

SOUTH CENTRAL RAILWAY

Safety.387/Fly Leaf/11/2023

Fly Leaf No. 11 / 2023

Attention..... All Concerned

WINTER PRECAUTIONS TO PREVENT RAIL / WELD FAILURE – SAFETY OF TRACK.

(Railway Board's letter No. 2016/CE-II/safety/Precaution dated 21.09.2023)

Winter will set in shortly in most parts of the country. Sufficient measures should be taken to prevent Rail / Weld failures in coming winter. Relevant Instructions should be reiterated in field up to the lowest level.

Railway Board has issued winter precautions to prevent rail / weld failure vide letter referred above duly mentioning some of the activities requiring specific attention are reproduced below :

- (i) Examination & Lubrication of Rail Joints including bolt holes of Joggled Fish Plates should be completed as per schedule.
- (ii) De-stressing of LWR/CWR shall be completed wherever due.
- (iii) LWR/CWR in RF/WF prone locations should be identified and measures like recouplement of missing fittings and de-stressing at lower temperature for winter season may be taken as per requirement.
- (iv) All Arrangements for cold weather patrolling should be made as per Para 1005 (3, 4, 5) of IRPWM 2020. Patrolman should be provided with GPS Trackers as per Board's letter No. 2017 / CE-II / TK / Policy Pt. dated 17.11.2017 for monitoring patrolling and to facilitate quick communication.
- (v) A close watch on rail temperature should be kept and temperature record register should also be maintained by SSE / P. Way. Cold Weather Patrolling must be introduced as Para 1005(3) of IRPWM 2020.
- (vi) Duty hours of Key Men should be suitably changed so that failures, if any, can be detected in time.
- (vii) Inspection of LWRs / CWRs & SEJs by JE / SSE /P. Way and ADEN as per Para 354 (e) of IRPWM 2020 and attention carried out as found necessary.
- (viii) It should be ensured that there are no arrears of USFD testing and corrective action as per provisions of USFD manual is taken.
- (ix) Rails having corroded flange should be kept under special watch. If necessary, speed restriction should be imposed to ensure safety.

WINTER PRECAUTIONS IN MAINTENANCE OF TRACK FOR THE YEAR 2023-24.

S. No.	Description	Reference No.
1.	AWARENESS :	
a	Steps may be taken to increase the awareness in the field officials particularly at the Supervisory levels (P. Way) regarding USFD testing results and action to be taken before onset of winter.	As per the Instructions specified in USFD manual (Revised-2022).
b	Periodic testing of AT welds as per stipulation of USFD manual (Revised 2022). Feeding of updated data in TMS is to be ensured.	
c	Normal USFD testing of rails as per Need based concept is to be ensured in all sections.	
d	It should be ensured that there are no arrears of USFD testing and corrective action as per provisions of USFD manual is taken.	Item No. VIII of Railway Board's letter No. 2016/CE-II /Safety/precaution dated 08.10.2021.
e	ADEN of the section should interact with each and every gang and explain the winter precautions to be taken within the next 15 days duly recording the rail temperature.	
f	Engineering Officers and staff should do detailed inspections by push trolley at the following locations. a) Ensure joggled fish plates with appropriate fittings are provided at the respective locations. b) Platform lines and other passenger lines in major junction stations and marshalling yards. c) Corrosion prone areas. d) Major Bridges, tunnels, high bank approaches and sharp curves.	As per ESO : 72/2011.
2	DETECTION OF RAIL DEFECTS LEADING TO FRACTURES:	
A	By USFD Testing:	
a	72 UTS rails have shown increasing trend in fracture beyond 250 GMT, whereas 90 UTS rails have shown high failure rate up to initial 50 GMT. Therefore, in addition to USFD testing as per the Need based concept, one round of testing shall be done before 31 st October (before onset of winter) in all 72 UTS rails territory where track has carried more than 250 GMT and in 90 UTS territory where traffic carried is up to 50 GMT.	Railway Board letter No. Track - 21/99/0910/7/Vol. II dated 17.09.2002.
b	In addition to normal testing, testing of SKV/AT welds shall be carried out on all major bridges and approaches for a length of 100m on either side before onset of winter.	Railway Board's letter No. Track I/21/99/0910/7/Vol. II dated 09.05.2003.
B	By Visual Examination: Examination of rail ends and bolt holes at fish plated joints is to be carried out at the time of greasing of fish plates including joggled fish plates.	Para No. 611(2) of IRPWM 2020.

3.	DETECTION OF FRACTURES:	
A	By Keymen : Duty hours of Keymen should be suitably changed so that failures, if any, can be detected in time. Keymen and Patrolmen should be suitably trained to detect fractures and to take protective measures from 01.11.2023 to 28/29.02.2024. Time: 06:00 hrs to 11:00 hrs and 14:00 hrs to 17:00 hrs.	
B	By Night Patrolmen:	
a	Night Winter Patrolling shall be in force from 1st November to 28/29th February. The period may be suitably changed/ extended based on the local conditions.	
b	Night Winter Patrolling shall be carried out (in the similar manner as prescribed for monsoon patrolling) from 22:00 hrs to 06:00 hrs on identified Block sections. For this purpose, Night Winter Patrolling charts duly signed by sectional Sr. DEN / DEN shall be issued to all concerned.	
c	The beat length and man power deployment may be decided depending on prevailing local conditions, frequency of train service, weather conditions etc.	
d	In case, If a Night Patrolman does not turn up as per the timings indicated in the chart, “ speed restriction of 40 kmph ” shall be imposed and Goods train shall be allowed first into such Block section.	GR 10.4 (3) of G & SR 2020 Appendix-IV.
e	The Patrolmen shall also obtain signature of the Gateman posted at the Level Crossings en-route in his beat length apart from obtaining signature from the respective SM/SS. The beat book shall be exchanged by the Patrolmen at the beat exchange point.	
f	Night Foot Plate inspection shall be done by nominated Engineering officials in the respective sections to ascertain the availability of the Patrolmen as per the Patrol chart.	
g	“ Special patrolling ” may also be carried out by posting a mobile Patrolman in such identified stretches where corrosion of rail is quite severe in addition to the normal Night Winter Patrolling. Such stretches shall be decided by the concerned sectional Sr. DEN / DEN.	
h	Rs.500/- may be awarded to the night patrolmen who detect the rail/weld failure between 22:00 hrs to 04:00 hrs as a motivation.	
4.	PREVENTIVE ACTION:	
a	Division wise list of identified Rail/Weld failure prone Kms. / block sections for the year 2021-22, 2022-23, 2023-24 (up to 30.09.23) enclosed as Annexure-II. Corrective measures should be taken by implementing 10 point programme as advised vide this	This office letter No. W.413/Genl/RWF/Vol. XXV dated 11.12.2013.

	office letter under reference (enclosed).	
b	All AT welds and SKV welds which have completed their 50% of stipulated fatigue life on sections having annual GMT more than 15 are to be provided with joggled fish plates with 2 far end bolts giving priority at the following locations. i) On curves especially the outer rail. ii) Approaches of Bridges. iii) High Banks above 5 m iv) High banks between 3m to 5m and v) Other locations.	Railway Board's letter No. Track/ 21/99/0910/7 Vol. II dated 21.9.2004.
c	One Metre long fish plates are to be provided at fish plated joints on all bridges including approaches and SWP track. The work on major bridges and approaches has to be completed on priority before onset of winter.	This office letter No. T - 5/P/SP.WP/Vol. II dated 07.01.2010.
d	Painting of weld collar with epoxy paint / Anticorrosive paints to be taken up.	
e	TWR work is to be taken up on priority in identified fracture prone stretches.	
f	LWRs identified as fracture prone, de-stressing may be carried out at a lower temperature i.e. between t_m to $t_m + 5^{\circ}C$.	Para no. 6.3 (v) of ESO No.3.
g	Painting of rails in corrosion prone areas is to be taken.	ESO No. 59 / 02.01.2008.
h	Sealing of liner contact area of rail flange with grease is to be done on gauge face sides in corrosion prone areas and other areas.	
I	De-stressing of LWR / CWR shall be completed wherever due.	
j	Rail fracture / Weld failure prone locations of LWR / CWR should be identified and measures like recoument of missing fittings and de-stressing at lower temperature for winter season may be taken as per requirement.	
k	Rails having corroded flange should be kept under special watch. If necessary, Speed Restriction should be imposed to ensure safety.	Railway Board's letter
l	All arrangements for cold weather patrolling should be made as per Para 1005 (3, 4 & 5) IRPWM 2020.	No. 2006/CE-II /Safety/precaution dated 08.10.2021.
m	A close watch on rail temperature should be kept and temperature record register should also be maintained by the SSEs/JEs (P. Way). Cold weather patrolling must be introduced as per Para 1005 (3) IRPWM 2020.	
n	Inspection of LWRs/CWRs & SEJs by SSE/JE (P. Way) and ADEN as per Para 354 (e) of IRPWM 2020 and attention carried out as found necessary.	
o	While repairing fractures, the rail which is inserted in the track needs to be cleared by USFD before putting into track. Each Section Engineer (P. Way) should have a stock of rails which have been tested by USFD and	ESO No.3 of SC Rly 6.3 (vii) dated 01.02.1999.

	cleared for usage in track.	
p	Suitable speed restriction shall be imposed on stretches where foot corrosion at the liner contact area is quite severe, especially in such cases, where the corroded liner contact area at the rail foot is shifted and is in suspended condition. Each such case shall be decided by the concerned sectional Sr. DEN / DEN.	
5.	ACTION ON FRACTURE:	
a	The night patrolmen are to be counselled/ trained to take precautions for passing the trains across the fracture location when gap at the fracture is up to 30 mm.	
b	Adequate number of joggled fishplates with clamps, wooden blocks shall be provided at all the manned level crossing gates and in the gang tool box for use in case of emergency.	
c	Joggled fish plates with clamps shall be provided on one of the rails at every one km. interval on UP and DN lines separately. However, the location shall be selected in such a way that it is staggered so that fish plates are available in every ½ km. for use in emergency.	This office letter No. W.413/Jogging/Vol. II dated 30.09.2013.

PRINCIPAL CHIEF SAFETY OFFICER

SAFETY ORGANISATION

SOUTH CENTRAL RAILWAY