No. 2012/M(N)/951/24

New Delhi, dated 13.7.12

The Chief Mechanical Engineers
All Indian Railways except SCR

Sub: Innovations and system improvements in Indian Railways

CME/SCR through his MCDO for the month of June, 2012 has informed about the following innovations/system improvements carried out by SCR on the freight side:

Wider Feeler Gauge Probe for cone Assembly

The same is enclosed for your kind information.

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Exec. Dir. Mech. Engg. (Frt.)

Encl: 2 pages

Copy to: EDS(W)/RDSO
C. **Carriage & Wagon**

C.1.1 Coaching ineffective was maintained at 5.12% against the Railway Board's target of 8.5%.

C.1.2 During the month 81 special trains and 1296 additional coaches have been maintained at coaching depots of S.C. Railway.

C.1.3 To clear extra rush during June' 2012, 1066 extra coaches have been maintained and attached to the trains in South Central Railway.

C.1.4 During the month of June '2012, 03 Parcel Cargo Express trains have been maintained.

C.1.5 Wagon ineffective was maintained at 3.68% against the Railway Board target of 3.90%.

C.1.6 15 Air brake vacuum wagons were condemned during the month of June'2012.

2. **Good work done:**

2.1 New G & SR Refresher course for Loco Inspectors at ZRTI/ MLY with duration of 6 days has been introduced. First batch will commence from 2\textsuperscript{nd} July -2012.

2.2 288 Nos of destination boards were screen printed and provided on train No. 12733/34 (TPTY-SC-HWH Narayanadri / Falknuma Express).

3. **Special Drives:**

3.1 Continuous special drive has been launched to measure wheel gauge from 21.06.2012 to 05.07.2012. During the drive period 12828 coach wheels measured and no abnormalities were noticed.

3.2 Special drive has been launched for detection of cracks in ICF bogies from 16.06.2012 to 27.06.2012. During the drive period 13804 coaches were checked and found no cracks on bogies.

4. **INNOVATIONS:**

4.1 **WIDER FEELER GAUGE PROBE FOR CONE ASSEMBLY:** (Rayanapadu Workshops).

For detecting surface defects on inner ring of cone assembly, RDSO vide G-81 manual has suggested a feeler probe gauge which is of 3mm width. To test the surface defects/roughness like spalling, dents, pitting etc., probe has to make contact with inner ring outer surface by inserting through the gap between roller and the cage. Since, the width of the probe is only 3mm to cover the entire width of inner ring it has to be rotated nearly 13 to 15 times. There is likelihood of missing some locations which may lead to online failure of the bearing causing hot axle due to allowing defective roller assembly into the service.
To avoid missing of inspection at some areas and to check complete periphery in only two rotations of inner ring, shop has devised an instrument with width equal to 0.5mm. With this probe, any surface defects if exists on the inner ring can be sensed by the probe. This instrument also saves inspection time.

**RDSO suggested probe:**

![Developed wider probe](image)

### 5 SYSTEM IMPROVEMENTS:

**5.1 Cleaning of axle end cap holes by Rayanapadu workshops.**

Cleaning of axle end cap holes is an important activity. In case of completely cleaned threads the major portion of the applied torque is used for tension of the cap screw. In case of rusted/dusty threads, major portion of the torque is used to overcome the friction instead of serving clamping purpose. In addition to cleaning of Axle end holes with oil shop is undertaking the activity of cleaning of axle end cap holes with compressed air jet to remove any dust remnants. Same has been also recommended by Railway board as is being done at Lower Parel workshop.