

SOUTH WESTERN RAILWAY

BLOCK WORKING MANUAL

PART - II

WORKING OF TRAINS UNDER AUTOMATIC BLOCK SYSTEM ON DOUBLE LINE

1.01 General Instructions:

- i) These instructions are supplementary to Chapter IX of the General and Subsidiary Rules 1976 edition and other relevant General and Subsidiary Rules applying to Automatic Block System except where otherwise provided for.
- ii) The equipment relating to the Automatic Block System on Double line is provided in the control Panel for operating points and signals at the respective stations.

1.02 Authority to proceed

The 'OFF' aspect of Semi-Automatic stop Signal or Manual stop Signal controlling entry into the Block Section constitutes the 'Authority to proceed' for trains to enter the block section.

1.03 Description and working of Panel/Route setting/RRI/EI type Interlocking Control Panel

- (i) The panel/Route setting/RRI/EI type interlocking Control Panel provided at the Stations on the Automatic Double Line section shall have the following features:
 - a) Bell Push Buttons
 - b) Approach Buzzers
 - c) Approach Acknowledgement Buttons.
 - d) Route setting buttons
 - e) Signal and point operation knobs
 - f) King Knobs
 - g) Panel telephone
 - h) Station Master's key
 - i) Route Cancellation Buttons
 - j) Signal Blank Buzzer
 - k) Gate control knob if LC gate available
 - l) Signal Blank buzzer Acknowledgement button
 - m) Power failure Buzzer
 - n) Power acknowledgement button **(CM No 1 dated 06.08.2018)**
- (ii) **Bell Push button:** - It is used to call attention of the adjacent station. While starting the train, the Station Master shall call the adjacent Station Master and inform him about the particulars of train number and description.
- (iii) **The approach Buzzer:** - It starts sounding at the receiving station as soon as the train has passed the Semi-Automatic stop Signal / Manual stop Signal (controlled by the station in rear) or as may be specified in SWR. The Station Master on duty at the receiving station shall press the concerned approach acknowledgement button to stop the buzzer. If a following train has entered the block section, before the previous train has cleared it, the approach buzzer will sound only after the previous train has cleared the block section.

- (iv) **Approach Acknowledgement Buttons:** - The approach Buzzer starts sounding at the receiving Station as soon as the train has passed the Semi Automatic / Manual Stop signal (LSS) or as may be specified in SWR. The Station Master on duty at the receiving station has to press the concerned Approach Acknowledgement Button to stop the Buzzer. If a following train has entered the block section, before the previous train has cleared it, the Approach Buzzer will sound only after the previous train has cleared the Block section.
- (v) **Panel telephone:-** It is provided at the appropriate end of the panel and is used to communicate with the Station Master of the adjacent block station. In the case of failure of Panel telephone, Inter cabin / station Group telephone/ the Railway Auto phone / BSNL / Control telephone / Very High Frequency set shall be used as alternative means of communication.
- (vi) **King knob:** - It is provided at stations (where necessary) to control the Semi-Automatic stop Signal controlling reception and despatch of trains, which can be made to function either as Manual or Automatic. It has two positions i.e. 'Normal' and 'Reverse'. When the king knob is in the 'Normal' position, the concerned Semi-Automatic Stop Signal works as a Manual Stop signal and when the king knob is in the 'Reverse' position, the same works as an Automatic Stop signal. The Semi-Automatic Stop Signal protecting a point acts as an Automatic Stop Signal with the 'A' marker lit when the point is set to the 'Normal' position. When the point is set to 'reverse' position, the Semi-Automatic Stop Signal shall function as a Manual Stop Signal with the 'A' marker light extinguished. Separate king knobs shall be provided for each direction.
- (vii) The functioning of Route setting buttons, Signal and Point operation knobs, Route Cancellation Buttons and Station Master's key are the same as found in any other Panel/RRI/EI panels.

1.04 Authorized means of communications: -

The following are the authorized means of communications used for the purpose of working trains in Double Line Automatic Sections: --

- (i) Panel telephone
- (ii) Inter cabin/Station Group telephone
- (iii) Station to station fixed telephone
- (iv) Fixed telephones such as Railway Auto phones and BSNL phone.
- (v) Control telephone
- (vi) VHF sets.

Note: - When all the above said means of communications have failed, Total Interruption of communications is said to prevail.

1.05 Train working: -

- (i) Before starting a train, the Station Master on duty shall consult the Section Controller and obtain his permission to start. Then he shall call the Station Master of the block station in advance and advise him the train number and description. The Station Master at the other end shall acknowledge the same by communicating a Private Number in token of his readiness to receive the train.
- (ii) Train Signal Register shall be maintained at all block stations. The following entries shall be made in the Train Signal Register:-

Train coming from.....	Train going to.....
a) Date	a) Date
b) Number and Description of the Train	b) Number and Description of the Train
c) Time, Permission asked for	c) Time, Permission asked for
d) Time, Permission granted	d) Time, Permission obtained
e) PN (in words and figures)	e) PN (in words and figures)
f) Time, Approach Buzzer sounded	f) Time of departure of the train
g) Time of arrival of train	g) Signature of Station Master
h) Signature of Station Master	h) Remarks
i) Remarks

Note: -

- (a) Entries relating to cancellation of Permission shall be made in red ink in the Train Signal Register against the entry for the train.
- (b) Any other relevant entry as required by the Station Working Rules and other instructions in force should also be promptly recorded in the Train Signal Register.
- (c) During suspension of normal working, all entries in the Train Signal Register should be made in red ink.

1.06 Failure or suspension of Normal working

Automatic Block working is considered failed / suspended on the following occasions:-

- (i) Failure of all signals likely to last for some time and cause serious delay when means of communications are available:-

The trains shall be worked as per the provisions of SR. 9.12 (1).

- (ii) Failure of all signals likely to last for some time and cause serious delay when no means of communications are available:-

The trains shall be worked as per the provisions of SR. 9.12 (2)

(iii) Temporary Single line working on Double line:-

The trains shall be worked as per the provisions of SR. 9.12 (3)

(iv) Temporary Single line working on double line when no means of communication is available and signals are also failed: The trains shall be worked as per the provisions available in SR. 9.12(4). **(CM No 1 dated 06.08.2018)**

(v) Despatch of a Relief engine/train to assist a crippled train:-

The trains shall be worked as per the provision of SR. 9.12(5).

1.07 Restoration of Failures: -

- (i) In case of failures referred in Para 1.06 of this manual, normal working shall not be resumed until the Signals or Communications or both have been certified to be in order by the concerned Signal and Telecommunication official.
- (ii) In the case of obstruction on track, a responsible Engineering/ Electrical official not below the rank of JE shall certify that the track is safe for passage of trains.
- (iii) A record of the failure of normal working and also other failures shall be maintained in the Signal, Block failure and Inspection book.
- (iv) In case of failure as stated in rule (iv) of 1.06, the normal working shall be resumed by the Station Masters themselves, when the cause for the failure/suspension is removed.

1.08 Shunting

(i) For shunting beyond departure Stop signal (Manual stop signal/Semi-automatic stop Signal) at a station and upto the next Automatic stop Signal.

- (a) When it becomes necessary to make shunt moves into the first signalling section, the Station Master shall advise the Station Master at the other end of the block section about the shunting and get his consent which shall be supported by a Private Number.
- (b) The SM shall ensure that the first Automatic Block Signalling section is clear by observing the indication on the panel and shall then authorize the movement by taking 'OFF' of shunt signals if any, Semi-Automatic/Manual Stop signal and also issue a written memo in the prescribed format to the Loco Pilot.
- (c) The SM shall authorize the Loco Pilot to shunt upto the next Automatic/Semi-Automatic Stop signal indicating the signal number or the place upto which he shall shunt in the memo within the first Automatic Block Signalling section.
- (d) During shunting, Line Block caps have to be provided on the signal knobs, protecting the section.

(ii) For shunting into the block section in advance beyond the first Automatic Block Signalling section.

- (a) When it becomes necessary to make shunt moves into the block section in advance beyond the first Automatic Signalling section, the SM shall inform the Controller and get his permission for blocking the section between the two block stations by exchanging Private Numbers.
- (b) The Station Master shall advise the Station Master at the other end of the block section about the shunting and get his consent which shall be supported by a Private Number.
- (c) Both the SMs shall ensure that the concerned block section shall be clear of trains.
- (d) The SM shall then authorize the Loco Pilot to perform shunting beyond the departure stop signal of his station by issue of a written memo in the prescribed format.
- (e) The individual number(s) of the Automatic/Semi-Automatic Stop signals which have to be passed while performing shunting shall be mentioned in the memo. The time by which the Loco Pilot shall clear the block section may also be mentioned in the memo.
- (f) Shunt Signal/Semi-Automatic/Manual Stop signal may be taken off. Otherwise, the SM shall ensure the correct setting and clamping / padlocking of points on the route of dispatch before the issue of the written memo.
- (g) In the case of Semi-Automatic Gate Stop signal, the Loco Pilot shall ensure that the gate is closed against road traffic before passing the same.
- (h) For return movement into the station, shunt signal if any may be taken off or movements shall be controlled by hand signals.
- (i) On completion of shunting, Loco Pilot shall hand over the written memo to the SM who shall cancel the same with time and return it to the Loco Pilot.
- (j) Entries regarding the shunting shall be made in red ink in the TSR.
- (k) During the period of shunting, Line block caps have to be provided on the signal knobs, protecting the section.

(iii) For shunting into the block section in rear – Movement against the Direction of Traffic

- (a) Station Master shall ensure that the entire block section is clear of trains.
- (b) The SM shall inform the Controller and get his permission for blocking the section by exchanging Private Numbers.
- (c) Station Master shall then advise the Station Master in rear about the shunting and get his consent, which shall be supported by a Private Number. The SM shall inform the Gateman about the shunt movement when communication is available.

- (d) The Station Master shall also give a Private Number to the Station Master of the block station in rear as an assurance that all the trains which have entered the block section have arrived complete at the station.
- (e) The Station Master of the block station in rear shall place Line Block caps on the relevant signal knobs controlling entry into the concerned block section.
- (f) The Station Master shall then authorize the Loco Pilot to shunt into the block section in rear by issue of a written memo in the prescribed format.
- (g) The place upto which shunting is required to be done may be indicated in the memo in terms of the signal number or other means. The time at which the section has to be cleared may also be mentioned in the memo.
- (h) The Loco Pilot shall be responsible to ensure that the level crossing gates if any are closed against road traffic before passing the same.
- (i) For the return shunt movement into the station, shunt signals if any shall be taken off or the movement shall be controlled by hand signals.
- (j) On completion of shunting, the Loco Pilot shall hand over the written memo to the SM who shall cancel the same with time and return it to the Loco Pilot.
- (k) Entries regarding the shunting shall be made in red ink in the TSR.

(iv) The written memo referred in sub-rule (i) of Para 1.08 shall be in the following format :--

From SM_____ **To** Loco Pilot / Loco Pilot (Shunting) of T.No_____

You are authorized to perform shunting towards_____ station upto the next Automatic / Semi-Automatic Stop signal No.----- / Specified location within the first Automatic Signalling section. On return, you shall bring your train to a stop at Signal No. -----/ location, and thereafter you will be guided by the taking 'OFF' Shunt signal or hand signals.

Date:

Signature of the SM

Signature of the Loco Pilot / Loco Pilot (Shunting)

(v) The written memo referred in sub-rule (ii) & (iii) of Para 1.08 shall be in the following format:-

From

To

SM _____

Loco Pilot / Loco Pilot (Shunting) of T.No _____

You are authorized to perform shunting towards _____ station upto the Automatic / Semi-Automatic Stop signal No.----- / Specified location. You are authorized to pass intervening Automatic/Semi-Automatic Gate Stop signal Nos duly observing that the gates are closed against road traffic. On return, you shall bring your train to a stop at Signal No.----- / location -----, and thereafter you will be guided by the taking 'OFF' of Shunt signal ,or hand Signals.

Date:

Signature of the SM

Signature of the Loco Pilot / Loco Pilot (Shunting)

1.09 Working of Trolley / Motor trolley / Ladder trolley

- i) Only Trollies , which are insulated, are allowed to work in the Automatic Double line territory duly suspending the Automatic block working.
- ii) Motor Trollies are prohibited from working on sections worked under Automatic Block system.
- iii) Trollies shall be worked on the authority of a '**written memo**' prepared in **duplicate** in the format given below:-

Station

Date:

From

Station Master _____

To

Official-in-charge of the Trolley/Lorry No _____

The Automatic Block working between _____ station and _____ station is suspended. This authority permits your trolley Number _____ to enter the block section towards _____ station in the Up/Down line. You shall clear the block section _____ station at _____ hours _____ mts. Private Number _____.

Signature of the Official In charge

Signature of the Station Master

- (iv) On arrival of trolley / lorry at the station, the Station Master shall give a Private Number to the Station Master at the other end for the complete arrival of the trolley / lorry and resume normal working.

- (v) Both end Station Masters shall make entry in red ink in the Train Signal Register.
- (vi) Procedure for working OHE Ladder trolley in suburban Automatic Block Double line shall be followed as per provision in S.R.17.08 (iv).
- (vii) Procedure for working OHE Ladder trolley in Non-suburban Automatic Block Double line shall be followed as per provision in S.R.17.08
- (viii) Automatic Block Double Line working shall be suspended and the Station Master shall issue the following '**written authority**' as prescribed below.

Station:

Date:

From

Station Master _____

To

Official-in-charge of the OHE Ladder Trolley No _____

The Automatic Block working between _____ station and _____ station is suspended. This authority permits your OHE Ladder trolley Number _____ to enter the block section towards _____ station on Up/Down line. You shall clear the block section _____ station at _____ hours _____ mts. Private Number _____

Signature of the Official In charge

Signature of the Station Master.

- (ix) On arrival of OHE Ladder trolley at the station, the Station Master shall give a Private Number to the Station Master at the other end for the complete arrival of the OHE Ladder trolley and resume normal working.
- (x) Both end Station Masters shall make entry in red ink in the Train Signal Register.
