

## EAST COAST RAILWAY

Office of the  
Principal Chief Operations Manager  
Rail Sadan: Chandrasekharpur  
Bhubaneswar-17

No. ECoR/Optg/SC/88/BWM/C.Slip/04/2024

Dated: 28.11.2024

To  
The DRMs/KUR, SBP & WAT


Sub: Addendum/Corrigendum No.3 to Block Working Manual published in 2010 by E.Co.Rly.

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Addendum/Corrigendum No.3 to Block Working Manual published in 2010 by East Coast Railway is issued with approval of Competent Authority. You are requested to arrange for further circulation among all concerned departments in the division to incorporate these corrections in Block Working Manual.

Kindly acknowledge.

DA: 20 pages.

  
(D.C. Pradhan)  
ATM(Safety)

For Principal Chief Operations Manager

### **By E-office/Whatsapp/E-mail**

- (1) Secy. to GM for kind information of GM please.
- (2) Secy. to AGM for information of AGM please.
- (3) Chief Commissioner of Railway Safety, Ashok Marg, Lucknow
- (4) Commissioner of Railway Safety, S.E. Circle, Kolkata
- (5) Principal Executive Director (Safety), Railway Board, New Delhi,
- (6) Director/Safety-I & II, Railway Board, New Delhi.
- (7) PCOM, PCSO, SDGM, PCE, PCME, PCSTE, PCEE, PCCM, CAO(C) for further circulation within their departments in HQ.
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#### 4.43: Description of SM's Block Panel:

SM's key. (Physical key & lock provided for block instrument to SM/ on duty near to him at suitable place)	SM's control key. The key when out prevents the following operations:- a) Transmission of BELL code b) Transmission of IS LINE CLEAR enquiry request. c) Cancellation of LINE CLEAR.
LCB key (Physical key & lock provided for block instrument to SM/on duty near to him at suitable place)	LINE CLEAR BLOCKING key. It serves the following, when out, a) To prevent station in rear to take 'LINE CLEAR'. b) To prevent closing of Block.
SM's Back Cover lock key	No provision.
Maintainer Back Cover lock key	No provision.

**SM's Keys:-** SM's key will not be soft but hard key provided separately and suitably Installed for both the block instruments individually. Each key will be separate from other one and also cannot be used in panel VDU. Once keys are inserted green Indication and after extraction RED indication of key in the VDU panel of EI will appear.

#### 4.44: Description of the indications:

##### 4.44.1: LINE CLOSED Indication – YELLOW

Circular indications (Two Numbers) in between the directional arrowhead. To indicate Block Section free from vehicles and LINE CLEAR not granted/received at train receiving/ train sending station respectively.

##### 4.44.2: TRAIN COMING FROM Indication – GREEN

In a directional arrow head pointing downward for incoming traffic towards station at train receiving station. To indicate LINE CLEAR granted, when TRAIN GOING TO icon and BELL icon have been pressed at sending station and the conditions for the granting of LINE CLEAR at receiving station have been complied with and a rectangular indication named TCF lights up GREEN.

**RED** - To indicate TRAIN ON LINE on entry of incoming train on LINE CLEAR and a rectangular indication named TOL light up RED.

**FLASHING GREEN** – To indicate

- Block section clear after arrival of train, but associated Signals and their controls not normal at either of station or LCB Key is OUT.
- Cancellation of LINE CLEAR before entry of train in Block Section.

##### 4.44.3: TRAIN GOING TO Indication - GREEN

In an arrow head pointing upward for outgoing traffic away from station at train sending station and a rectangular indication named TGT. To indicate LINE CLEAR received when TRAIN GOING TO icon and BELL icon have been clicked on Block Panel of train at sending station and the conditions for the granting of LINE CLEAR have been complied with at both stations and a rectangular indication named TGT lights up GREEN.

**RED** - To indicate TRAIN ON LINE on entry of outgoing train on LINE CLEAR and a rectangular indication named TOL light up RED.

**FLASHING GREEN** – To indicate

- Block section clear after arrival of train at other station, but associated Signals and their controls not normal at either or both stations or LCB Key is OUT at receiving station.
- LINE CLEAR cancelled before entry of train in Block Section.

#### 4.44.4 Cancel CO-OP indication – YELLOW

Indication to indicate co-operation extended by station at other end for cancellation of Line Clear by pressing Cancel Cooperation button.

#### 4.44.5 Cancel indication – FLASHING YELLOW Circular LED

To indicate progress of LINE CLEAR cancellation timer of 120 seconds. The indication lights up on pressing of CANCEL icon along with BELL icon, when TRAIN COMING FROM is displaying FLASHING GREEN indication.

#### 4.44.6 SNK Indication – SNK YELLOW

Two such indication are provided

i) SNK (D): Yellow Provided near TRAIN GOING TO directional arrowhead to indicate LAST STOP SIGNAL and its control at ON/Normal.

ii) SNK (R): Yellow provided near TRAIN COMING FROM directional arrowhead to indicate reception signal (S) & its controls at ON/Normal

#### 4.44.7 : SNOEK (SNK other end – YELLOW)

Provided near TRAIN COMING FROM directional arrowhead to indicate the following: LAST STOP SIGNAL and its controls at station in rear are at ON/Normal.

#### 4.44.8 Last Stop Signal (LSS) indication:

RED : To indicate Last Stop signal is at 'ON'

GREEN: To indicate Last Stop signal is at 'OFF'

#### 4.44.9 LINE FREE Indication – GREEN: To indicate Block Section is clear of vehicles.

LINE OCCUPIED Indication – RED: To indicate Block Section is occupied.

#### 4.44.10 ACKN indication – YELLOW: A indication near ACKN button To indicate SECTION buzzer ON status.

#### 4.44.11 SM KEY 'IN' indication - GREEN near 'SM KEY'. To indicate SM key 'IN'

#### 4.44.12 UFSBI/MUX - Ok indication: Glows GREEN when MUX is OK otherwise Extinguished.

#### 4.44.13 UFSBI/MUX - FAIL indication : Glows RED when MUX goes into a failure mode otherwise Extinguished.

#### 4.44.14 Communication LINK FAIL indication: Glow steady YELLOW when LINK FAILS otherwise flickering indication.

#### 4.45: Description and working of Button icons and Counters:

SM's Block Panel is provided with following soft visual buttons & counters:-

Despatching Station	Receiving Station
Bell button icon (Black in colour). Mouse to be right clicked, bell option will appear. Once bell option clicked, black colour of button icon disappears and changed to white for 10 sec. And again colour changed to black.	a) To transmit BELL codes to station at other end of Block section. b) To take LINE CLEAR, when pressed along with TRAIN GOING TO button icon. c) To cancel LINE CLEAR, when pressed along with CANCEL button icon.
TRAIN GOING TO Button Icon (Red in colour). Within 10 sec. The cursor of mouse right click to TGT and the red colour disappears to white for 10 sec and it will remain till TGT condition of block instrument appears, thereafter RED indication of TGT button icon appears.	To transmit IS LINE CLEAR enquiry to station in advance for taking LINE CLEAR. It is used in conjunction with BELL button icon at train sending station to light up TRAIN COMING FROM (GREEN) indication on Block Panel of receiving station, which in turn automatically grants LINE CLEAR to light up TRAIN GOING TO (GREEN) indication on Block Panel of sending station.
ACKN button (s) icon (Black in colour) Mouse right clicked "Acknowledgement" appears.	Two such buttons icon are provided, one each for dispatch line and receive line. To mute the SECTION buzzer on occupation or clearance of block section.
Cancel Co-op Button icon (Green in colour). Mouse right clicked, Cancel cooperation appears. Ind. Appears for 10 sec.	To give co-operation from sending station to cancel the line clear at receiving station.



CANCEL Button icon (Yellow in colour). Mouse right clicked "Cancellation" appears. Ind. Appears for 10 sec.	It is used in conjunction with BELL button icon at train receiving. Station under following conditions: a) Train has not entered the block section and line clear cancellation has to be done. b) Complete train has been pushed back at train sending station.
Cancellation Counter	To register cancellation of line clear.

#### **4.46 Operating Procedures:**

##### **4.46.1 Following is the Sequence of Operations of Signalling a train between two stations:**

The block section being clear and the "LINE CLOSED" indication being displayed on VDU Panel at both the stations. The action is taken by sending stations SM as under:

SM of the station intending to send a train from his station obtains verbal consent over block telephone from station in advance before taking LINE CLEAR on its VDU Panel

SN	SENDING STATION	SN	RECEIVING STATION
1	Before a request for IS LINE CLEAR is sent to station in advance, SM of sending station ensures the following near "TRAIN GOING TO" arrowhead on its Panel: - a) LINE CLOSED indication YELLOW. b) LINE FREE indication GREEN. c) SNK indication YELLOW. d) SNOEK indication YELLOW  SM inserts SM key and turns to IN. SM sends 'Call Attention' signal to receiving station by click BELL icon.	2	SM inserts SM key & turns to IN. SM acknowledges the "Call Attention" signal by click BELL icon
3	SM sends "Attend Telephone" signal by click BELL icon.	4	SM acknowledges by click BELL icon and attends telephone.
5	SM attends telephone and advises station at other end about the intended movement of train on telephone & asks for LINE CLEAR after prescribed BELL code.	6	a) The station in advance while granting his verbal consent ensures the following near "TRAIN COMING FROM" arrowhead on its Block Panel:  i) LINE CLOSED indication YELLOW. ii) LINE FREE indication GREEN. iii) SNK indication YELLOW iv) SNOEK indication YELLOW
7	Therefore, SM of sending station click BELL icon & "TRAIN GOING TO" icon through right click on the mouse within 10 sec. The black colour of bell button icon and red colour of TGT button icon changes to white for 10 sec as indication for pressing the button icon. And colour self-restores to original after TGT indication.	8	'LINE CLOSED' indicator turns off and the arrowhead, "TRAIN COMING FROM" is lit up to GREEN at receiving station.
9	The arrowhead, "TRAIN GOING TO" is lit up to green at sending/receiving station		
10	This restoration of Bell and TGT button icon after TGT indication is self restoring after 10 sec.		

11	The sending station SM after obtaining "LINE CLEAR" on its Panel sends the train into Block Section by taking the LSS to 'OFF'.		
12	On entry of train into section, "TRAIN ON LINE" lights up RED in arrowhead indication, SECTION buzzer sounds, along with ACKN indication near respective ACKN button icon through mouse and cursor on the menu. Pressing of ACKN of corresponding line (Dispatch/Receive) will turn off the buzzer and the ACKN indication.	13	On entry of train into section, "TRAIN ON LINE" lights up RED in arrowhead indication, Section buzzer sounds, along with ACKN indication near respective ACKN button icon through mouse and cursor on the menu. Pressing of ACKN of corresponding line (Dispatch/Receive) will turn off the buzzer and the ACKN indication.
14	After receipt of train at receiving station proper reception signals and complete arrival of train, "TRAIN GOING TO" arrowhead indication turn to FLASHING GREEN & "LINE FREE" indication turns to GREEN at the stations. "TRAIN GOING TO" indication continues FLASHING GREEN at sending station until departure signals and their controls are not normal or LCB Key is not 'IN'. If departure signals and their controls are at normal & LCB key is IN, "TRAIN GOING TO" arrowhead indications turns off and yellow "LINE CLOSED" indication lights up yellow.	15	After receipt of train at receiving station proper reception signals and complete arrival of train, "TRAIN COMING FROM" arrowhead indication turn to FLASHING GREEN & "LINE FREE" indication turns to GREEN at both the stations. "TRAIN COMING FROM" indication continues FLASHING GREEN at receiving station respectively until reception signals and their controls are not normal or LCB Key is not 'IN'. If reception signals and their controls are at normal & LCB key is IN, "TRAIN COMING FROM" arrowhead indications turns off and yellow "LINECLOSED" indication lights up yellow.

#### **4.46.2 Refusal to 'line clear enquiry'**

When the line is being blocked by the presence of a train in the section or train parting or shunting or for any other reason, the LCB key shall be taken out and kept in safe custody. On removal of obstruction, SM shall immediately inform SM of station in rear about the fact and put LCB key IN, so as to enable him to send a fresh LINE CLEAR ENQUIRY.

#### **4.46.3 Closing of block after a "push back" operation**

If a train is requested to be pushed back at the sending station, it will be received on written authority as mentioned in G&SR 5.10 and piloting. The sending station, after train has been pushed back will advise the receiving station. The receiving station closes the section by clicking BELL icon and CANCEL icon after getting cooperation from the sending station

#### **Method of "Push back" operation**

SENDING STATION		RECEIVING STATION	
1	Train clears the Block section LINE FREE indicator turns GREEN. SECTION buzzer sounds. ACKN indication lights up 'TRAIN GOING TO' arrowhead indication turns to FLASHING GREEN. Acknowledges the buzzer by pressing ACKN button icon. ACKN indication turns off. Ensures that the SNK indication is YELLOW.	2	Train clears the Block Section. Line free Indicator turns GREEN. SECTION buzzer sounds. ACKN indication lights up. 'TRAIN COMING FROM' arrowhead indication turns to FLASHING GREEN. Acknowledges the buzzer by pressing ACKN button icon. ACKN indication turns off.
3	Advices other end station SM to close the Block, on telephone after Call attention buzzer sounds.	4	On request from sending station SM about closing of the Block, on telephone, after Call attention buzzer sounds. Ensure SNK indicator YELLOW, SNOEK indicator YELLOW.
5	After verbal consent from other end SM ensure SNK indication YELLOW, SNOEK indication YELLOW. Press CANCEL CO-OP button icon and releases on receipt of Call attention buzzer.	6	CO-OP indication turns YELLOW. Presses BELL & CANCEL button icon by mouse and curser with SM key IN. CANCEL COUNTER increments. CANCEL indication turns FLASHING YELLOW & continues flashing for 120 seconds.



8	TRAIN GOING TO arrowhead indication turns off. LINE CLOSED indication glows.	7	On expiry of 120 seconds, TRAIN COMING FROM arrowhead indication and CANCEL indication turns off. LINE CLOSED indication glows.
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#### 4.46.4 Block back operations: -

The SM, who intends to Block Back, shall inform the SM of station in rear on telephone supported by private number, SM who intends to block back takes LCB key OUT and keeps in safe custody and permission to Block Back, who will acknowledge the message and grant permission supported by a private number.

The SM will then issue necessary authority to driver of train to perform shunting in Block Section. On completion of shunting, section clear message will be sent to SM of station in rear on telephone about obstruction removed supported by a private number, who in turn will acknowledge the same supported by a private number.

Thereafter SM will insert LCB Key and turn to IN position. All the entries shall be mentioned in TSR in RED ink with reasons in remarks column against each entry.

Station in REAR		Station intending BLOCK BACK	
2	Block Panel displays: LINE CLOSED -YELLOW LINE FREE -GREEN SNK- YELLOW	1	Block Panel displays: LINE CLOSED- YELLOW LINE FREE- GREEN SNOEK- YELLOW
4	Acknowledges call attention/attend telephone signal.	3	Inserts SM key & turns 'ON' Gives call attention/attend telephone signal.
6	Attends telephone.	5	Attends telephone.
8	Acknowledges & gives consent by private number.	7	Inform intention to perform shunting in Block Section.
		9	Takes LCB Key 'OUT' and keeps in safe custody. Issue necessary authority to driver of train to perform shunting in Block Section.
11	On entry of train in Block Section. Section buzzer sounds & ACKN indication glows.	10	On entry of train in Block Section. Section buzzer sounds & ACKN indication glows.
	LINE OCCUPIED indication turns to RED. LINE CLOSED indication turns off.		LINE OCCUPIED indication turns to RED. LINE CLOSED indication turns off.
	Acknowledges the buzzer by pressing ACKN button icon through mouse and cursor. ACKN indication turns off.		Acknowledges the buzzer by pressing ACKN button icon through mouse and cursor. ACKN indication turns off.
13	On clearing of Block Section. SECTION buzzer sounds & LINE CLOSED indication lights up. ACKN indication lights up.	12	On clearing of Block Section. SECTION buzzer sounds & LINE CLOSED indication glows. ACKN indication lights up.
	LINE FREE indication turns to GREEN. LINE CLOSED indication turns YELLOW.		LINE FREE indication turns to GREEN. LINE CLOSED indication turns YELLOW.
	Acknowledges the buzzer by pressing ACKN button icon through mouse and cursor. ACKN indication turns off.		Acknowledges the buzzer by pressing ACKN button icon through mouse and cursor. ACKN indication turns off.
15	Acknowledges call attention /attend telephone signal.	14	On completion of shunting, SM verifies the line between opposite STARTER ( if any) /Shunt signal or Block Section Limit Board, Stop Board/Fouling mark and First Stop Signal free from any vehicle. Gives call attention/attend telephone signal.
17	Attends telephone	16	Attends telephone
19	Acknowledges supported by the private number.	18	Inform shunting is completed supported by private number.
21	SNK light up YELLOW.	20	Inserts LCB KEY & turns to 'IN'.

#### 4.46.5 Block forward operation: -

SM, who intends to Block forward, shall inform the SM of station in advance on Telephone for permission to Block forward supported by private number, who will acknowledge this message and grant permission supported by a private number. The SM of advance station takes LCB key OUT and keeps in safe custody.

SM of this station will then issue necessary authority to driver of train to perform shunting in Block Section. On completion of shunting, message will be sent to SM of station in advance on telephone about obstruction removed supported by a private number, who in turn will acknowledge the same supported by a private number.

Thereafter SM of advance station will insert LCB key and turn to IN position. All the entries in Train Signal Register for this operation should be made in RED ink. The reasons for Block forward shall be recorded in remarks column against each entry.

Station intending BLOCK FORWARD		Station in advance	
1	Block Panel displays: LINE CLOSED –YELLOW LINE FREE - GREEN	2	Block Panel displays: LINE CLOSED –YELLOW LINE FREE - GREEN
3	Inserts SM key and turns. Gives call attention/attend telephone signal	4	Acknowledges call attention/attend telephone signal.
5	Attends telephone.	6	Attends telephone.
7	Inform intention to perform shunting in Block Section.	8	Acknowledges and gives consent by private number.
10	Issue necessary authority to driver of train to perform shunting in Block Section.	9	The LCB Key is taken out and kept in safe custody.
11	On entry of train in Block Section. SECTION buzzer starts ringing and LINE CLOSED indication turns off. ACKN indication lights up. LINE FREE indication turns to RED. Acknowledges the buzzer by pressing ACKN button icon through mouse and curser. ACKN indication turns off.	12	On entry of train in Block Section. SECTION buzzer starts ringing and LINE CLOSED indication turns off. ACKN indication lights up Yellow. LINE FREE indication turns to RED. Acknowledges the buzzer by pressing ACKN button icon through mouse and curser. ACKN indication turns off.
13	On clearing of Block Section. SECTION buzzer starts ringing and LINE CLOSED indication lights up yellow. ACKN indication lights up Yellow. LINE FREE indication turns to GREEN. Acknowledges the buzzer by pressing ACKN button icon through mouse and curser. ACKN indication turns off.	14	On clearing of Block Section. SECTION buzzer starts ringing and LINE CLOSED indication lights up. ACKN indication lights up Yellow. LINE FREE indication turns to GREEN. Acknowledges the buzzer by pressing ACKN button icon through mouse and curser. ACKN indication turns off.
15	On completion of shunting. SM verifies the line between STARTER/Shunt signal/Stop Board/Fouling mark and LAST STOP SIGNAL, Free from any vehicle. Inserts SM key and turn. Gives call attention to attend telephone.	16	Acknowledges call attention to attend telephone.
18	Attends telephone.	17	Attends telephone.
20	Inform shunting is completed supported by a private number.	19	Acknowledges supported by a private number.
		21	Inserts LCB and turn in.

#### 4.46.6. Line clear cancellation operation: (Before entry of train in the Block section).

After a train sending station has taken line clear, the receiving station can carry out line clear cancellation with the consent of other end station. Sending station puts back LSS to “ON”, if already taken “OFF” and its control to normal ensures SNK at “YELLOW”. Sending station extends co-operation by pressing CANCEL CO-OPERATION button.



On receipt of co-operation indication, receiving station presses bell and cancel button with SM KEY "IN". Receiving station observes cancel indication to light up flashing yellow and releases the buttons. TRAIN GOING TO/TRAIN COMING FROM Arrow Head indication turns to flashing green at sending/receiving station respectively. After 120 seconds LINE CLOSED indication lights up "YELLOW". TRAIN GOING TO/TRAIN COMING FROM Arrow Head Indication and cancel indication extinguish.

#### Method of Cancellation

SENDING STATION		RECEIVING STATION	
1	PUTS back LSS to 'ON', if already taken 'OFF', ensures SNK at YELLOW. Advises receiving end station SM about cancellation on telephone after prescribed BELL code.	2	Agrees to request, ensures SNK at YELLOW and SNOEK at YELLOW and gives consent on telephone after prescribed BELL code.
3	After verbal consent from other end SM, Presses cancel co-operation button and releases on receipt of bell code.	4	Waits for co-operation light up yellow and presses, bell & cancel button with SM key IN. Cancel counter increments. TRAIN COMING FROM Arrow Head indication turns to flashing green. Cancel indication lights up flashing yellow & continues flashing for 120 seconds.
5	'TRAIN GOING TO' indication turns flashing green.		
7	'TRAIN GOING TO' indication turns off LINE CLOSED indication lights up	6	On expiry of 120 seconds, TRAIN COMING FROM Indication & cancel indication turns off. LINE CLOSED indication lights up.

#### 4.47. Procedure for resetting of the axle counter when failed.

After a train has been received at the receiving end station or when no train has entered into the block section or after any block forward or block back operation is completed, if the 'Line Occupied' indication still persists, then receiving station SM and sending station SM shall adopt the following procedure for resetting the axle counter:

(i) Verify, that the block section is clear of vehicles, by any one of the following means :

(a) Observing the procedure laid down in G & SR 4.17.01 and the relevant SRs there under.

The complete arrival of a train at the station in advance will be ascertained by the Station Master at the receiving station by sending the complete arrival register (T/1410) to the Train Manager of the train who will certify by signing in the complete arrival register with time but if the train was running without brakevan/Train Manager the Station Master will ensure the complete arrival of the train by deputing Pointsman to verify the last vehicle number. The Pointsman so deputed after verifying the last vehicle number shall inform the Station Master about the complete arrival of the train by giving a Private Number.

(b) By checking up from the train signals register, the details of the last train passed through that block section and finding out from the SM of the station in advance or from the controller that the last train that has passed has arrived complete.

(ii) After the above verification, exchange private numbers with the receiving end station in token of such verification.

(iii) The axle counter is to be reset by receiving station. The receiving station SM after satisfying that no vehicle is left behind in the block section, advises the full facts to the sending station SM and requests him to co-operate in resetting of the axle counter.

- (iv) The sending station SM presses the RSB Push button provided on his block panel.
- (v) On getting a yellow 'Reset Co-operation' indication, the receiving station SM inserts, turns, and presses the RSK key on the panel for resetting the axle counter.
- (vi) Axle counter will not be reset until first train is piloted out. The reset counter increases by one number. On release of pressure on the RSK key 'Line Free' green indication appears and 'Line Occupied' Red indication disappears on the block panels at both the ends.
- (vii) This increment of counter should be recorded in the train register along with exchange of private number for every reset of axle counter done manually. The receiving end SM should then extract the RSK key and keep it in safe custody. At the receiving end an axle reset counter register is to be maintained at the station for registering each resetting of the axle counter.

Note : In case the SMs are unable to check the complete arrival of the train by any one of the means listed in para (i) above. Then before following the resetting procedure for resetting the axle counter, the first train should be sent on "Authority to proceed without line clear" for both up and down trains on form no. T/C-602 informing the Loco Pilot to look out for any obstruction and restricting the speed to 25KMPH in day time with clear visibility and 10 KMPH at night time and when the visibility is poor during day time. After this train has completely arrived at the receiving end station, the axle counter should then be reset by following the procedure as indicated above.

#### **4.48. Loco pilot's authority to proceed.**

- (i) On the Double Line sections, the Loco Pilot shall not take his train into a block station unless the last stop signal pertaining to him has been taken OFF as laid down in GR. 14.08.
- (ii) When the 'Block Panel' is in working condition and LSS has failed : If the Block Panel is in normal working condition but there is only failure of last stop signal, Line Clear working shall continue to be done on the Block Panel itself and a written authority on the Form T/ 369(3b) with an endorsement thereon by the Station Master that the Line Clear has been obtained on Block Panel along with the Private Number received from the block station in advance shall constitute the Loco Pilot's Authority to proceed (SR. 14.08.01).
- (iii) In case of failure of Block Panel : If there is failure of Block Panel and Line Clear cannot be obtained on it, then line clear should be obtained through the Electrical Communication equipment as laid down in GR. 14.13. T/369(3b) with private number and identification number which should be recorded on T/369(3b). This authorises the Loco Pilot to pass the last stop signal at 'ON' shall constitute the Loco Pilot's Authority to proceed

#### **4.49. Block failures.**

The block failures can be categorised into the following :-

- (A) Failure of Block panel.
- (B) Failure of Last stop signal.

##### **(A) Failure of the Block panel.**

The Block Panels must be considered to be defective for up and/or down trains, as the case may be in the following cases :

- (i) When no indication of any sort, at all appears on the block panel.
- (ii) When none of the indications viz. "Train coming from/Train going to", appears on the block panels except "Line Free" or "Line Occupied".
- (iii) When no train has entered in the block section but the Block Panel shows "Line Occupied" red indication and this indication persist even after resetting has been tried as per para 4.47.
- (iv) When "TRAIN GOING TO" or ' TRAIN COMING FROM" indications do not appear by appropriate action, though condition for asking "LINE CLEAR" and granting permission to approach are available.
- (v) When "TRAIN ON LINE" indication does not appear on the entry of train into Block section at either of the station.



(vi) When a train has arrived at the receiving station but the block panel still shows "TRAIN ON LINE" Red indication and/or also shows 'Line Occupied' Red indication and these indications persist even after resetting has been tried as per para 4.47.

(vii) Total failure of communication during which trains shall be worked as per extant rules in force on this railway.

(viii) Any damage is seen or reported to block equipments i.e. Block Panel, Axle Counter, Track Devices, Axle counter equipment and Block multiplexer equipment etc.

(ix) When Last Stop Signal cannot be kept at 'ON' during its suspension/disconnection.

(x) When Last Stop Signal of the station does not go back to 'ON' position on the entry of a train into the Block Section.

(xi) When the Bell Code Signals are received indistinctly.

Note : (i) In all the above cases, the Block Panel must be treated as defective block working suspended and trains must be dealt with by taking Line Clear on the Electric Communication Equipments provided and by following provisions of GR 14.13 and SRs there under.

(ii) In respect of the failure indicated in terms No. A (vii) of the para above, trains must be dealt with under the extant rules as outlined in GR 14.13 and SR there under.

(iii) In respect of failures indicated in the item Nos. (v), (ix) & (x) of the para (A) above, all efforts must be made to keep the LSS in the 'ON' position. If it is not possible, then a competent railway servant should be deputed with Red Hand Signal to take his position at the foot of the LSS to warn Loco Pilots of the approaching trains. In addition, all trains in the relevant directions should be stopped at the home signal and after ensuring that they have come to a stop, the home signal should be cleared to caution aspect only. The starter should not be taken off and the train should be despatched by issue of relevant authority to pass the starter and the LSS. Caution order should also be issued to the Loco Pilots about the defect of the LSS.

(iv) The Block Panel should not be restored for normal working until it is tested by a competent signalling staff and certified fit by him for use.

#### **(B) Failure of Last Stop Signal.**

The Last Stop Signal must be considered to have failed for UP or Down direction as the case may be in the following cases :—

(i) The Last Stop Signal cannot be taken 'OFF' even though Line Clear has been obtained.

(ii) The Last Stop Signal can be cleared without getting 'Line Clear'.

(iii) The Last Stop Signal does not restore to 'ON' position after the train enters the Block Section.

In all the cases indicated paras (A) and (B) above failures should be informed to S&T staff immediately. Note : In respect of the cases indicated in paras (B) (ii) & (iii) above the precautions indicated in Note No. (iii) & (iv) under para 4.49(A) dealing with failures of the Block panels should strictly be adhere to.

#### **4.50: Suspension of block working.**

Block working must be suspended and trains dealt with in accordance with the extant instructions in the following cases.

**(A) Suspension of Block Panel :—** The Block Panel shall be considered in operative and should be suspended in the following cases :—

(i) When material lorries, motor trollies, tie-tamping machines and rail motor/tower wagon (4-wheeler) has to run in the section, these shall be worked on authority of T/369(3b) and Caution order.

(ii) Abnormal movement i.e. Single Line Working on Double Line or mid-section accidents etc.

(iii) Block Back/Block Forward with the respective direction only.

(iv) When unsignalled reception has been restored to at the receiving station.

(v) When any part of the Block Equipment is to be opened for repairs which shall be done only under duly accepted disconnection notice. Block Panel working shall only be resumed by a Railway servant authorised as per extant rules in force on this Railway.

## (B) Suspension of Last Stop Signal:—

The Last Stop Signal shall be considered in-operative and deemed to have suspended in the following cases :—

- (i) When the Last Stop Signal has been undertaken for repairs by S&T staff.
- (ii) During the 'Block Forward' only.
- (iii) During the single line working on double line section due to some emergency like; mid-section accident or otherwise.
- (iv) When the material lorries/trolleys, tie-tamping machines or tower wagon has to run in the section.

**Note :** In respect of the cases listed in para (A) & (B) above, as soon as the cause of block working are removed normal working can be restored by SM.

### 4.51. Working of trains when there is failure of block panels.

Whenever the Block Panels fail, Line Clear should be obtained on the electric communication equipment and by following provisions of GR 14.13 and the SRs there under.

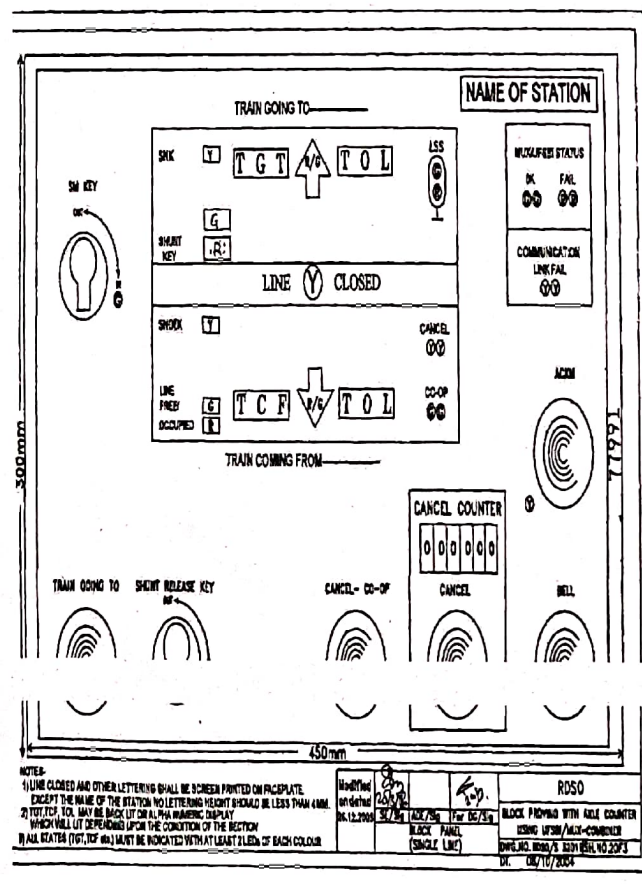
If block working can be carried on the Block Panel but the LSS cannot be taken off, then Line Clear should be obtained on the Block Panels but T/369(3b) should be issued as an Authority for entering the Block section.

### 4.52. Working of lorries, motor trolleys and other light vehicles.

All light vehicles and heavy material trolleys will work with block back or block forward.

## (B) SINGLE LINE

**4.53:** The indications of the "Block built in EI" are incorporated in EI VDU and the display of the indications are show in the figures below for Single line Block working.





#### **4.54: Description of Block Panel for Single line**

SM's Block Panel is provided with following KEYS for various functions.

1. SM key  
SM's control key. The key when out prevent following operations
  - a) Transmission of BELL code
  - b) Transmission of IS LINE CLEAR inquire request
  - c) Cancellation of LINE CLEAR
2. Shunt release key (SHK)  
Shunt Release KEY (normally OUT)  
The following operation is possible when IN
  - a) To take out SHUNT KEY from electric key transmitter (EKT), which serves as tangible authority for driver to shunt beyond Last Stop Signal up to First Stop Signal.
  - b) The following operation are not possible when IN;
    - i) To take LINE CLEAR
    - ii) Other side station to take LINE CLEAR.
    - iii) Closing of block
    - iv) To take Last Stop Signal to "OFF"
    - v) SM's Back Cover lock key: **No provision.**
    - vi) Maintainer Back Cover lock key: **No provision**

#### **4.55 Description of the indications:**

##### **4.55.1 LINE CLOSED Indication – YELLOW**

Circular indication in between the directional arrowhead. To indicate Block Section free from vehicles and LINE CLEAR not granted/received at train receiving/ train sending station respectively.

##### **4.55.2 TRAIN COMING FROM Indication – GREEN**

In a directional arrowhead pointing downward for incoming traffic towards station.

To indicate LINE CLEAR granted, when TRAIN GOING TO icon and BELL icon have been pressed at sending station and the conditions for the granting of LINE CLEAR at receiving station have been complied with and a rectangular indication named TCF lights up GREEN

**RED** - To indicate TRAIN ON LINE on entry of incoming train on LINE CLEAR and a rectangular indication named TOL light up RED.

**FLASHING GREEN** – To indicate

- c) Block section clear after arrival of train, but associated Signals and their controls not normal at either station.
- d) Cancellation of LINE CLEAR before entry of train in Block Section.
- e) Block section clear after arrival of train, associated signals and their controls at normal at both stations but after unintentional insertion of Shunt Release KEY IN when the train was in section.

##### **4.55.3. TRAIN GOING TO Indication - GREEN**

In a directional arrowhead pointing upward for outgoing traffic away from station at train sending station. To indicate LINE CLEAR received, when TRAIN GOING TO icon and BELL icon have been clicked at sending station and the conditions for the granting of LINE CLEAR have been complied with at both stations and a rectangular indication named TGT lights up GREEN

**RED** - To indicate TRAIN ON LINE on entry of incoming train on LINE CLEAR and a rectangular indication named TOL light up RED.

**FLASHING GREEN** – To indicate

- c) Block section clear after arrival of train at other station, but associated Signals and their controls not normal at either station.
- d) Cancellation of LINE CLEAR before entry of train in Block Section.

#### 4.55.4 Cancel CO-OP indication – YELLOW

Indication to indicate co-operation extended by station at other end for cancellation of Line Clear by Cancel Cooperation button.

#### 4.55.5 Cancel indication – FLASHING YELLOW Circular LED

To indicate progress of LINE CLEAR cancellation timer of 120 seconds. The indication lights up on pressing of CANCEL along with BELL button, when TRAIN COMING FROM is displaying FLASHING GREEN indication.

#### 4.55.6 SNK Indication – SNK YELLOW

One such indication is provided

- a) Provided near TRAIN GOING TO direction arrowhead to indicate LAST STOP SIGNAL, Recreational signal(s) and their controls at ON/Normal.

#### 4.55.7 SNOEK (SNK other end – YELLOW)

Provided near TRAIN COMING FROM directional arrowhead to Indicate the following:

- a) LAST STOP SIGNAL and its controls at station at other end are at ON/Normal.
- b) Shunt Key of EKT at other end station is 'IN'

#### 4.55.8 Last Stop Signal (LSS) indication:

RED : To indicate Last Stop signal is at 'ON'

GREEN: To indicate Last Stop signal is at 'OFF'

#### 4.55.9 LINE FREE Indication – GREEN: To indicate Block Section is clear of vehicles.

LINE OCCUPIED Indication – RED: To indicate Block Section is occupied.

#### 4.55.10. ACKN indication – YELLOW: A indication near ACKN button To indicate SECTION buzzer ON status.

#### 4.55.11. SM KEY 'IN' Indication - GREEN near 'SM KEY'. To indicate SM key 'IN'

#### 4.55.12. SHUNT KEY indication :

GREEN – To indicate SHUNT KEY OF EKT IS "IN".

RED - To indicate SHUNT KEY OF EKT IS "OUT".

#### 4.55.13. UFSBI/MUX - Ok indication : Glows GREEN when MUX is OK otherwise Extinguished.

#### 4.55.14. UFSBI/MUX - FAIL indication : Glows RED when MUX goes into a failure mode otherwise Extinguished.

#### 4.55.15 Communication LINK FAIL indication: Glow steady YELLOW when LINK FAILS otherwise flickering indication.

#### 4.56: Description and Working of Button icons and Counters:

SM's Block Panel is provided with following soft visual buttons & counters:-

<b>Bell button icon</b> (Black in colour). Mouse to be right clicked, bell option will appear. Once bell option clicked, black colour of button icon disappears and changed to white for 10 sec. And again colour changed to black.	<ol style="list-style-type: none"><li>a) To transmit BELL codes to station at other end of Block section.</li><li>b) To take LINE CLEAR, when pressed along with TRAIN GOING TO button icon.</li><li>c) To cancel LINE CLEAR, when pressed along with CANCEL button icon.</li></ol>
<b>TRAIN GOING TO</b> Button icon (Red in colour). Within 10 sec. The cursor of mouse right click to TGT and the red colour disappears to white for 10 sec and it will remain till TGT condition of block instrument appears, thereafter RED indication of TGT button icon appears.	To transmit IS LINE CLEAR enquiry to station in advance for taking LINE CLEAR. It is used in conjunction with BELL button icon at train sending station to light up TRAIN COMING FROM (GREEN) indication on Block Panel of receiving station, which in turn automatically grants LINE CLEAR to light up TRAIN GOING TO (GREEN) indication on Block Panel of sending station.



ACKN button (s) icon (Black in colour) Mouse right clicked "Acknowledgement" appears.	Two such buttons icon are provided, one each for dispatch line and receive line. To mute the SECTION buzzer on occupation or clearance of block section.
Cancel Co-op Button icon (Green in colour). Mouse right clicked, Cancel cooperation appears. Ind. Appears for 10 sec.	To give co-operation from sending station to cancel the line clear at receiving station.
Page 14 of CANCEL Button icon (Yellow in colour). Mouse right clicked "Cancellation" appears. Ind. Appears for 10 sec.	It is used in conjunction with BELL button icon at train receiving. Station under following conditions: a) There is no Train in the block section and Line clear cancellation needs to be done. b) Complete train has been pushed back at train sending station.
Cancellation Counter	To register cancellation of line clear.

#### 4.57 Operating Procedures:

##### 4.57.1 Method of Obtaining Line Clear:

The block section being clear and the "LINE CLOSED" indication being displayed on VDU Panel at both the stations. The action is taken by sending stations SM as under:

SM of the station intending to send a train from his station obtains verbal consent over block telephone from station in advance before taking LINE CLEAR on its Block Panel

SN	SENDING STATION	SN	RECEIVING STATION
1	Before a request for IS LINE CLEAR is sent to station in advance, SM of sending station ensures the following near "TRAIN GOING TO" arrowhead on its Panel: - e) LINE CLOSED indication YELLOW. b) LINE FREE indication GREEN. g) SNK indication YELLOW. h) SNOEK indication YELLOW  SM inserts SM key and turns to IN. SM sends 'Call Attention' signal to receiving station by pressing BELL icon.	2	SM inserts SM key & turns to IN SM acknowledges the "Call Attention" signal by pressing Bell icon.
3	SM sends "Attend Telephone" signal by click BELL icon.	4	SM acknowledges by click BELL icon and attends telephone.
5	SM attends telephone and advises station at other end about the intended movement of train on telephone & asks for LINE CLEAR after prescribed BELL code.	6	b) The station in advance while granting his verbal consent ensures the following near "TRAIN COMING FROM" arrowhead on its Block Panel:  i) LINE CLOSED indication YELLOW. ii) LINE FREE indication GREEN. iii) SNK indication YELLOW iv) SNOEK indication YELLOW v) SHUNT KEY indication GREEN & c) Grants Verbal LINE CLEAR.

7	Therefore, SM of sending station click BELL icon & "TRAIN GOING TO" icon through right click on the mouse within 10 sec. The black colour of bell button icon and red colour of TGT button icon changes to white for 10 sec as indication for pressing the button icon. And colour self-restores to original after TGT indication.	8	'LINE CLOSED' indicator turns off and the arrow head, "TRAIN COMING FROM" is lit up to GREEN at receiving station.
9	'LINE CLOSED' indicator turns off and the arrowhead, "TRAIN GOING TO" is lit up to green at sending station. This restoration of Bell and TGT button icon after TGT indication is self-restoring after 10 sec.		No Action
10	The sending station SM after obtaining "LINE CLEAR" on its Block Panel sends the train into Block Section by taking the LSS to 'OFF'.		No Action
11	On entry of train into section, "TRAIN ON LINE" lights up RED & LSS replace to 'ON' in arrowhead indication, SECTION buzzer sounds, along with ACKN indication near respective ACKN button icon through mouse and cursor on the menu. Pressing of ACKN of corresponding line (Dispatch/Receive) will turn off the buzzer and the ACKN indicator turn off. Puts back the LSS controls to Normal. Ensures SNOEK light up YELLOW.	12	On entry of train into section, "TRAIN ON LINE" lights up RED in arrowhead indication, Section buzzer sounds, along with ACKN indication near respective ACKN button icon through mouse and cursor on the menu. Pressing of ACKN of corresponding line (Dispatch/Receive) will turn off the buzzer and the ACKN indication.
14	After receipt of train at receiving station proper reception signals and complete arrival of train, "TRAIN GOING TO" arrowhead indication turn to FLASHING GREEN & "LINE FREE" indication turns to GREEN at the stations, "TRAIN GOING TO" indication continues FLASHING GREEN at sending station until departure signals and their controls are not normal. After departure signals and their controls are at normal, "TRAIN GOING TO" arrowhead indications turns off and "LINE CLOSED" indication lights up yellow.	13	After receipt of train at receiving station proper reception signals and complete arrival of train, "TRAIN COMING FROM" arrowhead indication turn to FLASHING GREEN & "LINE FREE" indication turns to GREEN at both the stations, "TRAIN COMING FROM" indication continues FLASHING GREEN at receiving station respectively until reception signals and their controls are not normal. SNK light up YELLOW If reception signals and their controls are at normal, "TRAIN COMING FROM" arrowhead indications turns off. "LINECLOSED" indication lights up yellow.

#### 4.57.2 REFUSAL TO 'LINE CLEAR ENQUIRY':

When a block section is blocked by presence of a train in the section or train parting or shunting or opening of level crossing in mid-section or for any other reason, the SHUNT key of EKT shall be taken out and kept in safe custody.

If the block station at other end refuses the IS LINE CLEAR enquiry signal, no train shall be allowed to leave until a fresh IS LINE CLEAR enquiry signal has been given to Block Station at other end and accepted.



On removal of obstruction, the Shunt Key of EKT shall be inserted and turned to IN position and the Shunt Release Key should be taken OUT. SM shall immediately inform SM of other end about the fact, so as to enable him to send a fresh IS LINE CLEAR signal.

#### **4.57.3 CLOSING OF BLOCK AFTER A 'PUSH BACK' OPERATION:**

After a train has been pushed back at the sending station, the sending station advises the receiving station. The receiving station closes the section by clicking BELL icon and CANCEL icon after getting cooperation from the other end station.

#### **Method of "Push back" operation**

SENDING STATION		RECEIVING STATION	
1	Train clears the Block section LINE FREE indicator turns GREEN. SECTION buzzer sounds. ACKN indication lights up. 'TRAIN GOING TO' arrowhead indication turns to FLASHING GREEN. Acknowledges the buzzer by pressing ACKN button icon. ACKN indication turns off. Ensures that the SNK indication is YELLOW.	2	Train clears the Block section LINE FREE Indicator turns GREEN. SECTION buzzer sounds. ACKN indication lights up. 'TRAIN COMING FROM' arrowhead indication turns to FLASHING GREEN. Acknowledges the buzzer by pressing ACKN button icon. ACKN indication turns off.
3	Advises receiving end station SM about cancellation on telephone after prescribed BELL code.	4	Agrees to request, ensures SNK indicator YELLOW, SNOEK indicator YELLOW, SHUNT KEY indicator GREEN and Gives consent on telephone after prescribed BELL code.
5	After verbal consent from other end SM ensure SNK indication YELLOW, SNOEK indication YELLOW, SHUNT KEY indication GREEN Press CANCEL CO-OP button icon and releases on receipt of BELL code.	6	CO-OP indication turns YELLOW. Presses BELL & CANCEL button icon by mouse and curser with SM key IN. CANCEL COUNTER increments. CANCEL indication turns FLASHING YELLOW & continues flashing for 120 seconds.
8	TRAIN GOING TO arrowhead indication turns off. LINE CLOSED indication lights up.	7	On expiry of 120 seconds, TRAIN COMING FROM arrowhead indication and CANCEL indication turns off. 'LINE CLOSED' indication lights up.

#### **4.57.4 BLOCK BACK OPERATION :**

The SM, who intends to Block Back, shall inform the SM of station in rear on telephone supported by private number, SM who intends to block back takes SHUNT key OUT and keeps in safe custody. The SM will then issue necessary authority to driver of train to perform shunting in Block Section.

On completion of shunting, section clear message will be sent to SM of station in rear on telephone about obstruction removed supported by a private number, who in turn will acknowledge the same supported by a private number. Thereafter SM will insert SHUNT Key of EKT and turn to 'IN' position and takes out the shunt release key.

All the entries shall be mentioned in TSR in RED ink with reasons in remarks column against each entry.

Station in REAR		Station intending BLOCK BACK	
2	Block Panel displays: LINE CLOSED -YELLOW LINE FREE -GREEN SNOEK- YELLOW SHUNT KEY - GREEN	1	Block Panel displays: LINE CLOSED- YELLOW LINE FREE- GREEN SNOEK- YELLOW SHUNT KEY - GREEN
4	Acknowledges call attention/attend telephone signal.	3	Inserts SM key & turns 'ON' Gives call attention/attend telephone signal.
6	Attends telephone.	5	Attends telephone.
8	Acknowledges & gives consent by private number.	7	Inform intention to perform shunting in Block Section.



10	SNOEK turns off.	9	Takes SHUNT Key 'OUT' from EKT and keeps in safe custody. Issue necessary authority to driver of train to perform shunting in Block Section. SHUNT KEY indication turns to RED.
12	On entry of train in Block Section. Section buzzer sounds & ACKN indication glows.	11	On entry of train in Block Section. Section buzzer sounds & ACKN indication glows.
	LINE FREE indication turns to RED. LINE CLOSED indication turns off.		LINE FREE indication turns to RED. LINE CLOSED indication turns off.
	Acknowledges the buzzer by pressing ACKN button icon through mouse and curser. ACKN indication turns off.		Acknowledges the buzzer by pressing ACKN button icon through mouse and curser. ACKN indication turns off.
14	On clearing of Block Section. SECTION buzzer sounds & LINE CLOSED indication lights up. ACKN indication lights up.	13	On clearing of Block Section. SECTION buzzer sounds & LINE CLOSED indication glows. ACKN indication lights up.
	LINE FREE indication turns to GREEN. LINE CLOSED indication turns YELLOW.		LINE FREE indication turns to GREEN. LINE CLOSED indication turns YELLOW.
	Acknowledges the buzzer by pressing ACKN button icon through mouse and curser. ACKN indication turns off.		Acknowledges the buzzer by pressing ACKN button icon through mouse and curser. ACKN indication turns off.
16	Acknowledges call attention /attend telephone signal.	15	On completion of shunting, SM verifies the line between opposite STARTER ( if any) /Shunt signal or Stop Board/Fouling mark and First Stop Signal free from any vehicle. Gives call attention/attend telephone signal.
17	Attends telephone	16	Attends telephone
19	Acknowledges supported by the private number.	18	Inform shunting is completed supported by a private number.
21	SNOEK light up YELLOW.	20	Inserts SHUNT KEY of EKT & turns to 'IN' SHUNT KEY indication turns to GREEN.

#### 4.57.5. Method of "Line Clear Cancellation" (Before entry of train in the Block section).

After a train sending station has taken line clear, the receiving station can carry out line clear cancellation with the consent of other end station. Sending station puts back LSS to "ON", if already taken "OFF" and its control to normal ensures SNK at "YELLOW". Sending station extends co-operation by pressing CANCEL CO-OPERATION icon.

On receipt of co-operation indication, receiving station presses bell and cancel button with SM KEY "IN". Receiving station observes cancel indication to light up flashing yellow and releases the icon. TRAIN GOING TO/TRAIN COMING FROM arrow Head Indication turns to flashing green at sending/receiving station respectively. After 120 seconds LINE CLOSED indication lights up "YELLOW" TRAIN GOINGTO/TRAIN COMING FROM Arrow head indication and cancel indication extinguishes.

#### Method of Cancellation:

SENDING STATION		RECEIVING STATION	
1	PUTS back LSS to 'ON', if already taken 'OFF', ensures SNK at YELLOW, Advises receiving end station SM about cancellation on telephone after prescribed BELL code.	2	Agrees to request, ensure SNK at YELLOW and SNOEK at YELLOW and gives consent on telephone after prescribed BELL code.
3	After verbal consent from other end SM, presses cancel co-operation icon and releases on receipt of bell code.	4	Waits for co-operation light up yellow and presses, bell & cancel icon with SM key IN. Cancel counter increments. TRAIN COMING FROM Arrow Head indication turns to flashing green. Cancel indication lights up flashing yellow & continues flashing for 120 seconds.



5	'TRAIN GOING TO' indication turns flashing green.		
7	'TRAIN GOING TO' Indication turns off LINE CLOSED indication lights up	6	On expiry of 120 seconds, TRAIN COMING FROM Indication & cancel indication turns off. LINE CLOSED indication lights up.

#### 4.58: BLOCK FAILURE

##### 4.58.1. Failure of the Block panel and Last Stop Signal

###### (a) Failure of Block Panel :

The block panels must be considered as defective in the following cases :

- (i) When no indication is available on the Block Panel.
- (ii) When none of the indications viz. Train Coming From/Train Going To appears on the Block Panel except 'Line Free'.
- (iii) When no train has entered into the Block Sections, but the Block Panel shows 'Line Occupied' RED indication and this indication persists even after Resetting has been tried as per para 4.60 of this chapter.
- (iv) When TRAIN GOING TO or TRAIN COMING FROM indications do not appear by appropriate action though condition for asking 'LINE CLEAR' and granting permission to approach are available.
- (v) TRAIN GOING TO or TRAIN COMING FROM indicator does not turn to RED to give TRAIN ON LINE on the entry of train into Block Section at either of the station.
- (vi) When a train has arrived at the receiving station but the Block Panel still shows TRAIN ON LINE RED indication and persists even after Resetting has been tried as per para 4.60 of this chapter.
- (vii) When a train has arrived at the receiving station but the Block Panel shown FLASHING GREEN indication even after ensuring SNKE indicator & LCB key IN at both the station.
- (viii) Total failure of communication during which train shall be worked as per extent rules in force on the Railway.
- (ix) Any damage is seen or reported to block equipment i.e. Block Panel, Axle Counter, Track Devices, Axle counter equipment and block multiplexer equipment etc.
- (x) When Last Stop Signal cannot be kept at 'ON' during its suspension/disconnection.
- (xi) When Last stop Signal of the station does not go back to 'ON' position on the entry of a train into the Block Section
- (xii) When the Bell Code signals are received indistinctly or are not received.

###### Note:

- (a) In all the above cases, the Block Panel must be treated as defective for block working and trains must be dealt with by taking Line Clear on Electrical communication equipments provided and by following provisions of GR 14.13.
- (b) In respect of the failure indicated in the item number (viii) of above para trains must be dealt with under the extant rules as outlined in SR. 6.02.04.
- (c) In respect of the failures indicated in the item nos (v), (ix) & (x) of the para {4.58.1(a)} above, all efforts must be made to keep LSS in the 'ON' position. If it is not possible, then a competent railway servant should be deputed with red Hand Signal to take his position at the foot of the LSS to warn loco pilots of the approaching trains. In addition, all trains in the relevant directions should be stopped at home signal and after ensuring that they have come to stop, the home signal should be cleared to caution aspect only. The starters should not be taken off and the trains should be despatched by issue of relevant paper authority to pass the starters and the LSS at ON. Caution Order should also be issued to the Loco Pilot about the defect of the LSS.

(d) The Block Panel should not be restored for normal working until a competent signalling staff has tested & certified fit.

(e) In all the cases indicated in paras {4.58.1(a)} above failures should be informed to S&T staff immediately.

#### **(b) Failure of Last Stop Signal**

The Last Stop Signal must be considered to have failed in the following cases :—

- (i) The Last Stop Signal cannot be taken 'OFF' even though Line Clear has been obtained.
- (ii) The Last Stop Signal can be cleared without getting Line Clear.
- (iii) The Last Stop Signal does not restore to 'ON' position after the train enters the Block Section.

Note:

(a) In all the cases indicated in para {4.58.1(b)} above failures should be informed to S&T staff immediately. (b) In respect of the cases indicated in paras (b)(i) & (iii) above the precautions indicated in Note No. (iii) and (iv) under the para, 4.58.1 (a) dealing with failures of the Block panels should be strictly adhered to.

#### **4.59. Suspension of Block working/Last Stop Signal**

##### **(a) Suspension of Block Working**

Block Working must be suspended and trains dealt with in accordance with the extant instructions in the following cases :—

- (i) When light vehicles such as material lorries, motor trolleys, tie-tamping machines, rail motor cars, Tower wagon (4-wheeler), etc., has to run in the section, these shall be worked on PLC.
- (ii) An Accident in mid-section.
- (iii) When any part of the Block Equipment is to be opened for repairs, it shall be done only under duly accepted disconnection notice. Block Panel working shall only be resumed by a Railway servant authorized as per extant rules in force on the East Coast Railway.

**Note :-** As soon as the cause of suspension of block working is removed normal working can be restored by SM.

##### **(b) Suspension of last Stop Signal**

The last stop signal shall be considered and deemed to have been suspended in the following cases :-

- (i) When the Last Stop Signal has been undertaken for repairs by S&T staff,
- (ii) During the block back,
- (iii) Mid-Section accident.
- (iv) When the material lorries/trolleys, tie-tamping machines or tower wagon has to run in the section.

**Note :** As soon as the cause of suspension of LSS is removed normal working can be restored by SM.

#### **4.60. Resetting of Axle Counter.**

After a train has been received at receiving station or after a Block Back operation or when no train has entered into Block Section and LINE FREE indicator displays RED, then the following procedure shall be adopted to reset the Axle counter. Re-setting operation of axle counter is cooperative and Station Master having reset cooperation button on its block panel shall extend cooperation. Axle counter will not be reset until first train is piloted out.

##### **(i) Verify the "Block Section is clear of any vehicles"**

- (a) Observing the procedure laid down in GR 4.17 & relevant SR's thereto.
- (b) By checking the train signal register, the details of last train passed through that Block Section and finding out from station in advance or from controller, that the last train that has passed has arrived complete. The SM should exchange private number with the SM/Controller or from whom the complete arrival has been confirmed.



**(ii) Resetting Procedure.**

After the verification of Block section clear of Vehicles, follow the procedure given below for resetting of Axle Counter.

SN	Station provided with Reset Key	SN	Station Provided with Reset Button
1	Inserts & turns SM key, Gives Call attention/ attend telephone signal.	2	Acknowledges call attention/ attend telephone signal.
3	Attends telephone.	4	Attends telephone.
5	Informs the SM that the Axle Counter has failed after arrival of train.	6	Acknowledges
7	Informs the SM that complete arrival of last train that passed from sending station to receiving station has been verified and intimate his intention to normalise the Axle Counter & communicates his private number.	8	Acknowledges and give a Private number
9	Requests for cooperation to normalise the Axle Counter.	10	Acknowledges and presses RESET button.
11	On 'Reset cooperation' indication lit, inserts RESET key. Turns & presses for short duration & releases. Advises sending station SM to release RESET button.	12	Releases the buttons
13	LINE FREE indication turns GREEN from RED. SECTION buzzer starts ringing TRAIN GOING TO/TRAIN COMING FROM indication disappears. 'LINE CLOSED' indication appears. Acknowledges the buzzer by pressing ACKN button. The reset Counter increments. The number is entered in train signal register as well as in counter register kept at the station with details of private number.	14	LINE FREE indication turns GREEN from RED.  SECTION buzzer starts ringing.  TRAIN GOING TO/ TRAIN COMING FROM indication disappears.  'LINE CLOSED' indication appears.  Acknowledges the buzzer by pressing ACKN button.

**4.61 Working of trains when there is failure of Block Panel / Last Stop Signal**

**(a) Failure of Block Panel :**

Whenever the Block Panel fail, Line Clear should be obtained on Electrical communication equipments provided and by following provisions of GR 14.13.

**(b) Failure of Last Stop Signal but Block panel is working.**

If block working can be carried on the Block Panel but the Last Stop Signal cannot be taken off, then Line Clear should be obtained on the Block Panels but Paper Line Clear Ticket should be issued as an Authority for entering the Block section.

**(2) In Chapter-V, Para no.5.01(a), Para no.5.02(a) and entire Part-I(Para no.5.03 to 5.29) shall be deleted.**

**No. No: No. ECoR/Optg/SC/88/BWM/C.Slip/2/2024,**

**Date:28.11.2024**

**S/d  
(Y.N.Babu)  
Principal Chief Operations Manager**