

NORTHERN RAILWAY

No. 100-T/SSMU/SC/Fog/Optg/2024
Dated: 29.10.2024

Divisional Office
New Delhi

All Operating officers

Station Director- NDLS, DLI, NZM, ANVT

CAM/TKD, ATM/GZB, AO/PNP & AO/ROK.

All - TIs & SSs/DLI Divn., All TM/Counsellors

Sr. DEN/C, Sr. DEN-I, II, III, IV, V, All ADENs & SSE/Pway,

Sr. DSTE/C, Sr. DSTE-I, II, DSTE/RRI, All ADSTEs & SSE/Sig,

Sr.DSO, Sr.DEE/RSO, Sr.DME/P, Sr.DEE/TRD, All CLIs & Safety Counsellors,

Chief Controller, Dy.CHG, Safety Control,

Divisional Training school, KKDE, TKD & GZB, CYZ & SSB.

Divisional Safety Circular No. 08/2024

- Sub:** (i) Train Operation during Foggy & inclement weather-Precautions.
(ii) Winter and Fog precautions for signalling system.
- Ref:** (i) HQ Letter No.403-T/Fog/Instructions/Circular/Optg/14/Part-III/224 Dated 23.10.2024.
(ii) HQ Letter No.403-T/5/Pt.16/Rule/Policy Dated 22.10.2024

Railway Board has issued instructions for precautions in train operations during foggy and inclement weather, which have been reiterated by HQ in letter no. 403-T/Fog/Instructions/Circular/Optg/14/Part-III/224 dated 23.10.2024. Precaution/Preparation to be done for train operations during foggy/inclement weather are as under:

(A) Infrastructure/Additions /Alterations:

(i) Provision of Fog Safe Device (FSD):-

Reliable Fog Safe Devices, if available, may be provided to the Loco pilots in all Locomotives running in fog affected areas during fog. Placement of detonators under conditions as prescribed in Para E(ii) shall be dispensed with, where reliable Fog Safe Device is available and is in working order.

(ii) Modification of Automatic Signaling System:

Introduction of Modified Automatic Signaling System as per G.R 9.01 (3) & (4) and G.R 9.03 (3) and (4) & G.R 5.18 and SRs their under to be followed strictly.

(B) Works to be completed before foggy weather to strengthen Rail Infrastructure:-

- (i) Adequate supply of detonators to be ensured.
- (ii) Lime marking across the track at the Sighting Board (or at Distant Signal in case of Double Distant Signals) must be done.
- (iii) All Signal Sighting Boards, Whistle Boards, W/L Boards, fog signal posts and busy vulnerable level crossing gates which are accident prone should either be painted or provided with yellow/black luminous strips. The work of repainting for their proper visibility should be completed before onset of winter/foggy season.
- (iv) Lifting barriers at busy level crossings, where necessary, to be provided with Yellow/Black luminous indication strips.
- (v) The new existing SLRs are already being fitted with LED based flasher tail light, therefore, the existing SLRs with fixed Red lights should also be modified and fixed with LED lights. This will be a very important step to ensure safety in foggy weather. The Railways should undertake this work on war footing. When the train is held up in Automatic territory (on double or multiple sections) in abnormal situation including fog, the Train Manager will put the LED light to on position. This will be in addition to Flashing Red Tail Lamp.

- (vi) It should be ensured that retro reflective strip in Sigma shape for identification of stop signal be provided as per existing instructions.
- (C) **The following points are to be kept in mind during operation of trains in foggy weather:-**
- (i) **Reduced Movements During Fog:-**
Rationalization of movements in the Coaching yards, approach to terminals, and at/near terminals etc. has to be done to reduce pressure on congested areas; this may be achieved by reduction in loco changes, reduced shunting, etc. and cancellation of trains. 20% reduction in movements during the fog has to be ensured i.e. by reduced movement of locos from and to shed, shunting in major yards, etc. and mainly by cancellation of trains-Mails/Express and Passenger trains running in and via Delhi area as also up to an equal no. also in fog affected sections (other than the trains passing via Delhi area) to be proposed to cancelled. A review be done the Zonal Head Quarters with the Divisions with mutual consultation to identify which Mail/Express and Passenger trains are to be canceled and proposals sent to the Coaching Directorate, Railway Board. This will also help in tackling extra requirement of Loco pilots/Assistant Loco pilots and Train Managers for changing en-route on sections where there is abnormal increase in duty hours of crews. This will also help in tackling extra requirement of Loco pilots/Assistant Loco pilots and Train Managers for changing enroute on sections where there is abnormal increase in duty hours of crew. This will also increase availability of spare rakes to cater to late running of trains.
 - (ii) PME/Refresher Training and other Safety/Promotional Courses of Loco pilots/Assistant Loco pilots and Train Managers in ZRTI/STCs, etc. who become due between 15th December and 31st January should be completed by 15th December.
 - (iii) Fog affected Railways should review the crew changing locations. In view of increased hours on road the Railways may create infrastructure at new/additional crew changing locations. Simultaneously the loco/crew/rake links be reviewed during the period of fog. All crews (Loco Pilots, Assistant Loco Pilots and Train Managers) on stationary duty should be utilized for train working especially during fog.
 - (iv) The instructions on all matters including cancellation of train be made applicable from 20th December to 31st January. However, the provisions herein may be implemented earlier or extended if the fog sets in early before 20th December and continues beyond 31st January respectively as the case may be.

(D) **Visibility Test Object (VTO):-**

- (i) The check of adequacy of visibility through the VTO is to guide the SM so as that he can decide when detonators are to be placed to warn the Loco Pilot of the location of an approach Stop Signal.
- (ii) VTO for Semaphore Signaling and for two aspect CLS:-
The VTO may be the light (or arm by day) of a Starter Signal (where exists) or the back light of the Home signal etc. as defined in GR 3.61/(2)(b). In such case, the VTO is normally located 300-350 meters at a place from where it is to be seen by the SM. During foggy or tempestuous weather, when such a VTO is not seen by the SM, it shall determine that fog has set in.

Note: The Visibility Test Object to be defined in the SWR of stations, which qualify for placement of detonators, should be on each end of a station (for junction stations there may be more than two VTOs).

- (iii) Prescribed VTO for Multiple Aspect Colour Light Signalling:-
 - (a) Stations with MACLS shall have a prescribed VTO located at a distance of 180 meters from a nominated location where the SM shall stand.

- (b) When a prescribed VTO is not visible from 180 meters or more during dense fog, the SM shall not use his discretion as per GR 3.61(2)(a) but will arrange to place the detonators to warn the Loco Pilot, unless specified otherwise in these Instructions.

Note:- There should be one Visibility Test Post in MACLS territory (at stations which qualify for placement of detonators) located at a distance of 180 meter from the place where at the SM shall normally stand to see the prescribed VTO.

- (iv) When the VTO (or the prescribed VTO) provided under conditions laid down is not visible to the Station Master, he shall take action as under:-

- (a) Ensure that signals are lit during night as well as during day in Semaphore Signaling sections when visibility is impaired due to fog, and VTO is also lit.
- (b) Observe the VTO before granting Line Clear to a train.
- (c) In case prescribed VTO is not visible take action as under:-
 - Depute fog signalman with detonators to place detonators in situations prescribed under para (E) (ii) at 270 – 280 metres from the first stop signal to inform in advance the location of this signal to the Loco Pilot of the approaching train.
 - Engineering Department will make all efforts to provide fog signalman.
 - No shunting should be carried out on non-isolated lines after granting Line Clear to an approaching train.
- (d) Provisions given as per GR 5.18 to be followed strictly and no train to be advanced beyond the Starter, or beyond Intermediate Starter Signal where these exists, up to the Advance Starter at stations which do not have track circuiting in this zone.

(E) Necessity of Placement of Detonators:-

(i) Where Not Necessary to Place Detonators:-

It is not necessary to place detonators to indicate 'location of a Stop signal' to the Loco Pilot in following circumstances:-

- (a) In sections where a reliable Fog Safe Device has been provided on Locomotives;
- (b) Where adequate pre-warning is provided; i.e. at stations where double distant signals are provided;
- (c) Where maximum speed allowed in the station section is upto 15 kmph even at stations where pre-warning signal is not available, but a Warning Board exists;
- (d) Where speed of the section is less than 50 KMPH (but more than 15 kmph) and the first signal of a Station is not a stop signal;
- (e) In Automatic Signaling territory;
- (f) On Gate Signal;
- (g) On Departure Signal;
- (h) At the site(s) of Temporary Speed Restriction imposed due to maintenance of Track/OHE/Signal.

(ii) Where it is necessary to Place Detonators:-

The Detonators should be placed at 270 meters short of the First Stop Signal at stations detailed as under:-

- (a) At 'A' class stations where Warner exists – Detonators to be placed short of Home signal and not the Warner;
- (b) At 'B' class station equipped with Lower Quadrant Signals - Detonators to be placed short of Outer signal.
- (c) In Multiple Aspect Signaling, where single Distant Signal is provided- Detonators to be placed short of Home signal.

Note:- The Fog Signal Posts will be provided only at stations where there may be a requirement for placing detonators. Such post may, therefore, be shifted suitably based on the above mentioned position(s).

(F) Precautions by Loco Pilot:-

The Loco Pilot shall take action in regard to speed of the train during fog as under:-

- (i) During fog when the Loco Pilot in his judgment feels that visibility is restricted due to fog, he shall run at a speed at which he control the train so as to be prepared to stop short any obstruction; this speed shall in any case not be more than 75 kmph.
- (ii) Loco Pilot to whistle frequently to warn the gateman (where provided) and road users of an approaching train at level crossings.
- (iii) In Absolute Block System the speed should not exceed 75 kmph as detailed at item (i) above.
- (iv) In Automatic Block Territory the speed will be subject to the judgment of the Loco Pilot as mentioned in item (i) above and shall not exceed as under:-
 - (a) After passing Automatic stop signal at 'Green', the speed not to exceed 75 Kmph.
 - (b) After passing an Automatic stop signal at 'Double Yellow', the speed not to exceed 30 Kmph.
 - (c) After passing an Automatic stop signal at 'Yellow', the Loco Pilot to run at a further restricted speed so as to be prepared to stop at the next stop signal.

Note (i) In case fog safe device is not available in locomotives or the device fails enroute the maximum speed of 75 kmph as indicated above shall be reduced to 60 kmph or less subject to judgement of Loco Pilot.

Note (ii) As provided under GR 4.16 (1) (b) a red tail lamp of approved design displaying a flashing red light, during day or night, to indicate last vehicle check device in foggy weather should be provided and lit on the last vehicle. Check device in foggy weather should be provided and lit on the last vehicle.

Note (iii) First Stop Signal location kilometre chart of every station be provided to each Loco Pilot either as an easy to carry Card or in the Working Time Table.

Note (iv) Prevailing Fog situation should be advised to Crew & Train Manager in lobby during "Sign ON".

S&T precautions to be taken for ensuring smooth train operation during Winter session and foggy weather.-

1. Modified Auto Signalling:

- a) The working of Modified Automatic Signaling system should be jointly tested with operating department. The working of "A" Marker Light & Signal post telephones should be especially checked. The Modified Semi-Automatic Signals and track circuits in automatic territory on Railways should be maintained to the highest standard by way of preventive maintenance so as to ensure 'zero' failure.
- b) Dedicated maintenance teams should be organized section-wise, who would be provided with all the maintenance materials/tools. Directed repair/maintenance should be carried out with immediate effect under supervision of JE/SSE.

2. Power Supply in order to prevalent Signal 'No light' cases:

- a) Reliable and uninterrupted power supply for Signaling equipments should be ensured by proper maintenance of IPS and power supply sources such as AT & DG sets.
- b) Audit of ratings of all switching equipments like electrical joints, MCB, auto changeovers etc. should be done and Visual inspection to check that they are not bunt/getting heated should

be ensured. The connection should be checked and tightened, especially where high currents are involved.

- c) DG sets provided should be tested and adequate fuel/diesel should be made available to ensure meeting with long power failure conditions.
- d) No Electric heaters should be connected to Signalling supply.

3. Visibility of Signals:

- a) Luminous paints/strips should be checked for their effectiveness on Signal Sighting Boards viz. Passenger and Goods warning boards.
- b) Highlighter grade luminous strips should be provided on Distant Signal to enhance visibility of Signal aspects to loco pilots.
- c) Hoods and side plates of the Signal units should be checked and attended on priority to ensure proper Signal visibility to the drivers.

4. Axle Counter:

- a) Proper adjustment of channel voltage and physical verification of deflector and tightness of the fittings.
- b) Availability of spares cards etc.
- c) Working of systems in standalone mode wherever redundancy is provided in media and systems.
- d) Checking of manual as well as auto resetting features in case of dual detection arrangement.
- e) In case of dual detection, both systems should be monitored separately through Data Loggers along with generation of exception reports about mismatch.

5. Electronic Interlocking:

- a) Working of System A & B in standalone mode.
- b) Availability of the spares.

6. LC Gates:

- a) Yellow luminous strips should be ensured on interlocked L.C. gate booms for proper visibility.
- b) Alternative yellow and black painting of LC gate booms should be ensured.
- c) Wire run of Mechanical LC gates should be readjusted.
- d) Provision of stop board with retro-reflective/tape on sliding boom should also be ensured.

7. Track Circuits:

- a) RDSO type block insulation joints should be maintained and presence of free rail joints should be ensured on both the ends.
- b) All types of track bondings should be checked and replaced wherever necessary.
- c) Condition of insulation sleeve on OHE bond beneath rails to be ensured.

8. Points:

All point adjustments should be done properly, proper anti-creep arrangement as prescribed in IRPWM should be ensured.

9. Maintenance:

- a) Inspection at officer's level and supervisory level, including night inspections, should be intensified during foggy weather for spreading more awareness and alertness among the maintenance staff.
- b) Signal Maintainers/Supervisors proceeding to attend Signal failures, should be allowed to board trains on priority in both directions viz. Attending failure and returning to their Head Quarter,
- c) All equipment like chargers, stabilizers, inverters should be properly sealed to prevent entry of pests like rats and mice.
- d) Luminous jackets/ Protective clothing, torch Light etc. to be ensured for S&T staff moving on line for the safety of staff.
- e) Functioning of door closing with datalogger.
- f) Staff should be counselled for ensuring their own safety and to follow safe working practices.

The copies of the above may be circulated to all stations, control offices, crew and Train Manager booking lobbies, running rooms, etc. Safety seminars may be conducted involving train passing staff- SMs, TIs, Loco Pilots and LIs etc. to educate the staff concerned on precautions to be taken during fog.

Further all supervisors should ensure that the staff be advised and counseled regarding provisions in the G&SRs and these instructions before the onset of fog and their assurances is being taken. Each and every crew is to be imparted necessary training for up to two days about the systems of working of trains during fog. This process to be completed by 1st December every of this year positively.

CS
29/10/24

Sr. DOM/G/DLI

Copy to: DRM, ADRM/OP, ADRM/Infra, ADRM/Admin, Sr.DOM & Sr.DSO for kind information please.