



भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226011
Tele/Fax : 2465754 & 42226 (Rly)
e-mail : dse4cs@gmail.com

Government of India - Ministry of Railways
Research, Designs & Standards Organization,
LUCKNOW - 226011



No. EL/3 2.108/3-ph

Date: 21.12.2016

Chief Electrical Engineer,
Northern Railway,
Baroda House,
New Delhi-110001

Sub: Minutes of the meeting regarding issues of axle box bearing of three phase electric locomotives.

The minutes of the meeting regarding issues of axle box bearing of three phase electric locomotives held at RDSO on 19.12.2016 is enclosed herewith for kind information please.

(Mohit Sonakiya)
for Director General/ Electrical

Encl: Copy of minutes of meeting

Copy to:

1. Secretary (Electrical), Railway Board, Rail Bhawan, New Delhi-110001
(Kind Attn: Sri A. K. Goswami, DEE (RS) /Railway Board): for kind information please.
2. Chief Electrical Engineer, Chittaranjan Locomotive Works, Chittaranjan – 713 331: For kind information please.
3. M/s SKF India Limited, 17th floor, Building no. 5B, Cyber City,
DLF Phase – III, Gurgaon-122 002
4. M/s FAG bearings India Ltd, Maneja Vadodara – 390 013
5. M/s National Engineering Industries Ltd., Khatipura road, Jaipur,
Rajasthan – 302 006
for information and necessary action please.
6. Sr. Divisional Electrical Engineer (TRS)/Electric Loco Shed,
- Northern Railway, Ghaziabad -201 001
- Northern Railway, Ludhiana (Panjab)-141 001
: for kind information and necessary action please

(Mohit Sonakiya)
for Director General/ Electrical

Minutes of the meeting held at RDSO on 19.12.2016 regarding issues of axle box bearing of three phase electric locomotives

Present:

RDSO (S/Shri)	Railway (S/Shri)	Firms (S/Shri)
O. P. Kesari, EDSE(Co-ord)	Mohit Chandra, CELE/NR	Sandeep Lal, Manager, FAG
Mohit Sonakiya, DSE/C&S	Satish Kumar, Sr.DEE/TRS/LDH	Manoj Puri, General Manager, FAG
Girraj Kishore, ADE/C&S	M. K. Gupta, ADEE/TRS/GZB	Santosh Lele, Manager, FAG
U. B. Yadav, SSE/D/Elect.	N. S. Meena, SSE/TRS/GZB	Narendra Bhagwanani, DGM, SKF
		Sanjeev Bhatia, DGM, SKF
		Amrendra Singh, Asstt. Manager, NEI

A meeting was held at RDSO on 19.12.2016 to review actions decided during earlier performance review meeting held at ELS/GZB on 9.11.2016 regarding axle box bearing in WAP7 locomotives. During the meeting following points were discussed:

- 1. Investigation into racers collected from ELS/GZB:** The firms have submitted investigation reports of sample of racers collected from ELS/GZB and have submitted that the "cracks" reported by shed are only superficial marks on the racer formed when the rollers slide on the racer axially.
- 2. Ferrous content in grease samples:** Electric Loco Shed, Ghaziabad had reported that metal content in axle box grease is exceeding 0.25g in a large number of cases. RDSO informed that there is no extant instruction regarding metal content for Three-phase locomotive bearing. The firms submitted that they have not prescribed any limit in this regard and based on sampling procedure observed at Electric Loco Shed and metal content limits stipulated in EN 12802 for performance of axle boxes, 1% limit may be adopted initially and locomotives monitored. Electric Loco Shed had also been keeping the limit to 1% for three years and no abnormal running was observed. It was, therefore, decided that limit of ferrous contents in grease may be kept at 1 % during checking in IC schedule for three phase locomotives. Electric Locomotive Workshops replacing these bearings should also keep a record of metal content of incoming bearing so that data can be collected to finalize a limit.

3. **Step Size Racer:** As discussed in the meeting at ELS/GZB, NEI has already submitted the drawing of step size racer to RDSO for approval on 13.12.2016. M/s FAG informed that the drawings have been prepared and drawings of step-size & standard-size racers shall be submitted to RDSO for approval by 21.12.2016. M/s SKF sought two weeks' time to submit proposal of step-size racers for SKF make bearing.
4. **Procedure for greasing:** ELS/GZB expressed difficulty in removing angle rings of SKF make bearings as also in older bearings in which holes are not available in the angle ring. Therefore, they have to pull the axle box to remove the angle ring which causes rollers to move axially over racers. No such problem is observed in removing angle rings for NEI or FAG make bearings having angle ring with holes. M/s SKF informed that they would be modifying the dimensions of angle ring to address the issue. M/s NEI and M/s FAG suggested that the greasing hole should be used for lubrication as is the practice in all other bearings and frequent removal of angle ring is not desirable. M/s SKF stated that the existing procedure of removing angle ring for greasing should continue. However, in cases where removal of angle ring through bolts is not possible, axle box should not be pulled out and greasing can be done using grease holes. It was, therefore, decided to continue with existing instructions except in cases when angle ring cannot be removed. However, care should be taken to ensure that adequate amount of grease gets into the bearing. M/s SKF and M/s FAG agreed to assist to ELS/GZB regarding threaded hole in angle ring.
5. **Quantity and Type of Grease:** M/s FAG stated that the quantity mentioned in SMI 246 Rev'1' does not match their recommendation. M/s SKF stated that the grease type indicated in the TC 34 should be amended. All the firms were requested to review the type of grease as well as greasing quantity and periodicity and submit changes if any by 23.12.16.
6. **Torquing of axle box bolts:** M/s SKF stated that they would suggest a solution for tightening axle box bolts using torque wrench by next meeting.