CHAPTER XIV

BLOCK WORKING

A. GENERAL PROVISIONS.

14.01. MEANS OF GRANTING OR OBTAINING LINE CLEAR - The running of every train shall, in its progress from one block station to another, be regulated by means of any one of or a combination of the following –

(a) electrical block instruments of token or tokenless type,

(b) track circuits,

(c) axle counters, or

(d) electrical communication instruments.

SR. 14.01: Use of walki–Talkie Sets: *Walkie – Talkie is a communication instrument which can be easily carried for making conversation between various officials involved in train working. This shall be used in the following instances:*

(i) In case a train has come to an out of course halt in Automatic Signalling Territory between two stations and is not in a position to move ahead and requires a relief engine, the Guard of that train shall guide the crew of a relief engine when it is to come to pick- up the train, except in suburban sections.

(ii) Station Master may communicate on Walkie-Talkie for advising abnormalities that require immediate attention by Loco Pilot/Guard for controlling/stopping their train.

(iii) Use of Walkie-Talkie sets should in no way contravene conditions required to be satisfied for reception/ dispatch of trains as per mentioned in this manual.

(iv) Walkie – Talkie sets should not be used as an alternative to written authority to proceed, authority to pass a defective signal at danger etc.

(v) These sets shall not be used for communicating the aspect/position of any signal by Station Master to Loco pilot/Guard. The loco Pilot / Guard may advise if the aspect of any signal is 'ON'.

(vi) Walkie-Talkie sets should not be used as an alternative to or replace physical exchange of signals. However in case of full length trains, in following circumstances, walkie- talkie sets may be used for exchange of signals between Loco Pilot and Guard when it is not possible to exchange signals physically and the conditions for exchange of signals have been fulfilled :-

(a) To Dispatch/start the train from a station;

(b) To start a train stopped in curvatures/tunnels in block section and

(c) On run, when it is not possible due to curvatures or due to geographical lay outs.

(vii) In all the above cases where the Station Master or Loco Pilot or Guard uses the Walkie-Talkie, he will clearly mention his identity along with station name/train number while communicating and also confirm the identity of the speaker at the other end.

14.02. PROVISION OF INSTRUMENTS –

(1) Electrical communication instruments shall be provided at every station, except at class 'D' stations where they may be provided under special instructions.

(2) (a) The electrical block instruments, where provided, and electrical communication instruments at any station shall be of a type approved by the Commissioner of Railway Safety and shall not be brought into use in the first instance unless they have been passed by him.

(b) The person in charge of the maintenance of electrical block instruments or electrical communication instruments shall not without the approval of the Commissioner of Railway Safety, permit the substitution, for the instruments and installation brought into use in the first instance, of any instruments or installation which do or does not satisfy the conditions prescribed in clause (a).

14.03. CONSENT REQUIRED BEFORE INTERFERING WITH BLOCK WORKING EQUIPMENT -

No railway servant shall interfere with the block working equipment, or their fittings for the purpose of effecting repairs, or for any other purpose, except with the previous consent of the Station Master.

SR.14.03 :

1. Whenever block instruments or their fittings are to be interfered with for testing, repairs or replacement, the competent S&T staff shall issue a Disconnection Memo on the prescribed form S&T(T/351) to Station Master clearly specifying the various signals which shall be affected during such repairs or replacement of block instruments. The Station Master shall not give his consent for this purpose unless the block section is clear of trains and the block instruments, where provided, have been brought to Line Closed position.

If a train is waiting at station to proceed, the block instruments or signals shall not be tested by S&T staff, unless it has been so authorized in writing by the Station Master, who, before giving such permission, shall inform the Loco Pilot of the waiting train in writing to treat signal/signals as defective. After the testing of the block instruments and signals has been completed and the Reconnection Memo received from S&T staff, the block instruments and signals shall be brought in use and normal working resumed. The Loco Pilot of the waiting train shall also then be advised to this effect.

B. BLOCK STATIONS AT WHICH ELECTRICAL BLOCK INSTRUMENTS, TRACK CIRCUITS OR AXLE COUNTERS ARE PROVIDED.

14.04. CERTIFICATE OF COMPETENCY –

(1) No person shall operate the electrical block instruments until he has passed a test in the operation of block instruments and unless he holds a certificate of competency granted by a railway servant appointed in this behalf by the Railway Administration.

(2) The certificate of competency referred to in sub-rule (1) shall only be valid for a period of three years or such longer period as may be laid down by special instructions.

SR.14.04 :

(i) No person should be permitted to operate a Block instrument unless he has satisfactorily passed the prescribed examination and holds a duly authorized certificate of competency.

This certificate shall be valid for a period of 3 years, Principal/Zonal Rail Training Institute shall issue the necessary certificate of Block competency to the staff concerned undergoing training after the initial, Promotional and Refresher Course.

Where, however, for any reason staff are not sent for Refresher Course within the period of 3 years, the validity of the Competency Certificate issued by the Principal/Zonal Rail Training Institute may be extended locally for a period of one year only after jointly re-examining the staff by TI(M)/Station Manager and Section Engineer (Signal) concerned. After extension of the validity has been certified by the TI(M)/Station Manager and Section Engineer(Signal), it shall be countersigned by the Sr.DOM/DOM or an Assistant Operations Manager duly authorized on this behalf.

(ii) The TI(M)/Station Manager and Section Engineer (Signal) must also have valid competency certificate from Sr. DSTE/DSTE/Principal, Zonal Rail Training Institute for Block competency for the purpose of discharging their duty under SR 14.04 (i).

(iii) In case of staff holding authorized certificate of competency, if they do not have to operate Block Instrument for a period exceeding one year, then a fresh certificate of competency will have to be obtained by them before they can operate the block instrument. Such certificate issued by TI/Station Manager and section Engineer (Signal) concerned. While issuing such certificate SR 14.04 (ii) must be complied with.

(iv) The competency certificate issued by Principal/Zonal Rail Training Institute must cover Panel/RRI working and first aid training in addition to block competency.

14.05. BELL CODE - For the signaling of trains, the prescribed code of bell signals as detailed below, shall be used, and a copy thereof shall be exhibited in each block station near the place of operation of the block working equipment

Ref. No	Indication	Code	How signaled	How acknowledged
1.	CALL ATTENTION, OR ATTEND TELEPHONE	O	One stroke orbeat	One stroke orbeat
2.	IS LINE CLEAR, OR LINE CLEAR ENQUIRY	OO	Two	Two
3.	TRAIN ENTERING BLOCK SECTION	OOO	Three	Three
4.	(A) TRAIN OUT OF BLOCK SECTION (B) OBSTRUCTION REMOVED	OOOO	Four	Four
5.	(A) CANCEL LAST SIGNAL (B) SIGNAL GIVEN IN ERROR	OOOOO	Five	Five
6. (A)	OBSTRUCTION DANGER SIGNAL (GENERAL)	OOOOOO	Six	Six
6. (B)	STOP AND EXAMINE TRAIN	OOOOOO - O	Six pause One	Six pause One
6. (C)	TRAIN PASSED WITHOUT TAIL LAMP OR TAIL BOARD	OOOOOO - OO	Six pause Two	Six pause Two
6. (D)	TRAIN DIVIDED	OOOOOO - OOO	Six pause Three	Six pause Three
6. (E)	VEHICLES RUNNING AWAY IN WRONG DIRECTION ON DOUBLE LINE OR INTO THE BLOCK SECTION ON SINGLE LINE	OOOOOO - OOOO	Six pause Four	Six pause Four
6. (F)	VEHICLES RUNNING AWAY IN RIGHT DIRECTION ON DOUBLE LINE	OOOOOO - OOOOO	Six pause Five	Six pause Five
7.	TESTING.	OOOOOOOOOOOO OOOO	Sixteen	Sixteen

NOTE : (1) 'O' INDICATES A STROKE OR A BEAT AND '—' INDICATES A PAUSE.

(2) EACH SIGNAL SHALL BE GIVEN SLOWLY AND DISTINCTLY.

(3) Exchange of bell code under reference no. 3 & 4 are not required in a section provided with Block Proving Axle Counter or Track Circuit having complete track circuiting of station yard excluding non -running lines on either end.

SR.14.05 :

(1) It must be clearly understood that telephone attached to block instrument does not do away with the necessity for the use of the authorized code of Bell Signals.

(2) In cases where block instruments are placed in cabins, the operator must, whenever the code signals for the following are given or received, immediately advise the Station Master at the station -

(a) Obstruction danger signal.
(b) Stop and examine train
(c) Train passed without tail-lamp or tail board
(d) Train divided.
(e) Vehicles running away on wrong line.
(f) Vehicles running away on right line.

14.06. ACKNOWLEDGMENT OF SIGNALS –

(1) Each signal received shall be acknowledged by sending its authorized acknowledgment.

(2) No signal shall be acknowledged until it is clearly understood.

(3) A signal shall not be deemed to be complete until it is acknowledged,

(4) If the station to which a signal is sent does not reply, the signal shall be repeated at intervals of not less than 20 seconds until reply is received.

14.07. TRAIN SIGNAL REGISTER –

(1) A Train Signal Register shall be kept by the Station Master or under his orders.

(2) All signals received or sent on the electrical block instrument and the timings of receipt and dispatch shall be entered therein, immediately after acknowledgment, by the person operating the block instrument.

(3) The timings entered in the register shall be the actual timings, except that any fraction of a minute shall be counted as one.

(4) All entries in the register shall be made in ink.

(5) No erasure shall be made in the register, but if any entry is found to be incorrect, a line shall be drawn through it, so that it may be read at any time and the correct entry shall be made above it.

(6) The person who keeps the register for the time being shall be responsible for all entries made therein and for correctly filling in each column thereof.

SR.14.07 :

(a) The Station Master, Assistant Station Master, Cabin Assistant Station Master or Switchman, as the case may be, who makes any entry for a train, shall continue on duty till all entries affecting that train are completed. By this is meant that the man who gives line clear for a train to enter the block section shall remain on duty till the train has arrived and the "Train out of section" signal has been given and acknowledged. The man who receives line clear for a train to enter the block section shall remain on duty till the" train out of section" signal is received and acknowledged.

Shunting Jamadar / Line Jamadar / Points man / Gateman and staff of other category related with train passing duty/ Shunting who have been personally intimated of the arrival/departure of a train and whose duties are directly concerned with the safe passage of train into or out of the Station or who they are associated with the shunting operation shall not go off duty unless properly relieved..

(b) When the Station Master, Assistant Station Master, Cabin Assistant Station Master or Switchman, as the case may be, change duty, a line must be drawn across the Train Signal Register Book underneath the entry of the last train. The person going off duty must note the state of Train Signal Register, record the time and sign his name above the line and similarly the reliever must do likewise below the line.

(c) In the case of a train working in the Block Section and in exceptional circumstance like accidents, engine-failures, OHE failures etc. where, abnormal delay to the train is apprehended sub-rule(a) need not be observed, but the entry in the train signal register with details of the train must be initiated by both men. An entry to this effect must also be made in the Station Diary and initialed by both Station Masters.

(d) Station Master at Stations where another person maintains the Train Signal Register must examine the book for its correctness by signing it. All irregularities noticed therein to be reported to the Sr. Divisional Operating Manager and Sr. Divisional Safety Officer. The Train Signal Register must not be taken out of office or Cabin in which the Block instruments is/are placed for any purpose whatsoever without the authority of Divisional Railway Manager/Principal Chief Operations Manager. Any other official while inspecting should check the train signal register also

(e) The Train Signal Register must be preserved by the Station master for one year after the completion.

(f) Train Signal Register to be maintained properly avoiding any correction. Alteration, if any, in Train Signal Register must be initialed in ink.

(g) The number of the token given to and received from each train must be entered in the Train Signal Register.

(h) The number of any token obtained from or returned to the instrument owing to cancellation, testing or transference must be entered in the Train Signal Register.

14.08. AUTHORITY TO PROCEED - The Loco Pilot shall not take his train from a block station unless he has been given an authority to proceed –

(a) on double line, by the taking 'OFF' of the last Stop signal, and

(b) on the single line, either -

(i) by a token for the block section, taken from an electrical block instrument, or

(ii) by a Line Clear Ticket duly signed by the Station Master, or

(iii) by any document prescribed in this behalf by special instructions, or

(iv) by the taking 'OFF' of the last Stop signal in lieu of tangible authority as mentioned in sub-clauses (i) to (iii) on sections provided with electrical block instruments of tokenless type or track circuits or axle counters.

SR. 14.08 : (1) Different authority to proceed are as follows:-

(A) ***Double Line-*** *"Taking 'OFF " of the Last Stop Signal.*

In case of failure of last stop signal or block instrument, T/369 (3b) to be issued quoting the private number so obtained from the station in advanced in confirmation of line clear.

(B) ***Single Line-***

(a) Token/Tablet along with the "taking OFF" of the last stop signal i.e. Advanced Starter or Starter as the case may be.

(b) Taking "OFF" of the last stop signal i.e. Advanced Starter or Starter as the case may be where Tokenless Block Instrument is provided.

(c) Where there is no departure signal, Paper Line Clear Ticket to be issued as an authority to proceed if token or tablet is not given as an authority to proceed.

(i) In case of failure of Single Line Block Instrument, Paper Line Clear Ticket to be issued as an authority to proceed in addition to the authority for passing the last stop signal i.e. Advanced Starter or Starter as the case may be.

(ii) Where Block Instrument is in working order and line clear can be obtained on the block instrument and token or tablet can be extracted, only T/369 (3b) to be issued if advanced starter or starter as the case may be is defective.

(iii) In case of failure of tokenless block instrument where provided, Paper Line Clear Ticket to be issued in addition to the authority for passing last stop signal i.e. Advanced Starter or Starter, as the case may be, on form T/ 369 (3b).

(iv) In case tokenless block instrument is in working order and Line Clear can be obtained on the block instrument but last stop signal i.e. Advanced Starter or Starter, as the case may be, is only defective, form T/ 369 (3b) only to be issued.

14.09. LOCO PILOT TO EXAMINE AUTHORITY TO PROCEED –

(1) The Loco Pilot shall ensure that the authority to proceed given to him is the proper authority under the system of working and refers to the block section he is about to enter, and if the said authority is in writing that it is complete and duly signed in full and in ink.

(2) If the conditions mentioned in sub - rule (1) are not complied with, the Loco Pilot shall not take his train past or start from the station until the mistake or the omission is rectified.

SR.14.09 : *(i) A damaged token/tablet must not be accepted as an authority to proceed by the Loco Pilot.*

(ii) The Loco Pilot must not accept an Authority to proceed when it is in writing, if any erasures or corrections have been made therein. When any mistake has been made in writing out the authority to proceed, a fresh one must be prepared and issued.

14.10. CONDITIONS FOR CLOSING THE BLOCK SECTION –

(1) When the block section has been cleared by the arrival of the train or by the removal of the cause of blocking, the block section shall be closed by the block station in advance by giving the prescribed bell code signal.

(2) Before such signal is given, the Station Master shall satisfy himself as per the prescribed special instructions -

(a) that the train has arrived complete, or the cause of blocking the section has been removed, and

(b) that the conditions under which Line Clear can be given, are complied with.

(3) The provision of clause (b) of sub-rule (2) may be relaxed at class 'A' single line crossing stations. In such cases, the Station Master shall satisfy himself that the train is standing at its Starter clear of the line on which the second train is to run.

(4) Where in a section, a block proving axle counter or continuous track circuiting between block stations and complete track circuiting of station section excluding non-running lines of the receiving station is installed and is functioning and there is a clear indication of clearance of block section as well as complete arrival of the train as per indication given, it would be taken as assurance for complete arrival of the train to the Station Master.

SR.14.10 :

(i) In cases where the Block Instruments are not located in the Cabins, before the line clearsignal is sent, the Station Master shall obtain an assurance from the Cabin staff that the conditions under which line clear may be given have been complied with. The assurance shall be confirmed by exchange of Private Number.

(ii) At stations where Block Proving Axle Counter of continuous track circuiting between two block stations is provided, closing of Block Section is done automatically and if it shows clear indication; clearance of Block Section is ensured. In case of any eventuality when section is showing clear but there is chance of any blockade/obstruction etc., SM must turn LCB key to 'OUT' so that the Line Clear cannot be obtained by station in rear. Further action for granting Line Clear to be taken only when clearance /safe passage of train is ensured. In case BPAC is defective, action as mentioned in SWR to be taken.

14.11. RESPONSIBILITY OF STATION MASTER AS TO AUTHORITY TO PROCEED –

(1) An authority to proceed shall not be given to the Loco pilot until the procedure prescribed for the purpose, so far as it is applicable in the particular case, has been followed.

(2) An authority to proceed shall not be given to the Loco Pilot except by the Station Master or by some railway servant appointed in this behalf by special instructions.

(3) The Station Master shall see that the authority to proceed given to a Loco Pilot is accurate and that, when it is in writing, it is complete and is signed in full and in ink.

(4) If the train stops at the station and is waiting to cross another train, the authority to proceed shall not be given to the Loco Pilot until the whole of the latter train has arrived and is clear of the running line for the former train.

(5) If two engines are coupled together or if one engine is in front and another in rear of the train, the authority to proceed shall be given to the Loco Pilot of the leading engine.

14.12. SPECIAL RESPONSIBILITY AS TO ELECTRICAL TOKEN INSTRUMENTS AND TO THE TOKEN -

(1) The Station Master shall be responsible to ensure that –

(a) no one but himself operates the electrical block instruments,

(b) the procedure regarding bell signals and in addition any Communication made by electrical communication instruments including the use of a private number, as laid down under special instructions, is correctly carried out,

(c) in the case of stopping trains, the incoming token is surrendered by the Loco pilot before an outgoing token is delivered to him,

(d) When he receives the token of an incoming train, it is put in the electrical block instrument immediately, and

(e) no one except the person authorized by special instructions opens the electrical block instruments.

(2) (a) A token shall not be taken out of an electrical block instrument earlier than necessary and when taken out, its number shall be recorded in the Train Signal Register, and it shall be kept in the personal custody of the Station Master till issued to a Loco Pilot or returned to the instrument.

(b) On arrival of the train at the block station in advance, the Loco Pilot shall give up the token in accordance with special instructions, and this token shall then be placed in the electrical block instrument at that station.

(c) If the train has to return to the block station from which it started, the token shall, on such return, be replaced in the electrical block instrument from which it was extracted.

14.13. FAILURE OF ELECTRICAL BLOCK INSTRUMENTS OR TRACK CIRCUITS OR AXLE COUNTERS -

(1) If the electrical block instruments, track circuits or axle counters or their electric connections fail. Line Clear shall be obtained through the electrical communication instruments.

(2) When Line Clear has been so obtained, an entry to that effect shall be made in the Train Signal Register, and the train may be allowed to proceed on the issue of a written authority to proceed, which shall also bear a remark to that effect.

14.14. CLOSING OF INTERMEDIATE BLOCK POST - If the electrical block instruments provided at the stations on either side of an Intermediate Block Post or the track circuiting provided beyond the Last Stop signal, or the axle counters provided at either end of block section fail, the Intermediate Block Stop signal shall be treated as defective and the Intermediate Block Post shall be deemed to be closed and the section between the stations on either side of the Intermediate Block Post shall be treated as one block section.

C. BLOCK STATIONS AT WHICH ELECTRICAL BLOCK INSTRUMENTS ARE NOT PROVIDED.

14.15. TRANSMISSION OF SIGNALS - For the working of trains at such stations where electrical block instruments are not provided, signals as prescribed under special instructions shall be transmitted, as occasion may require, on the electrical communication instruments.

14.16. TRAIN SIGNAL REGISTER - The Train Signal Register referred to in Rule 14.07 shall also be maintained at block stations where block instruments are not provided.

14.17. FORMS FOR MESSAGES AND WRITTEN AUTHORITY TO PROCEED –

(1) All messages dispatched in connection with the working of trains, and all written authorities to proceed, shall be written on forms specially provided for the purpose by the Railway Administration.

(2) Such forms shall be bound up in books and kept at each block station by the Station Master, or by some railway servant appointed in this behalf by special instructions.

14.18. DISTINCTION OF MESSAGES –

(1) Every message dispatched in connection with the working of a train shall distinctly describe the train to which it relates.

(2) For every train a separate inquiry and reply shall be sent.

14.19. WRITING AND SIGNING OF MESSAGES AND WRITTEN AUTHORITIES TO PROCEED –

(1) All message dispatched in connection with the working of trains and all written authorities to proceed, shall be written up in ink and signed by the person authorized to dispatch or issue the same.

(2) No messages or written authority to proceed shall be written out, either in full or in part, or signed, until necessary.

14.20. COMPLETION OF MESSAGES - No part of any message shall be dispatched or acted upon until the whole message has been written out except with a view to the prevention of an accident, or in some other case of emergency.

14.21. PRESERVATION OF MESSAGES AND WRITTEN AUTHORITIES TO PROCEED - Messages and written authorities to proceed shall be destroyed at such time after issue as may be prescribed by special instructions:

Provided that no message or written authority to proceed shall be destroyed before one month after issue.

SR. 14.21:

(i) (a) *Train Signal Register, Line clear Enquiry and Reply Books and counterfoil of Caution orders and Authority to proceed without Line clear must be preserved for one year by the Station Master.*

(b) *Paper Line clear Ticket, Authority to Proceed without Line clear Tickets and Caution Orders must be preserved by the Mechanical Department for one year.*

14.22. CANCELLATION OF LINE CLEAR - On a single line when a Line Clear has been cancelled, no train shall be allowed to leave in the opposite direction until a message has been received acknowledging such cancellation and stating that the train for which the Line Clear has been given is and shall be detained.

14.23. LOCO PILOT TO HAVE AUTHORITY TO PROCEED - The Loco Pilot shall not take his train from a station unless he has in his possession, as his authority to proceed, a Line Clear Ticket duly signed by the Station Master.

SR.14.23 :

(i) If a Loco Pilot finds, the Token cannot be extracted from the Token Exchanger Box in a siding in mid-section he must proceed with his train as usual at the normal running speed prescribed over the section to the block station and report the matter to the Station Master.

14.24. AUTHORITY TO PROCEED WHEN TO BE GIVEN TO LOCO PILOT - An authority to proceed shall not be given to the Loco Pilot until the procedure prescribed for the purpose, so far as it is applicable in the particular case, has been followed.

D. LINE CLEAR TICKETS.

14.25. (1) When owing to failure or non -provision of electrical block instruments the authority to proceed is a Line Clear Ticket, it shall be in prescribed format.

(2) Each such ticket shall bear a serial number which shall be recorded in the Train Signal Register, the numbers for the Down direction being clearly distinguished from those for the UP direction.

(3) The ticket referred to in sub-rules (1) and (2) shall be printed on white paper with blue font. To distinguish paper Line Clear Ticket for Up and Down direction, water mark arrow pointing Up and Down will be printed on the ticket.

E. USE AND OPERATION OF BLOCK WORKING EQUIPMENT.

14.26. USE AND OPERATION OF BLOCK WORKING EQUIPMENT - The use and operation of electrical block instruments shall be governed by special instructions to be issued with the prior approval of the Railway Board.

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