# LUBRICATION OF RAIL JOINTS

**Purpose**

The lubrication of rail joints retards the wear on the fishing planes of the rails and the fishplates. It also facilitates expansion of rails.

**Material used as lubricant**

A stiff paste of plumbago and Kerosene oil made in the proportion of 3 kg of plumbago and 2 kg of Kerosene oil. Black oil or reclaimed oil is used for fishbolts and nuts.

**Schedule**

Once a year after 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 two years with the approval of the Chief Engineer.

**Pre-requisites**

- Creep in excess of 150 mm should be adjusted before the work of lubrication of rail joints is undertaken.
- The work 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 order arranged to be issued daily by the JE/SSE(P.Way).
- The work should be carried out under protection of engineering signals or under traffic block.
- Spare fish-plates and bolts should be available for replacement of cracked ones.

**Protection of Track**

The protection of line has been discussed in following sub-Para. However, the following points should be kept in view, while protecting the track in the cases mentioned in sub-Para (1) and (2) below-

- At places where there are curves or falling gradients and at times of poor visibility the distances laid down in following para may be suitably increased wherever necessary and intermediate flagman posted to relay hand signals.
- In case of night working, red light must be

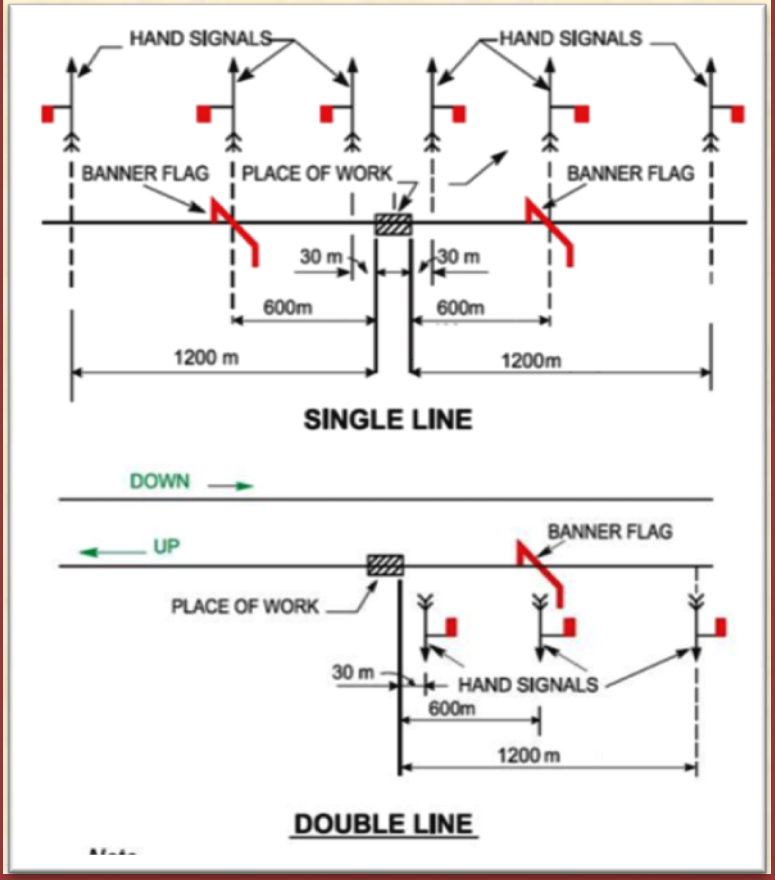
exhibited in the direction of approaching trains in place of red hand signaling flags and banner flags.

1. **When the train can pass over the work spot at restricted speed in Block section**
   *(Ref: Annexure - 8/2 - Para 806(2), IRPWM 2020)*

- Post a flagman exhibiting caution hand signals at a distance of 30 metres from the place of obstruction.
- Post a flagman exhibiting caution hand signals at a distance of 1200 metres for Broad Gauge from the place of obstruction.
- Post an intermediate flagman with hand signals at a distance of 600 metres for Broad Gauge from the place of obstruction. He will also place a banner flag across the track. The intermediate banner flag must be kept across the line until the speed of the train has been reduced, after which the banner flag shall be removed and the train hand signaled forward.
- The railway servant at the site of work should give proceed hand signals to indicate to the Driver, that he may resume normal speed after the train has been hand signaled past the site of work .

## Protection of line in case of reduced speed

*(Ref: Annexure - 8/2 - Para 806(2), IRPWM 2020)*



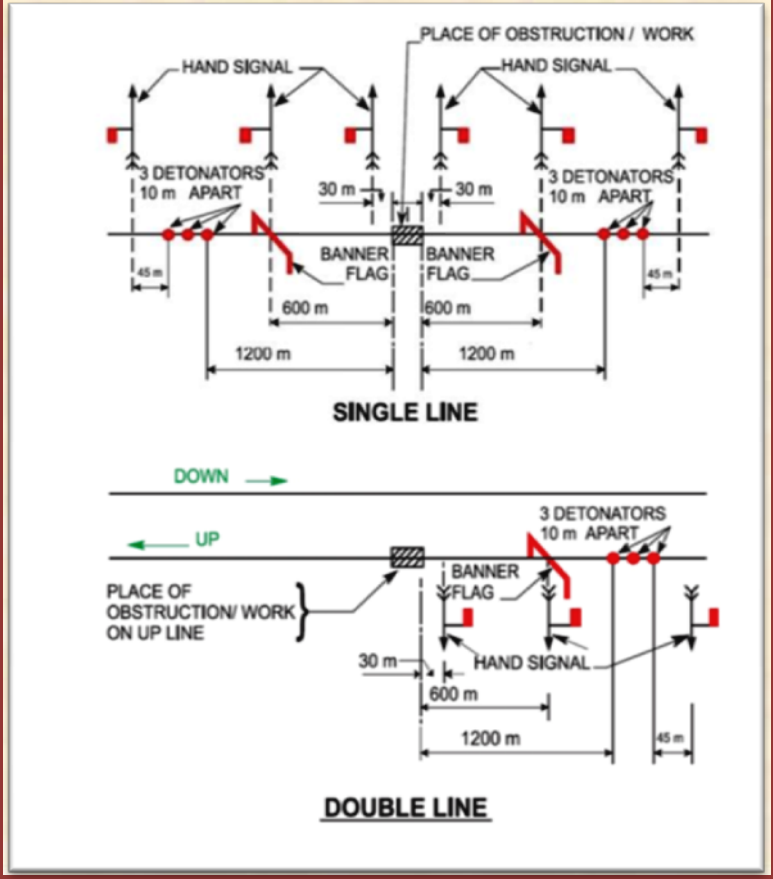
## 2. When the train is required to stop at the site of work in Block section

*(Ref: Annexure - 8/1 - Para 806(1), IRPWM 2020)*

- Post a flagman with hand signals at a distance of 30 meters in rear of the place of obstruction, to show stop hand signals.
- Post a flagman with hand signals and place a banner flag across the track at a distance of 600 meters in rear of the work. The flagman will show stop hand signals.
- Post a flagman with hand signals and detonators at a distance of 1200 metres in rear of the work. The flagman shall fix three detonators on the line 10 metres apart and stand at a place not less than 45 metres from the three detonators, from where he can obtain a clear view of the approaching train. He will show stop hand signals
- The man at the site of obstruction shall give proceed hand signal to indicate to the Driver, when he may resume normal speed after the train has been hand signaled past the obstruction.

## Protection of line in case of Stop dead Restriction

*(Ref: Annexure - 8/1 - Para 806(1), IRPWM 2020*



**3. Works to be carried out in station limits**

- No work should be commenced on running line at a station without the written permission of the Station Master and until the relevant signals have been placed at 'ON'.
- Before commencing a work on a line which can be isolated from the other running lines, the JE/SSE/P.Way should ensure that the line has been isolated and retain the keys of locking device in his possession. Where isolation is effected by the setting of points, they must be locked by means of clamps or bolts and cotters.
- Before commencing work on a line which cannot be isolated from other running lines as provided for above, the JE/SSE/P.Way should protect the line as detailed in (1) &(2) above.

**4. Works in Automatic Territory**

In automatic territory, if the distance from the place of works/obstruction to the automatic signal controlling entry of a train into the signaling section is less than 1200 meters and the automatic signal is secured at 'ON' the banner flag and three detonators may be provided at 90 and 180 meters respectively.

**Procedure**

- The nuts are unscrewed and the fish bolts and fish-plates are removed.
- The fishing surfaces of the fish-plates and rails are then cleaned with a wire brush.
- The rail ends and fish plates are inspected for cracks with the help of magnifying glass and a small mirror is helpful in examining the underside of rails.







The fishing surfaces of rails and fish-plates are checked for wear. The fracture normally starts as a fine crack from the fish bolt or bond holes. During lubrication of rail joints, opportunity should be taken to observe the rail ends carefully for presence of fine cracks. If cracks are noticed, rails should be replaced.

- The fishing surfaces of the rails and fish-plates are then lubricated.



- The fish-bolts are then put back in reverse position, the inner two bolts being tightened first, then other two bolts tightened with standard fish-bolt spanner.



- While tightening overstressing of bolts should be avoided.
- Daily work of lubrication of rail joint should be recorded in T.M.S.

***Ref:*** *Indian Railways Permanent Way Manual, Revised Edition- June 2020, corrected upto ACS-16(Especially Para 619, 806)*
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## Disclaimer

*The information contained in this pamphlet does not supercede any existing provisions laid down in RDSO & Rly. Board instructions. This document is not statutory & instructions given in it are for the purpose of guidance only.*

**GOVERNMENT OF INDIA - MINISTRY OF RAILWAYS**

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