

## CHAPTER VIII

### FAILURE OF BLOCK INSTRUMENTS OR APPARATUS.

#### 8.1. Failure of Tokenless block instruments:

The block instrument shall be considered to be interrupted and their working suspended in the following circumstances:

- a) **Diodo Handle type and Kyosan / Podanur push button tokenless block instruments.**
  - i) When attention cannot be obtained directly on the block instrument.
  - ii) When signals on the bell are received indistinctly or fail altogether.
  - iii) If the Last Stop Signal fails to return to 'ON' position as a train passes it.
  - iv) If the train arrival buzzer does not sound the alarm even after the complete passage of the train inside the Home signal over the LVT. (this may be due to failure of the LVT)

**Note:** *Though Home signal may go automatically to 'on' by passage of the train, Home signal lever shall not be put back to normal position unless the whole of the train has arrived inside the Home signal. Failure to adhere to this will result in block failure and the train arrival buzzer will not sound alarm under such circumstances.*

- v) When there is reason to believe that there is contact between the block wire and any other circuit.

**Note:** *(i) If a contact exists between the block wire and any other circuit, there is a possibility of irregular beats on the bell. A contact between two block wires would cause signals given on one instrument to be repeated on the neighbouring instrument.*

*(ii) The telephone connected with the block instrument for train signalling, also shall be considered as having failed and working by means of the telephone would not be resumed until authorised by the Signal Inspector or any other authorised person.*

- vi) If the block instrument or its battery counter is found unlocked or seal missing.

- vii) When TOL buzzer fails to give the alarm for any reason at the receiving station, even after display of TOL indication on the block instruments.

*Note: (i) If a following train in the same direction working on PLCT actuates the TAR bell, block working may be resumed by Station Master.*

- (ii) If there is no following train but there is a train to proceed in the opposite direction the same will be dispatched on PLCT. The Station Master at the other end should use S 2 switch in the case of Diodo Handle type block instrument and operate the 'Cancellation' button / switch along with 'Bell code' push button in the case of Kyosan / Podanur push button type tokenless block instruments, as in the case of a train pushing back and receive the train on proper signals after which block working may be resumed without waiting for S&T staff.

- viii) When a material train etc., is required to be taken into a block section after traffic block has been imposed in accordance with S.R. 15.06.

*Note: Block working (with line clear exchange by any means) shall be suspended and the material train etc., started on T/462 or T/A462. After the traffic block has been removed, the Station Masters themselves shall resume block working in accordance with para 8.10 below.*

- ix) When a train is required to enter a block section which is obstructed by an accident or any other reason.

*Note: Block working (with line clear exchange by any means) shall be suspended and trains started in accordance with S.R.6.02. On the obstruction being removed, the Station Masters themselves shall resume block working in accordance with para 8.10 below.*

- x) If it is known that the block instrument is defective in any way not specified above.

**b) Diado Handle type tokenless block instruments – other failures:**

- i) If the galvanometer needle fails to move, when bell signals are given or received.
- ii) If the TOL indication fails to appear on the block instrument after the train has entered the block section.

- iii) If the Last Stop Signal cannot be taken ‘OFF’ when the block handle is turned to the TGT position;
- iv) If the Last Stop Signal can be taken ‘OFF’ when the block handle is not turned to the TGT position;
- v) When the train arrives at a station without ‘Line clear’ having been given for it;

*Note: This occurrence must be reported as an accident.*

- vi) Whenever the block handle is not free to be turned from one of the positions even after the correct sequence of operations;
- vii) If the block handle can be turned from TOL to ‘Line closed’ position before complete arrival of the train;
- viii) If the block handle can be turned to any of the three positions without a prolonged beat from the station at the other end;
- ix) If ‘Line clear’ when obtained cannot be cancelled even though proper procedure has been followed;

c) **Kyosan/Podanur Push button Tokenless block instrument – other failures:**

- i) If the ‘TGT’ indication is not displayed on the block instrument when operated or ‘TOL’ indication is not displayed on the block instrument after the train has entered the block section;
- ii) If the Last Stop Signal cannot be taken ‘OFF’ when the block instrument displays ‘TGT’ indication;
- iii) If the Last Stop Signal can be Taken ‘OFF’ without displaying ‘TGT’ indication on the block instrument;

*Note: This test shall be made when Station Masters take charge of the block instrument and the entry made in the Train Signal Register.*

- iv) When a train arrives at a station and the block instrument is not displaying TOL indication;

*Note: In this case, irregularities shall be reported as an accident.*

- v) If the ‘Line closed’ indication can be displayed on the block instrument before complete arrival of the train;
- vi) If the ‘TGT’ indication cannot be cancelled even though proper procedure has been followed;
- vii) If the ‘TGT’ indication can be cancelled without the co-operation of the Station Master as required in the procedure 3.3(B) at the other end of the block section;

**d) Failure of Axle Counter Proven Block Panel (UFSBI & SSBPAC (D) single line) and Last stop signal.**

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 Section 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 end 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 shows FLASHING GREEN/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 extant 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, after a Line Clear cancellation, CANCEL indicator does not light up FLASHING YELLOW or lights up steady YELLOW after appropriate actions or;
- xi) When SSBPAC (D) Fail indication appears;
- xii) When Communication Link Fail indication becomes steady yellow;
- xiii) When Last Stop Signal cannot be kept at 'ON' during its suppression/disconnection;
- xiv) When Last Stop Signal of the station does not go back to 'ON' position on the entry of a train into the Block Section;

- xv) When the Bell Code signals are received indistinctly or are not received and
- xvi) If it is known that the block panel is defective in any way not specified above.

*Note: Whenever, a difficulty is faced to set the Block Panel to TGT or 'Line Closed', the Station Master shall verify from other end Station Master about the availability of SNK, SHK (IN), SCK (IN) indicators before treating the Block Panel as failed.*

**e. Failure of Last Stop Signal:**

In the following cases of failure of LSS, Block instrument shall not be suspended.

- 1. Where block instrument is interlocked with LSS and LSS cannot be taken off even though Line Clear has been obtained on block instrument
- 2. Where block instrument is interlocked with IBS, direction of traffic has been established and line clear has been obtained on block instrument, but LSS cannot be taken OFF despite the track circuiting provided beyond the LSS and the axle counters provided at either end of block section are in working condition.

In both the cases above, the Last stop signal shall be treated as defective and PLCT (T/C or T/D 1425) shall be issued to Loco pilot as authority to proceed duly mentioning that Line clear was obtained through Block instrument.

Where IBS is working, it can be taken OFF.

Note: when Line clear is obtained on block instrument, filling T/A 1425 and T/B 1425 shall be dispensed with.

**Failure of IBS:**

During all cases of IBS failure, Block instrument shall be suspended. (*Item No. 13 of AS-6 Dt: 18.06.24*)

*NOTE: Failure advice: In case of Block panel or Last stop signal failure the Station Master on duty shall promptly advise the concerned Electrical Signal Maintainer and the Signal Supervisor and issue failure memo for the rectification of the failure.*

**8.2. Alternative means of communication:**

- a) In the event of failure or suspension of block instrument, Track circuiting or Axle counters, 'Line clear' shall be obtained by any one of the alternative means of communications in the order of priority indicated below:
  - (i) Telephone attached to Block Instrument;
  - (ii) Station to station fixed telephone wherever available;
  - (iii) Fixed telephone such as Railway auto-phone and BSNL phone;
  - (iv) Control telephone and
  - (v) VHF set.
- b) If all the above means of communications fail, the block section should be considered totally interrupted and trains shall be worked in accordance with the procedure laid down in S.R.6.02.4.
- c) All failures shall be reported promptly to all concerned.

**8.3. Block instrument failures record:**

A record of block instrument failures shall be maintained in the Signal and Block Inspection and Failures Register at the station