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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/OSC

Dt. 29-7-2010

**The General Manager (Engg.):**

1. Central Railway, Chhatrapati Shivaji Terminus, Mumbai - 400 001
2. Eastern Railway, Fairlie Place, Kolkata - 700 001
3. Northern Railway, Baroda House, New Delhi - 110 001
4. North Eastern Railway, Gorakhpur - 273 001
5. Northeast Frontier Railway, Maligaon, Guwahati - 781 011
6. Southern Railway, Park Town, Chennai - 600 003
7. South Central Railway, Rail Nilayam, Secunderabad - 500 071
8. South Eastern Railway, Garden Reach, Kolkata - 700 043
9. Western Railway, Churchgate, Mumbai - 400 020
10. East Central Railway, Hajipur - 844 101
11. East Coast Railway, Chandrasekharapur, Bhubaneswar - 751 016
12. North Central Railway, Allahabad - 211 001
13. North Western Railway, Jaipur - 302 006
14. South East Central Railway, Bilaspur - 495 004
15. South Western Railway, Hubli - 580 023
16. West Central Railway, Jabalpur - 482 008

**Sub: Final speed certificate for operation of EOG AC Oscillograph Car LHB variant Coach on track maintained to C&M-I, Volume-I standard.**

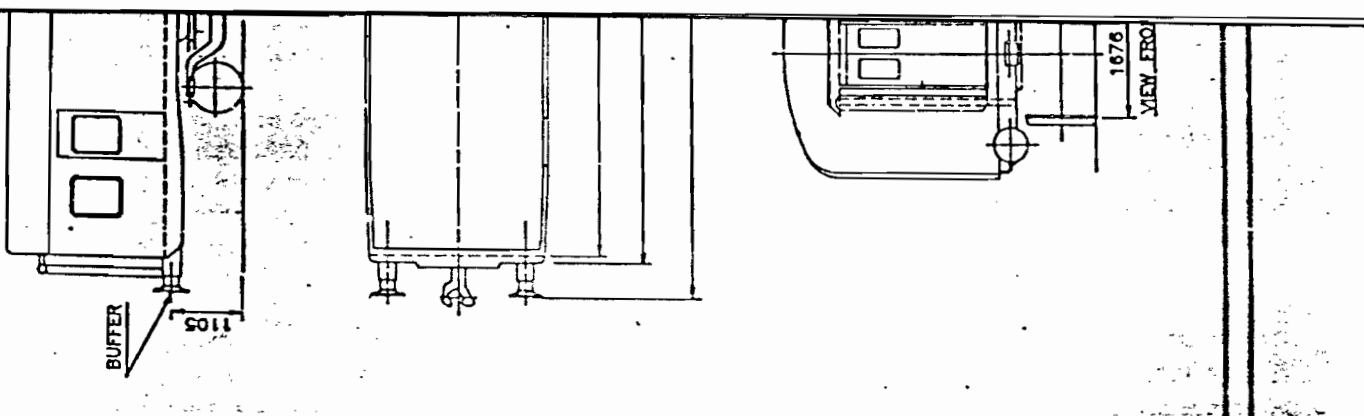
1. RCF has built EOG AC Oscillograph Car LHB variant broad gauge coaches fitted with Fiat bogies under the Transfer of Technology from M/s ALSTOM-LHB. The LHB AC coaches, generally to RDSO drg. No. SK. 96077 have speed potential for operation 160 kmph on track maintained to C&M-I, Vol. I. These coaches are built to the state of art technology, provided with disc brakes and center buffer couplers.
2. LHB AC EOG coach has undergone detailed Oscillation trials upto test speed of 180 KMPH and speed certificate for regular operation LHB AC Chair Car at a maximum speed of 160 KMPH on track maintained to C&M-I, Vol.-I standard have been issued vide RDSO Letter no. MC/LHB/COACH dated 19.03.2003. Dispensation has been obtained from CCRS/Lucknow for operation of EOG AC Oscillograph Car LHB Variant Coach vide letter no. ब्यू-17016/07/2010- ता कि, dated 01.07.2010. Trials on LHB AC Chair Car were carried out with satisfactory result contained in RDSO's Report no.MT-240.
3. Based on above, it is certified that EOG AC Oscillograph Car LHB variant Coach is fit for operation upto maximum speed of 160 kmph and fit upto maximum speed of 180 KMPH exclusively only for trials over track maintained to C&M-I, Vol. I standard of Indian Railways subject to conditions given below.

### 3.1 Track

- 3.1.1 The track shall be to a minimum standard of 52 Kg rails on sleepers to M+7 density and minimum depth of ballast cushion below the sleepers to 250 mm which may consist of at least 100 mm clean and the rest in caked up condition on compacted and stable formation and track maintained to C&M-I, Vol.-I standard.
- 3.1.2 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.
- 3.1.3 The maximum permissible speed on curves to be decided on the basis of the existing provisions of the Indian Railways Permanent Way Manual Second Reprint-2004.
- 3.1.4 The track maintenance shall be in accordance with the recommendations contained for the maintenance of track on high speed routes circulated to the railways under RDSO's DO letter no. CRA/509 dated 07-7-1971 and approved by Railway Board vides their letters no.71/W6/HS/8 dated 27.8.1971 and 71/W6/HS/1 dated 21-10-1971 should be followed.
- 3.1.5 (i) Wherever condition warrant on account of corrosion on rail/weld collar, wear of rail, cupping in the welds etc necessary precautions should be taken for fish plating/joggle fish plating of the rail/weld.
- (ii) Zonal Railways may impose such further restrictions of speed as deemed fit, based on the age and condition of track and the extent of fractures/weld failures/defect generation rate occurring in the sections.

### 3.2 Bridges

- 3.2.1 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 76.2 m (clear) designed for BGML standard loading as per RDSO's drawing no. BA-11154 should be strengthened by providing two additional anchor bolts.
- 3.2.2 Superstructures and bearings of non-standard spans including Arches and sub-structures of all bridges are to be examined under the directions of the Chief Bridge Engineer concerned and certified safe with respect to current Indian Standard codes with up to-date correction slips.
- 3.2.3 Zonal Railways to certify adequacy of existing bridges for permitted rolling stock based on physical condition of bridges by keeping them under observations considered necessary by the Chief Bridge Engineer of Railway.
- 3.2.4 Location of bridges on which speed restrictions are imposed shall be notified by the Railways and incorporated in the working timetable.



3.2.5 This clearance is subject to the following parameters of EOG AC Oscillograph 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

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

### 3.3 Signaling

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

3.3.2 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.

### 3.4 Traction Installation

#### For 25Kv a.c. Traction area

3.4.1 In 25kV a.c. traction area, the CEE of Railway shall have to ensure that the minimum height of contact wire and electrical clearances as stipulated in provision of Chapter-V and V-A, Electric Traction "Schedule of Dimension of 1676 gauge (BG) revised 2004" is not violated and strictly followed to ensure its safe running".

#### For DC Traction

3.4.2 For DC OHE the condition of operation shall be specified by CEE of the concern railway.

### 3.5 Rolling Stock

3.5.1 Before starting the operation, CME of the concerned railway will certify the track worthiness and safety of the rolling stocks. He will also ensure proper maintenance of the stocks.

3.5.2 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.

3.5.3 The EOG AC Oscillograph Car LHB Variant Coach shall be maintained as per "Preventive Maintenance system for LHB Coaching Stock" issued by Railway Board and the instructions issued by RDSO & Railway Board time to time.

### 3.6 General

3.6.1 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.

3.6.2 Profile of EOG Oscillograph car LHB variant coach is same as that of LHB AC EOG variant Coaches (Other than ACCN) with 23540 mm length over body and 12340 mm maximum distance apart between any two adjacent axles which infringes clauses 13(b), 16, 17, 19(b), 20(b), 21(b), 22 & 32(b) of Chapter IV (A) of BG Schedule of Dimensions, 1973 Reprint. These infringements of LHB AC EOG variant coaches had been condoned by Railway Board vide their letter No. 97/CEDO/SR/3, dated 07.02.1997.

- DA: 1. Rly. Board letter no.97/CEDO/SR/3 dated 07.02.97  
2. RDSO SK. 96077  
3. CCRS Letter no. vide क्रू-17016/07/2010- त० वि०, dated 01.07.2010

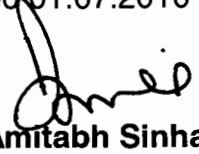
  
(Amitabh Sinha)

**Executive Director Standards (Motive Power)**

Copy to:

1. The Secretary (Mech., Elec. & Engg. /G)  
Railway Board, Rail Bhawan,  
New Delhi - 110 001
2. The General Manager (Mech., Elect. & Optg./S & T)
  - i. Central Railway, Chhatrapati Shivaji Terminus, Mumbai – 400 001
  - ii. Eastern Railway, Fairlie Place, Kolkata - 700 001
  - iii. Northern Railway, Baroda House, New Delhi - 110 001
  - iv. North Eastern Railway, Gorakhpur - 273 001
  - v. Northeast Frontier Railway, Maligaon, Guwahati - 781 011
  - vi. Southern Railway, Park Town, Chennai - 600 003
  - vii. South Central Railway, Rail Nilayam, Secunderabad - 500 071
  - viii. South Eastern Railway, Garden Reach, Kolkata - 700 043
  - ix. Western Railway, Churchgate, Mumbai - 400 020
  - x. East Central Railway, Hajipur - 844 101
  - xi. East Coast Railway, Chandrasekharapur, Bhubaneswar - 751 016
  - xii. North Central Railway, Allahabad - 211 001
  - xiii. North Western Railway, Jaipur - 302 006
  - xiv. South East Central Railway, Bilaspur - 495 004
  - xv. South Western Railway, Hubli - 580 023
  - xvi. West Central Railway, Jabalpur - 482 008
3. Managing Director, Konkan Railway Corporation, Belapur, Navi Mumbai-400014.
4. Chief Commissioner of Railway Safety, NE Railway, NE Railway Compound, Ashok Marg, Lucknow-226001

- DA: 1. Rly. Board letter no.97/CEDO/SR/3 dated 07.02.97  
2. RDSO SK.96077  
3. CCRS Letter no. vide क्रू-17016/07/2010- त० वि०, dated 01.07.2010

  
(Amitabh Sinha)

**Executive Director Standards (Motive Power)**

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

No. 97/CEDO/SR/3.

23/2

दिनांक 07.02.97  
New Delhi-110001, dated 07.02.97

To,  
The Director General (Track),  
R.D.S.O.,  
Manak Nagar,  
LUCKNOW - 226 001.

4/7/2  
1-2-97  
Date No. [ ]

Subj: LHE Coach - Condonation of the infringements to Schedule of dimensions 1973.

With reference to your application No. CT/LC/EG. dt. 17/20.1.97, sent through the Chief Commissioner of Railway Safety, Lucknow, the sanction of Ministry of Railways is hereby communicated for condonation of infringement to item 13(b), 16, 17, 19(b), 20(b), 21(b), 22 & 32(b) of Chapter-IV(A) of B.G. Schedule of dimensions (1973) involved in 23540 mm long LHE coach with 2350 mm width.

The sanction is based on Form- and Sketch No. 96077 accompanying your application referred to above.

( V.K. BAHANI )  
Exec. Dir. Civil Engg. (G)  
Railway Board.

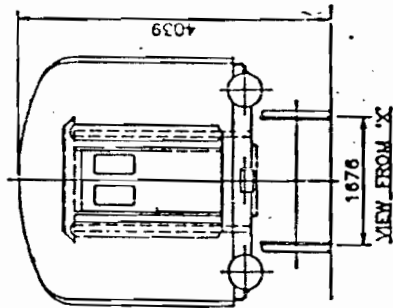
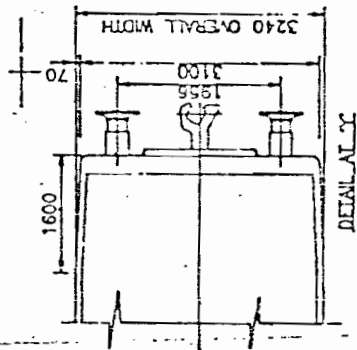
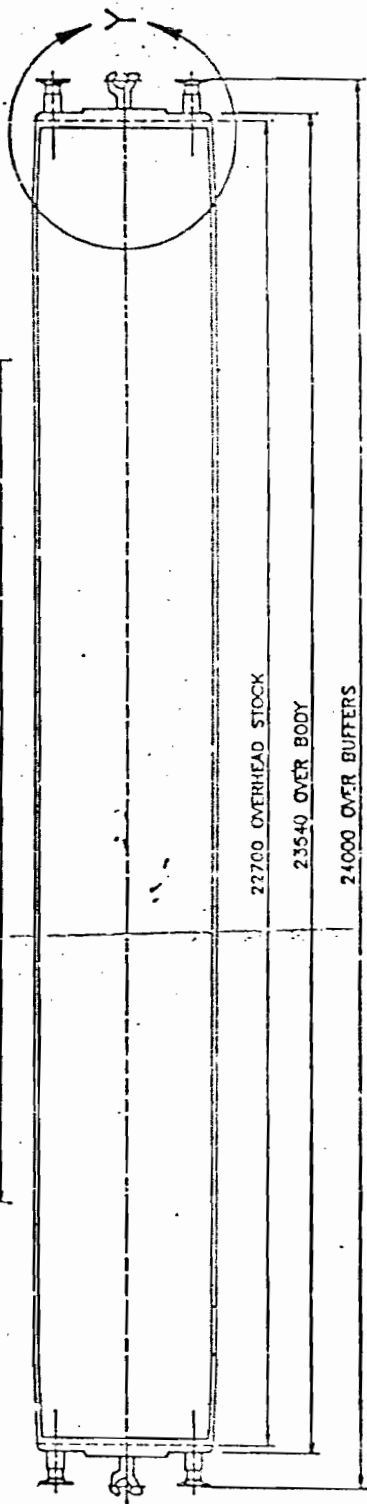
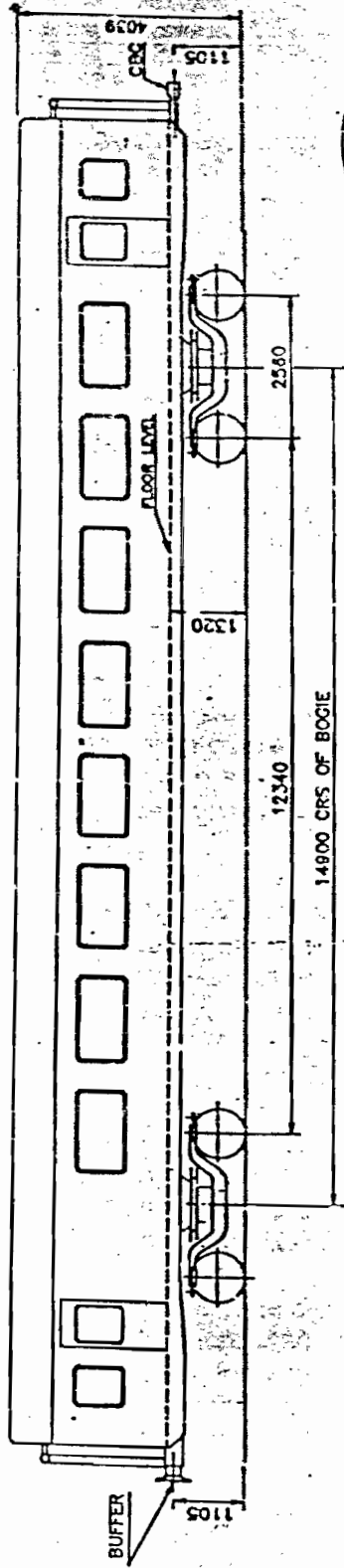
No. 97/CEDO/SR/3.

New Delhi, Dt. 07.02.97.

Copy forwarded for information to the Chief Commissioner of Railway Safety, 16-A, Ashok Marg, Lucknow - 226 001 with reference to his endorsement No. Q.17.112/1/97/RS dated Nil.

( V.K. BAHANI )  
for Secretary Railway Board.

DS-12-7



NOTE:-

BUFFERS ARE TO BE PROVIDED ONLY  
IN POWER CAR.

DIAGRAM SHOWING MAIN DIMENSIONS  
OF LHB-IR COACH.

SKETCH-96077

चौफकाम  
Telegram : CHIEFCOM  
e-mail-chiefcom@sancharnet.in  
ई-मेल-चौफकाम@संचारनट.इन



फोन/Ph. - 2629743 (P&T)  
31-254 N.E. Rly. 31-570  
N. Rly. 23-290  
टेली फैक्स/Tele Fax - 0522-2626608

भारत सरकार  
नागर विमानन मंत्रालय  
(रेल संरक्षण आयोग)

GOVERNMENT OF INDIA  
MINISTRY OF CIVIL AVIATION  
(COMMISSION OF RAILWAY SAFETY)

अशोक मार्ग, लखनऊ--226 001  
Ashok Marg, Lucknow- 225 001  
दिनांक - 01.07.2010

संख्या -दयू- 17016/07/2010-त0वि0

सेवा में,

महानिदेशक,  
अनुसंधान अभिकल्प एवम् मानक संगठन,  
मानक नगर,  
लखनऊ।

[ ध्यानार्थ : ED (Car) ]

विषय: Introduction of EOG AC Oscillograph Car variant LHB Coach.

संदर्भ : आपका पत्र सं० MC/OSC दिनांक 07.05.2010।

आपके संदर्भ में दिये गये पत्र द्वारा भेजे गये उपलिखित प्रस्ताव के सम्बन्ध में मुख्य रेल संरक्षा आयुक्त द्वारा दोलन परीक्षण न करने की छूट की अनुमति प्रदान की जाती है।

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

01-07-2010  
(उत्तम प्रकाश)

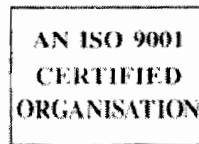
उप रेल संरक्षा आयुक्त (यॉन्ट्रिक)

टेलीफोन/Tele : 2451200 (PBX)  
2450115 (DID)  
फैक्स/Fax : 91-0522-2458500



सत्यमेव जयते

भारत सरकार - रेल मंत्रालय  
अनुसंधान अधिकल्प और मानक संगठन  
लखनऊ - 226 011  
Government of India-Ministry of Railways  
Research Designs & Standards Organisation  
Lucknow - 226 011



No. MC/OSC

Date: 07.5.2010

Chief Commissioner of Railway Safety  
NER Compound,  
Ashok Marg,  
Lucknow-226001

**Sub: Introduction of EOG AC Oscillograph Car variant LHB Coach.**

**Ref: Testing Directorate note no. RM2/G/7 dated 26.03.10**

It is proposed to introduce EOG AC Oscillograph Car variant LHB Coach for Data Acquisition and Analysis of test coaches for operation over Indian Railways. Hence RCF has currently manufactured two EOG AC Oscillograph Car variant LHB Coaches for Data Acquisition and Analysis which are exactly similar to existing EOG AC Chair Car LHB Coach.

EOG AC Chair Car LHB Coach have undergone detailed oscillation trials and speed certificates for regular operation of EOG AC LHB AC Chair Car Coach at a maximum speed of 105 kmph on track maintained to other than C&M Vol. I standard have been issued vide RDSO's letter no. MC/LHB/COACH dated 14.03.2001. The results are contained in RDSO Mechanical Report No. MT-233 and is satisfactory.

EOG AC Chair Car LHB Coach have undergone detailed oscillation trials and speed certificates for regular operation of EOG AC Chair Car LHB Coach at a maximum speed of 160 kmph on track maintained to C&M Vol. I standard have been issued vide RDSO's letter no. MC/LHB/COACH dated 19.03.2003 with partial amendment on 27.02.2004. The results are contained in RDSO Mechanical Report No. MT-240 and is satisfactory.

For the introduction of any new stock, Policy Circular No.6, para-11 states that "New Rolling Stock" would mean a stock with the following changes:

- having different principal dimensions
- a different bogie design
- new braking system
- new suspension design
- axle load, track load density, unsprung mass etc.

The circular also states that 'Minor change of equipment design and change of internal /equipment layout of rolling stock would not constitute a new stock unless such changes are likely to significantly affect weight distribution, centre of gravity, and riding behavior of rolling stock.

o/c



The following table lists out a comparison of the EOG AC Chair Car LHB coach that have successfully completed oscillation trials with proposed EOG AC Oscilograph Car variant LHB Coach.

S.No.	EOG AC Chair Car LHB coach	EOG AC Oscilograph Car variant LHB Coaches	Remarks
1.	Fiat Bogie (16.25 t axle load )	Fiat Bogie (16.25 t axle load )	Same
2.	Under frame mounted air brake system with disc brake	Under frame mounted air brake system with disc brake	Same
3.	Leading Dimensions: EOG AC Chair Car LHB Coach (Existing) -Length over buffer =24000 mm -Overall width =3240 mm -Height = 4039mm -Bogie centre distance = 14900mm	Leading Dimensions: EOG AC Oscilograph Car variant LHB Coach -Length over buffer =24000 mm -Overall width =3240 mm -Height = 4039mm -Bogie centre distance = 14900mm	Same
4.	Axle Load (max) = 16.25t	Axle Load (max) = 16.25t	Same
5.	Suspension Design EOG LHB AC Chair Car coach: a) Primary springs:- i) Inner FIATE's Drg.No. 1277143 ii) Outer FIATE's Drg.No. 1267411 (Version 3)  b) Secondary springs:- i) Inner FIATE's Drg.No. 1269513 (Version 1) ii) Outer FIATE's Drg.No. 1268836  The springs shall confirmed FIATE's Technical Specifications mentioned below: Primary- Technical Specification 17.248 Part Doc.100, Version 5 Secondary i - Technical Specification 17.471 Part Doc.101, Version 1 & ii - Technical Specification 17.248 Part Doc.100, Version 5	Suspension Design EOG AC Oscilograph Car variant LHB Coach: a) Primary springs:- i) Inner FIATE's Drg.No. 1277143 ii) Outer FIATE's Drg.No. 1267411 (Version 3)  b) Secondary springs:- i) Inner FIATE's Drg.No. 1269513 (Version 1) ii) Outer FIATE's Drg.No. 1268836  The springs shall confirmed FIATE's Technical Specifications mentioned below: Primary- Technical Specification 17.248 Part Doc.100, Version 5 Secondary i - Technical Specification 17.471 Part Doc.101, Version 1 & ii - Technical Specification 17.248 Part Doc.100, Version 5	Same
6.	Tare and Gross weight, TLD, Unsprung mass, C.G. Details :-  - Tare Weight = 42.270 t  - Gross Weight = 50.270 t	Tare and Gross weight, TLD, Unsprung mass, C.G. Details :-  - Tare Weight = 44.5 t  - Gross Weight = 46.100 t	Existing EOG AC LHB chair car has a tare weight of 42.270 t and gross weight of 50.270 t .

- C.G. Height = Not exceeding 1830mm. - TLD = 2.021 t/m	- C.G. Height = Not exceeding 1830mm. - TLD = 1.9208 t/m	AC EOG Oscilograph Car variant LHB coaches have the same suspension springs as in existing EOG AC chair car LHB coach
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S. No.	Coach Name	Traffic Code	Tare (Tonnes)	Gross (Tonnes)
1	EOG AC Oscilograph Car variant LHB Coach	LWOGCAR	44.5 t	46.1 t
2	EOG AC chair car LHB coach	LWACCZ	44.5 t	50.270 t

In terms of Para 11 of Railway Board's Policy Circular No. 6, EOG AC Oscilograph Car variant LHB Coach is similar to Existing EOG AC Chair Car LHB coach. They have the same principal dimensions, bogie suspension design, brake system and axle load. These coaches have been assigned a different Traffic code only to identify them due to minor change in internal layout. It can be seen from the above table that the tare and gross weight of these coaches are within those that are in service at present.

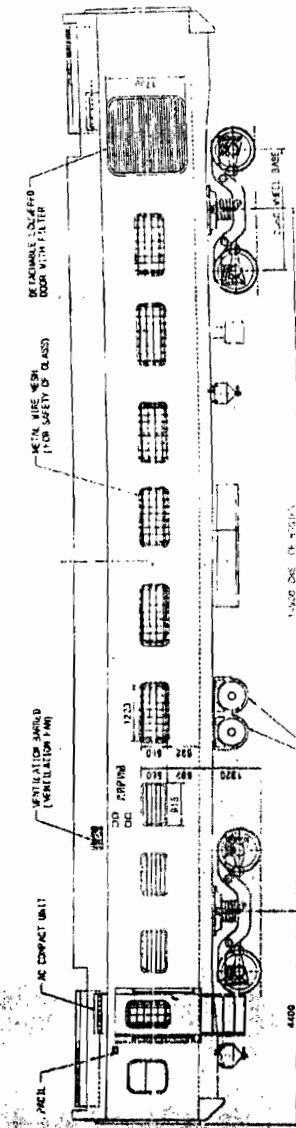
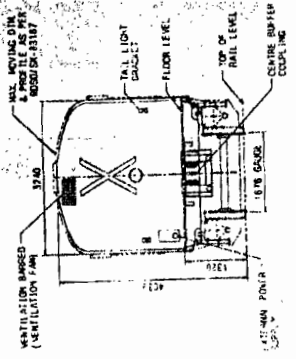
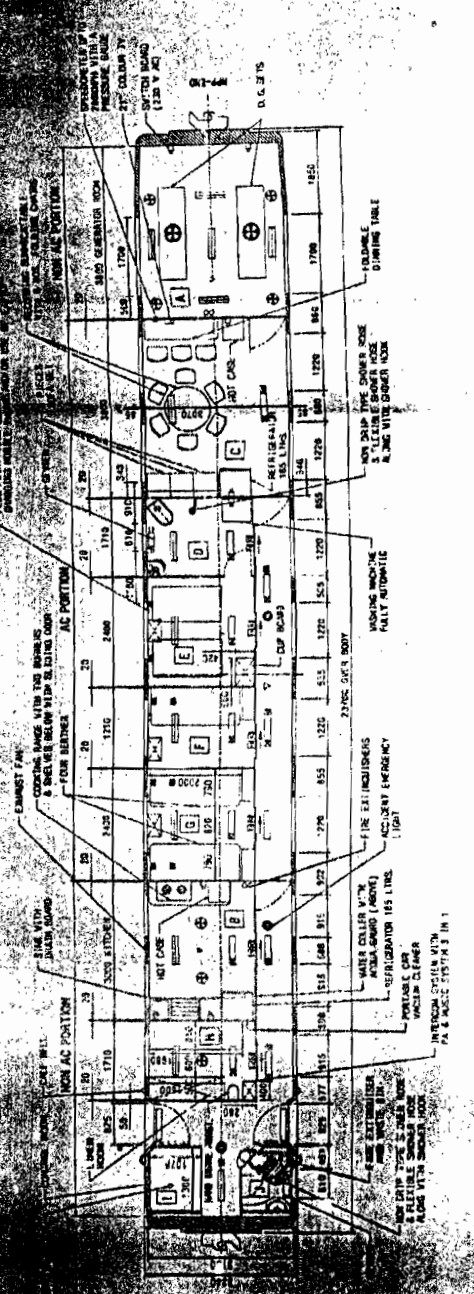
It is therefore proposed to introduce the above coach for Data Acquisition and Analysis without carrying out detailed oscillation trials, in terms of para.2.2.2 of Railway Board's Policy circular no.6. CCRS is requested to grant his assent to the dispensation to the requirement of oscillation trials and confirmatory oscillograph runs as this proposed coach is exactly similar to those already working over IR.

- DA : i) Layouts of EOG AC Oscilograph Car variant LHB Coach  
ii) Existing EOG AC Chair Car LHB coach  
iii) RDSO trial reports MT-233, MT-240

*D.K. Agarwal*  
(D.K. Agarwal)

Executive Director (Standard) / Carriage

16/12/52  
17/12/52



2 IN. DIA. WHEEL (FOR SAFETY OF CLASS)

- 1. HALLWAY
- 2. SMOKE FLOUSE
- 3. SMOKE
- 4. FAN
- 5. FAN
- 6. EMERGENCY BRAKE
- 7. READING LIGHT
- 8. LOCKSMITH
- 9. SMOKE DETECTOR
- 10. FLUORESCENT LIGHT (100.0)
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- 76. FLUORESCENT LIGHT (100.0)
- 77. FLUORESCENT LIGHT (100.0)
- 78. FLUORESCENT LIGHT (100.0)
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- 88. FLUORESCENT LIGHT (100.0)
- 89. FLUORESCENT LIGHT (100.0)
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- 91. FLUORESCENT LIGHT (100.0)
- 92. FLUORESCENT LIGHT (100.0)
- 93. FLUORESCENT LIGHT (100.0)
- 94. FLUORESCENT LIGHT (100.0)
- 95. FLUORESCENT LIGHT (100.0)
- 96. FLUORESCENT LIGHT (100.0)
- 97. FLUORESCENT LIGHT (100.0)
- 98. FLUORESCENT LIGHT (100.0)
- 99. FLUORESCENT LIGHT (100.0)
- 100. FLUORESCENT LIGHT (100.0)

PL. NO.	REV.	DATE	BY	CHKD.	APP.	REMARKS
16/12/52						
17/12/52						

LAYOUT OF  
DATA ACQUISITION AND ANALYSIS CAR  
(EG

