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

No. 2023/CE-II/Safety/Instruction New Delhi, dated 14.06.2025

Principal Chief Engineers,
All Zonal Railways.

Sub: Instructions for maintenance of track on Ghat Sections and Sections having curve sharper than 5^0on gradient steeper than 1 in 100

Indian Railways has a number of Ghat sections and sections having curves sharper than 5° on gradients steeper than 1 in 100. Indian Railways Permanent Way Manual (IRPWM) and various other instructions stipulate provisions for maintenance of all types of track geometry. However, since maintenance of track in aforementioned sections is always challenging and requires greater attention in terms of inspection, maintenance inputs, and renewals, following steps would help in improving track safety:

1. To avoid fast wearing of rails and smooth Rail-Wheel interaction, track mounted Automatic Gauge Face Lubricators (GFL) should be installed for greasing of gauge face of outer rail of curves as per Para 424 of IRPWM-2024. Till automatic GFL are installed, hand lubrication in curves should be done positively as per following schedule:

   (i) $\leq 3°$ - once in 15 days
   (ii) $> 3°$ and $\leq 5°$ - once in 7 days
   (iii) $> 5°$ - once in 3 days

2. Measurement of track parameters (gauge, cross level & twist) at every 5^{th} sleeper should be carried out once in a month, preferably with recordable and GPS-enabled Track Measuring Trolley. Record of measurements should be kept safely for at least one year. The records will be countersigned by SSE/P.Way (In-charge) and ADEN during their field inspections.
3. To have stringent control over rail wear, lateral & vertical wear in curves having radius of 600 m or less should be measured once in 3 months. Record of measurements should be entered in TMS. If field condition warrants, PCE may further tighten the limits of permissible loss of section, vertical wear and lateral wear as given in Para 702(1)(b) of IRPWM-2024.
4. Railways may explore the possibility of having same maximum permissible speeds for both passenger and goods trains. This would enable providing equilibrium cant (super-elevation) in curves thereby minimizing the lateral wear in rail.
5. In entire section, a strict ‘Zero Missing Fittings’ regime must be maintained at all times. Keymen working in the section should be sensitized properly and instructed to inform about missing fittings on daily basis. On receiving a report, missing fittings should be recouped on the same or next day.
6. Close watch should be kept on the available toe load of ERCs to ensure minimum 600 kg. As per the need, the frequency of toe load measurement be increased more than as stipulated in Para 628(1) of IRPWM-2024 by CTE for such sections.

7. There shall be no overdue track renewals in these sections. All sanctioned track renewal works must be executed on priority.
8. CTE to examine the need of provision of check rail on curves milder than 8^0 and issue instructions for such sections. The check rail clearances should be measured once in a month with measurement of track parameters as stipulated in para 2 above.
9. To reduce the wear on outer rail on the curve, slack gauge sleepers should invariably be provided in curves having curvature above 5^0 as prescribed in Para 424(1)(d) of IRPWM-2024.
10. Rail creep shall be measured at every kilometre once a month and proper records must be maintained. The frequency of measurement may be increased by the concerned Sr.DEN/DEN depending on the incidence and severity of creep in the section. These records shall be scrutinized by the Sr.DEN/DEN during their trolley inspections to assess the effectiveness of corrective actions.
11. Based on the condition of rail joints, fish bolts, and overall creep behaviour, necessary action such as pulling back of creep and adjustment of joint gaps shall be carried out promptly to ensure proper rail expansion and joint integrity.
12. As stipulated in the Note under Para 718 of IRPWM, the renewal of GRSP/CGRSP shall be carried out after completing 50% of the stipulated life applicable to plain track, or earlier on a condition basis as decided by the CTE. Field units shall monitor the condition of rubber pads in these critical sections closely and plan renewal accordingly.
13. In non-track-circuited areas, extra rib depth metal liners (RDSO/T-8995) should be used throughout. In track-circuited areas, extra rib depth HVN liners (RDSO/T-8992) should be used in place of GFN liners.
14. Consistent and correct sleeper spacing shall be ensured during both maintenance and track renewal works. Cross bracing arrangement as given in drawing No. RDSO/T-8329 should be provided as per Para 326(2)(a)(i) of IRPWM or even at milder curves as per need to ensure correct sleeper spacing.
15. Such sections may be considered for conversion to LWR, subject to approval of the PCE and in consultation with RDSO on case-to-case basis.
16. It must be ensured that the cess is maintained to prescribed standards and there should be no locations with low or deficient cess. Special attention shall be given to approaches of bridges, where wider cess is essential to ensure stability and proper drainage.
17. Adequate ballast cushion must be maintained throughout, with no deficiency permitted, to ensure proper track geometry, drainage, and long-term track performance.

Zonal Railways are advised to issue a detailed PCE Circular within 15 days of the date of issue of this letter covering the above instructions and including any other site-specific provisions relevant to their 'Ghat sections and Sections having curve sharper than 5^0 on gradient steeper than 1 in 100'.

A copy of the issued circular shall be forwarded to the Railway Board for information and record.

SAURABH JAIN

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Director, Civil Engg. (Plg.)
Railway Board