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पश्चिम मध्य रेल
West Central Railway

महाप्रबंधक कार्यालय
इंजीनियरिंग विभाग, जबलपुर

General Manager's Office
Engg. Department, Jabalpur

No. W-HQ/W-4/Track-II/Policy/Circular/26

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CTE Circular No. 26 / 2023-24

Sub: Visual Examination of Fish-plated Joints on Track.

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Fish-plated joints is the weakest link in track. Proper visual inspection and Oiling/Greasing of Fish-plated Joints is very important for its proper functioning as most of the fractures take place at Rail Joints. Since, rail fractures affect both Safety and Punctuality of train operation, therefore, the efficiency in controlling fracture plays an important role in performance of our Railways.

Frequent visual examination is also essential so as to detect maximum possible number of potential fractures at the cracks' formation stage itself. Para 619 of IRPWM-2020 (Updated till Latest Correction Slips) demonstrates the process for examination of Rail ends and lubrication of Rail Joints (**Annexure - A**).

Following instructions are now being issued with regard to visual examination of Rail ends and bolt holes at fish-plated joints in the track. These instructions are also applicable on Fish-plated joints behind CMS Crossings and on Fish-plated joints on Girder Bridges:

- Rail ends and bolt holes should be examined visually **with magnifying glass and mirror** for any incipient crack during lubrication of joints as per frequency of Visual examination mentioned in this Circular.
- On Routes having ≥ 20 GMT**, visual examination of fish-plated joints and old fish bolt holes has to be carried out at least **Once in "Three months"**. This should be done in such a manner that at least one visual examination occurs between two consecutive USFD testing. However, for Fish-plated joints lying on **other than Main Line**, frequency of Visual examination shall be **Once in "Six Months"**.
- On Routes having < 20 GMT**, the visual examination of fish-plated joints and old fish bolt-holes has to be carried out at least **Once in "Six Months"**. However, for Fish-plated joints lying on **other than Main Line**, frequency of Visual examination shall be **Once in "A Year"**.
- Necessary protection of track as per IRPWM must be taken for carrying out these works. Above works to be done under Traffic block only.
- The work of visual examination of Rail ends and old fish-bolt holes should not be carried out under the supervision below the rank of JE/P.Way.
- All fish plated joints shall be provided with **Single Spring Coil washer (RDSO Drawing No. RDSO/T-1879)** to ensure the tightness of bolt.

- g. Field staff should be suitably counselled so as to ensure that work is systematically carried out from one end of the gang beat /unit to the other end.
- h. The record of visual examination of rail joint / fish-bolt hole should be maintained as per proforma (**Annexure - B**) for each gang/unit.
- i. For recording purpose, each joint has to be numbered serially from one end of kilometre to the other end and paint marked on web of Rail. In case double line/multiple lines section and loop lines numbering should be done for each individual line.
- j. To ensure prescribed action being taken, the records should be checked periodically by AEN/DENs/Sr.DENs. Such records can be asked by HQ anytime for scrutiny.
- k. **Joints at both ends of CMS crossing should be kept Gapless to reduce the effect of wheel impact.**

DA: Annexure – A & B.

(Anoop Kumar)
Chief Track Engineer

Annexure – A

Para 619 of IRPWM-2020 (Updated till Latest Correction Slips)

619 Lubrication of Rail Joints:

- (1) The purpose of lubricating rail joints is not only to facilitate expansion of rails but also to retard wear on the fishing planes of the rail and the fishplate. Reduced wear on the fishing planes is one of the preventives of the low joints.
- (2) A stiff paste of plumbago (Graphite) and kerosene oil, made in the proportion of 3 kg of plumbago to 2 kg of kerosene oil may be used as lubricant. Black oil or reclaimed oil may be used for fish bolts and nuts. Alternatives to the above may be used, with the specific approval of Chief Engineer.
- (3) All rail joints should normally be lubricated once a year on a programmed basis during the cold weather months after the monsoon, from October to February. Lubrication should not be carried out in extremes of weather both hot and cold. On non-running lines, this period may be extended to 2 years with the approval of the Chief Engineer.
- (4) Creep in excess of 150 mm should be adjusted before the work of lubrication of rail joints is undertaken.
- (5) The lubrication of rail joints should normally be carried out by gangs working under the direct supervision of at least JE/P.Way. The work should be carried out under caution orders arranged to be issued daily by the JE/SSE(P.Way) and under protection of engineering signals or under traffic block, as per **Para 806**. The procedure to be followed will be as below:
 - a) The nuts are unscrewed and the fish bolts and fishplates are removed.
 - b) The fishing surfaces of the fishplates and rail are then cleaned with a wire brush.
 - c) The rail ends are inspected for cracks and the fishing surfaces of rails and fishplates are checked for wear. A magnifying glass and a mirror should be used for detecting cracks in rail ends and fishplates.
 - d) The fishing surfaces of the rails and fishplates are then lubricated.
 - e) The fish bolts are then put back in reverse position and tightened using a standard fish bolt spanner, the inner two bolts being tightened first.
 - f) While tightening overstraining of bolts shall be avoided.
 - g) Spare fishplates and bolts should be available for replacement of cracked ones.
- (6) The Chief Engineer may issue subsidiary instructions as necessary.
- (7) The lengths over which the rail joints are lubricated together with dates shall be recorded in the TMS. In the month of April, SSE/P.Way (In-charge) should submit the certificate of lubrication of rail joints giving reasons for any exception to the Assistant Divisional Engineer. Copies of these certificates should be forwarded with the Assistant Divisional Engineer's comments to the Divisional Engineer for scrutiny and record.
- (8) During all works such as relaying, rail renewals and renewals of turnouts, etc. rail joints should be lubricated. All such joints those have been lubricated by the gang should be checked and retightened by Keyman during his routine patrolling.
- (9) Insulated joint fishplates should not be greased.

Gang Unit No.: _____

[illegible]