

No. 104. Read the following letter from Major C. J. SMITH, R.E., Officiating Consulting Engineer for Railways, to Major-General G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Madras, 23rd September 1875, No. 533 :—

REFERRING to the Proceedings of Government, No. 2,919, dated 13th October 1874, I have the honor to forward letter, No. 982, dated 20th instant, with enclosure, from the Agent of the Madras Railway, requesting the sanction of Government to the removal of the restriction of speed of trains over the girder bridges at 308-7 and 313-12 miles on the Nilgiri Branch.

2. In their order, No. 2,692, dated 21st September 1874, the Government approved of the arrangement mutually agreed upon by the Consulting Engineer and the Railway authorities that the maximum speed of trains over all bridges on the Madras Railway, composed of wrought iron girders on screw pile piers, should be

* 308-7 and 313-12.

No. 2,919, dated 13th October 1874.

limited to ten miles per hour, and the bridges* now alluded to form two of seven such bridges included in the list embodied in the Proceedings of Government marginally noted.

3. The tests for determining the amount of oscillation caused by trains running at a high speed over the bridges were taken in the presence of Lieutenant-Colonel Shaw-Stewart who was satisfied with the results. Under these circumstances, I recommend that the restriction on speed over bridges at 308-7 and 313-12 be removed.

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, 20th September 1875, No. 982.

WITH reference to the accompanying copy of the Chief Engineer's letter, No. 708, of the 18th instant, and its enclosures, I have the honor to request that, if you agree with the opinion expressed by Mr. Anderson, you will be so good as to communicate to me sanction for the removal of the restriction as to the speed of trains as far as the girder bridges at 308-7 and 313-12 Nilgiri Branch are concerned.

From B. ANDERSON, Esq., Chief Engineer, to R. B. ELWIN, Esq., Agent and Manager of the Madras Railway Company, dated Madras, 18th September 1875, No. 708.

I SEND you, herewith, copy of a letter, No. 719 A, of 16th instant, from the Resident Engineer, 4th Division, South-west Line, forwarding a statement, giving the result of tests taken by my directions, to show the amount of oscillation caused by trains running at a high speed over the girder bridges at 308-7 and 313-12 Nilgiri Branch line.

2. These tests were made in the presence of Colonel Shaw-Stewart, and satisfactorily show, as I fully expected they would, that the screw pile bridges on the Nilgiri Branch are in all respects steady and reliable structures.

3. No reason whatever exists why trains should not be allowed to traverse them at a speed of 40 miles an hour, and I will ask you to be good enough to apply for the sanction of Government to remove the restriction as to speed that is in force as regards these bridges.

Original and enclosures

*Proceedings of the Madras Government, Public Works Department,
8th October 1875.*

From F. B. HANNA, Esq., Resident Engineer, 4th Division, to B. ANDERSON, Esq., Chief Engineer, Madras Railway Company, dated Pothanore, 16th September 1875, No. 719 A.

I BEG to send you the following detailed account of the testing (for oscillation only) of the girder bridges at 307-17, 308-7 and 313-12, Nilgiri Branch, which was carried out yesterday in the presence of the Consulting Engineer.

2. Mr. George Hardinge and Captain Hardinge, R.A., kindly assisted in taking the observations; so we were able to watch the instruments at the centres of all the spans during the passage of the trains, and were thus enabled to fix the zero points, &c., with great accuracy.

3. The high wind which was blowing altered the zero points of some of the instruments from moment to moment, where I had reason to think this had caused a result which could not be depended upon. I have given the total oscillation only.

4. The train consisted of —

	T.	Cwt.	Qrs.
Engine No. 35, six wheels coupled goods	...	28	1 0
Tender	...	17	15 1
High-sided open goods, No. 720, tare 5-3-2, load 3	...	8	3 2
Do. do. No. 83, ,, 5-3-0, ,, 5	...	10	3 0
Carriage B, No. 6	...	7	15 0
Brake-van	...	7	6 1
		79	4 0

5. The instruments were attached to the top flanges of the west girders, and to the west trestle caps respectively; the train ran from north to south in all cases. The spans and trestles are numbered from south to north.

6. I am unable to explain the cause of the unexpected result obtained in the case of the bridge at 307-17, where you will observe the oscillation due to the higher speed is less than in the first experiment. Colonel Shaw-Stewart was watching one instrument, and I myself was at the other in both cases, and we each noticed the fact at once, so I am sure the result is not due to an error in observation.

7. As I have already informed you by telegraph, the Consulting Engineer considers it unnecessary to restrict the speed over the bridges at 308-7 and 313-12, the total oscillation being, with one exception, under three-quarters of an inch; speed has never been restricted over 307-17, which was tested with a view to compare masonry and trestle piers.

308th mile, 7th telegraph post, Nilgiri Branch, girder bridge of 4 spans of 70 feet each, masonry abutments, screw pile piers.

	SPEED, 20 MILES AN HOUR.			SPEED, 40 MILES AN HOUR.		
	MOVEMENT.		Total Oscillation.	MOVEMENT.		Total Oscillation.
	To West.	To East.		To West.	To East.	
Centre of span, No. 1	0-06	0-145	0-205	0-11	0-44	0-55
Do., " 2	0-03	0-24	0-27	...	...	...
Do., " 3	0-04	0-35	0-39	0-12	0-78	0-90
Do., " 4	0-155	0-35	0-505	0-135	0-455	0-59
16 feet from S. abutment	...	...	0-22	...	...	0-23
48 do. do.	...	...	...	...	...	0-31
Trestle, No. 1	...	...	0-025	...	...	0-055
Do., " 2	...	...	...	...	...	0-075
Do., " 3	...	...	0-07	0-035	0-075	0-11

*Proceedings of the Madras Government, Public Works Department,
8th October 1875.*

313th mile, 12th telegraph post, Nilgiri Branch, girder bridge of 4 spans of 70 feet each, masonry abutments, screw pile piers.

	SPEED, 20 MILES AN HOUR.			SPEED, 40 MILES AN HOUR.		
	MOVEMENT.		Total Oscillation.	MOVEMENT.		Total Oscillation.
	To West.	To East.		To West.	To East.	
Centre of span, No. 1	...	...	0-44	0-33	0-275	0-605
Do., " 2	...	...	0-34	0-165	0-565	0-73
Do., " 3	0-11	0-23	0-34	0-13	0-385	0-515
Do., " 4	0-12	0-43	0-55	0-15	0-57	0-72
Trestle, No. 1	...	...	...	...	...	...
Do., " 2	0-04	0-055	0-095	0-045	0-065	0-11
Do., " 3	...	...	0-085	...	...	0-11

307th mile, 17th telegraph post, Nilgiri branch, girder bridge of 2 spans of 70 feet each, masonry abutments and piers.

	SPEED, 20 MILES AN HOUR.			SPEED, 40 MILES AN HOUR.		
	MOVEMENT.		Total Oscillation.	MOVEMENT.		Total Oscillation.
	To West.	To East.		To West.	To East.	
Centre of span, No. 1	0-08	0-185	0-265	0-10	0-14	0-24
Do., " 2	0-115	0-26	0-375	0-125	0-24	0-365

No. 105.

ORDER THEREON, 8th October 1875, No. 2,875.

RAILWAY, No. 8.

HIS EXCELLENCY the Governor in Council is pleased, on the recommendation of the Chief Engineer of the Madras

Railway, concurred in by the Officiating Consulting Engineer, to remove the restriction as to speed over the bridges at 308-7 and 313-12 on the Nilgiri Branch.

(True Extract.)

Major-General, R.E.,

Secretary to Government.

To the Consulting Engineer for Railways.

Exd. E. C. Shunker.

Spare Copies

No. 982

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE,

Madras, 20th September 1875.

From

R. D. Elwin Esq

Agent and Manager. of the M. R. C.

To

Lt Col. J. H. Webb - Chairman & Stewart, R.C.

Consulting Engineer for Railways.

SIR,

With reference to the accompanying copy of the Chief Engineer's letter No. 708 of the 18th instant and its enclosures, I have the honour to request that, if you agree with the opinion expressed by Mr. Anderson, you will be so good as to communicate to me sanction for the removal of the restriction as to the speed of trains, as far as the girder bridges at $\frac{308}{7}$ and $\frac{313}{12}$ Kelyberry Branch are concerned.

I have the honour to be,
Sir,

Your most obedient servant

R. D. Elwin

Agent and Manager.

N^o 708

Madras Railway Company
Chief Engineer's Office
Madras 18th September 1875

The Agent and Manager
Dear Sir,

I send you herewith copy of a letter
N^o 719 of 16th instant from the Resident Engineer
4th Division S.M. Line, forwarding a statement giving
the result of tests taken, by my directions, to
show the amount of Oscillation caused by trains
running at a high speed over the girder bridges
at $\frac{308}{7}$ and $\frac{313}{12}$ Neilgherry Branch line.

2 These tests were made in the pre-
sence of Colonel Shaw Stewart, and satisfactori-
ly show, as I fully expected they would, that the
screw pile bridges on the Neilgherry Branch
are in all respects steady, and reliable structures.

3. No reason whatever exist why trains
should not be allowed to traverse them at a
speed of 40 miles an hour, and I will ask you
to be good enough to apply for the sanction of
Government to remove the restriction as to speed
that is in force as regards these bridges.

Yours faithfully
Edw Percival Anderson
Chief Engineer

(True copy)

H. J. Shaw
Agent and Manager

From
MADRAS RAILWAY.

The Agent and Manager.

To

The Consulting Engineer

for Railways.

Date 20th Sept 1875
Recd. H. J.
No. 982

Regarding speed
of the screw pile bridges
at 308 & 313
Neilgherry Branch

1875
3/12/75

Railway Department

CONSULTING ENGINEER'S OFFICE

No. 533

Made at 23 September 1875

From

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

Offg. Consulting Engineer for Railways,

To

Major General

COLONEL G. W. WALKER, R.E.,

Secretary to Government,

Public Works Department,

Fort Saint George.

SIR,

Referring to the
Proceedings of Government
No. 2919, dated 13th October 1874.
I have the honour to forward
copy of letter No. 982, dated 20th
instant with enclosure from
the Agent of the Madras Railway
requesting the sanction of Govern-
ment to the removal of the
restriction of speed of trains

me

CO-8th Oct 1875

with 13.10.74

11/10/22/95

over the girder bridges at $\frac{308}{7}$
and $\frac{313}{12}$ miles on the Seaboard
branch.

In their Order No 2692
dated 21 September 1894 the
Government approved of the
arrangement mutually agreed
upon by the Consulting Engineer
and the Railway Authorities
that the maximum speed of
trains over all bridges on
the Madras Railway composed
of wrought iron girders on
steel pile piers should be
limited to ten miles per
hour and the bridges were
alluded

$\frac{308}{7}$ and $\frac{313}{12}$

alluded to form two of seven
such bridges included in
the list embodied in the
Proceedings of Government
marginally noted.

No 2919 B
13 October 1894.

The tests for deter-
mining the amount of oscillation
caused by trains running
at a high speed over the bridges
were taken in the presence
of Lt Colonel Shaw Stewart
who was satisfied with the
results. Under these
circumstances I recommended
that the restriction on
speed over bridges at $\frac{308}{7}$
and

1802125 4/14/74 46 475-476-
 " 13: 225 " " 509-510
 " 17: 225 " " 333-334.

S. W. 1895 Sept.

RAILWAY DEPARTMENT.
No. 6122

From 100.01
The Consulting Engineer,
for Railways,

The Secretary to Government,
P. W. Department,
Fort Saint George.
Dated 23rd September 1875
Recd. 24th

No. 533

he reasoned.
 I leave the honors to him.
 Yours most obedt. Servt.
 Kenneth Major R.E.
 offered to be: Eng. for Regt.

Schmitts
 Sells from the
 Great Hudson Bay
 Region for the
 purpose of restoring
 the office of
 our sister
 at 308 2nd 313
 Bridge St. New
 York City.

Feb. - 27 - 9-75 Del'd 8-16-75
 11-12-82-9-75
 11-12-82-10-75

No 2875. 8th Oct 75 (27)

No Excellency, the Governor in Council is pleased, on the recommendation of the Chief Engineer of the Madras Railway concerned by the officiating Commissioner Enquiring to remove the restriction as to speed over the bridge at $\frac{7}{8}$ and $\frac{9}{12}$ on the Weligandy branch.

For aught for 1/2

Chad

Bo/12 = 21-10-75

Dated

Dec. 1.

Enci

G. C. 8001 • 1875, No. 2375

Nos. 104-105

Speed of trains over the
Girder bridges at $\frac{308}{7}$ and
 $\frac{313}{12}$ miles on the Highland
branch of the M. & N. Y.

Intimating the removal
of the restriction as to
the —