



GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

2019/Track-III/TK/16

New Delhi, dated 20-04-2023

Principal Chief Engineer,
All Zonal Railways

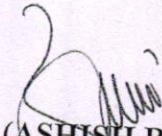
Sub: Compliance to provisions given in IRPWM for UML peaks detected during Track recording by TRCs.

Ref: RDSO letter No.RDSO/TMM0LKO(IM85)/1/2020 dated 10-04-2023.

It has come to the notice that during track recording UML (Urgent Maintenance Limit) are exceeded but Zonal Railways are not taking prompt and appropriate action as per provisions given in IRPWM (Indian Railway Permanent Way Manual) 2020. Zonal Railways are again advised to take immediate corrective action as prescribed in Para 523 of IRPWM.

In this context, attention is also invited to Para 5 of RDSO's above referred letter. Zonal Railways are advised to comply with the above provisions. AM(CE) will be reviewing the status of TRC recordings shortly. The dates will be intimated in due course.

DA : as above


(ASHISH BANSAL)
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No. RDSO/TMMOLKO(IM85)/1/2020

Date: 10.04.2023

To,
Chief Track Engineers,
All Zonal Railways

Sub: Field Verification of UML peaks of gauge reported by TRC (ITMS)

New TRCs (ITMS) have been introduced on IR with features of track parameters recording system, full rail profile and wear measurement system, acceleration measurement at axle box and coach floor levels, system for measurement of infringement of MMD envelops and following video inspection systems:

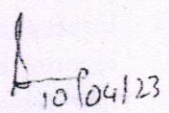
- a. System for video inspection of track components with the help of line scans cameras and analysis of track components by incorporating artificial intelligence and system learning.
 - b. System for Rear Window Video Recording of IR track by high resolution cameras, for correlation of track defects with track assets.
1. These TRCs have facility of synchronisation of its location with ground chainage by GPS and RFID tags.
 2. SMS and email alerts for all types of UML peaks are given which contains Peak values of gauge w.r.t. to nominal gauge and value of average gauge (over 200m block) also.
 3. On several occasions in past, reports have been received from field units that the values of Gauge reported by TRC are not matching in field. To clear the doubt, peaks of gauge in UML and NBML have been verified multiple times jointly by TRC team with field officials. It was found that when meticulously mapped, peaks reported by TRC were available in field in all cases without fail. Such joint verifications have been done in divisions viz. NGP(CR), CSTM(CR), CKP(SER), DLI(NR), ASN(ER), HWH(ER), HYD(SCR), WAT(ECOR), AGC(NCR) and BCT(WR). A joint verification exercise was also carried out in AGC division (NCR) for mean gauge (Mean value of gauge over 200 m block) and found in order. In well-maintained stretches of track, the value of gauge reported by TRC and those measured in floating condition in field are in range of ± 2 mm. However, in case of unsatisfactory conditions of fittings, packing etc. these variations were found to be more. It is worth to note that the values reported by TRC are measured under loaded and dynamic condition whereas manual measurements are done in floating condition.

4. During these joint validation exercises with field engineers it is noticed that;

- a. Locating the exact field chainage of reported peak by TRC staff is done with the help of data of different sub-systems of ITMS, including rear window and video recording of track components. While locating of peaks by field staff is done by general assessment, which leads to mismatch of reported chainage and field chainage hence the peak value.
- b. Peaks reported by TRC are with respect to nominal gauge of 1676 mm. It has been noted that many time Gauge Cum Level instrument used in field is calibrated to 1673 mm. Further, measuring range of "Gauge cum level" is "-10 mm" to "+20 mm" only. These instruments cannot verify peaks reported by TRC beyond this range.

5. Therefore it is advised that;

- a. RFID tags should be fixed on track at regular intervals so that synchronisation of TRCs are done correctly and field engineers can reach the correct location of any defect reported by TRC. Detailed instructions for fixing of RFID Tags has been issued by Railway Board vide their letter no 2019/Track-III/CS/I dated 14.11.2022.
- b. GPS data of Zonal railways at GIS portal of CRIS is being used for GPS synchronisation of TRC's location. Many times it is found that information available at GIS portal are not correct. Data for many sections are not even available. It is suggested that availability of correct GPS data of all routes and lines should be ensured on GIS portal.
- c. Proper "Gauge Cum Level" instrument duly calibrated (w.r.t 1676mm) is made available in the field.


(S.K. Barnwal)

Executive Director/Track Monitoring