



No.MC/MT

Date 16/01/2017

महाप्रबन्धक(इंजीनियरिंग),

1. मध्य रेलवे, छत्रपति शिवाजी टर्मिनस मुम्बई- 400001
2. पूर्व रेलवे, फेयरलीप्लेस, कोलकाता- 700001
3. उत्तर रेलवे, बडौदाहाऊस, नईदिल्ली- 110001
4. पूर्वोत्तर रेलवे, गोरखपुर- 27 3001
5. पूर्वोत्तर फन्टियर रेलवे, मालीगाँवगुवाहाटी- 781011
6. दक्षिण रेलवे, एनेक्सी, पार्कटाऊन, चेन्नई- 600003
7. दक्षिण मध्य रेलवे, रेलमिलायम, सिकन्दराबाद- 500071
8. दक्षिण पूर्व रेलवे, गार्डनरीच, कोलकाता- 700043
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10. उत्तर मध्य रेलवे, इलाहाबाद- 211001
11. उत्तर पश्चिम रेलवे, जयपुर- 302006
12. पूर्व मध्य रेलवे, हाजीपुर- 844101
13. पूर्वकोस्ट रेलवे, रेलवेकॉम्पलेक्स, भुवनेश्वर- 751023
14. दक्षिण पश्चिम रेलवे, हुबली- 580023
15. पश्चिम मध्य रेलवे, जबलपुर- 482001
16. दक्षिण पूर्व मध्य रेलवे, बिलासपुर- 495004
17. मैनेजिंग डायरेक्टर, कोंकण रेलवे कार्पोरेशन लिमिटेड, बेलापुर, नवी मुम्बई- 400614

Sub: Final speed certificate for operation of New Milk Tank Van 'VVNH1' (44,660 liters capacity) on ICF all coiled bogie fitted with bogie mounted brake system, up to a maximum speed of 110 kmph on the track maintained to C&M-I Vol.-I standard.

- 1.0 Design&development of a special purpose 'VVNH1' type New Rail Milk Tank Van (with 44660 Litter capacity) for transportation of liquid milk (Fitted with BMBS) Broad Gauge (1676 mm) has been done by RITES & RDSO. The Rail Milk Tank Van is designed to operate at a maximum speed of 110kmph.
- 1.1 These New Rail Milk Tank Van is manufactured as per RITES General Arrangement drawing no. RSD-6410-053 (alt 5).
- 1.2 TheRail Milk Tank Vans has been provided with fabricated bogie type "EMU high capacity trailer coach" to RITES Bogie General Arrangement drawing no. RSD-6410-078 (alt. 3), similar to ICF drawing no. DC/EMU/H<sub>2</sub>-0-0-201 with an axle load of 20.32 t is fitted with wheels of 952 mm dia on tread and 2896 mm wheel base.
- 1.3 The Rail Milk Tank Van have twin pipe graduated released bogie mounted air brake system fitted with load sensing device (LSD).
- 1.4 The Rail Milk Tank Van has High tensile tight lock transition coupler with draft gear to RDSO Spec.no. RDSO/2009/CG-22.
- 1.5 The Rail Milk Tank Van has estimated tare weight of 29.70t and gross load of 75.70t.
- 1.6 The Transportation code of this milk tank van is 'VVNH1'.

- 1.7 With a view to assess the speed potential, riding quality and stability of New Milk Tank Van 'VNH1' (44,660 liters capacity) on ICF all coiled bogie fitted with bogie mounted brake system, detailed oscillation trial was conducted upto maximum test speed of 120kmph over IGP-BSL (DN Line) section of Central Railway on the track maintained to C&M-I Vol.-I standard. The results as contained in RDSO Report No. RDSO/2016/TG/MT- 1459/F/Rev.-0/ Amendment- Nil, dated 20.07.2016 indicated satisfactory riding up to a maximum test speed of 120kmph on straight track and station yard and 2° curve in detailed & long confirmatory run in both empty & loaded conditions.
- 2.0 Based on the above oscillation trial, it is certified that New Milk Tank Van 'VNH1' (44,660 liters capacity) on ICF all coiled bogie fitted with bogie mounted brake system is fit for operation upto a maximum speed of 110 kmph on the track maintained to C&M-I Vol.-I standard of Indian Railways, subject to the following conditions:
- 2.1 **Track:**
- 2.1.1 The track shall be to a minimum standard of 60Kg (90UTS) rails on sleeper with 1660 density and minimum depth of ballast cushion below sleepers of 300mm, which may consist of at least 150mm clean ballast and the rest in caked up condition on compacted and stable formation.
- 2.1.2 On the track laid with 52Kg (90UTS) rails on sleeper with M+7 density and minimum depth of ballast cushion below sleepers of 250mm, which may consist of at least 100mm clean ballast and the rest in caked up condition on compacted and stable formation, maximum speed shall be restricted to 100 kmph in loaded condition and 110kmph in empty condition.
- 2.1.3 On the track laid with 52Kg (72UTS) rails on sleeper with M+7 density and minimum depth of ballast cushion below sleepers of 250mm, which may consist of at least 100mm clean ballast and the rest in caked up condition on compacted and stable formation, maximum speed shall be restricted to 60 kmph in loaded condition and 110kmph in empty condition.
- 2.1.4 In case of track laid with 90R rails on sleeper with M+4 density and minimum depth of ballast cushion below sleepers of 200mm, which may consist of at least 75mm clean ballast and the rest in caked up condition on compacted and stable formation, maximum speed shall be restricted to 30 kmph in loaded condition and 110 kmph in empty condition.
- 2.1.5 "Moreover the instructions maintenance if track on high speed rout (Track maintained to C&M-I Vol-I standard) , circulated to the Indian Railway under RDSO's DO letter No. CRA.509 Dt 07.07.1971 and approved by the Railway Board under their letter No. 71/W6/HS/8 dt. 27.08.71 and 71/W6/HS/1 dt. 21.10.71 should also be followed".
- 2.1.6 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, instructions issued by Railway Board should also be followed. 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.
- 2.1.7 The maximum permissible speed on curve shall be decided on the basis of the existing provisions of the Indian Railways Permanent Way Manual, second reprint 2004.
- 2.1.8 The welds shall be protected by Joggled fish plates as per provision of Para 6.4 and Para 8.14 of USFD Manual and Para 6.3 of AT welding manual and other policy instructions of Railway Board. The maintenance of rail and rail joints shall be ensured as per Para 250 & 251 of IRPWM. In addition, wherever condition warrants on account of corrosion on rail /weld collar, wear on rail, cupping of welds etc. necessary precaution shall be taken for fish plating/ joggled fish plating.

2.1.9 Zonal Railways may ensure, further detailed examination of track as deemed fit based on age cum condition basis, overdue renewal and condition of formation etc. as per provisions of Chapter – III of IRPWM-2004 regarding permanent way renewals.

## 2.2 Bridges:

2.2.1 The clearance refers to bridges "Standard Spans" with standard design of girders, slabs, pipe culverts, piers and abutments etc. issued by RDSO for BGML, RBG and MBG-1987 standard loadings. However, the bearings of span 76.2 m (clear) designed for BGML standard loading as per RDSO's drawing No. BA-11154 should be strengthened by providing two additional anchor bolts.

2.2.2 Superstructures & bearings of "Special Spans" (designed and constructed by Zonal Railways based on site requirements) including Arches and sub-structures of all bridges (all Standard & Special Spans) are to be examined under the directions of the Chief Bridge Engineer concern and certified safe with respect to current Indian Railway standard codes with up to-date correction slips.

2.2.3 For BG Rail Milk Tank Van fitted with ICF all coiled Bogies as per RITES drawing no. RSD-6410-078 (alt. 3).

Maximum axle load of VVNH1	: 20.32 t
Maximum Braking Force at Rail Level	: 1.14t/axle(tare condition)
	: 1.89t/axle(loaded condition)
CG height above rail level	: 1315.7 mm (tare condition)
	: 2109 mm (loaded condition)

2.2.3.1 In loaded condition all standard spans of BGML, RBG and MBG loading are restricted to 105 Kmph.

2.2.4 Location of bridges on which speed restrictions are imposed shall be notified by Railways and incorporated in the working timetable.

2.2.5 The above clauses have been arrived considering bridges are in physically sound condition. In case the bridges are not in satisfactory physical condition. Necessary speed restriction to be imposed by concern Chief Bridge Engineer of Zonal Railway.

2.2.6 Specific restrictions are applicable as mentioned in relevant speed certificates of hauling single/multiple locomotives issued by RDSO.

## 2.3 Traction Installation:

2.3.1 In 25 KV AC traction area, the CEE of the Railway shall have to ensure that the minimum height of contact wire and electrical clearances as stipulated in provision of Chapter-V and V-A, Electrical Traction "Schedule of Dimension of 1676 mm Gauge (BG) Revised 2004" with latest addendum & corrigendum slips is not violated and strictly followed to ensure its safe running.

2.3.2 In addition to above, the Chief Electrical Engineer of concerned Railway may impose any temporary speed restrictions on the basis of his personal knowledge and experience of sectional OHE and the field conditions prevailing on the particular section.

2.3.3 The Dome cover (Intel for loading on top) of 'New Milk Tank Van 'VVNH1' (44,660 liters capacity) on ICF all coiled bogie fitted with bogie mounted brake system' shall be in closed &

locked down condition during movement and while standing under 25 kV AC OHE in live condition.

**2.4 Signaling:**

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

2.4.2 On the sections where EBD of more than 1 km is to be catered for, second distant signal of automatic signalling should be available failing which suitable speed restriction is to be imposed.

2.4.3 The condonation regarding infringements in schedule of dimensions, if any, shall be obtained in accordance with local conditions, before movement.

**2.5 Rolling stock:**

2.5.1 Before starting the operation, CME/CEE of the concerned Railway shall certify the track worthiness and safety of the rolling stocks and they shall also ensure proper maintenance of the rolling stocks.

2.5.2 Brakes of locomotive and Milk Tank Van should be in good working order during the operation.

**3.0 General:**

3.1 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.

3.2 New Rail Milk Tank Van as per RITES drawing No. RSD-6410-053 (Alt. 5) does not infringe any clause of IRSOD 1676 mm (BG) Revised 2004 with latest addendum and corrigendum.

3.3 Suitable Locomotive having valid speed certificate and sanction of Railway Board for infringement to IR SOD if any, shall be used for operation of these wagons.

संलग्नक.1. RITES General Arrangement drawing no.

RSD-6410-053 (alt 5).

2. RITES Bogie General Arrangement drawing no. RSD-6410-078 (alt. 3)

(सी. मधुसूदन राव)  
कार्यकारी निदेशक मानक चालन शक्ति

**प्रतिलिपि:**

1 सचिव यांत्रिक/इंजीनियरिंग(जी), रेलवे बोर्ड, रेल भवन, नई दिल्ली- 110001

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3 महाप्रबन्धक (यांत्रिक/परिचालन/संकेत एवं दूरसंचार/विद्युत)

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ii) पूर्व रेलवे, फेयरलीप्लेस, कोलकाता- 700001

iii) उत्तर रेलवे, बडोदा हाऊस, नई दिल्ली- 110001

iv) पूर्वोत्तर रेलवे, ओरखपुर- 273001

v) पूर्वोत्तर फन्टियर रेलवे, मालीगाँव गुवाहाटी- 781011

vi) दक्षिण रेलवे, एनेक्सी, पार्कटाऊन, चेन्नई- 600003

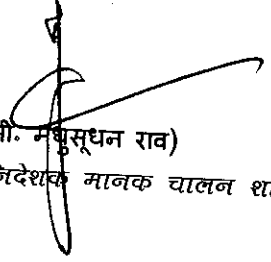
vii) दक्षिण मध्य रेलवे, रेलनिलायम, सिकन्दराबाद- 500071

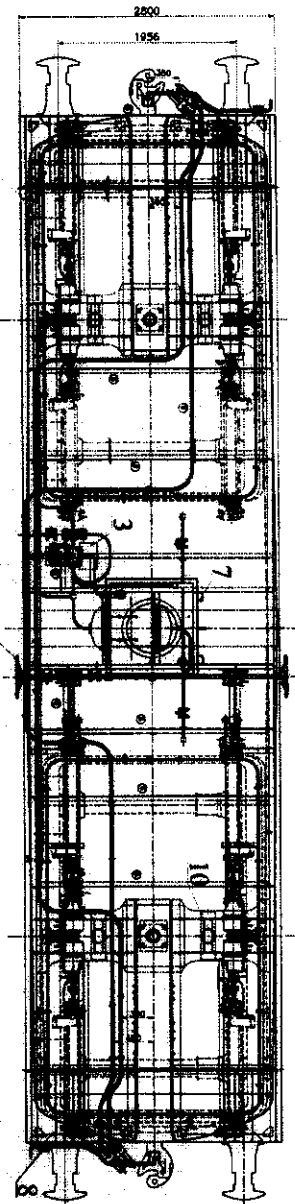
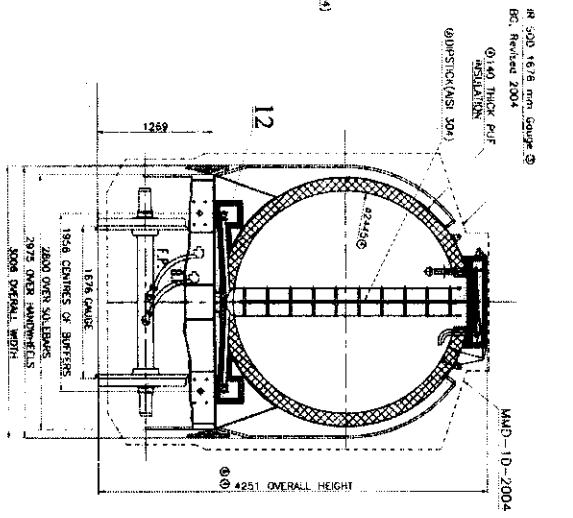
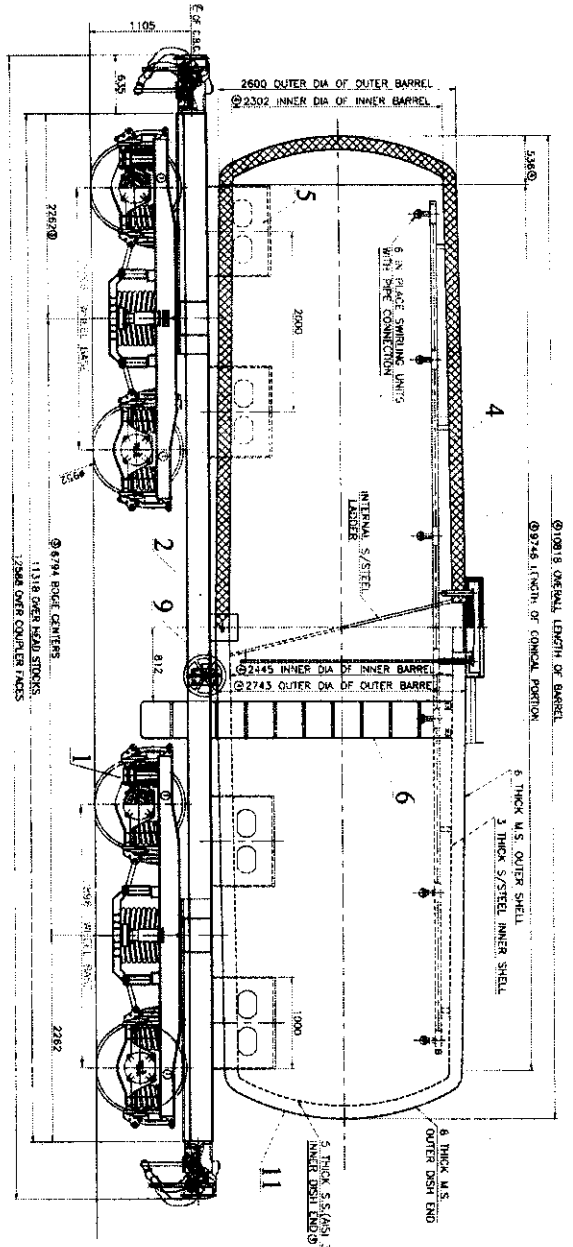
viii) दक्षिणपूर्व रेलवे, गार्डनरीच, कोलकाता- 700043

ix) पश्चिम रेलवे, चर्चनेट, मुम्बई- 400020

- X) उत्तर मध्य रेलवे, इलाहाबाद- 211001  
XI) उत्तर पश्चिम रेलवे, जयपुर- 302006  
Xii) पूर्व मध्य रेलवे, हाजीपुर- 844101  
Xiii) पूर्वकोस्ट रेलवे, रेलवेकॉम्प्लेक्स, भुवनेश्वर- 751023  
Xiv) दक्षिण पश्चिम रेलवे, हुबली- 580023  
Xv) पश्चिम मध्य रेलवे, जबलपुर- 482001  
Xvi) दक्षिणपूर्व मध्य रेलवे, बिलासपुर- 495004  
4 मैनेजिंग डायरेक्टर, कॉकण रेलवे कार्पोरेशन लिमिटेड, बेलापुर, नवी मुम्बई- 400614-

- संलग्नक. 1.RITES General Arrangement drawing no.  
RSD-6410-053 (alt 5).  
2.RITES Bogie General Arrangement drawing  
no. RSD-6410-078 (alt. 3)

  
(सी. मधुसूदन राव)  
कार्यकारी निदेशक मानक चालन शक्ति



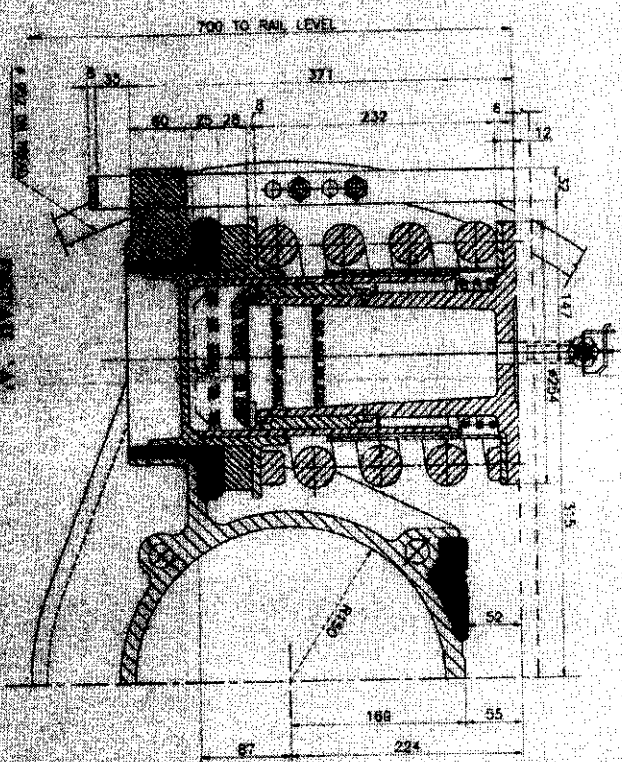
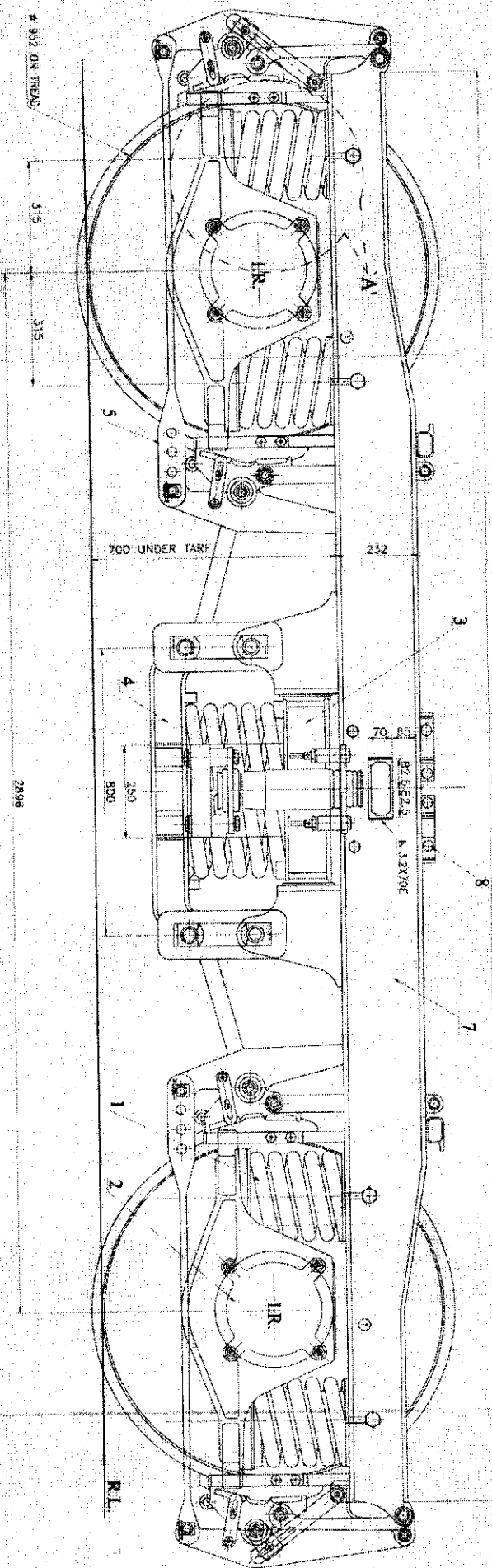
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MILK TANK VAN  
 GENERAL ARRANGEMENT  
 RSD-6410-053





- NOTE :-
1. THIS DRAWING IS BASED ON THE ROSE GENERAL ARRANGEMENT DRAWING NO. - RC/EMU/4 - 0-0-201.
  2. ALL DIMENSIONS AS PER AXLE BOX GUIDE ARRANGEMENT DRAWING NO. - DC/EMU/4 - 0-1-201 EXCEPT FOR :-  
 a) AXLE BOX SPRING TO DRAWING NO. DC/EMU/4-0-1-203 INSTEAD OF DRAWING NO. DC/EMU/4-0-1-002.  
 b) PACKING (ITEM No.6) DIA. 8 CHANGED TO DIA. 28.  
 c) 1) ARRANGEMENT UNDER TARE CONDITION WITH NEW TIRES DIMENSIONS 703/378 259 80R70-6.7J59.82.31  
 CHANGED TO 700/378 228 41.52.52.224 RESPECTIVELY AS SHOWN IN DETAIL 'A'.  
 d) ARRANGEMENT SHOWING PACKING WITH 40 mm. WCAH ON TIRES DIMENSION 345 CHANGED TO 318.
  3. ROSE FRAME ARRANGEMENT DRAWING NO. - RC/EMU/4 - 0-3-201. SECTION 'A' DIMENSION 48mm CHANGED TO 700 mm.

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9/15

भारत सरकार GOVERNMENT OF INDIA  
रेल मंत्रालय MINISTRY OF RAILWAYS  
(रेलवे बोर्ड RAILWAY BOARD)

No2010/M(C)137/3

New Delhi dated 27.08.2013

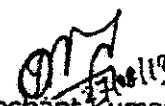
The Executive Director (Carriage),  
RDSO / Lucknow.

**Sub: Approval of revised layout for New Insulated Rail Milk Van**

**Ref: RDSO's letter no. MC/MT dated 30.5. 2013**

Ref. above, revised layout no. CG-13010 for design of New Insulated Rail Milk Van submitted by RDSO for approval has been examined and same has been approved by Board (MM, MT).

A unique Transportation code "VNH1" may be assigned to this New Insulated Rail Milk Van.

  
(Prashant Kumar)  
Dir. Mech. Engg. (Chg.)  
Railway Board