated 23rd March and 27th August 1860, we have cost of English materials, including 2½ per cent. estimated for contingencies, Rupees 4,10,026 divided by 4 = Rupees 1,02,506, to be spent during each year, and the proportion chargeable to Capital in the—

Official year.	Per-centage to Capital.	Proportion chargeable to Capital.
1871-72	36.91	Rs. 37,835
1872-73	31.76	" 32,556
1873-74	27.24	" 27,923
1874-75	22.34	" 22,900
		" 1,21,214

No. 71. ORDER THEREON, 5th October 1870, No. 2,400.

RAILWAY, No. 5.

RESOLVED that this letter with the accompanying estimate of Rupees 4,16,623 be forwarded to the Government of India, and that the sanction of that Government be requested to the proposed outlay on the substitution of iron for wooden sleepers on the portion of the South-west Line of the Madras Railway between Avanashy and Muddikerray.

Ordered that the following letter be sent:—

(Here enter No. 2,401, dated 5th October 1870.)

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Acting Consulting Engineer for Railways.

Exd. S. T. Augustin.

Govt. of {1870} Madras.

To PUBLIC WORKS.

THE ACTING CONSULTING ENGINEER

FOR RAILWAYS.

Dated October, 5th.

Recd.

Encl.

G. O., 5th October 1870, No. 2,400.

OCTOBER.

Nos. 70-71

*Sleepers (Railway).—*Passing orders on the letter from the Consulting Engineer for Railways, submitting an estimate for renewing the line between Avanashy and Muddikerray on the South-west Line of the Madras Railway with iron pot sleepers.

PUBLIC WORKS DEPARTMENT,
FORT ST. GEORGE, 5th October 1870.

No. 72.

No. 2,401.

To

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

RAILWAY, No. 6.

SIR,—I am directed herewith to forward a letter from the Acting Consulting Engineer for Railways giving cover to

an estimate of Rupees 4,16,623, for renewing with iron sleepers the portion of the South-west Line of the Madras Railway between Avanashy and Muddikerray.

2. In his letter printed with the Proceedings of this Government, under date the 7th October 1869, No. 3,234, the Consulting Engineer strongly recommended to the consideration of Government, on grounds of ultimate economy, the adoption of iron sleepers up to Pulghaut, and subsequent experience has shown that the cost of maintaining the wooden sleeper road has increased to an unprecedentedly large extent. It would further appear that the life of a wooden sleeper according to the latest computations is found not to exceed on an average $3\frac{1}{2}$ years, and that the rate of decay is advancing in a constantly increasing ratio. This rapid deterioration, notwithstanding the great care that is exercised in the selection of the sleepers is attributed by the Acting Chief Engineer of the Company to the circumstance of the largest and best trees in the forests adjacent to the line having become exhausted in a great measure, leaving none but inferior sorts available.

3. Adverting to the observations of the Government of India, as contained in letter, No. 223 R., dated 4th February 1870, in respect to the want of evidence to establish the fact that the saving in maintenance will not be counterbalanced by the increased charge for interest on the additional capital required for carrying out this work, I am to invite attention to paragraph 4 of Captain Prendergast's letter, in which it is conclusively shown that the saving in maintenance effected on that portion of the line which has already been renewed with iron sleepers is considerably in excess of the increased charge for interest on the additional capital expended on the undertaking.

4. Of the total amount of the estimate to which sanction is now requested, it is explained that, under the principles approved by the Secretary of State in his despatch of the 16th December 1864, No. 23, and assuming the renewals to extend over a period of about four years, the allocation to Capital will be Rupees 1,21,214, and the amount chargeable to Revenue Rupees 2,95,409.

I have the honour to be,

Sir,

Your most obedient servant,

Colonel, R.E.,

Secretary to Government.

Ed. S. T. Augustin.

7E 8-1

CONSULTING ENGINEER'S OFFICE.

Railway Department.

No. 368.

From

Captain W. L. Prendergast R.E.
Consulting Engineer for Railways,

To

Colonel C. A. Orr R.E.

Secretary to Government,

Public Works Department,

Fort Saint George.

SIR,

With reference to the

GC 25 April
1870 No. 1093
12723 of
8 March 1870.

orders as per margin, I have the
honour to submit for the sanction
of the Government of India, an
estimate of Rs 4,16,623 received
from the Agent of the Madras
Railway, for renewing the line
between Avenashy and Muddi-
herry with iron pot sleepers.
The

The distance between these two stations is 33 miles, and adding 5 miles more on account of sidings at Arenashy Lomanore, Poothanore, and Muddiherray stations, the total length estimated for, is 38 miles.

2. It was originally proposed to extend the iron sleeper road to Palghat, 24 miles beyond Muddiherray, but the Acting Chief Engineer in his last report for the half-year ending 30 June 1870, considers it advisable to defer for the present, any further extension.

Acting Chief Engineer
letter 78279 dated
3rd September 1869
paragraph 6
G.O. 32314 of 7th
October 1869.

The Deputy Chief Engineer in his report for the last quarter of 1868, wrote as follows, regarding the heavy cost of renewals of wooden sleepers on the 4th Division.

"A comparison of the expenditure on the 4th Division during the present and preceding quarters, exhibits a very alarming increase, and a glance at the abstract in the 'column' 'Materials', and also at paragraph 33 of this report" (marginally noted) "will show that this is due to the very heavy renewals of wooden sleepers. During

1st Division (P.O. renewed during quarter) 4/167 or 5.27
2nd " " " " " " 170 or 4.68
3rd " " " " " " 119 or 9.71
4th " " " " " " 3396 or 2.44.5
5th " " " " " " 13,444 or 517.0

During the September Quarter they
 amounted to 304 per mile per
 annum, but they have now attained
 the unprecedented figure of 512
 per mile per annum, making the
 life of a sleeper equivalent to but
 little more than $3\frac{1}{2}$ years. We
 have done our best to select tried
 and approved woods, and neither
 I nor the Engineer in charge (who
 has been in the District for many
 years) can assign any reason
 for such an extraordinary decay.
 A reference to the marginal table
 will show that during the past
 year it has been in a constantly
 increasing

	January 1868	1786	July 1868	2553
February	2123	2824		
March	2144	2709		
April	2505	2587		
May	2492	4478		
June	2858	5979		
	13838	20970		

115
 increasing ratio. In the 31st para-
 graph of my report for the
 quarter ending December 1866, I
 advocated the extension of the iron
 road (on the Greaves system) to
 Palghat, where we have ballast
 adapted to it. I would now
 propose to lay down iron in
 lieu of timber, on the entire
 line between the Cauvery and
 Bellore, adopting beyond Palghat
 some system suitable to rough
 and nodular ballast. I am
 convinced that until we do this,
 we shall never be able to bring
 our expenditure within reasonable
 limits.

13E
13E
"limits; and as I think that your
"views upon this subject agree with
"mine, I trust that you will
"bring the matter forward, and
"endeavour to obtain some im-
"mediate action."

3 The Chief Engineer's
"observations on the above are to the
"following effect.

"It will be seen from
"the quarterly report of the Deputy
"Chief Engineer that the expendi-
"ture for renewals of wooden
"sleepers on the Western Division
"of the South-west line has
"reached an unprecedentedly high
"figure. The rate of decay of
"our

our wooden sleepers has been
steadily progressive, despite the
care that has been observed in
selecting none but the most
approved woods. I can only
account for this unsatisfactory
state of things, on the supposition
that when the demand for sleepers
arose in the forests adjacent to
our line, the largest and best
trees were first selected for
felling; and as these became
exhausted, our Contractors have
had to fall back upon younger
and inferior ones. After much
anxious thought, the conclusion
has been forced upon me, that
the

154
"the road cannot be maintained
"at a reasonable cost until we
"replace the wooden sleepers by
"iron. I shall therefore prepare
"an Indent for the number of
"Greaves' bowl sleepers required to
"relay the line between Erode
"and Palghat, as the ballast
"on that length is suitable.
"From Palghat to Bcyfore,
"however, the ballast is principally
"rough laterite, and for this
"portion a different form of
"sleeper must be adopted."

4 The wooden sleepers
between Avenashy and Muddikerray

were

were laid in 1867 and as it is
shown that the average life
of a sleeper is little more than
3½ years, it seems very desirable
that the renewal of the line
should not be delayed much
longer. As also the wooden
sleepers will have been on the
line for about the average period
of their life when the renewal
begins, no deductions have been
made in the estimate for
old materials.

In further reference
to paragraph 6 of the letter
from the Government of India

G.O. No. 723 dated
8 March 1870

No.

No 223 K. dated 4th February
1870, I beg to submit the fol-
lowing analysis prepared by
the Chief Engineer showing
the comparison between the saving
in maintenance and increase
of interest on additional
capital in the 3rd Division.

Average expenditure
in maintenance of 3rd Division
per mensem during
the six months which pre-
ceded the renewal with pots,
over $49\frac{1}{4}$ miles of iron road
and $60\frac{1}{2}$ of wooden road — Rs 11.171
— do — do — for 3 months
December January and
February

176

February, since the renewal
was completed there being $82\frac{1}{4}$
miles of iron road, and $27\frac{1}{2}$
of wooden road — Difference — Rs 8.035
Being an annual saving of — Rs 3.136
12
37.632

Estimated expenditure on
Capital — Rs 213.643
Less value of old mate-
rials credited to Capital — Rs 24.950
Rs 188.693

The interest on which at 5%
per annum amounts to — Rs 9.434

5 The saving in maintenance
is thus shown to exceed consider-
ably the increased charge for
interest on additional Capital,
of the total amount of the
estimate

estimate now submitted, viz:—
 Rs 4.16.623; Rs 1.21.214 is
 chargeable to Capital, and is
 Rs 2.95.409 to Revenue.

The allocation to
 Capital is arrived at by assum-
 ing the renewals to extend over
 a period of about four years,
 and taking the percentage of
 the cost of sleepers chargeable
 to Capital as given in the
 Tabular Statement prepared
 under the orders of Government
 Nos 155 and 495 dated 23rd
 March and 27th August 1860, we
 have cost of English materials in-
 cluding 2½ per cent estimated for
 contingencies

contingencies Rs 4.10.026 divided
 by 4 = Rs 10.2,506 to be spent
 during each year and the pro-
 portion chargeable to Capital
 in the

Official year	Percentage to Capital	Proportion chargeable to Capital
1871-72	36.91	Rs 37.835
1872-73	31.76	32.556
1873-74	27.24	27.923
1874-75	22.34	22.900
		<u>121.214</u>

I have the honour to be,
 Sir,

Your most obedient servant,
 Wm Sander & Co Capt. R.E.
 Asst Engr. for Railways.

Madrass
 14 Sept 1870

P. Dr. D.
No 2407
Proceedings of the Madras Government
Under date the 5th Sept^r 1870
Read the following.

From
The Asst. Engineer
for Railways } (N. E. No. 368 of 14th Sept^r 1870)

Resolved that this
letter with the accompa-
nying estimate of Rs
4,16,623 be forwarded to
the Govt of India, and that
the sanction of that Govt.
be requested to the pro-
posed outlay on the
substitution of iron for
wooden sleepers on the
portion of the South West
Line of the Madras
Railway between Avaram
and

17.

Mr. J. B. D. S.
 Secy to Govt of Madras
 No 368 of
 The Asst. Engineer
 for Railways
 To
 The Secretary to Govt
 P. W. Dept.

Dated 14th Sept^r 1870
 No 2407-5-10-30

No 368
 No 2407-5-10-30

Submitted for
 the sanction of the Govt
 of India, an estimate
 received from the Asst
 of the Asst. Engr for measuring
 the line between Avaram
 and Avadi.

No 2407-5-10-30

No 2407-5-10-30

and Muddikerri.

N. E. No 2401 of 5th Oct/70
To
The Acting Comr Engineer
for Railways
Date 6-10-70

The Secy. to the Govt
of India P. W. D.
Sir,

I am directed herewith
to forward a letter from
the Acting Comr Engineer
for Railways giving cover
to an estimate of Rs. 4,16,623 for renewing with
iron sleepers the portion
of the South West Line
of the Madras Railway
between Avanahy and
Muddikerri.

In his letter printed
with the Proceedings of
this Govt under date
the

the 7th October 1869 No 3234,
the Comr Engineer strongly
recommended to the con-
sideration of Govt on
grounds of ultimate eco-
nomy, the adoption of
iron sleepers up to
Palghat; and where
great experience has
shown that the cost
of maintaining the wooden
sleeper road has increased
to an unprecedently large
extent. It would further
appear that the life of a
wooden sleeper according
to the latest comp. tations
is found not to exceed
on an average $3\frac{1}{2}$ years
and that the rate of decay
is advancing in a
constantly

constantly increasing
ratio. This rapid deteriora-
tion, notwithstanding
the great care that is
exercised in the selection
of the sleepers is attrib-
uted by the Acting Chief
Engineer of the Company
to the circumstance of the
largest and best trees in
the forests adjacent to
the line having become
exhausted in a great
measure, leaving none
but inferior sorts
available.

Adverting to the
observations of the Govt
of India, as contained
in letter No. 223 P. dated
4th February 1870, in
respect.

254
respect to the want of
evidence to establish the
fact that the saving
in maintenance will
not be counterbalanced
by the increased charge
for interest on the addi-
tional Capital required
for carrying out this work.
I am to invite attention
to para. of Captain
Prendergast's letter, in
which it is conclusively
shown that the saving
in maintenance effected
on that portion of the
line which has already
been renewed with iron
sleepers is considerably
in excess of the increased
charge for interest on the
additional

additional Capital ex-
penditure on the undertaking.

Of the total amount
of the estimate to which
sanction is now requested,
it is explained that,
under the principles
approved by the Secy.
of State in his Despatch
of the 16th December 1864,
No. 23 and assuming
the renewals to extend
over a period of about
four years, the allocation
to Capital will be Rs
1,21,214 and the amount
chargeable to Revenue
Rs 2,95,409.

[Signature]

21
Despatch with an
estimate to the Commr.
of Rs 2400. 6. 10. 70

27E

Further No. 1344 of 16-5-71

[Initials]

Form No. 10 for Inve-
stment estimate of Rs.
4,00,000 for renewing the
line between Arcot and
Maddur on the S. R.
line of the Madras Railway
with iron post sleepers.

additional Capital ex-
penditure on the undertakings

Of the total amount
of the estimate to which
sanction is now requested
it is explained that
under the principles
approved by the Secy
of State in his Despatch
of the 16th December 1862
No 23 and assuming
the renewals to extend
over a period of about
four years, the allocation
to Capital will be Rs
12,12,14 and the amount
chargeable to Revenue
Rs 29,54,09.

[Signature]

C/365

Govt. of 1870: Madras.

PUBLIC WORKS.

To the Consulting Engineer
for Railways
and
To the Secretary to the Govt
of India

Dated

Recd.

G. O. 5th Dec 1870. No 2400-2401.

Nos. 70-71 & 72

Repeal of Railway Bill
reference to the Govt. to
prepare for Railways with
within an estimate for
Revenue the same, and
to submit the same to
S. M. L. & the Madras
Railways with iron
and steel.