

NORTH EASTERN RAILWAY

CE'S P.WAY CIRCULAR NO.61 OF 1972
(IN SUPERSESSON OF P.WAY CIRCULAR
NO.45 OF 1965).

CASE NO.W/275/O/A/Pt.IV/W-4A.

LUBRICATION OF RAIL JOINTS.

1. 1.1 This circular supersedes P.Way Circular No.45 of 1965 and all other instructions on the subject issued so far.

1.2 The existing practice of applying paint mark on the centre of fishplates hitherto followed only for 30 NS and 41½ lbs should also be followed for other rail sections. This would ensure that the fish plates have been properly cleaned and lubricated.

1.3 There would be no change in the procedure followed so far for 50 NS and 41½ lbs.track where the practice of keeping the fish-bolts nuts on the out side must continue to avoid infringement by worn out flanges.

1.4 The practice of reversing fish-bolts nuts in alternate years for sections other than 50 lbs.in vogue. This would enable check being exercised to see that the bolts have been cleaned and oiled.

2. The lubrication of rail joints should be carried out as laid down in para 637 of IRWW Manual with certain modifications detailed in the following paragraphs.

3. The purpose of lubricating rail joints is not only to facilitate expansion of rail but also to retard the inherent feature of wear on the fishing plates of the rails and fish plates. Reduced wear on fishing plate is one of the preventives for low joints.

4. For lubrication of the fish plates only grease graphite ready mix as per I.R.S. Specification G/C-101/82 should be used. This has already been specified as per Chief Engineer's letter No.W/275/13/5297 dated 4.11.58. Black oil or re-claimed oil should be used for fish bolts and nuts.

The following quantities to the above specification should suffice for one K.M. of track for different poundages of rails mentioned as under:-

(i)	75 lbs. rail	11kg
(ii)	60 " "	7 "
(iii)	50 " "	6 "
(iv)	50 NS, BS & 41½ lbs	6 "

For track laid with short welded panels of 5 rail length, 1/5th the above quantity and of 3 rail length, 2/3rd of the above quantity will suffice.

5. All rail joints should be lubricated once a year on programme basis during cold weather months. The work should be completed before 15th of March.

6. On trunk routes and main lines the lubrication of rail joints should generally be carried out by collecting Gangs of the adjacent gangs beats (excluding keymen who will be left for looking after their own duties in their respective sections and work done under the direct supervision of a

qualified Section Mate or an APWI. With a normal strength of 1+1+8 and excluding keymen, there will be 3 Mates and 24 men available for the work. By deputing 6 men for the purpose of protection of line, 18 men will be available for the lubrication of the rail joints who can complete the work on each gang length in 5 days on track laid with fish plated joints. For tracks laid with short welded panels, the time taken will be nearly $\frac{1}{5}$ th or $\frac{1}{4}$ rd of this depending upon the number of rails in each panel. At this rate the PWI's section can be completed in about one month's time in case of track laid with fishplated joints and in one or two weeks in case of track laid with short welded panels of 5 rail lengths or 3 rail lengths. The work should be carried out under caution order to be issued daily by the PWI or the APWI and under the protection of Engineering Signals as per para 150 I.R.W.W. In order to minimise possible detection to trains, the work should not be done at more than one place at a time on any one section.

7. In case for some reasons an APWI or Section Mate cannot be made available for the work of lubrication in accordance with above instructions on trunk routes and main lines then AEN concerned may take special permission of the DEN to get the work of lubrication done by the keyman of each gang assisted by one or more men from the gang of the section. In such cases the instructions laid down for lubrication of branch line, given below, shall be followed. This relaxation would not apply to track laid with short-welded panels.

8. On branch lines, except those laid with short welded panels, the work of lubrication may be carried out by the keymen of the gang assisted by one or more men from the gang of the section. In such cases

the keyman shall exhibit a red signal flag on a light post at the site of work. Not more than one joint should be opened at a time under this procedure. Before the work of lubrication is taken up in hand according to this procedure the PWI or the APWI incharge of the section should carefully inspect the track for any jammed joints or excessive gap at rail joints, indicating strained condition due to creep. The work will not be carried out unless the conditions of strain are put right. This work of lubrication by keymen will also not be carried out in foggy weather when visibility is poor.

9. Where the work of lubrication is being carried out by the keyman, the PWI or the APWI on the section must issue a caution order daily mentioning clearly that the work is being carried out by keyman and the drivers should exercise extra vigilance on that account.

10. Systematic operation for lubrication of rail joints:

(Except those laid with 50NS&41 lbs. rails)

10.1 In order to ensure that the fish plates are thoroughly scraped and properly lubricated, it would be necessary to ensure a check being carried out on the work. For this purpose after the monsoon of 1972, the inner fish plates of the right hand rail while facing the up direction, should be painted with white paint for a length of 4" in the middle of each fish plate. Thus when the work of lubrication is to be commenced in the winter of 1973, all inner fish plates on the right hand rail would have a white paint mark. During the lubrication work to be done in 1973, these fish plates would go to the left hand rail in accordance with the procedure prescribed below:-

10.2 The following procedure should be adopted when work is to be done in the odd year May:1973.

10.2.1 As mentioned in para 10.1 above, the painted fish plates will be on the right hand rail while facing the up direction during the current year, i.e. 1972 (even year). This would be the situation in all 'even' years.

10.2.2 Have two spare fish plates (without paint marks) on hand. Clean them and lubricate.

10.2.3 Unscrew the nuts of the joints on the right hand rail and remove the fish plate on the nut side leaving the other fish plate and bolts in position.

10.2.4 Clean the fishing surface of the rail with wire brush and lubricate the fishing angle of the rail surface.

10.2.5 Fix the fishplate from the spare ones which have been already kept ready.

10.2.6 Take out the end fish bolts one at a time and put each back after oiling in the reverse position.

10.2.7 Remove the other fish plate and replace it from the other spare fish plate duly greased.

10.2.8 Replace nuts and tighten to the extent possible with the standard fish bolt spanner without over straining the bolts. It should, however, be ensured that the bolts are inserted in such a manner that the nuts remain in the inner side of the rails in even years and outer side of the rail in odd years.

10.2.9 Released fish plates should be now taken to the joint on the left hand rail. A similar procedure as above should be followed in removing the fish plates and replacing them. The painted fish plates should be used for replacing the inner fish plates.

10.2.10 Now the painted inner fish plate released from the right hand rail will be in the inner side of the left hand rail for the odd year 1973.

10.2.11 Similarly, the work should be carried on till oiling and greasing is done and the fish plate on the left hand rail changes place with a fish plate on the right hand rail.

10.2.12 Before commencement of the work, it should be seen that the paint mark is prominent. If the paint mark is faded or indistinct, the paint mark should be painted afresh with white paint for a length of 4" in the middle of the relevant fish plate for the entire height.

11. Procedure for track laid with 50NS & 41½lbs.

On 50 NS and 41½lbs. track, if the nuts are kept on the gauge face side of rail i.e. inside the track, a worn out flange passing on a worn out rail may graze the nuts. Hence the bolts should be always inserted from inside so that the nuts can be kept on the outer side of the gauge face of a rail. Extract with this change procedure laid down in para 10 will be followed in this case also.

12. Precautions to be observed while doing the work:

12.1 It should be particularly noted that at no time during operation there is less than one fish plate and two fish bolts without nuts connecting the rails at the joint.

12.2 Both the fish plates should be fixed and atleast one fish bolt and nut on either side of each joint should be tightened when a train is approaching the site of work.

12.3 On branch lines, when the work is being done by keyman only not more than one joint should be opened at a time.

12.4 When fish plate are being opened out not less than two men must be present and they must be provided with two red hand signal flags and a red flag on a light post for display at the site of work. They will also have 12 detenators in their possession for use in emergency.

12.5 Look out for an approaching train must be kept and fish plates must be refixed before a train arrives at site. If difficulty in observing the approach of trains is experienced due to local conditions, fish plates must not be opened until the site has been properly protected by putting down detenators and displaying red flag.

12.6 Lubrication of rail joints shall not be done in extremes of temperature. Creeps where it is heavy, must be adjusted before work of lubrication of points is undertaken.

13. The lengths over which the rail joints are lubricated together with dates shall be recorded in the Creep Register, a few pages of the Register being earmarked for this purpose.

14. By 15th April, PWIs should submit to the AEN a certificate of having done the lubrication of rail joints. Copies of these certificates should be forwarded by 30th April each year with AENs' comments to the DEN for scrutiny and record.

15. For all works such as relayings, rail renewals and renewals of turn outs, rail joints shall be lubricated. The importance of going over the retightening the bolts after the fish plates have taken a bearing under traffic should be impressed on the staff.

16. All rails should be properly examined for any cracks near fish bolts holes before grease is applied. Any cracks observed should be brought to the notice of the PWI and rail and marked with pink paint for reference and observation in future where changing of rails is required. This should be arranged quickly.

17. Additional precaution to be observed in case of short welded panels:

The lubrication of rail joints in case of short welded panels should only be undertaken every year before the hot summer months at a rail temperature within 5°C of the mean annual rail temperature. As laid down in para 8.13 of part II of circular No.46 of 1965 (Revised) on "Annual Systematic Track Maintenance" the work should be done only under personal supervision of APWI or a Section Mate, ensuring the provision of expansion gaps prescribed in para 2.10 of the RDSO's letter No.ET/JW dated 20.6.61, enclosed as annexure VI to CE's Circular No.46 of 1965 (Revised).