दक्षिण पश्चिम रेलवे
SOUTH WESTERN RAILWAY

प्रधान कार्यालय
Headquarters Office,
संरक्षा विभाग ,हुब्बल्लि,
Safety Department. Hubballi.

सं/No.T.389/Safety Circular/4/23

दिनांक / Dated: 06.04.2023

To all concerned/SWR

HQ Safety Circular No. 12

Sub: JPO for loading / unloading and transportation of Welded rail Panels South Westren railway supplies for SAIL/ Bhilai.

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On 16.01.2023, while unloading of rail panels from EUR rakes, an unusual incident of rail panel piercing and damaging brakevan has taken place between CLI – RNR section of MYS Division. In order to stream line the working of EUR rakes, JPO has been issued by the committee consisting of CTE, CFTM, CRSE/freight & CELE.

All concerned should follow the instructions contained in JPO strictly, to avoid recurrence of such incidents in future.

Encl: JPO order 01/2023-24.

Tiwari
6.4.23

(आलोक तिवारी / Alok Tiwari)
प्रधान मुख्य संरक्षा अधिकारी/Pr.Chief Safety Officer

SOUTH WESTERN RAILWAY

No. 504/JPO **Dated: 05.04.2023**

JOINT PROCEDURE ORDER 01/2023-24

Sub: Joint Engineering, Mechanical, Electrical and Operating Procedure Order for loading/ unloading and transportation of welded rail panels in South Western Railway supplied from SAIL/ Bhilai.

Ref: 1) Railway Board's Letter No. 2014/Track -1/5/22, dated 30.06.2015 regarding 'Joint Procedure Order' for operations of EUR rakes.
2) RDSO's Guidelines for Handling and Stacking of Rails (CT-35), October-2014.
3) SWR WTT General Instruction booklet-I for 2023.

1. INTRODUCTION:

Various grade and sections of Rails are in use on Indian Railways to meet the traffic requirement. The rail sections of 60 kg (90 UTS)/R260 welded as LWR/CWR of length from 10 rail panel (130m) to 20 rail panel (260m) are unloaded at the work site from EUR rakes.

The rails should be handled with care to get required service life of rails. Any carelessness in loading, unloading, handling and laying is liable to cause damage which will not only contribute towards bad running but also result in irreparable damage to, or incipient failures of rails. It is also necessary to ensure safety of staff involved in unloading/handling as well as Railway property like wagons, loco, Over head equipments, S&T installations, engineering assets etc.

Unloading of long welded panels through a rail puller and laying the rails along the ballast bed is a special task and needs precautionary measures with utmost care and expertise for handling such type of work. The welded rail panels require special rakes to load, transport and unload. These rakes are designated as End Unloading Rakes (EURS).

Each such rake consists of BRHS/BRNS/BRN-A/BRNAHS suitable modified with stanchions and rollers to support and guide rails for simultaneous unloading of rails, on either side of track. Such BRHS/BRNS/BRN-A/BRNAHS are termed as modified BRHS/BRNs/BRN-A/BRNAHS. 10/20 rail panels shall be moved only with such modified BRHS /BRNS/BRN-A/BRNAHS rake.

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2. FORMATION OF RAKE:

Generally the formation will consist of following:

1) Engine
2) Modified three empty BRHs/BRNs/BRN- A/BRNAHS with adjustable ramper and chute arrangements needs to be attached for the purpose of unloading only (DMT)
3) Eighteen BRHs/BRNs/BRN-A/BRNAHS (modified) loaded with 10/20 rail welded panels on inbuilt roller fitted in channel beams.
4) The rake will run as one complete rake and no wagon should be detached en-route. In case of any wagon being marked sick en-route, whole rake should be considered as sick and should be attended on priority.
5) Brake van in rear except while proceeding for unloading purpose.
6) Empty BRHs/BRNs for loading tools.
7) The EURs are permitted to run without brake van while proceeding into the block section for unloading purpose. In that case guard of the train will travel in engine.
8) The Rail DMT will be worked with separate engine and shall not be moved by ordinary train. A suitable power has to be provided to work EUR along with Guard and Crew.
9) The hand brakes of all the vehicles shall be in good working order.
10) The block section in which the rails are to be unloaded should be specified in advance and conveyed to concern SM for dispatch of DMT to said destination.

3. EQUIPMENT REQUIRED AT THE TIME OF UNLOADING RAKE:

1) Field portable telephone/**Megaphone**
2) First Aid box
3) Minimum T &P required for unloading on DMT :
   a) 60 m of 1" dia wire rope - 02 Nos
   b) 10 m of 1" dia wire rope - 02 Nos.
   c) 03 m of 1 " dia wire rope 12 Nos.
   d) U clamp 1" dia MS round-25 Nos.
   e) M.S. Rivet 25x100 duly drilled of 5 mm at ends -30 Nos.
   f) M.S. wire 2.0 mm dia for locking the rivets -05 metre.
4) Spare hooks and slings, crow bars, manila rope.
5) Rail cutting facilities for cutting rail in emergency.
6) Wooden Wedges/skids of standard design.
7) Two set of tested slings will always be prepared at nominated stations in division, which will be used for unloading of DMT in the division. Any repair/replacement of slings ropes may be planned by divisions well in advance.

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8) Divisions will initially procure slings/ropes & maintain sufficient stock for replacement of broken items etc.

4. LOOSE SHUNTING :

1) No loose or fly shunting of EUR empty or loaded with welded panels is permitted.
2) Consignment shall also not be humped and sudden braking should be avoided by the Loco Pilots/Guards during run as well as while unloading.

5. SPEED RESTRICTION:-

1) EUR will not run on any condition either backward or forwarded with open door of block head except in block during unloading and as in (6) in below.
2) Rail Panel DMT rakes loaded with 10/20 rail panels is permitted to travel at restricted speed of 40 Kmph. It should be mentioned in working time table and Caution Order to be issued to Loco Pilot working with the EUR loaded rail DMT.
3) Speed while negotiating turnouts should be restricted to 15 Kmph for turnouts having speed potential of 15 Kmph or more. Speed at turnout having speed potential less than 15 Kmph shall be negotiated at specified speed.
4) Loco Pilots should observe all permanent and temporary speed restrictions imposed in the section during its run.
5) The EUR may be run at night also.

6. SAFE KEEPING OF T & P ITEMS:

SSE/JE/Pway in charge of section, where unloading is being done, will be responsible for ensuring all the T &P items i.e .all rollers, slings, ropes to Rail DMT in charge. Special attention required for rollers, which are not fixed with DMTs.

7. EQUIPMENTS REQUIRED AT THE TIME OF UNLOADING THE EUR:

1) Sufficient Numbers of Walkie-Talkies
2) Field Telephone
3) First Aid Box
4) Spare hooks and slings, crow bars, manila rope
5) Rail cutting facilities for cutting rail in emergency/ Gas Cutting equipment of ONE set
6) Wooden Wedges/skids of standard design.

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8. UNLOADING STAFF IN FIELD:

For unloading, minimum 20-25 men should be available along with SSE/JE deputed for unloading.

9. DUTIES OF GUARD and LOCOPILOT/ASSISTANT LOCO PILOT:

1) The Guard shall observe the instruction contained in G&SR for working , when EUR performs unloading work.
2) The LP/ALP of special DMT shall be vigilant & be on constant look out for signals from SSE/JE/Pway in charge of section while unloading of rails & obey the signals from the rear of DMT.

10. DUTIES OF SM/ASMS:

The Station Masters on either side of the block section shall be where EUR is working on lines shall be vigilant. As far as possible, one line should be kept free and the point shall be set to that line to meet any eventualities like parting etc. as per the provisions in G&SR.

11.RESPONSIBILITY OF P. WAY OFFICIALS:

1) The P. Way officials should be sensible enough for taking all necessary precautions during unloading and handling of rails to prevent development of defects.
2) Respective SSE/(P.Way) shall be responsible for efficient functioning of the unloading mechanism of EUR including slings, chains, hooks, shackles, wire ropes, crow bars and other tools. He shall also ensure lubrication of worn out gear of ramper and proper securing of roller arms on the stanchion.
3) Sr. DOM in coordination with Sr.DEN/CO shall be responsible for arranging sufficient blocks for unloading of rails panels in which minimum one hour shall be for opening of bulk head. Hence unloading time will be over and above one hour.
4) The rails of higher UTS (90UTS and above), being brittle in nature, are susceptible to sudden or premature fractures from locations of even minor dents/deformation, which are generally formed on the edge of the rail foot mainly due to rubbing of rails during unloading and handling of rails at site. Improper handling may cause bending, indentation or damage to surface, leading to premature failure of rails.

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5) The sectional P.Way Engineer, not below JE shall be responsible for:

a) Protection of adjacent lines in double/multiple lines as per G&SR

b) Placement of unloaded rails in safe position so that there is no infringement of standard dimensions. In case of bridges / culvert etc. it will be ensured that Rails Panels are well supported at appropriate distances, as there should be no chance of lifting of ends of rail/ panel. Rails so be so spread as to rest evenly along their entire length or on supports closely spaced. FF rails should lie on the foot.

c) Providing adequate anchorage for proper securing of unloaded rail panels.

d) Supervising safe unloading of panels.

e) Placement of unloading rail panels in safe position, so that panel does not infringe the Standard Dimensions.

f) To ensure that the track on which unloading has been done as well as adjacent track is clear of all obstructions before EUR leaves the site.

g) For handling of rail panels Para 2.3 of RDSO guidelines CT-35 of Oct' 2014 be referred.

12. PRECAUTIONS WHILE UNLOADING OF LONG WELDED PANELS FROM EUR:

While unloading long welded rail panels from EUR (End Unloading Rake) of higher UTS (90 and above), the following precautions should be followed:

a) **General Precautions:**

1. Movement of loaded EUR with 20/10 Rail panels is not permitted in CLR-QLM and SKLR – SBHR Ghat sections of SWR.
2. Unloading of long welded rail panels from EUR during NIGHT not permitted.
3. Unloading shall not be undertaken at locations having vertical clearance less than 4500 mm from rail level to the fixed structure.
4. Unloading of rail panels shall not be undertaken in platform area and on ballast-less open web girder bridges.
5. Loading and unloading shall be done under the supervision of an Engineering Official not below the rank of a SSE/P. Way who shall personally ensure that no tool or any part of body of worker comes within the "danger zone" i.e. within 2m of the OHE.
6. Under any circumstances, 10/20 rail panel rake shall not be started keeping panels in ramper and threader wagons and without securing bulk head doors in closed position duly placing the rail stoppers.
7. 8 wheeler staff coach/ 8 wheeler covered wagon should be attached to EUR formation (at other end where ramper and threader are not attached) for staff.
8. No work of heating, flame cutting, spot welding on or adjacent to rails should be done. Flame cutting when found essential, should be done

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after preheating minimum of 10 cm of rail length on either side of the cut to about 250-350 ^{0}C by uniform movement of heating torch.

9. Unloading of panels should be arranged in such away that steel girder bridges, turnout and cross-overs are avoided.
10. Proper lubrication of rollers of EUR should be done.
11. While unloading the rail panels in Electrified section, care shall be taken to ensure that rails do not touch each other to form a continuous metallic mass of length greater than 300mts. In case of length more than 300 mts, the rails shall be earthed.

b) <u>Precautions while on run/movement of EUR:</u>

1. Loose shunting and sudden application of brakes shall not be permitted and clear instructions shall be given to Loco Pilot and Guard in this regard.
2. Strict speed restriction shall be observed while negotiating crossovers.
3. The EUR rake should not be allowed to run either backward or forward with open door of bulk head in any circumstance except in block during unloading.
4. Panels should not be pulled out in advance into ramper and threader wagons in the yard or en-route.
5. Fixing of chain hook assemblies for the bottom two layers of the panels should be done at the site of unloading to avoid possibility of entanglementwith coupling assembly while on run.
6. Bulk head doors should be properly fixed/ closed, and rail stoppers are positioned when the formation is in motion till it reaches the location of unloading.
7. Movement of 20 Rail Panel rakes [EUR Rakes] should be avoided on second and subsequent loops to avoid derailments.
8. During movement of EUR, staff should travel only in 8 wheeler staff coach/ 8 wheeler covered wagon.
9. In sections where gradient is steeper than 1 in 80, speed restriction of 30 kmph should be followed during normal movement of EUR.
10. While passing through platform lines and negotiating turnouts, maximum permissiblespeed of EUR should be restricted to 15 kmph.

c) <u>Precautions during unloading from EUR:</u>

1. Rails shall be protected against impact or abrasion against separators in wagons, brushing, notching or scoring of rail surface.
2. Sudden impact should not be imparted to rails while unloading.
3. Whenever unloading of 10/20 rail panels is to be done on graded section having gradient steeper than 1 in 100, unloading should be done by moving the train towards down gradient.
4. During process of unloading 10/20 rail panels in double/multiple line sections, speed restrictions of '30 kmph and whistle freely' should be imposed on adjoining lines.

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5. Adequacy of traffic blocks should be ensured just before starting unloading of 10/20 rail panels from the EURs.
6. The protective rail (rail stoppers) and flap door of bulk head shall be opened during block only for the layer (usually top layer panels) to be tackled. Once all the rails of that layer are unloaded, next layer door shall be opened forunloading.
   a) Rail stoppers work as a rail protector and placed behind the bulk head flap door.
   b) Ensure to follow safe practice of opening bulk head flap doors and removing rail stoppers behind bulk head at work site in traffic block only.
7. The rails should be prevented from bending while unloading.
8. Rope should be passed through the arrangement fixed in ramper and threader wagons attached at the end of EUR rake.
9. Only tested slings should be used for unloadingof welded panels. Rail panels should be tied with manila rope (or wire rope)/slings with the help of HTS bolts through the holes provided at the end of panels.
10. Other end of manila rope (or wire rope) should be tied to any fixed structure capable of pulling rail load. Allow the rake to move forward at very cautious speed not exceeding 15kmph so that in the event of any unusual/unsafe situation the rake can be stopped immediately.
11. Height of rampers should be adjusted/ maintained with respect to the layer of rails being unloaded and it should be decreasing towards end of wagon.
12. Eccentric unloading or unloading from only one side of BFR (Bogie Flat for Rails) is strictly prohibited. Ensure to unload theRail panels at equal distances from centre line.
13. Just before complete unloading of first pair of rail panel, the rake should be stopped and next rail panel to be unloaded is tied with near end of rail panel partially unloaded, with rope. Then, therake should be moved forward to unload next rail panel. This process is to be continued for unloading of successive rail panels.
14. The EUR rake should never be moved backward during unloading.
15. In case, traffic block is to be cleared before complete unloading of rake, the clamps for layers, where rail panels are left shall be re-fixed properly before movement of rake to avoid any chance of movement of panel during run. All the panels in that layer shall be properly secured with the help of wire ropes to stanchions and then only formation should be moved with a speed restriction of 20 kmph. On steeper gradients, this speed may further be reduced.

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d) **Precautions for Safety of Personnel:**

Following precautions must be ensured for safety of personnel involved in handling of rails:

1. The staff deputed for unloading of EUR rakes shall travel only in tool van/ separate wagon provided in rake composition.
2. They shall not be allowed to travel on BFRs/ or on ramper/threader during movement of rake from one station to another station where rake is moving for non-block activity.
3. Trackmen/staff shall not be allowed to stand between bulkhead doors and panels on either side of the formation while rake is on run.
4. The staff must use protective gloves and clothing to minimize the risk of skin abrasion, lacerations and extremes of temperature.
5. Handling of rails shall be done using proper tools and equipments approved by SSE (P.Way) in- charge. No locally made arrangements shall be used.
6. The staff must wear distinctive colored helmet and clothing for easy identification by crane and other machine operators to avoid accidents.
7. The staff shall use steel toe-capped protective footwear.
8. The staff shall be properly trained and cautioned to avoid standing under suspended loads, sudden dropping and impact of rails.
9. Safe working in the vicinity of electrical conductors and cables shall be ensured.

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