CHAPTER IV

BLOCK PANEL WORKING WITH AXLE COUNTER ON DOUBLE LINE AND SINGLE LINE

This chapter is for 'Block Panel' with 'Block proving by Axle counter. These rules must be studied in conjunction with General (Amendment) and Subsidiary Rules (2010).

4.01. Block Panel.

A Block panel means a panel associated with axle counter equipment to control the movements of trains on double line and single line block sections.

4.02. Knowledge of Rules.

Every railway servant working on block Panel must be conversant with the rules relating to the block working whether supplied or not with a copy or translation of the rules relating to his duties.

4.03. Access to and operation of equipment.

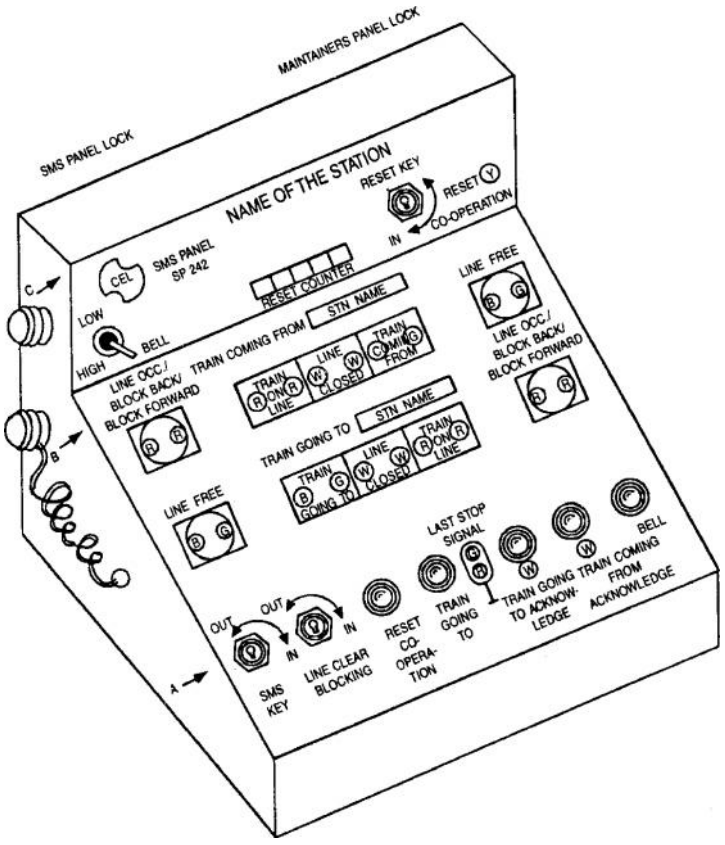
(1) No unauthorised person shall be permitted to have access to or operate signals, points, Block Panel and electrical communication instruments or any other appliance connected with the working of the railway.

(2) No unauthorised person (whether railway servant or otherwise) shall enter any block/ signal cabin except when requires to do so in connection with the regular duties. All concerned supervisory staff will monitor strict compliance of these instructions through frequent and surprise checks.

(A) DOUBLE LINE BLOCK PANEL WORKING

I. DESCRIPTION OF THE BLOCK PANEL

4.04. Block Panel Diagram.



4.05. Block Panel.

The running of every train shall in its direction from one block station to another on double line be regulated by means of a block panel with associated axle counter and other equipments.

4.06. Description of Block Panel.

The block panel consists of push buttons, keys indications, counters, block bell, block telephone, buzzer, etc., mounted on a frame. The block panel can be divided into three portions viz., A, B & C for the purpose of its explanation.

Portion-"A" lt has three rows

Upper row-it houses various indications pertaining to 'Train Going To' direction.

Middle row-it houses various push buttons SM's key and LCB key.

Lower row-it houses LSS, TGT, ACK and TCP indications.

Portion-"B" it houses various indications pertaining to 'Train Coming From' direction.

Portion-"C" It houses Reset Counter, Reset key and Reset co-operation indication. The description of the various parts/portions is as given below :

4.07. Push Buttons.

(i) TGT push button-'Train Going To' Push button is located in the portion-'A' of block panel and is to be pressed alongwith 'BELL' push button to obtain line clear, to send a train into the block section.

(ii) 'TGT ACK'- Train Going To acknowledgement push button is located in the portion 'A' of block panel and is to be pressed for acknowledgement of line occupied axle counter failed or line free axle counter restored in the Train Going To' direction.

(iii) 'TCF ACK' - Train coming from acknowledgement push button is located in the portion 'A' of block panel and is to be pressed for acknowledgement of line occupied/axle counter failed or line free/axle counter restored in the Train Coming From' direction.

(iv) BELL push button- It is located in the portion 'A' of block panel and when it is pressed a bell beat is heard in the single stroke bell at the other end of the block section.

The Bell Push button shall be used to :

(a) transmit the prescribed code of Bell signals.

(b) get 'Line Clear' when pressed alongwith 'TGT' push button.

(c) Cancel the 'Line Clear' by the train receiving station which is already obtained by the train despatching station when operated in conjunction with 'LCB key' out.

(v) 'RSB' Push button- Reset push button, when it is intended to reset the axle counter by the receiving end SM.

4.08. Keys :

(i) **SM'S KEY** : SM's control key for block panel is a two position key. It is located in the portion 'A' of block

panel.This key is provided to enable Station Master to have control on the block panel.

SM's key should normally remain in the personal possession of SM. It should be inserted and turned whenever any operation on the block panel is to be done.

When this key is 'out', only the undermentioned operations are possible :

(a) Exchange of Bell Code Signal.

(b) Acknowledgement of buzzers of Train entering/ clearing/axle counter failure/restored by pressing TGT ACK/TCF ACK push buttons.

(ii) LCB Key : Line clear blocking cancelling key is a two position key normally kept inserted and turned. It is located in the portion 'A' of block panel. It is to be taken out by receiving end Station Master in the following cases only.

(a) In case of emergency for withdrawing the facility of obtaining Line Clear available with sending SM.

(b) If the sending end SM has already taken Line Clear to send a train, this can be cancelled by taking out this key and simultaneously pressing the Bell Push Button with SM's key 'IN' provided the train for which line clear is taken has not entered the block section.

(c) The LSS of sending station will also be replaced to 'ON' automatically if already taken OFF for sending the train in the section.

Note :— This facility is to be used only in an emergency and adequate safeguards are to be provided in the station

working rules for recording this action so that this facility is not misused.

(iii) RSK KEY- This reset key is located in the portion 'C' of the block panel. It is a non-locking key and when at receiving station this key is inserted, turned and pushed in, it resets the axle counter provided to prove the clearance of the block section.

(iv) This key therefore has to be used with great caution, be sure that the block section is clear of all obstructions.

4.09. Indications :

Separate indicators are available on the block panel for TCF and TGT directions.

(i) TCF Direction : (In the portion 'B' of block panel)

(a) **'Line Closed'**- Indication appears as 'Yellow' light on the panel when there is no train; in the Block section and when the section has not been blocked.

(b) **Train Coming From -** Indication appears as a 'Green' light on the panel at the receiving station, when TGT and BELL push buttons are pressed simultaneously at sending station and the condition of granting line clear at receiving station have been complied with.

(c) **'Train on Line'-** Indication appears as a 'Red' light on the panel when the block section is occupied by a train or any other rail vehicle like motor trolley after line clear has been obtained on the block panel.

(d) **"Line Free"**- A 'Green light' to indicate that the block section is clear of trains or vehicles.

(e) **"Line occupied/Block forward/Block Back"**-

A red light indication to indicate line occupied/ block forward/block back on the panel when the block section is occupied by a train either through a signalled move or when the line is blocked back/ blocked forward.

(ii) TGT Direction : (In the Upper row of portion 'A' of the Block panel).

(a) **Line Closed** - Indication appears as 'Yellow' light on the panel, when there is no train in the block section and when the section has not been blocked.

(b) **Train Going to** - Indication appears as a 'Green' light on the panel at the sending station when TGT and BELL push buttons are pressed simultaneously at sending station and conditions for granting line clear for the train at receiving station been complied with.

(c) **Train on Line** - Indication appears as 'Red' light on the panel when the block section is occupied by a train or any other rail vehicle like motor trolley after line clear has been obtained on the block panel.

(d) **Line Free** - A Green light to indicate that block section is clear of train or vehicle.

(e) **Line occupied/Block Forward/Block Back** -

A 'Red' light indication to indicate line occupied/ block forward /block back on the panel when block section is occupied by a train either through a signalled move or when the line is blocked back/ forward.

(iii) "LSS indication"- (In the lower row of portion 'A' of the Block Panel).

(a) A 'Red' lamp indication to indicate.

(i) 'ON' aspect of last stop signal.

(ii) When train passes, the LSS in 'OFF' position and the same replaced to 'ON' position.

(b) A 'Green' lamp indication to indicate that the Last Stop Signal has been cleared for the train to enter the block section.

(iv) Acknowledgement indications : (In the lower row of portion 'A' of the Block panel)

(a) TGT ACK indication- A 'Yellow' lamp to draw the attention of the Station Master at the train sending end when the buzzer sounds in the event of block section being occupied or when the train arrives.

(b) TCF ACK indication- A 'Yellow lamp to draw the attention of the Station Master at the train receiving end when the buzzer sounds in the event of block section being occupied or when the train arrives.

(v) Reset Co-Operation Indication- (In the portion 'C' of the block panel).

A Yellow lamp indication for 'Reset Cooperation' to

indicate that co-operation has been extended by the sending for resetting the axle counter.

4.10. Counter (In the portion 'C' of the Block Panel)

Axle counter reset Counter for registering the number of attemps made to Reset the axle counter.

4.11. Buzzer :

When a train occupies/clears a block section or axle counter fails/restores to normal, a buzzer sounds. The Station Master can silence this buzzer by pressing TGT ACK or TCF ACK push buttons, based on the event of proceeding the sounding of the buzzer. Along with this buzzer 'Yellow' indication also appears above the TGT ACK or TCF ACK push buttons which guides SM as to which button is to be pressed.

4.12. Block Bell

This is a single stroke bell and is operated by pressing the BELL push button provided on the panel at either end of the block section. This gives audible signal at the other station.

4.13. Block telephone :

This provides speech communication between the Station Masters at the either end of the block section attached to the block panel.

4.14. Locks :

Two locks have been provided in the rear of the block panel as under:

(a) Signal Maintainer's lock

(b) Station Master's lock

Unless both these locks are unlocked, the block panel from the rear cannot be opened for maintenance purposes.

4.15. Block working :

(i) Trains are worked on the Absolute Block System. Block working is by means of block panel, Axle counters and associated equipments. The movements of trains in the block section are controlled by a block panel provided with operating buttons, keys and indications. Their use and operations are explained in detail in Part-II (Operating Procedures).

(ii) Each block section is provided with two block panels, one at either end of the block section; serving for both the lines of the double line section. All operations like obtaining Line Clear, cancelling Line Clear, etc. are done on these panels.

(iii) The occupancy of the entire block section is proved by provision of Axle counters. It is not possible to either obtain Line Clear or close the block section unless the entire section is clear of trains. The Line Clear is obtained by the sending end SM and the block section gets closed automatically with the complete arrival of the train at the receiving station.

4.16. Principle of operation :

Electrical control is provided on relevant last stop signal to ensure that:

(i) The last stop signal at sending station cannot be taken OFF until the sending SM has pressed the

TGT & BELL push buttons and all the conditions for granting of Line Clear are available at the receiving station.The latter is automatically checked by axle counter and associated equipment installed on either side of the block section.

(ii) (a) The last stop signal lever (in the case of lever frames) is free in the reverse position so that it can be put back to normal position when desired.

(b) Where a switch/push button has been provided for operating the last stop signal it is possible to replace this signal to ON position with the help of signalling circuits provided at the station.

(iii) If the receiving station is not in a position to accept a train or an emergency has occurred after line clear has been taken by the sending station, the circuits permits the receiving station to put back to ON the last stop signal at the sending station provided the train has not left the station in rear.

(iv) The principle of 'One Line Clear One Train and One Signal One Train' has been followed in the circuitry so that if the Last Stop Signal of the sending Station goes back to ON by the departure of a train from the sending station the same cannot be re-cleared unless fresh Line Clear is obtained after the previous train has arrived complete at the receiving station.

II. OPERATING PROCEDURES

4.17. Method of obtaining Line Clear.

Following is the sequence of operations for obtaining Line Clear to send the train from station in rear to station in advance.

Taking two stations X and Y and a train travelling from X to Y, the block section being clear and the Line Closed. Yellow indication being displayed in TRAIN GOING TO part of the portion A of the block panel at X station & TRAIN COMING FROM part of the portion B of the block panel at Y Station.

"X" Station (Sending)	"Y" Station (Receiving)
1. Insert SM's key and turn, press bell push button to send "Call Attention/ Attend Telephone" signal to Station Y.	2. Bell signal is acknowledged by pressing Bell push button. Attends Telephone.
3. Receiving acknow-ledgement signals. Attend telephone and calls out his station name.	4. Calls out his station name.
5. Asks consent giving number and description of the train.	6. Gives consent by repeating the number and description of the train, provided it can

be accepted. This should be confirmed by giving a private number after ensuring that the LCB key is in the block panel and in the 'turned' position.

7. Obtaining 'Line Clear' by pressing TGT push button alongwith the BELL push button and keeps them pressed.

8. Block panel displays Train Coming From green indication.'Line Closed'Yellow indication disappears.

9. Block panel displays 'Train Going To' green indication. 'Line Closed'Yellow indication disappears. Release buttons.

10. Take Off the departure signals to send the train into the block section, LSS green lamp indication appears in portion 'A' of the Block panel.

11. As soon as the train occupies track just ahead of the last stop signals, the LSS automatically goes back to its 'ON' position. LSS 'Red' lamp indication

12. 'Train On Line' red indication appears automatically on the panel and buzzer sounds continuously. 'Line Occupied' red

appears in portion 'A' of block panel and Train on Line' Red indication appears automatically and a buzzer also sounds. 'Line occupied' red indication appears and 'Line Free' green indication disappears. SM presses TGT ACK to silence the buzzer.

indication appears and 'Line Free' green indication disappears. SM Presses TCF ACK to silence the buzzer.

13. Takes off reception signals. As soon as the train passes the Home Signal, the signal goes back to ON automatically. A buzzer sounds continuously after the train has completely passed the block overlap ahead of the Home Signal.
14. Block Panel displays 'Line Closed' Yellow indication and Train On Line' red indication disapperars.
15. SM presses TCF ACK to silence the buzzer.

16. Block panel displays 'Line Closed' yellow indication and "Train On Line" red indication disappers and buzzer sounds which is silenced by pressing TGT ACK push button by SM.

17. The Home Signal lever and its SM's control slide, where provided, are put back to normal position.

18. Gives Train out of section signal after satisfying himself that the train has arrived complete or passed with the tail lamp/tail board on the last vehicle as per SR 4.17.01.

19. Acknowledges Train out of section signals.

4.18. Refusal to the 'Is Line Clear' Signal and sending of the Obstruction Danger Signal.

(1) If the line being blocked by the presence of a train in the section, or by shunting or for any other reason, the block station in advance is unable to accept 'is Line Clear signal', such station must refuse on telephone communication and also take out LCB key from the portion 'A' of the Block Panel.

(2) If the block station in advance does not give consent to accept the train, the train must be stopped at the station in rear and should not be allowed to leave until a fresh consent has been given and accorded by the block station in advance.

4.19. The Train entering section signal

(1) On departure of train across a block station and occupying the track circuit just in advance of LSS,

A buzzer will sound at both 'train sending' as well as 'train receiving' station. This should be acknowledged by pressing the respective acknowledgement buttons i.e. TGT ACK button by train sending SM and TCF ACK push button by train receiving station.

(2) Then so acknowledged, the section shall be considered to be blocked for any other train.

4.20. 'Train out of section' or 'Obstruction Removed' signals.

When the section is cleared after the arrival of the train or by removal of the cause of blocking the block section, which shall be detected by axle counter device, buzzer will start at both train receiving and train sending stations. This should be acknowledged by pressing the respective acknowledgement buttons i.e.TCF ACK button by train receiving SM and TGT ACK button by train sending SM.

4.21. The Obstruction Danger signal.

(1) This signal is a 'Danger' signal and shall be given in any case of danger when it is necessary to stop a train or to attract the immediate attention of the SM of the next station.

(2) It must always be promptly acknowledged and immediate steps must be taken to stop any train entering the block section.

(3) If a 'Line Clear' has been obtained, the station receiving the obstruction danger signal must cancel the 'Line Clear' so obtained.

(4) The 'Obstruction Danger' signal should be recorded as a danger signal and it should be used only in case of danger or sudden emergency. When it is necessary to stop train for which line clear has already been given, the station transmitting this signal i.e. train receiving station shall take out LCB key and press BELL push button simultaneously. This should be done with SM's key in IN position. The receiving station SM must record the reasons for this in TSR and exchange private number with station in rear.

4.22. 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 guard of the train who will certify by signaling in the complete arrival register with time but if the train was running with last vehicle without brakevan/with last vehicle No. the Station Master himself will verify the Last Vehicle Number personally.

(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 cabin 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) 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/C602 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.

4.23. To cancel Line Clear.

(A) When a line clear has been obtained and afterwards found that the train for which line clear already obtained has to be detained owing to any reason, the following procedure must be adopted :

(i) If LSS is not taken OFF, SM should not clear the LSS.

(ii) If LSS is already taken OFF, it must be put back to 'ON' and SM should inform the Loco Pilot of the train for which the LSS was taken off, regarding cancellation of the line Clear obtained for the said train.

For cancelling the 'Line Clear' the following procedure must be adopted :

"X" Station (Sending)	"Y" Station (Receiving)
1. Block Panel indicates 'Train GoingTo' green indication.	1. Block panel indicates 'Train Coming From' green indication.
2. Gives Call Attention Attend Telephone Signals.	3. Acknowledges Call Attention Telephone Signal.
4. Attends Telephone.	4. Attends Telephone.
5. Inform that the train for which line clear has been obtained is being detained and the line clear is to be cancelled. In support of this he gives a private number.	6. Acknowledges and gives consent by giving a private number. Also takes out the LCB key and simultaneously presses Bell push button with SM's key 'IN'.
7. 'Train Going To' green indication disappears & 'Line Closed'Yellow indication appears on the block panel.	8. 'Train Coming From' green indication disappears & 'Line Closed'Yellow indication appears on the block panel.
	9. LCB key is inserted and turned.

Note : Next Train can now be sent following the regular procedure as per para 4.17.

(B) Where Line Clear has been obtained and the train has also been despatched into the block section and it is afterwards found that the train has to return back to the station from which it was started, the following procedure must be adopted :

"X" Station (Sending)	"Y" Station (Receiving)
1. Block Panel indicates 'Train On Line' red indication.	1. Block Panel indicates 'Train On Line' red indication.
2. Gives Call Attention/ Attend Telephone signal.	3. Acknowledges Call Attention/Attend Telephone signal.
4. Attend Telephone.	4. Attend Telephone.
5. Informs that the train which left the station has returned back to this station complete, supported by his private number.	6. Acknowledges by giving private number.
7. 'Train On Line' red indication still persists (as in 1 above)	7. 'Train On Line' red indication still persists (as in 1 above)
8. 'Line Free' green indication appears on the block panel.	8. 'Line Free' green indication appears on the block panel.

Note: The following train shall be worked on 'Paper Line Clear'. After the arrival of the said train at the station in advance, 'Train On Line' indication disappears and 'Line closed'Yellow inidcation appears at both stations and further trains will be worked in the normal way.

(C) When station in advance wished to cancel the Line Clear, he must (except in cases of emergency when the Obstruction Danger signal is to be used) informs the station in

rear on the telephone and when the station in rear agrees, the cancellation must be done as described in para 4.23(A).

4.24. 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.

4.25. Block Forward

(a) The Station Master who intends to block forward the line shall advise the Station Master of the station in advance on block telephone by supporting a private number and ask permission to 'Block Forward' who will acknowledge the message and grant permission supported by a private number.The SM in advance will take out LCB key and keep it in safe custody. Loco Pilot shall be given Shunting Authority in form T/806 for entering the block section for shunting. On competion of shunting, the Station Master shall inform the Station Master of the station in advance of the completion of shunting supported by a private number which shall be acknowledged by the SM of the station in advance by a private number.

On completion of the shunting, the Station Master of the station in advance should restore the LCB key of the panel.

(b) All the entries in the TSR will be made in RED ink. Reasons for Block Forward has to be recorded against the entry in the remarks column.

(c) For Block Forward following procedure shall be adopted :

(Shunting being performed at the Station 'X')

	"X" Station		**"Y" Station**
1.	Block Panel indicates 'Line Closed Yellow indication.	1.	Block Panel indicates 'Line Closed' Yellow indication.
2.	Inserts the SM's key and turns and gives 'Call attention signal.	3.	'Inserts the SMs key turns and acknowledges the 'Call attention' signal.
4.	Attends Telephone.	4.	Attends Telephone.
5.	Informs intention to do shunting in the block section and give private number.		
		6.	Acknowledges and removes the LCB key and keeps it in his personal custody.
7.	Prepares T/806 and sends it to the Loco Pilot. When the movement takes place into the block section, the buzzer sounds which is silenced by pressing TGT ACK push button.The Line occupied red indication appears.	8.	The buzzer sounds which is silenced by pressing TCF ACK push button.The 'Line Occupied red indication appears.
9.	When the shunting is completed and the train has cleared the block	10.	The buzzer sounds which is silenced by pressing the TCF ACK

	section, the buzzer sounds which is silenced by pressing the TGT ACK push button.		push button.
11.	Line occupied red indication disappears and 'Line free' yellow inidcation appears.	11.	Line occupied red inidication disappears and 'Line Free' yellow indication appears.
12.	Gives 'Call Attention' signal and attends telephone.	13.	Acknowledges 'Call Attention' signal & attends telephone.
14.	Informs that shunting is completed supported by a private number.	15.	Acknowledges supported by a private number and restore the LCB key.

4.26. Block Back

(a) The Station Master who intends to Block Back the line shall ask the Station Master of the station in rear on the telephone for permission to 'Block Back' who will acknowledge the message and grant permission supported by a private number. The LCB key shall be 'taken out' by the SM who intends to perform shunting and shall be kept in personal custody of SM. The SM will then issue the necessary memo to the Loco Pilot on the prescribed Shunting Order Form No. T/806 authorised to him to perform shunting in the block section.

(b) On completion of the shunting the LCB key shall be restored to the block panel. Then the SM shall inform the Station Master of the station in rear

regarding the completion of shunting supported by a private number which shall be acknowledged by the Station Master of the station in rear by a private number.

(c) All the entries in theTSR will be made in RED ink. Reasons for Block Back must be recorded against the entry in remarks column.

(d) The following operations are to be done on the Block Panel for 'Block Back.

(Shunting being performed at Station 'X' towards 'Y' on the wrong line).

"X" Station	**"Y" Station**
1. Block Panel indicates 'Line Closed Yellow indication.	1. Block panel inidcates 'Line Closed' Yellow indication.
2. Inserts the SM's key and turns and gives 'call attention' signal.	3. Inserts SM's key and turns and acknowledges 'Call Attention' signal.
4. Attends telephone.	4. Attends telephone.
5. Informs intention to permorm shunting in block section on wrong line.	6. Acknowledges and gives consent by giving a private number.
7. Takes out the LCB key and keeps it in his personal custody. Issues T/806 to the Loco Pilot for performing shunting in the block section.	

8. When the movement takes place in the block section, the buzzer sounds which is silenced by pressing TCF ACK push button. 'Line occupied' red indication appears.

9. The buzzer sounds which is silenced by pressing TGT ACK push button. 'Line Occupied' Red indication appears.

10. When the shunting train has cleared the block section, the buzzer sounds which is silenced by pressing TCF ACK push button. 'Line occupied' red indication disappears and 'Line Free' green indication appears.

11. The buzzer sounds which is silenced by pressing TGT ACK push button 'Line Occupied' Red indication disappears and 'Line Free' Green indication appears.

12. Restores the LCB key and gives 'Call attention' attend telephone signal.

13. Acknowledges and attends telephone.

14. Informs that shunting is completed supported by a private number.

15. Acknowledges supported by a private number.

III. BLOCK FAILURE

4.27. 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 4.22.

(iv) When "TRAIN GOINGTO" 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 4.22.

(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 thereunder.

(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 thereunder.

(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' positon 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 4.27(A) dealing with failures of the Block panels should strictly be adhere to.

4.28. 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 consedered 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/trollies, 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.

4.29. 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 thereunder.

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.

4.30. Working of Lorries, Motor Trollies and other Light Vehicles

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

(B) SINGLE LINE BLOCK PANEL WORKING

4.31. Features of Block panel

The Block Panel means Panel associated with axle counter and other equipment which controls, commands, indicates and provides the information for the operation of trains in a block section. The block panel operated axle counter block system for Single Line Section checks the movement of train "in" and "out" of the block section by means of axle counter. The system checks the complete arrival of train at the receiving station automatically. System uses the concept of "Train Going To" (TGT) from sending end for taking line clear. The "Train Coming From" (TCF) comes automatically if all the conditions required to grant line clear are available at the receiving end. The "Train On Line" (TOL) and "Line Closed" condition are displayed on the block panel automatically. Block panels are of two types. (1) Panel at the station without evaluator (Drg No. RDSO/S32010/002/011) and (2) Panel at the station where evaluator is also housed (Drg. No. RDSO/S32010/003/011). These two panels differ regarding provision of reset key, counter & reset co-operation button on panel. Their availability on panels are given here under.

Key/Button/Counter	Available	
	Panel Drg. No.RDSO/ S32010 / 002/011	Panel Drg. No.RDSO/ S32010 / 003/011
Reset Key	No	Yes
Reset Counter	No	Yes
Reset Co-operation Button	Yes	No

4.32. Principle of working

(i) The trains are worked on absolute block system of working.

(ii) The block section is provided with an axle counter to verify the occupation and clearance of block section.

(iii) It shall not be possible to take off Last Stop Signal unless the line clear has been obtained.

(iv) It shall not be possible to take Line Clear unless the line is clear of trains running in the same direction, not only upto the first stop signal at the block station at which such line clear is given, but also for an adequate distance beyond it and is clear of trains running in the direction towards the block station to which such line clear is given.

(v) The last stop signal replaces to ON aspect on the entry of train into block section. This will cause TOL indication to appear on block panel of stations indicating the entry of train in the block section. Last stop signal is replaced to ON with the entry of train in block section is maintained in that position till a fresh line clear is obtained on Block Panel.

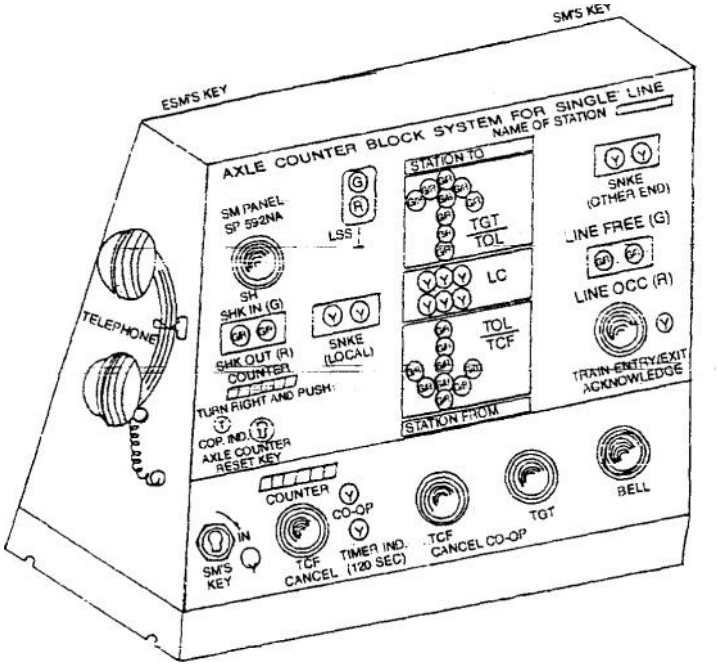
(vi) Block section is automatically closed on complete arrival of train at the receiving station.

(vii) A co-operative control is provided on the block panel to cancel the Line Clear already taken.

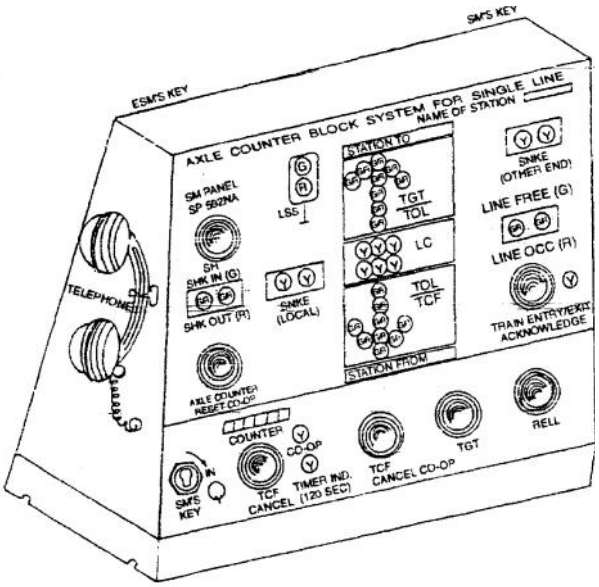
(viii) A co-operative control for resetting of axle counter is provided.

4.33. Description of Block Panel

The Drg. Nos. RDSO/S32010/002/011 and RDSO/ S32010/003/011 represent the block panels at two adjacent stations 'A' & 'B' which govern the movements of train in block section between 'A' & 'B'. A set of two block panel and their associated equipments as shown in the diagram will be used as a pair, one at station 'A' and the other at station 'B'. Telephone communication is also provided in conjuction with block panels.



SINGLE LINE BLOCK PANEL WITH AXLE COUNTER
(RDSO/S32010/003/011)



SINGLE LINE BLOCK PANEL WITHOUT AXLE COUNTER
(RDSO/S32010/002/011)

1. TGT, TCF, TOL AND LC INDICATIONS ARE OF ALPHA NUMERIC DISPLAY TYPE.
2. THE TELEPHONE BRACKET SHALL BE MOUNTABLE ON EITHER SIDE OF PANEL.
3. SM'S LOCK & ESM'S LOCK SHALL BE PROVIDED SEPERATELY AT REAR OF PANEL

Followings are the various parts of the Block panel and their functions.

(i) Push Buttons (non locking type) :

Push buttons	**Functions**
BELL	To transmit BELL codes to station at other end of Block Section. To take Line Clear, when pressed along with TRAIN GOING button.

	To cancel Line Clear when pressed along with CANCEL button.
TRAIN GOING TO	Station Master of sending station operates it along with bell button. This sets sending block panel to 'Train Going To' condition and receiving station block panel to 'Training Coming From' condition Green TGT indicates this condition on block panel.
CANCEL	It is operated along with 'Bell' button to enable cancellation of 'Line Clear' condition, if the train has not entered the block section or after the train has pushed back to the station. Station Master at train receiving station does cancellation operation.
ACKN	It is operated to acknowledge the section occupied on section free condition. It silences the SECTION OCCUPIED / FREE buzzer.
AXLE COUNTER RESET CO-OP CANCEL CO-OP	It is operated to extend co-operation from a station where evaluator of axle counter has not been provided fo resettig of Axle Counter.
	It is operated by train sending station for extending cancel co-operation to receiving station.
SHUNT BUTTON	It is operated to extract shunt key.

(ii) Keys :

Keys	**Functions**
SM KEY	The key when out prevent following operations : a) Transmission of BELL code. b) Transmission of line clear enquiry code c) Resetting of Axle counter. d) Release of shunt key.
AXLE COUNTER RESET KEY	Axle Counter reset key where provided/when pressed resets the axle counter provided reset cooperation is available from other station.
MAINTAINER BACK COVER LOCK KEY	A lock is provided at the back of block panel for maintenance purpose.
SM'S BACK COVER LOCK	For doubel lock arrangement, a lock on the back of block panel is provided which can be operated by key kept in the custody of Station Master.
SHUNT KEY	This key is provided to perform shunting operations.
CATCH/SLIP SIDING	This key on demand is provided to perform CATCH/SLIP SIDING operations.

(iii) Indicator :

Indicators	**Functions**
LINE CLOSED	Its shape is round / rectangular and is provided with white/yellow LEDs. When lit, indicates that section is free from vehicle & line clear has not been granted/received.
TRAIN COMING FROM	Its shape is arrowhead pointing in direction of traffic towards station and is provided with Green/Red.

(iv) Counters :

Counters	**Functions**
CANCEL	It keeps record of cancellation of 'line clear' when train has not entered block section or train has been done 'push back' operation.
RESET	Reset Counter is provided on block panel at the station where Axle Counter Reset key is provided. It keeps record of number of successful resets of Axle Counter.

(v) Indicators (Audible) :

Buzzers	**Functions**
BLOCK	It gives signal as per BELL CODE sent by operator at station at other end of block section.
SECTION	Its audible signal informs SM that train has either occupied or cleared the Block Section.

OPERATING PROCEDURES

4.34. Method of signalling trains from one block station to another block station.

(i) Sequence of operations for sending a train

Block Panel Operators at sending and receiving stations will go through following chain of events listed here under for sending & receiving a train.

	Sending Station		Receiving Station
1.	Ensures (a) Line Closed indicator is lit & SNKE indicators local and far end are lit.		
2.	SM key IN is lit. Sends 'Attend Telephone' signal by pressing BELL.	3.	Acknowledges by pressing BELL and attends telephone.
4.	Attends telephone, advises about the intended movement of the train and asks for LINE CLEAR for train to go from his station with his private number.	5.	After (exchanging) information regarding train movement, ensures Line Closed indicator, SNKE (local) indicator are lit and then convey verbal line clear supported by private number.
6.	Presses BELL & TRAIN GOING TO button and keeps both	7.	'LINE CLOSED' indication disappears & TRAIN COMING

	buttons pressed ' till TRAIN GOING TO Green indication appears.	FROM Green indication appears.
8.	'LINE CLOSED' indication disappears. TRAIN GOING TO Green indication appears on the panel. Releases BELL & TRAIN GOING TO button	
9.	Takes off Last Stop signal. Train enters the Block Section. LINE FREE indicator turns to RED. SECTION buzzer starts ringing & TRAIN GOING TO indication turns 'Red' on the panel. Last Stop signal replaces to 'ON'.	9. SECTION buzzer starts ringing & 'TRAIN COMING FROM' indication turns 'Red' on the panel. LINE FREE indicator turns to RED.
10.	Acknowledges the buzzer by pressing ACKN button. Puts back the Last Stop signal.	10. Acknowledges the buzzer by pressing ACKN button.

11. Clears the reception signal at his station for receiving the train.

    Train passes the Home Signal.

    Home signal is replaced to ON.

    Train clears the Block Section and SECTION buzzer starts ringing.

    Acknowledges the buzzer by pressing ACKN button.

12. LINE FREE indicator turns to GREEN. SECTION buzzer starts ringing.

    TRAIN GOING TO indication turns to flashing GREEN. Acknowledges the buzzer by pressing ACKN button.

13. Train GoingTo Indication disappears 'LINE CLOSED' indication appears.

13. Replaces all controls pertaining to reception of train to Normal. SNKE (Local) indication appears TRAIN COMING FROM disappears.

    'LINE CLOSED' indication appears

(ii) To Cancel "Line Clear" before a train enters the Block Section :

When line clear has been obtained and afterwards, it is found that the train for which line clear already obtained has to be detained owing to any reason, the following procedure must be adopted.

Only train receiving station can cancel 'line clear' with cooperation from train sending station.

Sending Station	**Receiving Station**
Block Panel displays "train Going to" indication	**Block Panel displays "Train Coming from" indication.**
Train sending station ensures that cancellation of line clear conditions are availab e. Exchange private number.	Receiving station ensures that cancellation of line clear conditions are available. Exchange private number.
(i) If, L.S.S. is taken "OFF" SM Should not clear the L.S.S. and will keep it at 'ON' only.	
(ii) If L.S.S. is already taken "OFF" it must be put back to 'ON' and SM's slide of concern L.S S. should also be normal. SM should inform the Loco Pilot of the train tor which L.S.S. was taken "OFF". For cancellation of the line clear, following procedure must be adopted.	

	Sending Station		**Receiving Station**
1.	Press "cancel co-operation" Button.	2.	After verifying the Cancel Co-operation cancellation indication is available on his block panel, Presses & Releases BELL and CANCEL buttons simultaneously and then releases. TRAIN COMING FROM indication turns to flashing GREEN. After signals at both stations are at NORMAL i.e., SNKE (local) and SNKE (other end) is lit, TIMER indicator appears flashing.
3.	TRAIN GOING TO indication turns FLASHING GREEN. Puts back the Last Stop signal controls to Normal if taken OFF & observes SNKE is lit.	4.	CANCEL indicator continues Flashing for 120 seconds, On expiry of 120 seconds TRAIN COMING FROM indication and TIMER indication disappears. 'LINE CLOSED' indication appears.
5.	Train Going To indication disappears. 'Line Closed' indication appears.		

(iii) To close the block when a train returns to the starting station (Push back operation)

After a train has been pushed back at the sending station, the sending station advises the receiving station regarding this under exchange of private number. The receiving station can close the section by pressing BELL & CANCEL button after taking cancel-cooperation from other end.

	Sending Station		**Receiving Station**
1.	Train clears the block section. Section buzzer starts ringing.	2.	Train clears the block section. Section buzzer starts ringing.
	TRAIN GOING TO' indication turns FLASHING GREEN.		'TRAIN COMING FROM' indication turns to flashing GREEN.
	Acknowledges the buzzer by pressing ACKN button.		Acknowledges the buzzer by pressing ACKN button.
	Ensures SNKE (local) indicator is lit.		On request from sending station on telephone after prescribed BELL code for closing of block ensures. SNKE indication is lit.
	Advises receiving station operator to close the block on telephone after prescribed BELL code.		Presses BELL & CANCEL buttons simultaneously and releases buttons.
	Presses cancel cooperation button.		TIMER indicator appears flashing & continues flashing for 120 seconds.

	On expiry of 120 seconds, TRAIN COMING FROM indication and TIMER indication disappears.
	'LINE CLOSED' indication appears.
3. TRAIN GOING TO indication disappears.	
'LINE CLOSED' indication appears.	

(iv) Block Back :

The Shunt Key is the authority for the Loco Pilot to shunt from Starter upto the opposing First Stop Signal of concerned block section.This key authorizes the Loco Pilot to pass Advance Starter at 'ON' during shunting. Precautions regarding correct setting & locking of the route and showing of "Proceed" signal as per General Rules 3.70/ G&SR shall be observed. Whenever shunt key is to be handed over to Loco Pilot for shunting, it shall be kept in a suitable pouch to avoid damage during handling. The shunt key shall be handled very carefully both by the Station Master and the Loco Pilot as damage to the Shunt Key will lead to failure of the Block System.

The Shunt Key can be extracted only when Block Panel is displaying LINE CLOSED or TGT condition. It cannot be extracted if block panel is displaying TCF condition. The SM, who intends to extract shunting key shall inform Station Master at other end on telephone for permission to shunt, who will acknowledge the message & grant permission supported by a private number.

(v) Shunt key extraction in "line close" condition

Operations for extraction of shunt key under "line closed" condition are as under.

Station intend carrying out shunting	Other end Station
1. Station Master will press, "shunt key button" on block panel and extract shunt key.	
2. On entry of train in Block Section. SECTION buzzer starts ringing & LINE CLOSED indication disappears. LINE FREE indication turns to RED. Acknowledges the buzzer by pressing ACKN button.	3. On entry of train in Block Section, SECTION buzzer starts ringing & LINE CLOSED indication disappears. LINE FREE indicator turns to RED. Acknowledges the buzzer by pressing ACKN button.
4. On Clearing of Block Section, SECTION buzzer starts ringing & LINE CLOSED indication appears. LINE FREE Indication turns to GREEN. Acknowledges the buzzer by pressing ACKN button. Exchanges private number.	5. On Clearing of Block Section, SECTION buzzer starts ringing & LINE CLOSED indication appears. LINE FREE indication turns to GREEN. Acknowledges the buzzer by pressing ACKN button. Exchanges private number

(vi) Shunt key extraction in "Train Going To" condition

Whenever it is necessary to extract the shunt key with the "Train Going To" indication on block panel it shall be done only after Train on Line' condition has been established under exchange of private number.

(a) Shunting is completed before the train clears Block section :

Shunting train enters a block section with shunting key and returns back to station while another train is still in the block section. Station Master inserts shunting key back in block panel and the block section clears automatically when other train clears the section. Clearing time of section by train and private number shall be recorded in a train signal register.

(b) Train clears section before shunting is completed

When the train proceeding on regular line clear has cleared the block section and shunting train is still in the section, both end block panels will continue to show "Train On Line" condition. When the shunting train clears the block section, the block section will automatically normalize.

The Station Master receives back the shunting key and inserts the shunting key back in the block panel system and normalises. Normal train movements are then possible.

(vii) In case of train parting, part clearance of train from receiving station & clearance of balance portion from sending station :

Block will normalize automatically as soon as block section is clear of all vehicles provided front part of train has been received on signal at the receiving station. In case train has been received by other than clearing the nominated signal, the cancellation action will be required.

BLOCK FAILURE

4.35. 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 6 above.

(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 6 above.

(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 (4.35(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 (4.35(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 enlers the Block Section.

Note:

(a) In all the cases indicated in para (4.35(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, 4.35 (a) dealing with failures of the Block panels should be strictly adhered to.

4.36. 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

servanlt 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.

4.37. 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 co-operative and Station Master having reset cooperation button on its block panel shall extend cooperation.

(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.

Station provided with Reset Key		**Station provided with Reset Button**	
1.	Inserts & turns SM key, Gives Call attention/ attend telephohe 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.	Ackonwledges
7.	Informs the SM that complete arrival of last train that passed from sending station to receiving station has been verified and	8.	Acknowledges & gives a private number.

intimate his intention to normalise the Axle Counter & communicates his private number.

9. Requests for cooperation to normalise the Axle Counter.

10. Acknowledges & 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

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.

train signal register as well as in counter register kept at the station with details of private number.

4.38. 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 and Block panel is working

Private Numbers exchanged before and after shunting operations along with time of exchange shall be entered in Red ink in Train Signal Register. The station at which shunting is to be performed shall give a written authority to the Loco Pilot for shunting as well as passing the Starter, Advanced Starter at ON upto the Opposite First Stop Signal.

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