



No. MC/LHB/COACH

Date: 13 .05.2020

महाप्रबन्धक (इंजीनियरिंग)

1. उत्तर रेलवे, बड़ौदा हाऊस, नई दिल्ली - 110 001.
2. उत्तर मध्य रेलवे, हास्टिंग रोड, प्रयागराज - 211 001.
3. पूर्व मध्य रेलवे, हाजीपुर - 844 101.

Sub: Speed Certificate for operation of train consisting of maximum 24 LHB (EOG) coaches comprising of

- i) LHB AC Generator Van (LWLRRM),
- ii) LHB (EOG) Executive AC Chair Car (LWFCZAC),
- iii) LHB (EOG) Second Class AC Chair AC Chair Car (LWSCZAC),
- iv) LHB (EOG) AC First Class (LWFAC),
- v) LHB (EOG) AC First cum AC-2 Tier (LWFCWAC),
- vi) LHB (EOG) AC 2-Tier Sleeper Coach (LWACCW),
- vii) LHB (EOG) AC Hot Buffet Car (LWCBAC),
- viii) LHB (EOG) AC 3-Tier Coach (LWACCN),
- ix) LHB (EOG) 3-Tier Sleeper Coach (LWSCN),
- ix) LHB (EOG) Non AC Chair Car (LWSCZ),
- x) LHB High capacity parcel van (LVPH),
- xii) LHB (EOG) Second Class Non AC Unreserved coach with Vestibules (LWS),
- xiii) LHB (EOG) Second Class Cum Luggage & Brake Van (LSLRD)

with single WAP7 locomotive, up to maximum speed of 130 kmph on Ghaziabad (GZB)- DDU- Pradhankunta (PKA) via Gaya & back section of Northern Railway, North Central Railway, East Central Railway on track maintained to as per standard specified under Para 607 of Indian Railway Permanent Way Manual, Third Reprint 2019.

Ref: Eastern Railway's letter no. MD/19/RAJDHANI/Vol. I dated 24.10.2019

- 1.0 Indian Railways had signed a contract with M/s LHB Germany for supply of 24 nos. all metal lightweight high-speed BG AC coaches along with transfer of technology. These LHB coaches are fitted with CBC and FIAT bogies to 16.25 t axle load capacity with disc brake arrangement. These coaches have been designed with overall dimension to RDSO Sketch-96077 to operate up to a maximum speed of 160 kmph.
- 1.1 LHB AC EOG Chair car has undergone detailed oscillation trials up to test speed of 180 kmph on Palwal-Mathura section of Northern Railway & 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-240, exhibit satisfactory riding and stability behavior, upto test speed of 180 kmph on track maintained to C&M-I, Vol.-I standard. The LHB AC Generator Van has undergone detailed oscillation trials up to 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 test speed of 180 kmph on track maintained to C&M-I, Vol.-I standard. Based on the results, a speed certificate for regular operation of LHB AC chair cars and LHB AC Generator Vans at a maximum speed of 160 km/h on track maintained to C&M-I Vol.-I standard have been issued vide RDSO's letter no. MC/LHB/Coach dated 19.3.2003 followed by partial amendment dated 27.2.2004 and amendments dated 18.11.2014 & 20.12.2014 for LHB AC EOG Chair Car and RDSO letter no. MC/LHB/COACH dated 20.3.2003 followed by partial amendment

dated 27.2.2004 and amendments dated 18.11.2014, 20.12.2014 & corrigendum no. 01 dated 08.01.2015 to Amendment no.02 for LHB Generator Van.

The revised final speed certificate for operation of BG EOG type LHB AC Chair Cars (LWSCZAC & LWFCZAC) & LHB AC Generator Van (LWLRRM) fitted with FIAT bogies upto maximum speed of 160 kmph on track maintained to C&M-I Volume-I standard, has also been issued vide RDSO's letter nos. MC/LHB/Coach dated 08.04.2015 after incorporating concerned amendments as desired by CRS Northern Circle. An amendment no. 01, dated 07.03.2018 to RDSO letter no. MC/LHB/ COACH, dated 08.04.2015 for LHB AC Generator Van fitted with FIAT bogies has also been issued.

- 1.2 RCF has built AC 2-Tier (LWACCW), AC First Class (LWFAC), AC First cum AC-2 Tier (LWFCWAC), AC Hot Buffet Car (LWCBAC), BG LHB AC EOG variant Broad Gauge coaches confirming to RDSO's drawing no. 96077 fitted with Fiat bogies. These Coaches have been built to the state of art technology and provided with disc brakes and CBC. CCRS was approached for granting dispensation for conduct of trials on the basis of similar suspension design and other parameter of above said coaches, being comparable to LHB EOG AC Chair cars, which had exhibited satisfactory riding up to maximum test speed of 180 kmph in accordance with report no MT-240 for track maintained to C&M-I, Vol.-I. Accordingly, CCRS/Lucknow vide letter क्यू – 17016 / 06 / 2013–14. तऱविऱ dated 05.03.2014, granted dispensation from conduct of oscillation trials for above said coaches. Based on above, the speed certificate for operation of AC 2-Tier (LWACCW), AC First Class (LWFAC), AC First cum AC-2 Tier (LWFCWAC), AC Hot Buffet Car (LWCBAC), BG LHB AC EOG variant Broad Gauge coaches has been issued up to maximum speed of 160 kmph on track maintained to C&M-I, Vol.-I standard vide letter no. MC/LHB/COACH dated 05.06.2014.
- 1.3 RCF has built LHB EOG Composite First AC Cum AC-2 Tier coach (LWFCWACA) & **dispensation to detailed oscillation** has been granted by CCRS vide letter no. क्यू-17016/01/2018-19-टीऱ डब्लूऱ dated 17.04.2018 for track maintained to C&M-I, Vol.-I standard. Based on above, the final speed certificate for operation of LHB EOG Composite First AC Cum AC-2 Tier coach (LWFCWACA), up to maximum speed of 160 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO's letter no. SV.FIAT (SC) dated 12.09.2018.
- 1.4 BG EOG Type AC-3 Tier LHB coach (LWACCN) has undergone detailed oscillation trials up to test speed of 180 kmph on Ghaziabad (GZB) -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-412, exhibit satisfactory riding and stability behavior, upto test speed of 180 kmph on track maintained to C&M-I, Vol.-I standard. Based on the results, a speed certificate for regular operation of BG EOG Type AC-3 Tier LHB variant coach (LWACCN) at a maximum speed of 160 km/h on track maintained to C&M-I Vol.-I standard has been issued vide RDSO's letter no. MC/LHB/COACH dated 20.05.2003 followed by partial amendment dated 27.2.2004 and amendment No. 01 dated 03.07.2015.
- 1.5 RCF has built Three Tier Sleeper coaches (LWSCN) & dispensation to detailed oscillation has been granted by CCRS vide letter no. क्यू-17016/04/2011-तऱविऱ dated 08.08.2011 for track maintained to C&M-I, Vol.-I standard. Based on above, the final speed certificate for operation of Three Tier Sleeper coaches (LWSCN), up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO letter no. MC/LHB/COACH dated 14.10.2011.
- 1.6 RCF has built Three Tier Sleeper coaches (LWSCN1) & **dispensation to detailed oscillation** has been granted by CCRS vide letter no. क्यू-17016/03/2017-18-टीऱ डब्लूऱ dated 04/8.09.2017 for track maintained to C&M-I, Vol.-I standard. Based on above, the final speed certificate for operation of Three Tier Sleeper coaches (LWSCN1), up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO letter no. MC/LHB/COACH dated 03.11.2017

- 1.7 RCF has built Three Tier Sleeper coaches (LWSCNA) & **dispensation to detailed oscillation** has been granted by CCRS vide letter no. क्यू-17016/04/2017-18-टी0 उब्लू0 dated 04/8.09.2017 for track maintained to C&M-I, Vol.-I standard. Based on above, the final speed certificate for operation of Three Tier Sleeper coaches (LWSCNA), up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO's letter no. SV.FIAT dated 09.11.2017.
- 1.8 The final speed certificate for operation of BG EOG Non AC Chair Car LHB coach (LWSCZ) fitted with FIAT bogies upto maximum speed of 130 kmph on track maintained to C&M-I Volume-I standard, has been issued vide RDSO's letter nos. MC/LHB/Coach dated 31.3.2011 followed by amendment no. 01 & amendment no. 02 dated 06.03.2013 & 19.07.2016 respectively.
- 1.9 For LWSCZA coach **dispensation to detailed oscillation** has been granted by CCRS vide letter no. क्यू-17016/02/2018-19- तौवि0 dated 17.04.2018. Based on above, the final speed certificate for operation of BG LHB Non AC EOG Second class Chair Car (LWSCZA) & pneumatic suspension at secondary stage on FIAT bogies, upto maximum speed of 130 kmph on track maintained to C&M-I Volume-I standard, has been issued vide RDSO's letter nos. SV.FIAT dated 20.08.2018.
- 1.10 The final speed certificate for operation of LHB High capacity parcel van (LVPH) up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO's letter no. SV.FIAT (SC)LVPH/130 dated 29.11.2019.
- 1.11 The final speed certificate for operation of BG EOG LHB Second Class Non AC Unreserved coach with vestibules (LWS) and pneumatic suspension at secondary stage on FIAT bogies, upto maximum speed of 130 kmph on track maintained to C&M-I Volume-I standard, has been issued vide RDSO's letter no. SV. FIAT (SC), dated 07.09.2018.
- 1.12 The final speed certificate for operation of LHB Second class Cum Luggage & Brake Van (LSLRD). up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO's letter no. SV.FIAT (SC)LSLRD/130 dated 23.07.2019.
- 1.13 For LDSLRA coach **dispensation to detailed oscillation** has been granted by CCRS vide letter no. क्यू-17016/07/2018-19-टी0 उब्लू0 dated 12.06.2018. Based on above, the final speed certificate for operation of BG LHB Power Car with underslung DG set having compartment for passengers & Disabled passenger (LDSLRA) & pneumatic suspension at secondary stage on FIAT bogies, upto maximum speed of 130 kmph on track maintained to C&M-I Volume-I standard, has also been issued vide RDSO's letter nos. SV.FIAT(SC) dated 24.07.2018.
- 1.14 Coupler force & Emergency Braking Distance trials of 24 numbers of AC/Non AC (EOG) LHB coaches and LHB AC/Non AC (EOG) Chair Car coaches including 2 numbers of LHB AC Generator Vans with single WAP7 Locomotive have been conducted at maximum speed of 130 kmph on Andul (ADL) - Tata Nagar (TATA)-Andul (ADL) section of South Eastern Railway and results are contained in Report no. RDSO/2019/TG/MT-1593/F Rev.-0/Amendment -Nil dated 28-2-2019. The Braking distance during Full Service of 24 numbers loaded LHB coaches with single WAP7 Locomotive at speed of 130 kmph on level tangent track was recorded 1161 meters.
- 1.15 The Confirmatory Oscillograph Car Runs of 24 numbers of AC/Non AC (EOG) LHB coaches and LHB AC/Non AC (EOG) Chair Car coaches including one number of LHB AC Generator Vans (LWLRRM) & one number of LHB Second class Cum Luggage & Brake Van (LSLRD) with single WAP7 Locomotive have been conducted at maximum speed of 130 kmph on Ghaziabad (GZB)- Deen Dayal Upadhyaya (DDU) & back, and Deen Dayal Upadhyaya (DDU) - Pradhankunta (PKA) via Gaya & back, sections on North Central Railway, East Central Railway on track maintained to as per standard specified under Para 607 of Indian Railway Permanent Way Manua,l Third Reprint 2019

and results are contained in Report no. RDSO/2020/TG/ MT-1692/ F/ Rev.-0/ Amendment–Nil, dated 23.03.2020 followed by corrigendum no. No. RM2/RP/Vol-25 dated 23.04.2020 & RDSO/2020/TG/ MT-1695 /F/Rev.-0/ Amendment–Nil, dated 24.03.2020 followed by corrigendum no. RM2/RP/Vol-25 dated 23.04.2020 respectively, exhibit satisfactory riding and stability behaviour.

- 2.0 Based on the above, it is certified that train consisting of maximum 24 LHB (EOG) coaches comprising of LHB AC Generator Van (LWLRRM), LHB (EOG) AC First class (LWFAC), LHB (EOG) AC First cum AC-2 Tier (LWFCWAC), LHB (EOG) AC 2-Tier Sleeper coach (LWACCW), LHB (EOG) AC 3-Tier coach (LWACCN), LHB (EOG) AC Hot Buffet Car (LWCBAC), LHB (EOG) Executive AC Chair Car (LWFCZAC), LHB (EOG) Second Class AC Chair AC Chair Car (LWSCZAC), LHB (EOG) Non AC Chair Car (LWSCZ), LHB (EOG) 3-Tier Sleeper (LWSCN), LHB High capacity parcel van (LVPH), LHB (EOG) Second Class Non AC Unreserved coach with Vestibules (LWS), LHB (EOG) Second Class Cum Luggage & Brake Van (LSLRD), **kindly refer Para 2.7.10 of this speed certificate for five other type of coaches**, with single WAP7 locomotive is fit for operation, up to maximum speed of 130 kmph on Ghaziabad (GZB)-DDU- Pradhankunta (PKA) via Gaya & back section of Northern Railway, North Central Railway, East Central Railway on track maintained to as per standard specified under Para 607 of Indian Railway Permanent Way Manual, Third Reprint 2019. In this connection, the following conditions shall apply:

2.1 Locomotives

- 2.1.1 The WAP7 class of locomotive manufactured by Chittranjan Locomotives Works has undergone detailed oscillation trials at maximum speed of 155 kmph and the results are contained in RDSO report no. MT/983/F (27.08.2009). Based on the results, WAP7 class of locomotives have been cleared for operation up to a maximum speed of 140 kmph on track maintained to standards laid down in RDSO report no. C&M-I Vol. I vide RDSO's letter no. EL/3.1.35/4 dated 13.10.2009 followed by amendment no. 1 dated 12.12.2013 & amendment no. 2 dated 07.09.2015.

2.2 Track

- 2.2.1 The track shall be to a minimum standard of 52 kg (90 UTS) rails on PSC/ST sleepers with 1540 density and minimum depth of ballast cushion below sleeper of 250 mm, which may consist of at least 100 mm clean and the rest in caked up condition, on compact and stable formation.
- 2.2.2 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, instructions issued by Railway Board letter no.65/WDO/SR/26 dtd. 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.
- 2.2.3 The maximum permissible speed on curves shall be decided on the basis of the existing *provisions of the Indian Railways Permanent Way Manual, Third reprint- 2019.*
- 2.2.4 The welds shall be protected by joggled fish plates as per provisions 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 Rails and Rail joints shall be ensured as per Para 250 & 251 of IRPWM, Third Reprint-2019. In addition, wherever condition warrants on account of corrosion on rail/weld collar, wear on rail, cupping of welds etc., necessary precautions shall be taken for fish plating/ joggled fish plating.
- 2.2.5 Zonal Railway 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 Indian Railways Permanent Way Manual, Third Reprint-2019 regarding permanent way renewals and may suitably restrict maximum speed of operation based on such examination.

- 2.2.6 All the turnouts shall be fixed heel curved switches type laid on PSC sleepers layout with CMS crossings.
- 2.2.7 Sleepers on bridges (other than ballasted deck) would be steel channel/ H-Beam/ Composite Sleeper.

2.3 Bridges

- 2.3.1 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 & MBG-1987 standard loadings. However, the bearings of span 76.2 meters (clear) designed for BGML standard loading as per RDSO's drg. no. BA-11154 should be strengthened by providing two additional anchor bolts.
- 2.3.2 Superstructures and bearings of "Special Spans" (designed and constructed by zonal railways based on site requirements) including all Arches and sub-structures of all bridges (all standard Spans & Special Spans) shall be examined under the directions of the Chief Bridge Engineer concerned and certified safe by him in terms of current Indian Standard Codes with up to- date correction slips.
- 2.3.3 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 concerned Chief Bridge Engineer of Zonal Railway.
- 2.3.4 Location of bridges on which speed restrictions are imposed shall be notified by the Railways and incorporated in the working timetable.
- 2.3.5 This clearance is subject to the following parameters of locomotive and LHB AC/ Non AC (EOG) coaches:

(A) For Locomotive:-

S. No.	Description	WAP7
1.	Max. axle load	20.5 ± 2% t
2.	Max. tractive effort	32.9 t
3.	Max. braking force at rail level	18.6 t
4.	CG height above rail level	Not exceeding 1830 mm

(B) For LHB AC (EOG) and Non AC (EOG) Variant Coaches:-

S. No.	Name of Coaches	Maximum Axle Load	Maximum Braking Force at Rail Level	CG height above rail level
1.	Executive AC Chair Car (LWFCZAC)	16.25t	5.8t	Not exceeding 1830 mm
2.	Second Class AC Chair Car (LWSCZAC)	16.25t	5.8t	
3.	AC First Class (LWFAC)	16.25t	5.8t	
4.	AC First cum AC-2 Tier (LWFCWAC)	16.25t	5.8t	
5.	AC 2-Tier Sleeper Coach (LWACCW)	16.25t	5.8t	
6.	AC 3-tier Sleeper Coach (LWACCN)	16.25t	5.8t	
7.	AC Hot Buffet Car (LWCBAC)	16.25t	5.8t	
8.	Three Tier Sleeper Coach (LWSCN)	16.25t	5.8t	
9.	Non AC Chair Car coach (LWSCZ)	16.25t	5.8t	
10.	High capacity parcel van (LVPH)	16.25t	6.6t	
11.	Second Class Non AC Unreserved coach with vestibules (LWS)	16.25t	5.4t	
12.	Second Class Cum Luggage & Brake Van (LSLRD)	16.25t	5.8t	
13.	Generator van (LWLRRM)	16.25t	6.6t	

(C) For LHB AC (EOG) and Non AC (EOG) Variant Coaches: After Completion of Route Proving Run as per Para 2.7.10 of subject speed certificate

S. No.	Name of Coaches	Maximum Axle Load	Maximum Braking Force at Rail Level	CG height above rail level
1.	<i>AC First cum AC-2 Tier (LWFCWACA)</i>	16.25t	6.6t	Not exceeding 1830 mm
2.	<i>Three Tier Sleeper coaches (LWSCNA)</i>	16.25t	6.6t	
3.	<i>Three Tier Sleeper coaches (LWSCN1)</i>	16.25t	5.8t	
4.	<i>Non AC Second class Chair Car (LWSCZA)</i>	16.25t	5.4t	
5.	<i>LHB Power Car with Underslung DG set having compartment for passengers & Disabled passenger (LDSLRA) & pneumatic suspension at secondary stage on FIAT bogies (LDSLRA)</i>	16.25t	5.4t	

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

2.4 Signaling

2.4.1 Provisions of GR, SR, IRSOD, SEM & all extant instructions issued from time to time as applicable shall be complied with.

2.4.2 In case of locomotive/rolling stocks having EBD of more than 1 Km and non-provision of second distant signal / 4 Aspect Automatic signaling in the section, suitable speed restriction shall be imposed by the Railway as deemed appropriate, to prevent SPAD.

2.4.3 In case electromagnetic compatibility (EMI/EMC) test with S&T equipment has not been conducted during initial/oscillation trials then same may be ensured before introduction of normal running of the said locomotive/rolling stock.

2.5 Traction Installation

2.5.1 The 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 m, proportionately less for smaller spans.

2.5.2 In case of locations where 25 kV AC porcelain section insulators are installed on main line and lies within first 1/10th and 1/3rd of the span immediately after the OHE structure and the Runners in the trailing direction, the maximum speed shall be 120 km/h. At all other locations where 25 kV AC porcelain section insulators are installed, the speed shall be limited to 80 km/h.

2.5.3 It is recommended that the cantilevers in the section 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.

2.5.4 The current collection shall be made through one no. pantograph fit for high-speed operation.

2.5.5 In 25 kV AC traction area, the Chief Electrical Engineer of the Railway shall have to ensure that the minimum height of contact wire and electrical clearances, as stipulated in provisions of Chapter-V and V-A, Electric 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.

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

2.6 Rolling Stock

- 2.6.1 Before starting the operation, Principal Chief Mechanical Engineer & Principal Chief Electrical Engineer of the concerned Railway shall certify track worthiness and safety of the Coaching Stock and Locomotive respectively. They shall also ensure proper maintenance of respective rolling stock.
- 2.6.2 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 become defective enroute of any train running upto 140 kmph with rake composition less or equal to 25 coaches and with maximum brake cylinder pressure of 3.0 kg/cm², the train can go upto destination without speed restriction as per RDSO's letter no. MC/LHB/Brake dated 25/29.04.2016.
- 2.6.3 The earthing arrangement on the coaches shall be maintained as per design.
- 2.6.4 The LHB AC/ Non AC (EOG) coaches shall be maintained as per "Maintenance manual for LHB coaches issued by CAMTECH Gwalior with latest amendments.

2.7 General


- 2.7.1 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.
- 2.7.2 Attention is also invited to the note on "Preparation of Electrical Equipment of Diesel and Electric Locomotives for high speed operation" circulated with this office letter No. EL/3.3.15/WAM2/Gr.CON dated 24.12.1970 and the locomotive should be attended accordingly.
- 2.7.3 All type of LHB AC/ Non AC (EOG) coaches and LHB Generator Van do not infringe any clause of Chapter-IV (A) of revised IRSOD-2004 with latest addendum & corrigendum slip.
- 2.7.4 WAP7 locomotives alongwith pantograph in locked down condition and surge arresters does not infringe any clause of Chapter IV (C), Chapter V-A and Maximum Moving Dimension 1D of Indian Railway BG Schedule of Dimensions-2004 and its Addendum and Corrigendum Slip (ACS) No. 27.
- 2.7.5 Para no. 6.1.3 of policy circular no. 6 shall be followed by Zonal Railways for introduction of a passenger train having 22 coaches or more plus one inspection carriage (LHB or other types).
- 2.7.6 Track maintained to C&M-I, Vol.-I standard in this speed certificate shall be considered as track maintained to as per standard specified under Para 607 of IRPWM, Third Reprint-2019.
- 2.7.7 All level crossings shall be manned with telecommunication facilities.
- 2.7.8 Concerned Zonal Railway shall ensure provision of fencing at vulnerable locations on need basis.
- 2.7.9 As per Para 6.1.2 of revised policy circular no.6, dated 31.10.2018, speed certificate of train for operation in the section shall be as per provision of General Rules 1976- Rule 4.08.1 (a).
- 2.7.10 LHB AC (EOG) First cum AC-2 Tier (LWFCWACA), LHB Non AC (EOG) Three Tier Sleeper coaches (LWSCNA), LHB Non AC (EOG) Three Tier Sleeper coaches (LWSCN1), LHB Non AC (EOG) Second class Chair Car (LWSCZA), LHB Power Car with Underslung DG set having compartment for passengers & Disabled passenger (LDSLRA) for which detailed oscillation trials had earlier been dispensed with, shall be included in this train only after successful completion of Route Proving Run by Zonal railway as per conditions mentioned in Para 6.5.1.3 of Policy Circular- 6 (Revised-2018) at maximum speed of 130 kmph and results found satisfactory as per Policy and Criteria. The results of RPR should be informed to RDSO before operation of train with these coaches.

2.7.11 The track structure has been specified to standards laid down by Railway Board through letter no. 2014/CE-II/TSC/1Pt.1 dated 8th Sep 2016 for speed above 110kmph and up to 130kmph. The same has been circulated to all Zonal Railways vide letter no. CT/Tech Mission/High Speed dated 19.09.2016. The conditions stipulated in the letter shall be followed by Zonal Railway.

2.7.12 Track attention is required where acceleration value is exceeding 0.30g and number of peak exceeds one and track to be attended where acceleration value exceeding 0.35g before operation of train as per COCR report no. MT-1692/F and MT-1695/F.

संलग्नक:

- (i) RDSO Sketch 96077
- (ii) RCF's drawing no. LE90009
- (iii) RCF's drawing no. LJ90004
- (iv) RDSO drawing CSC-1840 Alt. 2
- (v) RDSO drawing no.CSC-1844
- (vi) RDSO drawing no. CG-11034
- (vii) ICF drawing No.LGS/EOG/ASR-9-0-001
- (viii) RDSO drawing CSC-1836
- (ix) RCF's drawing no. LJ90007
- (x) RDSO drawing CSC-1808
- (xi) RCF's drawing no. WA90004


(वी. के. अग्रवाल)
13/05/2020

कार्यकारी निदेशक मानक/चालन शक्ति

प्रतिलिपि:

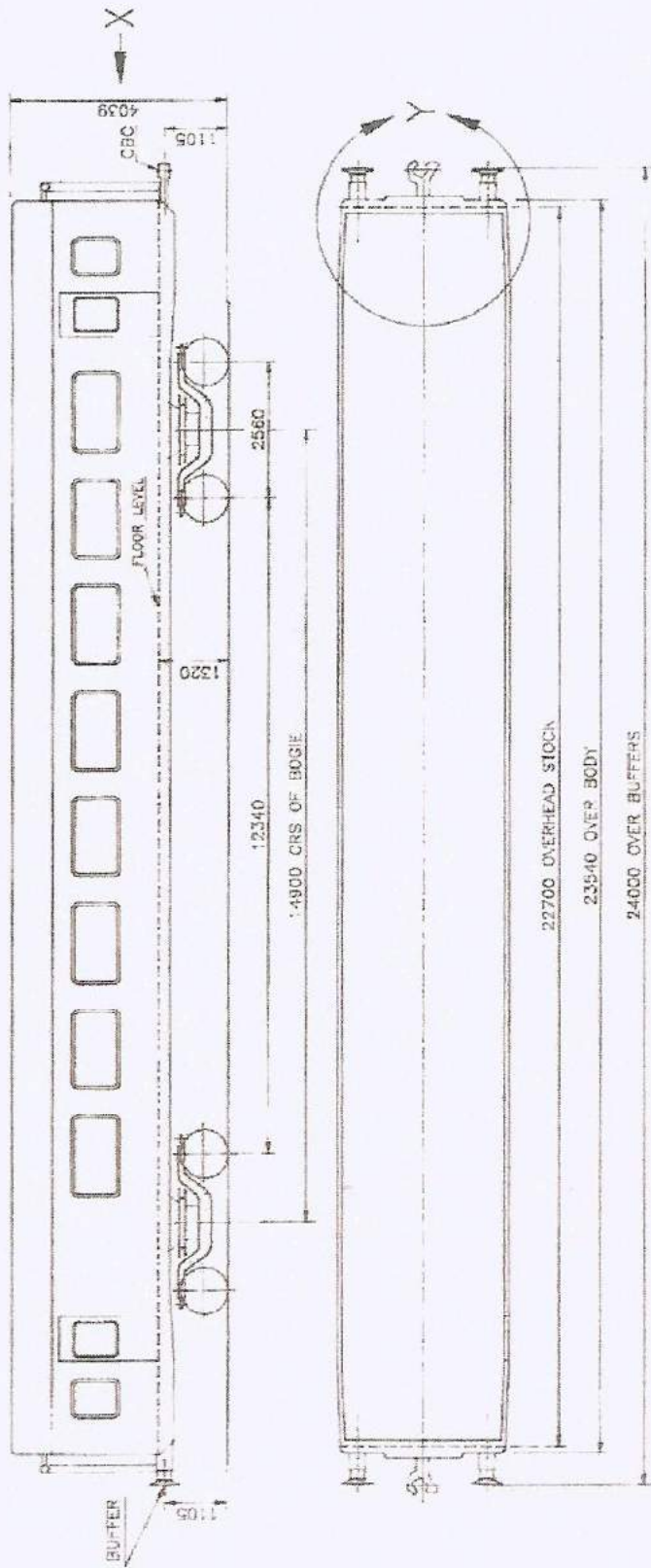
1. सचिव (यांत्रिक/इलेक्ट्रिकल/इंजीनियरिंग-जी), रेलवे बोर्ड, रेल भवन, नई दिल्ली - 110 001.
2. मुख्य रेल संरक्षा आयुक्त, मण्डल रेल प्रबन्धक कार्यालय, पूर्वोत्तर रेलवे परिसर, अशोक मार्ग लखनऊ- 226 001
3. महाप्रबन्धक (यांत्रिक/विद्युत/ओपरेटिंग/एस एण्ड टी)
 - i) उत्तर रेलवे, बड़ौदा हाऊस, नई दिल्ली - 110 001.
 - ii) उत्तर मध्य रेलवे, हास्टिंग रोड, प्रयागराज - 211 001.
 - iii) पूर्व मध्य रेलवे, हाजीपुर - 844 101.

संलग्नक:

- (i) RDSO Sketch 96077
- (ii) RCF's drawing no. LE90009
- (iii) RCF's drawing no. LJ90004
- (iv) RDSO drawing CSC-1840 Alt. 2
- (v) RDSO drawing no.CSC-1844
- (vi) RDSO drawing no. CG-11034
- (vii) ICF drawing No.LGS/EOG/ASR-9-0-001
- (xii) RDSO drawing CSC-1836
- (ix) RCF 's drawing no. LJ90007
- (x) RDSO drawing CSC-1808
- (xi) RCF's drawing no. WA90004


(वी. के. अग्रवाल)

कार्यकारी निदेशक मानक/चालन शक्ति



NOTE:—
BUFFERS ARE TO BE PROVIDED ONLY
IN POWER CAR.

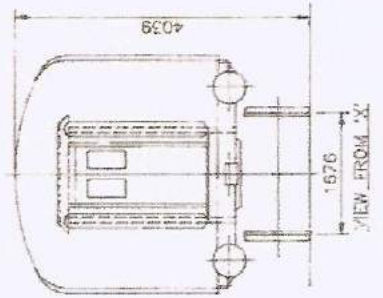
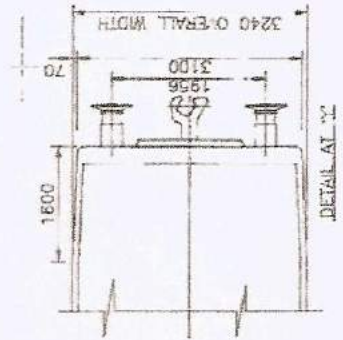
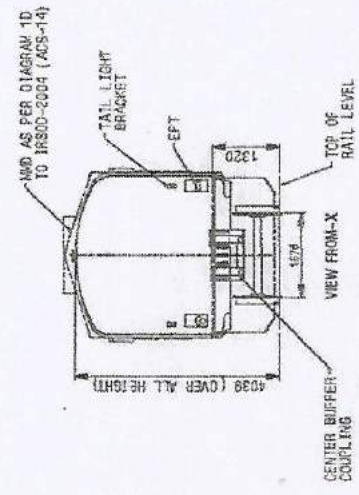
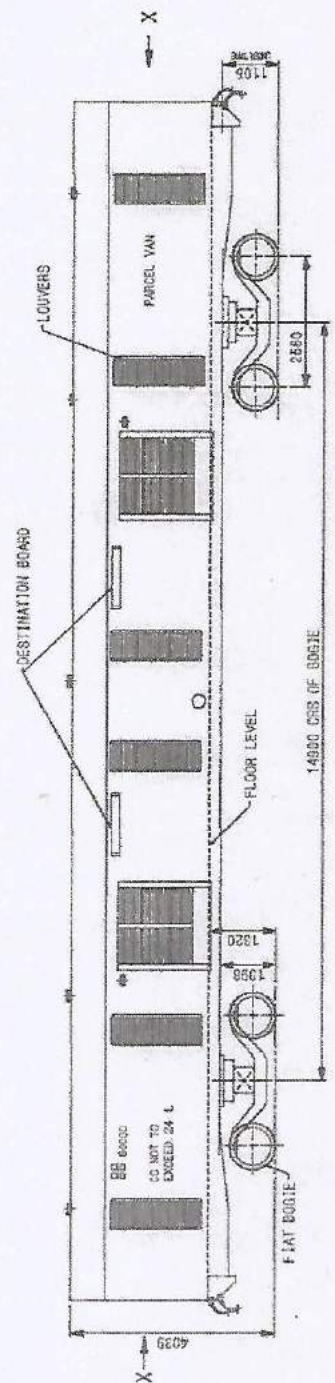
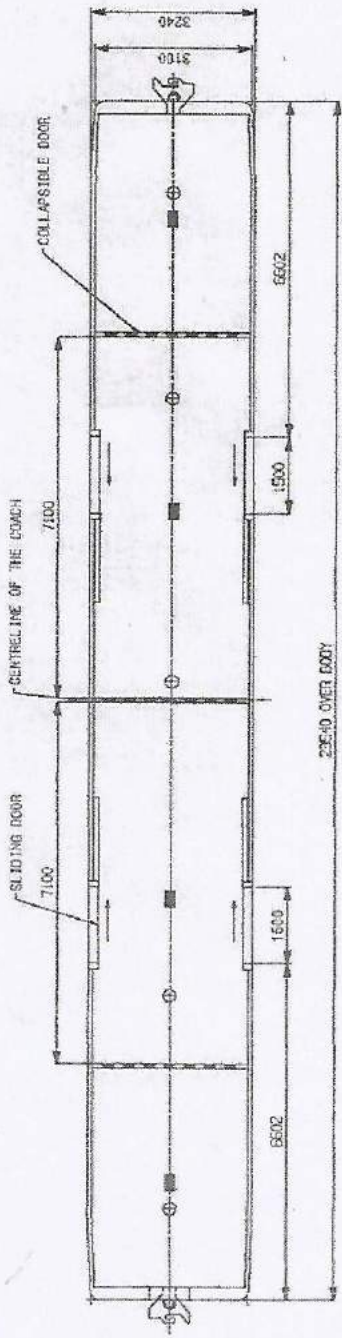


DIAGRAM SHOWING MAIN DIMENSIONS
OF LHB-IR COACH



- 00000 --- COACH NUMBER
- 00001 --- RAILWAY ASSET
- 00002 --- RAILWAY
- 00003 --- ROOF VENTILATOR
- 00004 --- LED LIGHT WITH VIBRATOR SOUND
- 00005 --- SIDE LAMP

NOTE: -
 1. LUGGAGE CARRYING CAPACITY - 24 TONNES
 2. COVERED POCKETS FOR THE SLIDING DOORS TO BE PROVIDED.

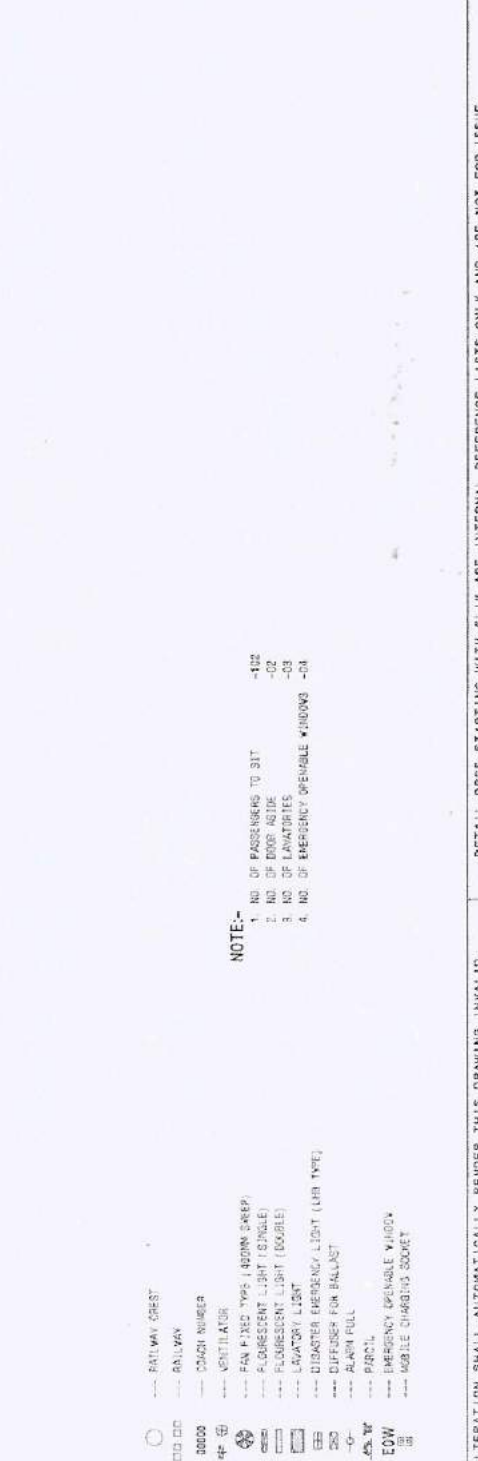
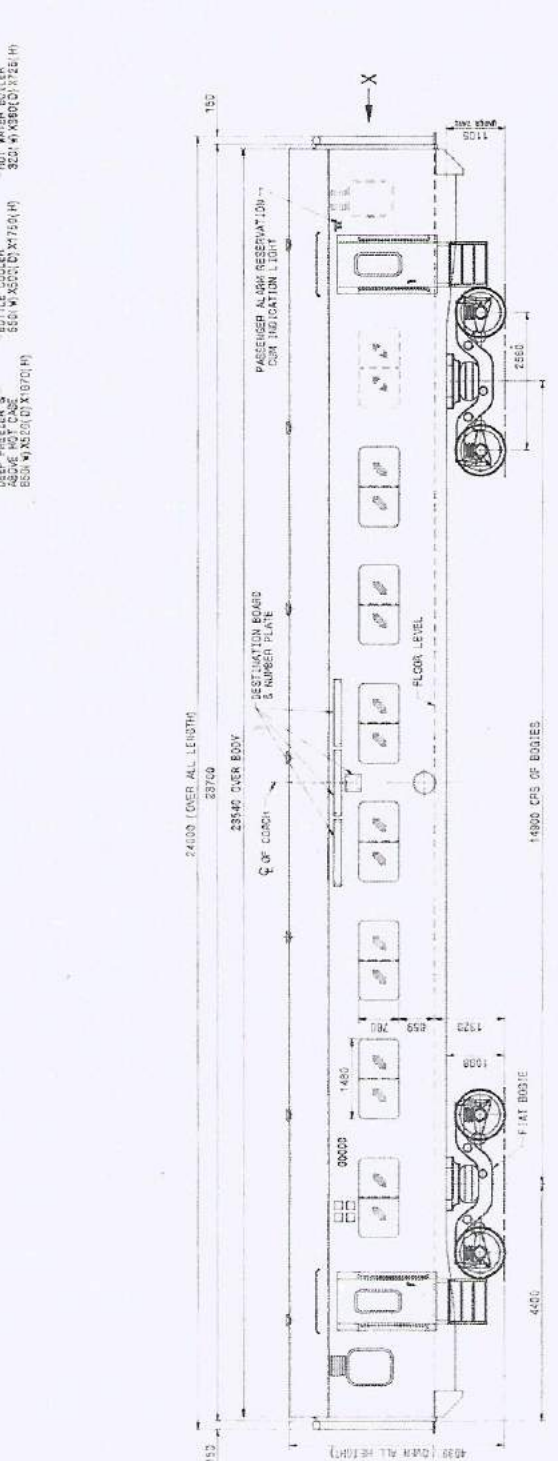
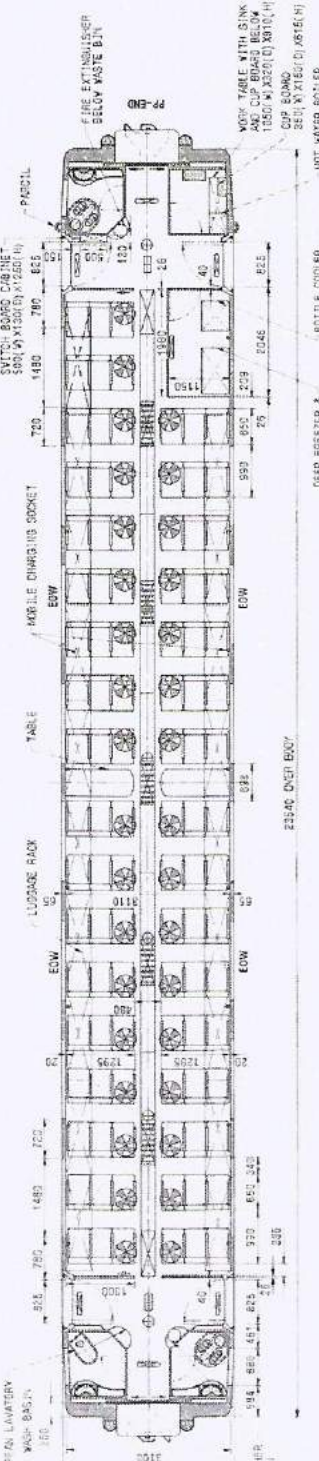
APPROVED VIDE RAILWAY BOARD'S LETTER NO. 97/M/O/202/4 Pt. (1)
 DATED 06/08/2018 [RDSO FILE NO./LHB/LAYOUT, S. NO. 1012]

TRANSPORTATION CODE	LVPB	SUPERSEDED BY	
REFERENCE	CG-1848	SCALE	1:80
CG-1848		DATE	15/07/18
CGC NO.	1-14905	DESIGNER	B.G.
		CHECKER	1091
		DATE	15/07/18
		DESCRIPTION	CG-1848
		MAX. CARRYING CAPACITY	24 TONNES
		DESIGNER	B.G.
		CHECKER	1091
		DATE	15/07/18

INDIAN RAILWAYS STANDARDS
 LHB SHELL ON FIAT BOGIES COACHES
 LAYOUT OF LHB DESIGN HIGH CAPACITY
 PARCEL VAN WITHOUT LUGGAGE RACKS

CSC-1840

SL. NO.	DATE	ZONE	ACTIVITY	AUTHORITY
0	23/04/2013	15-H	1. WINDOWS HEIGHT FROM FLOOR LEVEL WAS 602mm. 2. DOUBLE LEAF DOOR REPLACED WITH FLAP DOOR IN PANTRY AREA. 3. CHAMFERED CORNER PARTITION REPLACED WITH SHARP CORNER IN PANTRY AREA.	DIC NO. M0120032
1	13/10/2018	14-H	1. FLAT BOGGIES WITH AIR SUSPENSION PROVIDED. 2. FIRE EXTINGUISHER BELOW WASTE BIN PROVIDED ON BOTH ENDS. 3. AISLE WIDTH CORRECTED. 4. TITLE DESCRIPTION UPDATED.	DIC NOS. M0180005 & M0180005



REVISED 2024 WITH AG-14
15 OCT 2018

FIELD	LENGTH	UNIT	DESCRIPTION & DIMENSIONS	STATUS	DATE	BY	APP.
FILE	14800	MM	COACH BODY & INSTALLATION	WORKING	13/10/2018	AL T G	
FILE	14800	MM	COACH BODY & INSTALLATION	WORKING	13/10/2018	AL T G	
FILE	14800	MM	COACH BODY & INSTALLATION	WORKING	13/10/2018	AL T G	

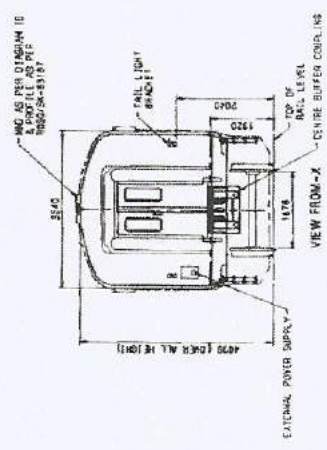
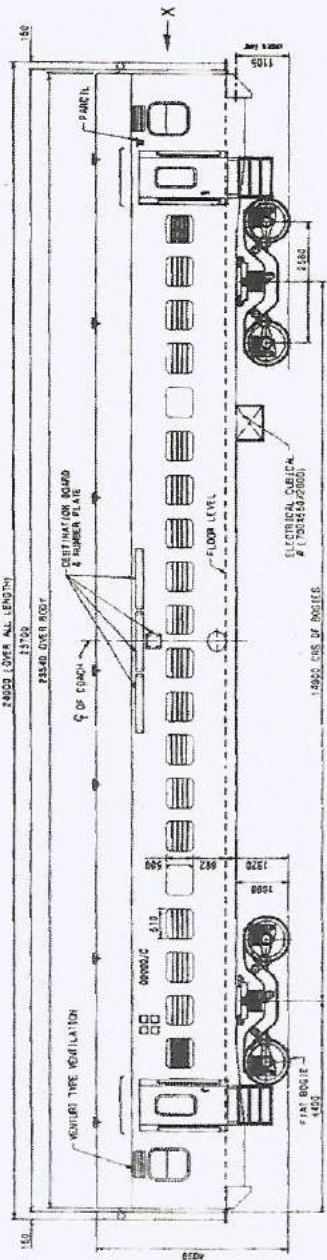
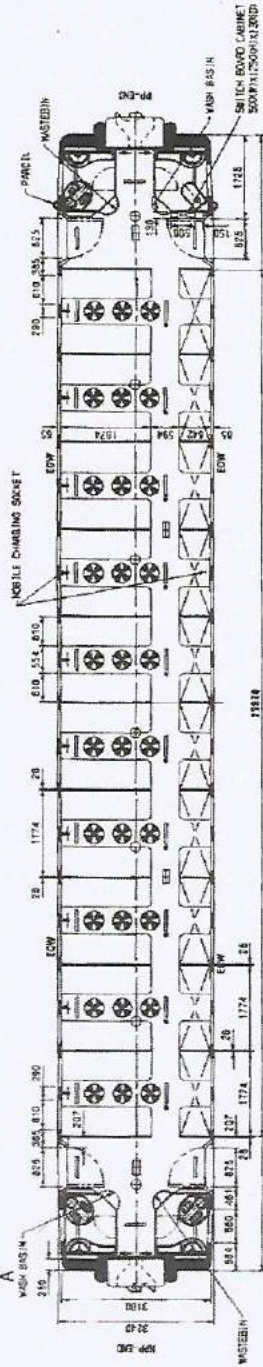
LAYOUT OF SECOND CLASS NON-AC CHAIR CAR (LHB/EOG) 102 SEATER FOR JAN SHATABDI TRAIN WITH AIR SUSPENSION
RAIL COACH FACTORY, KANPUR/INDIA

PL NO. NIL
DRG. NO. LJ90007

SYMBOL	DESCRIPTION
○	RAILWAY GREST
□	RAILWAY
□	COACH NUMBER
○	VENTILATOR
○	FAN F-RED TYPE (ADORN SREPI)
○	FLOURESCENT LIGHT (SINGLE)
○	FLOURESCENT LIGHT (DOUBLE)
○	LAWATORY LIGHT
○	DISASTER EMERGENCY LIGHT (LHM TYPE)
○	DIFFUSER FOR BALLAST
○	ALARM PULL
○	PARTICL
○	EMERGENCY OPENABLE WINDOW
○	MOBILE CHARGING SOCKET

NOTE:-
1. NO. OF PASSENGERS TO SIT - 412
2. NO. OF FOOD ANDBE - 02
3. NO. OF LAVATORIES - 03
4. NO. OF EMERGENCY OPENABLE WINDOW - 04

SHEET No. 107



(FOR OFFICE USE ONLY)

- NOTE:
1. NO. OF PASSENGERS TO SLEEP
 2. NO. OF PASSENGERS TO SIT
 3. NO. OF DOOR ASSES
 4. NO. OF LAVATORIES
 5. NO. OF LARGEST OPENABLE WINDOWS
 6. WINDOW TO BE PROVIDED WITH DUST SCREEN
 7. TRANSPORTATION CODE
 8. INDICATE CLEAR SPECIFICATIONS

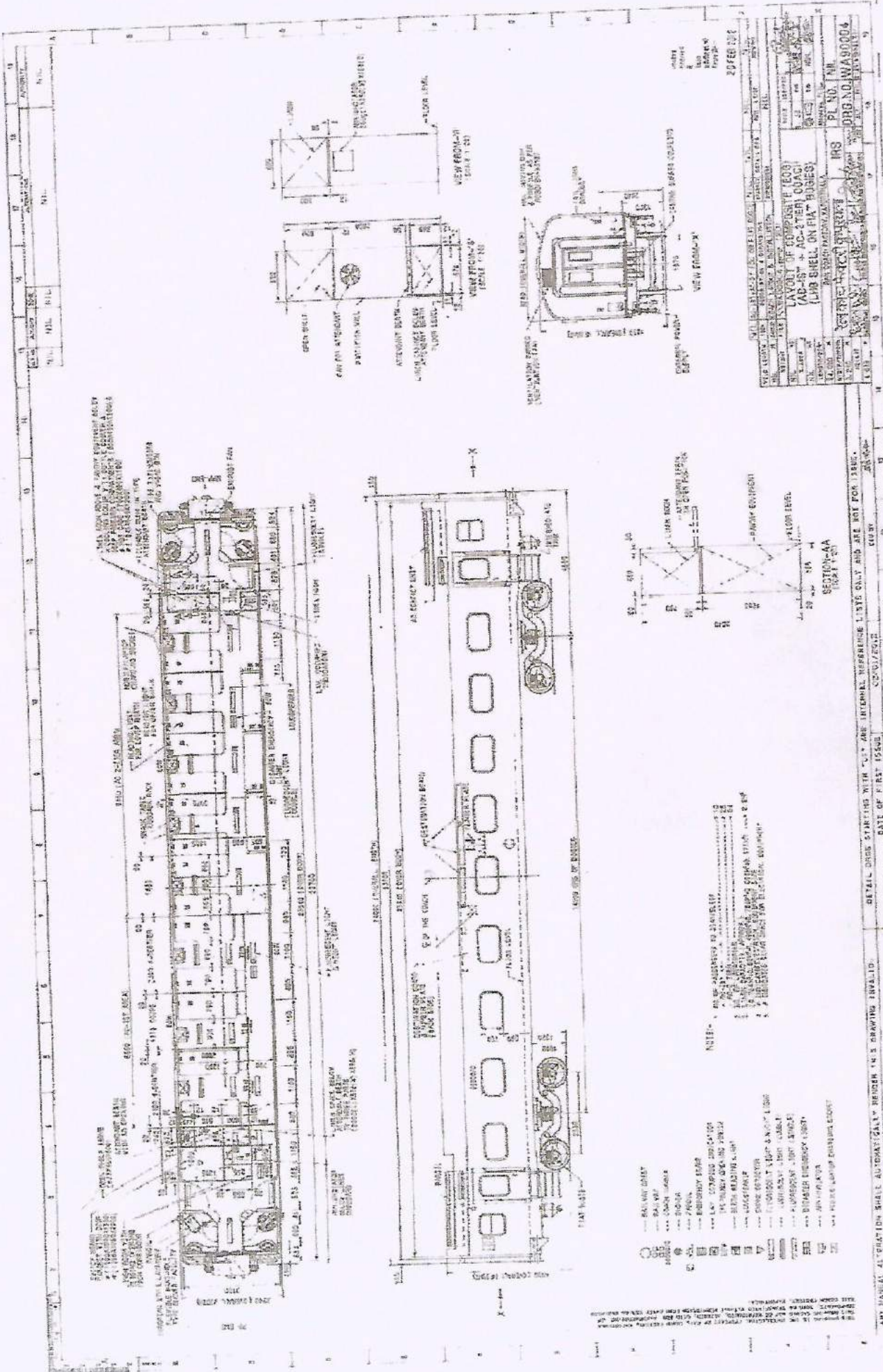
- RAILWAY PRESS
- RAILWAY
- COACH NUMBER
- VENTILATION
- AIR TIGHT FARE ADMIN. SHEET
- EQUIPMENT LIGHT
- NIGHT LIGHT
- DIMENSIONAL ENERGY LIGHT LAB TIME
- AIR FAN
- PARCEL
- EXTERIOR OPENABLE WINDOW
- MOBILE CHARGING SOCKET (P) ME. IN. 100-840

APPROVED WITH PASSENGER BOARD'S LETTER NO. 2007/001/07/15
 DATED 20/04/2007 FILE NO. 100-840

ASSEMBLY (MOS)	1150	
SCALE	1:1	
DATE	10/07/07	
DESIGNED BY	B.G. 1061	
CHECKED BY		
APPROVED BY		
REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISED & RETURN	
2	WHITE LETTERS OF REPORT	

NO. OF PASSENGERS TO SLEEP	40
NO. OF PASSENGERS TO SIT	40
NO. OF DOOR ASSES	10
NO. OF LAVATORIES	10
NO. OF LARGEST OPENABLE WINDOWS	10
WINDOW TO BE PROVIDED WITH DUST SCREEN	10
TRANSPORTATION CODE	10
INDICATE CLEAR SPECIFICATIONS	10

NDAR RAILWAYS STANDARDS
 NON AC (EOO) L/B VARIANT COACHES
 LAYOUT OF
 THREE TIER SLEEPER NON AC (EOO) COACH
 CSC-1808



DATE	1954
BY	...
CHECKED BY	...
SCALE	...

THIS DRAWING IS A PART OF A CONTRACT DOCUMENT AND IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT.

SECTION-AA
1:12

SECTION-BB
1:12

SECTION-CC
1:12

SECTION-DD
1:12

SECTION-EE
1:12

SECTION-FF
1:12

SECTION-GG
1:12

SECTION-HH
1:12

SECTION-II
1:12

SECTION-KK
1:12

SECTION-LL
1:12

SECTION-MM
1:12

SECTION-NN
1:12

SECTION-OO
1:12

SECTION-PP
1:12

SECTION-QQ
1:12

SECTION-RR
1:12

SECTION-TT
1:12

SECTION-UV
1:12

SECTION-VV
1:12

SECTION-WW
1:12

SECTION-XX
1:12

SECTION-YY
1:12

SECTION-ZZ
1:12

SECTION-AA
1:12

SECTION-BB
1:12

SECTION-CC
1:12

SECTION-DD
1:12

SECTION-EE
1:12

SECTION-FF
1:12

SECTION-GG
1:12

SECTION-HH
1:12

SECTION-II
1:12

SECTION-KK
1:12

SECTION-LL
1:12

SECTION-MM
1:12

SECTION-NN
1:12

SECTION-OO
1:12

SECTION-PP
1:12

SECTION-QQ
1:12

SECTION-RR
1:12

SECTION-TT
1:12

SECTION-UV
1:12

SECTION-VV
1:12

SECTION-WW
1:12

SECTION-XX
1:12

SECTION-YY
1:12

SECTION-ZZ
1:12

SECTION-AA
1:12

SECTION-BB
1:12

SECTION-CC
1:12

SECTION-DD
1:12

SECTION-EE
1:12

SECTION-FF
1:12

SECTION-GG
1:12

SECTION-HH
1:12

SECTION-II
1:12

SECTION-KK
1:12

SECTION-LL
1:12

SECTION-MM
1:12

SECTION-NN
1:12

SECTION-OO
1:12

SECTION-PP
1:12

SECTION-QQ
1:12

SECTION-RR
1:12

SECTION-TT
1:12

SECTION-UV
1:12

SECTION-VV
1:12

SECTION-WW
1:12

SECTION-XX
1:12

SECTION-YY
1:12

SECTION-ZZ
1:12

SECTION-AA
1:12

SECTION-BB
1:12

SECTION-CC
1:12

SECTION-DD
1:12

SECTION-EE
1:12

SECTION-FF
1:12

SECTION-GG
1:12

SECTION-HH
1:12

SECTION-II
1:12

SECTION-KK
1:12

SECTION-LL
1:12

SECTION-MM
1:12

SECTION-NN
1:12

SECTION-OO
1:12

SECTION-PP
1:12

SECTION-QQ
1:12

SECTION-RR
1:12

SECTION-TT
1:12

SECTION-UV
1:12

SECTION-VV
1:12

SECTION-WW
1:12

SECTION-XX
1:12

SECTION-YY
1:12

SECTION-ZZ
1:12

SECTION-AA
1:12

SECTION-BB
1:12

SECTION-CC
1:12

SECTION-DD
1:12

SECTION-EE
1:12

SECTION-FF
1:12

SECTION-GG
1:12

SECTION-HH
1:12

SECTION-II
1:12

SECTION-KK
1:12

SECTION-LL
1:12

SECTION-MM
1:12

SECTION-NN
1:12

SECTION-OO
1:12

SECTION-PP
1:12

SECTION-QQ
1:12

SECTION-RR
1:12

SECTION-TT
1:12

SECTION-UV
1:12

SECTION-VV
1:12

SECTION-WW
1:12

SECTION-XX
1:12

SECTION-YY
1:12

SECTION-ZZ
1:12

SECTION-AA
1:12

SECTION-BB
1:12

SECTION-CC
1:12

SECTION-DD
1:12

SECTION-EE
1:12

SECTION-FF
1:12

SECTION-GG
1:12

SECTION-HH
1:12

SECTION-II
1:12

SECTION-KK
1:12

SECTION-LL
1:12

SECTION-MM
1:12

SECTION-NN
1:12

SECTION-OO
1:12

SECTION-PP
1:12

SECTION-QQ
1:12

SECTION-RR
1:12

SECTION-TT
1:12

SECTION-UV
1:12

SECTION-VV
1:12

SECTION-WW
1:12

SECTION-XX
1:12

SECTION-YY
1:12

SECTION-ZZ
1:12

SECTION-AA
1:12

SECTION-BB
1:12

SECTION-CC
1:12

SECTION-DD
1:12

SECTION-EE
1:12

SECTION-FF
1:12

SECTION-GG
1:12

SECTION-HH
1:12

SECTION-II
1:12

SECTION-KK
1:12

SECTION-LL
1:12

SECTION-MM
1:12

SECTION-NN
1:12

SECTION-OO
1:12

SECTION-PP
1:12

SECTION-QQ
1:12



No. MC/LHB/COACH

Date: 13.05.2020

महाप्रबन्धक (इंजीनियरिंग)

1. उत्तर रेलवे, बड़ौदा हाऊस, नई दिल्ली - 110 001.
2. उत्तर मध्य रेलवे, हास्टिंग रोड, प्रयागराज - 211 001.
3. पूर्व मध्य रेलवे, हाजीपुर - 844 101.

Sub: Speed Certificate for operation of train consisting of maximum 24 LHB (EOG) coaches comprising of

- i) LHB AC Generator Van (LWLRRM),
- ii) LHB (EOG) Executive AC Chair Car (LWFCZAC),
- iii) LHB (EOG) Second Class AC Chair AC Chair Car (LWSCZAC),
- iv) LHB (EOG) AC First Class (LWFAC),
- v) LHB (EOG) AC First cum AC-2 Tier (LWFCWAC),
- vi) LHB (EOG) AC 2-Tier Sleeper Coach (LWACCW),
- vii) LHB (EOG) AC Hot Buffet Car (LWCBAC),
- viii) LHB (EOG) AC 3-Tier Coach (LWACCN),
- ix) LHB (EOG) 3-Tier Sleeper Coach (LWSCN),
- ix) LHB (EOG) Non AC Chair Car (LWSCZ),
- x) LHB High capacity parcel van (LVPH),
- xii) LHB (EOG) Second Class Non AC Unreserved coach with Vestibules (LWS),
- xiii) LHB (EOG) Second Class Cum Luggage & Brake Van (LSLRD)

with single WAP7 locomotive, up to maximum speed of 130 kmph on Ghaziabad (GZB)- DDU- Pradhankunta (PKA) via Gaya & back section of Northern Railway, North Central Railway, East Central Railway on track maintained to as per standard specified under Para 607 of Indian Railway Permanent Way Manual, Third Reprint 2019.

Ref: Eastern Railway's letter no. MD/19/RAJDHANI/Vol. I dated 24.10.2019

- 1.0 Indian Railways had signed a contract with M/s LHB Germany for supply of 24 nos. all metal lightweight high-speed BG AC coaches along with transfer of technology. These LHB coaches are fitted with CBC and FIAT bogies to 16.25 t axle load capacity with disc brake arrangement. These coaches have been designed with overall dimension to RDSO Sketch-96077 to operate up to a maximum speed of 160 kmph.
- 1.1 LHB AC EOG Chair car has undergone detailed oscillation trials up to test speed of 180 kmph on Palwal-Mathura section of Northern Railway & 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-240, exhibit satisfactory riding and stability behavior, upto test speed of 180 kmph on track maintained to C&M-I, Vol.-I standard. The LHB AC Generator Van has undergone detailed oscillation trials up to 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 test speed of 180 kmph on track maintained to C&M-I, Vol.-I standard. Based on the results, a speed certificate for regular operation of LHB AC chair cars and LHB AC Generator Vans at a maximum speed of 160 km/h on track maintained to C&M-I Vol.-I standard have been issued vide RDSO's letter no. MC/LHB/Coach dated 19.3.2003 followed by partial amendment dated 27.2.2004 and amendments dated 18.11.2014 & 20.12.2014 for LHB AC EOG Chair Car and RDSO letter no. MC/LHB/COACH dated 20.3.2003 followed by partial amendment

dated 27.2.2004 and amendments dated 18.11.2014, 20.12.2014 & corrigendum no. 01 dated 08.01.2015 to Amendment no.02 for LHB Generator Van.

The revised final speed certificate for operation of BG EOG type LHB AC Chair Cars (LWSCZAC & LWFCZAC) & LHB AC Generator Van (LWLRRM) fitted with FIAT bogies upto maximum speed of 160 kmph on track maintained to C&M-I Volume-I standard, has also been issued vide RDSO's letter nos. MC/LHB/Coach dated 08.04.2015 after incorporating concerned amendments as desired by CRS Northern Circle. An amendment no. 01, dated 07.03.2018 to RDSO letter no. MC/LHB/ COACH, dated 08.04.2015 for LHB AC Generator Van fitted with FIAT bogies has also been issued.

- 1.2 RCF has built AC 2-Tier (LWACCW), AC First Class (LWFAC), AC First cum AC-2 Tier (LWFCWAC), AC Hot Buffet Car (LWCBAC), BG LHB AC EOG variant Broad Gauge coaches confirming to RDSO's drawing no. 96077 fitted with Fiat bogies. These Coaches have been built to the state of art technology and provided with disc brakes and CBC. CCRS was approached for granting dispensation for conduct of trials on the basis of similar suspension design and other parameter of above said coaches, being comparable to LHB EOG AC Chair cars, which had exhibited satisfactory riding up to maximum test speed of 180 kmph in accordance with report no MT-240 for track maintained to C&M-I, Vol.-I. Accordingly, CCRS/Lucknow vide letter क्यू – 17016 / 06 / 2013–14. तऱविऱु dated 05.03.2014, granted dispensation from conduct of oscillation trials for above said coaches. Based on above, the speed certificate for operation of AC 2-Tier (LWACCW), AC First Class (LWFAC), AC First cum AC-2 Tier (LWFCWAC), AC Hot Buffet Car (LWCBAC), BG LHB AC EOG variant Broad Gauge coaches has been issued up to maximum speed of 160 kmph on track maintained to C&M-I, Vol.-I standard vide letter no. MC/LHB/COACH dated 05.06.2014.
- 1.3 *RCF has built LHB EOG Composite First AC Cum AC-2 Tier coach (LWFCWACA) & dispensation to detailed oscillation has been granted by CCRS vide letter no. क्यू-17016/01/2018-19-टीऱु उडुडुऱु dated 17.04.2018 for track maintained to C&M-I, Vol.-I standard. Based on above, the final speed certificate for operation of LHB EOG Composite First AC Cum AC-2 Tier coach (LWFCWACA), up to maximum speed of 160 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO's letter no. SV.FIAT (SC) dated 12.09.2018.*
- 1.4 BG EOG Type AC-3 Tier LHB coach (LWACCN) has undergone detailed oscillation trials up to test speed of 180 kmph on Ghaziabad (GZB) -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-412, exhibit satisfactory riding and stability behavior, upto test speed of 180 kmph on track maintained to C&M-I, Vol.-I standard. Based on the results, a speed certificate for regular operation of BG EOG Type AC-3 Tier LHB variant coach (LWACCN) at a maximum speed of 160 km/h on track maintained to C&M-I Vol.-I standard has been issued vide RDSO's letter no. MC/LHB/COACH dated 20.05.2003 followed by partial amendment dated 27.2.2004 and amendment No. 01 dated 03.07.2015.
- 1.5 RCF has built Three Tier Sleeper coaches (LWSCN) & dispensation to detailed oscillation has been granted by CCRS vide letter no. क्यू-17016/04/2011-तऱविऱु dated 08.08.2011 for track maintained to C&M-I, Vol.-I standard. Based on above, the final speed certificate for operation of Three Tier Sleeper coaches (LWSCN), up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO letter no. MC/LHB/COACH dated 14.10.2011.
- 1.6 *RCF has built Three Tier Sleeper coaches (LWSCN1) & dispensation to detailed oscillation has been granted by CCRS vide letter no. क्यू-17016/03/2017-18-टीऱु उडुडुऱु dated 04/8.09.2017 for track maintained to C&M-I, Vol.-I standard. Based on above, the final speed certificate for operation of Three Tier Sleeper coaches (LWSCN1), up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO letter no. MC/LHB/COACH dated 03.11.2017*

- 1.7 RCF has built Three Tier Sleeper coaches (LWSCNA) & **dispensation to detailed oscillation** has been granted by CCRS vide letter no. क्यू-17016/04/2017-18-टी० डब्ल्यू० dated 04/8.09.2017 for track maintained to C&M-I, Vol.-I standard. Based on above, the final speed certificate for operation of Three Tier Sleeper coaches (LWSCNA), up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO's letter no. SV.FIAT dated 09.11.2017.
- 1.8 The final speed certificate for operation of BG EOG Non AC Chair Car LHB coach (LWSCZ) fitted with FIAT bogies upto maximum speed of 130 kmph on track maintained to C&M-I Volume-I standard, has been issued vide RDSO's letter nos. MC/LHB/Coach dated 31.3.2011 followed by amendment no. 01 & amendment no. 02 dated 06.03.2013 & 19.07.2016 respectively.
- 1.9 For LWSCZA coach **dispensation to detailed oscillation** has been granted by CCRS vide letter no. क्यू-17016/02/2018-19- त०वि० dated 17.04.2018. Based on above, the final speed certificate for operation of BG LHB Non AC EOG Second class Chair Car (LWSCZA) & pneumatic suspension at secondary stage on FIAT bogies, upto maximum speed of 130 kmph on track maintained to C&M-I Volume-I standard, has been issued vide RDSO's letter nos. SV.FIAT dated 20.08.2018.
- 1.10 The final speed certificate for operation of LHB High capacity parcel van (LVPH) up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO's letter no. SV.FIAT (SC)LVPH/130 dated 29.11.2019.
- 1.11 The final speed certificate for operation of BG EOG LHB Second Class Non AC Unreserved coach with vestibules (LWS) and pneumatic suspension at secondary stage on FIAT bogies, upto maximum speed of 130 kmph on track maintained to C&M-I Volume-I standard, has been issued vide RDSO's letter no. SV. FIAT (SC), dated 07.09.2018.
- 1.12 The final speed certificate for operation of LHB Second class Cum Luggage & Brake Van (LSLRD). up to maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard, has been issued vide RDSO's letter no. SV.FIAT (SC)LSLRD/130 dated 23.07.2019.
- 1.13 For LDSLRA coach **dispensation to detailed oscillation** has been granted by CCRS vide letter no. क्यू-17016/07/2018-19-टी० डब्ल्यू० dated 12.06.2018. Based on above, the final speed certificate for operation of BG LHB Power Car with underslung DG set having compartment for passengers & Disabled passenger (LDSLRA) & pneumatic suspension at secondary stage on FIAT bogies, upto maximum speed of 130 kmph on track maintained to C&M-I Volume-I standard, has also been issued vide RDSO's letter nos. SV.FIAT(SC) dated 24.07.2018.
- 1.14 Coupler force & Emergency Braking Distance trials of 24 numbers of AC/Non AC (EOG) LHB coaches and LHB AC/Non AC (EOG) Chair Car coaches including 2 numbers of LHB AC Generator Vans with single WAP7 Locomotive have been conducted at maximum speed of 130 kmph on Andul (ADL) - Tata Nagar (TATA)-Andul (ADL) section of South Eastern Railway and results are contained in Report no. RDSO/2019/TG/MT-1593/F Rev.-0/Amendment -Nil dated 28-2-2019. The Braking distance during Full Service of 24 numbers loaded LHB coaches with single WAP7 Locomotive at speed of 130 kmph on level tangent track was recorded 1161 meters.
- 1.15 The Confirmatory Oscillograph Car Runs of 24 numbers of AC/Non AC (EOG) LHB coaches and LHB AC/Non AC (EOG) Chair Car coaches including one number of LHB AC Generator Vans (LWLRRM) & one number of LHB Second class Cum Luggage & Brake Van (LSLRD) with single WAP7 Locomotive have been conducted at maximum speed of 130 kmph on Ghaziabad (GZB)- Deen Dayal Upadhyaya (DDU) & back, and Deen Dayal Upadhyaya (DDU) - Pradhankunta (PKA) via Gaya & back, sections on North Central Railway, East Central Railway on track maintained to as per standard specified under Para 607 of Indian Railway Permanent Way Manua,l Third Reprint 2019

and results are contained in Report no. RDSO/2020/TG/ MT-1692/ F/ Rev.-0/ Amendment–Nil, dated 23.03.2020 followed by corrigendum no. No. RM2/RP/Vol-25 dated 23.04.2020 & RDSO/2020/TG/ MT-1695 /F/Rev.-0/ Amendment–Nil, dated 24.03.2020 followed by corrigendum no. RM2/RP/Vol-25 dated 23.04.2020 respectively, exhibit satisfactory riding and stability behaviour.

- 2.0 Based on the above, it is certified that train consisting of maximum 24 LHB (EOG) coaches comprising of LHB AC Generator Van (LWLRRM), LHB (EOG) AC First class (LWFAC), LHB (EOG) AC First cum AC-2 Tier (LWFCWAC), LHB (EOG) AC 2-Tier Sleeper coach (LWACCW), LHB (EOG) AC 3-Tier coach (LWACCN), LHB (EOG) AC Hot Buffet Car (LWCBAC), LHB (EOG) Executive AC Chair Car (LWFCZAC), LHB (EOG) Second Class AC Chair AC Chair Car (LWSCZAC), LHB (EOG) Non AC Chair Car (LWSCZ), LHB (EOG) 3-Tier Sleeper (LWSCN), LHB High capacity parcel van (LVPH), LHB (EOG) Second Class Non AC Unreserved coach with Vestibules (LWS), LHB (EOG) Second Class Cum Luggage & Brake Van (LSLRD), **kindly refer Para 2.7.10 of this speed certificate for five other type of coaches**, with single WAP7 locomotive is fit for operation, up to maximum speed of 130 kmph on Ghaziabad (GZB)-DDU- Pradhankunta (PKA) via Gaya & back section of Northern Railway, North Central Railway, East Central Railway on track maintained to as per standard specified under Para 607 of Indian Railway Permanent Way Manual, Third Reprint 2019. In this connection, the following conditions shall apply:

2.1 Locomotives

- 2.1.1 The WAP7 class of locomotive manufactured by Chittranjan Locomotives Works has undergone detailed oscillation trials at maximum speed of 155 kmph and the results are contained in RDSO report no. MT/983/F (27.08.2009). Based on the results, WAP7 class of locomotives have been cleared for operation up to a maximum speed of 140 kmph on track maintained to standards laid down in RDSO report no. C&M-I Vol. I vide RDSO's letter no. EL/3.1.35/4 dated 13.10.2009 followed by amendment no. 1 dated 12.12.2013 & amendment no. 2 dated 07.09.2015.

2.2 Track

- 2.2.1 The track shall be to a minimum standard of 52 kg (90 UTS) rails on PSC/ST sleepers with 1540 density and minimum depth of ballast cushion below sleeper of 250 mm, which may consist of at least 100 mm clean and the rest in caked up condition, on compact and stable formation.
- 2.2.2 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, instructions issued by Railway Board letter no.65/WDO/SR/26 dtd. 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.
- 2.2.3 The maximum permissible speed on curves shall be decided on the basis of the existing provisions of the Indian Railways Permanent Way Manual, Third reprint- 2019.
- 2.2.4 The welds shall be protected by joggled fish plates as per provisions 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 Rails and Rail joints shall be ensured as per Para 250 & 251 of IRPWM, Third Reprint-2019. In addition, wherever condition warrants on account of corrosion on rail/weld collar, wear on rail, cupping of welds etc., necessary precautions shall be taken for fish plating/ joggled fish plating.
- 2.2.5 Zonal Railway 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 Indian Railways Permanent Way Manual, Third Reprint-2019 regarding permanent way renewals and may suitably restrict maximum speed of operation based on such examination.

- 2.2.6 All the turnouts shall be fixed heel curved switches type laid on PSC sleepers layout with CMS crossings.
- 2.2.7 Sleepers on bridges (other than ballasted deck) would be steel channel/ H-Beam/ Composite Sleeper.

2.3 Bridges

- 2.3.1 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 & MBG-1987 standard loadings. However, the bearings of span 76.2 meters (clear) designed for BGML standard loading as per RDSO's drg. no. BA-11154 should be strengthened by providing two additional anchor bolts.
- 2.3.2 Superstructures and bearings of "Special Spans" (designed and constructed by zonal railways based on site requirements) including all Arches and sub-structures of all bridges (all standard Spans & Special Spans) shall be examined under the directions of the Chief Bridge Engineer concerned and certified safe by him in terms of current Indian Standard Codes with up to- date correction slips.
- 2.3.3 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 concerned Chief Bridge Engineer of Zonal Railway.
- 2.3.4 Location of bridges on which speed restrictions are imposed shall be notified by the Railways and incorporated in the working timetable.
- 2.3.5 This clearance is subject to the following parameters of locomotive and LHB AC/ Non AC (EOG) coaches:

(A) For Locomotive:-

S. No.	Description	WAP7
1.	Max. axle load	20.5 ± 2% t
2.	Max. tractive effort	32.9 t
3.	Max. braking force at rail level	18.6 t
4.	CG height above rail level	Not exceeding 1830 mm

(B) For LHB AC (EOG) and Non AC (EOG) Variant Coaches:-

S. No.	Name of Coaches	Maximum Axle Load	Maximum Braking Force at Rail Level	CG height above rail level
1.	Executive AC Chair Car (LWFCZAC)	16.25t	5.8t	Not exceeding 1830 mm
2.	Second Class AC Chair Car (LWSCZAC)	16.25t	5.8t	
3.	AC First Class (LWFAC)	16.25t	5.8t	
4.	AC First cum AC-2 Tier (LWFCWAC)	16.25t	5.8t	
5.	AC 2-Tier Sleeper Coach (LWACCW)	16.25t	5.8t	
6.	AC 3-tier Sleeper Coach (LWACCN)	16.25t	5.8t	
7.	AC Hot Buffet Car (LWCBAC)	16.25t	5.8t	
8.	Three Tier Sleeper Coach (LWSCN)	16.25t	5.8t	
9.	Non AC Chair Car coach (LWSCZ)	16.25t	5.8t	
10.	High capacity parcel van (LVPH)	16.25t	6.6t	
11.	Second Class Non AC Unreserved coach with vestibules (LWS)	16.25t	5.4t	
12.	Second Class Cum Luggage & Brake Van (LSLRD)	16.25t	5.8t	
13.	Generator van (LWLRRM)	16.25t	6.6t	

(C) For LHB AC (EOG) and Non AC (EOG) Variant Coaches: After Completion of Route Proving Run as per Para 2.7.10 of subject speed certificate

S. No.	Name of Coaches	Maximum Axle Load	Maximum Braking Force at Rail Level	CG height above rail level
1.	<i>AC First cum AC-2 Tier (LWFCWACA)</i>	16.25t	6.6t	Not exceeding 1830 mm
2.	<i>Three Tier Sleeper coaches (LWSCNA)</i>	16.25t	6.6t	
3.	<i>Three Tier Sleeper coaches (LWSCN1)</i>	16.25t	5.8t	
4.	<i>Non AC Second class Chair Car (LWSCZA)</i>	16.25t	5.4t	
5.	<i>LHB Power Car with Underslung DG set having compartment for passengers & Disabled passenger (LDSLRA) & pneumatic suspension at secondary stage on FIAT bogies (LDSLRA)</i>	16.25t	5.4t	

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

2.4 Signaling

2.4.1 Provisions of GR, SR, IRSOD, SEM & all extant instructions issued from time to time as applicable shall be complied with.

2.4.2 In case of locomotive/rolling stocks having EBD of more than 1 Km and non-provision of second distant signal / 4 Aspect Automatic signaling in the section, suitable speed restriction shall be imposed by the Railway as deemed appropriate, to prevent SPAD.

2.4.3 In case electromagnetic compatibility (EMI/EMC) test with S&T equipment has not been conducted during initial/oscillation trials then same may be ensured before introduction of normal running of the said locomotive/rolling stock.

2.5 Traction Installation

2.5.1 The 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 m, proportionately less for smaller spans.

2.5.2 In case of locations where 25 kV AC porcelain section insulators are installed on main line and lies within first 1/10th and 1/3rd of the span immediately after the OHE structure and the Runners in the trailing direction, the maximum speed shall be 120 km/h. At all other locations where 25 kV AC porcelain section insulators are installed, the speed shall be limited to 80 km/h.

2.5.3 It is recommended that the cantilevers in the section 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.

2.5.4 The current collection shall be made through one no. pantograph fit for high-speed operation.

2.5.5 In 25 kV AC traction area, the Chief Electrical Engineer of the Railway shall have to ensure that the minimum height of contact wire and electrical clearances, as stipulated in provisions of Chapter-V and V-A, Electric 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.

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

2.6 Rolling Stock

- 2.6.1 Before starting the operation, Principal Chief Mechanical Engineer & Principal Chief Electrical Engineer of the concerned Railway shall certify track worthiness and safety of the Coaching Stock and Locomotive respectively. They shall also ensure proper maintenance of respective rolling stock.
- 2.6.2 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 become defective enroute of any train running upto 140 kmph with rake composition less or equal to 25 coaches and with maximum brake cylinder pressure of 3.0 kg/cm², the train can go upto destination without speed restriction as per RDSO's letter no. MC/LHB/Brake dated 25/29.04.2016.
- 2.6.3 The earthing arrangement on the coaches shall be maintained as per design.
- 2.6.4 The LHB AC/ Non AC (EOG) coaches shall be maintained as per "Maintenance manual for LHB coaches issued by CAMTECH Gwalior with latest amendments.

2.7 General

- 2.7.1 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.
- 2.7.2 Attention is also invited to the note on "Preparation of Electrical Equipment of Diesel and Electric Locomotives for high speed operation" circulated with this office letter No. EL/3.3.15/WAM2/Gr.CON dated 24.12.1970 and the locomotive should be attended accordingly.
- 2.7.3 All type of LHB AC/ Non AC (EOG) coaches and LHB Generator Van do not infringe any clause of Chapter-IV (A) of revised IRSOD-2004 with latest addendum & corrigendum slip.
- 2.7.4 WAP7 locomotives alongwith pantograph in locked down condition and surge arresters does not infringe any clause of Chapter IV (C), Chapter V-A and Maximum Moving Dimension 1D of Indian Railway BG Schedule of Dimensions-2004 and its Addendum and Corrigendum Slip (ACS) No. 27.
- 2.7.5 Para no. 6.1.3 of policy circular no. 6 shall be followed by Zonal Railways for introduction of a passenger train having 22 coaches or more plus one inspection carriage (LHB or other types).
- 2.7.6 Track maintained to C&M-I, Vol.-I standard in this speed certificate shall be considered as track maintained to as per standard specified under Para 607 of IRPWM, Third Reprint-2019.
- 2.7.7 All level crossings shall be manned with telecommunication facilities.
- 2.7.8 Concerned Zonal Railway shall ensure provision of fencing at vulnerable locations on need basis.
- 2.7.9 As per Para 6.1.2 of revised policy circular no.6, dated 31.10.2018, speed certificate of train for operation in the section shall be as per provision of General Rules 1976- Rule 4.08.1 (a).
- 2.7.10 LHB AC (EOG) First cum AC-2 Tier (*LWFCWACA*), LHB Non AC (EOG) Three Tier Sleeper coaches (*LWSCNA*), LHB Non AC (EOG) Three Tier Sleeper coaches (*LWSCN1*), LHB Non AC (EOG) Second class Chair Car (*LWSCZA*), LHB Power Car with Underslung DG set having compartment for passengers & Disabled passenger (*LDSLRA*) for which detailed oscillation trials had earlier been dispensed with, shall be included in this train only after successful completion of Route Proving Run by Zonal railway as per conditions mentioned in Para 6.5.1.3 of Policy Circular- 6 (Revised-2018) at maximum speed of 130 kmph and results found satisfactory as per Policy and Criteria. The results of RPR should be informed to RDSO before operation of train with these coaches.

2.7.11 The track structure has been specified to standards laid down by Railway Board through letter no. 2014/CE-II/TSC/1Pt.1 dated 8th Sep 2016 for speed above 110kmph and up to 130kmph. The same has been circulated to all Zonal Railways vide letter no. CT/Tech Mission/High Speed dated 19.09.2016. The conditions stipulated in the letter shall be followed by Zonal Railway.

2.7.12 Track attention is required where acceleration value is exceeding 0.30g and number of peak exceeds one and track to be attended where acceleration value exceeding 0.35g before operation of train as per COCR report no. **MT-1692/F** and **MT-1695/F**.

संलग्नक:

- (i) RDSO Sketch 96077
- (ii) RCF's drawing no. LE90009
- (iii) RCF's drawing no. LJ90004
- (iv) RDSO drawing CSC-1840 Alt. 2
- (v) RDSO drawing no.CSC-1844
- (vi) RDSO drawing no. CG-11034
- (vii) ICF drawing No.LGS/EOG/ASR-9-0-001
- (viii) RDSO drawing CSC-1836
- (ix) RCF's drawing no. LJ90007
- (x) RDSO drawing CSC-1808
- (xi) RCF's drawing no. WA90004

(वी० के० अग्रवाल)

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/विद्युत/ओपरेटिंग/एस एण्ड टी)
 - i) उत्तर रेलवे, बड़ौदा हाऊस, नई दिल्ली - 110 001.
 - ii) उत्तर मध्य रेलवे, हास्टिंग रोड, प्रयागराज - 211 001.
 - iii) पूर्व मध्य रेलवे, हाजीपुर - 844 101.

संलग्नक:

- (i) RDSO Sketch 96077
- (ii) RCF's drawing no. LE90009
- (iii) RCF's drawing no. LJ90004
- (iv) RDSO drawing CSC-1840 Alt. 2
- (v) RDSO drawing no.CSC-1844
- (vi) RDSO drawing no. CG-11034
- (vii) ICF drawing No.LGS/EOG/ASR-9-0-001
- (xii) RDSO drawing CSC-1836
- (ix) RCF 's drawing no. LJ90007
- (x) RDSO drawing CSC-1808
- (xi) RCF's drawing no. WA90004

(वी० के० अग्रवाल)

कार्यकारी निदेशक मानक/चालन शक्ति