M.R.O. 1—4,002—16-9-48.

(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. 1115, 1116,	Press
~~B.P. No.~~ 253, 254, 355	Mis.

Dated 17- 4- 1873.

Not to be folded or roughly handled

No. 253. Read the following letter from the Consulting Engineer for Railways to the Secretary to Government, Public Works Department, dated Madras, 1st April 1873, No. 198 :—

In the Deputy Consulting Engineer's memorandum* upon the dimensions of the structures and rolling-stock of the Madras Railway, Captain Thompson reported that the standard dimensions for the rolling-stock, as fixed in 1856, had been observed, with the exception of the wheel-base, which was originally limited to 11 feet, but which in the case of some vehicles lately built had been increased to 13 feet. In submitting that memorandum I drew attention to the incomplete character of the table of standard dimensions, and to the fact that considerable doubt existed with regard to certain particulars in what was understood to be the authorized loading gauge.

* Printed with G. O., 19th December 1872, No. 3,021.

2. I have now the honour to lay before Government two letters* from the Agent of the Madras Railway Company, to which I request that the attention of His Excellency the Governor General in Council may be drawn. Along with these letters Mr. Elwin forwards communications from the Chief Engineer and from the Locomotive Superintendent, in which the advisability of revising the table of standard dimensions is insisted on. The suggestions contained in Mr. Barton Wright's letter, dated the 22nd February 1873, No. 75, have my full concurrence.

* No. 101, 8th February 1873.
" 209, 20th March "

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 8th February 1873, No. 101.

I have the honour to enclose you copies of the letters noted in the margin, received from the Chief Engineer and the Locomotive Superintendent upon the subject of rules for maximum fixed and moving dimensions upon Indian Railways.

Chief Engineer, No. 81, 6th February 1873.
Locomotive Superintendent, No. 40, 28th January 1873.

2. The question was raised, you will observe, upon the receipt of your letter No. 80, dated the 24th ultimo, and as the standard dimensions settled in 1856 have in some instances been departed from with the authority of the Government, I quite agree with Mr. Anderson and Mr. Wright that it is desirable that revised rules should be prepared which will definitely fix all maximum and minimum dimensions. I think it is also most desirable that a standard loading gauge should be decided upon for all railways interchanging rolling-stock.

3. I shall be much obliged if you will give this subject your consideration, and favour me with your views thereon at your convenience.

From the Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 6th February 1873, No. 81.

Your letter No. 346 of 29th ultimo, forwarding an extract from Locomotive Superintendent's letter No. 40, dated 28th idem.

I quite agree with the Locomotive Superintendent in thinking it of the utmost importance that the standard maximum dimensions of rolling-stock should be definitely fixed, if it be shown that

the rules laid down in Circular from the Government of India, No. 83, dated 1st August 1872 (*vide* G O., No. 1,986, of 30th August 1872,) are not sufficiently explicit.

2. No modification of existing rules should be sanctioned if inconsistent with the circumstances and requirements of any of the great trunk lines now completed.

3 It should be remembered that an increase of wheel-base to 18 feet would render our present carriage turn-tables (which are 15 feet and 16 feet in diameter) useless.

4 It is most desirable that a standard loading gauge, suitable for all the broad gauge railways in India, should be adopted and definitely settled by mutual agreement.

From the Locomotive Superintendent, to the Agent and Manager of the Madras Railway Company, dated Perambore Works, 20th January 1873, No. 40.

With reference to the Consulting Engineer's letter, No. 80 of 21th January, bearing your endorsement of 25th idem, I beg to state that I will arrange to give effect to Colonel Shaw Stewart's wishes therein conveyed

2. I think, however, that it is important that the standard maximum dimensions of rolling stock should be definitely fixed, and that such modifications should be permanently sanctioned as have been approved by the Government of India for other Railways, provided they are not inconsistent with the circumstances and requirements of this Railway, and are in conformity with the views of the Government Consulting Engineer of this Presidency.

3. I mention this because I consider that, with the exception of the length of wheel-base, no deviation from the existing rules as regards maximum moving dimensions can be made with safety; and, with the above exception, the standard of such maximum dimensions should in future be made absolute.

4. On European Railways a wheel-base of 18 feet is not unusual, and whatever latitude is allowed in this respect on other Indian Railways is equally applicable to our Railway. I would therefore beg to suggest that the maximum wheel-base allowed by the Government of India should be ascertained, and would recommend that such maximum shall for the future be made the limit to be observed in the construction of this Company's stock.

5. I would also beg to suggest that a standard loading gauge for this Company be adopted and definitely settled.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 15th March 1873, No. 202.

With reference to your letter No. 179, of the 20th ultimo, I have the honor to forward herewith copies of letters from the Chief Engineer and the Locomotive Superintendent, in which those officers express their opinions upon the points raised in your letter in connection with the proposed revision of the rules for maximum and minimum dimensions upon the Indian broad gauge railways.

2 Mr Wright has gone so fully into the question as to leave nothing further to be said, except in the conclusions arrived at by Mr Anderson and Mr Wright.

From the Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 13th March 1873, No. 161

Consulting Engineer's letter No. 179 of 20th ultimo

I consider it correct in all with the exception of the length of wheel-base, the standard dimensions as fixed in 1856 should be retained

2. It is much to be desired that the list of standard dimensions should be made as complete as possible, such dimensions as height of platforms, maximum width of vehicles, etc., etc., being given.

3. It would undoubtedly be a convenience to have all vehicles able to turn on existing turn-tables, but it is not so important in the case of passenger carriages as of goods wagons, horse boxes, etc., etc.

Vide Agent and Manager's letter, No. 866, dated 29th November 1872.

4. My letter No. 555 of 29th November 1872, shows that a carriage 60 feet long with wheel-base of 40 feet may be used on the Madras Railway.

From the Locomotive Superintendent, to the Agent and Manager of the Madras Railway Company, dated Perambore Works, 22nd February 1873, No. 75.

I beg to acknowledge the receipt of the Consulting Engineer's letter, No. 178, of 20th instant, bearing your endorsement of yesterday's date.

2. With reference to the several points on which an expression of the views of the Railway officers concerned is asked, I beg to state my opinion as follows:—

1*st.*—That it is desirable to retain the standard dimensions as fixed in 1856 with the exception of the length of wheel-base.

2*nd.*—That the maximum height of platforms should be fixed, and as this height will determine the points to which it will be safe to give vehicles their maximum width of 10 feet 6 inches, it will also be necessary to fix a minimum height from rail level to a point where such maximum width may commence, care being taken to allow sufficient clearance vertically to avoid any risk of fouling platforms by reason of deflection of springs, wear and tear of tyres, etc. Below the point so fixed nothing should be allowed to exceed the maximum width already fixed for the carriage steps, namely, 10 feet.

3*rd.*—That it is essential that all goods vehicles, horse-boxes, and carriage trucks should be able to turn on turn-tables of 15 feet diameter, but all passenger vehicles other than horse-boxes and carriage trucks may be excepted. The length of wheel-base should certainly not exceed 18 feet in carriages built on the ordinary principle, where no special provision is made for facilitating their passage round curves, but in all cases where such provision is made either by means of radiating axle-boxes and guides, or by double bogies, it is almost unnecessary to lay down any restricting rule.

In constructing carriages of great length running on bogies, it will, of course, be necessary to make such reduction in their width as will prevent any risk of their fouling any fixed or moving body when passing round curves. In running over curves such carriages will deviate laterally from the centre line of rails to an extent equal at their own centres to whatever may be the *versed sine* resulting from the application to the curve of a chord equal in length to the distance from centre to centre of bogies. The maximum widths of all parts of such carriages must, therefore, be reduced to an extent equal to double that of such *versed sine* taken over the sharpest curve over which the carriages would have to run.

3. I do not know that there is anything further requiring consideration, unless it be that some rule might with advantage be laid down as to the clearance to be allowed between ash-pans and other projecting under-parts of engines, tenders, or carriages between and outside the wheels; a minimum distance between such parts and rail-level should be fixed, and, on the other hand, a limit should be laid down restricting the placing of any thing fixed or movable between or near the rails to such dimensions as cannot interfere with the safe passage of engines or trains.

Proceedings of the Madras Government, Public Works Department,
17th April 1873.

No. 254. ORDER THEREON, 17th April 1873, No. 1,115.

*RAILWAY, No. 35.

ORDERED that these papers be forwarded for the consideration of the Government of India.

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

No. 255. (DOCKET, No. 1,116, dated 17th April 1873.)

COPY of the above forwarded to the Government of India, in continuation of the papers transmitted with docket No. 3,032, dated 19th December 1872.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

No. 101

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 1st February 187[illegible].

From Robert B. Ilume Esqr
Agent and Manager. of the M.R.C.

To Lieutt. Colo. J. H. M. Stewart R.E.
Consulting Engineer for Railways.

SIR,

I have the honour to enclose a Copy of the letter noted in the margin* from the Chief Engineer dated 1st February 1873 received from the Exec. Superintendent dated 20th January 1873 Chief Engineer and the Executive Superintendent upon the subject of Rules for maximum speed and stopping distances upon Indian Railways.

2. The question was raised on receipt of your letter dated the 27th ultimo, and as the Standard dimensions settled in 1857 have in some instances been departed from with the authority of the Government, I am agreed with Mr Anderson and Mr Knight that it is desirable that revised Rules should be prepared which will definitely give the maximum

maximum and minimum dimensions
I think it is also most desirable that a
Standard loading Gauge should be de-
cided upon for all Railways interchanging
Rolling Stock.

I shall be much obliged if you will
give this subject your consideration and
favour me with your views thereon at
your convenience.

I have the honour to be
Sir
Your most obedient servant
W. H. Barlow
Agent and Manager.

Madras Railway Company
Chief Engineers Office
Madras 6th February 1873.

No 81

The Agent and Manager
Dear Sir,

Your letter No 346 of 29th ultimo forwarding an Extract from Locomotive Superintendent's letter No 40 dated 28th idem.

I quite agree with the Locomotive Superintendent in thinking it of the utmost importance that the Standard maximum dimensions of Rolling stock should be definitely fixed, if it be shown that the rules laid down in circular from the Government of India No 35 dated 1st August 1872 (vide G.O. No 1986 of 20th August 1872) are not sufficiently explicit.

2. No modification of existing rules should be sanctioned if inconsistent with the circumstances and requirements of any of the great trunk lines now completed.

3. It should be remembered that an increase of wheel base to 18' would render our present Carriage turntables (which are 15' & 16' in diameter) useless.

4 It is most desirable that a Standard loading Gauge, suitable for all the broad gauge railways in India, should be adopted and definitely settled by mutual agreement.

(True Copy)

(Sd)

Agent and Manager

Yours faithfully
Beresford Anderson
Chief Engineer

No 6

From

The Agent and Manager.

To

The [illegible]

No 2142/43.

[illegible]

Registered & Telegraphic

[illegible]

whatever latitude is allowed in this respect on other Indian Railways is equally applicable to our Railway. I would therefore beg to suggest that the maximum which have been allowed by the Government of India should be maintained and would recommend that such maximum shall for the future be made the limit to be observed in the construction of this Company's stock.

I would also beg to suggest that a standard loading gauge for this Company be adopted and definitely settled.

Yours faithfully
(Sd) W. Duncan Wright
Locomotive Superintendent

(True Copy)
[illegible signature]
Agent & Manager

P.W. 2152/73

No. 209

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE.

Madras, 19th March 1873

From

[illegible]

Agent and Manager [illegible]

To

[illegible]

Consulting Engineer for Railways.

Sir,

[illegible]

[illegible] March 1873

[illegible]

I have the honour to be
Sir
Your most obedient Servant
[illegible signature]
Agent and Manager

[illegible]

MADRAS RAILWAY.

From The Agent and Manager,

To The Consulting Engineer for Railways.

R. F. 2152/73

Dated 17 March 1873.

Recd 20/3/73

No. 269

Sending copies of letters from the Ch. Engineer and Loco: Supdt on the subject of the proposed revision of the Rules for maximum and minimum dimensions upon the Indian Broad Gauge Railways

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15 / 7

No 161.

Madras Railway Company
Chief Engineer's Office
Madras 13th March 1873.

The Agent & Manager,

Dear Sir,

Consulting Engineer's letter No 178 of 20th ultimo.

I consider it essential that, with the exception of the length of wheel base, the standard dimensions as fixed in 1856 should be retained.

It is much to be desired that the list of standard dimensions should be made as complete as possible, such dimensions as height of platforms, maximum width of vehicles, &c &c being given.

It would undoubtedly be a convenience to have all vehicles able to turn on existing turntables, but it is not so important in the case of passenger carriages as of Goods Wagons, Horse boxes, &c &c.

My letter No 555 of 29th November 1872 shows that a carriage 60' long with wheel base of 40' may be used on the Madras Railway.

Vide Agent & Manager's letter No 861 dated 29th Novr 1872.

Yours faithfully
(Sd) Beresford Anderson
Chief Engineer

True Copy

R. H. Lewin
Agent & Manager

Ahmedabad Railway
Locomotive Superintendent's Office
Pennanhoor Station 22nd Feby 1873.

To

The Agents and Managers,

Sirs,

I beg to acknowledge the receipt of the Consulting Engineer's Letter No. 1/76 of 20th Instant, bearing your endorsement of the same date.

With reference to the remarks contained in which the expressions of the Railway Officers concerned is asked, I beg to hold my opinions as follows:

1st. That it is desirable to retain the standard dimensions as prescribed in the 105th with the exception of the height of wheel base.

2nd That the maximum height of fixed cranes should be fixed, and when this height will determine the height to which it will be safe to pile bales their maximum width, of 10 feet breadth, should also be fixed a minimum distance of 4 feet between each tier of bales should be left to admit of the passage of a man, and bales should be piled to the maximum height, consistent with the safety of the bales, and sufficient to secure the property by the usual means.

[illegible] of Carriages, measured from
the Centre of Spindle, measured Round
the Tyres &c. Between the Foremost fixed
Axle and Hind Axle is allowed to exceed
the above Limit by Three Inches
in the Carriages described in Rule 10.

3rd That the Centre of the Spindle
(Axletree) Naves Levers and Carriages
be made Channel in Axle to Inside and
Three Inches of Wheel Diameter, but
all Carriages Circular than Naves
Levers and Carriages Channel may
be excepted. The length of Wheel Base
Diagonal Carriages not less 1 Foot
in Carriages with the exception
principle when an Opening is
made for Driver Along the Carriage
would Injure, but in all cases where
such Injunction would be taken by
means of Sliding Seats and
under, by Law it is
almost unnecessary to say Damages
for Breaking Rules.

In describing Carriages of great
length we may say that will
of Carriages to necessary Length and
Width in their Middle as well
Fore and Back part of them gently
Sloped to Meeting Ends by
passing round Corners, Carriages
are Carriages with
Seats Laterally from the Centre

[illegible] Carriages
[illegible] Axle to be equal at
their Centre to whatever may be
the Inclined Line resulting from the
application to the Circle of a Chord
equal in length to the distance from
Centre to Centre of Axles. The Maximum
Width of all parts of such Carriages
must therefore be reduced to Line
equal to Length that of such Inclined
Line between the Sharpest Curves
in which the Carriages would have
to run.

I do not know that there is any thing
further requiring Consideration, unless
it be that some Rule might be with advantage
be made to Limit the Clearance to be
allowed between the Under-parts of Engines
Tenders Carriages &c. Tenders
Carriages between and under the Wheels,
and that such Limit should be fixed, and
as the other hand a Limit should be laid
down restricting the Planing of any thing
Fixed or moveable between or near the
Rails Inside Surfaces or Outside
Faces of Engines or
Tenders with the exception of Engines or
Carriages.

Yours faithfully
Jos. W. Barton Wright
Asst. Superintendent

[illegible]

Railway Department.

CONSULTING ENGINEER'S OFFICE,

No. 190

From

LIEUT.-COLONEL J. H. M. SHAW STEWART, R.E.,
Consulting Engineer for Railways,

To

COLONEL G. W. WALKER, R.E.,
Secretary to Government,
Public Works Department,
Fort Saint George.

SIR,

In the Deputy Consulting Engineer's memorandum upon the dimensions of the structures and rolling-stock of the Madras Railway, Captain Thompson reported that the standard dimensions for the rolling-stock, as fixed in 1856, had been observed, with the exception of the wheel-base, which was originally limited to 11 feet, but [illegible] in the case of some [illegible]

Pub 19 Sec 72. No 435 436

RAILWAY DEPARTMENT.

Public Works 1873 Department

From

The Consulting Engineer
for Railways,

To

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

Dated 1 March 1873
Rect 3

Encl.

No 170

Submitting a letter
from the Great Indian
with reference to
the standard Section
for Railway Stations

W Thornton

No 1115.

Dated Madras Engineers Office the 19th March 1873.

From

Lieut. Colonel J. Pennycuick R.E.
Secretary to the Government of India,
Public Works Department.

To

The Consulting Engineer for Railways,
Madras.

Sir,

In the communication from the Govt of Madras
No 1116 &c
dated 19th March 1873 a copy of the above Memorandum to the
Govt of India in Consultation with the Railway
Department regarding Standard Designs for Railway Stations
was received with your Endorsement No 253.55.
dated 19-4-73.

Enclosure.

Cab. C 2152

Cabt. C 1578 3 Orders.

PUBLIC WORKS.

To the Commissioners
& the Secretary

1116.

Nos. 253-254 & 256

Rolling Stock. Rolling

Orders on Letter from the
Engineer Commissioner
Correspondence relating to
the Standard Gauge
Rolling Stock.

Forwarding Corres-
pondence relating &c.
Standard Gauge