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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

MC/LHB/COACH

Date: 12.12.2014

महाप्रबन्धक (इंजीनियरिंग)

1. मध्य रेलवे, छत्रपति शिवाजी टर्मिनस, मुम्बई – 400 001.
2. पूर्व रेलवे, फेयरली प्लेस, कोलकाता – 700 001.
3. उत्तर रेलवे, बडौदा हाउस, नई दिल्ली – 110 001.
4. दक्षिण रेलवे, पार्क टाउन, चेन्नई – 600 003.
5. दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद – 500 071.
6. दक्षिण पूर्व रेलवे, गार्डेन रीच, कोलकाता – 700 043.
7. पूर्वोत्तर रेलवे, गोरखपुर – 273 012.
8. पूर्वोत्तर सीमान्त रेलवे, मालीगाँव, गुवाहाटी – 781 011.
9. पश्चिम रेलवे, चर्चगेट, मुम्बई – 400 020.
10. पूर्व मध्य रेलवे, हाजीपुर – 844 101.
11. पूर्व तटीय रेलवे, बीडीए रेंटल कालोनी, रेलवे काम्पलेक्स, चन्द्रशेखरपुरा, भुवनेश्वर, उड़ीसा – 751 016.
12. उत्तर मध्य रेलवे, हार्लिंग रोड, इलाहाबाद – 211 001.
13. उत्तर पश्चिम रेलवे, जयपुर – 302 006.
14. दक्षिण पश्चिम रेलवे, हुबली – 580 023.
15. पश्चिम मध्य रेलवे, जबलपुर – 482 001.
16. दक्षिण पूर्व मध्य रेलवे, आर ई आफिस काम्पलेक्स, बिलासपुर – 495 004.

Sub: Final speed certificate for operation of BG EOG AC Observation Car LHB variant coach (LACOC) fitted with FIAT bogies upto maximum speed of 160 km/h on track maintained to C&M-I, Volume-I standard.

1. RCF has built EOG AC Observation Car LHB variant Broad Gauge Coaches (LACOC) as per RDSO's drawing no. CSC-1829, fitted with Fiat bogies. These Coaches have been built to the state of art technology and provided with disc brakes and CBC. The speed potential of these Coaches is 160km/h. The BG EOG AC Observation Car LHB variant coach is similar to that of existing LHB AC EOG Chair car coach.
 - 1.1 Detailed oscillation trials of LHB AC EOG Chair car have been conducted up to maximum speed of 180 km/h and results are contained in RDSO's Report no. MT-240. On the basis of satisfactory results of oscillation trials, this chair car has been cleared for operation up to maximum speed of 160 km/h on track maintained to C&M-I, Vol.-I standard vide this office letter of even no. dated 19.03.2003. On the basis of LHB AC EOG Chair car, CCRS/Lucknow has accorded sanction for dispensation of oscillation trials for BG EOG AC Observation Car LHB variant coach vide letter no. व्यू-17016/01/2014-15-टी.डब्लू. dated 18.09.2014.
 2. Based on the above, it is certified that BG EOG AC Observation Car LHB variant coach is fit for operation upto maximum speed of 160 km/h on track maintained to C&M-I, Vol. I standard of Indian Railways subject to the conditions given below.

2.1 Track

- 2.1.1 The track shall be to a minimum standard of 60 kg (90 UTS) rail on PSC sleepers with 1660 sleeper/km density and minimum depth of ballast cushion below the

sleeper of 300mm which may consist of at least 150 mm clean and rest in caked up condition, on compact and stable formation and maintained to the standard stipulated in RDSO report no. C&M-I, Vol.-I. In this connection, the instructions for the maintenance of track on high-speed routes (track maintained to C&M-I, Volume-I standard), circulated to the Indian Railways under RDSO's DO letter no. CRA/509 dated 07.7.1971 and approved by Railway Board vide 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 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 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.
- 2.1.4 The maximum permissible speed on curve shall be decided on the basis of the existing provisions of the Indian Railways Permanent Way Manual Second Reprint-2004.
- 2.1.5 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.
- 2.1.6 Zonal Railways may ensure that all Turnout are with fixed heel curved switches laid on PSC sleepers layout with CMS crossings with adequate arrangement to ensure designed geometry of turnouts. Turnout with thick web switches shall be preferred on route where operation of trains at 160 kmph is planned. Provision of clamp type lock along with thick web switches in facing direction on main line shall be ensured before operation. Other turnouts shall be provided with thick web switches in phased manner.

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 clause have been arrived considering bridges are in physically sound condition. Zonal Railways 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 BG EOG AC Observation Car LHB variant coach
- | | | |
|----------------------------------|---|-----------------------|
| (i) Maximum Axle Load | : | 16.25 t |
| (ii) Maximum Braking Force | : | 5.8 t |
| (iii) 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 Provisions 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.
- 2.3.3 The condonation regarding infringements in schedule of dimensions shall be obtained in accordance with local conditions, before movement.

2.4 Traction Installation

- 2.4.1 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 (0.8 mm per meter/1.6 mm per meter presag) is on the contact wire for a maximum span of 72 m, proportionately less for smaller spans.

The gradient of contact wire and difference in the gradient of contact wire between two adjacent spans (relative gradient) may be kept as 3 mm /meter and 1.5 mm/meter respectively.

The above presag as well as gradient of contact wire are for running of one to two trains each way at 160 kmph.

- 2.4.2 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 are 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.
- 2.4.3 It will be ensured that the cantilevers in the section shall have "BFB" steady arm assembly with 25 mm drop bracket.

- 2.4.4 The current collection shall be made through one number pantograph fit for high speed operation.
- 2.4.5 The current collecting pantograph shall be checked before and after the use.
- 2.4.6 In 25 kV AC traction area, the Chief Electrical Engineer of the concerned 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 of Schedule-I of "Schedule of Dimension of 1676 mm gauge (BG) revised 2004" with latest addendum & corrigendum slips is not violated.
- 2.4.7 Any temporary speed restrictions on the basis of performance/ experience of sectional OHE and the field conditions prevailing on the particular section, may be imposed by the traction distribution officers.
- 2.4.8 There shall not be any crossed type OHE within the section, otherwise suitable speed restrictions may be imposed

2.5 Rolling Stock


- 2.5.1 Before starting the operation, Mechanical/ Electrical department of the concerned Railways shall arrange to certify the track worthiness and safety of the rolling stocks. They shall 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 The BG EOG AC Observation Car LHB variant coach does not infringe any clause of Indian Railways BG Schedule of Dimensions, Revised 2004.
- 2.6.3 All level crossing gates should be manned.
- 2.6.4 Concerned Zonal Railway will arrange for provision of sturdy fencing of track as per requirement at vulnerable locations prone for cattle crossing / trespassing identified by General Manager of respective railway to prevent trespassing/cattle crossing. Zonal railways should also provide subways at suitable location to avoid trespass and ensure effectiveness of fencing provided.

संलग्नकः

1. RDSO's drawing no. CSC-1829,
2. CCRS Letter no. क्यू-17016/01/2014-15-टी.डब्लू. dated 18.09.2014.


(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 / इलेक्ट्रिकल / ओपरेटिंग / एस एण्ड टी)

- i) मध्य रेलवे, छत्रपति शिवाजी टर्मिनस, मुम्बई- 400 001.
- ii) पूर्व रेलवे, फेयरली प्लेस, कोलकाता - 700 001.
- iii) उत्तर रेलवे, बडौदा हाउस, नई दिल्ली - 110 001.
- iv) दक्षिण रेलवे, पार्क टाउन, चेन्नई - 600 003.
- v) दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद - 500 071.
- vi) दक्षिण पूर्व रेलवे, गार्डेन रीच, कोलकाता - 700 043.
- vii) पूर्वोत्तर रेलवे, गोस्वपुर - 273 012.
- viii) पूर्वोत्तर सीमान्त रेलवे, मालीगाँव, गुवाहाटी - 781 011.
- ix) पश्चिम रेलवे, चर्चगेट, मुम्बई - 400 020.
- x) पूर्व मध्य रेलवे, हाजीपुर - 844 101.
- xi) पूर्व तटीय रेलवे, बीडीए रेंटल कालोनी, रेलवे काम्पलेक्स, चन्द्रशेखरपुरा, भुवनेश्वर, उड़ीसा-751 016.
- xii) उत्तर मध्य रेलवे, हास्टिंग रोड, इलाहाबाद - 211 001.
- xiii) उत्तर पश्चिम रेलवे, जयपुर - 302 006.
- xiv) दक्षिण पश्चिम रेलवे, हुबली - 580 023.
- xv) पश्चिम मध्य रेलवे, जबलपुर - 482 001.
- xvi) दक्षिण पूर्व मध्य रेलवे, आर ई आफिस काम्पलेक्स, बिलासपुर - 495 004.

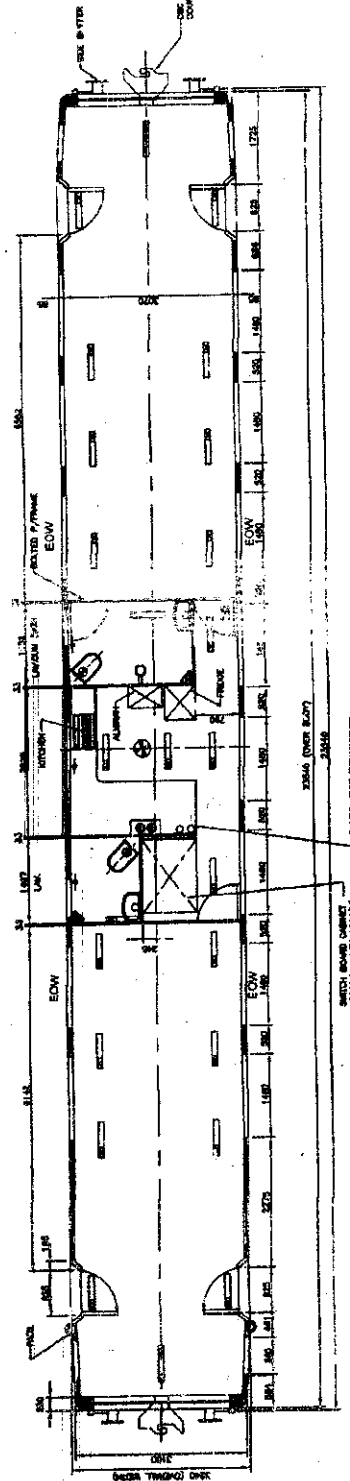
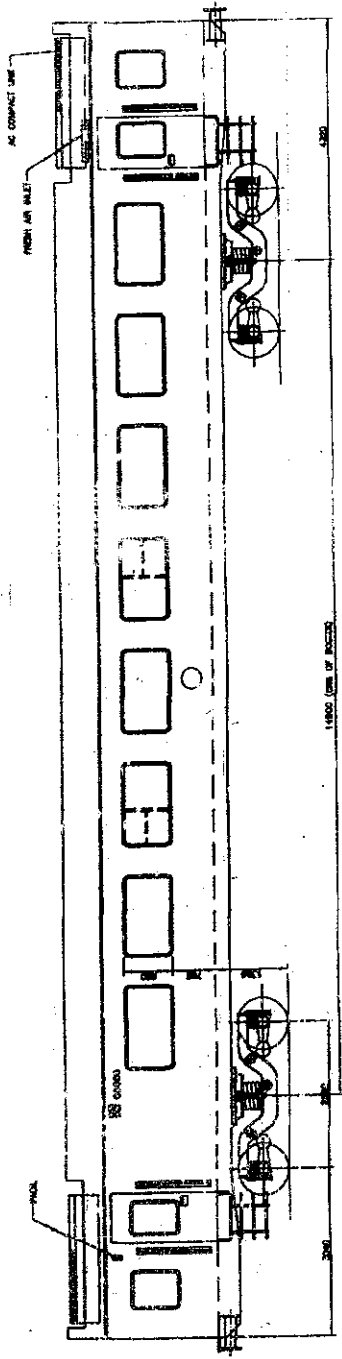
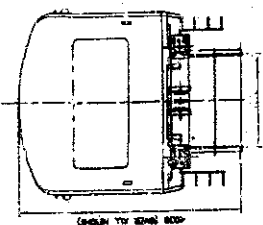
4. मैनेजिंग डायरेक्टर, कोंकण रेलवे कार्पोरेशन लिमिटेड, बेलापुर, नवी मुम्बई - 400 614.

संलग्नक:

1. RDSO's drawing no. CSC-1829,
2. CCRS Letter no. व्यू-17016/01/2014-15-टी.डब्ल्यू. dated 18.09.2014.



(सी. मधुसूदन राव)
कार्यकारी निदेशक सानक / चालन शक्ति



MODEL: COACH PROFILE AND MAX. MOVING DIMENSIONS AS PER SK-83167.

- ☐ RAILWAY
- RAILWAY CREST
- COACH NUMBER
- ▬ FLOURESCENT LIGHT
- ⊞ FAN
- ⊞ P/CL
- ⊞ EMERGENCY OPENABLE WINDOW
- ⊞ EOW ACCIDENT EMERGENCY LIGHT (LHB TYPE)
- ⊞ ALARM PULL CHAIN

APPROVED VIDE RAILWAY BOARD'S LETTER NO. 2007/MCO/157/14 VOL. V PART (V)
 DATED 27.08.2014 (RDSO FILE NO. MC/LHB/LAYOUT, SL. NO. 326)

TRANSPORTATION CODE: LACOC	SUPERSEDED BY:	INDIAN RAILWAY STANDARDS ICF/RCF
REFERENCE :- CG-14052	SCALE: P 1:50	LAYOUT OF AC OBSERVATION CAR (EOW) (LHB SHELL ON FIAT BOGIES)
CRC No.:-	DATE: 14.03/09/14	R.D.S.O. (CG)
DESCRIPTION	CGC No.:-	BG
DATE		CSC-1829

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नगर विमानन मंत्रालय
(रेल संरक्षा आयोग)

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GOVERNMENT OF INDIA

MINISTRY OF CIVIL AVIATION

(COMMISSION OF RAILWAY SAFETY)

पूर्वोत्तर रेलवे, मं.रे.प्र. कार्यालय परिसर
16, अशोक मार्ग, लखनऊ-226001

N.E. Railway, DRM OFFICE CAMPUS
16, Ashok Marg, Lucknow-226 001

फाईल संख्या-क्यू 17016/01/2014-15-टी.डब्लू.

अशोक मार्ग, लखनऊ ।
दिनांक: 18.09.2014

सोचा में,

महानिदेशक (कैरिज),
अनुसंधान अभिकल्प और मानक संगठन,
लखनऊ

विषय: Dispensation of detailed oscillation trials of BG EOG AC Observation
Car LHB variant coach (TRANSPORTATION Code- LACOC)

- संदर्भ: आपका पत्र संख्या -
1. MC/LHB/Coach, दिनांक 20/24.07.2014
 2. MC/CB/AC/DD, दिनांक 01.08.2014.
 3. MC/LHB/Coach, दिनांक 05.09.2014.

संदर्भ में दिये गये पत्रों द्वारा भेजे गये उपरिलिखित प्रस्ताव के सम्बन्ध में मुख्य रेल
संरक्षा आयुक्त द्वारा दोलन परीक्षण न करने के सम्बन्ध में छूट हेतु सहमति प्रदान कर दी गयी
है ।

यह पत्र मुख्य रेल संरक्षा आयुक्त के अनुमोदनोपरान्त जारी किया जा रहा है ।

18-09-2014
(उत्तम प्रकाश)

उप रेल संरक्षण आयुक्त (वाटिक)
मुख्य रेल संरक्षा आयुक्त