



भारत सरकार - रेल मंत्रालय  
अनुसंधान अभिकल्प और मानक संगठन  
लखनऊ - 226 011  
EPBX (0522) 2451200  
Fax (0522) 2458500

Government of India-Ministry of Railways  
Research Designs & Standards Organisation  
Lucknow - 226 011  
DID (0522) 2450115  
DID (0522) 2465310



**MC/CTRB/Defects**

**Date: 24.05.2019**

**Principal Chief Mechanical Engineer,**

1. Northeast Frontier Railway, Maligaon, Guwahati - 781 011
2. East Coast Railway, Chandrasekharapur, Bhubaneswar - 751 016
3. South Central Railway, Rail Nilayam, Secunderabad - 500 071

**Sub:** Audit of Maintenance Practices of CTRB of LHB Design Coaches

**Ref:** This office letter of even No. dated 21.02.2019.

Based on deficiencies observed during audits of workshops by RDSO, Zonal Railways, vide letter under reference, were requested to audit their bearing maintenance practices in workshops with particular attention to deficiencies listed in Annexure I of the letter and take immediate action to set right the bearing maintenance practices in accordance with laid down procedures, wherever warranted. It was also communicated that RDSO shall be carrying out further audits.

Accordingly, RDSO official has audited CTRB maintenance practices followed at Mechanical Workshop, Dibrugarh, Coaching Depot, Puri & Carriage Repair Shop, Tirupati. The common deficiencies observed in the workshops are attached as Annexure-A and specific deficiencies observed in workshops & coaching depot are attached as Annexure-B.

In continuation to the letter under ref, Zonal Railways are again requested to audit their bearing maintenance practices in workshops with particular attention to deficiencies listed in the Annexure-A & B of this letter and Annexure I of the letter under ref and take immediate action to set right the bearing maintenance practices in accordance with laid down procedures. RDSO shall be carrying out further surprise audits in the next three months.

**DA:** As above.

  
(Shobhit Pratap Singh)  
Jt. Director/VDG/Carriage  
for Exe. Director (Stds.)/Carriage

**Copy to:** DME/Coaching, Railway Board, Rail Bhawan, New Delhi - 110 001

**Principal Chief Mechanical Engineer,**

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. Southern Railway, Park Town, Chennai - 600 003
5. South Eastern Railway, Garden Reach, Kolkata - 700 043
6. North Eastern Railway, Gorakhpur - 273 001
7. Western Railway, Churchgate, Mumbai - 400 020
8. East Central Railway, Hajipur - 844 101
9. North Central Railway, Allahabad - 211 001
10. North Western Railway, Jaipur - 302 006
11. South Western Railway, Hubli - 580 023
12. West Central Railway, Jabalpur - 482 008
13. South East Central Railway, Bilaspur - 495 004
14. Konkan Railway Corp. Ltd. Corporate office Belapur Bhawan Nawi Mumbai-400 614

**DA:** As above.

  
(Shobhit Pratap Singh)  
Jt. Director/VDG/Carriage  
for Exe. Director (Stds.)/Carriage

**Common deficiencies noticed at Workshops**

- i. Bearing mounting is carried out without adequate care to ensure enclosed dust proof environment for bearing mounting.
- ii. Bearing mounting/dismounting presses available in Wheel Shop for bearing mounting are not equipped with pressure relief valve. SKF make bearings were found mounted on LHB wheelsets at 25T pressure at Dibrugarh Workshop & 33T pressure at Tirupati Workshop against stipulated 28T to 32T pressure. Timken make bearings are mounted on LHB wheelsets at 25T pressure at Dibrugarh Workshop & 33T pressure at Tirupati Workshop against stipulated 37T to 42T pressure.
- iii. Axle shoulder dimensions are not being checked before bearing mounting on LHB wheelset, which is mandatory as per Para No. 4.5.2 of Maintenance Manual for LHB Coaches.
- iv. Waviness & taper of axle journal are not checked before bearing mounting, which should be checked as per Para No. 4.4.1 of Maintenance Manual for LHB Coaches.
- v. Rust preventive oil are not applied on axle shoulder area between backing ring and wheel hub after mounting of bearing, which is mandatory as per Para No. 4.5.6 of Maintenance Manual for LHB Coaches.
- vi. Mounted End Play of bearings is not checked in 100% cases after mounting of bearings, which is mandatory as per Para no. 4.5.3 of Maintenance Manual for LHB Coaches – “Check the bearing mounted end play with a dial indicator mounted on a magnetic base. Place the magnetic base on the axle end and position the indicator stem against the face of the cup, marking the position on the cup.”
- vii. In end locking arrangement of axles, use of M20X60 screws of proper property class and authorized makes (TVS, LPS & UNBRAKO) are not being ensured. The screws & axle end holes are not being checked by using GO / NO-GO thread ring gauge & thread plug gauge respectively.
- viii. In locking arrangement of phonic wheel & oiler ring of earthing device on security disc, M8X35 bolts & M8X25 bolts of proper property class and authorized makes (TVS, LPS & UNBRAKO) are not being ensured. Threaded holes of security disc & threads of M8 screws/bolts are not being checked by GO NO-GO thread plug gauge & thread ring gauge respectively.





## Specific deficiencies observed in Workshops & Coaching Depot

### 1. Mechanical Workshop, Dibrugarh

- i. Some of the LHB wheelsets with mounted bearings were found stored adjacent to each other, with flanges of wheels touching bearings of other wheels, which might damage bearing seals and initiate crack in bearing cup or some internal damage.



- ii. Bearings are dropped on floor during dismounting of bearings.
- iii. The dismounted bearings are not packed in polythene bags and triangular card boards are not placed in dismounted bearings. Storage of used/dismounted bearings needs improvement.



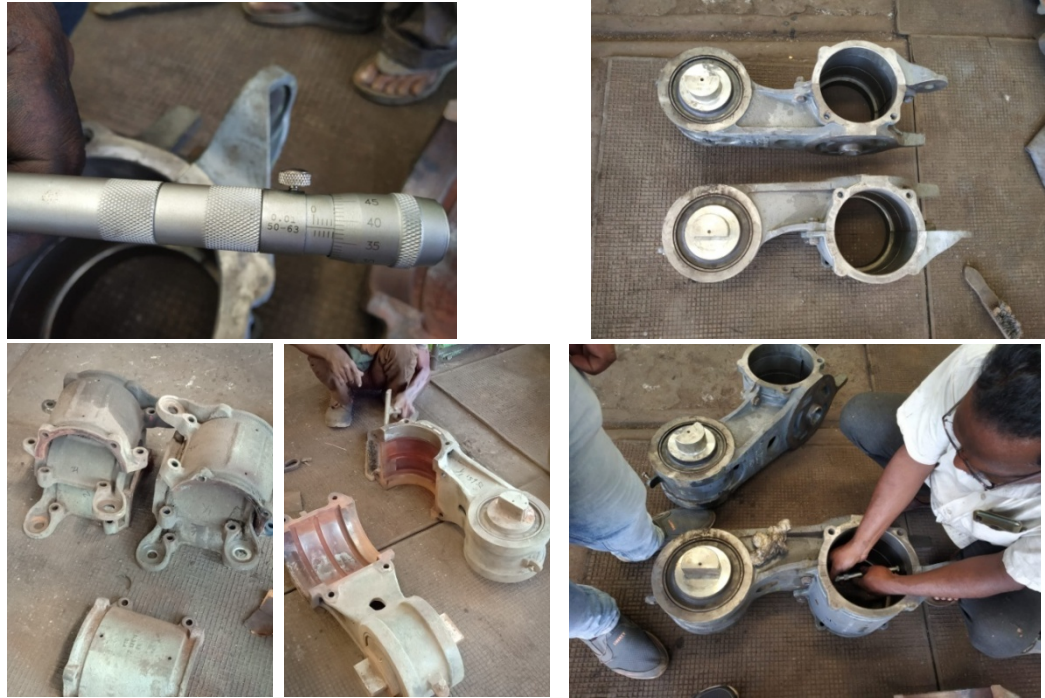
- iv. The dismounted control arms are not stocked in pair and their dimensions are not measured. As mentioned in Para no. 4.4.3 of Maintenance Manual for LHB Coaches – “The control arm should be stocked in pair and its dimensions should be mentioned as per maintenance manual.”



- v. Dye penetration test (DPT) of forged wheels is not being ensured, it should be ensured in terms of RDSO letter No. MC/WA/Genl. dated 15.10.2018.

## **2. Carriage Repair Shop, Tirupati**

- i. The dismantled control arms are stocked in pair and their dimensions are being measured with 2-leg inside micrometer having least count of 0.01mm instead of 3-leg inside micrometer having least count of 0.001mm.



- ii. Bearings are not covered during tyre turning, as mentioned in RDSO letter No. MC/RB/defects dated 05.09.2014.

## **3. Coaching Depot, Puri**

Dye penetration test (DPT) of forged wheels is not being ensured during D3 Schedule as mentioned in Para no. 12.4 of Maintenance Manual for LHB Coaches - Dye penetration test (DPT) of forged wheels to be ensured.