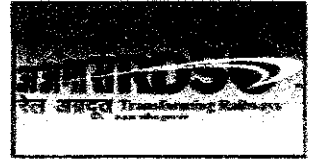




भारत सरकार - रेल मंत्रालय
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Lucknow - 226 011
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MC/LHB/COACH

Date-02.11.2016

महाप्रबन्धक (इंजीनियरिंग),
पश्चिम रेलवे, चर्चगेट, मुम्बई - 400020

Sub: Speed Certificate for operation of Rajdhani Express and similar trains comprising maximum 24 numbers of LHB AC EOG variant coaches including two LHB Generator Vans on Mumbai Central (BCT)-Virar-(VR)-Godhra(GDA)-Ratlam (RTM)-Nagda (NAD)- Mumbai Central (BCT) section of Western Railway at a maximum speed of 130 kmph on track maintained to C&M-I, Volume-I standard.

- Ref: (i) Western Railway D.O. letter no. M. 120/15-2/LHB-150 dated 01.09.2016
(ii) Western Railway letter no. M. 120/15/2/LHB-160 dated 19.09.2016
(iii) RDSO speed certificate no. SD.POL.12.4 dated 25.07.2008 & 28.7.2008.
(iv) RDSO speed certificate no. MC/LHB/COACH dated 20.04.2007 followed by amendment no. 01 & 02 dated 19.10.2012 & 22.8.2013 respectively.
(v) RDSO speed certificate no. MC/LHB/COACH dated 08.04.2016

Vide reference (i) & (ii) above, Western Railway has requested to issue a consolidated speed certificate incorporating extracts of already issued speed certificates mentioned at references (iii), (iv) & (v) to avoid cumbersome. Therefore, RDSO decided to update speed certificate indicated in subject to keep in line with RDSO's speed certificate at reference (iv).

- 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 M+T-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 Car & LHB AC Generator Van 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.

- 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 क्र्यू-17016/06/2013-14.तठवि0 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 Coupler force and EBD trials of 18 numbers of LHB AC EOG coaches with single WAP5 Locomotive have been conducted on NDLS-CNB-NDLS section of Northern Railway and North Central Railway and the test results as contained in Report no. MT-283 (March 2001) are found within limit.
- 1.4 Emergency Braking Distance and Full Service Braking Distance trials of 22 AC /Non AC EOG LHB coaches hauled by single WAP4 Locomotive have been conducted on MGS-GZB section of North Central Railway. The test results as contained in Report no. RDSO/2012/TG/MT-1160/F Rev.-0 dated 22.03.2012 Amendment-Nil, are found within limit.
- 1.5 The Confirmatory Oscillograph Car Runs of 21 LHB AC EOG coaches hauled by single WAP4 Locomotive & single WDP4 Locomotive have been conducted on Vadodra (BRC)-Nagda (NAD) section of Western Railway, in both up and down directions upto a max speed of 130 kmph respectively. The test results as contained in RDSO's Report no. RDSO/2016/TG/MT-1434/F Rev.0 Amendment-Nil, dated 31.12.2015, exhibit satisfactory riding and stability behavior upto maximum speed of 130 kmph. Based on results of COCR, RDSO issued " speed certificate for operation of Rajdhani Express and other similar trains comprising maximum 21 numbers of LHB AC EOG variant coaches including two LHB Generator Vans on Vadodra(BRC)-Nagda(NAD)- Vadodara(BRC) section of Western Railway at a maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard" vide RDSO's letter no. MC/LHB/COACH dated 08.04.2016.
- 1.6 The Confirmatory Oscillograph Car Runs of LHB AC EOG coaches hauled by single WAP5 Locomotive has been conducted on Virar(VR)- Ahmedabad(ADI), Ahmedabad(ADI)-Godhra(GDA) and Godhra(GDA)-Vadodra(BRC)-Virar(VR) section of Western Railway, in both up and down directions upto a max speed of 130 kmph. The test results as contained in RDSO's Report no. MT-853/F, exhibit satisfactory riding and stability behavior upto maximum speed of 130 kmph. Based on results of COCR, RDSO issued " speed certificate for operation of Rajdhani Express and other similar trains with WAP5 class of locomotive between Virar(VR)- Ahmedabad(ADI), Ahmedabad(ADI)-Godhra(GDA) and Godhra(GDA)-Vadodra(BRC)-Virar(VR) section of Western Railway at a maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard" vide RDSO's letter no. SD.POL.12.4 dated 25.07.2008.
- 1.7 The Confirmatory Oscillograph Car Runs of LHB AC EOG coaches hauled by single WAP7 Locomotive has been conducted on Virar(VR)- Ahmedabad(ADI), Ahmedabad(ADI)-Godhra(GDA) and Godhra(GDA)-Vadodara(BRC)-Virar(VR) section of Western Railway, in both up and down directions upto a max speed of 130 kmph. The test results as contained in RDSO's Report no. MT-847/F, exhibit satisfactory riding and

stability behavior upto maximum speed of 130 kmph. Based on results of COCR, RDSO issued " speed certificate for operation of Rajdhani Express and other similar trains with WAP7 class of locomotive between Virar(VR)- Ahmedabad(ADI), Ahmedabad(ADI)-Godhra(GDA) and Godhra(GDA)-Vadodara(BRC)-Virar(VR) section of Western Railway at a maximum speed of 130 kmph on track maintained to C&M-I, Vol.-I standard" vide RDSO's letter no. SD.POL.12.4 dated 28.07.2008.

1.8 Locomotive

- 1.8.1 The WAP4 locomotive, previously 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 standard as per C&M-1 Vol.I vide this office letter no. SD.WAP1.11 dt. 27.9.1994. Rly. Bd.'s vide their letter no. 93/Elect. (TRS) 440/3 dated 19.01.1995 this class of locomotive has been classified as WAP4 and accordingly, the Zonal Railways have been advised vide this office letter no. SD.WAP1.11 dated 18.4.1996.
- 1.8.2 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 standards laid down in RDSO report no. C&M-I, Vol.I vide RDSO's amended letter no.SD.WDP4.11 dated 29.12.2008.
- 1.8.3 The WAP5 class of locomotives imported from M/s ABB, Switzerland have undergone detailed oscillation trials at 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 standards laid down in RDSO report no. C&M-I Vol.I vide RDSO's letter no. SD.WAP5.11 dated 19.06.1997 followed by amendments dated 23.10.2006, 20.01.2012 & 13.06.2012.class of locomotives imported from M/s ABB, Switzerland have undergone detailed oscillation trials at 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 standards laid down in RDSO report no. C&M-I Vol.I vide RDSO's letter no. SD.WAP5.11 dated 19.06.1997 followed by amendments dated 23.10.2006 and 20.01.2012.
- 1.8.4 The WAP7 class of locomotives manufactured by Chitranjan Locomotive Works have undergone detailed oscillation trials at 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 standards laid down in RDSO report no. C&M-I Vol. I vide RDSO's letter no. EL/3.1.35/4 dated 1.05.2001.
- 1.8.5 The WAP1 locomotive as shown in RDSO Sketch No. SKDL-3031A (Alt. 01) previously designated as WAM4R using axle hung nose suspended TAO-659 traction motor and flexi coil bogies with two stage suspension has undergone detailed oscillation trials at a maximum speed of 160 kmph and the results are contained in RDSO Report NO. MT-529. Based on the results, WAP1 class of locomotives has been cleared up to a max. speed of 140 kmph on track maintained to RDSO report No. C&M-I Vol.I vide this office letter No. SD. WAP1.11 dated 27.9.1994.
2. Based on the above & Western Railway letter no. M. 120/15/2/LHB-160 dated 19.09.2016 (copy enclosed), it is certified that Rajdhani Express and similar type of trains hauled by single WAP4/ WDP4/WAP5/WAP7/WAP1 Locomotive and having maximum 24 nos. of LHB AC EOG variant coaches including two nos. of LHB AC Generator Van

may be permitted to operate between Mumbai Central (BCT)-Virar-(VR)-Godhra(GDA)-Ratlam (RTM)- Nagda (NAD)- Mumbai Central (BCT) section up to the maximum as given below.

S. No.	Sub-Section	Speed
1.	Mumbai Central (BCT)- Borivali (BVI)	100 Kmph
2.	Borivali (BVI)-Virar (VR)	110 Kmph
3.	Virar (VR)- Godhra (GDA)	130 Kmph
4.	Godhra (GDA)- Limkheda (LMK)	110 Kmph
5.	Limkheda (LMK)- Ratlam (RTM)	100 Kmph
6.	Ratlam (RTM)- Nagda (NAD)	130 Kmph

2.1 Track

- 2.1.1 The track shall be to a minimum standard of 52 kg rail on PSC sleepers with M+7 density and depth of ballast cushion below the 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 track maintained to C&M-I, Vol.-I standard. Moreover, the instructions for the maintenance of track on high-speed route, circulated to the Indian Railways under RDSO's DO letter no. CRA/509 dated 07.7.1971 and approved by Railway Board under their letters No. 71/W6/HS/8 dated 27.8.1971 and 71/W6/HS/1 dated 21.10.1971 should also be followed.
- 2.1.2 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 roadbed 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.
- 2.1.4 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. Maintenance of rail & rail joints shall be ensured as per Para 250 & 251 of IRPWM. In addition, wherever condition warrants on account of corrosion on rail/ weld collar, wear on rail, cupping of welds etc. necessary precautions shall be taken for fish plating/ joggled fish plating.
- 2.1.5 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.
- 2.1.6 Replacement of existing loose heel switches by fixed heel curved switches laid on PSC sleeper layout with CMS crossings with adequate arrangements for designed geometry of turnouts shall be ensured. Turnouts with TWS shall be preferred on such routes.
- (ii) Preferably improved SEJ should be provided on such routes.
 - (iii) Improvement on track geometry parameters on the route of operation of the coaches/trains shall be carried out.
 - (iv) The curves shall have to be suitable realigned and proper transition length shall be provided.
 - (v) All level crossings shall be manned.

2.2 Bridges

- 2.2.1 The clearance refers to bridges "Standard Spans" with standard design of girders, slabs, pipe culverts, piers and abutments, etc. issued by RDSO for BGML, RBG & 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.

2.2.2 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 concern and certified safe by him in terms of current Indian Standard Codes with up to- date correction slips.

2.2.3 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 concern Chief Bridge Engineer of Zonal Railway.

2.2.4 Location of bridges on which speed restrictions are 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 and LHB AC EOG variant coaches:

(A) For Locomotives:

S. No	Description	WDP4	WAP4	WAP5	WAP7	WAP1	
1	Max. axle load	19.5 t	19.0 + 2% t	19.5±2% t	20.5±2% t	18.8±2% t	
2.	Max. tractive effort	27.52 t	30.8 t	26.3 t	32.9 t	22.4 t	
3.	Max. braking force at rail level	16.3t	22.73 t	16.3 t	18.6 t	22.73 t	
4.	Max. CG height from rail level	Not exceeding 1830mm					

(B) For LHB AC EOG Variant Coaches & LHB Generator van

S. No	Description	Max. axle load	Max. braking force at rail level	Max. CG height from rail level
1	AC First Class Coach (LWFAC)	16.25t	5.8 t	Not exceeding 1830mm
2.	AC First cum AC-2 Tier (LWFCWAC)	16.25t	5.8 t	Not exceeding 1830mm
3.	AC 2-Tier Sleeper Coach (LWACCW)	16.25t	5.8 t	Not exceeding 1830mm
4.	AC 3-tier Sleeper coach (LWACCN)	16.25t	5.8 t	Not exceeding 1830mm
5.	AC Pantry Car (LWCBAC)	16.25t	5.8 t	Not exceeding 1830mm
6.	Generator van (LWLRRM)	16.25t	6.6 t	Not exceeding 1830mm

2.2.6 Specific restrictions are applicable as mentioned in 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 MACLS shall be provided with two distant signals or four aspect automatic signaling. If two distant signals are provided than first distant signal shall be located at a distance of 1

km in rear of the home signal and the second distant signal at a distance of 2 kms in rear of the home signal. This stipulation shall also be applicable to the IBS and interlocked gates located in the block section.

2.3.3 All manned level crossing gates shall be provided with telephone communication with the nearest station.

2.3.4 With a view to maintained safety, the last stop signal shall not be taken "OFF" at the station unless:

2.3.4.1 The sections upto the stations in advance is clear, and

2.3.4.2 At the station in advance, the route of the train is clear, correctly set and locked for reception of train.

2.3.5 Following provisions are mandatory.

- i) Electrical operation of points and means for locking both switches.
- ii) Electrical means for lock detection and independent switch detection by the respective signals.
- ii) The interlocking between signal and points shall be by electrical or electronic means (PI/RRI/SSI).
- iii) Track circuiting of all running line from first stop from first stop signal to last stop signal.
- iv) At stations provided with central panel interlocking arrangement for verifying complete arrival of train by suitable means (Axle counter/track circuit block proving).
- v) Means for directly holding the closed switch rail to corresponding stock rail and preventing the points from being unlocked during the passage of the train (clamp lock) is required for facing point.

2.3.6 25Watts VHF sets shall be provided in the locomotive and guards van for communication between loco pilot, guard and adjacent station master till such time mobile train radio communication work is commissioned in the section.

2.3.7 All level crossing gates should be manned.

2.4 Traction Installation (Applicable when electric locomotive is used)

2.4.1 The OHE shall have swivelling type of cantilever having the tension in the conductors regulated automatically, with a presag of 50 / 100 mm. The presage is on contact wire for a span of 72 meter, proportionately less for smaller spans.

2.4.2 In case of locations where porcelain section insulators are installed on main line and lie 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 limited to 120 km/h. At all other locations where porcelain section insulators are installed, the speed shall be limited to 80 km/h.

2.4.3 The current collection beyond 100 km/h shall be made through one number pantograph fit for high-speed operation.

2.4.4 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.

2.4.5 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.

2.4.6 In addition to the above, the CEE may impose any temporary speed restriction on the basis of his personal knowledge and experience of the OHE and the conditions prevailing on any particular section.

2.4 Rolling Stock

2.5.1 Before starting the operation, CME/PCE of the concerned railway shall arrange to certify the track worthiness & safety of rolling stocks and they shall also ensure proper maintenance of the stock.

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 become defective enroute, of any train running up to 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 up to destination without speed restriction as per RDSO's letter no. MC/LHB/Brake dated 25/29.04.2016.

2.5.3 The earthing arrangement on the coaches shall be maintained as per design.

2.5.4 The LHB AC EOG coaches shall be maintained as per "Maintenance manual for LHB coaches issued by CAMTECH Gwalior in year 2013.

2.5.5 In existing LHB EOG coaches having feeder cable of 120 mm², 400A Inter-vehicular (IV) coupler and Diesel-Alternator sets capacity of 2x336 KW, maximum permissible coaches to be augmented is 21 numbers including two power cars.

2.5.6 For augmentation of 24 numbers of LHB EOG AC coaches of Rajdhani Express or similar trains including two LHB generator cars, provisions of 150 mm² feeder cable, 500 A Inter-vehicular (IV) coupler and high capacity power car of capacity of 2x450 KW Diesel Alternator set in power car to be ensured.

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.

2.6.2 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.

2.6.3 LHB AC (EOG) variant coaches and LHB Generator Van do not infringe any clause of revised IRSOD-2004 with latest addendum & corrigendum slip.

2.6.4 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.

2.6.5 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.

2.6.6 The pantograph of WAP5 locomotive in locked down condition and the surge arrestors infringe the Maximum Moving Dimensions of 1929 over non-electrified sections. 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

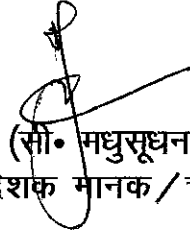
have condoned these infringements vide their letter No.95/CEDO/SR/18 dated 14.7.1995.

2.6.7 The pantograph of the WAP7 locomotives in locked down condition and 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 moving 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 letter no. 2000/CEDO/SR/2 dt. 17.02.2000.

2.6.8 The design of WAP₁ locomotive infringes clauses 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. 79/WDO/SR/6 dated 07.4.1979, initial designation of the locomotive being WAM4R.

संलग्नकः

- (i) RDSO Sketch 96077
- (ii) RCF's drawing no. LE 90009
- (iii) Western Railway letter no. M. 120/15/2/LHB-160 dated 19.09.2016


(सी. मधुसूदन राव)

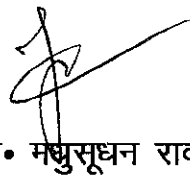
कार्यकारी निदेशक मानक/चालन शक्ति

प्रतिलिपि:

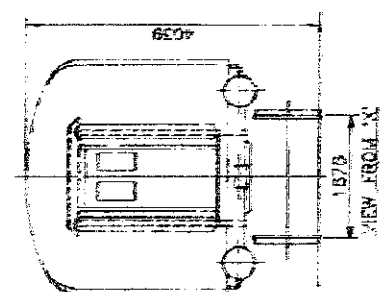
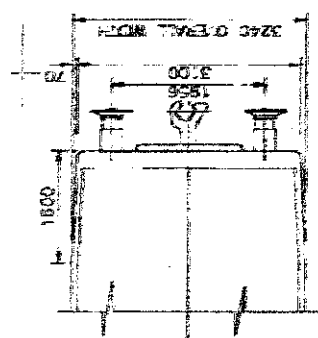
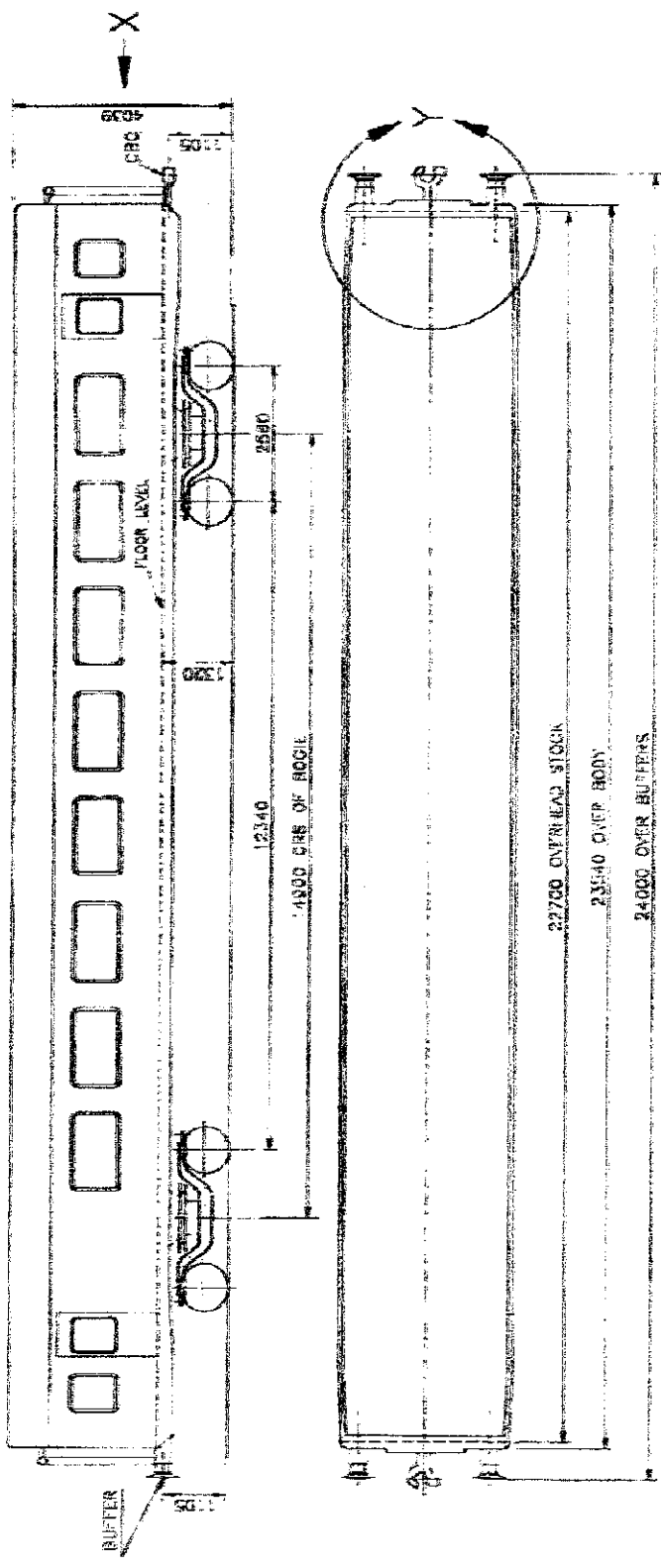
1. सचिव (यांत्रिक/इलेक्ट्रिकल/इंजीनियरिंग-जी), रेलवे बोर्ड, रेल भवन, नई दिल्ली-110 001.
2. मुख्य रेल संरक्षा आयुक्त, मण्डल रेल प्रबन्धक कार्यालय, पूर्वोत्तर रेलवे परिसर, अशोक मार्ग लखनऊ-226 001
3. महाप्रबन्धक (यांत्रिक/विद्युत/ओपरेटिंग/एस एण्ड टी) पश्चिम रेलवे, चर्चगेट, मुम्बई - 400020

संलग्नकः

- (i) RDSO Sketch 96077
- (ii) RCF's drawing no. LE 90009
- (iii) Western Railway letter no. M. 120/15/2/LHB-160 dated 19.09.2016


(सी. मधुसूदन राव)

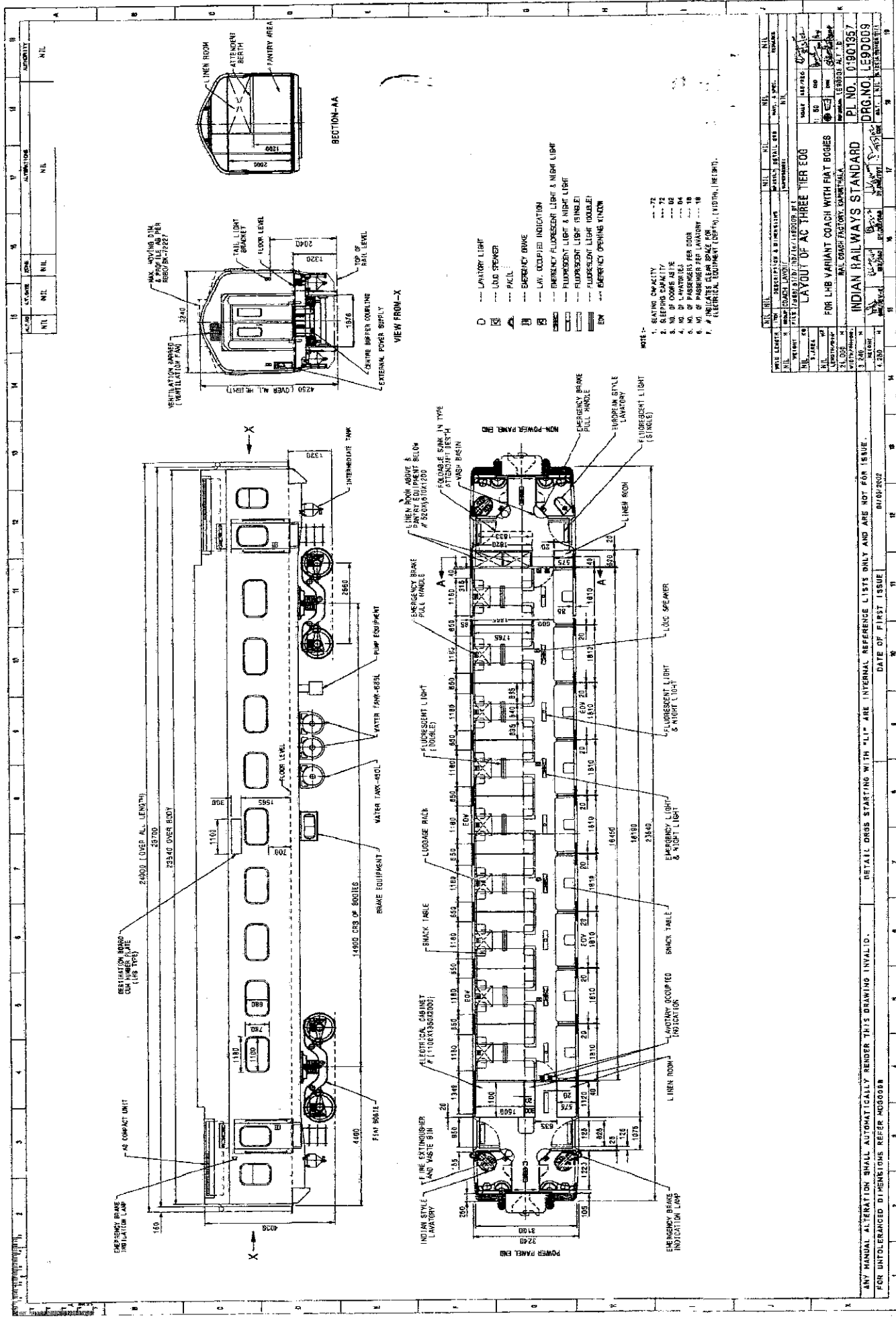
कार्यकारी निदेशक मानक/चालन शक्ति



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

DIAGRAM SHOWING MAIN DIMENSIONS OF LHB-IR COACH

SKETCH-96077



NO.	DESCRIPTION	UNIT	QTY.	REMARKS
1	SEATING CAPACITY		72	
2	SLEEPING CAPACITY		72	
3	NO. OF DOORS AJIVE		04	
4	NO. OF LAMPS		04	
5	NO. OF PASSENGER SEAT		18	
6	NO. OF PASSENGER LAMP		18	
7	INSULATED CLEAR SPACE FOR ELECTRICAL EQUIPMENT (TOP, MIDDLE, BOTTOM)			

LAYOUT OF AC THREE TIER EOG
 FOR LHB VARIANT COACH WITH FLAT BOGGIES
 INDIAN RAILWAYS STANDARD
 PL. NO. D1901357
 DRG. NO. LE90008

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.
 RETAIL DRGS STARTING WITH "L1" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.
 FOR UNTOLERANCED DIMENSIONS REFER H080008
 DATE OF FIRST ISSUE: 01/01/2002

DATE OF FIRST ISSUE: 01/01/2002



पश्चिम रेलवे
WESTERN RAILWAY

प्रधान कार्यालय
Headquarters Office
चर्चगेट, मुम्बई-400020
Churchgate, Mumbai

No.M 120/15/2 LHB-160

Date: 19.09.2016

Executive Director (Carriage)
RDSO, Lucknow

Sub: speed certificate for operation of Rajdhani Express and similar trains comprising maximum 24 numbers of LHB AC EOG variant coaches including two LHB Generation Vans on Mumbai Central (MCT)- Virar (VR)- Godhra (GDA)- Ratlam (RTM)- Nagda (NAD)- Mumbai Central (MCT) section of Western Railway at a maximum speed of 130 Kmph on track maintained to C&M-I, Volume – I standard.

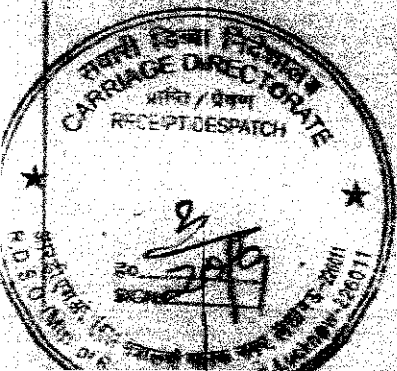
Ref: Dy. Director/Carriage/RDSO's letter no. MC/LHB/COACH dtd. 14.09.16.

With reference to above, Comments/remarks of Western Railways are as under:

1. Speed certificate should cover Mumbai Central (BCT)-Virar (VR)-Godhra (GDA)-Ratlam (RTM – Nagda (NAD) – Mumbai Central (BCT) section of Western Railway. The section mentioned in the draft speed certificate needs to be corrected.
2. RDSO's speed certificate No. SD.POL.12.4 dt. 22.08.2008 for operation of Rajdhani and similar trains with WDP4 loco also needs to be incorporated which is missing from the draft speed certificate.
3. Revised speed certificate needs to mention following proposed speeds in various subsections.

Sub-Section	Speed
BCT – BVI	100 Kmph
BVI – VR	110 Kmph
VR – GDA	130 Kmph
GDA – LMK	110 Kmph
LMK – RTM	100 Kmph
RTM – NAD	130 Kmph

The above corrections may please be included in RDSO's final/revised speed certificate to be issued for the purpose.



(S.C. Prasad)
Dy. CME(R)/CCG
For CRSE/F&O/CCG