1.0 सामान्य/ General

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) welded as LWR/CWR of length from 10 rail panel (130m) to 20 rail panel (260m) are unloaded at the work site.

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 irrepairable damage to, or incipient failures of rails.

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**.

2.0 रेलपथ अधिकारियों की जिम्मेदारी/ Responsibility of P. Way Officials

The P. Way officials should be sensible enough for taking all necessary precautions during unloading and handling of rails to prevent development of defects. The defects, which may happen to be developed, lead to premature or sudden failures.

The rails of higher UTS (90 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.

The rails with any damage (including dent/ deformation) should not be used in track without removal of damaged portion of rails.

3.0 रेक का गठन/ Formation of Rake

Generally the formation will consist of following –

A. (i) Engine
   (ii) Modified three empty BRHs/BRNs/BRN-A/BRNAHS with adjustable ramper and chute arrangements needs to be attached for the purpose of unloading only.
   (iii) Eighteen BRHs/BRNs/BRN-A/BRNAHS (modified) loaded with 10/20 rail welded panels on inbuilt roller fitted in channel beams.
   (iv) The rake will run as one complete rake and no wagon should be detached enroute. In case of any wagon being marked sick enroute, whole rake should be considered as sick and should be attended on priority.
   (vi) Brake van in rear except while proceeding for unloading purpose.
   (vii) Empty BRHs/BRNs for loading tools.

   The above formation can be changed.

B. 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.

4.0 EUR से लंबे वेल्डेड पैनलों को उतारने के दौरान सावधानियां/ 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:

4.1 सामान्य सावधानियां/ General Precautions

1. Unloading shall not be undertaken at locations having vertical clearance less than 4500 mm from rail level to the fixed structure.
2. Unloading of rail panels shall not be undertaken in platform area and on ballast-less open web girder bridges.
3. 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.
4. 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.
5. 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.
6. While unloading the panels in the night blocks [in case of emergency], adequate lighting arrangement should be made.
7. Contact of rails with injurious substances which produce high corrosion of steel, i.e. acids, alkalis, salts, fertilizers, sulphate, chlorides, nitrates etc. should be avoided.
8. Rails should not be in contact with electric arcs and molten metal splashes, i.e. from loose cables or adjacent welding operations.
9. No work of heating, flame cutting, spot welding on or adjacent to rails should be done.
   - Flame cutting when found essential, should be done 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.
10. Unloading of panels should be arranged in such a way that turnout and cross-overs are avoided.
11. Proper lubrication of rollers of EUR should be done.

4.2 EUR रन/मूवमेंट के दौरान सावधानियां/ Precautions while on run/movement of EUR

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 enroute.
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 entanglement with 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 permissible speed of EUR should be restricted to 15 kmph.

4.3 EUR से उतारने के दौरान सावधानियां/ Precautions during unloading from EUR

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.
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 for unloading.
   - Rail stoppers work as a rail protector and placed behind the bulk head flap door.
   - 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.
   - Rope should be passed through the arrangement fixed in ramper and threader wagons attached at the end of EUR rake.



8. Only tested slings should be used for unloading of 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.




9. 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.




10. 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.





11. Eccentric unloading or unloading from only one side of BFR (Bogie Flat for Rails) is strictly prohibited.
    - Ensure to unload the Rail panels at equal distances from centre line.



12. 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, the rake should be moved forward to unload next rail panel. This process is to be continued for unloading of successive rail panels.




13. The EUR rake should never be moved backward during unloading.



14. 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.



5.0 कर्मियों की सुरक्षा के लिए सावधानियां/ 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 coloured 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.
10. The rails should never be carried by staff on the head or shoulder.

6.0 EUR को उतारने के समय आवश्यक उपकरण/ Equipments required at the time of unloading the EUR

1. Megaphone 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
6. Wooden Wedges/skids of standard design.

5.0 संदर्भ/ References

(i) Railway Board's Letter No. 2014/Track -1/5/22, dated 30.06.2015 regarding 'Joint Procedure Order' for operations of EUR rakes.

(ii) RDSO's Guidelines for Handling and Stacking of Rails (CT-35), October-2014.

(iii) JPO No. 01/2013-14 of West Central Railway [Vide No. W-HQ/W-4/Track/Safety/45-VII, dated 12.07.2013].

(iv) Engineering Standing Order No. 64 issued by CTE/SCR, Secunderabad [Vide No. 506/P/Vol. X, dated 26.04.2010]

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भारत सरकार - GOVERNMENT OF INDIA

रेल मंत्रालय - MINISTRY OF RAILWAYS

लंबे वेल्डेड पैनलों को उतारने के दौरान बरती जाने वाली सावधानियाँ

PRECAUTIONS TO BE TAKEN WHILE UNLOADING LONG WELDED PANELS



कैमटेक/सि/2019/एलडब्ल्यूपी/1.0

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अअमासंRDSO
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यदि आप इस सन्दर्भ में कोई विचार और सुझाव देना चाहते हों तो कृपया हमें इस पते पर लिखें।

If you have any suggestion & comments on contents of the pamphlet, please write to: *Joint Director (Civil), CAMTECH, Maharajpur, Gwalior (M.P) – 474 005*

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