

SOUTH CENTRAL RAILWAY

Safety.387/Fly Leaf/02/2013

Fly Leaf No. 02/2013

Attention...Engineering Officials

SUMMER PRECAUTIONS

Summer is fast approaching and when weather changes from Winter to Summer, variations in the rail temperature will be greater making it essential to take summer precautions especially in **LWR** (Long Welded Rails) territory. The sections are required to be inspected with a view to identify deficiencies in the form of missing fittings, ballast deficiency and consolidation etc. De-stressing must be carried out for the stretches of LWR based on their behaviour.

Also essential to look after the **SWR** (Short Welded Rails) track and free rail track to ensure proper gaps at joints, gap survey, pulling back before the onset of Summer (by the end of February). After completion of the work, a certificate to be submitted to Headquarters (**Para 509 & 510 of IRPWM**) to avoid kinky alignment or buckling which may take place in such stretches. Following points need special attention;

- 1.** Deficiency of ballast in LWR & newly created welded rail sections should be made good before the onset of Summer.
- 2.** Ensure proper profile of ballast on LWR section which may need balancing of ballast.
- 3.** Dressing up of ballast to the required ballast profile (upto rail head boxing), especially at bridge and LC approaches and places where pedestrian/cattle crossing.
- 4.** De-stress the LWRs based on behaviour and stretches of LWR where renewals/deep screening had been carried recently (**Para 6.4 of Engg. Standing Order No. 3**).
- 5.** Locations where de-stressing done at lower temperatures than specified in the LWR Manual should once again be de-stressed to the standard rail temperature.
- 6.** Recoument of fittings to ensure Zero missing Fittings in theft prone locations.
- 7.** Plan for Hot Weather patrolling (**Annexure X (A) – Para 9. 1.2 (i)** of LWR Manual}.
- 8.** Awareness to be brought among the P.Way Staff about **DO's and DON'T's** (Annexure "A") while working of LWR and they shall be in possession of competency certificate after training (**Para 6.2 and 6.3 of LWR Manual**).
- 9.** Special watch on sections where deep screening works are on hand, strict adherence to the Manual provisions.
- 10.** All the Gangs should have rail thermometers and its accuracy should be checked frequently by the Inspecting Officials.
- 11.** Knowledge of the Gangs in rules should be tested particularly with regard to the limit of rail temperature in different colours painted. They should also be trained as to what action is to be taken when the temperature is high.
- 12.** Stretches of 10 rail-panel should have a temporary SR of 50 KMPH till converted into LWR and patrolling to be done during day time.

13. JE/SSE/P.Way should ensure gaps at all the rail joints in the morning in such locations.
14. Footplate Inspection of complete section should be done between 1100 to 1600 hours by JEs/SSEs - P.Way and ADEN **till June**.
15. LWR Register should be scrutinised and de-stressing of LWR/CWR undertaken where necessary based on inspection of SEJs as per schedule.
16. Switch Expansion Joints (SEJ) should be oiled & greased once in a month (**ESO No.12**).
17. Sr.DEN/DEN should record his certification in LWR/CWR registers about satisfactory behaviour of LWRs/CWRs and an exception report should be submitted.

ANNEXURE "A"

DO'S	DON'Ts
<p>GENERAL:</p> <ul style="list-style-type: none"> ✓ Check the accuracy of the rail thermometer. ✓ Pay attention to stretches of track which are liable to creep. ✓ Provide extra shoulder ballast on the outside of all the curve locations. ✓ Check the joint gaps wherever necessary. Never allow more than 6 continuous jammed joints in case of single rail track and more than 2 in SWR track at Mean Rail Temperature (t_m). ✓ Provide rail anchors other than PSC track. ✓ Take extra precautions at the locations vulnerable to buckling such as short stretches of wooden sleepers, junction of track laid with anti-creep fastenings, wooden sleeper track between level crossing on one side and metal sleeper track on the other, wooden sleeper track in the vicinity of insulated joints and SEJs, short patches of wooden sleepers. ✓ Educate Mates, Keymen and Trackmen to detect buckling of track and protect the track in case of emergencies. ✓ Engineering Inspecting Officials should trolley their sections during the hottest part of the day. 	<p>GENERAL:</p> <ul style="list-style-type: none"> ✗ Do not undertake deep screening and track renewals without speed restriction and the supervision of Supervisor. ✗ Avoid inadequate expansion gap, failure to counteract creep in time, non-lubrication of rail joints, failure to remove rail closures from track, inadequacy of ballast to prevent buckling. ✗ Do not over tighten the fish bolts. ✗ Do not undertake greasing of fishplates after commencement of hot weather. ✗ Do not undertake through packing after the onset of Summer. ✗ Do not carry out maintenance operations when the temperature is high.

✓ Identify locations where continuous falling of keys, ERCs are predominant like loosening/missing of fastenings in sabotage prone area.

✓ Track should be boxed up.

SWR track - Restrict all the regular maintenance operations when the temperature is within $t_m + 25^\circ \text{C}$. On curves, restrict these works when the temperature is below $t_m + 15^\circ \text{C}$. In emergencies, if maintenance operations have to be undertaken at a temperature higher than the above limits, do not open more than 30 sleeper spaces in one continuous stretch (where t_m = Mean rail temperature). Also follow this instructions for run-down track also.

LWR track

✓ Know the De-stressing temperature (t_d) of your section.

✓ Carry the appropriate equipment as prescribed for LWR territory for execution of track work.

✓ Regular track maintenance operations should be confined to the hours when the rail temperature is below $t_d + 10^\circ \text{C}$.

✓ Precautions regarding the consolidation of track and SRs such as, if rail temperature after maintenance operation exceeds $t_d + 20^\circ \text{C}$, then during the period of consolidation (**Para 1.18 of LWR Manual**), "SR of 50 / 40 KMPH on BG/MG shall be imposed" when shoulder and crib compaction has been done; 30/20 KMPH when shoulder and crib compaction has not been done in addition to mobile Watchman (**Para 6.2.1.i (a) of Addendum to Corrigendum No.9 of 2005 to LWR Manual**).

SWR track

✗ Do not allow more than two joints consecutively jammed at t_m in SWR.

✗ Do not disturb SWR track if more than two consecutive jammed joints are noticed at t_m .

✗ Do not undertake major works in continuous stretch without suitable precautions when the temperature is above $t_m + 15^\circ \text{C}$ and also do not fail to impose SR.

✗ Do not open shoulder and crib ballast at a time.

✗ Do not permit slewing of track during hottest period of the day.

LWR track

✗ Do not open track for more than 30 sleepers at a stretch when the temperature is within $t_d + 10^\circ \text{C}$.

✗ Do not lift or align track when rail temperature is above $t_d + 10^\circ \text{C}$.

✗ Do not open the adjacent length before 24 hours in the case of Broad Gauge (BG) carrying more than 10 GMT.

✗ Do not open shoulder and crib ballast simultaneously.

✗ Do not try to lift the track while packing sleepers for replacement of ERC & Liners and slewing with crow bars.

✗ Do not renew more than one sleeper within 30 sleepers at a time.

✗ Do not renew fastenings not requiring lifting on more than one sleeper within 15 sleepers at a time.

<ul style="list-style-type: none"> ✓ The ballast should be opened to the barest minimum required to ensure lateral and longitudinal stability. ✓ Ballast deficiency, if any, should be left only in the crib portion of the track but not at the shoulder location. ✓ SEJs should be oiled & greased once in a month as per ESO No.12. ✓ Patrolling equipment should be handy and Hot weather patrol should be introduced when the temperature exceeds $t_d + 20^{\circ}\text{C}$ where sleeper density is less than 1540 Nos./KM. If more than 1540/KM $t_d + 25^{\circ}\text{C}$ (Addendum and Corrigendum slip No. 12 of 2009 to LWR Manual). ✓ Keep the bolts of buffer rails always tight. ✓ Check the gaps of SEJs once in a fortnight during the hottest part of the day. ✓ Renew fittings other than GRSP only on one sleeper at a time out of 15 sleepers without lifting the track. ✓ Attend only 1 or 2 sleepers out of 30 at a time for adjusting fittings while removing a kink. ✓ Pay special attention to SEJs, breathing lengths, curves, approaches to level crossings, un-ballasted bridges, horizontal and vertical curves. ✓ Pay special attention for crib and shoulder packing of ballast on CST-9 track. 	<ul style="list-style-type: none"> ✗ Do not allow loose, missing or ineffective fastenings to remain in track. ✗ Do not neglect checking and attending to the breathing lengths of LWR in a fortnight. ✗ Do not lift track by more than 50 mm even if temperature is within de-stressing temperature t_d.
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**CHIEF SAFETY OFFICER
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