



Ref : SV.AS.ML/07/Vol-IV
Date: April 12, 2007

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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 AC EOG coaches - Power Car (WLRRM) and 1st AC Chair Car (WFCZAC) fitted with Pneumatic Suspension at the Secondary Stage on ICF bogie at 105 kmph over track maintained to standards other than those specified in RDSO's report C&M-I Vol-I.

- 1 RDSO has redesigned the suspension of AC EOG coaches, as per ICF's drg. no.WTAC₅-9-0-501 for AC Chair Car and Drg. no.WLRRM₉-9-0-912 for Power Car. Both AC Chair Car and Power Car have been provided with Pneumatic Suspension at the Secondary Stage on ICF bogie.
 - 1.1 In order to assess the riding quality and stability of all the AC EOG coaches fitted with air springs in secondary stage, detailed oscillation trials and long confirmatory runs have been conducted on track maintained to standards other than those laid down in C&M-I Vol-I upto a maximum test speed of 135 kmph on Nagda-Ujjain-Bairagarh section of Western Railway using one AC chair car and one Power car.

The results contained in RDSO's Report no.'s MT-755 and MT-756 indicate that AC chair car and Power Car with pneumatic suspension exhibits satisfactory riding upto a test speed of 115 kmph.

- 2 Based on the above, it is certified that the WLRRM and WFCZAC coaches fitted with 16.25t axle load ICF bogie are fit to run upto a maximum speed of 105 kmph over track maintained to standards other than those 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 abutment, 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 AC EOG Coaches:
- | | | |
|--|---|--------------------------|
| (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. |

2.3 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 General

- 2.5.1 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.
- 2.5.2 The modified design of EOG Ist AC Chair Car and 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.WTAC5-9-0-501
2.Drg. No.WLRRM9-9-0912



(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
 - vi. North Frontier Railway, Maligaon, Guwahati- 781 001
 - vii. North Eastern Railway, Gorakhpur-273 001
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 - ix. South Central Railway, Secunderabad-500 071
 - x. West Central Railway, Jabalpur-482 001
 - xi. South East Central Railway, Bilaspur-495 004
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 - xiii. East Coast Railway, Railway Complex, Bhubaneshwar-751 023
 - 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

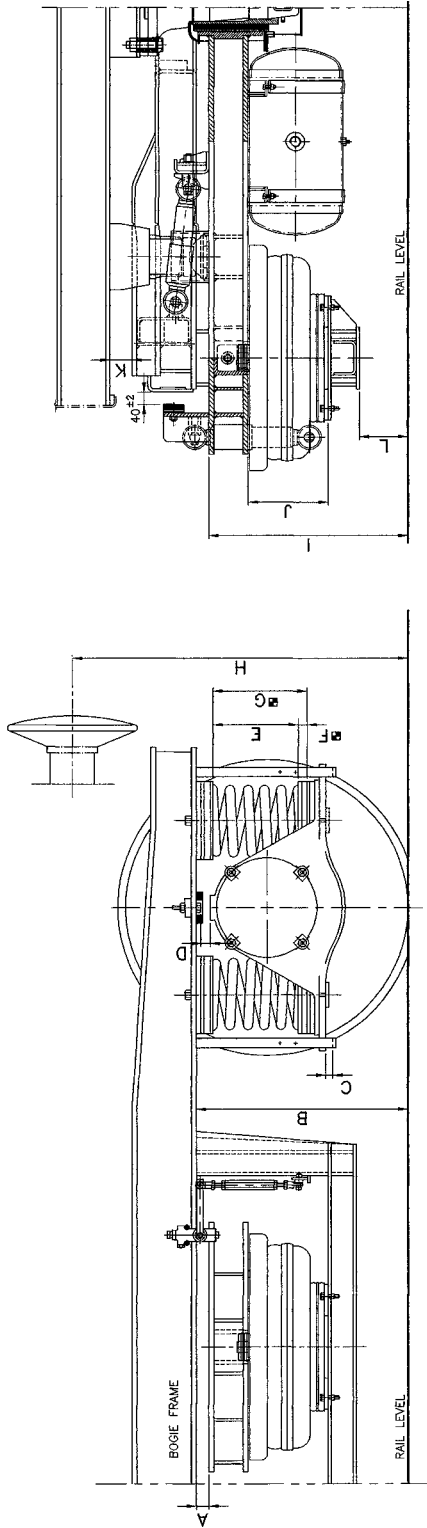


(S.K. Sinha)

Sr. Executive Director Standards (Motive Power)

WTAC5-9-0-501

ALTERATIONS



SUSPENSION DATA

LOAD	A	B	C	D	E	F	G	H	I	J	K	L
TARE	40 ^{±5}	686 ^{±5}	40 ^{±5}	40 ^{±5}	291 ^{±5}	-	281 ^{±5}	1104 ^{±5}	646 ^{±5}	255 ^{±5}	70 ^{±5}	166 ^{±5}
GROSS	40 ^{±5}	678 ^{±5}	48 ^{±5}	32 ^{±5}	285 ^{±5}	-	283 ^{±5}	1096 ^{±5}	638 ^{±5}	255 ^{±5}	70 ^{±5}	158 ^{±5}

WEIGHT PARTICULARS

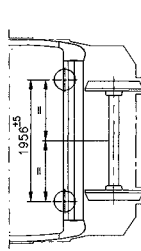
TARE WEIGHT OF THE COACH : 42.6 Tonnes
 WEIGHT OF THE BOGIE : 6.2 Tonnes
 WEIGHT OF THE BOLSTER : 0.5 Tonne
 UNSPRUNG MASS PER BOGIE : 5.2 Tonnes
 NORMAL PAY LOAD : 3.68 Tonnes
 OVER LOAD : - Tonnes
 TOTAL PAY LOAD (SDCL) : 3.68 Tonnes
 GROSS WEIGHT OF THE COACH : 46.28 Tonnes

TEST LOAD/BOGIE

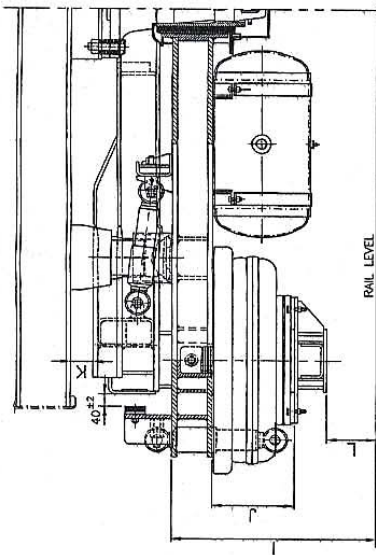
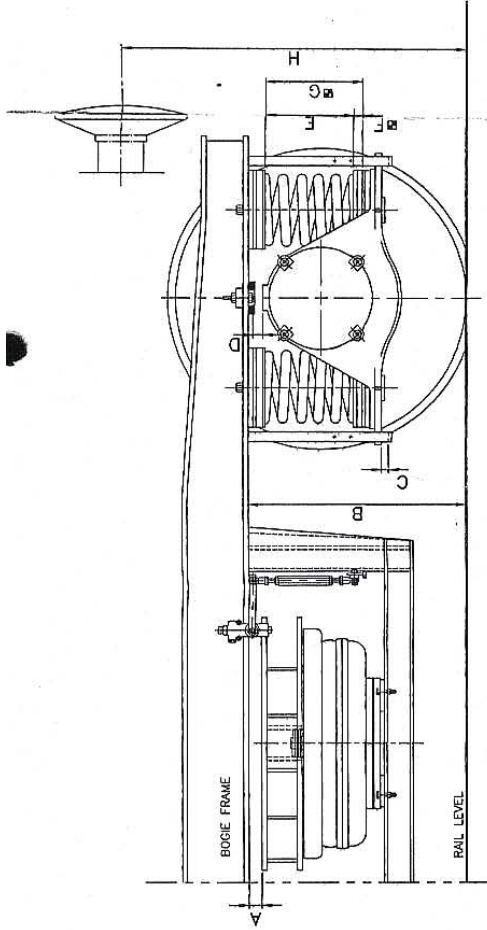
UNDER TARE : 15.10 Tonnes
 UNDER GROSS : 16.94 Tonnes

NOTE:

- DIMENSION 'G' SHOULD BE MAINTAINED WITH REQUIRED No. OF COMPENSATING RINGS OF STANDARD THICKNESS OF 4mm.
- AXLE BOX SPRING TO DRG. No. WTAC2-0-1-202.
- 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:	
SCALE: 1:1		SCALE: 1:1	
ASSEMBLY DRAWINGS: WTAC5-0-0-501		DRAWING NO.: 013	
DATA CODE No. 013		SHEET 1 OF 1	
DATE OF LATEST ALTM. DATE OF FIRST ISSUE: 27-12-2017		INDIAN RAILWAY STANDARDS	
DATE OF ISSUE: 27-12-2017		WTAC5-9-0-501	
DATE OF LATEST ALTM. DATE OF FIRST ISSUE: 27-12-2017		FORM IR 42 600 x 420	



SUSPENSION DATA

LOAD	A	B	C	D	E	F	G	H	I	J	K	L
TARE	40 ^{±5}	686 ^{±25}	40 ^{±5}	29 ^{±3}	275 ^{±5}	15	290 ^{±3}	110 ^{±10}	646 ^{±5}	255 ^{±5}	70 ^{±3}	166 ^{±5}
GROSS	40 ^{±5}	860 ^{±25}	46 ^{±5}	23 ^{±2}	269 ^{±4}	-	28 ^{±3}	1098 ^{±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

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. WLRRM6-0-1-802.
3. DIMENSIONS A,H,I,J,K SHALL BE ENSURED AT FURNISHING DIVISION AFTER GIVING AIR CONNECTION TO THE AIR SPRINGS AND CONTROL SYSTEMS.

अनधिकृत प्रति
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GROUP: SUSPENSION		SUPERSEDED BY:	
SCALE: 1/25		SCALE: 1/25	
DRAWN: R. Murugan		DRAWN: R. Murugan	
CHECKED: R. Murugan		CHECKED: R. Murugan	
DATE: 10.12.2014		DATE: 10.12.2014	
PROJECT: WLRRM9-9-0-912		PROJECT: WLRRM9-9-0-912	
SHEET: 1 OF 1		SHEET: 1 OF 1	
INDIAN RAILWAY STANDARDS		INDIAN RAILWAY STANDARDS	
DATA CODE No. 227		DATA CODE No. 227	
WTACS-0-0-501		WTACS-0-0-501	
ASSEMBLY DRAWINGS		ASSEMBLY DRAWINGS	
DATE OF LATEST AMENDMENT: 10.12.2014		DATE OF LATEST AMENDMENT: 10.12.2014	
DATE OF FIRST ISSUE: 10.12.2014		DATE OF FIRST ISSUE: 10.12.2014	