

EAST COAST RAILWAY

Office of the
Pr Chief Safety Officer,
Bhubaneswar.

No:- ECoR/SFY/ 67/142

Date:- 18.03.2025

(SAFETY CIRCULAR NO- 18/2024)

Sub: Summer precaution-Maintenance track in LWR/CWR/SWRs territory.

Summer season has set in. Necessary important/Mandatory safety precautions as laid down in Para 324 & 320 of IRPWM 2024 for free rail/SWR track and Para 345 & 346 of IRPWM for LWR track & Hot weather patrolling as per Para 1005 (1 & 2) of IRPWM are to be followed. Besides the above, further action need to be taken are reiterated under:

1. De-stressing of LWRs based on behavior of LWR, (Para 347 of IRPWM), stretches of LWR where renewals/deep screening or any special maintenance operations (Para 346) have been carried out in recent past, stretches where new LWRs have been laid.
2. Recoupmnt of fittings to ensure zero missing fittings and renewal of ineffective fittings to ensure adequate toe load.
3. Ensure enough ballast in shoulder and crib portion in general and on bridge approaches, LC approaches and trespassing locations.
4. Mates, Key man, JE/SSE(P Way) shall be advised in regard to their duties and responsibility for working in LWR & SWR territory as per IRPWM and know the stress free temperature of LWR in the section.
5. Planning for hot weather patrolling, monitoring of rail temperature record and availability of requisite contingent of tools and plants of Patrolman. One gas cutting set to be made available with SSE/P.Way(I/c)
6. Foot Plate/Push trolley/ Foot inspection by SSE/P-way, ADEN and Sr. DENs to be conducted.

Besides above, the following precautions on LWR/SWR track working to be ensured:

A. LWR:-

1. As the various maintenance operations are to be carried out within the temperature range specified, reliability of the thermometer available with the units should be ensured (Para 333 of IRPWM). Temperature range for different operations should be marked on rail thermometer available with all gangs.
2. LWR/CWRs should be inspected in detail during peak temperature hours/day time at highest temperatures.
3. Ensure that there are no Rail closures /Cut rail in LWR track. If exists; a suitable speed restriction must be imposed and to be welded as early as possible.
4. Training out of sufficient quantity of ballast, to provide full ballast section before commencing any major maintenance operation.
5. Ballast section shall be properly maintained, especially on pedestrian & cattle crossings, outside of curve, approaches to level crossings and bridges.

6. If immediate arrangement of ballast is not possible, shortage in shoulders at isolated places may be made good by taking out minimum quantity of ballast from the cribs (over a width not exceeding 600mm and depth not exceeding 100 mm). Ballast disturbance such as pedestrian/cattle crossing etc. may be protected by dwarf walls (Para 345 (1) (C) of IRPWM).
7. Special attention shall be paid to maintenance of track at following locations.
 - a) SEJs/breathing length.
 - b) Approaches of level crossings, points & crossings and unballasted deck bridges.
 - c) Horizontal and vertical curves
 - d) Ensure all fastenings shall be complete and well secured.
 - e) Ballast profile must be maintained as per Para no.212 of IRPWM.
8. The regular track maintenance in LWR for track on concrete sleeper shall be confined to hours when the rail temperature is between $t_d+10^{\circ}\text{C}$ and $t_d-30^{\circ}\text{C}$ and shall be completed well before onset of summer. For LWR on wider base sleeper the regular track maintenance shall be confined to hours when the rail temperature is between $t_d+15^{\circ}\text{C}$ and $t_d-30^{\circ}\text{C}$.
9. If rail temperature after the maintenance operation exceeds $t_d+20^{\circ}\text{C}$ for conventional PSC sleepers and $t_d+25^{\circ}\text{C}$ for wider base sleepers during the period of consolidation then the speed restriction of 50 Kmph on BG shall be imposed as per Para 345 (1) (b) of IRPWM.
10. **MECHANISED MAINTENANCE:**
 - a) For mechanised maintenance in LWR track, provisions of Para 345 (2) of IRPWM shall be observed strictly i.e. tamping in LWR with general lift not exceeding 50 mm including correction of alignment shall be carried out during the period when prevailing rail temperature are as per Para 345 (1) (a & b) of IRPWM together with precaution laid down therein.
 - b) Lifting where needed, in excess of 50mm shall be carried out in stage with adequate time gap in between successive stages such that full consolidation of the previous stage is achieved prior to taking up the subsequent lift.
 - c) Mechanised cleaning of the shoulder ballast shall be undertaken when prevailing rail temperature are within limits prescribed together with the precautions mentioned therein.
11. **MANUAL MAINTENANCE:**
 - a) At no time, not more than 30 sleeper spaces in a continuous stretch shall be opened for manual maintenance or shallow screening with at least 30 fully boxed sleeper spaces left in between adjacent openings. Maintenance of in between length shall not be undertaken till passage of traffic for at least 24 hrs, in case of BG carrying more than 10 GMT or two days in case of other BG route. (Para 345 (3) of IRPWM).
 - b) For correction of alignment, shoulder ballast shall be opened out to the minimum extent necessary and that too just opposite to the sleeper end. The ballast in shoulder shall be put back before opening out crib ballast for packing.

- c) In exceptional circumstances when more than 30 sleeper spaces have to be opened for any specific work, like through screening of ballast etc. during the period of the year when minimum daily rail temperature is not below $t_d - 30^{\circ}\text{C}$ or maximum does not go beyond $t_d + 10^{\circ}\text{C}$, up to 100 sleeper spaces may be opened under the direct supervision of JE/SSE (P. Way).
- d) It should however, be ensured that rail to sleeper fastening on the entire length of LWR including SEJ are functioning satisfactory.
- e) For casual renewal of sleepers, if inescapable, not more than one sleeper in 30 consecutive sleepers shall be renewed at a time. If it is necessary to renew two or more consecutive sleepers in the same length, they may be renewed at a time after packing the sleepers renewed earlier duly observing the temperature limits together with precautions specified in Para 345 (1) and 345 (4) of IRPWM.
- f) The work of renewal of fastenings shall be carried out when rail temperature is within limits specified in Para 345 (1) (a & b) of IRPWM.
 - i. Fastenings not requiring lifting of rails- shall be renewed on not more than one sleeper at a time. In case fastenings of more than one sleepers are required to be renewed at a time, then at least 15 sleepers in between shall be kept intact. Work shall be done under supervision of Key man.
 - ii. Renewal of fastenings requiring lifting of Rail-Fastenings requiring lifting of rails i.e., grooved rubber pads, etc. shall be renewed on not more than one sleeper at a time. In case fastenings of more than one sleeper are required to be renewed at a time, then at least 30 sleepers in between shall be kept intact. Work shall be Done under supervision of Gang Mate. Alternatively, if prevailing rail temperature is lower than $t_d - 10$, fastening up to 5 sleepers on either side may be removed for replacement of rubber pad under the rail.

g) MAINTENANCE OF SEJS-

- i. Once in a fortnight SEJs shall be checked, packed and aligned if necessary. Oiling greasing of tongue and stock rails of SEJ and tightening of fastenings shall be done simultaneously.
 - ii. During his daily patrolling, Key man shall keep special watch on the SEJs falling in his beat.
12. Special track maintenance to be carried out as per Para 346 of IRPWM.
 13. Hot weather patrolling shall be introduced and carried out in accordance within the provision contain in Para 1005(1&2) of IRPWM.
 14. All the supervisory staff should be examined & updated in their knowledge of maintenance of LWR. Only staff trained in laying and maintenance of LWR/CWR shall be posted on LWR/CWR sections. All competency certificates should be as per Annexure 14/2 Para 344, 1406 of IRPWM.

B. SWRs (Para 324 of IRPWM 2024)

- a. Regular track maintenance operations like packing, lifting, aligning, local adjustment of curves, screening of ballast other than deep screening and scattered renewal of sleepers may be carried out without restriction when the rail temperature is below $t_m + 25^{\circ}\text{C}$. in the case of zone I & II and $t_m + 20^{\circ}\text{C}$ in the zone III and IV. However, on curves of less than 875 meter radius in Broad Gauge or yielding formation, the above temperature limit shall be restricted to $t_m + 15^{\circ}\text{C}$ in the case of zone I and II and $t_m + 10^{\circ}\text{C}$ in the case of Zone III and IV.
- b. If the maintenance operations have to be undertaken at temperature higher than that mentioned above in **Sub-Para (a) above**, not more than 30 sleeper spaces in one continuous stretch shall be opened leaving at least 30 fully boxed sleeper spaces between adjacent lengths which are opened out. Before the end of the day's work, it shall be ensured that the ballast is boxed up.
- c. As an additional precaution, during summer months, to be specified by the Chief Engineer, for attention to run down track, even if temperature is less than the temperature specified in **Sub-Para (a) above**, not more than 30 sleeper spaces in one continuous stretch shall be opened, leaving at least 30 fully boxed sleeper spaces between adjacent lengths which are open out. Further, if joint gapes are not available at the time of opening of the track even when rail temperature are less than those specified in clause **Sub-Para (a) above** not more than 30 sleepers in on continuous stretch should be opened leaving at least 30 boxed sleeper spaces between adjacent length which are opened up.
- d. Major lifting, major alignment of track, deep screening and renewal of sleepers in continuous length- Each of these operations shall be done under suitable precautions and normally when the rail temperature is below $t_m + 15^{\circ}\text{C}$ in the case of Zone I and II, and $t_m + 10^{\circ}\text{C}$ in the case of III and IV. If it becomes necessary to undertake such works at rail temperature exceeding the above values, adequate speed restrictions shall be imposed.
- e. Adequate number of joggled fish plated with special clamps shall be provided to the gangs for use in emergencies.
- f. In the case of any fracture in the weld or in the rail, the portion of rail with fracture is cut, and removed for a length of not less than 5.5 m to carry out the re-welding duly introducing a rail piece of equivalent length, also ensuring that no weld lies closer than 4 m from the fish-plated joint.

The precautions laid down are only guidelines and for any specific information, the IRPWM, PCE Circulars and railway board guide lines may be referred to.

Samade
18/3/25
Pr. Chief Safety Officer
Bhubaneswar

Copy to-

1. Secy. to GM for kind information of GM.
2. Secy. to AGM for kind information of AGM.
3. PCE, PCME, PCOM, PCEE, PCCM, PCSTE, PCSC & CAO (Con) for information.
4. DRM KUR, SBP & WAT for information & necessary action.
5. Sr.DSO/ KUR, SBP & WAT for information & necessary action.
6. Principal MDTC/VSKP & MDZTI/BBS for information & necessary action.

WORK CHART AND AUTHORISED LEVEL OF SUPERVISION

Sl. No	NATURE OF WORK	Lowest level of staff/ Supervisor incharge of work
1	MAINTENANCE OPERATION	
(a)	Mechanised Tamping, Lifting(General lift), Alignment, Minor alignment of curves, Deep screening etc.	JE/P.Way
(b)	Manual Packing ,Alignment	Gang mate
(c)	Lifting/Lowering of track	JE/P.Way
(d)	Lifting, aligning, packing etc., in case of emergencies at temperatures higher than those permitted	JE/P.Way
2	RAILS, SLEEPERS AND FASTENINGS	
(a)	Packing or renewal of single isolated sleeper not requiring lifting or slewing of track	Gang mate
(b)	Renewal of fastenings not requiring lifting	Key man
(c)	Renewal/recoupmnt of fastenings requiring lifting	Gang mate
(d)	Casual renewal of sleepers and fastenings over long stretches	JE/P.Way
(e)	Renewal of Defective rails	JE/P.Way
(f)	Carrying out welding of rail joints at site	JE/P.Way
3	BALLAST	
(a)	Making up of shortage of ballast in shoulders at isolated places	Gang mate
(b)	Replenishment of ballast & Checking ballast section before the onset of summer	JE/P.Way
(c)	Screening of ballast other than Deep screening	JE/P.Way
(d)	Deep Screening	JE/P.Way
4	CURVE REALIGNMENT	
(a)	Minor Realignment of curves	JE/P.Way
(b)	Major realignment of curves under special instructions from ADEN	JE/P.Way
5	HOT WEATHER WORK	
(a)	Imposing speed restriction if the temperature exceeds(t_d+20°) Celsius after maintenance work is completed, manually or by Machines	Gangmate
(b)	Organizing hot weather patrolling during summer months	JE/P.Way
(c)	Ensuring that hot weather patrolman turns out promptly for duty during the required period of patrolling and during other periods when rail temperature exceeds ($t_d+ 20^\circ$) Celsius	Gang mate
(d)	Hot weather Patrolling, watching stability of track, presence of large number of sleepers with defective packing, alignment of track, checking if the profile of ballast is disturbed, tendency for lateral/ vertical de formation of track	Hot weather patrolman
(e)	Inspection in summer months and checking on the working of hot weather patrols	JE/P.Way
6	cold weather patrolling	Cold weather patrolman
7	De-stressing-all operations regarding De-stressing	JE/P.Way
8	RAIL FRACTURE	
(a)	Emergency repairs	Competent Key man.Trackmen
(b)	Temporary repairs	JE/P.Way
(c)	Permanent repairs	JE/P.Way
9	BUCKLING	
(a)	Protection of track and secure safety of trains in case of buckling, rail fractures, or any abnormal behaviour of track	Patrolman
(b)	Emergency repairs	JE/P.Way
(c)	Permanent repairs	JE/P.Way
10	Emergencies-Action in case of damage to track following derailments, breaches etc.	JE/P.Way
11	SEJ	
(a)	Checking of SEJ, oiling and greasing and re-tightening/ renewal of fittings once a fortnight	Keyman
(b)	Inspection of SEJ	JE/P.Way