

No. MC/CB/AC/DD

Date-07.05.2012

महाप्रबन्धक (इंजीनियरिंग)

1. उत्तर रेलवे, बड़ौदा हाउस, नई दिल्ली - 110001
2. उत्तर पश्चिम रेलवे, जयपुर - 302006

**Sub: Speed Certificate for operation of a rake consisting of 13 nos. of BG High Capacity AC EOG Double Decker Chair Car coaches (width 3050 mm) fitted with pneumatic suspension at the secondary stage on Fiat bogies and 2 nos. of BG LHB Generator Van hauled by single WAP4/ WAP5/ WAP7/ WDP4/ WDP4B class of locomotive on Delhi Sarai Rohilla - Jaipur section of NR and NWR upto a maximum speed of 110 kmph on track maintained to C&M-I, Vol.-I standard.**

1. RCF has built BG High Capacity AC EOG Double Decker Chair Car coaches (width 3050 mm) fitted with pneumatic suspension at the secondary stage on Fiat bogies as per RCF's drawing no. LD90009. The BG High Capacity AC EOG Double Decker coaches are fitted with Fiat bogies with 16.25 t axle load and provided with disc brakes and CBCs. The speed potential of these coaches is 160 km/h on track maintained to C&M-I Vol.-I standard. The BG High Capacity AC EOG Double Decker Chair Car coaches (width 3050 mm) is similar to that of existing BG High Capacity AC EOG Double Decker Chair Car coaches (width 3135 mm) except for reduction in coach width by 85 mm only.
  - 1.1 Detailed oscillation trials & long confirmatory run of BG High Capacity AC EOG Double Decker Chair Car coach (width 3135 mm) fitted with pneumatic suspension at the secondary stage on Fiat bogies have been carried out upto a maximum test speed of 180 km/h and results are contained in RDSO's Report no. RDSO/2010/TG/MT-1061/F Rev-0, Amendment-Nil dated 10.09.2010. On the basis of satisfactory results of oscillation trials, this BG High Capacity AC EOG Double Decker Chair Car coach (width 3135 mm) has been cleared for operation up to a maximum speed of 160 km/h on track maintained to C&M-I, Vol.-I standard vide this office letter of even no. dated 14.10.2010. The oscillation trials of BG High Capacity AC EOG Double Decker Chair Car (width 3135 mm) have also been done upto a maximum test speed of 130 kmph on 2 degree curve of BZL-DKAE section of Eastern Railway. The results are contained in RDSO Report No. RDSO/2011/TG/MT-1095/F, Rev-0, Amendment-Nil dated 23.03.2011. The riding characteristics have been found satisfactory upto maximum speed of 130 kmph over 2 degree curve. On the basis of satisfactory results, this coach has been cleared for operation upto a maximum speed of 160 kmph on track maintained to C&M-I, Vol. I standard vide this office speed certificate of even no. dated 24.3.2011 followed by amendment no. 1 dated 31.5.2011. On the basis of BG High Capacity AC EOG Double Decker Chair Car coach (width 3135mm), CCRS/Lucknow has accorded sanction for dispensation of oscillation trials for BG High Capacity AC EOG Double Decker Chair Car coach (width 3050mm) vide letter no. क्यू-17016/06/2011-तपवि 213 dated 13/15.09.2011. Based on above, a speed certificate for regular operation of BG High capacity AC EOG Double Decker Chair Car coaches (width 3050 mm) at a maximum speed of 160 kmph on track maintained to C&M-I, Vol.-I standard has been issued vide RDSO's letter no. MC/CB/AC/DD, dated 15.11.2011.

- 1.2 The LHB AC Generator Van has undergone detailed oscillation trials up to a test speed of 145 kmph on Palwal-Mathura section of Northern Railway & North-Central Railway and from 145 kmph upto 180 kmph on Ghaziabad-Tundla section of North-Central Railway on track maintained to C&M-I, Vol.-I standard. The test results of trials as contained in RDSO Report no. MT-274 and MT-282 respectively. The test results of these trials exhibit satisfactory riding and stability behavior, upto a test speed of 180 kmph on track maintained to C&M-I, Vol.-I standard.
- 1.3 RDSO has conducted route clearance trial of 13 nos. of BG AC EOG Double Decker Chair Car Coaches (width 3050 mm) with two BG LHB Generator Van rake on Delhi Sarai Rohilla - Jaipur section of NR and NWR upto a maximum speed of 110 kmph in up & down direction on track maintained to C&M-I, Vol.-I standard as desired by CCRS vide their letter no. ~~क्यू-17016/06/2011-त0वि0~~ 213 dated 13/15.09.2011. The test results of route clearance trial are contained in RDSO report no. MT-1174/F (April, 2012) which has satisfactory. Railway board has already planned to operate the Double Decker Chair Car (width 3050 mm) services vide their letter no.77/M(C)/202/6 dated 14.10.2012 & 24.11.2012.
- 1.4 The WAP4 locomotive, previously known as WAP1 (5,000 hp) locomotive as shown in RDSO's sketch no. SK.DL-3031A Alt.1 has undergone detailed oscillation trials at a maximum speed of 160 kmph and the results are contained in RDSO report no. M-529 (Feb – March 1994). Based on the results, WAP4 class of locomotive has been cleared up to a max. speed of 140 kmph on track maintained to C&M-I Vol.-I standard vide this office letter no. SD.WAP1.11 dated 27.9.1994. Railway Board vide their letter no. 93/Elect. (TRS) 440/3 dated 19.01.1995 has classified this class of locomotive as WAP4 and accordingly, the Zonal Railways have been advised vide this office letter no. SD.WAP1.11 dated 18.4.1996
- 1.5 WAP5 class of locomotives imported from M/s ABB, Switzerland have undergone detailed oscillation trials at a maximum speed of 180 kmph and the results are contained in RDSO's report no. MT-88 (June,1997). Based on the results, WAP5 class of locomotives have been cleared for operation up to a maximum speed of 160 kmph on track maintained to C&M-I Vol.-I standard vide this office letter no. SD.WAP5.11 dated 19.06.1997 followed by amendments dated 23.10.2006 and 20.01.2012.
- 1.6 WAP7 class of locomotives manufactured by Chitranjan Locomotive Works have undergone detailed oscillation trials at a maximum speed of 145 kmph and the results are contained in RDSO report no. MT-290 (March, 2001). Based on the results, WAP7 class of locomotives have been cleared for operation up to a maximum speed of 130 kmph on track maintained to C&M-I Vol.-I standard vide this office letter no. EL/3.1.35/4 dated 1.05.2001.
- 1.7 The WDP4 class of locomotive has undergone detailed oscillation trials up to a maximum test speed of 180 kmph on Ghaziabad-Kanpur and Tuglakabad-Agra Cantt section of North Central Railway, results of which are contained in RDSO report no. MT-326 (Jan.,2002). Based on the results of trial, WDP4 class of locomotive has been cleared for regular operation upto 160 kmph on track maintained to C&M-I, Vol.-I standard vide this office amended speed certificate no. SD.WDP4.11 dated 29.12.2008
- 1.8 The WDP4B class of locomotive has undergone detailed oscillation trials up to a maximum test speed of 145 kmph on Palwal-Mathura-Agra Cantt section of North

Central Railway, results of which are contained in RDSO report no. MT-1056/F, Rev.0 dated 17.08.2010 amendment-nil. Based on the results of trial, WDP4B class of locomotive has been cleared for regular operation upto 130 kmph on track maintained to C&M-I Vol.-I standard vide this office letter no. SD.WDP4B.11 dated 14.10.2010.

2. Based on the above, it is certified that 13 nos. of High Capacity AC EOG Double Decker Chair Car coaches (width 3050 mm) fitted with pneumatic suspension at the secondary stage on Fiat bogies and 2 nos. of BG LHB Generator Van hauled by single WAP4/ WAP5/ WAP7/ WDP4/ WDP4B class of locomotive may be permitted to operate upto a maximum speed of 110 kmph on Delhi Sarai Rohilla - Jaipur section of NR and NWR on track maintained to C&M-I, Vol.-I standard subject to the following conditions:-

## **2.1 Track**

- 2.1.1 The track shall be to a minimum standard of 52 Kg (72 UTS) rail on sleepers to M+7 density and minimum depth of ballast cushion below the sleepers to 250 mm which may consist of at least 100 mm clean cushion and the rest in caked up 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 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 Second Reprint-2004 but should not exceed 110kmph.
- 2.1.4 (i) Joggled fish plating of welds should be done as per provisions of para 6.4 and 6.6 of Chapter VI of USFD Manual and para 6.3 of AT welding manual and policy instructions of Railway Board. Fish plating of rail should also be ensured as per para 251 of IRPWM 2004 regarding maintenance of rail joints  
  
(ii) 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.
- 2.1.5 The track maintenance shall be in accordance with the recommendations contained in RDSO report no. C&M-I, Vol.-I. In this connection, the instructions for the maintenance of track on high-speed routes circulated to the railways under RDSO's DO letter no. CRA/509 dated 07.7.1971 and approved by Railway Board vide their letters no. 71/W6/HS/8 dated 27.8.1971 and 71/W6/HS/1 dated 21.10.1971 should also be followed.
- 2.1.6 (i) Replacement of existing loose heel switches with fixed heel curved switches laid on PSC sleeper layout with CMS crossings with adequate arrangements to

ensure designed geometry of turnouts. Turnouts with TWS shall be preferred on such routes.

- (ii) Preferably Improved SEJ should be provided on such routes.
- (iii) The curves shall have to be suitably realigned and proper transition length to be provided.

## 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. However, the bearings of span 78.8 m (effective) 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 and bearings of non-standard spans including Arches and sub-structures of all bridges shall be examined under the directions of the Chief Bridge Engineer concern 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 Foundations code etc. read with upto-date correction slips.
- 2.2.3 The above clauses have been arrived considering bridges are in physically sound condition. Zonal Railway shall certify the adequacy of bridges for permitting rolling stocks based on physical condition of bridges..
- 2.2.4 Location of bridges on which speed restrictions have been imposed shall be notified by the Railways and incorporated in the working timetable.
- 2.2.5 This clearance is subject to the following parameters of locomotives, BG High Capacity AC EOG Double Decker Chair Car coaches (width 3050 mm) and BG LHB Generator Van:

(A) For Locomotives:

S.N	Description	WAP4	WAP5	WAP7	WDP4	WDP4B
1.	Max. axle load	19 t	19.5 t	20.5 +2% t	19.5 t	20.2 t
2.	Max. tractive effort	30.8 t	26.3 t	32.9 t	27.52 t	39.2 t
3.	Max. braking force at rail level	22.73 t	16.3 t	18.6 t	16.3 t	26.25 t
4.	CG height above rail level	Not exceeding 1830 mm				

(B) For BG High Capacity AC EOG Double Decker Chair Car Coach (width 3050 mm)

Maximum axle load : 16.25 t  
 Maximum Braking Force at Rail Level : 6.62 t  
 (at 3.8 kg/cm<sup>2</sup> BC pressure)

CG height above rail level : Not exceeding 1830 mm

(C) For BG LHB Generator van

Maximum Axle Load : 16.5 t

Maximum Braking Force at Rail Level : 6.62 t

(at 3.8 kg/cm<sup>2</sup> BC pressure)

CG height above rail level : Not exceeding 1830 mm

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

### 2.3 Signaling

2.3.1 Provision of GR, SR, SEM and 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 signaling should be available failing which suitable speed restriction is to be imposed.

### 2.4 Traction Installation

2.4.1 In 25 KV AC OHE shall have swiveling type cantilever assembly having tension in the conductors regulated automatically with a presag. The presag of 50/100 mm is on the contact wire for a maximum span of 72 meters proportionately less for smaller spans

2.4.2 In case of locations where 25 KV AC porcelain section insulators are installed on the mainline and lies within first 1/10<sup>th</sup> and 1/3<sup>rd</sup> of the span, immediately after the OHE structure and the Runners are in trailing direction, the maximum speed shall be 120 kmph. At all other locations, where 25 KV AC porcelain section insulators are installed the speed shall be limited to 80 kmph.

2.4.3 It is recommended that the Cantilevers in the sections should have BFB Steady Arm (RI No. 2390) with 25 mm Drop Bracket Assembly (RI No. 2360) instead of Tubular Steady Arm (RI No. 2520). Bent Steady Arm at overlap locations shall continue.

2.4.4 The current collection shall be made through one number pantograph fit for high speed operation.

2.4.5 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, Electric Traction ' Schedule of Dimensions of 1676 mm Gauge (BG) revised 2004, with latest Addendum & Corrigendum Slips is not violated and strictly followed to ensure its safe running.

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

## **2.5 Rolling Stock**

- 2.5.1 Before starting the operation, CME/CEE of the concerned Railways shall certify the track worthiness and safety of the rolling stocks. He will also ensure proper maintenance of the stocks.
- 2.5.2 The Wheel Slide Protection (WSP) device of all the coaches in the rake shall be functional at the starting station. If the WSP of any coach becomes defective enroute, the brake system of that particular coach shall be isolated.

## **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, signaling and interlocking etc. shall be observed.
- 2.6.2 BG High Capacity AC EOG Double Decker Coaches (width 3050 mm) infringes clauses 9, 10 19(b), 20(b), 29 & 30 of Chapter-IV (A) and diagram No.1D of IR BG Schedule of Dimensions, Revised 2004. These infringements of BG High Capacity AC EOG Double Decker coaches (width 3050 mm) have been condoned by Railway Board vide their letter No. 2011/CEDO/SD/RS/03 dated 27/9/2011.
- 2.6.3 The minimum horizontal distance from centre of track to face of passengers or goods platform coping or face of platform wall shall be maintained as per IRSOD (BG) revised 2004.
- 2.6.4 LHB Generator Van with 23540 mm length over body and 12340 mm max. distance apart between any two adjacent axle infringes clause 13 (b), 16, 17,19(b),20(b), 21 (b), 22 and 32 (b) of Chapter IV (A) of BG Schedule of Dimensions, 1973 Reprint. These infringements of LHB AC Coaches were condoned by Railway Board vide their letter no. 97/CEDO/SR/3 dated 07.02.1997.
- 2.6.5 The design of WAP4 (previously WAP1 5000 hp) locomotive infringes clauses 9 (b), 12 and 13 of Chapter IV (C) of the BG Metric Schedule of Dimensions, 1973 Reprint. Railway Board have condoned these infringements vide their letter No. 96/CEDO/SR/10 dated 10.5.1996.
- 2.6.6 The pantograph of WAP5 locomotive in locked down condition and the surge arrestors infringe the Maximum Moving Dimensions of 1929 over non-electrified territory. After removing the pantograph pan assembly and two surge arrestors, the profile will infringe the Maximum Moving Dimensions of 1929 but will be within 'X' class loco profile. For movement of the loco in non-electrified territory, pantograph pan assembly and two surge arrestors shall be removed and the movement of the loco shall be cleared by the Railway concerned as per the extant rules applicable. In non-electrified sections where Maximum Moving Dimensions of existing 'X' class locos are not permissible, the movement shall be in accordance with the instructions issued by Railway Board and other additional instructions issued by the Zonal Railways for the movement of ODCs. Railway Board have condoned these infringements vide their letter No.95/CEDO/SR/18 dated 14.7.1995.
- 2.6.7 The pantograph of the WAP7 locomotives in locked down condition and the surge arresters infringe the maximum moving dimensions of 1929 over non-electrified sections. After removing pantograph pan assembly and two surge arresters, the

profile will infringe the maximum moving dimensions of 1929 but will be within 'X' class loco profile. For movement of the loco in non-electrified territory, pantograph pan assembly and two surge arresters shall be removed and the movement of the loco shall be cleared by the railway concerned as per the extant rules applicable. In non electrified sections where maximum moving dimensions of existing 'X' class locos are not permissible, the movement shall be in accordance with the instructions issued by the Railway Board and other additional instructions issued by Zonal railways for the movement of ODCs. Railway Board have condoned the infringements of WAP7 locomotive vide their letter no. 2000/CEDO/SR/2 dt. 17.02.2000.

2.6.8 The design of WDP4 locomotive infringes clauses 11 (ii), 12, 13 and 17 of Chapter IV (C) of the BG Metric Schedule of Dimensions, 1973 Reprint. Railway Board have condoned these infringements vide their letter No. 2001/CEDO/SR/18 dated 23.8.2001.

2.7.8 The profile of WDP4B class of locomotive does not infringe any clause of Chapter -IV-C of BG Schedule of Dimensions, Revised-2004.

2.7.9 In order to run these coaches, it is essential to provide certain clearances between kinematic profile and fixed structures. In view of this, Zonal Railways have been advised to undertake identification of existing infringements to the requirements mentioned in RDSO's letter no. MC/GR dated 13.08.2009 and MC/CB/AC/DD dated 02.12.2009 and 22.02.2010 (copy enclosed ) to bring at par with Garib Rath coach and ensure their removal prior to operation / trial of AC EOG double decker chair car coaches. However, actual requirement of removal of infringements is shown in drg. no. CG-11032 (copy enclosed) and following clearances shall be ensured :-

- i) Minimum clearance of 150 mm to 225 mm beyond kinematic profile for operation of these coaches up to 75 kmph
- ii) Minimum clearance above 225 mm and beyond kinematic profile for operation of these coaches at speeds beyond 75 kmph

Zonal Railway must ensure removal of the existing infringements, due to the design of Double Decker Coaches before operation/ trial on routes.

- DA: 1. Rly. Bd.'s letter no. 2011/CEDO/SD/RS/03 dated 27.09.2011.  
2. RCF Drawing No.- LD90009  
3. CCRS letter no. क्यू-17016/06/2011-त०वि० 213 dated 13/15.09.2011  
4. CT/DHS/3/Coaches dated 01.09.2011

  
(राजीव विश्नोई)

वरिष्ठ कार्यकारी निदेशक मानक/चालन शक्ति

प्रतिलिपि:

1. सचिव (यांत्रिक/इलेक्ट्रिकल/इंजीनियरिंग-जी), रेलवे बोर्ड, रेल भवन, नई दिल्ली-110 001.
2. मुख्य रेल संरक्षा आयुक्त, मण्डल रेल प्रबन्धक कार्यालय, पूर्वोत्तर रेलवे परिसर, अशोक मार्ग लखनऊ-226 001

3. महाप्रबन्धक (यांत्रिक / इलेक्ट्रिकल / ओपरेटिंग / एस एण्ड टी)

i) उत्तर रेलवे, बड़ौदा हाउस, नई दिल्ली – 110 001.


ii) उत्तर पश्चिम रेलवे, जयपुर – 302 006.

DA: 1. Rly. Bd.'s letter no. 2011/CEDO/SD/RS/03 dated 27.09.2011.

2. RCF Drawing No.- LD90009

3. CCRS letter no. क्यू-17016/06/2011-तदवि 213 dated 13/15.09.2011

4. CT/DHS/3/Coaches dated 01.09.2011

  
(राजीव विश्‍नोई)

वरिष्ठ कार्यकारी निदेशक मानक / चालन शक्ति





भारत सरकार Government Of India  
रेल मंत्रालय Ministry Of Railways  
रेलवे बोर्ड Railway Board

No. 2011/CEDO/SD/RS/03

New Delhi, Dated 27<sup>th</sup> September, 2011

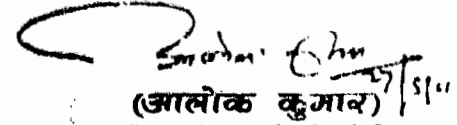
The Director General,  
Research Designs & Standards Organisation,  
Manak Nagar, Lucknow.

**Sub :** Condonation of infringement to IRSOD for EOG Air Conditioned Double Decker coaches (width 3050mm).

**Ref :** Your office letter no. CT/DHS/3/Coaches, dated 01.09.2011.

In reference to above, sanction of Ministry of Railways, Railway Board is hereby communicated for condonation of infringement to IRSOD for EOG Air Conditioned Double Decker coaches (width 3050mm).

The design of above EOG Air Conditioned Double Decker coaches (width 3050mm), infringes Clauses no. 9, 10, 19(b), 20(b), 29 & 30 of Chapter-IV(A) of Indian Railways Schedule of Dimensions (B.G.), Revised, 2004 as per Annexure-I, drawings & other details accompanying with your above referred letter.

  
(आलोक कुमार)

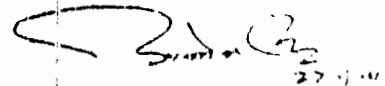
कार्यकारी विदेशक/सिविल इंजीनियरिंग/सा.रेलवे बोर्ड

No. 2011/CEDO/SD/RS/03

New Delhi, Dated 27<sup>th</sup> September, 2011

**Copy forwarded for information to :**

1. The Chief Commissioner of Railway Safety, Compound of DRM/NER, Ashok Marg, Lucknow w.r.t. his endorsement no. र.प. 17012/04/2011 - र.पि., dated 07.09.2011.
2. Executive Director/Track-I, RDSO, Lucknow.

  
(आलोक कुमार)

कृते सचिव, रेलवे बोर्ड

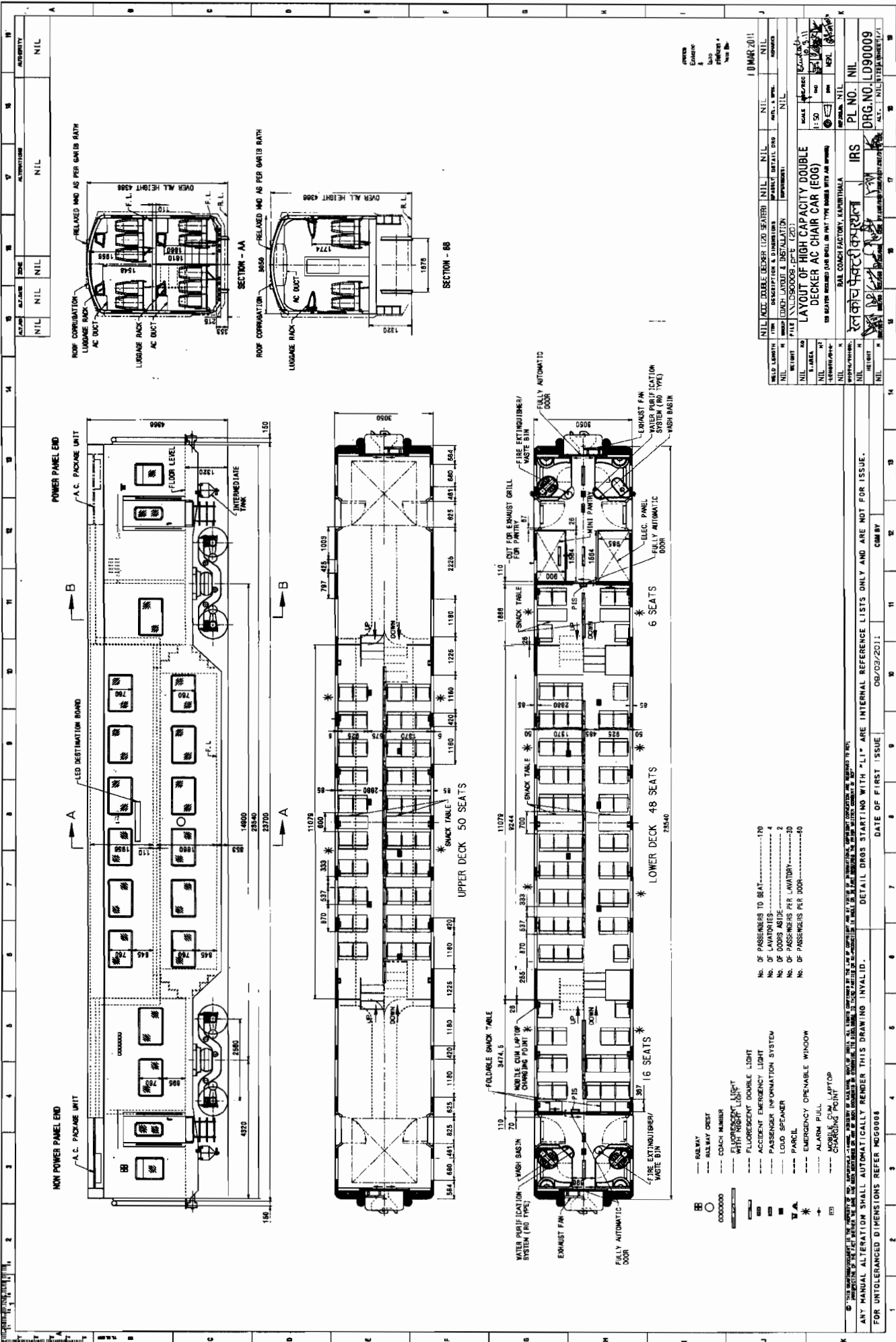
**Copy to :**

1. General Managers, All Indian Railways .
2. Commissioners of Railway Safety, All Circles.
3. EDME/Coaching, Railway Board, Rail Bhawan, New Delhi.

ADG/T-1

S. Prakash  
29.09.11

24/9.11



COVER  
 GREEN  
 BLUE  
 RED  
 YELLOW  
 PINK

DATE	10 MAR 2011
NO.	1
DESCRIPTION	LAYOUT OF HIGH CAPACITY DOUBLE DECKER AC CHAIR CAR (EOG)
SCALE	1:50
PROJECT	IRIS
CLIENT	RAIL COACH FACTORY, KAPURTHALA
PL NO.	NIL
DRG. NO.	LD90009

SYMBOL	DESCRIPTION
BB	RELAY
○	RAILWAY CREST
○○○○○○	COACH NUMBER
---	FLUORESCENT LIGHT WITH NIGHT LIGHT
---	FLUORESCENT DOUBLE LIGHT
---	ACCIDENT EMERGENCY LIGHT
---	PASSENGER INFORMATION SYSTEM
---	LOUD SPEAKER
---	PARCEL
---	EMERGENCY OPENABLE WINDOW
---	ALARM PULL
---	MOBILE CFM LAPTOP CHARGING POINT

NO. OF PASSENGERS TO SEAT.....120  
 NO. OF LAVATORIES.....4  
 NO. OF DOORS ASIDE.....2  
 NO. OF PASSENGERS PER LAVATORY.....30  
 NO. OF PASSENGERS PER DOOR.....40

DATE OF FIRST ISSUE: 08/03/2011

DATE OF ISSUE: 08/03/2011

FOR UNTOLERANCED DIMENSIONS REFER MCG0008

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

DETAIL DROPS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.

सूचक : चीफकांग  
Telegram : Chiefcom  
e-mail : chiefcom@rodffmail.com



फोन/PH : 0522-2233097 (P.S.)  
0522-2233098 (P.S.)  
N.Riv. 31-140, 31-156  
N.Riv. 23-290  
टेली फैक्स/Tele Fax-0522-223309  
0522-223309

भारत सरकार  
नागर विमानन मंत्रालय  
रेल संरक्षा आयोग

GOVERNMENT OF INDIA

MINISTRY OF CIVIL AVIATION  
(COMMISSION OF RAILWAY SAFETY)

अशोक मार्ग, लखनऊ- 226 007  
Ashok Marg, Lucknow - 226 007

संख्या -क्यू- 17016/06/2011-संवि/8/3

दिनांक: 13.09.2011

सोपा में,

महाविदेशिक स्टैण्डर्ड्स/ कोरिअ,  
अनुसंधान अभिकल्प एवम् मानक संगणन,  
मानक नगर,  
लखनऊ।

विषय : E. D. Standards / Carriage

विषय: Dispensation for conducting detailed oscillation trials for operation of BG AC EOG Double Decker Chair Car Coach (width 3050 mm) to RCF Drawing no.-LD 90009 approved by Railway Board's letter no. 77/M(C)/202/6 Dated:23.03.11.

संदर्भ: अनुसंधान अभिकल्प एवम् मानक संगणन का पत्र  
संख्या- MC/CB/AC/DD दिनांक-02.09.11

The concurrence of Chief Commissioner of Railway Safety is hereby conveyed for dispensation for conducting detailed oscillation trials for operation of BG AC EOG Double Decker Chair Car Coach (width 3050 mm) with the following remark:-

" Clearance studies for each route, where it will be proposed to be introduced, will be necessary."

यह पत्र मुख्य रेल संरक्षा आयोग के अनुमोदनोपरांत जारी किया जा रहा है।

*Shri Subhadra*  
*Kuma p.l.c.*  
*2/19*  
*13/09/11*

*15/9/11*

*उप रेल संरक्षा आयोग*

870 05

Track Design Directorate

No. CT/DHS/3/Coaches

Dated: 01.09.11

Sub: i) Condonation of infringements to maximum moving dimensions of EOG air conditioned double decker coaches (width 3050 mm).  
ii) Condonation of infringements to maximum moving dimensions of EOG air conditioned double decker coaches (Mark-II) coaches.  
Ref: Carriage Directorate's notes no. MC/CB/AC/DD dated 18/8/11, 26/8/11 & 30/8/11.

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- 1.0 With reference to above, condonation proposals have been forwarded to CCRS for sanction of Railway Board keeping in view the clarification given by carriage directorate vide notes referred above.
- 2.0 A copy of condonation proposals duly signed is enclosed herewith.

DA: As above

~~Bose~~  
Dixit  
dpe  
21/9/2011

~~SONVIR SINGH~~  
ED/Track-1  
01-09-11

790053

ED/Carriage

P. Compare with our  
present draft with  
A.P.  
11/9/11

Singh  
14/9/11

फैक्स/Fax : 91-0522-2458500  
तार : 'रेलमानक' लखनऊ  
Telegram : 'RAILMANAK', Lucknow  
टेलीफोन/Tele : 2451200 (PBX)  
2450567 (DID)



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

No. CT/DHS/3/Coaches

Dated: 01.09.2011

Chief Commissioner Railway Safety,  
Ministry of Tourism & Civil Aviation,  
North Eastern Railway Office Compound,  
Ashok Marg, Lucknow - 226001

Sub: Condonation of infringements to maximum dimensions of EOG Air Conditioned double decker coaches (width3050mm).

Hon'ble MR announced in Railway Budget 2009 to introduce double decker trains in Indian Railways. RDSO has developed a design of EOG AC double decker coaches (width3050mm) fitted with pneumatic suspension at secondary stage on FIAT bogies. The coach is fitted with Centre Buffer Couplers and FIAT bogies with 16.25 t axle load capacity. The coaches have been designed to operate up to a maximum speed of 180 kmph.

2. The design features and layout of high capacity AC EOG double decker chair car (width3050mm) are shown in RCF Drg. No. LD90009 which has been approved by Railway Board vide their letter no. 77/M(C)/202/6 dated 22.03.2011. There are certain infringements in design of Double Decker Coach to BG schedule of dimensions (IRSOD) Revised - 2004 which are unavoidable because of specific needs like upper and lower decks.
3. The infringement of AC EOG double decker coach (width3050mm) with respect to Schedule of Dimensions (IRSOD) Revised - 2004\*are shown in RDSO Drg. no. CG-11031 and tabulated in Annexure-I.
4. In terms of the Chapter V and V-A (Electric Traction) of IRSOD, Revised - 2004, the minimum height of contact wire required for EOG AC double decker coaches (width3050mm) is as under:

(i) For 25KVA AC traction:

Minimum contact wire requirement will be 4656mm. The breakup of various clearances required shall be as under.

- a. Coach height .....4366mm
- b. OHE erection allowance .....20mm
- c. Track raising allowance .....20mm
- d. Vertical electrical clearances between roof of coach and contact wire .....250mm

Minimum contact wire height required ...4656mm say 4.66 m

Thus proposed EOG Air Conditioned double decker coach (width3050mm) can safely run under 25 Kv AC traction where minimum contact wire is not less than 4.66 m.

770059

ii) **For DC Traction**

- a. Maximum height of EOG AC Double Decker Coach from Rail Level .....4366mm
- b. Minimum vertical clearance between live conductor wire and any structure. As per note 4 of Chapter V of IRSOD 2004 Revised ...130mm
- c. Temporary raising of tracks during Maintenance .....20mm (considered)
- d. OHE maintenance allowance .....20mm

Minimum contact wire height required .....4536mm

In DC area proposed EOG AC Double Decker coach (width3050mm) can run where contact wire height is more than or equal to 4536mm. In case contact wire height is less than 4536mm, structure and OHE will require modification, after identification, for raising of height of contact wire.

5. Carriage Dte. of RDSO has carried out studies in order to define kinematic profile of these coaches. These studies took into account various factors such as maximum deflection of primary and secondary springs, bolster swing, wear on side bearers, wear in wheel flange, cross level and alignment defect in track etc. The calculations in this regard and Kinematic profile drawn by Carriage Directorate enclosed in Annexure-II and, Drg. No. CG-11032 respectively.

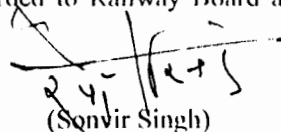
6. In order to run these coaches, it is essential to provide certain clearances between kinematic profile and fixed structures. Following clearances are proposed to be ensured:

- (i) Minimum clearance of 150mm to 225mm beyond kinematic profile for operation of these coaches at speeds upto 75Kmph.
- (iii) Minimum clearance above 225mm beyond kinematic profile for operation of these coaches at speeds beyond 75Kmph.

7. Zonal Railways have been advised to undertake identification of existing infringements to the requirements mentioned in Para 6 above vide RDSO's letter no MC/GR dtd. 13.08.2009 & MC/CB/AC/DD dated 02.12.09, 22.02.2010 (copy enclosed) to bring at par of Garib rath coaches and ensure their removal prior to operation of AC EOG double decker coaches (width3050mm). The actual requirement of removal of infringements for above-mentioned clearances is shown in Drg. No.CG-11032(copy enclosed)

A letter addressed to Railway Board along with necessary drawings and annexures are enclosed herewith in duplicate.

It is requested that the same may please be forwarded to Railway Board along with your recommendations.

  
(Sonvir Singh)

Executive Director/Track 1  
For Director General (Track)

1. Annexure-I.
2. Railway Board's letter no.77/M(C)/202/6 dated 22.03.2011.
- 3 RDSO Drg.No.CG-11031.
4. RDSO Drg No.CG-11032
5. RCF Drg.No.LD90009

Annexure-I

Statement Showing the Infringements of AC EOG Double Decker Coaches (width 3050mm) to BG Schedule of Dimensions 2004 as per RDSO Drg. No. CG-11031 and RCF Drg. No. LD90009

SLNo.	Clause No.	Description	Dimensions as per SOD (mm)	Proposed Dimension (mm)	Magnitude of Infringement (mm)	Remarks
1.	29 of Chapter IV (A)	Maximum height above rail level for a width of 760 mm on either side of centre of unloaded vehicles	4265	4366	101	Coach height is essential for making available the minimum headroom required in both the lower and upper deck. Further Zonal Railways shall ensure adequate clearance between kinematic profile and fixed structure as per drawing no. CG-11032 before operation of AC EOG Double Decker Coaches (width 3050mm).
2.	9 of Chapter IV (A)	Maximum height above rail level for floor of any unloaded vehicle/ Minimum height above rail level for floor of fully loaded passengers vehicle.	1345/1200	353	992/847	This height is essential for the provision of lower deck to accommodate more passengers and this height does not infringe the any part of track. Further floor height at door location is 1320mm which is more than the height of passenger platform

19 (b) of Chapter IV (A)	Maximum length of body or roof for : (b) Bogie vehicles	21340	23340	2200	Maximum length over body has been kept as 23540mm to permit higher passenger carrying capacity. This length has been condoned by Railway Board vide their letter no.97/CEDO/SR.3 dated 7. 2.97 in case of LHB coach.
20 (b)	Maximum length over side buffers : (b) Bogie vehicles	22300	24000	1700	As consequence of item 4 above.
20	Maximum height above rail level at side of unloaded vehicle	3735	3953	218	Coach height is essential for making available the minimum headroom required in both the lower and upper deck. Further Zonal Railways shall ensure adequate clearance between kinematic profile and fixed structure as per drawing no. CG-11032 before operation of AC EOG Double Decker Coaches (width 3050mm).

790064

*[Handwritten signature]*

*[Handwritten signature]*  
18/5/11



**Infringement Concerning Top Profile of Coach (Ref. RDSO Drg. no. CG-11031)**

Sl.No.	Horizontal Distance from Centre of Track (mm)	Magnitude of Vertical Infringement over Diagram no. 1D of IRSOD - 2004 (mm)	Remarks
1.	239	88.8	Coach height is essential for making available the minimum headroom required in both the lower and upper deck. Further Zonal Railways shall ensure adequate clearance between kinematic profile and fixed structure as per drawing no. CG-11032 before operation of AC EOG Double Decker Coaches (width 3050mm).
2.	403	69.9	
3.	551	65.8	
4.	760	19	
5.	1022	272.4	
6.	1063.55	243.2	
7.	1525	185.5	

Note-

1. Certified that there are no other infringements to the BG Metric Schedule of Dimensions Revised 2004 except those given above.

*(Signature)*

Executive Director/ Track-I

*(Signature)*

Executive Director/ Carriage (Standard)

190061

**Calculation of End Throw and Middle Throw of AC EOG Double Decker Coach  
(width 3050mm)**

For AC EOG DD coach, lateral displacements due to:

S.No.	Item	C&M I Vol.1 Std. maintained track	Other than C&M I Vol.1 Std. maintained track
1.	Bolster Swing	25 mm	25 mm
2.	Primary suspension	07 mm	07 mm
3.	Flange wear	07 mm	12 mm
4.	Flange clearance	09 mm	09 mm
5.	Gauge tolerance	06 mm	10 mm
6.	Alignment error due to laying	12 mm	12 mm
7.	Alignment tolerance for maintenance	06 mm	06 mm
8.	Other factors*	30 mm	21mm <sup>o</sup>
	<b>Total lateral shift</b>	<b>102mm</b>	<b>102mm</b>

\* Deflection of Bump stops in extreme lateral loading condition, failure of suspension system etc.

<sup>o</sup> Lower value has been taken because the speed is limited to 105KMPH on Other than C&M I Vol.1 Std. maintained track.

Nosing of coach = Total lateral shift x Length of coach / Bogie centres - Lateral shift

$$\begin{aligned} \text{Nosing of ref. ICF coach} &= 102 \times 21337 / 14783 - 102 \\ &= 147.22 - 102 \\ &= 45.22 = \text{say } 46 \text{ mm} \end{aligned}$$

$$\begin{aligned} \text{Nosing of AC EOG DD coach} &= 102 \times 23540 / 14900 - 102 \\ &= 161.146 - 102 \\ &= 59.146 = \text{say } 60 \text{ mm} \end{aligned}$$

Difference between Nosing of AC EOG DD coach and a ref. ICF coach  
= 60 - 46 = 14mm

990066

**Middle Throw**

$$MT = (a^2 \times 1000) / 8R$$

- where,
- MT = Middle throw
  - a = Bogie centre distance
  - R = Radius of curve (m)

10° of curvature, Radius of curve R=175m. (Page 35 of SOD)

Middle throw of a ref. ICF coach within SOD

$$\begin{aligned} &= 14783 \text{ mm} = 14.783 \text{ m (clause 17 of Chapter IV (A))} \\ &= 175 \text{ m} \end{aligned}$$

$$MT = (14.783 \times 14.783 \times 1000) / 8 \times 175 = 156.098 \text{ mm}$$

3) Middle throw of an AC EOG DD coach

$$a = 14900 \text{ mm} = 14.9 \text{ m}$$

$$R = 175 \text{ m}$$

$$MT = (14.9 \times 14.9 \times 1000) / 8 \times 175 = 158.578 \text{ mm}$$

Middle throw difference between proposed AC EOG DD coach (width 3050mm) and ref. ICF coach is  $158.578 - 156.098 = 2.48 \text{ mm}$  = say 2.5mm.

End Throw

$$ET = (L^2 \times 1000) / 8R - MT$$

Where,

$$ET = \text{End throw}$$

$$L = \text{Length of coach (m)}$$

$$R = \text{Radius of curve (m)}$$

$$MT = \text{Middle throw (mm)}$$

At 10° of curvature, Radius of curve R=175m. (Page 35 of SOD)

A) End throw of a ref. ICF coach within SOD

$$L = 21337 \text{ mm} = 21.337 \text{ m (clause 19 (b) of Chapter IV (A))}$$

$$R = 175 \text{ m}$$

$$MT = 156.098 \text{ mm}$$

$$ET = (21.337 \times 21.337 \times 1000) / 8 \times 175 - 156.098$$

$$= 325.191 - 156.098$$

$$= 169.093 \text{ mm}$$

B) End throw of an AC EOG DD coach

$$L = 23540 \text{ mm} = 23.540 \text{ m}$$

$$R = 175 \text{ m}$$

$$MT = 158.578 \text{ mm}$$

$$ET = (23.54 \times 23.54 \times 1000) / 8 \times 175 - 158.578$$

$$= 395.808 - 158.578$$

$$= 237.23 \text{ mm}$$

End throw Difference between AC EOG DD coach and ref. ICF coach is  $237.23 - 169.093 = 68.137 \text{ mm}$ . approx.  
= say 70 mm.

190067

Analysis on straight line

Width of reference ICF coach = 3245mm.

Maximum permissible width of AC EOG DD coach at end with respect to ref. ICF coach  
=  $3245 - 2x$  (Nosing diff. Of AC EOG DD coach & ref. ICF coach)  
=  $3245 - (2 \times 14)$   
= 3217mm

Width of proposed AC EOG DD coach is 3050mm which is less than 3217mm.

Analysis on outside of a curve

Width of reference ICF coach = 3245mm.

Maximum permissible width of AC EOG DD coach at end with respect to ref. ICF coach  
=  $3245 - 2x$  (Nosing diff. between AC EOG DD coach & ICF coach + End throw diff. between AC EOG DD coach & ref. ICF coach)  
=  $3245 - 2x (14 + 70)$   
= 3077mm.

Width of proposed AC EOG DD coach is 3050mm which is less than 3077mm.

Analysis on inside of a curve

Width of reference ICF coach = 3245mm.

Maximum permissible width of AC EOG DD coach at end with respect to ref. ICF coach  
=  $3245 - 2x$  (Middle throw difference between AC EOG DD coach & ref. ICF coach)  
=  $3245 - (2 \times 2.5)$   
= 3240mm.

Width of proposed AC EOG DD coach is 3050mm which is less than 3240mm.

790068

Analysis on inside of a curve below & at platform level

Distance from the centreline to extreme edges of foot stop as per SOD

1570 - 152mm. (Para 2 of appendix, page 33)

1518 mm.

Maximum permissible width from centreline of AC EOG DD coach below platforms level with respect to ref. ICF coach

1518 - Middle throw difference between AC EOG DD coach & ref. ICF coach

1518 - 2.5) mm.

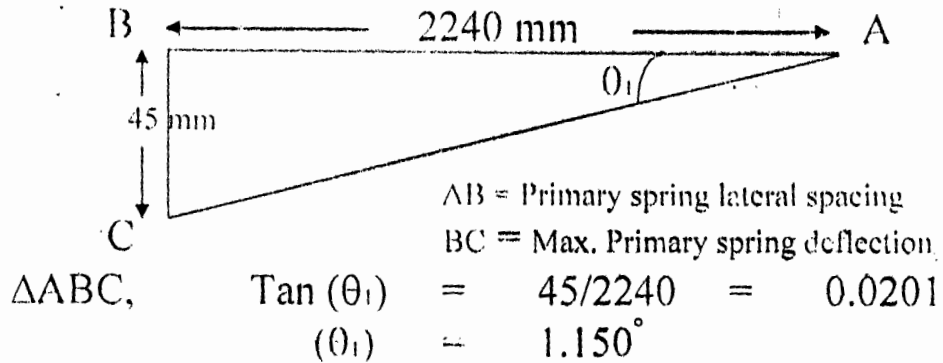
1515.5 mm.

Width of proposed AC EOG DD coach from centreline below platform level is 1525mm

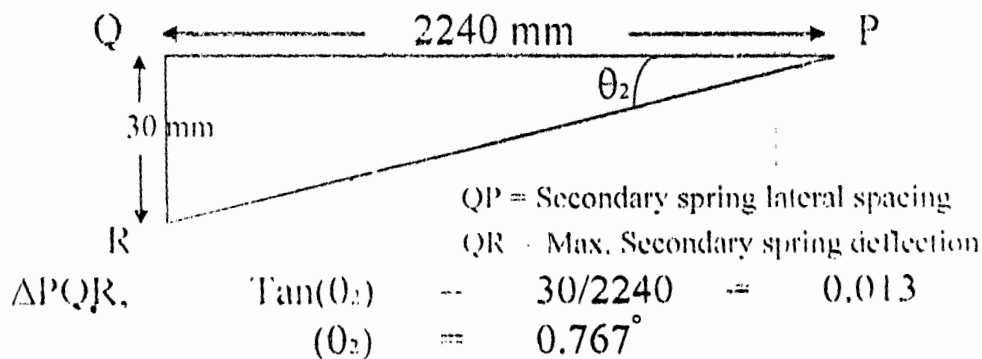
which is 9.5mm more than 1515.5 mm.

Detailed Calculation for Rotation Of Proposed "EOG AC Double Decker Coach  
(width 3050)

i) Due to maximum deflection of primary suspension spring on one side.

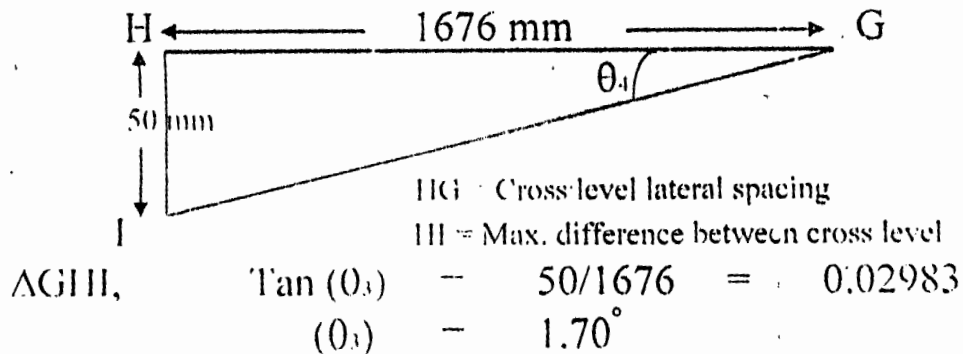


ii) Due to maximum deflection of secondary suspension spring on one side.



790069

iii) Due to maximum difference of cross levels on one side.



TOTAL ROTATION OF CARBODY IN DEGREES =  $\theta_1 + \theta_2 + \theta_3 = 3.617^\circ$

22/4/11

GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS  
(RAILWAY BOARD)

Have various milestones  
& work plan listed  
21/3/11

*BDR*  
*DRC*

New Delhi, dated 22.3.2011

No.77/M(C)/202/6

The General Manager,  
RCF, Kapurthala

The Executive Director/Carr  
RDSO, Lucknow

Sub: Body width & layout for AC double decker coaches.  
Ref : Board's letter of even No. dated 28.12.10

Following out of the review for the body width of AC Double Decker Chair Cars to be adopted in future, it was decided in terms of Board's letter referred to above that the body width shall be restricted to 3050mm (upto at least 1065 mm above rail level), as against a uniform body width of 3135mm in case of the prototype rake manufactured during 2010-11.

In consonance with the above, RDSO & RCF proposed separate layouts for high capacity EOG-AC design EOG AC Double Decker Chair Cars with air springs in the secondary suspension. While the exterior body width in the RCF layout No.LD90009 is 3050mm uniformly for all the decks, this has been kept as 3250mm in upper deck and 3050mm in the lower deck (with end tapered side walls in the middle deck) in the RDSO layout No.SD-11004. These layouts have been deliberated upon in Board's office.

Board's approval is hereby accorded for manufacture of AC Double Decker coaches to RCF layout No.LD90009, with a passenger seating capacity of 120. RCF may accordingly take up the design development and manufacturing of such AC Double Decker coaches in earnest & advise Board of the various milestones/target dates, particularly in light of the announcement in the Budget Speech 2011-12 for running of AC Double Decker Services on routes viz., Jaipur-Delhi and Ahmadabad - Mumbai.

Board has also accorded approval to the design, development and manufacturing of a prototype AC Double Decker coach to the layout No.SD-11004 as proposed by RDSO. RCF may also take up this exercise in parallel for development and manufacture of the prototype, & submit a comprehensive review of the layout/design for final adoption.

ALL-1

*Arvind*  
(Arvind Nautiyal)  
Dir Mech Engg (Coaching)  
Railway Board

For information to: The Chief Mechanical Engineers, NR, NWR & WR.

22 MAR 2011

IS 7 70224  
2810  
1716

No. MC.GR

Carriage Directorate  
13.08.2009

General Managers,  
All Indian Railways

Sub: Introduction of double Decker over Indian Railways – announcement made by Hon'ble MR in the Railway Budget 2009.

Ref: 1. Railway Board's No. 2006/CEDO/SR/8 dated 05.09.2006.  
2. ED/Track /RDSO' letter No. CT/DHS/3/coaches Dated 08.03.2007.

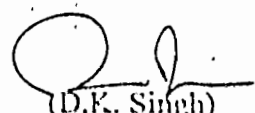
Hon'ble MR has announced that double decker trains are to be introduced over Indian Railway system shortly during this year's Railway Budget. The design of the double decker coaches is presently being developed with the plan of manufacturing these coaches at RCF. It may be recalled that the height of existing BG coaches was increased from 4265 mm to 4381 mm by manufacturing two number of "Garib rath" coaches to the increased height in 2006-07. The double decker coaches now being planned shall utilize the profile that had been developed for the 'Garibrath' coaches with increased height earlier.

Railway Board had conveyed condonation to Indian Railways Schedule of Dimension (IRSOD 2004) vide their letter referred to at '1' above, with instructions to Zonal Railways for ensuring removal of existing infringements due to new design. These instructions were conveyed to Zonal Railways vide ED Track/RDSO's letter referred at '2' above.

Since the double decker coaches are being developed on the same Garib Rath profile, it is requested that necessary action to identify and remove infringements due to the existing fixed structures, if any, as per drawing No. VDG/Carriage/MMD9 (Rev. 1) and drawing No. VDG/Carriage /MMD 9A Rev. (copy enclosed) may be taken on priority as conveyed vide RDSO letter referred at '2' and Boards letter at '1' above.

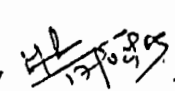
DA:Nil as above

11071

  
(D.K. Singh)

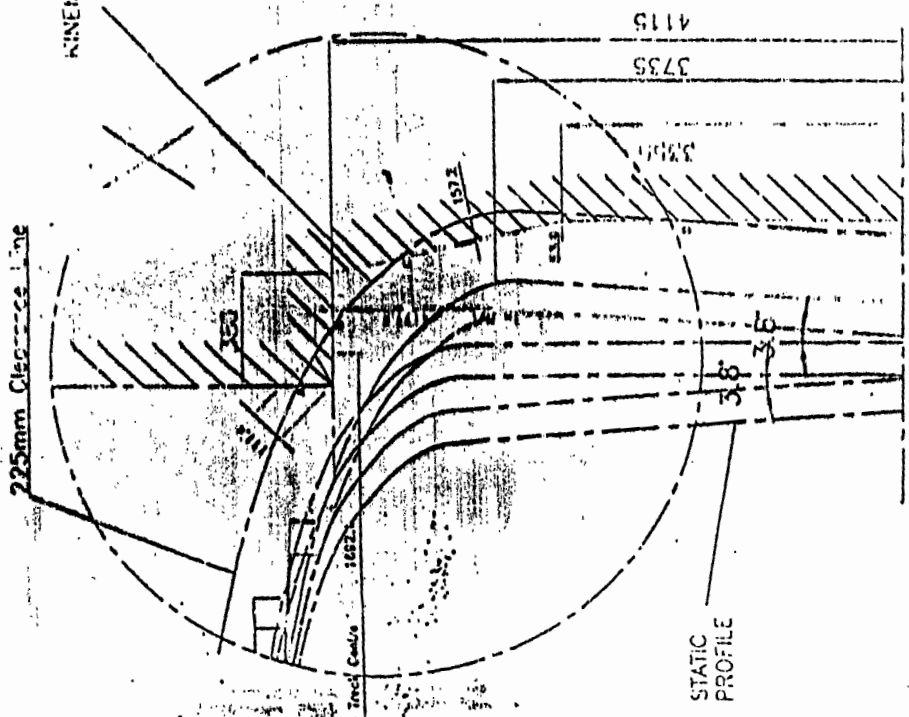
Exec. Director /Carriage

Copy to :-

1. EDME/Coaching, Railway Board, Rail Bhavan, New Delhi
2. GM/RCF & GM/ICF
3. CMEs of all Zonal Railways
4. ED/Track - I/RDSO/Lucknow 
5. Managing Director, Konkan Railway Corporation Ltd., Belapur Bhavan, Navi Mumbai-400614

01/6

Infringement required to be removed for maintaining minimum clearance of 225 mm beyond Kinematic profile.

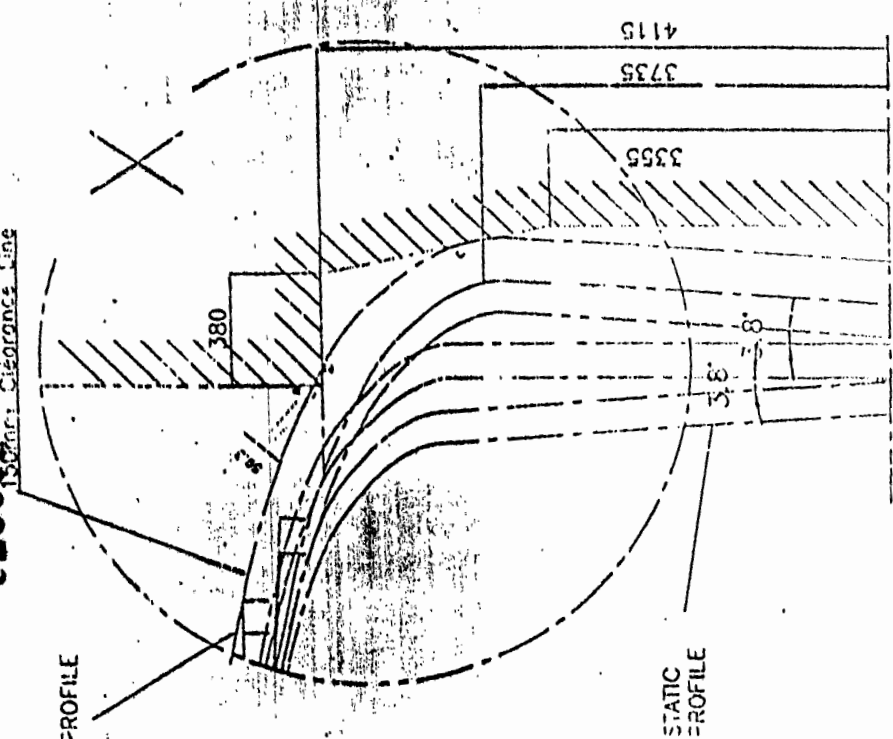


COORDINATES FROM CENTRE OF TRACK (x) AND RAIL LEVEL (y)

- A = 1600 mm, 4226.7 mm
- B = 1798.7 mm, 4115 mm
- C = 2135.1 mm, 2949.9 mm
- D = 2024.7 mm, 3896.5 mm

ENLARGED PORTION OF 'X'

Infringement required to be removed for maintaining minimum clearance of 150 mm beyond Kinematic profile.



COORDINATES FROM CENTRE OF TRACK (x) AND RAIL LEVEL (y)

- A = 1600 mm, 4142.4 mm
- B = 1650.7 mm, 4115 mm
- C = 2074.6 mm, 3660.1 mm

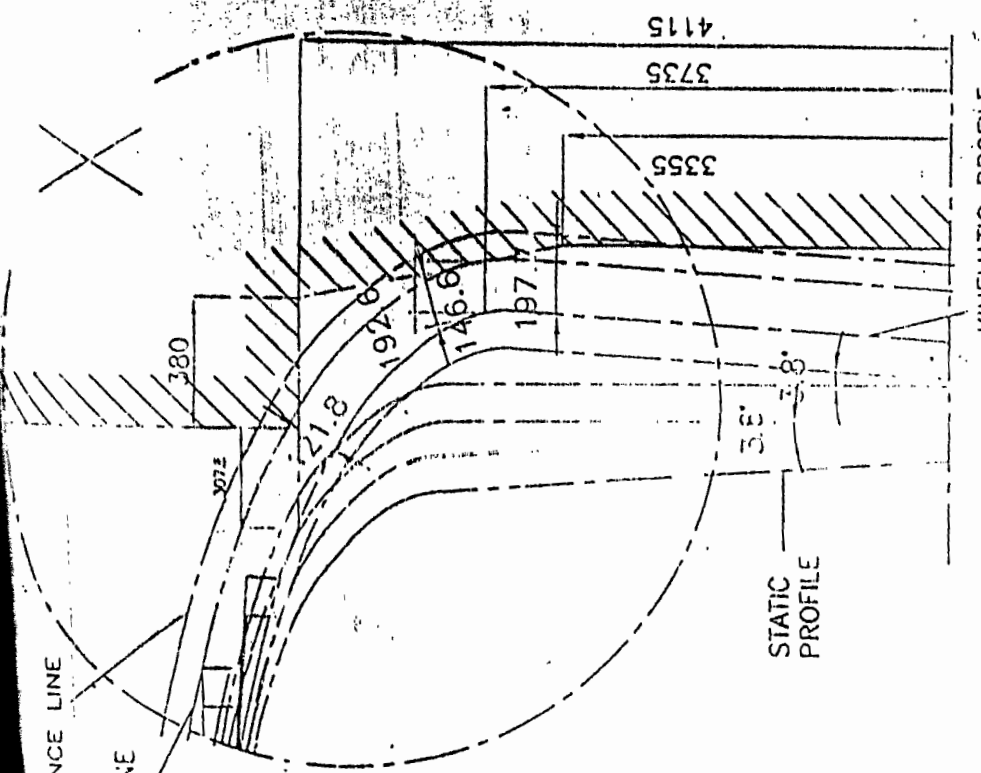
ENLARGED PORTION OF 'X'



225mm CLEARANCE LINE

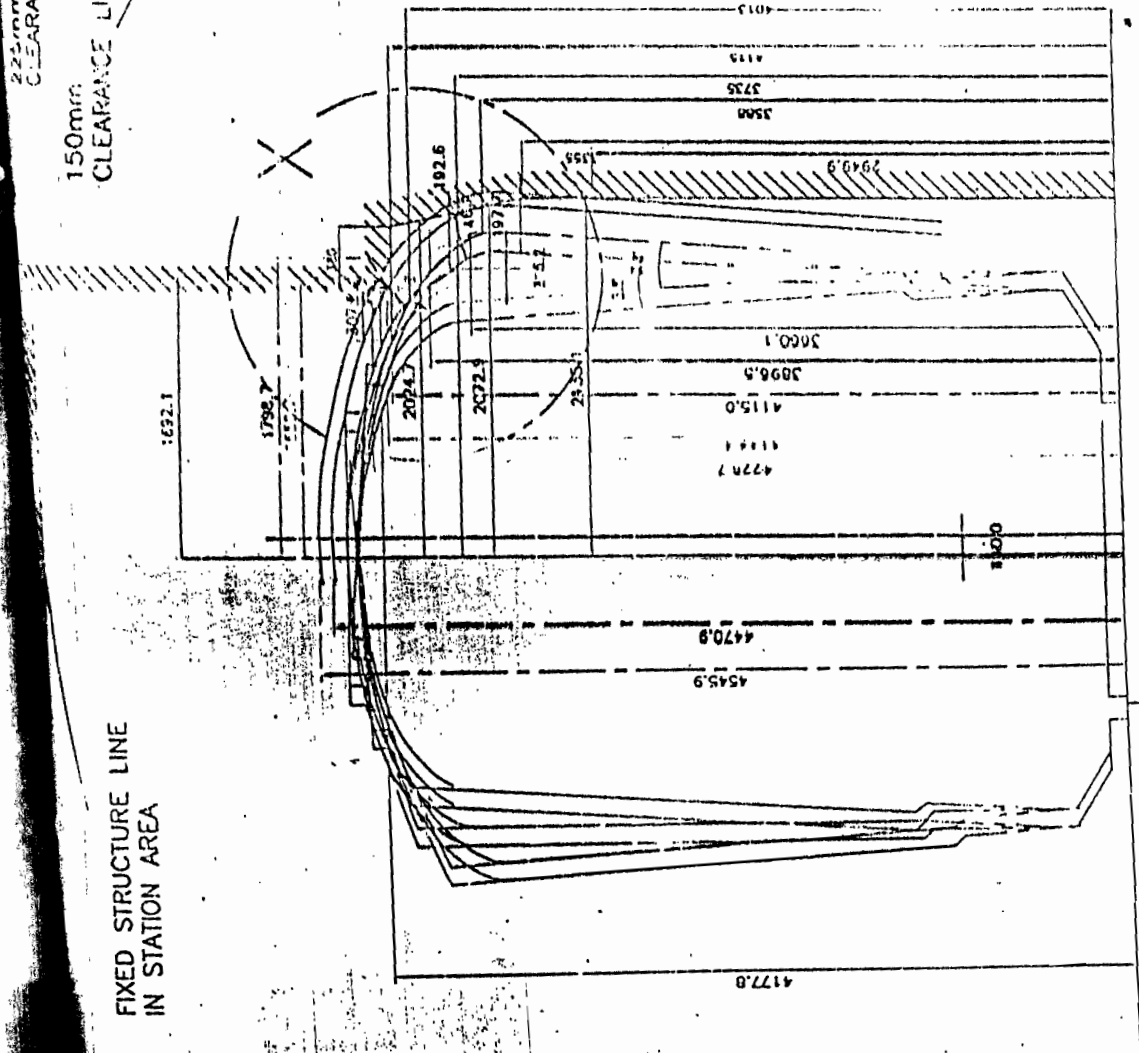
150mm CLEARANCE LINE

FIXED STRUCTURE LINE  
IN STATION AREA



KINEMATIC PROFILE  
ENLARGED PORTION OF 'X'

STATIC PROFILE



DRG. NO. VDG/CARR/MMD9/R53  
DYNAMIC PROFILE

70073

2492 XXX  
2493 XXX

: 91-0522-2458500



सत्यमेव जयते

भारत सरकार - रेल मंत्रालय  
अनुसंधान अभिकल्प और मानक संगठन

संख्यांक - 226 011

Government of India-Ministry of Railways  
Research Designs & Standards Organisation  
Lucknow - 226 011.

AN ISO 9001  
CERTIFIED  
ORGANISATION

No. MC/CB/AG/DD

Dated. 02.12.09

गणनाक्रम

1. मध्य रेलवे, राजपति शिवाजी टर्मिनस, मुंबई - 400 001.
2. पूर्वी रेलवे, चेंबरली प्लेस, कोलकाता - 700 001.
3. उत्तर रेलवे, मझीवा हावरा, नई दिल्ली - 110 001
4. दक्षिण रेलवे, माई, चेन्नई - 600 003
5. उत्तर मध्य रेलवे, प्रेम विद्यालय शिकारवाड़ा - 500 071
6. उत्तर पूर्वी रेलवे, गार्डिन रोड, कोलकाता - 700 043.
7. उत्तर रेलवे, गोरखपुर - 273 012
8. उत्तर सीमांत रेलवे, नालीगोवा, गुवाहाटी - 781 011
9. पश्चिम रेलवे, नर्मदा, मुंबई - 400 020
10. पूर्वी मध्य रेलवे, गार्डीपुर - 844 101.
11. पूर्वी मध्य रेलवे, बीबीए रेलवे कालोनी, कलकत्ता, कलकत्ता, कलकत्ता, कलकत्ता - 700 006
12. उत्तर मध्य रेलवे, भारतीय रेल, इलाहाबाद - 201 001
13. उत्तर पश्चिम रेलवे, जयपुर - 302 006
14. दक्षिण पश्चिम रेलवे, हुयली - 580 023.
15. पश्चिम मध्य रेलवे, जबलपुर - 482 001
16. दक्षिण पूर्वी मध्य रेलवे, आर ई ऑफिस, कानपुर, कानपुर - 495 006
17. बॉम्बे रेलवे कारपोरेशन लि., कारपोरेट ऑफिस, वेलापुर भवन, नवी मुंबई - 400 014
18. इन्टीग्रल कोच फैक्ट्री, चेन्नई - 600 038.
19. रेल कोच फैक्ट्री, हुरीनपुर, कनूरुथला - 144 602.
20. बी.ई.एम.एल., बेंगलूर काम्प्लेक्स, यू थियेसा-दा, पोस्ट, वावरा नं. 7501, बेंगलूर - 56 007
21. रेल पश्चिम कारपोरेशन, चेन्नई, बेंगलूर - 600 084.

Sub: Introduction of double decker trains over IR - Announcement made by Hon'ble MR in the Railway Budget 2009.

Ref: i) Railway Board's letter no. 2006/CEDO/SR/3 dt. 05.09.2006  
ii) ED/Track/RDSO's letter no. CT/DHS/3/Coached dated 08.06.07  
iii) This office letter no. MC/GR dated 13.08.2009.

In compliance to Hon'ble MR's announcement of introducing double decker train while presenting Railway Budget of 2009, prototype coach is likely to be ready by Jan. 2010. Railways were requested vide letter at reference iii) above to remove infringements on existing structures to enable operation of these double decker trains.

It may be mentioned that double decker coaches will have same profile as of Garib Rath coaches of 4381mm height.

Removal of infringements by Railways may be expedited.

*(D.K. Agarwal)*  
For Director General (Carriage)

Copy to:

- i) EDME/Coaching, Railway Board, New Delhi.
- ii) GM/RCF, Kapurthala & GM/RCF, Chennai.
- iii) CMEs of all Zonal Railways.
- iv) ED/Track-I, RDSO, Lucknow.
- v) MD, Konkan Railway Corporation Ltd., Belapur Bhavan, Navi Mumbai - 14

*S/Copy for file  
SV/GR*

SPD/OSI  
1-10  
22/2

2493 XXX  
2493 XXX

01-0522-2450600



सत्यमेव जयते

SN 272  
272  
226 011  
Government of India - Ministry of Railways  
Research Designs & Standards Organisation  
Lucknow - 226 011

ISO 9001  
CERTIFIED  
ORGANISATION

No. MC/CB/AC/DD

Dated: 22.02.2010

गयाप्रबन्धक

1. उत्तर रेलवे, बलीया हाउस, नई दिल्ली - 110 001.
2. उत्तर मध्य रेलवे, छारिंग रोड, इलाहाबाद -- 211 001.
3. रेल कोच फैक्टरी, कपुरथला, कपुरथला -- 144 002.

Sub: Oscillation trials of double decker coach - Announcement made by Hon'ble MR for introducing double decker trains in the Railway Budget 2009.  
Ref: i) Railway Board's letter no. 2006/CEDO/SR/8 dt. 05.09.2006.  
ii) ED/Track/RDSO's letter no. CT/DHS/3/Coached dated 08.06.07.  
iii) This office letters no. MC/GR dated 13.08.2009, 02.12.09 and MC/CB/AC/DD dated 04.01.2010.

In compliance to Hon'ble MR's announcement of introducing double decker train while presenting Railway Budget of 2009, RDSO along with Rail Coach Factory is working on developing double decker coach design. Its prototype coach shall be ready by mid March 2010 for oscillation trials.

The coach has maximum moving dimension similar to that of Garib Rath coach of enhanced height of 4361mm. Railways were earlier requested vide letters at reference iii) above to remove infringements on existing structures to enable operation of these double decker trains. Railways should have taken necessary action in this regard.

Oscillation trials of the coach have been planned in TKD-AGC section on C&M-I Vol.I standard track and MB-BE section on other than C&M-I Vol.I standard track. Also, there will be movement of this coach from Rail Coach Factory, Kapurthala to New Delhi, New Delhi to Moradabad and Moradabad to Tuglakabad.

It is requested to ensure removal of infringements, if any existing, as per schedule suggested below:-

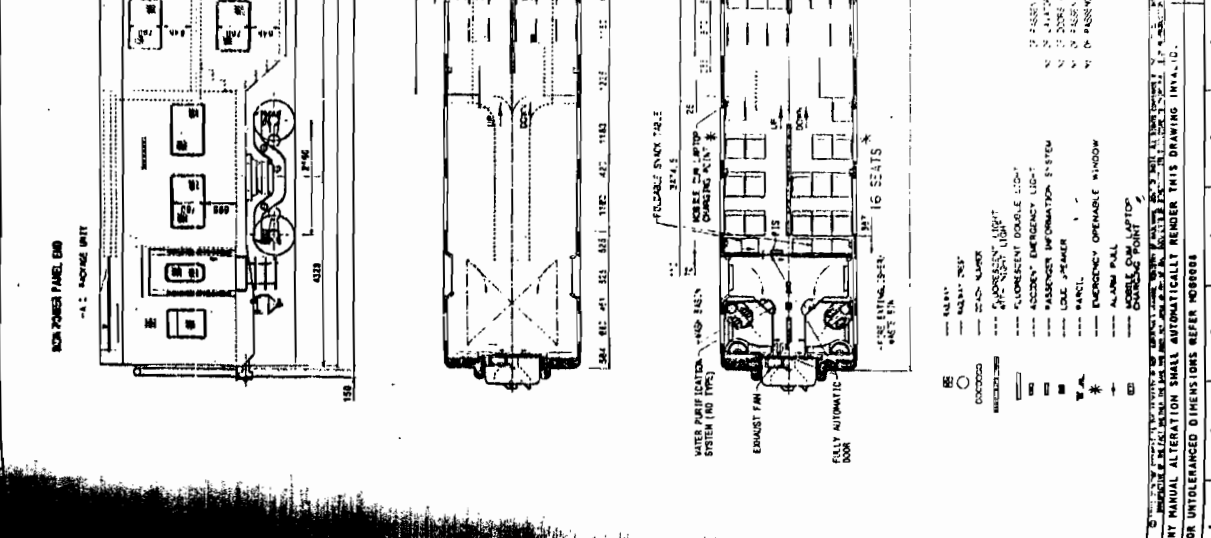
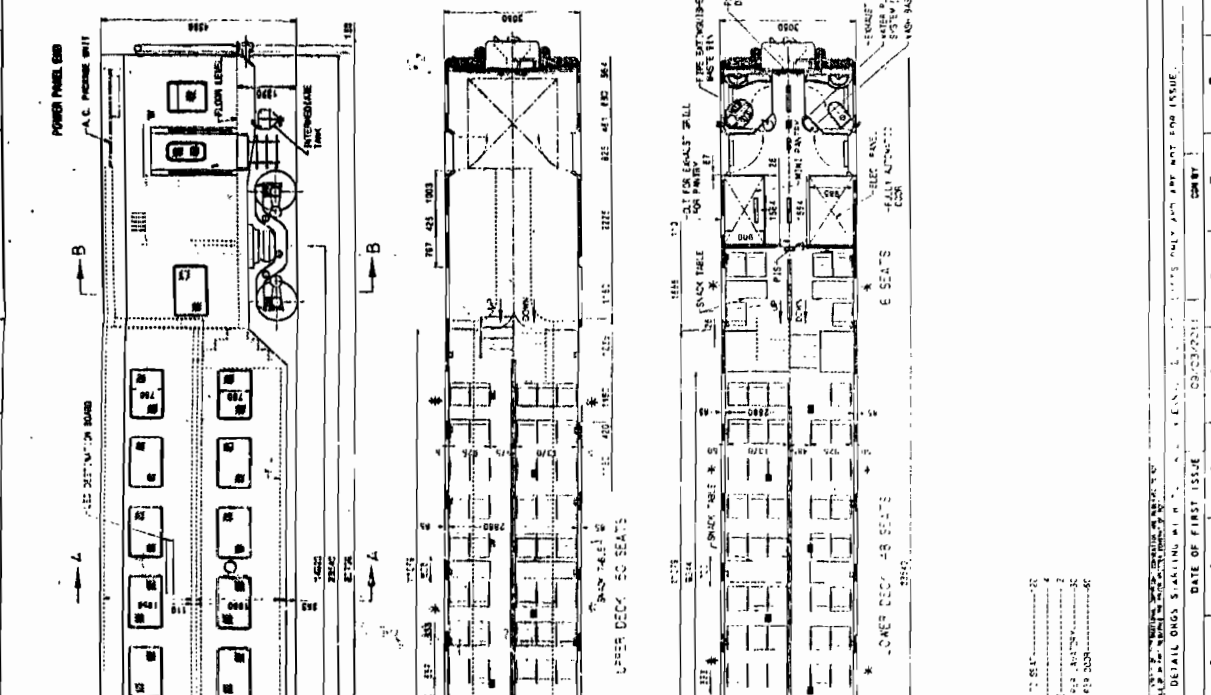
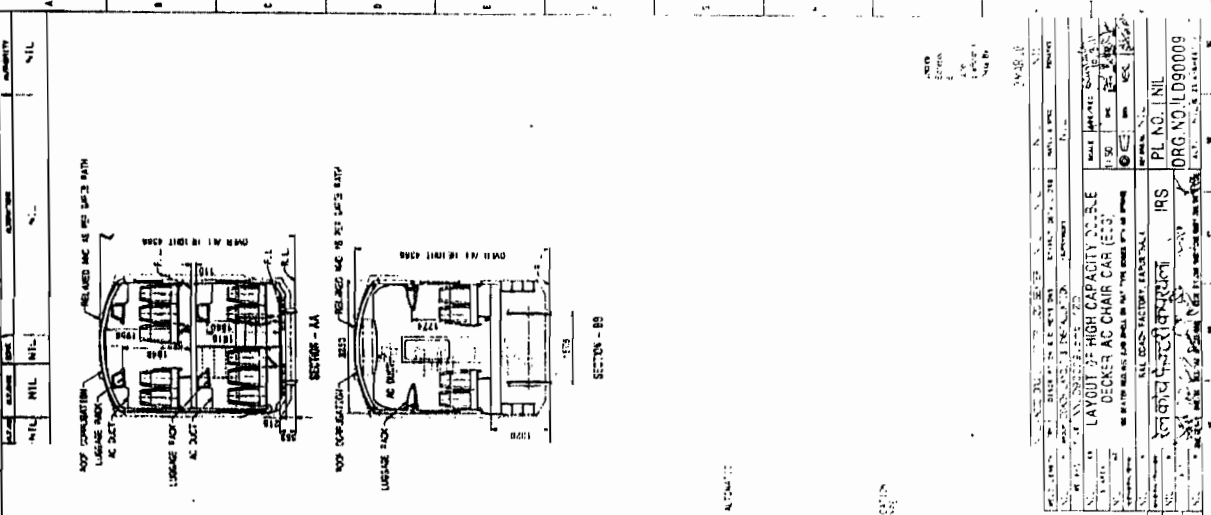
RCF, Kapurthala to New Delhi by 15.03.2010.  
New Delhi to MB by 31.03.2010  
MB to TKD by 10.04.2010.

In case there are no infringements, it may be confirmed at the earliest.

(D.K. Agarwal)  
For Director General (Carrage)

- Copy to:
- i) EDME/Coaching, Railway Board, New Delhi.
  - ii) CMEs of Northern and North Central Railways.
  - iii) ED/Track-I, RDSO, Lucknow.
  - iv) Divisional Railway Manager, Ferozpur Division, Northern Railway, Ferozpur.
  - v) Divisional Railway Manager, Ambala Division, Northern Railway, Ambala.
  - vi) Divisional Railway Manager, Moradabad Division, Northern Railway, Moradabad.
  - vii) Divisional Railway Manager, Delhi Division, Northern Railway, New Delhi.
  - viii) Divisional Railway Manager, Agra Division, North Central Railway, Agra.

15/11/11



PL. NO. 1111	PL. NO. 1111
ORG. NO. LD90009	ORG. NO. LD90009
ALL DIMENSIONS IN INCHES	ALL DIMENSIONS IN INCHES
DATE OF FIRST ISSUE	DATE OF FIRST ISSUE
REVISIONS	REVISIONS
NO.	DESCRIPTION
1	ISSUE
2	REVISION
3	REVISION
4	REVISION
5	REVISION
6	REVISION
7	REVISION
8	REVISION
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10	REVISION
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50	REVISION

WATER PURIFICATION SYSTEM (NO TYPE)

EXHAUST FAN

FULLY AUTOMATIC DOOR

TOILET

WATER PURIFICATION SYSTEM (NO TYPE)

EXHAUST FAN

FULLY AUTOMATIC DOOR

TOILET

WATER PURIFICATION SYSTEM (NO TYPE)

EXHAUST FAN

FULLY AUTOMATIC DOOR

TOILET

WATER PURIFICATION SYSTEM (NO TYPE)

EXHAUST FAN

FULLY AUTOMATIC DOOR

TOILET

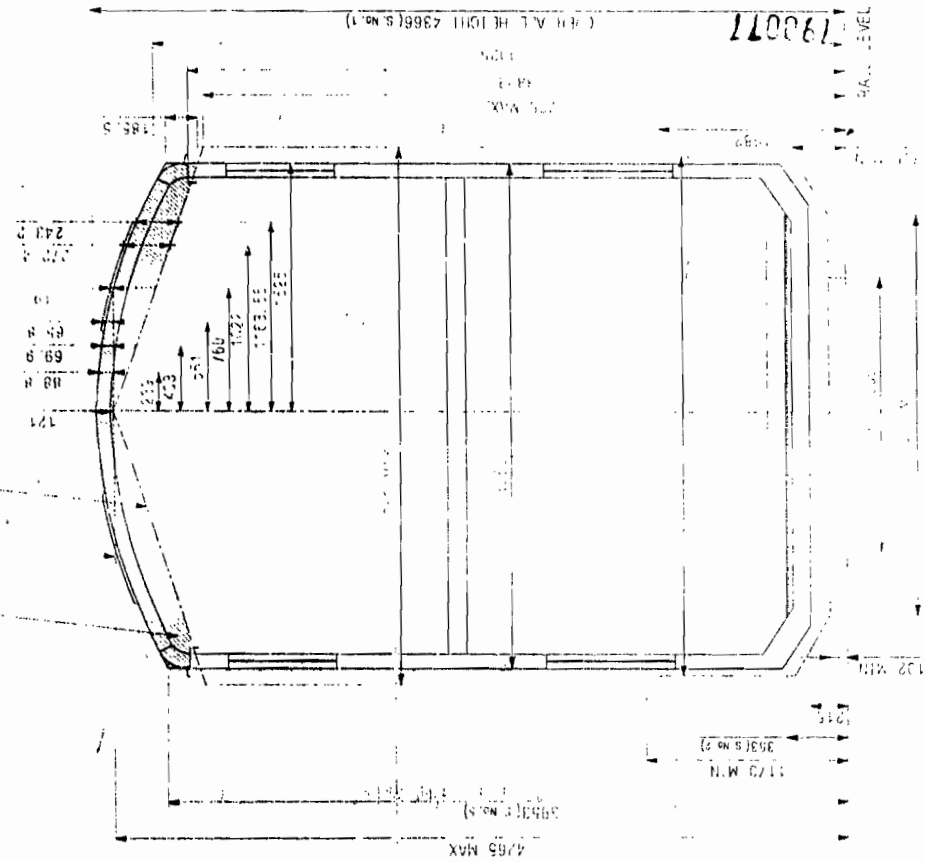
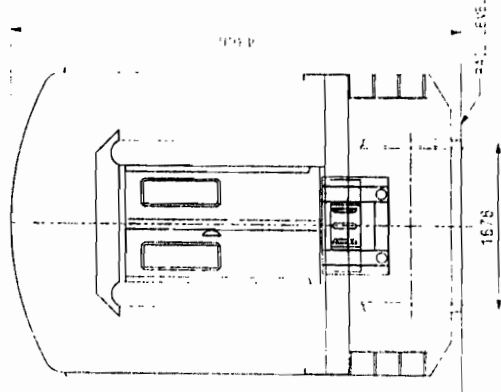
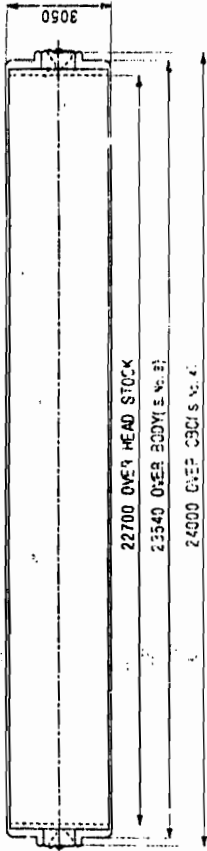
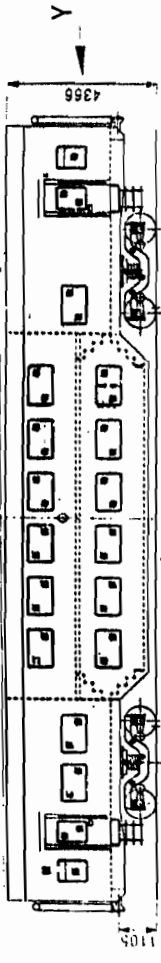
LEGEND

- BE - BATTERY
- BO - BLOWER
- BR - BRACKET
- BU - BULB
- CB - CONTROL BOX
- CD - CABLE
- CE - CONNECTOR
- CF - CABLE FEED
- CG - CABLE GUIDE
- CH - CHANNEL
- CI - CABLE IDENTIFICATION
- CJ - CABLE JUNCTION
- CK - CABLE KICKER
- CL - CABLE LOOP
- CM - CABLE MOUNT
- CN - CABLE NUT
- CO - CABLE OVERHEAD
- CP - CABLE POINT
- CQ - CABLE QUANTITY
- CR - CABLE RUN
- CS - CABLE STRAP
- CT - CABLE TIE
- CU - CABLE UNDER
- CV - CABLE VERTICAL
- CW - CABLE WIRE
- CX - CABLE X
- CY - CABLE Y
- CZ - CABLE Z
- DA - DATA
- DB - DATA BUS
- DC - DATA CENTER
- DD - DATA DISTRIBUTION
- DE - DATA ENTRY
- DF - DATA FEED
- DG - DATA GUIDE
- DH - DATA HOLD
- DI - DATA IDENTIFICATION
- DJ - DATA JUNCTION
- DK - DATA KICKER
- DL - DATA LOOP
- DM - DATA MOUNT
- DN - DATA NUT
- DO - DATA OVERHEAD
- DP - DATA POINT
- DQ - DATA QUANTITY
- DR - DATA RUN
- DS - DATA STRAP
- DT - DATA TIE
- DU - DATA UNDER
- DV - DATA VERTICAL
- DW - DATA WIRE
- DX - DATA X
- DY - DATA Y
- DZ - DATA Z

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID. FOR UNTOLERANCED DIMENSIONS REFER HORRIBA

— INFRINGEMENT OF AC DOUBLE DECKER COACH PROFILE TO WAO — 10

— PROPOSED MAX. MOVING DIMENSION



SECTION A-A

VIEW FROM-Y

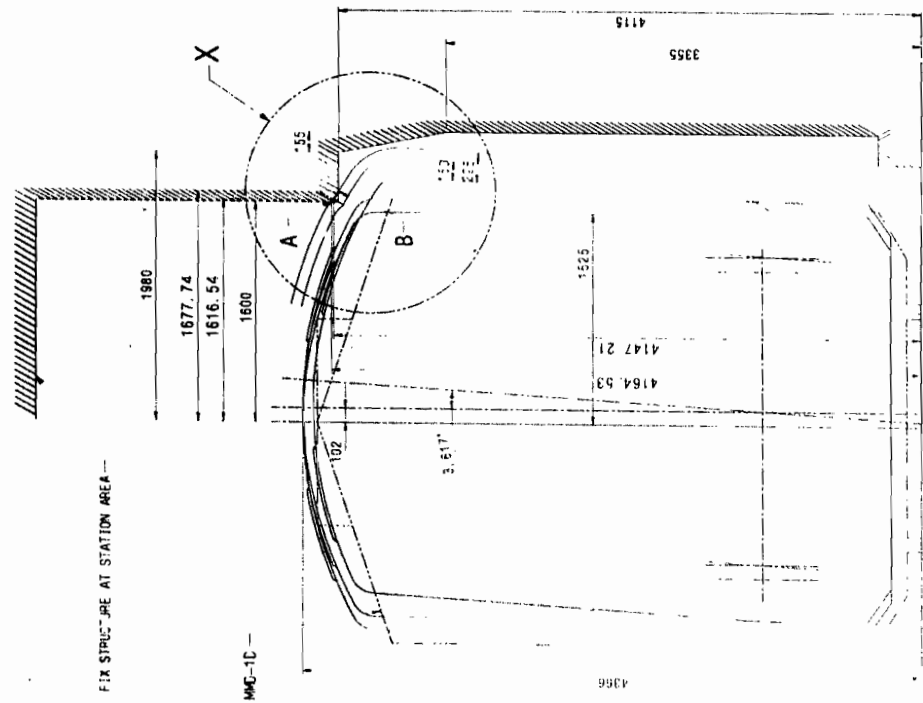
ASSEMBLY DROS	INDIAN RAILWAYS	REMARKS
REFERENCE	IRDD COACHES	
	DIAGRAM SHOWING MAIN DIMENSIONS AND	
	INFRINGEMENT OF AC EGG DOUBLE DECKER COACH	
	(WIDTH 3050)	
CO. NO. 1173	R.D.S.O.	
U.S. CO. 20/11	[CG]	
	B.G.	
	CG-11031	

N.T. ITEM	AUTHY.	DESCRIPTION	CHKD.	DATE

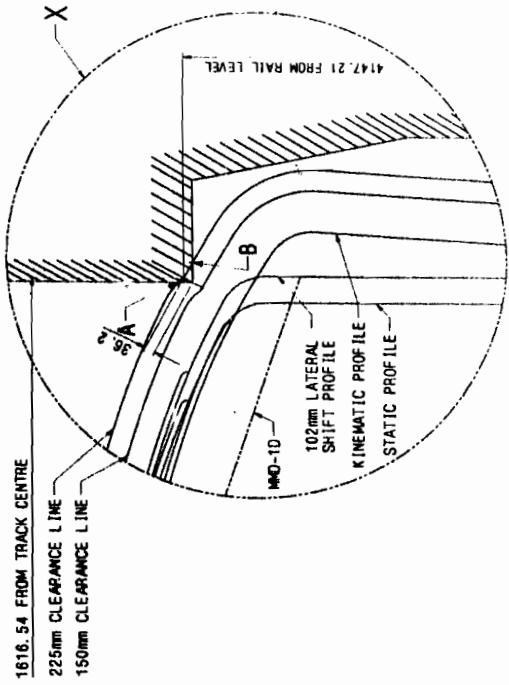
(4th A.L. HE. 10/11 4366(S.No.1))

198077

INFRINGEMENT WRT. FIXED STRUCTURE DUE TO PROPOSED  
DOUBLE DECKER WITH FIAT BOGIE PROFILE ON STRAIGHT TRACK



INFRINGEMENT TO BE REMOVED FOR MAINTAINING MINIMUM  
CLEARANCE OF 225mm BEYOND KINEMATIC PROFILE



ENLARGED VIEW AT 'X'  
SCALE-1:10

COORDINATES FROM CENTRE OF  
TRACK (X) AND RAIL LEVEL (Y)

POINT	X COORDINATE (in mm)	Y COORDINATE (in mm)
A	1600	4164.53
B	1677.74	4115

ITEM DESCRIPTION & DIMENSIONS	NO.	REF. Dwg	DATE	BY	CHKD.	REMARKS
INDIAN RAILWAYS						
IRDD COACHES						
DYNAMIC COACH PROFILE & INFRINGEMENT						
WRT FIXED STRUCTURE OF PROPOSED						
AC EGG DD COACH (WIDTH 3050)						
B.G. R.D. 5.0. [CG]						
CG-11032						

ASSEMBLY DPGS.	SCALE	REFERENCE	DATE	BY	CHKD.	REMARKS
	1:20					
CCIC NO. ---						
DESCRIPTION						
DATE						

170078