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भारत सरकार - रेल मंत्रालय

अनुसंधान अभिकल्प और मानक संगठन

लखनऊ - 226011

Government of India-Ministry of Railways
Research Designs & Standards Organisation

Lucknow - 226011



No. MC/RLC/D

Dated: 07-01-02

The General Manager (Engg.):

1. Northern Railway, Baroda House, New Delhi - 110 001.
2. Central Railway, CST, Mumbai - 400 001.
3. Eastern Railway, Fairlie Place, Kolkata - 700 001.
4. Western Railway, Churchgate, Mumbai - 400 020.
5. Southern Railway, Park Town, Chennai - 600 003.
6. South Central Railway, Rail Nilayam, Secunderabad - 500 071.
7. South Eastern Railway, Garden Reach, Kolkata - 700 043.
8. North Eastern Railway, Gorakhpur - 273 012.
9. Northeast Frontier Railway, Maligaon, Guwahati - 781 011.

Sub: Final maximum permissible speed certificate for operation of BG DMU stock fitted with all coil ICF bogie with improved suspension for operation at 95 km/h.

1.0 Broad Gauge Diesel Multiple Units, manufactured by ICF/Chennai as per Drawing Nos. DMU/DPC-9-0-001, DMU/TC-9-0-001 and DMU/DTC-9-0-001 were subjected to oscillation trials and cleared for operation at a maximum speed of 80 km/h vide this office letter No. MC/RLC/D dated 27-9-94. These DMUs were provided with standard screw couplings and side buffers and were fitted with 20 t bogie for DPC, 16 t bogie for DTC and 13 t bogie for TC.

1.1 With a view to increasing the speed potential of the DMU up to 100 km/h, the suspension system has been redesigned. In addition, screw coupling has been replaced with Schaku coupler and 16 t bogies have been fitted on both TC and DTC.

1.1.1 The DPC of the modified DMUs are of two types as described below: -

- (a) DPC with roof mounted radiator: Drg. No. DMU/DPC-9-0-203
- (b) DPC with side mounted radiator: Drg. No. DMU/DPC-9-0-201

1.1.2 The TC and DTC of the modified DMUs are as per the following drawings:

- TC: Drg. No. DMU/TC-9-0-201
DTC: Drg. No. DMU/DTC-9-0-201

1.1.3 The bogies of the modified DMUs are as per the following drawings:

✓ DPC (either type): Drg. No. DMU/DPC-0-0-001
TC & DTC: Drg. No. WTAC3-0-0-301

1.2 In order to assess the speed potential of the modified DMU, detailed oscillation trials were conducted on Jalandhar-Pathankot section of Ferozpur Division of Northern Railway up to a maximum speed of 105 km/h. The results, reported vide RDSO's Report No. MT-131 (July, 1998), indicate satisfactory riding of the modified DMU up to the maximum speed of 105 km/h.

2. Based on the results of these trials, it is certified that modified BG DMU stock as described in Para 1.1 may be permitted to run at maximum speed of 95 km/h, subject to the following conditions.

2.1 Track

2.1.1 The track shall be to a maximum standard of 90R rails on sleepers to M+4 density and depth of ballast cushion below sleepers of 200 mm, which may consist of at least 75 mm clean, and the rest in caked up condition, on compacted and stable formation.

2.1.2 For track of lower standard than that mentioned above, the Chief Engineer concerned shall decide the lower maximum permissible speed. In this connection, Railway Board's letter No. 65/WDO/SR/26 dated 19/20-10-1966 may be seen. 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.

2.1.3 The maximum permissible speed on curves shall be decided on the basis of the existing provisions of the Indian Railway Permanent Way Manual, 1986.

2.2 Bridges

2.2.1 The clearance in regard to bridges refers to standard design of girders, slabs, pipe, culverts, pier and abutments etc. issued by RDSO for BGML, RBG & MBG - 1987 standard loadings.

2.2.2 All other designs of superstructures and sub-structures are to be examined under the direction of the Chief Engineer concerned and certified safe by him in terms of current IRS Bridge Rules, Steel Bridge Code, Bridge Sub-structure and Foundation Code etc. read with up-to-date correction slips.

2.2.3 The clearance is subject to the following parameters:

Maximum axle load for DPC:	17.16 t
Maximum axle load for TC/DTC:	13.24 t/13.36 t
Maximum tractive effort for DPC:	6.70 t
Maximum braking force for TC, DTC & DPC:	Not exceeding 10% of axle load

2.3 Signalling

2.3.1 Provision of GR, SR, SEM and all extant instructions issued from time to time shall be complied with.

2.4 General

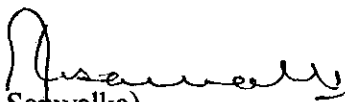
2.4.1 All the permanent and temporary speed restrictions in force and those that may be imposed from time to time due to track, bridges, curves, signalling and interlocking etc. shall be observed.

2.4.2 The initial DMU/DPC, as per Drg. No. DMU/DPC-9-0-001 was constructed within the EDO-590 profile. However, it infringed Clause 19(b) (length over body) of Chapter IV (A) of BG Schedule of Dimensions, 1929 (Reprint 1973). These infringements were condoned by Railway Board vide their letter No. 94/CEDO/SR/13 dated 26-9-94. The modified DMU/DPC also infringes the above Clause, but its length over body is within the condoned length of the initial DMU/DPC.

2.4.3 Further, the modified DMU/DPC of type 1.1.1(a) (with roof mounted radiator) also infringes Clause 31 of Chapter IV (A) and profile for maximum moving dimensions and others of BG Schedule of Dimensions, 1929 (Reprint 1973) as per Drg. Nos. SK-94014 & ICF/SK-9-0-093. These infringements have been condoned by Railway Board vide their letter No. 95/CEDO/SR/22 dated 31-8-95.

Encl.: 1. Drg. No. DMU/DPC-9-0-203
Drg. No. DMU/DPC-9-0-201
Drg. No. DMU/TC-9-0-201
Drg. No. DMU/DTC-9-0-201.

2. Letter No. 94/CEDO/SR/13 dt. 26-9-94
3. Letter No. 95/CEDO/SR/22 dt. 31-8-95

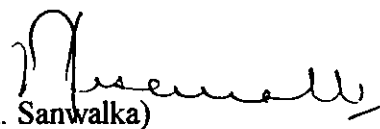

(A. K. Sanwalka)
Executive Director Standards (Motive Power)

Copy to:

The General Manager (Mech.)/Optg.:

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Encl.: Nil.



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