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Government of India
Ministry of Railways
(Railway Board)

No.2010/Safety(A&R)/19/20 New Delhi,dt.20.09.2010

General Manager,
All Zonal Railways.

Sub: Rules for Working of Trains in Modified Automatic Block Signaling.

In supercession of instructions contained in Board's letter of even number dated 13.09.2010 on the above subject, revised instructions regarding working of trains in automatic block signalling territory when one automatic signal between two stations is converted to semi-automatic during fog and other exigencies for enhancing level of safety are sent herewith as Annexure-I to this letter. The system will be initially commissioned over NCR on a trial basis.

The Zonal Railways may make all out efforts to initiate training of concerned Loco Pilots, Assistant Loco Pilots, Guards, SMs, LIs and TIs regarding working of trains under the proposed system.

These instructions are issued with the approval of Board (MT/CRB).

Encls. As above.

(J.S.Bindra)
Joint Director/Safety
Railway Board

O/C

N.O.O.

No.2010/Safety(A&R)/19/20 New Delhi, dt.20.09.2010

Copy for information and necessary action to:-

(1) Chief Operations Mangers/NCR, NR, WCR, NER and NWR.
(2) Chief Signal and Communications Engineers/NCR, NR, WCR, NER and NWR.
(3) Chief Mechanical Engineers/NCR, NR, WCR, NER and NWR.
(4) Chief Electrical Engineers/NCR, NR, WCR and NER.

कृपया जारी करें।
दीपचन्द
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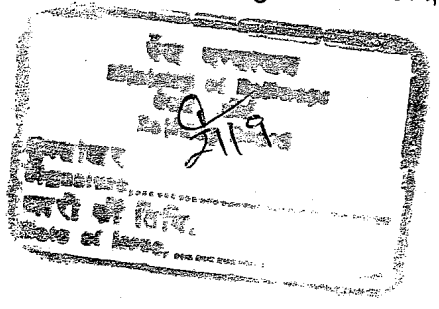

ANNEXURE-I

ANNEXURE to Railway Board's letter No. 2010/Safety (A&R)/19/20 dated 20.09.2010 in supercession of instructions contained in Board's letter of even number dated 13.09.2010.

RULES FOR WORKING OF TRAINS IN MODIFIED AUTOMATIC BLOCK SIGNALING

To increase the headway between trains during abnormal working conditions (including during foggy weather) in Automatic Signalling territory, minor changes will be effected in the signalling arrangement by which the system will work as Modified Automatic Block Signalling. By this, one Automatic signal in between two block stations shall be converted into a Semi-Automatic signal. Hence, there shall now be three Semi-Automatic signal in between the two adjacent stations; viz the Advanced Starter of one station, the Home signal of the station ahead, and the converted Semi-Automatic signal (one of the signals midway converted from Automatic to Semi-Automatic). The system of working to be adopted now will provide increased headway between trains i.e. normally upto two trains in between the two adjacent stations.

Even with the change in the signalling arrangement, for the Loco Pilot, all existing Rules/Instructions for train passing in Automatic Signalling, remain applicable. He can still pass the Automatic signal at 'Red' aspect after waiting for 1 minute by day and 2 minutes by night or in thick foggy weather. The only change for the Loco Pilot will be that 'A' marker of one of the Automatic signal will be extinguished, which has been converted to Semi-Automatic, when working in other than the Automatic mode.

Fog is an uncertain phenomenon; it may exist in a severe intensity at one location, and may be very mild (or even negligible) at an adjacent location. It has also a shifting characteristic and may change in intensity from time to time, as also from place to place. In view of the uncertain nature of fog it is essential to put in place the change in the signalling arrangement on a broad principle for a defined period as also for a nominated time/duration.

A specified section of around 100-200 kms. length may, therefore, be defined under special instructions. On this section a uniform system will be adopted for a specified time decided in advance for implementation of the change in signalling; as also the duration (period) for making the change. Each station is worked by train passing staff, some of which are permanently at a station; others (LR and RG) are changing from one station to another. This makes it necessary to have uniformity and a pre-decided pattern of changing the signalling system in a specified section.

However, as in some years there may be almost a negligible amount of fog, some discretion has to be given to the local authorities to make modification in the broad principle enumerated above.

Based on pattern of fog on specific sections, a decision to continue or discontinue with the system will be taken by the Sr.DOM of the division and will be advised to the station masters, the controllers and loco pilots and guards lobbies on a weekly basis.

Detailed instructions are as under:-

1. In the Automatic Block Signaling territory, one automatic signal between two stations in each direction, near about mid-way, is made as semi-automatic which is controlled by the Station Master of the station where the train is to be received. This signal is suitably interlocked with the track sections and signals ahead. By operation of a set of buttons or pulling of a slide/lever or click of a mouse, the specified signal can be operated as semi-automatic or work as fully automatic. Relevant indications are available to station masters of the stations at both ends to indicate whether the signal is in Automatic or Semi-Automatic mode.

2. In normal circumstances, the specified signal (midway in between the two stations) works in the auto mode with 'A' sign of the semi- automatic signals lit. During special circumstances like fog impairing visibility, when the station master of the train dispatching station decides to introduce this system, he will talk to the station master of the receiving station and after exchange of private numbers, operate a button on the panel or pull a slide/lever or click on the VDU with a mouse (as the case may be). This action shall extinguish the 'A' sign of the advanced starter of his station. Similarly, the station master of the receiving end will operate a button on the panel or pull a slide/lever or click on the VDU with a mouse (as the case may be). This action will extinguish the 'A' sign of the semi-automatic signal in the mid-section as well as of the first stop signal of his station. This action by both SMs extinguishes the 'A' sign of all the three signals i.e. advanced starter of the dispatching station, semi-automatic signal in the block section as well as of the first stop signal of receiving station and train working shall start under the new modified system. As far as possible the action by both the SMs be done at a pre-decided time, so that the change in the signalling arrangement is done simultaneously. The indication of aspect of semi-automatic signal in the mid-section (i.e. 'A' marker lit or extinguished) shall be depicted on the VDU/panel of both the stations (train dispatching and train receiving), along with the aspect of Advanced Starter or Home Signal as the case may be.

3. During the period when fog normally is in place i.e. around the 20th December till 31st January, or any other dates/period decided under Special Instructions to be communicated by the Sr. DOMs to all SMs on fog affected sections, the SM will switch over to the changed mode at a pre-decided time say 2000 hrs. and changed mode shall continue till 0800 hrs. of the next day.

4. In this system, Interlocking will be such that when the mid-section semi-automatic signal is working with 'A' sign extinguished, not more than two trains, one on either side of this semi-automatic signal will be ensured by

the signalling system, planned to be there between two stations at any given point of time. The semi-automatic signal (in mid-section) shall when 'Off", depict the aspect (Green or Double Yellow etc.) based on the aspects and number of Automatic Signal (including any other signal) in the rear of the Home Signal.

5. Advanced starter signal of the station in rear is interlocked with the semi-automatic signal in the block section in such a way that when working with 'A' sign extinguished, the Advanced starter cannot assume 'off' aspect (Double Yellow or Green) and it should never assume single 'Yellow' aspect when working under modified automatic signalling. Similarly, mid section semi-automatic signal working with 'A' sign extinguished shall be so interlocked that it cannot assume 'off' aspect until the line is clear upto adequate distance beyond the first stop signal of the receiving station.

6. A register will be maintained at the station by the station master to record the time at which the modified automatic signalling system is introduced and when the same is dis-continued.

7. Once this system is introduced by the two station masters of the dispatching and receiving stations at a nominated time after taking action, as far as possible, simultaneously and train working started as per new modified system, as described in paras above, the system will continue to operate automatically in the manner prescribed above and the process of taking 'Off' Advanced starter and mid section semi-automatic signal will need not be repeated by station masters of respective stations for every train. Facility shall however exist to work the advanced starter as manual signals as and when considered necessary by the controlling station masters. Facility of converting semi-automatic Home signal as manual or automatic signal shall continue to remain with the station master.

8. All other automatic signals in the section shall work normally and driver will follow existing GR/SR while passing/observing these signals.

9. To restore the normal automatic signaling system, at a pre-fixed nominated time the station masters of the train dispatching and train receiving stations will talk to each other under exchange of private numbers and will re-introduce the normal system by operating the button on the panel or pulling slide/lever or by clicking on the VDU with a mouse which will restore the 'A' sign on the advance starter of the train dispatching station and the semi-automatic signal in the block section as also of the first stop signal of the train receiving station.

10. System of working during failure of signals when working trains in modified automatic signalling system.

(a) **Failure of advanced Starter:** When 'A' marker is extinguished – Written authority to pass the signal and enter the next signalling

section will be given when previous train has passed the next mid-section semi-automatic signal.

(b) Failure of Home signal: By taking 'off' calling-on signal or by issuing written authority when Calling-on signal is also defective.

(c) Failure of Modified Semi-Automatic Signal in mid-section;

(i) If the mid-section semi-automatic signal becomes defective and/or shows 'Red' aspect due to any reason, the loco pilot will contact the station master of the station ahead on telephone provided at the mid-section semi-automatic signal post/or through secure means of communication (to be prescribed by the Zonal Railway), and inform him about the same. In case the Loco Pilot is unable to contact the station master of the train receiving station and is able to contact the station master of the train dispatching station, the station master of the dispatching station shall after obtaining permission from the station master of the receiving station supported by a private number shall repeat the private number to the Loco Pilot and allow him to pass the mid-section semi-automatic signal showing 'Red' and proceed ahead. The station master of the receiving station shall confirm the position of trains by seeing the indication on his VDU/Panel and shall allow the Loco Pilot to proceed or otherwise.

(ii) In case the telephone provided at mid-section semi-automatic signal is not working or is not available and the loco pilot can not contact the station master of the station ahead as also the station in rear by secured means of communication and the signal continues to display 'Red' aspect, the Loco pilot shall, after waiting for five minutes, pass the mid-section semi-automatic signal at 'On' and proceed ahead with great caution at a restricted speed not exceeding 10 kmph. and be prepared to stop adequately short of any obstruction on the track including a train ahead, till he reaches the Home signal of the station ahead and be guided by the aspect of the Home signal.

(d) Failure of fog switch/Button.

In case after taking action as per para 2 above by the respective station master, 'A' marker on all the three signals or at any one of the three signals do not get extinguished, fog signaling system shall be taken to have failed in between the two relevant stations. In this case, the system shall work in between these two stations as conventional Automatic Signalling System and normal rules applicable for Automatic System shall be observed as laid down in GR/SR.

The Station Master shall issue a Caution Order to the Loco Pilot to proceed cautiously and to run at a speed at which he can control the train so as to stop short of any obstruction; however, the speed shall in any case not exceed 30 kmph. during the period the changed system is supposed to be working but has failed.

During the next three months all the Loco Pilots/Assistant Loco Pilots, LIs etc. and also the ASM/SM/SS/TIs and Guards may be given a two days course at a Training Institute or a Training Camp to be advised of the new system of working.

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