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भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow-226 011

AN ISO 9001
CERTIFIED
ORGANISATION

No. SV.AS.ML/07/Vol-IV/411

Dated: May 31, 2007

05/06/07

The General Manager (Engineering),

- i. Northern Railway, Baroda House, New Delhi-110 001
- ii. Western Railway, Churchgate, Mumbai-400020
- iii. Central Railway, CSTM, Mumbai - 400 001
- iv. Eastern Railway, Fairly Place, Kolkata- 700 001
- v. Southern Railway, Park Town, Chennai - 600 003
- vi. North Frontier Railway, Maligaon, Guwahati- 781 001
- vii. North Eastern Railway, Gorakhpur-273 001
- viii. South Eastern Railway, Garden Reach, Kolkata-700 043
- ix. South Central Railway, Secunderabad-500 071
- x. West Central Railway, Jabalpur-482 001
- xi. South East Central Railway, Bilaspur-495 004
- xii. South Western Railway, Hubli-580023
- xiii. East Coast Railway, Railway Complex, Bhubaneswar-751 023
- xiv. East Central Railway, Hajipur-844 101
- xv. North Western Railway, Jaipur-302 006
- xvi. North Central Railway, Allahabad-211 001

Sub:- Final maximum permissible speed certificate for operation of Power Car (WLRRM) fitted with Pneumatic Suspension at the Secondary Stage on ICF bogie at 130 kmph over track maintained to standards specified in RDSO's report C&M-I Vol-I.

- 1 RDSO has redesigned the suspension of Power Car (WLRRM) provided with Pneumatic Suspension at the Secondary Stage on ICF bogie as per ICF's drg. no.WLRRM₉-9-0-912.
- 1.1 In order to assess the riding quality and stability of Power Car fitted with pneumatic suspension in secondary stage, detailed oscillation trials and long confirmatory runs have been conducted on track maintained to standards laid down in C&M-I Vol-I upto a maximum test speed of 145 kmph on Surat-Virar section of Western Railway.

The results of oscillation trials of Power Car with pneumatic suspension contained in RDSO's Report no.RDSO/2007/TG/MT-766/F/Rev.0 dt.23.04.2007 indicate that Power Car exhibits satisfactory riding upto a test speed of 145 kmph.
- 2 Based on the above, it is certified that the Power Car (WLRRM) fitted with 16.25t axle load ICF bogie is fit to run upto a maximum speed of 130 kmph over track maintained to standards specified in RDSO's report C&M-I Vol-I subject to conditions given in the ensuing paragraphs.

2.1 Track

- 2.1.1 The 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 of 250 mm which may consist of at least 100 mm clean and the rest in caked condition, on compacted and stable formation.
- 2.1.2 For track maintained to lower standard than that mentioned above, the Chief Engineer shall decide the lower maximum permissible speed on the basis of maintenance condition. 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 suitably 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 Railways Permanent Way Manual, Second Reprint, 2004.

2.2 Bridges

- 2.2.1 The clearance refers to bridges with 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 super structures and sub-structures are to be examined, under the directions of the Principal Chief Engineer concerned and certified safe by him in terms of current IRS Bridge Rules, Steel Bridge Code, Concrete Bridge Code, Arch 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 Power Car:
- | | | |
|--|---|-----------------------|
| (i) Maximum axle load | = | 16.25t |
| (ii) Gross Track Loading Density | = | 2.915 t/m |
| (iii) Max. C.G. Height from Rail Level | = | not exceeding 1830mm. |
- 2.2.4 Specific restrictions are applicable which are indicated in relevant Speed Certificates of hauling locomotives issued by RDSO.

2.3 Signaling

- 2.3.1 Provisions of GR, SR, SEM & all extant instructions issued from time to time shall be complied with.
- 2.3.2 On the sections where EBD of more than 1 km is to be catered for, second distant signal or automatic signalling should be available failing which suitable speed restrictions is to be imposed.

2.4 Rolling Stock

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

2.5 Traction Installation

- 2.5.1 In 25kV a.c. traction area, the CEE of the Railway shall have to ensure that the minimum height of the contact wire as stipulated in provision of Chapter-V and V-A Electric Traction "Schedule of Dimension of 1676 gauge (BG) revised 2004" is not violated and strictly followed to ensure its safe running"

2.6 General

- 2.6.1 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.
- 2.6.2 The modified design of Power Car is identical to that of existing ICF coaches. This infringes with the 1973 edition of the BG schedule of Dimensions but is within the limits laid down in EDO-590, which has been condoned vide Board's letter No. 63/WDO/SD/Z dated 20.3.65.

Encl : 1. Drg. No.WLRRM₉-9-0-912



(S.K.Sinha)

Sr. Executive Director Standards (Motive Power)

Copy:-

1. **EDME (Coaching)**, Railway Board, Rail Bhawan, New Delhi-110 001
2. **General Manager (Mech./Optg.)**
 - i. Northern Railway, Baroda House, New Delhi-110 001
 - ii. Western Railway, Churchgate, Mumbai-400020
 - iii. Central Railway, CSTM, Mumbai - 400 001
 - iv. Eastern Railway, Fairly Place, Kolkata- 700 001
 - v. Southern Railway, Park Town, Chennai - 600 003
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 - xiv. East Central Railway, Hajipur-844 101
 - xv. North Western Railway, Jaipur-302 006
 - xvi. North Central Railway, Allahabad-211 001

3. **General Manager (Mech)**, ICF, Chennai

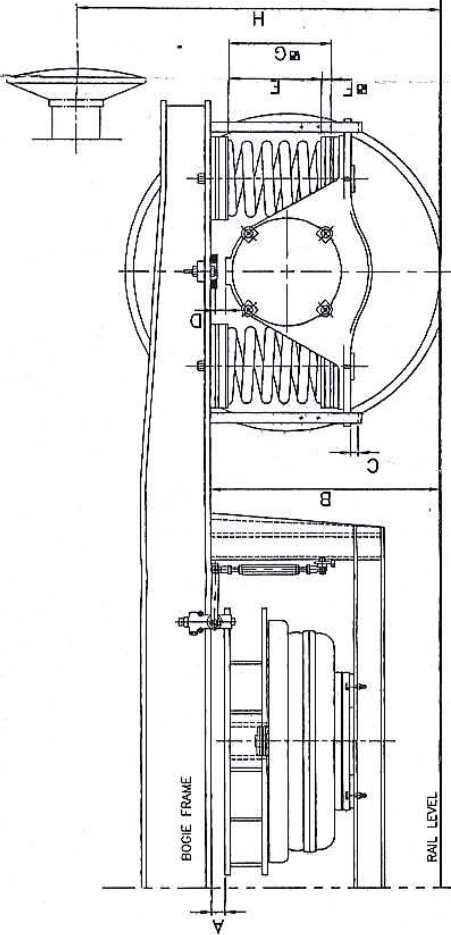
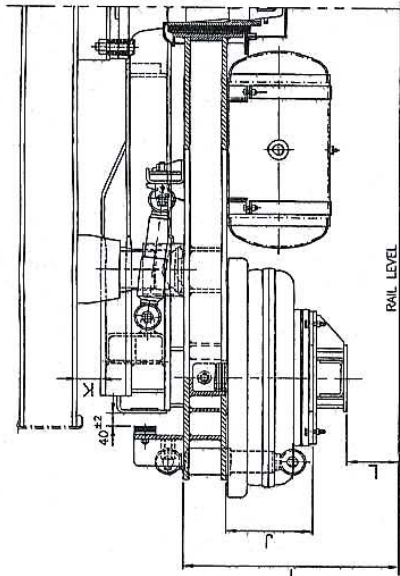
4. **General Manager (Mech.)**, RCF, Kapurthala

5. **Managing Director**, Konkan Railway Corp. Ltd., Belapur Bhavan, Navi Mumbai-14



(S.K.Sinha)

Sr. Executive Director Standards (Motive Power)



SUSPENSION DATA

LOAD	A	B	C	D	E	F	G	H	I	J	K	L
TARE	40 ^{±5}	666 ^{±5}	40 ^{±5}	23 ^{±3}	275 ^{±5}	15	290 ^{±3}	1104 ^{±10}	646 ^{±5}	255 ^{±5}	70 ^{±3}	166 ^{±5}
GROSS	40 ^{±5}	680 ^{±5}	46 ^{±5}	23 ^{±3}	269 ^{±4}	-	284 ^{±3}	1038 ^{±8}	640 ^{±5}	255 ^{±5}	70 ^{±3}	160 ^{±5}

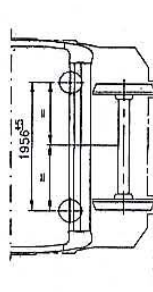
WEIGHT PARTICULARS

TARE WEIGHT OF THE COACH : 60.8 Tonnes
 WEIGHT OF THE BOGIE : 6.2 Tonnes
 WEIGHT OF THE BOLSTER : 0.5 Tonne
 UNSPRUNG MASS PER BOGIE : 3.2 Tonnes
 NORMAL PAY LOAD : 4.23 Tonnes
 OVER LOAD : - Tonnes
 TOTAL PAY LOAD (SDCL) : 4.23 Tonnes
 GROSS WEIGHT OF THE COACH : 65.03 Tonnes

TEST LOAD/BOGIE

UNDER TARE : 24.20 Tonnes
 UNDER GROSS : 26.315 Tonnes

ORIGINAL SET
 UNCONTROLLED COPY



NOTE:

1. DIMENSION 'G' SHOULD BE MAINTAINED WITH REQUIRED No. OF COMPENSATING RINGS OF STANDARD THICKNESS OF 4mm.
2. AXLE BOX SPRING TO DRG. No. WLRRM8-0-1-802.
3. DIMENSIONS A,H,I,J,K SHALL BE ENSURED AT FURNISHING DIVISION AFTER GIVING AIR CONNECTION TO THE AIR SPRINGS AND CONTROL SYSTEMS.

GROUP: SUSPENSION		SUPERSEDED BY:	
SUSPENSION DIAGRAMATIC ARRGT. WITH AIR SPRINGS		SUPERSEDES: SCALE: SSE/OT/100 CHD: R. Anand CAD: R. Murugan DRN: ALT:	
INDIAN RAILWAY STANDARDS		INTEGRAL COACH FACTORY CHENNAI - 600 038	
WTACS-0-0-501 ASSEMBLY DRAWINGS	DATE: 11/11/2017 CODE No. 227	SHEET 1 OF 1	WLRRM9-9-0-912
DATE: 11/11/2017 AME/D	DATE OF LATEST REVISION	DATE OF FIRST ISSUE	