

फोन नं. : 0522-2424 RDSO-IN

फोन नं. : 0522-458500

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सत्यमेव जयते

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/MG/RBC



Date: 19.3.99

The General Manager(Engg.),  
Western Railway,  
Churchgate,  
Mumbai - 400 020.

Sub. : Final maximum permissible speed for operation of MG/DMU stock converted from ICF MG Coaches by Izatnagar Workshop of North-Eastern Railway.

- 1.0 As per directives of Railway Board, Izatnagar Workshop of North-Eastern Railway has converted ICF MG Coaches to Diesel Multiple Unit with Hydraulic transmission. The unit consists of one driving power car, one trailer car and one driving power car as per RDSO drawing No.SK.96056 & SK.96057 respectively. The gross weight of driving power car and trailer car is about 39t. The powered bogies are YRD-4 type bogies while the non powered bogies are same as mainline MG coach bogies.
- 1.1 The DMU unit is a self propelled unit fitted with standard ABC couplers and air brake system.
- 1.2 The design of driving power car and its suspension arrangement are same as for railbus converted by Izatnagar Shop except that driving power car has only one driving cab. Detailed oscillation trials were conducted on Badaun-Kasganj section of North-Eastern Railway to assess the maximum speed potential of railbus. The results contained in report NO.MT-110 (January, 1998) indicate satisfactory riding upto the test speed of 60 kmph on tangent track, station yard and curved track on consideration of 50mm cant deficiency.
- 1.3 The design of trailer car and its suspension arrangement is same as the standard ICF MG mainline general second class coach. Only interior seating layout has been changed. The mainline MG coaches are running at maximum permissible speed of 75 kmph on Indian Railways at present.
- 1.4 Based on the above MG DMU(converted) was permitted to operate upto the maximum speed of 55 kmph on 60R track vide this office speed certificate of even no. dated 28.5.98. Western Railway, vide their letter No. W638/15/5/3/1(W3) dated 16.10.98 have requested for issue of speed certificate for operation of MG DMU on Mahesana - Tarangana Hill MG Section having 50R/50lb/NS rails. The MG Railbus converted (which is similar to driving power car of DMU) has been permitted to operate on the above section at a maximum

speed of 50 kmph vide speed certificate no. SD.RAILBUS.11 (MG) dated 18.3.99..

2.0 Based on the above it is certified that the MG DMU(converted) may be permitted to operate at the maximum permissible speed of 50 kmph on Mahesana – Taranga Hill section subject to the following conditions:

## 2.1 TRACK

2.1.1 The track shall be to a minimum standard of 50R/50BS/NS rails on sleepers to M+2 density and depth of ballast cushion below sleepers of 100mm, which may consist of at least 50mm clean and the rest in caked up condition on compacted and stable formation

2.1.2 As the maximum speed of greater than 35 kmph is to be permitted on 50R/NS section, rails should be kept under observations for any tendency of fracture and adverse effects on track. The frequency of checks on rails for the above issue can be decided by Chief Engineer depending upon the local conditions.

2.1.3 For track of lower standard than that mentioned above, the Chief Engineer concerned shall decide the maximum permissible speed in terms of Railway Board's letter No.65/WDO/Sr/26 dated 19/20.10.66. 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.

2.1.4 The maximum permissible speed on curves shall be decided on the basis of the existing provisions of the Indian Railways 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 MGML, MMG-88 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 Bridges Rules, Steel Bridge Code, Bridge Sub-Structures and Foundation Code etc. read with upto date correction slips.

2.2.3 The clearance is subject to the following parameters of the MG -DMU:

(i)	Maximum axle load	=	11.0t
(ii)	Maximum tractive effort	=	1.6t
(iii)	Maximum braking force	=	6.86t

## 2.3 SIGNALLING

2.3.1 The speed of MG DMU while running through a station will be decided by Zonal Railway depending upon type of route release circuit adopted, length of FVT

track circuit provided ahead of last stop signal and standard of interlocking existing at a station.

**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, signaling and interlocking etc., shall be observed.
- 2.4.2 The design of driving power car (converted) infringes items 18(ii) and 19(ii) of chapter IV(A) of MG Schedule of Dimensions 1963. Condonation of these infringements has been communicated vide Railway Board's letter No.96/CEDO/SR/6 dated 1.3.96.

DA.: Nil

(P.BHATTACHARYA)  
EXECUTIVE DIRECTOR STD./MOTIVE POWER

Copy to :

1. The Secretary(Mech./Engg.), Railway Board, Rail Bhawan, New Delhi-110001.
2. The General Manager(Mech.), Western Railway, Churchgate, Mumbai-400020.
3. The Chief Workshop Manager, North Eastern Railway, Izatnagar.

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