

# Working of trains in tempestuous or bad weather impairing visibility

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# Work before foggy season

- Ensure adequate supply of detonators
- Lime marking across the track at the sighting board or at distant/double distant signal if available
- All signal sighting boards, whistle boards, fog signal posts should be painted with yellow/black luminous strips
- Improve visibility of LC gate
- Fog lamps provided on locomotive running over fog affected areas.
- **Fog Safe Device** to be provided

# During operation of trains

## Reduced movements during fog

1. Rationalization of movements in coaching yards, approach to terminals, etc.
2. Reduction in loco change, reduced shunting
3. Cancellation of trains up to 20%
4. Reduced duty hours of LP/Guards
5. All refresher for LP/Guard course to be completed before 15th dec
6. Review the crew changing locations, loco/crew/rake links.

# Visibility Test Object (VTO)

The check of adequacy of visibility through VTO is to guide the SM/ASM so that he can decide when detonators can be placed to warn the loco pilot of the location of an approach stop signal.

VTO may be a HS lamp of a type that corresponds to specific type of signal lamp on the signals provided at the station, i.e. K-oil lit HS lamp or electrical type HS lamp for colour light signal respectively.

# VTO for semaphore signalling and for two aspect CLS

- VTO is normally located at 300-350 meters at a place from where it can be seen by SM. If VTO is not visible by SM, it shall determine that fog has set in.
- VTO may be the light (or arm by the day) of a starter signal or the backlight of a Home signal , etc.

# VTO for MACLS

- VTO shall be provided at a distance of 180 meters from a nominated location where the SM shall stand normally. There shall be no prescribed VTO for stations with double distant signals.
- When VTO is not visible from 180 meters, the SM shall not use discretion but will arrange for detonators to warn the loco pilot

# Duties of SM/ASM regarding VTO

- When VTO is not visible to SM/ASM , then he has to ensure that all signals and VTO are lit during night/day. Further, he has to observe the VTO before granting line clear.
- Actions to be taken
  - Depute fog signalman with detonators at 270-280 meters from first stop signal to inform in advance the location of this signal to the LP of the approaching train.
  - Engineering deptt. 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.

# Place for placement of Detonators

- At “A” class stations – short of home signal and not to warner
- At “B” class station- short of outer signal at station equipped with lower quadrant signal
- At multiple aspect signal, where single distant signal is provided, detonators are to be placed short of home signal.
- The fog signal post may be erected at 270 metres from FSS. No fog signal are to be provided at stations with double distant signal and at stations which do not qualify for placement of detonators.

# Not necessary to place detonators

- In sections where reliable fog safe device has been provided on locos.
- Where adequate pre-warning is provided (Double distant)
- In automatic signal territory
- In station section with speed not more than 15 kmph
- at sites of temporary speed restriction imposed due to maintenance of track/OHE/signal
- in automatic signal territory
- on gate signal
- On departure signal

# Precaution by Loco Pilot

- During fog when the LP feels that visibility is restricted due to fog, he shall run at a speed at which he controls the train so as to stop short any obstruction. This speed shall not be more than 60 kmph . (applies for absolute block system)
- LP can whistle freely to warn the gateman and road users
- In automatic block system
  - after passing 'Green' speed  $\leq$  60 kmph
  - after passing 'double yellow' speed  $\leq$  30 kmph
  - after passing 'yellow' , LP is to run at a further restricted speed so as to be prepared to stop at the next stop signal.
  - after passing 'Red' , speed not more than 10 kmph upto next stop signal

# Duties of Guard

- He should ensure that approved design flashing type tail lit lamp up on last vehicle during day/night.
- It is necessary to lit up tail lamp with last vehicle check device.

# Precaution taken by administration

- FSS location kilometre chart of every station to be provided to LP either as easy to carry card or in the Working time table.
- Necessary training to crew about system of working during fog.

THANKS