

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RESEARCH, DESIGNS & STANDARDS ORGANISATION

Alambagh,
Lucknow.

No. SD.POL.12.6

Dated: 1-9-1971

The General Manager,

1. Northern Railway,
Baroda House,
New Delhi.
2. Eastern Railway,
Fairlie Place,
Calcutta.

Sub: Increase of speed of Rajdhani Express
/New upto 130 km/h on Delhi-Allahabad-Howrah
Route via Grand Chord.

Ref: Director Civil Engineering, Railway Board's
D.O. letter No.71/W6/HS/1 dt. 16.6.71.

WDM4 diesel electric loco and ICF all coil coaches are certified vide RDSO's letter No. SD.POL.12.2 dated 16th Nov., 1968 for operation at a maximum speed of 120 km/h on Delhi-Allahabad-Howrah Route via Grand Chord, maintained in accordance with recommendations contained in Vol. I & II of Civil & Mech. Engineering Report No. C&M 1. In connection with increase of speed of the Rajdhani Express to 130 km/h, detailed oscillation investigations were carried out upto 145 km/h by RDSO on Allahabad-Kanpur Section to examine the suitability of WDM4 and ICF all-coil coaches at the proposed speeds of 130 km/h.

2. Based upon these investigations and studies, it is certified in consultation with the Director Standards Civil that single WDM4 locomotive with gear ratio of 57:20 and ICF all coil coaching stock provided with slack adjusters, DA/QA valves and improved brake power in accordance with drawing Nos. SK.68259 Alt.1, 68260 Alt.1, are suitable for operation on New Delhi-Allahabad-Howrah route (Rajdhani Express route) at a maximum speed of 130 km/h subject to the following considerations:

2.1 Track:

2.1.1 The track shall be to a minimum standard of 90 lb. rails on sleepers to N+3 density and minimum depth of ballast cushion below sleepers of 204 mm (8") (which may consist of 76 mm (3") clean and the rest in caked up condition) on compacted and stable formation and maintained to the standards recommended in RDSO's report No. C&M-1, Vol. I.

2.1.2 For track of lower standard than that mentioned above, the Chief Engineer concerned should decide the lower maximum permissible speed. In this connection, Railway Board's letter No.65/WDO/SR/26 dated 19/20.10.65 may be seen.

2.1.3 When the Chief Engineer considers that the road bed is not compacted or there is improper drainage, he may suitably restrict the maximum permissible speed depending on the local conditions. The Chief Engineer should also take cognisance of the standard of maintenance and behaviour of track under existing conditions and decide the maximum permissible speed in terms of DG/RDSO's letter No.ET/DEL dated 24.6.65.

2.1.4 The speed over curves will be decided on the basis of existing provisions of the Indian Railway Way & Works Manual, subject to amendments for curves on this route as authorised by Railway Board vide their letter No.68/WSC/TK/5 dated 5.5.68. The cant gradient of transitions of curves shall not exceed 1 in 720 and cant deficiency shall not exceed 100 mm as permitted by the Railway Board for high speed operation on this route.

2.1.5 Adequate clearance to fixed structures taking into account the increased cant deficiency of 100 mm shall be obtained.

2.2 Bridges:

2.2.1 Bridges shall be to BGML standard.

2.2.2 For bridges of lower standard than that mentioned in para 2.2.1 above, the Chief Engineer concerned should be referred to.

2.2.3 The clearance with reference to 'bridges' refers to standard designs of girders, slabs, pipe culverts etc., issued by RDSO, but not to the strength and stability of piers and abutments or of foundations which is to be examined under the direction of the Chief Engineer concerned and certified by the latter in terms of Addendum & Corrigendum Slip No.4 to IRS Bridge Sub-structure Code.

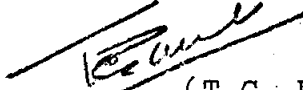
2.2.4 The speed on bridge No.479 shall be restricted to 100 km/h.

2.3 Other Special Conditions:

2.3.1 For maintenance of ICF all coil type coaching stock for operation at 130 km/h, attention is drawn to recommendations compiled in RDSO's Technical Pamphlet No.6804/R issued under RDSO's letter No.MC/CB/ICE/MM dated 9-2-71. These recommendations are subject to amendments as necessary on the basis of experience gathered with train operation at 130 km/h.

2.3.2 Attention is also invited to the note on "Preparation of electrical equipment of diesel and electric locomotives for high speed operation" circulated under RDSO's letter No.EL/3.3.15/WAM2/GR.Con. dated 24.12.70.

2.3.3 The permanent and temporary speed restrictions due to curves, bridges, track etc. in force and those that may be imposed from time to time shall be observed.


(T.C. Pant)
Director Standards (Mech.)

Copy to:

1. The Secretary(Works), Railway Board, New Delhi.
2. The Secretary(Mech.), Railway Board, New Delhi.