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रेलमनक लखनऊ

'RAILMANAK', Lucknow

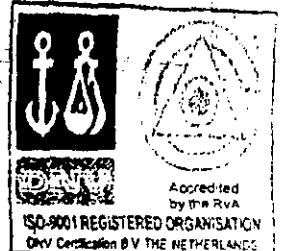
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सत्यमेव जयते

भारत सरकार - रेल मंत्रालय  
अनुसंधान अभिकल्प और मानक संगठन  
लखनऊ - 226011

Government of India-Ministry of Railways  
Research Designs & Standards Organisation  
Lucknow - 226011



No. SD. Self-Propelled ART. 11

Dated: 26-03-04

The General Manager (Engg.),

1. Central Railway, CST Mumbai - 400001
2. Eastern Railway, Fairlie Place, Kolkata - 700001
3. Northern Railway, Baroda House, New Delhi-110001
4. Southern Railway, NGO Annexe, Park Town, Chennai-600003
5. South Eastern Railway, Garden Reach, Kolkata - 700043
6. South Central Railway, Rail Nilayam, Secunderabad-500071
7. Western Railway, Churchgate, Mumbai-400020.
8. North Eastern Railway, Gorakhpur-273001
9. Northeast Frontier Railway, Maligaon, Guwahati-781011.
10. North Central Railway, Allahabad - 211 001.
11. North Western Railway, Jaipur -302 006.
12. East Central Railway, Hajipur - 844 101
13. East Coast Railway, Rail Vihar, B-2 Chandrasekharpur, Bhubaneswar- 751 023
14. South Western Railway, Hubli (Karnataka) 580 023.
15. West Central Railway, Jabalpur -482 001.
16. South East Central Railway, Bilaspur - 495 004.

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EDSC  
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7M

Sub: Final maximum permissible speed certificate for operation of Two coach BG Self Propelled Accident Relief Medical Van (SPARMV) manufactured by ICF, Chennai upto a speed of 105 Km/h on track maintained to other than C&M vol-I standards.

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690 hp, Two coach BG Self Propelled Accident Relief Medical Van is a self-propelled 8 wheeler, twin car unit consisting of driving power car (Auxiliary Tool Van) and a driving trailer car (Medical Relief Van). The Self Propelled Accident Relief Medical Van has been designed and manufactured by Integral Coach Factory, Chennai, as per their general layout drawing Nos. ARTV-9-0-001 (Alt. h) for DPC (Auxiliary Tool Van) and ARMVAC-9-0-001 (Alt. c) for DTC (Medical Relief Van). The bogie arrangement of DPC is as per ICF drawing No. ARTV-0-0-001 and that of DTC is as per ICF drawing No. WTAC3-0-0-301. DPC is a twin power pack unit. Inner axles of both bogies of the DPC are individually driven by axle drive gear boxes to which power is transmitted through cardan shafts by each set of power pack consisting of 345hp diesel engine and hydraulic transmission. The maximum axle load of DPC is 17.32t ±2% and that of DTC is 13.76t ±2%.

1.1 Twin pipe graduated release air brake system has been used in the Accident Relief Medical Van. The Self Propelled Accident Relief Medical Van has been earlier cleared for operation upto a maximum speed of 95km/h vide this office letter of even no. dated. 29.7.99.

1.2 To establish the full speed potential of the SPARMV, detailed oscillation trials of SPARMV were conducted on Bareilly - Moradabad section of Northern Railway upto a maximum speed of 115 km/h. The results as contained in RDSO's Report No. MT-466 of February-2004, show satisfactory stability and riding behaviour upto a speed of 115 km/h on track maintained to other than C&M vol-I standards.

2. Based on the above, it is certified that the Self Propelled Accident Relief Medical Van (SPARMV) as detailed above may be permitted to operate upto a maximum speed of 105 km/h, subject to the following conditions:

## 2.1 Track

2.1.1 (a) For speed up to 105 Km/h :- Track shall be to a minimum standard of 52 kg rails on sleepers to M+7 density and minimum depth of ballast cushion below sleepers to 250 mm which may consist at least 100 mm clean and the rest in caked up condition on compacted and stable formation.

(b) For speed up to 95 Km/h:- Track shall be to a minimum standard of 90R rails on sleepers to M+4 density and minimum depth of ballast cushion below sleepers to 200 mm which may consist 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 upon 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 Railways Permanent Way Manual-1986*

## 2.2 Bridges

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

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

2.2.3 The clearance is subject to the following parameters :

(i) Maximum axle load for DPC	= 17.32t $\pm 2\%$
(ii) Maximum axle load for DTC	= 13.76t $\pm 2\%$
(iii) Maximum tractive Effort for DPC	= 5.0t
(iv) Maximum braking force at rail level for unit	= 4.1t
(v) C.G. height from rail level (DPC/DTC)	= not exceeding 1830 mm

## 2.3 Rolling stock

2.3.1 Before starting the operation, CME of the railway will certify the track worthiness and safety of the rolling stock. He will also ensure proper maintenance of the stock.

## 2.4 Signalling

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

2.4.2 The speed of SPARMV while running through the station will be decided by the Zonal Railways depending upon the type of track relay used, type of route

2.5 General

- 2.5.1 All the permanent and temporary speed restrictions due to curves, bridges, track, signalling & interlocking etc. in force and those that may be imposed from time to time shall be observed.
- 2.5.2 The profile of Self Propelled Accident Relief Medical Van (SPARMV) infringes the clause 31 of Chapter IV (A) of BG Schedule of Dimensions 1929, reprint (1973). Railway Board have condoned this infringement vide their letter No. 99/CEDO/SR/12 dated 23-7-99.
- 2.5.3 This speed certificate supersedes the earlier final maximum speed certificate of even number dated 29.07.1999.

DA: Nil

  
(S.K.SINHA)  
Exe. Director Standards (Motive Power)

Copy to:

The Secretary (Mech./Engg.), Railway Board, Rail Bhawan, New Delhi-110 001.

The General Manager (Operating & Safety), Baroda House, New Delhi – 110 001.

The General Manager (Mech.)

1. Central Railway, CST Mumbai –400001
2. Eastern Railway, Fairlie Place, Kolkata -700001
3. Northern Railway, Baroda House, New Delhi-110001
4. Southern Railway, NGO Annexe, Park Town, Chennai-600003
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13. East Coast Railway, Rail Vihar, B-2 Chandrasekharapur, Bhubaneswar-751023
14. South Western Railway, Hubli (Karnataka) 580 023.
15. West Central Railway, Jabalpur -482 001.
16. South East Central Railway, Bilaspur – 495 004.

DA: Nil

  
(S.K.SINHA)  
Exe. Director Standards (Motive Power)

No. 001 Carriage etc. P.D.S. 1/10