



SOUTH EAST CENTRAL RAILWAY

BLOCK WORKING MANUAL

FOR OFFICIAL USE ONLY

EDITION – 2008

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PREFACE

1. The Block Working Manual of S.E.C. Railway deals with the rules for working of Block instruments which governs the movements of trains in Single line, Double line, triple lines and Quarduple lines sections under the guidance of General and Subsidiary Rules, 1998.

2. The rules in this Manual do not cancel or amend any rules of General and Subsidiary Rules for the purpose of training any procedure of working oif the Block Instruments either in Single line / Double lines / triple lines or Quarduple lines.

3. A new Chapter has been aded in this book as Chapter-III A which deals with the working of Trains under the system of Block proving with Axle Counter.

4. Staff concerned possess a copy of this book and should be thoroughly acquainted with the rules and regulations incorporated in this book as also with the amendment subsequently issued and notified from time to time.

5. The Addendum & Corrigendum nos. 1 to 9 have been incorporated in this new printed book.

Bilaspur

CHIEF OPERATIONS MANAGER

BLOCK WORKING MANUAL

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CHAPTER - I

PRELIMINARY

1.01. Issue of Block Working Manual.- This book of rules and regulations for working trains on Single/Double/Triple lines by Electrical Block Instruments/Electrical communication Instruments on absolute Block System as also on Automatic Block System shall be issued to such staff as directed by the Chief Operations Manager, South East Central Railway, under whose authority this Manual has been issued. Any addendum and Corrigendum that may from time to time be notified, shall be neatly posted and shall be recorded on the pages provided for the purpose.

1.02. This Manual shall be studied by the staff in conjunction with the General & Subsidiary Rules book to which it is a companion volume. Nothing in this shall supersede or cancel any of General or Subsidiary rules and shall be equally binding on the staff.

1.03. System of working.- Refer SR 7.01.01.

1.04. The object of signalling trains by Electrical Block Instruments is to provide at all times a visual indication of the state of the Block section to which they refer and to guard against two trains being admitted into a Block section at the same time. Each instrument is connected to a similar instrument at the next block station and the two work together.

1.05. Fixed, hand and Fog and Flare Signals.- Signalling trains by Electrical Block Instruments Electrical communication Instruments does not in any way dispense with the use of Fixed, Hand or Fog or Flare signal, whenever and wherever such signals shall be required to protect trains from obstructions on the line, nor does it change, in any way, the rules in force in regard to such signals.

1.06. Certificate of competency. -Refer GR14.04 and SR 14.04.01.

1.07. Instructions to staff.-

(1) The staff operating electrical block instruments shall be thoroughly instructed in the working of the same and the instructions shall include a clear demonstration of the visible signs which denote that any instrument is not in proper working order, or that the current is being irregularly received.

(2) Instrument in actual use for train working shall. on no account, be used for the purpose” of instructing the staff.

(3) The operating staff shall be responsible for the safe working of the instruments. The staff shall follow the correct code and the proper sequence of operation.

CHAPTER - II

GENERAL

2.01. A train message :- Train message is a message transmitted over the electrical communication instrument purporting to be :-

(i) an application for "Line Clear" for a train/Motor trolley etc. (called a Line Clear Enquiry message), or

(ii) a reply to the application for "Line Clear" for a train/motor trolley, etc. (called a "Line Clear Reply" message), or

(iii) a refusal to grant "Line Clear" in reply to an application for "Line Clear" for a train/motor trolley, etc. (called "Obstruction Danger" signal), or

(iv) a cancellation of a "Line Clear Enquiry" message or a "Line Clear Reply" message already despatched, or

(v) a departure report of a train/motor trolley, etc. (called "Out Report"), or

(vi) an arrival report of a train (called "Train out of block section" signal or "In Report").

2.02. Private Numbers :-

(1) The Station Master of every block station as well as others to whom the specific responsibilities for use of Private Numbers have been laid down under the relevant rules prescribed in G & SR, other Manuals and working rules shall be provided with books bearing a series of Private Numbers. These books shall be supplied by the Divisional Operations Manager/Divisional Safety Officer. The blocks which are not in use shall be kept under the safe custody of the official-in-charge to whom the books are supplied. The book in use shall be kept in the safe custody of the staff on duty who is entrusted with the responsibility for its use during the course of his duties. On being relieved, he shall hand it over to the person relieving him.

(2) Each Private Number consists of two digits. Such numbers are not printed in consecutive order but in random series. The numbers shall be allotted in the order printed.

(3) When a Private Number has been used, the figures to be scored out by drawing in ink a diagonal line through them, care being taken that the number thus scored out is not obscured or obliterated. The train number and/or the purpose for which a private number is allotted shall be entered against it.

(4) Should it occur from any cause (such as a misprint including obscured, illegible or the changing from one page to another) that a Private Number is the same as the last one issued, the person issuing the Private Number shall cancel this number with the remark "Same as last Private Number", sign it and issue the next different number. Should the message have been completed before the duplication of numbers is discovered, it shall be cancelled entirely and re-written with a fresh and different Private Number.

(5) When changing duties, a line shall be drawn horizontally below the last Private Number used by the person relieved and initialled by the person going "off duty" and the person coming "on duty".

(6) At mid night a line shall be drawn in red Ink horizontally below the last Private Number used on the previous day and the date being written below the horizontal line.

(7) The Divisional Operations Manager / Divisional Safety Officer shall issue to SM/PWI/ CHC/CTFO/CTPC and other officials concerned in the first instance, adequate number of Private Number books as may be necessary taking into consideration the frequency of train service, the number of cabins, level crossing etc., who in turn shall issue a Private Number book to the concerned railway servant to whom specific responsibilities have been laid down for its use under the relevant rules in the G & SR, other manuals and working rules. As soon as a book is exhausted, it shall be sent in a sealed cover to the DOM/DSO by the official-in-charge to whom it was issued when it shall be replaced by another. The Station

Master and other official-in-charge shall be responsible to ensure that sufficient spare books are on hand.

(8) Operating Inspecting officials while inspecting stations/cabins/level crossing gates shall check and compare a few Private Numbers exchanged and take up instances when the numbers do not agree. Similar countercheck shall be made by Station Masters in course of their daily check of Train passing records.

(9) In the Line Clear message, Private Numbers are to be written out and signalled in words and not as numerals.

(10) When Private Numbers are transmitted over the telephone it shall be given and acknowledged in two different ways e.g. "Thirty six"- "Three six". In addition, when possible shall be given in the regional language as well.

(11) A Private Number allotted and used for one purpose shall not be re-used for another purpose.

2.03. Incorrect Authority to Proceed :- When a Line Clear Ticket is issued to the Driver of a train with wrong date, wrong train number, or other error on it, or without Private Number, or with the Private Number not written both in words and figures, it is not to be surrendered to anyone else except the Loco/Shed/Traction Foreman of the Home station of the Driver and the Loco/Shed/ Traction Foreman shall forward the same to the concerned Divisional Safety Officer to take up with the staff at fault. The Driver shall, however, inform the Station Master in writing in what way it is incorrect, and the Station Master shall issue a fresh Line Clear Ticket, Under no circumstances the Driver shall take his train into the Block section with incorrect Line Clear Ticket. In the case of a wrong token, it shall be returned to the Station Master who shall issue a written memo to the Driver on receipt of the said Token. All cases of incorrect "Authority to Proceed" shall be reported at the end of journey to the Loco/Shed/Traction Foreman who shall send a special report to the concerned Divisional Safety Officer.

2.04. Delivery of Authority to Proceed :- (Refer GR 14.11)

- (1) Exchange of Tokens between Drivers and Station Masters. -
 - (a) For the purpose of exchanging Tokens/Line Clear Tickets at stations, leather pouches are provided. Care shall be taken, when fastening the pouch, that the Token/Line Clear. Ticket is properly secured.
 - (b) Line Clear hoops shall be attached to all pouches and carried by Drivers from station to station. The Station Masters shall ensure that the hoop selected for making over the Token/Line Clear Tickets to the Driver is in Good condition.
 - (c) Immediately after a Token has been taken out from the instrument by the SM on duty, he shall check that the Token relates to the Block section over which the train is to run, record the number of the token and place the same in the leather pouch provided for the purpose. The token shall not be removed from the pouch by Drivers except for inspection and they shall hand over the pouch with the Token inside it to the Station Master, or other duly authorised person at the other end of the section. A Token must not under any circumstances be taken beyond the Block station at the end of the Block section to which it refers. In case of line clear ticket, caution order or starting order the Driver shall remove the same and the hoop thrown back on to the platform at a place where no people are standing.
 - (d) The Station Master on receiving the Token from the Driver shall check that the Token relates to the Block section over which the train has just travelled and after recording the number of the same in the Train Signal Register, place it in the concerned instrument provided the conditions prescribed under GR 14.10 are complied with.

- (e) In cases of trains (Mail, Express & Passenger) with short halts, the outgoing Token/Line Clear Ticket (Secured in the hoop & pouch) shall be handed over to the Driver as the engine passes the station office but not before he has made over the incoming Token and provided there is no Caution Order is being issued for which signatures of the Guard & Driver are to be obtained. The Station Master shall be responsible in such cases to ensure that the Starting signal(s) is/are not taken 'off until it has come to a stand except as provided for in SR 3.36.04(c).
- (f) For other stopping trains the Station Master shall depute one of the qualified station staff to receive the Token from the Driver who shall immediately bring it to the Station Master. The Line Clear Authority (token or Line Clear Ticket) may be handed over to the Driver by the Guard, SM, ASM or a station staff who is qualified to understand and read the code abbreviations of the adjacent Block stations and are thoroughly acquainted with the difference of Up and Down Line Clear Tickets and the Up and Down directions.
- (g) In the case of a train having to cross another train already in the station or where special net for collecting the incoming token is not provided, the Token should be dropped by the Driver of incoming train opposite the Station building. The Station Master shall post one of the qualified station staff to receive the Token so dropped.
- (h) In the case of through trains passing over the main line at interlocked stations, the Token shall be made over to the pick-up apparatus as mentioned in para 2 below.
- (i) At non-interlocked stations and also at interlocked stations when the through trains are passed over the loop lines, the "Authority to Proceed" shall be made over opposite the station office/cabin.
- (2) **Picking up 'Authority to Proceed'.**-
 - (a) At all stations on the single line, the Token shall be handed over to the Driver/Fireman/ Assistant Driver of a run through train by means of a Line Clear hoop by a member of the Station staff. *Where* stands are provided for fixing the line clear hoop in position for being picked up, the person deputed for this purpose must place it in position and remain there till the train has passed. At night or during fog impairing visibility a white light shall be displayed near the hoop to illuminate the area in order to indicate to the engine crew the position of the line clear hoop.
 - (b) In case the Driver/Fireman/Assistant Driver fails to pick up "Authority to Proceed" or the "Authority to Proceed" picked up is found incorrect, the Driver shall bring the train to a stop at once and sound, the engine whistle thus '0-0" immediately. the train must not be pushed back. If the "Authority to Proceed" could not be picked up, the Station Master shall arrange to send the same to the Driver by a member of the station staff with least possible delay.
But in case of incorrect "Authority to Proceed", action shall be taken in terms of para 2.03.
 - (c) All cases of trains being stopped owing to the "Authority to Proceed" not being in proper position for picking up or due to incorrect "Authority to Proceed" or due to failure of the Driver/Fireman/Assistant Driver to pick up "Authority to Proceed" shall be reported by the Guard in his journal.
 - (d) Whenever circumstance warrants, caution order/Line Clear Ticket or any other advice as may be required to be delivered to a Driver of a through passing train may also be delivered in the manner detailed in the foregoing paragraphs.
 - (e) While passing through, Driver/Fireman/ Asstt. Driver shall drop the Token duly secured in pouch and hoop complete into the net where provided for the purpose. Where nets are not provided the Driver/ Fireman/Asstt. Driver shall drop the same off the engine opposite the station building where no people are standing in such a

manner so that the station staff may find it easily. The Station Master shall depute a qualified station staff to recover the Token soon after it is dropped.

2.05. Withdrawing an “Authority to Proceed”.-

If for any reason a train has to be detained and the ‘Authority to Proceed’ already delivered to the Driver has to be taken back, the Station Master shall do so by a written memo.

2.06. Bell Code: (Refer GR 14.05)- The signals on the Bells must be made slowly and distinctly and the pauses between the sets of beats clearly marked. Bell plunger/Bell push button must be pressed into its full extent with a slight pause between each stroke or pressure. It must be ensured that the Bell plunger resumes its normal position after each signal has been made.

2.07. Use of Bell codes for working trains-

- (1) “Call attention” signal.- The “Call attention” signal shall be given when it is necessary to direct attention to the Block Instruments. The Station Master/Switchman receiving the signal shall immediately acknowledge the same.
- (2) “Attend Telephone” signal.-In order to ascertain whether the correct Block station/cabin is in contact and to convey the description and number of the train for which line clear is required, as well as to ascertain whether the Block station/cabin in advance is in a position to accept the “Is Line Clear” Signal the “Attend Telephone” signal is to be given.

Note: In case the Block station/cabin in advance is unable to accept “Is Line Clear” signal, a reply shall be given expressing its inability stating the reasons thereof. The times of transaction of messages indicating the reasons shall be recorded in the Train Signal Register at both stations/cabins.

(3) “Is Line Clear” or “line Clear Enquiry” signal, when to be sent.

- (a) The “Is Line Clear” or “Line Clear Enquiry” signals shall be sent only after it has been ascertained according to the procedure laid down in clause (2) above, that the station in advance is able to accept the signal.
- (b) The ‘Is Line Clear’ or “Line Clear Enquiry” signal shall not be given until the “Train out of Block section” signal has been received for the last preceding train from the block station/cabin in advance.
- (c) The “Is Line Clear” or “Line Clear Enquiry” signal for a train shall not be given until the “Train entering Block section” signal for the train has been received from the block station/cabin in rear. But in cases where the booked run of the train is short and waiting for the “Train entering block section” signal is likely to cause detention to the train the “Is Line Clear” signal may be sent to the block station/Cabin in advance immediately on sending the “Line Clear” signal to the block station in rear, provided the condition prescribed in sub-clause(b) above is complied with. In case of terminal/Engine/Crew changing station, this signal shall not be sent more than fifteen minutes before the train is ready to start.
- (d) Each line clear enquiry message as also the Line Clear Reply message shall clearly indicate the type of locomotive, whether there are more than one Engine on the train and when working the train in terms of SR 4.23.02 and SR 4.25.02, the last vehicle number also.

(4) Acceptance of the “Is Line Clear” Or “Line Clear Enquiry” signal, and sending of a “Line Clear” signal.

- (a) If, on the receipt of “Is Line Clear” signal, the conditions under which “Line Clear” can be given are complied with, the Block station/Cabin in advance shall accept the

signal by acknowledging the same to indicate "Line clear" on the Particular Block Instrument in use -

- (b) Except in case of failure of the block instruments, a train shall not be allowed to leave a block station unless the "Line Clear" signal has been received.

(5) "Train Entering Block Section"- when to be sent.

- (a) On Double Line section, the "Train Entering Block Section" signal shall not be sent to the Block Station/Cabin in advance unless :

- (i) The last vehicle of the train with the last vehicle indicator has passed the last stop signal, and
- (ii) The train is running in a safe and droper ordered.

At stations where Block Instruments are installed in the station master's office, the trailing end cabin shall, after satisfying himself with the conditions prescribed in subclauses (i) and (ii) above advise the station master supported by a Private Numbers. The Station Master supported by a Private Numbers. The Station Master shall then send the "Train entering block section" signal to the Block Station in advance.

- (b) On Single line section, the Procedure detailed in clause.

- (a) above shall be followed. But at stations where last stop signal is not provided, the "Train entering Block section" signal shall be sent after the train with last vehicle indicator has passed the -

- (i) outermost trailing points or shunting limit board, where provided, in case of stations having multiple aspect or Modified Lower Quadrant signals, or
- (ii) outermost trailing points or opposite home signal, if any, or the shunting limit board where provided, in case of stations having Two aspect signalling.

- (c) The Block Station/Cabin receiving the "Train entering Block section" signal shall at once acknowledge the same. When so acknowledged, the block section shall be deemed to be blocked against other train.

- (d) At Stations where considerable delay takes place in sending the "Train entering Block section" signal or acknowledgement thereof by the station ahead, the time of train entering the block section shall also be repeated on Block-telephone and entry to this effect be made in the remarks column of the Train Signal Register.

- (e) Whenever a train is worked under the provisions of SR 4.23.02 or 4.25.02, the last vehicle number shall also be repeated over the Block telephone in addition to the sending of "Train entering Block section" signal as provided for in clauses (a) or (b) above.

- (f) Whenever vehicles are attached behind the rear brakevan in terms of SR 4.24.01, and intimation in regard to the number of vehicles attached in rear of the brakevan shall also be given over the Block telephone in addition to sending of "Train entering Block section" signal in terms of clauses (a) or (b) above.

- (g) Whenever an intimation is given or received in terms of sub-clause(c) or (f) above, an entry to this effect shall be made in the remarks column of the Train signal register at both stations.

(6) "Train out of Block section" signal when to be sent:-

- (a) This signal shall not be sent to the Block station/cabin in rear unless the conditions prescribed in GR 14.10 and SR 4.17.01 are complied with.

- (b) Whenever an intimation has been received under clause(e) of sub-rule 5 above, the last vehicle number shall also be repeated over the block telephone to the block

station/cabin in rear in addition to the sending of "Train out of block section" signal as mentioned in clause(a) above.

(7) "Obstruction Removed" signal, when to be sent :-

When the block section is cleared by the removal of the cause of blocking, such as blockback or block forward as per GR 8.14 or on the removal of the obstruction for which "Obstruction Danger" signal was sent, this signal shall be sent to the block station/cabin at the other end of the concerned block section. Private Numbers shall be exchanged whenever "Obstruction Removed" signal is sent and acknowledged.

(8) "Cancel last signal" or "Signal given in error", when to be sent :-

- (a) This signal cancels the last signal given from the block station from which it was sent.
- (b) Where an 'Is Line Clear' signal has been forwarded and it is afterwards found that train to which it refers has to be detained for shunting or other purposes, or in case a train returns to the starting block station from which that signal was sent, the "Cancel last signal" shall be sent to the block station/cabin in advance, so that the previous signal may be cancelled.

(9) "Obstruction Danger" signal, when to be given :-

- (a) Whenever in consequence of any obstruction or other unusual circumstances it becomes necessary for a block station/cabin to refuse "Is Line Clear" signal for which permission has already been given over the block telephone, the station receiving "Is Line Clear" signal shall refuse it by sending "Obstruction danger" signal, or
- (b) If a block station/cabin is unable to accept a train for which "Line Clear" signal was sent earlier and the train is to be stopped at the block station in rear, "Obstruction danger" signal shall be sent by the block station/cabin in advance, or
- (c) Whenever a block station/cabin receives information of an accident or disabled train, "Obstruction Danger" signal shall be sent to the block station/cabin at the other end.

Note: For sending "Obstruction Danger" signal "Call attention" signal need not be sent.

- (d) The block station receiving "Obstruction danger" signal shall immediately replace the signal(s) governing the departure of the concerned train into the block section concerned to 'ON' and then acknowledge the same. If the block station fails to stop the train, such block station shall at once advise the block station from where "Obstruction Danger" signal was received, over the block telephone and then send the "Train entering block section" signal.
- (e) Once a block station acknowledges "Obstruction danger" signal, no train shall be allowed to proceed towards the block station from where "Obstruction Danger" signal was sent unless "Obstruction removed" signal is signalled by such block station and acknowledged by the block station in rear and advance respectively.
- (f) Private Number shall be exchanged whenever "Obstruction Danger" signal is sent and acknowledged except in case of clause (c) above.

(10) "Stop and examine train" signal :-

- (a) The signal shall be sent to the block station/ cabin in advance in the event of the contingencies mentioned in SR 4.29.01 and sub-rule (d) of SR 4.42.02 or when passengers are observed raising signal of alarm. This signal shall also be sent to the block station in advance in case a train becomes divided while starting and the Driver runs forward with a portion of a train leaving the rear portion stationary at a station. The full particulars shall also be given over the block telephone.
- (b) The block station/cabin receiving the signal shall at once acknowledge the same, ensure that the signal(s) governing the departure of the train is/are at 'ON' and take all possible measures to stop the train. In case the cause of sending this signal is due to hot-axle or derailed vehicle/dangerous condition of running gear of any vehicle, action shall also be

taken by the block station/cabin in terms of sub-rule (a) or (b) respectively of SR 4.29.03.

- (c) On double, treble or parallel single line section, the block station/cabin sending and acknowledging this signal shall not permit any train(s) to run over the adjacent line(s) provided a caution order is issued to the train crew to keep a sharp look out.
- (d) If the cause of sending this signal is due to goods falling off or when passengers are observed raising signals of alarm, block station in rear shall also be advised while sending "Train out of block section" signal about the circumstances. A caution order with an endorsement to proceed with caution and be prepared to stop short of any possible obstruction and report the state of the concerned section to the Station Master at the other end of the section, shall be issued to the Driver of the first available train which is to run over the adjacent line or the same line.

(11) "Train passed without last vehicle Indicator" -

- (a) This signal is to be sent to the block station/ cabin ahead in order that an assurance is obtained from the Guard of the train which has passed without last vehicle indicator that his train is complete. If there is any doubt that the train which passed without last vehicle indicator is also divided and a portion of the train is left in the block section in rear, "Train Divided" signal shall also be sent to the block station/cabin in rear.
- (b) The block station/cabin receiving the "Train passed without last vehicle indicator" signal shall take steps as indicated in sub-rule(c) of SR 4.17.02. But in case the block station/cabin does not succeed in stopping the train, such station shall advise the next block station ahead in the similar manner.

(12) "Train Divided" :-

- (a) This signal shall be sent to the block station in advance in the event of a Station Master/ Switchman observing that train has become divided and is running in two or more parts. If the train is running on a falling grade as on also a level grade but the section is short and the stoppage of the first part may cause a collision with the second part, the block station/cabin receiving the signal shall not show the signal to stop the first portion but shall exhibit the signal as illustrated under GR 3.55, provided:
 - (i) the line on which the divided train is running clear ahead for it to run on ; and,
 - (ii) on single line, line clear has not been given for a train to approach from the opposite direction.
- (b) as Soon as a Driver and a Guard become aware that their train is divided, they shall act in the manner detailed in GR 6.08.
- (c) If the line is not clear upto the next station ahead, the block station receiving the "Train Divided" signal shall arrange to stop the approaching train. As soon as the first portion of the train stops, proper measures for dealing with the second portion be taken as the situation may warrant. Signals shall be given to the Guard to control the rear portion and detonators shall be placed on the rails to attract the attention of the Guard.
- (d) If the divided train is running on a rising grade, the block station/cabin receiving the signal shall stop the first portion, shunt the same into a siding or on any other available line as expeditiously as circumstances will permit, or otherwise delt with as may be necessary to prevent the second portion coming in collision with it,
- (e) "Train divided" signal shall be sent to the Block station in rear when the Station Master/ Switchman has reason to believe that a portion of the train, which has passed his station without Last Vehicle Indicator, may be left in the section. The manner in which the signal shall be sent and further action to be taken by the Station Master/Switchman sending and receiving the signal shall be as follows :-

- (i) If a train from station 'W' passes station 'X' in the direction of 'V' and 'X' has reason to think any portion of it is missing, he shall send the "Train Divided" signal to 'W'. Whenever this signal is used, the "Train passed without Last Vehicle Indicator" signal shall also be sent to station 'V', if the front portion of the train has already passed beyond 'X'.
- (ii) On receipt of the "Train Divided" signal from station 'X', 'W' shall acknowledge it by repeating it, and shall take immediate steps to ensure the safety of any portion of the train or vehicles which may be left behind. He shall not give "Line Clear" to the station in rear or if a train has already left the station in rear, he shall stop it outside the first Stop signal and warn the Driver of the impending danger. The route shall be set to a clear line to catch the vehicles if they roll back, unless the station section is protected by a catch siding.
- (iii) The train which is to run on the adjacent line between station 'X' and 'W' shall be stopped and a caution order be issued explaining the occurrence and instructing to the Driver to find out the whereabouts of the missing vehicles and report at the next station.
- (iv) When it is ensured that the line is clear and the obstruction, if any, removed, the "Train out of block section" or "Obstruction Removed" signal may be sent over the 'Y-X', and 'X-W' Block sections and this will be an intimation that the Block section is clear and free from obstruction.

(13) "Vehicle running away into block section in single line".-

- (a) This signal is to be sent from a block station/ cabin say, 'X' to the block station/cabin, say, 'V' in the direction of which any vehicle, train, engine or portion of a train is running away. In addition to sending "vehicle running away into block section on single line" signal, full particulars of the vehicles running away shall also be given over the telephone. (GR 6.11 and SR 6.11.01)
- (b) Station 'V' receiving this signal shall at once acknowledge it and stop any train about to proceed into 'V'-'X' block section and take appropriate measures that may be necessary to avert an accident such as diverting the run-away vehicle(s) on to a clear line or into a siding or to take action as specified in SR 6.11.01 (a). If line clear has been given for any train from the block station at the other end i.e., 'I' or if the 'V'-'I' block section is clear, "Obstruction danger" signal shall at once be sent from block station 'V' to 'I'. If 'V'-'I' block section is clear, "Obstruction danger" signal shall at once be sent from block station 'V' to 'I'. If 'V' to 'I' block section is occupied by a train moving towards station 'I', station 'V' shall at once advise him of the impending danger whereupon station 'I' shall arrange to receive the train with the quickest possible means. But should a train moving in the direction of 'V' in the 'I'- 'V' block section, station 'V' shall stop the train at the first Stop signal and warn the Driver of impending danger unless quick reception of such a train may avert an accident.
- (c) When the run away vehicle(s) has/have been stopped and adequately secured, the reporting block station should be promptly advised of the fact.
- (d) If the vehicle do not arrive at the next station even after the lapse of reasonable time, arrangement should be made to clear the obstruction.

(14) "Vehicle running away in wrong direction on double line".-

- (a) This signal is to be sent from a block station/ cabin to the block station/cabin in rear in the event of any vehicle(s) or engine or a train or a portion on the wrong line towards the block station in rear and in addition full particulars about the run away vehicle(s) or engine shall also be given over the telephone (GR 6.11 and SR 6.11.01).
- (b) The block station sending and receiving this signal shall act in the manner as detailed in sub-para (b) & (d) of para 13 above and, in addition, commutators of the block

instruments at the either end of the section shall be turned so as to cause the block instrument to show "Train on line".

- (c) No train shall be allowed to leave the block station sending this signal over the adjacent line in the proper direction of running until information has been received that the runaway engine or vehicle(s) has/have been brought to a stop and adequately secured or has/have arrived at the station at anyone end of the section and it is ensured that the block section is clear and free from obstruction.
- (d) If the run away vehicle(s) does/do not arrive at the next station after the lapse of reasonable time, arrangements shall be made to clear the obstruction and after the obstruction is removed and it is ensured that the concerned block section is clear, "Obstruction Removed" signal shall be sent and acknowledged and the commutators may then be turned to normal position.

(15) "Vehicle running away in right direction on double line".-

- (a) This signal is to be sent from a block station/ cabin to a block station/cabin in advance in the event of any vehicle(s) or engine or a train or a portion of a train be running away from a block station on the proper line towards the block station in advance and in addition full particulars about the run away vehicles shall also be given over the telephone (GR 6.11 and SA 6.11.01.)
- (b) The block station/cabin sending and receiving this signal shall atonce turn the commutators of the block instruments so as to cause the block instruments to show "Train on line" and no train shall be allowed to move over the adjacent line from the block station/ cabin in the direction of which vehicle(s) has/ have escaped until information has been received that the run away vehicle(s) has/ have been brought to a stop and secured adequately or has/have arrived at the station at anyone end of the section and it is ensured that the block section is clear and free from all obstructions.
- (c) The block station/cabin receiving this signal shall also act in the manner as indicated in sub-para(b) of para 13 above.
- (d) If the runaway vehicle(s) does/do not arrive at the next station after the obstruction is removed action shall be taken as indicated in sub-para(d) of para 14 above.

(16) "Testing" signal.-

- (a) The testing signal shall be used only for the purpose of testing the instruments and shall only be given when the block instrument is in "Line Closed" position Whenever testing signal is sent and acknowledged proper entry shall be made in the Train Signal Register.
- (b) Authorised maintenance staff of the S & T Department may also send such signal in the presence of the persons on duty responsible for its operation so as to ascertain the proper working condition of the block instrument. The Station Master/ Switchman at the other end on receipt of this signal shall atonce acknowledge it.

2.08. Acknowledgement of signals :-(Refer GR 14.06)

2.09 Train Signal Register Book :-

- (a) Detailed instructions for maintenance of Train Signal Register book are given under GR 14.07 and SR 14.07.01. At stations where block instrument are installed in the cabins, Train Signal Register book shall be under the custody of the person on duty responsible for operation of block instruments at the Cabin.
- (b) All entries in regard to blocking of running lines at a block station, block back, block forward, running of motor trollies, material trollies etc. shall be made in Red ink.
- (c) The Train Signal Register [Form OP/T28 B/ OP/T 28 (Revised)] specimen of which is furnished in Appendix B.
- (d) Whenever any correction is made as per sub- rule(5) of GR 14.07, it must be initialled by the person on duty carrying out the correction.

- (e) The Station Master in charge of a station shall scrutinise the Train Signal Register daily and certify its correctness by signing it, all irregularities noticed therein being reported to the Divisional Safety Officer.
- (f) Inspecting officials of Operating and S & T Department shall also check the Train Register Book in course of their inspections at stations/cabins and shall put his initials against such portions of the Register as he has examined.
- (g) The Train Signal Register shall on no account be taken out of the Block Cabin/Station. The only exception given to this rule is when an accident has occurred under which circumstances the register may be removed for safe custody by the Station Master in charge or by an Inspector/Officer of the Operating Department after a new register has been brought into use.

2.10. Reporting of failures :-

- (a) All failures of Electrical Block, Axle Counter, Track circuit, Telephone attached to Block instrument and Train wire shall be reported to the following officials by wire :-
 - (1) Block Maintainer,
 - (2) Block Signal Inspector,
 - (3) Divisional Signal & Telecommunication Engineer,
 - (4) Divisional transportation Inspector,
 - (5) Divisional Operations Manager,
 - (6) Divisional Safety Officer,
 - (7) Chief Controller,
 - (8) Station Master of the concerned Notice Station.
 - (9) Station Master at the other end block section,
 - (10) Loco Foreman concerned, and
 - (11) Traction Foreman (Running) concerned electrified section),
- (b) The Station Master shall record details of failures in the Signal and Block Failure Register.
- (c) When the failure has been rectified, the authorised representative of the S & T Department who attended to the failure, shall certify to that effect under his signature.

CHAPTER - III

RULES FOR WORKING OF TRAINS ON THE ABSOLUTE BLOCK SYSTEM BY MEANS OF THE ELECTRICAL COMMUNICATION INSTRUMENTS

*(These rules are to be read in conjunction with Chapters VIII and XIV of
General and Subsidiary Rules)*

Part-I (Single Line)

3.01 Authority to Proceed.- (Refer GR 14.23)

PART-I (SINGLE LINE)

3.01 Authority to proceed - (Ref. GR 14.23)

(a) Where single line working of trains between stations is in force or is temporarily introduced, the 'Line Clear Ticket' referred to under sub-clauses (a), (b), (c) and (d) of clause (3) of GR 14.25 shall be in form T/B 1425, T/C 1425 respectively.

(b) The "Line clear Ticket" shall be written plainly and legibly in terms of GR 14.19. The Private Number shall be entered both in words and figures. Wherever it is used due to failure of electrical block instruments, proper entries shall also be made as required under sub-rule(e) and (f) of SR 6.02.03. No alteration or correction of any kind is permitted whether it is initialled or otherwise.

3.02 Driver to examine "Line Clear Ticket".-

The Driver shall ensure that the "Line Clear Ticket" given to him is in proper form as mentioned in sub-rule (a) of Rule 3.01 above and that the same is written in accordance with the instructions contained in sub-rule (b) of Rule 3.01 above.

3.03. Disposal of Line Clear Tickets.- All Line Clear Tickets received by a Driver during the journey of his train shall be retained by him. The same shall be made over to Loco/Shed/Traction Foreman of the Home station of the Driver who shall take action in accordance with the instructions contained in Rule 2.03 of Block Working Manual.

3.04. Changing duties by Station Master when block section is occupied. - In addition to observance of the stipulations contained in SR 14.07.01 (d), The Station Master going off duty shall see that his reliever initials the last entries in the concerned Train message book.

3.05 Authorised forms for paper Line Clear Working on single line and their descriptions :-

(a) The forms in use are :-

(i) Form T/A 1425, Line Clear Enquiry message book printed on white paper with black font separately for outward and inward transactions. This form is divided into four parts viz A,B,C, & D which are defined vide para 3.16, 3.17, 3.18 & 3.19 respectively.

- A - Line Clear Enquiry despatched.
- B - Replay received to Line Clear Enquiry.
- C - "Out report" despatched
- D - "In report" received.

(ii) Separate form is used for 'Line Clear Ticket' both for Up and down direction.

Paper 'Line Clear Ticket' No. T/B 1425 or T/C 1425 as the case may be to be issued on completion of line clear enquiry message is despatched and line clear received transaction is completed. Paper line clear ticket No. T/B 1425 for Down trains and T/C 1425 for Up train to be filled up with private no. received and issued to the driver of O/G train duly signed and stamped. This should be prepared in carbon process and Drivers 'foil to be handed over to the Driver keeping the record foil in the book.

- (iii) The line clear ticket to be issued to the driver of out going trains separately for Up & Down directions (specimen at Apx-B).
- (a) The Dn paper line clear ticket No. T/B 1425 printed in white paper with black font having an water arrow mark in the middle of the form pointing downwards.
- (b) The UP paper line clear ticket No. T/C 1425 printed in white paper with black font having as water arrow mark in the middle of the form pointing upwards.

This form of ticket is having a Column Authority to pass signal at 'ON' position may be used whenever the line clear ticket is used in abnormal condition and the Adv. Starter cannot be lowered. If any page found missing, the matter should be reported to the Divisional Safety Officer and accordingly, A copy of the report sent to DSO Office be kept pasted below the certificate and counter signed by the Station Master-in-charge.

(iv) Conditional line clear message - This form No. T/F 602 is printed on white paper with red font. On receipt of this book the SM/ASM shall number it serialy before it is brought into use. A certificate in regard to intactness of no. of forms shall be given by the SM/ASM on receipt of this book.

This form is used in conjunction with SR 6.02.02, SR. 6.02.04 by the Station Master of despatching trains waiting at his station during total failure of communications between two adjacent stations.

This form is to be prepared in duplicate by carbon process and Driver's foil to be handedover to the driver and record foil to be kept in the book.

(v) The Conditional Line Clear Ticket may be used when there is a total failure of telegraphic and telephonic communication, and trains are worked in terms of SR 6.02.05 and Sr 6.02.06.

Note :- Only one Ticket from each page can be used as the "Authority to Proceed" as any one time. When the Line Clear Ticket is used, the Conditional Line Clear Ticket Should be cancelled and vice versa.

Branch Line Masgage forms :- (i) The forms in use at stations on branch lines are thie same as those on thie main line, but at junction stations where any branch line joins the main line, special branch line forms are supplied as per GR 14.25 (3) (c) or (d) as thie case may be.

(ii) At junctions where two or more branch lines connect with the main line the forms for use for trains proceeding on the respective branch lines will have the name of the branch line printed in red ink across the face of the branch line form, and the form for one branch will have the three corners blocked in on both faces, the blocks being in the form of a triangle, and the form for the other branch will have black circles in the three corresponding corners on both faces as required under GR 14.25(l)(e).

Note :- Branch line forms shall on no account be used for main line trains, nor main line forms for branch line trains.

3.06. Bringing a Train Message book into use :-

- a) The Line Clear Enquiry Message (Outward/Inward) No. T/A 1425 is meant for transaction of Line Clear for both Outward/Inward trains between two adjacent block stations. The Station Master -In-Charge must see that sufficient number of books are always kept at his station.

This book contains 100 pages each for outward and inward messages.

- (b) The pages of these books are serially numbered.

(c) Each book before it is brought into use must be carefully checked by the Station Master to see that all the pages are correct. He must render a certificate duly dated and signed must be stamped with the station name stamp, immediately before each book is brought into use.

Note :- Should any page found in duplicate, the duplicate page must be marked 'cancelled' signed and dated by the Station Master-in-charge. Should any page be found missing, the matter should be at once reported to the divisional Safety Office and the certificates in the front cover leaf of the book qualified accordingly and a copy of the report pasted in the book below the qualified certificate; this certificate must be countersigned by the Station Master-in-charge.

3.07. Writing and signing of Train Messages. (Refer GR 14.19)

The Station Master on duty is alone authorised to sign the Train messages.

3.08. Despatching and receiving of Train Messages :- The issue of Line Clear messages is restricted to the Station Master on duty. Where Signallers are employed for transmission or receipt of messages they are not authorised to make out any of these messages. Only Signallers who have passed their train passing examination are authorised to despatch or receive such messages provided this has been sanctioned by the Divisional Safety Officer.

3.09 Signalling Train Messages :- (a) The Code "RR" will indicate a train message and shall be signalled first, but is not to be entered on any of the forms.

The moment the Station Master on duty or the Signaller receives the signal "RR" he shall enter the time in his form of train message.

The sending station staff then give.-

To Station Master (station)

From Station Master(station)

Note :- The Station names must be signaled in full.

(b) Next will be signalled the daily serial number and the body of the message, word by word exactly as written.

(c) It is not permitted to receive a message and afterwards write it in the book, nor should message be written on scraps of paper, nor on any but the printed train message book form.

(d) No "IS Line Clear" enquiry of "Line Clear" message or "In" or "Out" report of a train is under any circumstances be signalled on a verbal communication. Every message first be put in writing and then signalled, word by word, from the writing. The timings, etc., must be signalled from the actual entries in the Train Message books.

3.10. Every message shall be written in ink, and shall be written exactly as it is received on the wire or any approved means of communications, word for word.

3.11. Serial numbers of Train Messages :- (a) Every train message issued shall bear a separate serial number, and this number will be entered in by hand . There will be one

series for each adjoining Block station Layabad and Malkera as for instance, i.e. Layabad will have one series in common for all Up and Down train message sent to Malkera, and another series in common for all Up and down messages sent to Karkend. Each series will begin at midnight with No. 1.

(b) When a message bears reference to a prior message of the same station, the number of that prior message must be quoted at the beginning of the later message (e.g. No. 5, My No. 4)

It will be found in practice that, when a quotation of the arrival or departure of a train is made in an enquiry for Line Clear, or in a reply thereto, the serial number of that arrival or departure notice message will be the number used last before the serial number of the enquiry or reply message, and therein will be the proof of the correctness of such quotation.

(c) When a message is in reply to another, that other message number shall be quoted at the beginning of the reply.

3.12 Private Numbers in Line Clear Messages :-

(a) In addition to the serial number for the day, every Line Clear message in space "B" will be allotted a Private Number by the Station Master who signs the entry in the train message book (Form T/A 1425 (outward/Inward as the case may be.)

(b) The Private Number will form a part of the body of the Line Clear Message, and shall be signalled as the last word on it. It must be duly recorded in the Received Line Clear book ((Form T/A 1425) of the station to which the Line clear is signalled.

3.13. Describing Trains in Messages :- In enquiries for Line Clear and in-replies to them, the engine or train must be distinctly described thus - "Up Light Engine to Mohuda". "No. 313 Up Passenger" or "Up Ballast train (Driver illiterate)" as the case may be/and for every train a separate enquiry and reply message must be sent, so that each Driver may get the Line Clear originally intended for his train :- e.g., a Line Clear message for, say, "No. Up Gomoh Goods" may not be endorsed for " No. 313 Up Passenger", Though "No. 313 Up passenger may be ready to start first but the enquiry and Line clear Message for "No", Up Gomoh goods" must be cancelled and another enquiry message sent and Line Clear Message obtained for "No. 313 UP Passenger"

Note :- If the train is being worked by an illiterate Driver or if there be more than one engine on the train this information must be treated as a part of the description of the train.

3.14 Number of last train to be entered in Train Message :- In all cases when asking for Line Clear for a trains the Station Master should state the last train that passed over the section, whether Up or Down.

3.15 Cancellation of Train messages, incorrectly recorded Train Messages etc. -

(a) Train messages may, if necessary, be cancelled, if occasion arises to cancel any one message on a page, the whole of such page or leaf, i.e. all the sections of it shall be marked "cancelled".

In case of cancellation of the Line Clear Enquiry message the whole page (all the sections) T/A 1425 (Outward/Inward) shall be cancelled except when the corresponding line clear ticket has already been issued and train left the station already.

(b) If in the course of receiving a message a mistake made in writing it, the word or words in which the mistake occurred, shall at once be scored out with pen and ink, and correct words entered immediately after; the rest of the message may then has been received in full the Station Master or the Signaller on duty shall cancel the whole page by writing across it as follows :-

"Cancelled, see next page".

(c) He will then enter the correct messages on the next page in their proper places, and write his name across any blank spaces left on the cancelled page and leave them unused.

(d) If a page or pages be left blank through oversight and train messages be written on following pages, the intervening blank pages shall not be used for later trains but must be cancelled and signed by the Station Master on duty.

(e) Due care is required in writing in all train messages in order to make them, as they should be always clear and legible, and to prevent waste of forms.

OUTWARD TRAIN MESSAGES

3.16 Line Clear Enquiry despatched :- This is the enquiry despatched from a station at which a train is either waiting or expected to arrive, asking the station to which the train is about to proceed, if the line is clear, This enquiry shall be written by the Station Master on duty himself in the space-A. This message shall be serially numbered, and in it must be included the last train that entered the section the time of its arrival or departure, and in it must be included the last train that entered the section the time of its arrival or departure, and the serial message number of such arrival or departure notice, also the time the train for which line clear is being asked left the previous station in rear. (Refer Form No. T/A 1425).

3.17 Reply received to Line Clear Enquiry :- (a) The reply received by the Station Master at Layabad, from Malkera shall be entered by him in space 'B' word for word exactly as signalled to him by Malkera.

(b) The Station Master on duty at Malkera on receiving the enquiry as to whether the line is clear, shall give a reply in accordance with the facts before him.

(c) Several causes are possible :-

- Case** (i) The Line may be clear and no train waiting at Malkera that has preference over No. Up Ballast Train.
- ” (ii) The line may be clear, but another train may be waiting at Malkera to which Preference ought to be given.
- ” (iii) The line may be blocked either by a Trolley or Some accident to the Permanent way.

(d) A reply to the enquiry would then be considered on the following lines :-

(i) In the case of circumstances mentioned in (c) (i) above

(a) In this case the message despatched from the station asked to the station making the enquiry would intimate that the line is clear for No. Up Ballast train from Layabad.

(b) The Station issuing this reply shall also quote in this message the time of arrival or departure of the last train which entered the section, the serial message number of such arrival or departure notice and also the Private Number as in form No. T/A 1425

(c) On receipt of the reply, the station which asked for Line Clear shall write out the Line Clear Ticket for issue to the Driver of the train to be despatched 11 T/B 1425 or I/C 1425 for Dn or Up Train as the case may be.

(ii) In the case of situation mentioned in c (ii) above.

(a) In this case the Line Clear shall be refused the reply would be entered in Form No. T/A 1425.

(b) This message shall be written in space 'B' of the Reply Book at Malkera and entered at Layabad in space 'B' of Enquiry Book and the remaining unused spaces of the forms at both stations cancelled.

(c) A reply, cancelling an Enquiry message in order to give precedence to another train, will always be preceded by the Code "DRR", instead of the usual Code "RR", to warn the

station receiving such message of such unusual reply and no Private Number will be given in such reply.

(d) The message of any alteration in crossing of trains entailed by precedence being given must also follow as required.

(e) The Station Master, Malkera would then ask for "Line Clear" must not be entered in the same form or sent in one and the same message. Reference however, should be made to the previous message as in T/A 1425.

(iii) In the case of situation mentioned in (c) (iii) above-

(a) In this case the reply would be given as in Form No. T/A 1425 according to the circumstances of the case.

(b) The two Station Masters would then proceed according to circumstances.

(c) The reply "Line is not Clear" shall always be preceded by the Code "DRR" instead of the usual Code "RR" to warn the station receiving such message of such unusual reply and no Private Number will be given in such reply.

3.18. "Out Report" despatched :- (See BWM) 2.07 (5) (b). After the train has actually left the station. the Station Master shall personally write out the departure notice in space 'C' enter on it the time, and sign it and despatch it immediately. This message shall also be serialy numbered. This shall include and intimation when a train is worked in terms of 4.24.01 ; SR 4.23 and SR 4.25.02.

3.19. "In Report" received :- The "In report" is the message despatched from the station at which a train has arrived, informing the station, from which the train has come, that it has arrived complete. The "In report" must be entered in space 'D' as soon as received. (See BWM Rule 2.07 (6) also).

3.20. Working Line Clear :- When a train is required to work in the Block section, the "Line Clear" Enquiry and Reply messages shall be worded some what as per Specimen XIII to XVI of BWM Rule 3.31 according to the requirements of the case.

3.21. "Cancellation of Line Clear Enquiry" or "Line Clear Reply" message :- A cancellation message may originate either from the station intending to despatch a train or from the station which has given "Line Clear" for a train. The cancellation will be done in the following manner, taking into account that 'A' and 'B' are two adjacent Block stations on the single line :-

(a) Line Clear Enquiry message despatched but reply not received :-

(i) Cancellation message shall be written first by SM at station 'A' in the Station Master's diary under an entry and then to be despatched to Station Master at Station 'B' along with P.No. and knowing the intention of SM 'A' to cancel Line Clear enquiry message despatched or he is unable to give line clear to the train for which line clear enquiry was received will write the cancellation message in his diary under an entry and then will despatch the message to Station Master at Station 'A' duly supported by P.No.

(b) Line Clear already received and paper line clear ticket prepared :-

(i) If the Station Master at Station 'A' desires to cancel line clear, he shall first endorse on the line clear ticket as follows :-

Cancelled due to

(Here state the cause)

as per message No. of

(D/E No. recd.) (From Station)

If the line clear ticket has already been made over to the Driver of the train, it shall first be withdrawn from him.

- (ii) The Cancellation shall then be done by issuing message under diary entry Nos. as explained in the foregoing para (a)(i).

(C) Line clear given -

(i) If the Station Master at Station 'B' who has given 'Line clear' for a train to station 'A' desired to have it cancelled due to any reason of obstruction on line or to give precedence to a train from his station, the cancellation shall be done by means of message under a diary entry and the CODE 'DDR' shall be used.

(ii) The Station Master at station 'A' if he has already handed the Line Clear Ticket to the Driver, shall withdraw it and after endorsing on it as per the aforesaid para (b)(i) of this rule shall acknowledge this message by a return message which shall be written under a diary entry.

(iii) Particular attention shall be paid by the staff in cases when Code "DRR" is used.

(d) Late receipt of cancelling enquiry :- In the event of the Cancellling Enquiry message referred to above having been received too late to be acted on by the Station Master concerned owing to the train for which 'Line clear was initially given shall reply through a message under a diary entry prefixing 'DRR' on the message.

(e) Trains not to run on cancelled messages :- When an Enquiry message cancels a Line Clear message previously given for a train in the opposite direction, the Station Master receiving the cancelling message must act on it and cancel the "Authority to proceed". He shall on no account allow the train, if it is still at his station, or has not arrived there, to leave with the authority to proceed cancelled already.

(f) Cancelled Authority to be returned to Station Master :- A cancelled "Authority to proceed" as referred to above, must be returned by the Driver to Station Master, the latter shall record its receipt on the back of the new "Authority to Proceed" when tendered, in the following manner :-

"Line Clear authority No. given to Driver of No..... train at H..... M has been returned by him and is cancelled".

Note :- Cancelled Line Clear must not be confused with incorrect Line Clear Ticket regarding which see BWM Rule 2.03.

(g) Cancelled Line Clear to be in possession of Station Master before fresh Line Clear is given :- After a "Line Clear" has once been signalled, no train is to be started in the opposite direction, until an assurance message has been received supported by Private Number from the Station Master on duty at the other end that the train for which this "Line Clear" has been signalled, is and will be detained, and no Station Master shall give that assurance until the train to be detained has actually come to be stand at his station and the cancelled "Authority to Proceed" is in his possession.

(h) Discretion to be exercised before cancelling Line Clear :- Station Masters after giving Line Clear messages must exercise great discretion in cancelling such messages, as the responsibility for any detention, which may subsequently arise will rest with them, except when done under orders of the Section Controller. Attention of the Train passing staff is also invited to GR 3.36 (2).

Line Clear Inquiry Message (Outward/Inward):-

Book Form No. T/A 1425

3.22 (a) Outward message :- The Station Master of sending station will write the message on the 'A' part of line clear inquiry (Outward) message from as per the format

and will signal the same to the Station Master of receiving station. Station Master of sending station will sign in the message on the portion given for that purpose.

- (b) The receiving Station Master will write the message received from the Station Master of the station from where a train is about to leave directly on the space A of the Inward message book and put the time and signature on the space provided for the purpose.
- 3.23** (a) The Station Master of the receiving Station (towards which the train is about to proceed shall write his reply in the space 'B' in the Inward Message book and will signal to the Station Master of sending station.
(If he is in a position to receive the train). The message shall be serially numbered and shall bear a private number.
- (b) The sending Station Master who had despatched the message asking line clear for a train to the Station Master at the other end, will receive the message in reply from the Station Master of the receiving Station directly on the space 'B' including the private number received from the Station Master of the receiving station. The Station Master will put the time and signature on the space provided for the purpose.
- 3.24** (a) The departure notice shall be sent by the Station Master on actual departure of the train from his station as per BWM para 2.07 (5) and put the time in the space 'C' and signal to the Station Master of the Station towards which the train is proceeding and put his signature in the space provided for the purpose.
- (b) The receiving Station Master will acknowledge this departure notice despatched by the Station Master of the sending station directly to the space 'C' and put his signature in the space provided for the purpose.

3.25 (a) The arrival notice shall be sent by the Station Master of the receiving station on actual arrival of the train completely. Station Master shall verify the train to give line clear for a subsequent train as per BWM para 2.07 (6) and G&SR 8.01 respectively. The Station Master then put the time of arrival at the space 'D' and signal to the Station Master of the station from which the train has started and put his signature at the space provided for the purpose, in the inward message book.

(b) On receiving the message or arrival of the train which had left his station last from the Station Master of the receiving station will directly put the time in the space 'D' in the outward message book and put his signature at the space provided for the purpose.

N.B. : All transaction time shall be recorded as per the timings of the Station Clock of the station.

3.26. Actual Time of Arrival & Departure :- In space -D of Reply Book and in space-C of Enquiry Book the times of arrival and departure must be entered by the Station Master from the time indicated by the Station clock.

3.27. (a) In the event of the circumstances detailed in sbu-rules 9,10,11,12 and 13 of Rule 2.07 of Block Working Manual a message in plain language giving details of the situation shall be sent. The message shall be class prefixed as "XXR" except in case of "Obstruction Danger" When the Class Prefix shall be "DRR".

(b) Whenever any such message is sent or received, in addition to recording the same in the message book a remark in red ink shall be made on the top of the respective Enquiry and Reply book as also in the remarks columns against the entry of the concerned train in the Train Register.

(c) Actions to be taken by the Station Master sending and receiving the message are given in sub-rules 9,10,11,12 and 13 of Rule 2.07 of Block Working Manual.

Part - II
(DOUBLE LINE)

3.29. Authority to proceed :- (a) On double line, the written authority to proceed mentioned under Sub-rule (2) of GR 14.13, shall be in the form of T/369 (3b), which shall be issued only after obtaining Line Clear through the means of electrical communication instrument as mentioned in Rule 3.34 below. Identification Number shall also be indicated on it, Whenever Line Clear is obtained through the communication instrument listed under sub-rule (a) (ii); (b) and (c) of SR 6.02.03.

3.30. Means of obtaining/giving "Line Clear"- The electrical communication instruments (sub-rule 1 of GR 14.13) through which line clear shall be obtained is detailed under SR 6.02.03 which shall be used in the order given therein.

3.31. In the event of the circumstances detailed in sub-rule 9,10,11,12, and 13 of Block Working Manual Rule 2.07, action shall be taken as detailed in Rule 3.30 of Block Working Manual.

3.32. Train Signal Register Book :- The time at which all signals exchanged under these rules shall be entered legible in the Train Signal Register.

3.33. Block forward and Block back :- (Refer GR 1.02(9), 1.02(e) and 8.14)

(a) Whenever it becomes necessary to obstruct the line in terms of sub-rules (2) or (3) of GR 8.06, messages as per example-I shall be sent and acknowledgement thereof as per example-II below shall be obtained before issuing the authority for shunting.

Example - I

From : S.M. - "A" Time To : S.M. - "B"

No. II Intd to block forward A-B block section in advance
on Up line for (state cause). Acknowledge
back in rear

Private Number

Example - II

From : S.M. - "B" Time To : S.M. - "A"

No. 1 Your No. 1 of date acknowledged. I note Up line
between Station "A" and "B" is blocked. Private Number.

(b) After the obstruction is removed and after the authority for shunting is withdrawn and cancelled as contained in SR 5.13.02, message shall be exchanged as per Example-III and IV below :-

Example - III

From : S.M. - "A" Time To : S.M. - "B"

No. 2 my No.1 of (date). Block removed. Block Section in advance on Up line between
"A" and "B" is clear

Private Number

Example -IV

From : S.M. - "B" Time To : S.M. - "A"

No. 2 Your No. 2 of (date) noted. Private Number

(c) Entries shall be made in red ink in the Train Signal Register at both stations.

CHAPTER - III A

DOUBLE LINE BLOCK WORKING WITH AXLE COUNTER BLOCK

PART - I

GENERAL

This Block Working Manual is for 'Block Panel' with 'Block proving by Axle counter'. These rules must be studied in conjunction with General (Amendment) and Subsidiary Rules (1998) and the Block Working Manual Double Line (1999).

3A.01. Block Panel.

A Block panel means a panel associated with Axle counter equipment to control the movements of trains on double line Block Section.

3A.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 of translation of the rules relating to his duties.

3A.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.

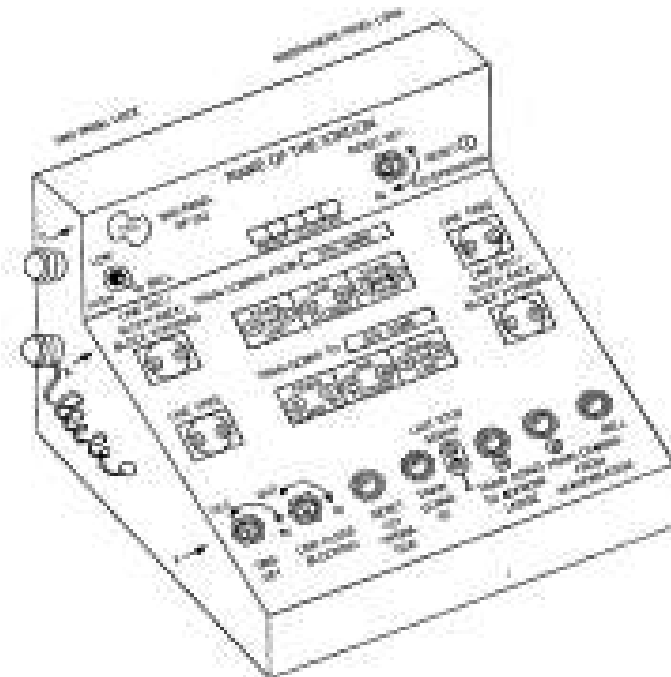
PART - II

DESCRIPTION OF THE BLOCK PANEL

3A.04. 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.

3A.05. Block Panel Diagram.



3A.06. Description of Block Panel.

The Block panel consists of push buttons, keys indications, counters, block bell, block telephone and 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" It has three rows

Upper row-it houses various indications pertaining to 'Train Going To' direction. Middle row-it houses various push: buttons 8M's key and LCB key.

Lower row-it houses L88, TGT, ACK and TCF, ACK 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:

3A.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 acknowledgment push button is located in the portion 'A' of Block panel and is to be pressed for acknowledgment 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.

3A.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 (never any-operation on the BLOCK panellsto 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 permission has been achived 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 reset 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.

3A.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 etc. 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 pane] 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 etc. 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/Blockforward/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 r 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 Co-operation' to indicate that co-operation has been extended by the sending for resetting the axle counter.

3A.10. Counter (In the portion 'C' of the Block Panel)

'Axle counter reset- Counter for registering the number of attempts made to Reset the axle counter.

3A.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. Alongwith this buzzer 'Yellow' indication also appears, above theTGT ACK orTCF ACK push buttons, which guides SM as to which button is to be pressed.

A.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.

3A.13. Block telephone:

This provides speech communication between the Station Masters at the two ends of the block section.

3A.14. Locks:

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

- (a) Signal maintainer's lock
- (b) SM's lock

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

3A.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-III.
- (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 or otherwise 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.

3A.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 Station 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.

PART - III

OPERATING PROCEDURES

3A. 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)

1. Insert SM's key and turn, press bell push button to send "Call Attention attend Telephone" signal to Station 'Y'.
3. Receiving acknowledgement signals Attend telephone and calls out his station name.
5. Asks consent giving number and description of the train.

7. Obtaining 'Line Clear' by pressing 'TGT' push button alongwith the 'BELL' push button and keeps them pressed.
9. Block panel displays 'Train Going To' green indication. 'Line Closed' Yellwo 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 appears in Portion 'A' of block panel and 'Train on Line' Red indication appears automatically and a buzzer also sounds. 'Line occupied' and red indication appears and 'Line Free' green indication disappears. SM presses 'TGT ACK' to silence the buzzer

"Y" Station (Receiving)

2. Bell signal is acknow-ledged by pressing Bell push button. Attends Telephone.
4. Calls out his Station name.
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.
8. Block panel displays 'Train Coming From' green indication. 'Line Closed' Yellow indication disappears.
12. Train On Line red indication appears automaticaly on the panel & buzzer sounds continuously. 'Line Occupied' red 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 signals, 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 & 'Train on Line' red indication disappears.
15. SM presses 'TCF ACK' to silence the buzzer.
16. Block panel displays 'Line Closed' yellow indication & 'Train on Line' red indication disappears 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 4.17.01.

3A.18. Refusal to the 'Is Line Clear' Signal & 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 its 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.

3A.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.

3A.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.

3A.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.

3A.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 'Une 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 anyone 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 to 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 L.V. without brakevan/with L. V. No. the Station Master himself will verify the Last Vehicle No. 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 alongwith exchange of private no. 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 a counter register to be maintained at the station for each resetting of the axle counter.

Note: In case the SMs are unable to check the complete arrival of the train by anyone 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 for relief engine/train into an occupied Block section on form No. T/A 602 with a caution order informing the driver to look out for any obstruction and restricting the speed to 15KMPH in day time with clear visibility and 8 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.

3A.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 driver of the train for which the LSS was taken off, regarding cancelling the line Clear obtained for the said train for cancelling the 'Line Clear' the following procedure must be adopted.

“X” Station (Sending)

1. Block Panel indicates 'Train Goint To' green indication.
2. Gives 'Call Attention attend Telephone Sign-als.
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.
7. 'Train Goint To' green indication disappears & 'Line Closed' Yellow indication appears on the Block panel.

“Y” Station (Receiving)

1. Block panel indicates 'Train Coming From' green indication.
3. Acknowledges call Attention Telephone Signal.
4. Attends Telephone.
6. Acknowledges and gives consent by giving consent by giving a private number. Also takes out the LCB key and simultaneously presses Bell push button with SM's key 'IN'.
8. 'Train Coming From green indication disappears & 'Line Closed' Yellow indication, appears on the Block panel.
8. LCB key is inserted and turned.

Note : Next Train can now be sent following the regular procedure as per para 3A.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)

1. Block Panel indicates 'Train On Line' red indication.
2. Gives 'Call Attention/Attend Telephone Signal.
4. Attend Telephone.
5. Informs that the train which left the Station has returned back to this Station. Complete, supported by his private number.
7. 'Train On Line' red indication still persists (as in 1 above)
9. 'Line Free' green indication appears on the Block Panel

“Y” Station (Receiving)

1. Block Panel indicates ‘Train On Line’ red indication.
 3. Acknowledges ‘Call Attention/ Attend Telephone’ signal.
 4. Attend Telephone.
 6. Acknowledges by giving private number
-
7. ‘Train On Line’ red indicatin. Still persists (as in 1 above)
 8. ‘Line Free’ green indication appears on the Block Panel.

“X” Station (Sending)

1. Block Panel indicates ‘Train On Line’ red indication.
2. Gives ‘Call Attention/Attend Telephone Signal.
4. Attend Telephone.
5. Informs that the train which left the Station has returned back to this Station. Complete, supported by his private number.
7. ‘Train On Line’ red indication still persists (as in 1 above)
 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 indication appears at both the 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 3A. 23(A).

3A.23. NOTE :- WHENEVER ANY OF THE ABOVE OPERATIONS IS TO BE DONE BY THE SWITCHMAN, HE SHALL NOT DO SO WITHOUT THE PERMISSION OF HIS STATION MASTER.

3A.24. Driver’s Authority to proceed.

- (i) On the Double Line sections, the Driver 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 & 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 Driver’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 using identification No. through the Electrical Communication equipment as laid down GR. 14.13. T/369(3b) with private No. and identification no to be issued to the driver authorising the Driver to pass the Last Stop Signal at 'ON' shall constitute the Driver's Authority to proceed.

3A.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 will 'take out' LCB key and keep it in safe custody. Driver shall be given shunting Authority in form T/806 for entering the block section for shunting. On completion 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 Forwarded has to be recorded against the entry in the remarks column.

(Shunting being performed at the Station 'X')

X" Station

1. Block Panel indicates Line Closed Yellow indication.
2. Inserts this SM's key and turns and gives 'Call attention signal.
4. Attends Telephone.
5. Informs intention to do shunting in the Block section and give private number

7. Prepares T/806 and sends it to the Driver. 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.

9. When the Shunting is completed and the train has cleared the block section the buzzer sounds which is silenced by pressing the 'TGT ACK' push button.
11. Line occupied red indication disappear and 'Line free' yellow indication appears.
12. Gives 'Call Attention' signal and attends telephone.

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

Y" Station

1. Block Panel indicates 'Line Closed' Yellow indication.
3. 'Inserts the SMs key turns and acknowledges the 'Call attention' signal.
4. Attends Telephone.

6. Acknowledges and removes the LCB key and keeps it in his personal custody.
8. The buzzer sounds, which is silenced by pressing 'TCF ACK' push button. The 'Line Occupied red indication appears.

10. The buzzer sounds, which is silenced by pressing the 'TCF ACK' push button.

11. Line occupied red indication disappear and 'Line Free' Yellow indication appears.
13. Acknowledges 'Call Attention' signal & attends telephone.
 14. Acknowledges supported by a private number and restore the LCB key.

3A. 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 issued the necessary memo to the driver 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, of the completion of shunting supported by a private number which shall be acknowledged by a Station Master of the Station in rear by a private number.
- (c) All the entries in the TSR 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

1. Block Panel indicates Line Closed Yellow indication.
2. Inserts the SM's key and turns and gives 'Call attention signal.
4. Attends Telephone.

5. Informs intention to perform shunting in block section on wrong line.
7. Takes out the LCB key and keeps it in his personal custody. Issues T/806 to the Driver for performing shunting into 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.
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.
12. Resotres the LCB key and gives 'Call attention' attend telephone signal.
14. Informs that shunting is completed supported by a private number.

Y" Station

1. Block Panel indicates 'Line Closed' Yellow indication.
 3. 'Inserts the SMs key turns and acknowledges the 'Call attention' signal.
 4. Attends Telephone.
 6. Acknowledges & gives consent by giving a private number.
-
9. The buzzer sounds which is silenced by pressing 'TGT ACK' push button 'Line Occupied' Red 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.
-
13. Acknowledges and attends telephone.
-
15. Acknowledges supported by a private number.

PART - IV

BLOCK FAILURE

3A.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 3A.22.
- (iv) When “TRAIN GOING TO” or “TRAIN COMING FROM” indications do not appear by appropriate action, though condition for asking “LINE CLEAR” and granting permission to approach are available.
- (v) When “TRAIN ON LINE” indication does not appear on the entry of train into Block section at either of the station.
- (vi) When a train has arrived at the receiving station but the block panel still shows “TRAIN ON LINE” Red indication and/or also shows ‘Line Occupied’ Red indication and these indications persist even after resetting has been tried as per para 3A.22.
- (vii) Total failure of communication during which trains shall be worked as per extent rules in force on the 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: (1) In all the above cases, the Block Panel must be treated as defected block working suspended and trains must be dealt with by taking Line Clear on Electric Communication Equipments provided and following provisions of GR 14.13 and SRs thereunder.

(ii) In respect of the failure indicated in the terms A (vii) of the para above, trains must be dealt with under the extant rules as outlined in GR 14.13 and 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 drivers 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 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 drivers about the defect of the LSS.

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

(B) Failure of Last Stop Signal.

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

- (i) The Last Stop Signal cannot be taken ‘OFF’ even though Line Clear has been obtained.
- (ii) The Last Stop Signal can be cleared without getting ‘Line Clear’.

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

In all the cases indicated paras (A) and (B) above failures should be informed to S&T staff immediately.

Note : In respect of the cases indicated in paras (B) (ii) & (iii) above the precautions indicated in Note No. (iii) & (iv) under para 3A.27(A) dealing with failures of the Block panels should strictly be adhere to.

3A.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, 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 in the Railway.

(B) Suspension of Last Stop Signal :-

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

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

3A.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, 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) and Caution order should be issued as an Authority for entering the Block section.

3A.30. Working of Lorries and Motor Trollies

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

3B.01. Foreword

The working of Block panel using block proving by axle counter for Single Line must be read in conjunction with G & SR of Indian Railways (1976) and Block Working Manual - Single Line. Notwithstanding the explanations given hereunder for Block panel working provisions of G & SR are inviolable.

3B.02. Brief description of Block panel & its features

The Block panel means Panel associated with axle counter and other equipment, which controls, commands, indicate and provide 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” (LC) condition are displayed on the block panel automatically. Block Panels are of two types. Panel at the station without evaluator (Drg. No. RDSO/S32010/003/011). These two panels differ regarding provision of reset key, counter & reset cooperation button on panel. Then availability on panels are given here under :

Key/Button/Counter	Available	
	Panel Drg. No. RDSO/S32010/002/0011	Panel Drg. No. RDSO/S32010/002/0011
Reset Key	No	Yes
Reset Counter	No	Yes
Reset Cooperation Button	Yes	No

3B.03. 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 Last Stop Signal to “OFF” 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 stations indicating 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 cooperative control is provided on the block panel to cancel the Line Clear, already taken.
- viii) A cooperative control for resetting of axle counter is provided.

3B.04. 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 then 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 are also provided in conjunction with block panels.

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 Go button.

To cancel Line Clear, when pressed along with CANCEL Button.

To extend cooperation for cancellation to other station, when pressed with RESET button.

TRAIN GOING OF	Station Master of sending stations operates it along with bell button. This sets sending block panel to Train going To condition and receiving station block panel in Train Coming from condition Green BELL indicates the 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.
ACRN	It is operated to acknowledge the section occupied on section free condition. It silences the SECTION OCCUPIED/FREE buzzer.
AXLE COUNTER RESET CO-OP	It is operated to extend cooperation from a station where evaluator of axle counter has not been provided for resetting of Axle Counter.
CANCEL CO-OP	It is operated by train sending station for extending cancel cooperation to train receiving station.
SHUNT BUTTON	It is operated to extract shunt key.
ii) Keys	Functions
Keys	
SM KEY	The key when out prevent following operations (a) Transmission of BELL code (b) Transmission of Line Clear inquiry 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.
SMS BACK COVER LOCK	For double 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 operation

CATCH SLIP SIDING	This key on demand is provided to perform CATCH SLIP SIDING operation.
iii) Indicators	Functions
LINE CLOSED	Its shape is Round / rectangular and is provided with white/yellow LEDs. When lit, indicates that section is free from vehicles & line Clear has not been granted/received
TRAIN COMING FROM	Its shape is arrowhead pointing in direction of train towards station and is provided with Green/Red LEDs When green light is “steady” it indicates that the train coming from ‘condition. When Green light is flashing it indicates (a)Line Clear has been withdrawn before the entry of train in Block Section or (b) Section has cleared after the arrival of train, but associated Signals & their controls have not been put to normal at stations. The indicator changes to Red on entry of train in block section and indicates ‘train on line’ condition.
TRAIN GOING TO	Its shape is arrowhead pointing in direction of traffic away from station. It is provided with Green/Red LEDs. When Green Light is “steady” it indicates that the train going to condition. When Green light is flashing it indicates that Line Clear has been withdrawn before the entry of train in Block Section but associate signals and their controls have not been normalized at station. This indicator changes to Red on entry of train in block section and indicates ‘train on line’ condition.
LAST STOP SIGNAL	Its shape is circular monogram of signal ‘Red’ indicator means Last Stop signal is at ON and Green indication means Last Stop Signal is at OFF.
RESET CO-OPERATION	Its shape is circular and is placed near reset key. When lit indicates that co-operation has been received from block panel where reset co-operation button has been provided.
LINE FREE	Its shape is circular / rectangular and is placed above ACKN button. It is provided with Green / Red indication Green indicates line is clear of vehicles and Red indicates line is occupied after line clear of Block Back.
SNKE (LOCAL)	Its shape is circular. When lit yellow it indicates LSS, First stop signal & controls on signal are normal.
SNKE (OTHER END)	Its shape is circular. When lit yellow it indicates LSS, FSS. Controls are normal and TCF indication is not available at station on other end of block section.
SM KEY (IN)	Lit indicates SM Key is IN and turned.
SHK-IN/OUT	It has 2 colours. When lit Green indicates Shunting Key has not been taken out and when lit RED indicates Shunting Key has been extracted.
Train acknowledgement in / out	Lit at the time of train entry into and exit from the block section. It remains lit until acknowledged.
Co-operation Timer	It starts flashing when cancellation process starts and flashes for 120 seconds.

iv) Counters

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 pan at the station where Axle Counter Reset Key is provided. It keeps record of number of successful resets of Axle Counter.

v) **Buzzers**

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.

3B.05. Method of signalling trains from 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.

 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.
3. Acknowledges by pressing BELL and attends telephone.
5. After (exchanging) information regarding train movement, ensures :
 - a) Line Closed indicator, SNKE (local) indicator are lit and the convey verbal line clear supported by private number.
6. Press BELL & TRAIN GOING TO button and keeps both buttons pressed till 'TRAIN GOING TO' 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'.
10. Acknowledges the buzzer by pressing ACKN button.

Puts back the Last Stop signal

7. 'LINE CLOSE', indication disappears & 'TRAIN COMING FROM' Green indication appears.

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.

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 SECTION buzzer starts ringing.

'TRAIN COMING FROM' indication turns to flashing GREEN.

Acknowledges the buzzer by pressing ACKN button.

13. Replaces all controls pertaining to reception of train to Normal

SNKE (Local) indication appears 'TRAIN COMING FROM' indication disappears.

'Line closed' indication appears

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 GONG TO Indication 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	Block Panel displays "train
Going to" indication	coming from" indication

Train sending station ensures that cancellation of line clear conditions are available. Exchange private number.

I.(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 driver of the train for which L.S.S. was taken 'OFF' regarding cancellation of the line clear for following procedure must be adopted.

1. Press "cancel operation" Button.

3. 'TRAIN GOING TO' indication turns flashing GREEN

Puts back the Last Stop signal controls to Normal if taken OFF & observes SNKE is lit.

5. TRAIN GOING TO indication disappears.

'LINE CLOSED' indication appears.

Receiving Station ensures that cancellation of line clear conditions are available. Exchange private number.

2. After verifying the Cancel Cooperation 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.
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.

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 or private number. The receiving station can close the section by pressing BELL & CANCEL button after taking cancel-cooperation from other end.

Sending Station

1. Train clears the Block Section. Section buzzer starts ringing.
'TRAIN GOING TO' indication turns FLASHING GREEN.
Acknowledges the buzzer by pressing ACKN button.
Ensures SNKE (Local) indicator is lit

Advises receiving station operator to close the block, on telephone after prescribed BELL code
Presses cancel cooperation button

3. TRAIN GOING TO indication disappears.
'LINE CLOSED' indication appears

Receiving Station

2. Train clears the Block Section. Section buzzer starts ringing.

'TRAIN COMING FROM' indication turns to flashing GREEN.

Acknowledges the buzzer by pressing ACKN button.

On request from sending station on telephone after prescribed BELL code for closing of block.

Ensures SNKF indication is lit.

Press BELL & CANCEL buttons simultaneously and releases buttons.

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.

(iv) Block Back

The Shung Key is the authority for the Driver to shunt from Starter upto the opposing First Stop Signal of concerned block section. This key authorizes the Driver 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 Driver 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 Driver, 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 the 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's extraction in "line close" condition

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

Station intend carrying out shunting

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.

Other end stations

3. On entry of train in Block Section, SECTION buzzer starts ringing & LINE CLOSED indication disappears.

LINE FREE indication turns to red

Acknowledges the buzzer 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.

LINE FREE indication turns to red

Acknowledges the buzzer by pressing ACKN button.

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” conditon

Whenever it is necessary to extract the shunt key with the “Train Going To” condition, 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 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 the 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 other than clearing the nominated signal, the cancellation action will be required.

6. 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 havng re-set 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 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

1. Inserts & turns SM key, Gives call attention / attend telephone Signal.
3. Attends telephone
5. Informs the SM that the Axle Counter has failed after arrival of train.
7. Informs the SM that complete arrival of last train that passed from sending station to receiving station has been verified and intimate his intention to normalise the Axle Counter & communicates his private number.
9. Requests for co-operation to normalise the Axle Counter.
11. On Reset Cooperation indication lit, Inserts RESET key. Turns & presses for short duration & releases. Advises sending station SM to release RESET button.

13. LINE FREE indication turns GREEN from RED

SECTION buzzer starts ringing.

TRAIN GOING TO / TRAIN COMING FROM indication disappears

'LINE CLOSED' indication appears

Acknowledges the buzzer by pressing ACKN button.

The reset Counter increments. The number is entered in train register as well as in Counter register kept at the station with details of private numbers.

Station provided with Reset button

2. Acknowledges call attention / attend telephone signal.
4. Attends telephone
6. Acknowledges
8. Acknowledges & gives a private number.

10. Acknowledges & presses RESET button.

12. Releases the button

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.

Failure of the Block panel and Last Stop Signal

a) Failure of Block panel

The block panels must be considered to be 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 through 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 / GREEN indication even after ensuring SNKE indicator & LCB key IN at both the stations.
- (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 suppression / 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 :

- (i) 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 and SR thereunder.
- (ii) In respect of the failure indicated in the item number (viii) of above para trains must be dealt with under the extent rules as outlined in SR.6.02.05.

- (iii) In respect of the failures indicated in the item nos. (v), (ix) & (x) of the para (7A) 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 drivers of the approaching trains. In addition, all trains in the relevant directions should be stopped at home signals 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 drivers about the defect of the LSS.
- (iv) The Block Panel should not be restored for normal working until a competent signalling staff has tested & certified fit.
- (v) **In all the cases indicated in paras (7A) - above failures should be informed to S&T staff immediately.**
- (b) Failure of Last Stop Signal
 - The Last Stop Signal must be considered to have failed in the following cases :-
 - (i) The Last Stop Signal cannot be taken 'OFF' even though Line Clear has been obtained.
 - (ii) The Last Stop signal can be cleared without getting Line Clear.
 - (iii) The Last Stop Signal does not restore to 'ON' position after the train enters the Block Section.

Note :

- 1) In all the cases indicated in paras (7b) above failures should be informed to S&T staff immediately.
- 2) In respect of the cases indicated in paras (b) (ii) & (iii) above the precautions indicated in Note No. (iii) and (iv) under the para 7(a) dealing with failures of the Block Panels should be strictly adhered to.

8. 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 extent instructions in the following cases :-

- (i) When material lorries, motor trolleys, tie-tamping machines and rail motor tower wagon (4-wheeler) 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, which shall be done only, under duly accepted disconnection notice. Block Panel working shall only be resumed by a Railway servant authorized as per extent rules in force on the South Eastern 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 in operative 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 (4-wheeler) has to run in the section.

Note :-

- 1) As soon as the cause of suspension of LSS is removed normal working can be restored by SM.

3B.09. Working of trains when there is failure of Block Panel / Last Stop Signal

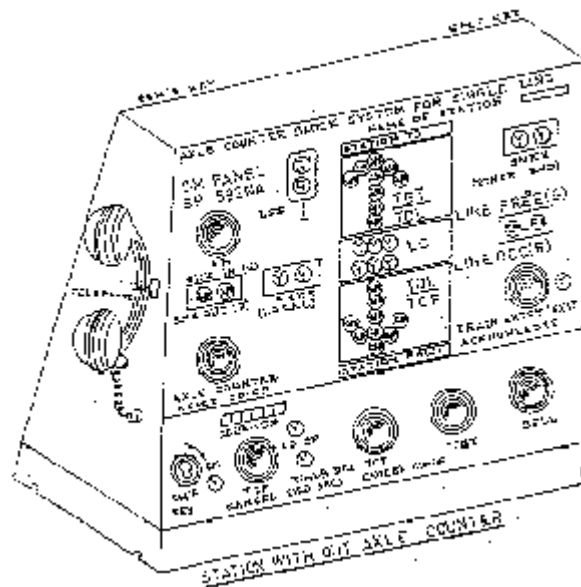
Whenever the Block Panel fail, Line Clear should be obtained on Electrical communication equipments provided and by following provisions of GR 14.13 and SR there under.

b) Failure of Last Stop Signal and Block Panel is working

Block Panel working need not be suspended if the last stop signal cannot be taken off even after setting the instrument to 'train going to' condition provided the block panel is in working order. In such cases, line clear should be obtained as usual through block instrument. The Station Master however will issue paper authority to the Driver authorizing him to pass the last stop signal in the ON position duly endorsing therein that line clear has been obtained through Block Panel.

Procedure for shunting during failure of Shunt Key

When the Shunt Key cannot be extracted and if shunting has to be necessarily performed, the Station Master shall ensure that the Block Instrument concerning the direction of shunting is in "Line Closed" condition. He shall advise the Station Master at the other end of the block section about the shunting to be performed, probable duration, etc. and exchange Private Numbers to this effect before starting shunting operations. The Station Master at the other end of the block section shall take out the Shunt Key, keep it in his personal custody and give a categorical assurance with a Private Number to the Station Master of the station at which shunting is to be done. After shunting has been completed, the Station Master shall inform the Station Master at the other end about the completion of shunting and exchange Private Numbers to this effect. Before the Station Master at the other end gives his Private Number, he shall insert the Shunt Key in the instrument. Both Station Masters shall enter in the Train Signal Register, in Red Ink, the time of exchanging Private Numbers and Private Numbers exchanged before and after shunting operations. The Station at which shunting is to be performed shall give a written authority to the Driver for doing shunting as well as passing the Advanced Station Signal at 'ON' upto the Opposing First Stop Signal.



RULES FOR WORKING OF TRAINS ON THE ABSOLUTE BLOCK SYSTEM ON SINGLE LINES WITH ELECTRIC BLOCK INSTRUMENTS.

4.01. Means of granting or obtaining Line Clear-(Refer GR 14.01). Line Clear for a train from one block station to another, in the direction of its running, shall be obtained/granted by means of-

- (a) electrical block instruments of token type of such construction that only one of the tokens applying to the same block section can be in use at the same time, in conjunction with telephone attached to the block instrument, or
- (b) electrical block instruments of tokenless type, in conjunction with telephone attached to the block instrument. Such instrument may be so designed that 'Line Clear' may be obtained by the Station Master of the block station from which the train is to be despatched with or without the co-operation of the Station Master of the block station in advance.

4.02. Authority to proceed.- [Refer GR 14.08 (b)]

- (1) The Driver shall not take his train from a block Station unless he has been given an authority to proceed-
- (a) by a token for the 'block section, taken out from the electrical block instrument at the block Station where electrical block instrument of token type as mentioned in Rule 4.01 (a) above is in use, or
- (b) by the taking "off" of the last Stop signal on the . section provided with electrical block instrument of tokenless type as mentioned in Rule 4.01 (b) above.

PART I

ELECTRICAL BLOCK INSTRUMENTS **OF TOKEN TYPE**

4.03. Type of Instruments.- The following types of Electrical Block Instruments of token type are in use on the South Eastern Railway :-

- (i) Neale's Ball Token Instrument 'B' type.
- (ii) Neale's Ball Token Instrument 'A' type.

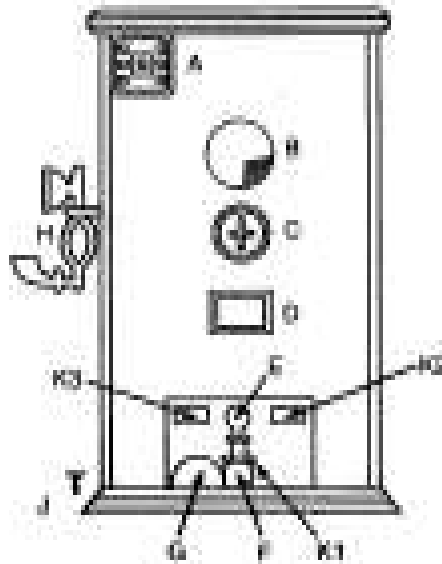
Note:- Each of the above type of instrument is provided with double locks and is kept sealed. The sealing is done by the Signal and Tele- communication branch. One key of double lock is kept under the personal custody of the Station Master and the other in the custody of the Sectional Block Maintainer. The object of providing double locks is to ensure that the concerned instrument shall not be possible to be opened independently by the Sectional Block Maintainer or any other official of the S & T Branch without the direct consent of the Station Master.

Whenever it becomes necessary to open any instrument in terms of BWM rule 4.12 (3) (a); 4.18 and 4.31, the Station Master shall operate the SM's key personally and unlock the same after signing Form SI-16 keeping the key in his custody.

Whenever Form SI-16 duly filled-in and signed by the officials of the S & T branch, certifying that the concerned electrical block instrument is properly closed, locked and sealed, it shall be the responsibility of the SM station Master to operate the SM's key and lock the same before signing the S.M.'s foil of the form SI-16.

4.04. Description of Instruments. - The following is the description of each of the above type of Instruments :

- (I) Neale's Ball Token Instrument 'B' type.



(A) Drawer with Station Master's key, through which the Tokens are placed in the Instrument. The drawer, except when in use, shall be kept locked and the key must remain always in possession of the Station Master on duty.

(B) The Bell.

The round gong for On instrument and sheep gong for Up Instrument.

(C) The galvanometer, to indicate whether a sending or a receiving current is on, and also to show that the electric connections are in order.

Note:- The visible signs which may occur to denote that a Neale's Token Instrument is not in proper working order or that a current is being irregularly received are the following :-

(i) The bell hammer of the Instrument will chatter or will remain pressed to the gong.

(ii) In the case of weak foreign currents, the bell may not ring but the galvanometer will deflect either to the right or to the left according to the direction of the foreign current.

(D) Small glass window to enable the Operator to see the Tokens in the Instrument.

(E) The plunger for working the Bell signals, and controlling the withdrawal of Tokens from the corresponding Instruments at the other end of the section.

(F) The handle, by means of which tokens are withdrawn. This handle can be turned to three positions, viz; vertical indicating "Line Closed", horizontal to the left, indicating "Line Blocked" for receiving a train from the next station, and horizontal to the right, indicating "Line Blocked" for sending a train to the next station.

(G) The aperture, through which tokens are withdrawn from the Instrument.

(H) The Telephone.

(J) The Electric Button, by pressing which the handle can be turned from either the "Sending" or "Receiving" position to the normal or "Line Closed" position, after dropping a token.

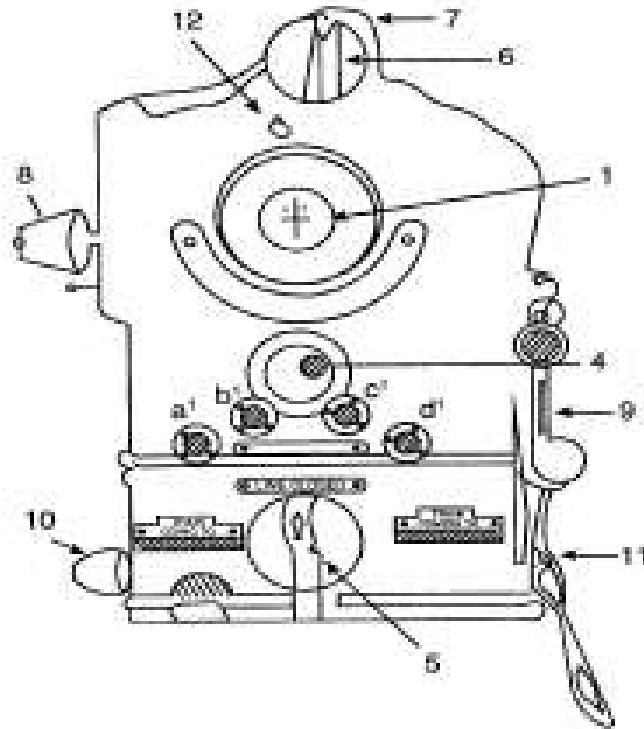
(K1) A brass plate indicating the position on both Instruments.

(K2) A brass plate indicating on one Instrument "Sending Down train" and on the other "Sending Up train".

(K3) A brass plate indicating in one Instrument "Receiving Up train" and on the other "Receiving Down train".

Note :- On each Instrument is shown the name of the station with which it is connected at the other end of the section.

(2) Neale's Ball Token Instrument, 'A' type.



(a) Names of different parts as numbered in the diagram are detailed below :-

- (1) Galvanometer.
- (4) Aperture for the disc indicating empty or existence of one or more Tokens in the instrument.
- (5) Operating handle and plunger.
- (6) Handle of the drum for inserting Tokens.
- (7) Flap covering the portion of the drum where tokens are inserted.
- (8) Bell (round gong for Down Instrument and sheep gong for Up Instrument).
- (9) Telephone hand combination.
- (10) & (11) For attachment of mechanical key locks for electric contacts for interlocking.
- (12) SM's key.
- (a1), (b1), (c1), (d1) - Small glass windows to enable the Operator to see the Token in the four respective Token races. .

Note:- Immediately if no Token is visible from any of the four windows the Sectional Block Maintainer or Block Signal Inspector is to be apprised of the fact through the Controller on phone followed by a telegram a memo as necessary.

(b) This Instrument differs from the 'B' type in the following aspects :-

- (i) The operating handle indicates "Train Coming From" and "Train Going To" in place of "Receiving" and "Sending".
- (ii) When there is no Token in the Instrument the operating handle can be moved only to the "Train Coming From" position.
- (iii) The Token is inserted by placing it in a drum at the top of the Instrument and the drum shall be revolved to allow the Token to drop into the Token chamber.
- (iv) Four small circular glass windows are provided in place of the rectangular window in the 'B' type Instrument for observing whether Tokens are available in the Instrument.
- (v) A shutter is provided which gives two indications;
 - (a) A green disc to indicate that there are one or more Tokens in the Instrument, and
 - (b) A red disc to indicate that there is no Token in the Instrument.
- (vi) The Tokens instead of having grooves of different patterns for adjoining Block sections have spigots of different shapes.
- (vii) The difference in the operation of the two Instruments is that with the 'B' type the Station Master granting the "Line Clear" is the first to restore his operating handle to normal while with the 'A' type the Station Master obtaining "Line Clear" is the first to restore his operating handle to normal.

4.05. Description of Bell Tokens :-

(1) The Tokens are aluminium balls, Each Ball Token is engraved in English with the code abbreviations of the stations at the either end of the block section to which it applies. The Ball Tokens are provided with different grooves so that they cannot be put into the instruments other than those to which they relate. The Ball Tokens are numbered serially.

(2) The Ball Tokens of Neale's 'A' type instead of having different grooves for adjoining block sections, have spigots of different shapes.

(3) Instruments pertaining to one block section consist of Tokens serially numbered as under :-

- (a) Neale's instrument Type 'A'-36 Ball Tokens.
- (b) Neale's Token instrument Type 'B'-20 Ball Tokens.

4.06. Requirements of Electrical Block Token Instrument :-

(1) The Station Master has to go through one or more definite moving operations on the Instrument, in addition to the working of a bell, key or plunger :-

(a) Before he can give permission to the Station Master at the other end of the section to release a Token.

(b) Before he can extract a Token with the permission of the Station Master at the other end of the section.

(2) If a Ball Token has been extracted *from* an Instrument, should show a definite indication by the position of the handle which will be locked until the section has been cleared.

(3) Both Instruments will have to be restored to normal before a further operation of extracting a Token can be carried out.

(4) It should be impossible *for* the mechanism which permits a Line Clear being received, and the mechanism which permits a Line Clear being given, to be in operation at the same time on the same Instrument.

(5) There should be no opening giving access to the interior of the Instrument through which it is possible to operate the mechanism by any irregular means.

(6) The internal mechanism of the Instruments should be secured against unauthorised manipulation, and the Instruments and batteries should be locked up and the keys kept by the authorised Block Maintenance staff. The Instruments and batteries shall be sealed with lead or other suitable seals. (Refer Note under BWM Rule 4.03)

(7) Telephones must be provided in conjunction with Token Instruments.

(8) The period of overhaul of all single line Block Instruments is fixed at ten years. The date of the last overhaul of the Instruments is painted on each Instrument and the Block Maintenance staff should send them into the shops for necessary overhaul prior to the expiry of the period fixed for the purpose.

(9) The "Taking off" of the Advanced Starter or Last Stop signal where such signal exists, should be controlled by the Electrical block Token Instrument.

(10) Electrical interlocking is to be provided between the Station Master's control and the Block Token Instrument. This interlocking is to be so arranged as to ensure the putting of the Home Signal to danger after the arrival of each train before the instrument can be used for subsequent Line Clear work.

4.07 .Importance of bell signals .- The provision of the telephone provided for under sub-rule (7) of BWM Rule 4.06 does not dispense with the necessity for the use of authorised code of bell code signals contained in GR 14.05 and BWM Rule 2.07.

4.08. Responsibility of the Operating staff.- The Station Master on duty alone shall be responsible to see that none but he himself operates the Electrical block instruments of Token type. He is responsible for the safe working of the instruments and that such safe working is dependant on the correct use of code of bell signals and the correct operation of the instruments being carried out in proper sequence.

4.09. Mode of signalling trains on various Electrical Block Instruments of token type.-

(1) Mode of signalling trains on Neale's Token (Ball) Instrument, Type 'B' .-

The Process of signalling is as follows for a train to leave 'X' and proceed to 'Y'.

<u>Station 'X'</u>	<u>Station 'Y'</u>
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(Block handles at station 'X' and 'Y' in "Line Closed" position. Last Stop and Home signal control key(s)/SM's control slide (if any) Pertaining to the block section concerned is/are in normal position).

1. Before asking for Line Clear on a section provided with Traffic Control, the Station Master shall consult the Controller.
2. Inserts Station Master's key and turns.
3. Sends "Call Attention" signal.
6. Sends "Attend telephone" signal
8. Takes up telephone, gives out station name.
10. Ensures correctness of station and asks "Y" if he is prepared to receive train No.
(Refer BWM Rule 2.07(3).
12. Repeats the Private Number given by Station Master 'Y'.
13. Replaces telephone.

15. Sends "Is Line Clear" signal on the plunger keeping the plunger pressed on the last beat for 5 seconds or till the galvanometer needle vibrates.

17. Releases plunger, pulls out and turns the handle to "Sending" position. A Ball Token will then drop through the aperture.

19. Complies with Rule 2.04, 2.07(5) (b) of BWM and ensures that the "Last Stop Signal" (if any) has gone to 'ON' and the Last Stop signal control is restored to normal.

20. Sends "Call attention" signal.

22. Sends "Train entering block section" signal.

26. Acknowledges.

28. On observing the deflection of the galvanometer needle, and on receiving the requisite bell code, turns the needle to "Line Closed" position on the last bell.

30. On observing the vertical position of the galvanometer needle, acknowledges "Train out of block-section" signal.

4. Inserts Station Master's key and turns.

5. Acknowledges "Call Attention" signal.

7. Acknowledges and attends on telephone.

9. Ensures correctness of station and gives out station name.

11. If prepared to receive the train, replies 'Yes' take Line Clear for train No. Private No.

14. Replaces telephone.

16. Pulls out and turns the handle to "Receiving" position acknowledges "Is Line Clear" signal on the plunger keeping the plunger pressed on the last beat for 5 seconds or till the galvanometer needle vibrates.

18. Releases plunger on observing the vibration of galvanometer needle.

21. Acknowledges.
23. On the complete arrival of the train, complies with Rules 2.04 (1) (d); 2.07 (6); ensures that the approach signal(s) is/are and Station Master's control on Home signal (if any) is restored to normal.
25. Sends "Call attention" signal
27. Pulls the drawer, places the Token in the drawer which is pushed home to allow the Token to drop, presses the electric button, turns the handle to "Line closed" position and then sends "Train out of block section" signal keeping the plunger pressed on the last beat for 5 seconds or till the galvanometer needle vibrates.
29. On observing the direction of deflection of the galvanometer needle, releases the plunger.

Instruments at both stations are again in their normal position.

(2) Mode signalling of trains on Neale's Token (Ball) instrument (Type A)

The Procedure of operation of Neale's Token (Ball) Instrument Type "A" is similar to that of Neale's Token (Ball) Instrument Type 'B' except the procedure detailed in para 16, 17, 28, 29 and 30 which are listed below :-

Station 'X'

Station 'Y'

17. Releases plunger, pulls out and turns the handle to "Train going to" position. A ball token will then drop into the aperture.

28. On observing the deflection of the galvanometer needle and on receiving the requisite bell code, turns the block handle to "Line Closed" position, acknowledges "Train out of block section" signal keeping the plunger pressed on the last beat for 5 seconds or till the galvanometer needle vibrates.

30. On observing the vibration of the galvanometer needle, releases plunger.

16. Pulls out and turns the handle to "Train coming from" position, acknowledges "Is Line Clear" signal on the plunger keeping the plunger pressed on the last beat for 5 seconds or till the galvanometer needle vibrates.

27. Places the token in the recess under the flap, turns the handle of the drum to allow the Token to drop, sends "Train out of block section" signal keeping the plunger pressed on the last beat for 5 seconds or till the galvanometer needle vibrates.

29. Releases the plunger and on receiving the requisite bell code signals, turns the handle to "Line closed" position.

Instruments at both stations are again in their normal position.

4.10. Restoring a Token into the instrument from which the same was originally extracted :-

(1) The following are the circumstances when it becomes necessary to restore the Token into the same instrument from which it was extracted.

- (a) When the Station Master granting 'Line Clear' wishes to cancel the permission and thereby sends "Cancel last signal".
- (b) On receipt of "Obstruction Danger" signal as indicated in BWM rule 2.07 (9) (b).
- (c) Whenever the Station Master obtaining "Line Clear" wishes to cancel the same for giving precedence to another train or for any other reasons,
- (d) When a train returns to the block station from which it left, and
- (e) On receipt of "Testing Line Clear".

(2) The Station Master say 'X' on being ready to restore the Token into the same instrument due to any one of the circumstances mentioned in sub-rule (1) above, shall ensure that the concerned block-section to which the Token refers are at 'ON' and the Station Master's control keys/slides for those signals (if any) are restored to their normal position.

The station Master of 'X' and 'Y' shall then adopt the procedure detailed below :-

Station 'X'

Station 'Y'

- 1. Sends "Call Attention" signal.
- 3. Sends "Attend Telephone" signal.

4. Informs 'Y' about his readiness to restore the Token into the Instrument giving the reasons thereof and also the number on the Token.
2. Acknowledges.
4. Acknowledges.
5. Ensures that the concerned block-section is clear, all approach and departure signals pertaining to the same block section are at 'ON' and the Station Master's control keys/ slides for these signals (if any) are in their normal position. He shall then gives his consent to Station Master 'X' to restore the Token into the instrument repeating the number on the token.

The Station Master 'X' shall then follow the procedure detailed under Serial Nos. 25, 27 and 29 and the Station Master 'Y' shall follow the procedure detailed under Serial Nos. 26, 28 & 30 under rule 4.09 (1) exactly in the same sequence for Neale's Token (Ball) instrument, Type 'B' But in case of Neale's Token (ball) instrument Type 'A', the Station Master 'X' shall follow the procedure detailed under serial number 25 of BWM rule 4.09 (1), 27 and 29 of BWM rule 4.09 (2) and the Station Master 'Y' shall follow the procedure detailed under serial number 26 of BWM rule 4.09 (1), 28 and 30 of BWM rule 4.09 (2) in proper sequence. The instruments at both stations shall then be in their normal position. Necessary remark shall be made in the Train Register at both stations.

4.11. Token balancing :- Due to running of more number of trains in one direction than the other, more number of Tokens accumulate at the instrument at one end of the section. This necessities at one end of the section. This necessities balancing of Tokens. At all block stations where electrical block instrument of Tokens on hand in the remarks columns of the Train Register at the end of each shift and advise the Block maintainer/Block Signal Inspector as soon as total number of tokens in a particular instrument falls to 'Six'.

4.12. Transference of Tokens :-

(1) The Station Master requiring Tokens to be transferred to his station shall advise the Block Maintainer or Block Signal Inspector as the case may be, through the Section Controller, or by a telegram if there is no Train Control or the same has been suspended.

(2) The Block Token Instruments are fitted with small doors in the rear at the lowest elbow of the Token run away channel so that Tokens may be withdrawn through these doors without interfering with or exposing the mechanism of the Instruments. The doors are normally locked. The key of these doors are with the Block Signal Inspector or the Block Maintainer.

(3) (a) If Block Signal Inspector or the Block Maintainer has occasion to withdraw Tokens for the purpose of transfer by opening the cover of the Instrument, BWM Rule 4.18 must be fully complied with. But if the Tokens are withdrawn through the rear door of the Instrument he will present his Book SI-14 before the Station Master who will first examine the authority of the concerned staff and then, provided the Block section concerned is clear and the handles of both the Block Token Instruments applicable to the section are in normal position, he will, after advising the Station Master of the station at the other end of the Block section over phone, grant the permission by filling up and signing the book foil of SI-14.

(b) The required number of Tokens will then be withdrawn by the Block Signal Inspector or the Block / Maintainer through the rear door of the Instrument and the doors locked in presence of the Station Master whereupon the Station Master will fill up the outer foil of SI-14 taking particular care that the numbers on Tokens are correctly recorded, and in the order in which withdrawn. The Block Signal Inspector or the Block Maintainer and the Station Master will then jointly sign this foil.

(c) The Block Signal Inspector or the Block Maintainer shall record in the Train Signal Register at the Station the numbers on the Tokens he has withdrawn and in the order in which they have been withdrawn from the Instrument. The Station Master will verify the entry, sign the register and insert the time at which the transaction takes place.

(d) The Block Maintainer or the Block Signal Inspector will then proceed to the other end of the Block Section and ask the Station Master's permission to deposit the Tokens into the Instrument concerned. Provided the Block section is clear and the handles of both the Instruments applying to the section are in normal position, he will give this permission and open the Token drawer. The Tokens should be deposited into the Instruments without any delay and the Station Master should not block the section for another train until all the Tokens brought by the Block Maintainer or the Block Signal Inspector are deposited in the proper Instrument.

(e) The Block Maintainer or the Block Signal Inspector shall drop the Tokens into the Instrument in presence of the Station Master and record their individual numbers in the Train Signal Register in the order in which dropped. The Station Master shall verify this, and, when satisfied, shall sign the entry and note the time at which the transaction has taken place. The Station Master shall also sign the certificate at the foot of the outer foil of SI-14.

(f) The Block Signal Inspector or the Block Maintainer shall keep in his possession and be responsible for the safe custody of all the Tokens he has withdrawn, until he has placed them in the Instrument at the other end of the section.

(g) The rear door of a Block Token Instrument must not be opened unless the handle of the Instrument is in its normal position. See also sub- para (J) below.

(h) A Block Token Instrument must not be .operated unless the rear door is properly closed and locked.

(i) If a Block Maintainer or Block Signal Inspector while transferring Tokens over his jurisdiction comes across a section the Block Token Instruments of which have already been suspended due to a fault other than Token getting exhausted, he must not under any circumstances transfer Tokens over that particular section. The Station Master of the stations concerned must not sign the permission form SI-14 but should inform him that the Instrument has already been suspended. The Block Maintainer or the Block Signal Inspector concerned shall adjust the Tokens, if necessary, when the Block Token Instruments over the suspended section are put in working order, and the normal working is resumed.

(j) In case of a failure due to Tokens exhausted, the Block Signal Inspector or the Block Maintainer may adjust theToken withdrawing them through the rear door of one Instrument and withdrawing them through the drawer of the corresponding Instrument. The Station masters concerned may then, provided the Block section is clear, resume the working of the Block Token Instruments after satisfying themselves that both the handles have been brought, to normal position and the Block Signal Inspector or the Block Maintainer has signed against the entry of the number of Token transferred in theTrain Signal Register book of the respective stations. (For specimen of form SI-14 see Appendix 'B'.)

4.13. Adjustment of BlockToken Pouches and Hoops :-

(1) Station Master must be careful that on every occasion when Tokens are adjusted by the Block Signal Instrument or the Block Maintainer, a corresponding adjustment of pouches and hoops is made by the Station Master, the pouches and hoops being supplied by Block Signal Inspector.

(2) Station Masters will replenish their stock of hoops and pouches on indent from the Block Signal Inspector of the section whenever required.

(3) Pouches which cannot hold theToken securely should be returned to the Block Signal Inspector for replacement. The hoops utilised for making over "Authority to Proceed" should be examined before use to ensure that they are in good condition and are not likely to snap at the time of picking up.

4.14. Token damaged.- (1) If a Token is damaged and it cannot be deposited in the Instrument, notices to that effect shall at once be sent to the Block Signal Inspector of the section, the Divisional Signal & Telecom Engineer or the Assistant Signal and Telecom. Engineer and the Section Controller where the section is controlled by Train control. On arrival of the Block Signal Inspector BWM rule 4.18 must be complied with before the Instrument is opened and the Instrument must then, in the presence of the Station Master, be so adjusted as to working to be resumed without the damaged Token which must be taken away for repair. Until necessary assistance arrives and the Instrument has been adjusted, no train may be allowed to travel over the section affected, except by means of Line Clear Tickets as prescribed in General Rule 14.25.

(2) Should a Token be damaged after it has been withdrawn and before it has gone forward into the section in advance, the train for which it has been withdrawn must not be detained for the Line Clear Ticket, but may proceed with the damaged Token.

4.15. Token Lost. - (1) Should a Token be lost, the concerned block instrument shall be considered as having failed and working of trains under Line Clear Tickets must be introduced at once. But in case the Token extracted from the electrical block token instrument in accordance with the procedure laid down in B.W.M. Rule 4.09 for a train, is lost in the process of picking up by the Driver or from the custody of the Driver before the train has left the station, that particular train may be allowed to proceed on the authority of a line clear ticket specified under GR 14.25 (1) issued by the Station Master since Line Clear for the train was already obtained. The Driver shall, however, issue a written memo to this effect to the Station Master, who shall paste the same in the concerned page of the Line Clear enquiry book with necessary remarks. The Station Master shall record the individual number of the Token lost and the Private Number obtained earlier *for* the said train on the Paper Line Clear Ticket and also inform the Station Master in advance of the loss of Token. After the train has started, the Station Master shall send "Train entering block section" report *for* such train shall be given supported by a Private Number. Necessary remarks shall be made in the Train Register books at both stations. The electrical block token instrument shall then be treated as suspended.

(2) After every possible enquiry and search have been made *for* missing Token, and when it has been established without doubt and it cannot be found, the Token must at once be reported as lost by telegram to the Station at each end of the section, to the Divisional Mechanical Engineer, Divisional Electrical Engineer (OHE), Divisional Safety Officer, Divisional Transportation Inspector, Block Signal Inspector, the Divisional Signal and Telecom. Engineer or Assistant Signal & Telecom. Engineer, the Loco Foreman, Loco Shed Foreman and Traction Foreman (Running) at either end and Station Master of the station on either side of the section of which the loss occurs. The code abbreviation *for* these addressees will be "All concerned Token".

Care should be taken to mention in the telegram the number engraved on the Token lost and the section to which it applies. The number of the Token should be written and transmitted in words and not in figures.

(3) The loss of Block Tokens will not be notified in the Caution Order issued from the notice station nor will it be necessary to stop a train out of course for the Driver's receipt to be obtained when the loss of a Token is notified in a Caution Order.

The Station Master of the station at each end of a section over which the Block Token Instruments are out of order, must by telegram or any other available means of communication, advise the Station Master of the next station on his side, and the Station Master on either side so advised must make the following entry in the Caution Order issued to the Drivers of trains approaching the section concerned :

Note :- Block Token working over section from to out of order Trains working on Line Clear Tickets.

This caution order shall be issued till block token working is resumed.

Example :- A, B, C & D are four consecutive stations. If the Block Token Instruments for the section between B & C are out of order and trains over that section are to work on the authority of Paper Line Clear Tickets, the Station Master at B & C must, by telegram, advise the Station Master A & D respectively and the stations at A & D must make the prescribed entry in the Caution Orders issued to Drivers of trains leaving for B & C respectively.

(4) On arrival of the Block Signal Inspector, Rule 4.18 of BWM must be complied with and Instrument must be adjusted by him so that normal working may be resumed. The Block Signal Inspector while resuming the electrical block token instrument for its normal working shall post a lost Token notice in the following form at both stations and shall submit a report to the Divisional Signal and Tele-communication Engineer..

<p>LOST TOKEN NOTICE</p> <p>Token no belonging to the section(station) and (station) is lost. If brought back to the station, at either end of the section, it must not be used but must be kept in the safe custody of the Station Master, who must advise me forthwith.</p> <p style="text-align: center;">Block Signal Inspector</p> <p style="text-align: center;">Hd. Qrs</p>
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(5) If a lost Token is found after a failure message has been sent but before the arrival of the Block signal Inspector and even if trains have been passed meanwhile on Paper Line Clear, the instruments shall be restored by the Station Master personally who shall, provided the block section is clear, advise the Station Master at the other end of the section as follows:-

No. My wire No.Token No..... found.
Last Train No. arrived/left here last at (Time). Propose to restore Token Instrument. Private Number.....

The Station Master receiving the advice shall, provided the block section is clear, reply as follows :-

No. Your wire No. Restore your instrument and let me restore mine. Last Train No..... arrived/left here last at.....
(Time). Private Number.....

Both Station Master shall then proceed to place their Instruments in the normal position carrying out the regular sequence of operations, and the Station Master who reported the failure shall cancel his original "Token lost" message by another. message which should read as follows :-

No.My No. cancelled. Token found and Block Instrument is adjusted and restored.

(6) If a Token is found after the Block Instrument is adjusted and restored by the Block Signal Inspector under no circumstances should the Token be deposited in the Block Instrument by the Station Master. Sub-rule(9) below must be complied with. The messages notifying the loss of and the restoration of the Tokens, issued by the Station Masters should be entered in the Caution Order Register.

(7) The stations at each end of the section to which the lost Token applies must enter in every Caution Order, issued subsequent to the loss of the Token, a notice as follows :-

Token No. applicable between..... and has been lost and must not be accepted by any Driver over the section.

This notice will be entered in the caution order until the lost token is restored in the instrument or a joint circular as in sub-rule (10) is issued whichever is earlier.

(8) The original Token if found, after it is replaced by a new one or after a lapse of six months whichever is earlier, should on no account be replaced in the Instrument but must be forwarded to the Divisional Signal and Telecom. Engineer for cancellation.

(9) If the Token is found within the period of six months or before being replaced by a new one, whichever is earlier, the Block Signal Inspector must be advised by a telegram to arrange for its return to the Instrument. When either the original or a fresh Token as explained has been placed in the Instrument, a telegram addressed to the persons mentioned in sub-rule(2) above, must be issued cancelling the message reporting the loss.

(10) On receipt of the Station Master's messages as per sub-rule(2) and Block Signal Inspector's report as per sub-rule(4) above, a joint circular (Operating and S & T) addressed to Divisional Mechanical Engineer, Divisional Electrical Engineer (OHE), Divisional Transportation Inspector, Block Signal Inspector, Loco Foreman, Shed Foreman, Traction Foreman (Running) and the Station Master of the stations on either side of the concerned block section shall be issued by the Divisional Signal & Telecommunication Engineer and Divisional Safety Officer giving full particulars of lost token for the information of the concerned staff.

(11) No Driver shall accept the token lost notified in the Caution Order as per sub-rule(7) or as per sub-rule(10) above as a correct "Authority to proceed" unless-

(a) the joint circular as per sub-rule (10) is cancelled by a fresh joint (Operating and S & T) circular, or (b) a caution order with proper endorsement is issued by the Station Master along with such token.

(12) Whenever the lost token is restored in the instrument in terms of sub-rule(9) above, the Station Masters shall issue a caution order accompanying the token with proper endorsement for the Driver to accept the token in the event of the same being issued to any Driver after being extracted from the instrument in the manner laid down in BWM Rule 4.09 till such time a fresh joint circular (Operating and S & T) is issued cancelling the original joint circular.

(13) In order that the running staff may have a ready record of lost Block Tokens, a list is published in the Gazette showing details of the Tokens reported to be lost and of those reported as recovered after loss.

(14) When a Token is reported as lost, but subsequently found within 6 months, it shall be deposited or restored to its respective instrument by the Block Signal Inspector of the section. He should do so only if the token is not damaged/ defaced, by dropping the same through the Token drawer when the instruments are in line closed position, and not by opening the front cover of the Instrument, or by the rear door of the Instrument through which Tokens are extracted (for the purpose of, transference), in the presence of the Station Master and obtain the latter's acknowledgement to this effect, the former making a suitable entry and signing the Train Signal Register as is required by rules. This procedure should also be strictly adhered to in cases of replacement of lost Tokens and damaged Tokens by new ones.

4.16. Overcarriage of Block Tokens by Drivers. - (1) Should a Token be inadvertently overcarried by a Driver, it must not be delivered to any station on another section, but must be retained by the Driver and handed over at the next engine changing station to the Loco Foreman or Shed Foreman or Traction Foreman (Running) for transmission in a sealed cover to the Divisional Signal & Telecom. Engineer of the Division to which the Token belongs. The Divisional Signal & Telecom. Engineer will forward the Token in a sealed cover to the Block Signal Inspector of the section for restoration to the proper Instrument.

(2) The Station Master of the station from which the Token has been overcarried or is missing, in order to make sure that the Token has been overcarried and not lost, should at once instruct the Station Master of the station ahead on the Block Instrument Telephone to stop the train even if it is a non-stopping one and to enquire from the Driver as to whether he has overcarried the Token and, if so, get from him a memo to that effect; but in no case should the Token in question be made over to such Station Master.

(3) On receipt of this memo from the Driver the Station Master will at once communicate the same to the Station Master of the station from which the Token is overcarried, who will then issue a telegram suspending the Block Instruments, giving the number of the Token and stating that it has been overcarried by the Driver. The Block Signal Inspector on the authority of this telegram will resume Block Instrument working as soon as possible.

(4) If the Driver cannot certify by a memo that he has overcarried the Token, then, the Token in question should be treated as lost and the Station Master of the station from which the Token is missing, should take action as prescribed in BWM Rule 4.15.

4.17. Should a Token be inadvertently left behind at station by a Driver, the following procedure shall be adopted:-

(1) The Token should be kept in safe custody by the Station Master and handed over to the Block Signal Inspector when he comes to resume block instrument working.

(2) (a) The Station Master of the Station at which the Token has been left behind must, in addition to an all concerned accident message under Class 'E', issue a telegram /message suspending Block Instrument working and giving particulars of the Token number and train number involved in the following form.-

Block Instrument working for section..... to..... suspended due to Token Noleft behind by Driver of

(b) The Block Signal Inspector on the authority of this telegram/message will resume Block Instrument working as early as possible and replace the Token in the proper Instrument.

4.18. Opening of Instruments for examination, test over-haul, repairs, adjustment of Tokens, etc :-

(1) The Station Master must not permit any person to open any Token or Tokenless Instrument unless he produces an authority numbered and signed by the Divisional Signal & Telecom, Engineer. The particulars of officials authorised to attend such instruments are also to be recorded in the Failure Register after the Station Master has verified their authority.

(2) The Instruments must on no account be opened for examination or in any way interfered with by the staff responsible for the maintenance unless the written authority of the Station Master has been previously obtained on form S&T (T/351). An entry to this effect must be made by Station Master in the Train Signal Register book 1 recording the time the Instrument was opened and the time it was closed.

(3) Before the Station Master gives his written authority to the signal staff to open a Block Instrument for inspection, test or overhaul or for any other reason, he must inform the Station Master on duty at the station on the other end of the Block section which the Instrument about to be opened .controls, and obtain from him permission verified by a Private Number for the Instrument to be opened.

This permission must be obtained through the Block telephone, if in order, or through the Morse Instrument or through the control phone and the Station Master giving permission must note on his Private Number book against the Private Number given that it was issued for the inspection of the Block Instrument at station.

(4) The Instruments must not be opened for examination or in any way interfered with when "Line Clear" has been granted or obtained for a train. When opened, it shall not be used for any Line Clear work.

(5) While the Block Maintenance staff has opened any Block Instrument for any purpose, such instrument must be considered to be out of order, and must on no account be used for train working nor shall the instrument be brought into use again till the Block Signal Inspector or the Block Maintainer gives the station master a certificate on form S&T (T/351) to the effect that the instrument has been correctly closed and secured and is in proper working order. The Station Masters concerned should exchange "line Clear" recording the particulars of such "Testing Line Clear" in the Train Signal Register book and must satisfy themselves that the instruments are in perfect working order before bringing the instruments into commission S&T (T/351) received from the Block Maintenance staff should be pasted in the Train Signal Register.

(6) No battery cupboard must be opened by the Block Maintenance staff when "Line Clear" has been granted or obtained for a train on any Instrument controlled by the battery in the cupboard, nor should "line Clear" be granted or obtained on any Instrument controlled by the battery in a cupboard when the cupboard is open.

(7) While the Block Maintenance staff have an instrument or battery cupboard opened, under no circumstances must any other than authorised staff interferes with the instrument or battery cupboard.

4.19. Abnormal condition of Block Instrument-(1) Should an instrument becomes defective in such a way as to allow of more than one Token to be withdrawn from one pair of instruments at the same time, or to permit of a Token being extracted without complete adherence to the authorised procedure for withdrawing Token, the matter must be promptly reported as an accident under Class "p", the Station Master of the station at the other end of the Block section being included in the address of the telegram/message.

(2) The working of trains by means of the instruments affected must be suspended and trains shall be worked over the section on the authority of Line Clear Tickets as prescribed in Chapter-III Part- I, of B. W. M. and the affected instruments at both the stations must be sealed by the Station Masters concerned in such a way as will prevent handling of the instrument.

(3) The Station Masters of the stations of which " the working of Block Instruments has been suspended under this rule must on no account permit the defective instruments to be opened by any person not holding a "Special permit" signed by the Divisional Signal and Telecom. Engineer or the Assistant Signal and Telecom Engineer. This "Special permit" will be addressed to the Station Masters of the stations concerned and will in each case, bear a reference to the accident message issued. The authority referred to in BWM rule 4.18(1) must not be accepted as a "special permit" for such cases.

(4) When a second Token is withdrawn *from* the instrument at the station *from* which the first one has been issued, it must be carefully retained in security by the Station Master and be handed over to the representative of the Signal branch holding the special permit mentioned in sub-rule(3) above and his receipt *for* it obtained. This receipt must be sent to the Divisional Safety Officer with the Accident report.

(5) The train carrying the first Token, on its arrival at the other end of the section, shall be signalled "Out of block Section" in the usual way by the Token being put into the instrument and notice must then at once be given suspending Token working between the two stations.

(6) When a second Token is withdrawn *from* the instrument at the station at the other end of the section to the *from* which the first one has been issued, it must be carefully retained by the Station Master in security and dealt with as per sub-rules 4 & 5 above.

(7) The representative of the Signal branch referred to in sub-rule(3) above, should thoroughly inspect the two block instruments concerned and check the number of Tokens in the two instruments. If the correct number of Token is not found, the procedure laid down in BWM Rule 4.15 shall be followed. He should draw the attention of the Maintenance branch of the condition of the overhead wires, if they are in an unsafe condition and if this has been the cause of the irregularity. If the cause of the irregularity was wrong manipulation of the instruments for which the traffic staff is at fault, he should at once bring this to the notice of the Divisional Safety Officer. He should further obtain written statements from the two Station Masters concerned, acknowledging that the instruments can be satisfactorily and safely operated and stating whether the instruments have their full number of Tokens or not, as the case may be. The Station Masters rendering this certificate must satisfy themselves that everything is correct, as they alone will be held responsible for any irregularity in the working of trains by means of the token instruments, which may be caused by the fact that spare Tokens have been wilfully kept back. To prevent the block instrument being kept suspended for a longer period than is necessary the department at fault should accept responsibility without delay. In case where responsibility cannot be fixed at once and provided no accident has occurred. The Divisional Signal and Telecom. Engineer or the Assistant Signal and Telecom Engineer concerned may resume normal working if he is satisfied that normal conditions prevail. If it is considered necessary by the Divisional Signal and Telecom. Engineer or the Assistant Signal and Telecom Engineer to work the block instrument with extra care and vigilance by using identification Number as laid down in SR 6.02.03 for a certain definite period, then the Divisional Signal and Telecom Engineer or the Assistant Signal and Telecom Engineer concerned will instruct the Station masters concerned in writing.

(8) Before normal working is resumed, an authority on form SI-4 (S&T/DN) should be handed over to the Station Masters concerned by the representative of the Signal branch referred to in sub-rule (3) above, who shall obtain the signature of the Station Masters concerned on the counterfoil. If the representative of the Signal branch referred to above, cannot be present during the time of resumption of normal working, the Block Signal Inspector of the section will be authorised to resume normal working.

(9) Form SI-4 (S& T/DN) issued by representative of the Signal branch referred to above, or the Block Signal Inspector as the case may be, should be pasted in the Train Signal Register by the Station Masters and "Testing Line Clear" must be exchanged.

4.20. In case of accidents of a serious nature. In case of accidents due directly or indirectly to the defective or irregular working of block instruments thereby causing collision or damage and when the matter is reported as an accident under Class "A" the Block Instruments must not be opened or inspected until the joint enquiry is held or the responsibility is fixed. The Station Master shall ensure that the block instrument is kept sealed during this period.

4.21. Suspension of BlockToken Instruments for overhaul or repairs.- (1) When the Block Signal Inspector/Block Maintainer requires to suspend the working of block instruments on a section for overhaul or repairs he must send a message to the Station Masters at both ends of the section with a copy to Divisional Operating Supdt., Divisional Safety Officer and the Divisional Signal and Telecom. Engineer concerned in which must be stated clearly the reason why the working is to be suspended.

(2) In the event of the repairs having to be left incomplete or the instrument left for the inspection of a Superior Officer, the instrument shall be locked up by the Block Signal Inspector or the Block Maintainer and the permission given by the Station Master on Form SI-4 (S& T/DN) for opening the instrument together with the unsigned counterfoil on Form SI-4(S &T/DN) will be torn out of the book by the Block Signal Inspector or the Block Maintainer

and fastened on the inside of the window so that it can be easily read through the window when the instrument is closed. On the instrument being again brought into use, the counterfoil will be signed and given to the Station Master in the usual way [see sub-rule (3) below] and if the instrument is brought into use by a superior officer of the Signal & Telecom. branch, the "Authority to open" portion will be forwarded by the Block Maintenance staff resuming block instrument working to the one who opened the instrument.

(3) When the instrument is in working order and has been locked up, permission to resume block instrument working will be given to the Station Master on the counterfoil of Form S&T (T/351). The Station Master after receiving this permission must inform the station Master at the other end of the section that block instrument working may be resumed and give him a Private Number. This Private Number must be entered on Form S&T (T/351) and also on the counter foil.

4.22. Inspection of single line Block Token Instruments.- The following instructions are issued for the guidance of the Block Signal Inspectors, Block Maintainers and Station Masters :-

(1) Instruments may be opened only by a duly authorised person who must produce his authority Card signed by the Divisional Signal and telecom. Engineer concerned.

(2) Instruments may be opened for inspection or transfer of Tokens only when the section is clear and the inspection or work can be completed before the instrument is again required for train working.

(3) For these inspections and for opening the instrument for the transfer of Token a message notifying the suspension of the block instrument working should not be issued but the written permission of the Station Master on Form S&T (T/351) must be obtained and the permission must bear a Private Number given by the Station Master at the other end of the section.

(4) Station Master must enter the time and date of inspection in the Train Signal Register and also sign the Block Signal Inspector/Block Maintainer's report form when completed.

(5) The date when each block instrument battery is attended to and the particular work done on it is to be entered in the battery history register/card by the S & T Maintenance staff.

(6) Block Signal Inspector and Block Maintainer must study the traffic conditions and attend to the instrument before Tokens are exhausted.

(7) As a check on the movement of Block Maintainer, each Block Maintainer must obtain the signature of the concerned Station Master in his daily maintenance report form whenever he visits a station.

4.23. Procedure to be followed when Maintenance party work on sections wherein Block wires are also carried.- (1) No work of any description is to be started on a section wherein the Railway Block wires are either carried through overhead aerial wires or through underground cable conductors without the official responsible for carrying out the work first giving the notice by message addressed to the Station Masters at either end of the section asking for their acknowledgement in the following form :-

To Station Masters, X and Y.

No..... Maintenance party will
commence working on wire section.....

to..... on (date) from hrs. Acknowledge.

No work should be commenced unless the acknowledgement is received. If the acknowledgements are not received within an hour, reminder message shall be issued.

(2) The Station Masters on receipt of the message indicated sub-rule(1) above shall issue the acknowledgement thereof, endorsing a copy of the same to the addressees mentioned in rule 4.24 (2) (a). The Station Masters at both ends of the section will issue an acknowledgement message in the following form ;-

To (Here enter the official designation of the Maintenance Official in charge of the party).

Copy to

No Your No dated I acknowledged and extra special care will be exercised and Identification Numbers will be used for block working betweenand from hrs. until receipt of line normal message.

Both the Station Masters may then continue to use the block instruments but with extra care and vigilance and using Identification Numbers until advised that the working party has completed their work vide sub-rule 4 below.

(3) Should there be any reason to believe that there is contact between the block wire and any other wire during the period the Maintenance party are working on the line, the Station Master will issue a block suspension message under rules for suspending block working and work on Line ClearTickets as prescribed in Chapter-III (part I) of BWM.

If a contact exists between the block and other circuits there will be either a permanent or intermittent deflection of the Galvanometer needle and possibly irregular beats on to bell. A contact between two block wires will cause signals given on one instrument to be repeated in the neighbouring instrument.

(4) On completion of the work and withdrawal of the party from the section, the maintenance official- in-charge should similarly notify the same to the Station Masters at either end of the section by a message in the following form :-

To,

Station Masters, X and Y,

No My message No.....of date Telegraph repairs on section..... to..... completed and line normal.

(5) The Station Master on receipt of the above message shall cancel his previous message vide para(2) above.

(6) In the event of block working having been suspended due to contact beats as per para(3), normal working shall not be resumed unless both instruments and Tokens have been examined and checked by the Block Signal Inspector concerned. On receipt of the authority of form S&T (T/351) from the Block Signal Inspector concerned, the Station Master shall then issue an "all concerned" message cancelling his first message and resume the block token working over the section suspended in terms of rule 4.19 of BWM.

(7) As far as possible a similar procedure as detailed above should also be followed when the maintenance party is proceeding on heavy interruption repairs.

(8) Under no circumstances should block working on a suspended section be resumed by the Station Masters unless authorised to do so by the Block Signal Inspector concerned in Form S&T (T/351)

4.24. Failure of Electrical block instrument (Token type).

(1) The Electrical block instrument (Token type) shall be considered as having failed and their work- ing suspended in the following circumstances :-

- (i) Attention cannot be obtained on the block instrument including the failure of block telephone.
- (ii) Bell signals received indistinctly or fail altogether.

(iii) Where last stop Signal has an electric lock interlocked with block instruments the last Stop signal lever can be reversed when the operating handle is not in "Train Going To" or "Sending" position.

(iv) Reasons to believe a contact on block wire:

Note :- (i) The indications are -

(a) Permanent or intermittent deflection Galvanometer.

(b) Signals given on one are repeated on the neighbouring instrument.

(c) Interference from other telegraph/telephone circuit as may be heard on the block telephone.

(ii) In such case BWM rule, 4.19 shall be followed.

(v) Instrument or its battery counter is found un- locked or with defective seal/unsealed condi- tion

(vi) Operating handle cannot be turned after cor- rect sequence of operation.

(vii) A train arrives without proper" Authority to Proceed".

Note :- This is to be treated as an accident.

(viii) Operating handle can be turned to anyone of the three positions without the plunger being pressed from the other end station except in case of Neale's Token (Ball) instrument, Type 'B' vide procedure 27 of rule 4.09(1) of BWM.

Note :- In such a case BWM rule 4.10 shall be followed.

(ix) "Line Clear" cannot be cancelled after correct manipulation.

(x) When a train is to be worked in terms of SA 6.02.02.

Note :- In this case the Station Masters themselves may resume normal working after ensuring that the block section is clear and after ex- changing message as indicated in SR. 6.02.02(d)(vi).

(xi) Token cannot be extracted after proper sequence of operation.

(xii) Token can be extracted without adherence to the proper sequence of operation.

Note :- This is to be dealt with as per rule 4.19 of BWM.

(xiii) Token is broken or damaged during or after extraction.

Note :- Rule 4.14 of BWM shall be followed.

(xiv) No Token in instrument at station where train is to depart. Token indicator shows 'Red' for Neale's token instrument, 'A' type.

(xv) Token received cannot be inserted or jams when inserted or the token drawer/drum is jammed.

(xvi) Home signal control key, where provided, and interlocked with the block instrument is lost.

Note :- If the lost key is found subsequently, Station Masters themselves may resume normal working only when the block section is clear.

(xvii) Token lost.

Note :- This is to be dealt with as per rule 4.15 of BWM.

(xviii) Token overcarried.

Note :- This is to be dealt with as per rule 4.16 of BWM.

(xix) Token left behind.

Note :- This is to be treated as an accident and action taken as per rule 4.17 of BWM.

- (xx) Token is issued to official of Signal and Telecommunication branch for work involving disconnection of outlying siding points controlled by token instrument.

Note:- In this case after the token is returned and on receipt of reconnection notice issued by the S & T official, Station Masters themselves may resume the normal working provided the block section is clear.

- (xxi) Key of the token inserting drum/drawer is lost.

Note :- This is to be dealt with as per rule 4.16 of BWM.

- (xxii) Last Stop signal control key, where provided on the instrument is lost.

Note:- In this case note below item (xvi) shall be followed.

- (xxiii) When the instrument is opened for test, over-haul or repairs.

Note :- In this case rule 4.18 and 4.21 of BWM shall be followed.

- (xxiv) When more than one token can be extracted from one pair of instrument.

Note :- In this case procedure detailed under rule 4.19 shall be followed.

- (xxv) When accident of a serious nature due directly or indirectly to the defective or irregular working of block instruments thereby causing collision or damage.

Note :- This shall be dealt with as per rule 4.20 of BWM.

- (xxvi) When it is known that the instrument is defective in any way not specified above.

(2) (a) Whenever any electrical block instrument fails the Station Master of the station at which the failure has occurred shall at once issue a message through the Section Controller on the section provided with Train control and on the section not provided with Train Control or in the event of failure of Train Control system, by issue of a telegram. In the controlled section, a telegram shall also be issued in addition.

The addresses shall be normally-

- (i) Block maintainer of the section.
- (ii) Block Signal Inspector of the section,
- (iii) Divisional Signal and Tele-communication Engineer,
- (iv) Divisional Safety Officer,
- (v) Station Master of the station at the other end of the section,
- (vi) Divisional Transportation Inspector,
- (vii) Divisional Mechanical Engineer,
- (viii) Divisional Electrical Engineer (OHE),
- (ix) Loco Foreman, and
- (x) Traction Foreman (Running) unless otherwise mentioned in the relevant rules.

(b) In case where the Block Maintainer/Block Signal Inspector is Headquartered at the same station at which the failure has occurred, a memo shall at once be sent to him and his acknowledgement obtained.

(c) It is the responsibility of each Block Signal Inspector and Block Maintainer to advise the Section Controller and the Station Master of the Headquarter station about his movement before he proceeds on line. This shall be done by issuing a memo and the acknowledgement of Station Master obtained.

(d) On receipt of information regarding block failure, the Section Controller shall immediately issue a control order advising the Block Maintainer and/or the Block Signal Inspector to attend the failure. For this purpose, the Section Controller shall maintain a Register (OP/T456) wherein such orders shall be recorded and also the date, time and station at which the order was repeated. In case the Block Signal Inspector or the Block Maintainer is at the same station where the control office is situated, the Dy. Chief Controller shall at once send a memo advising the failure.

(e) The Station Master of the station reporting the failure shall record the block failure in the signal failure and inspection book.

(f) The Station Masters at both stations shall make entries-

(i) in red ink in the Train Register Book, and

(ii) in the Caution Order Register, when the BlockToken working is suspended and also when normal working is resumed.

4.25. Resumption of normal working.- (1) Except in cases where Station Masters are authorised to resume normal working, Form S&T (T/351) duly filled in signed by authorised official of the Signal and Telecommunication Department certifying that the electrical block instrument concerned has been properly, closed, secured and working properly, must be obtained by the Station Master before normal working is resumed.

(2) After the certificate in Form S&T (T/351) as per sub-rule(1) above is obtained, the Station Masters shall not resume normal working unless (a) it is ensured by exchange of messages supported by Private Number between the Station Masters that the concerned block section is clear of trains, and

(b) "Testing Line Clear" is obtained and cancelled in the manner prescribed, by the Station Master at the either end of the concerned section and the same is recorded in the Train Registers at both stations.

(3) Whenever normal working is resumed, a message shall be issued cancelling the message issued in terms of sub-rule(2) of BWM Rule 4.24 and action taken as per clauses(e) and (f) of sub- rule (2) of BWM rule 4.24.

4.26. Testing Line Clear.-Whenever it is necessary to obtain "Testing Line Clear" the Station Master shall ensure that the block section to which the block instrument relates, is clear of all trains. Line Clear shall be obtained and a token shall be extracted in the similar manner by which line clear is normally obtained except that in lieu of sending and acknowledging "Is Line Clear" signal "Testing" signal shall be sent and acknowledged and no Private Number shall be given by the Station Master permitting to extract the token. The Station Master shall keep the token in his personal custody and test the behaviour of the last Stop signal, if any. He shall then cancel the token in the manner prescribed under BWM Rule 4.10 (2). The Station Master at the other end of the concerned" section shall also act in the similar manner.

4.27. Block back and removal of block.- (Refer GR 1.02(8) and 8.14).Whenever it becomes necessary to obstruct the line in terms of GR 8.13, the procedure detailed under rule 3.32 of BWM shall be followed.

4.28. Working of MotorTrolley.- (1)Whenever a motor trolley is to be worked in terms of SR 15.25.03(a), line clear shall be obtained in the manner detailed for working of trains.

(2) Whenever a Motor trolley is to follow a train or another Motor trolley, the Station Master responsible for the operation of block instrument, shall obtain the permission to despatch from the other end Station Master supported by a Private Number. If two Motor trollies are to follow a train, Private Number shall be obtained separately for each motor trolley. Entries in the Train Register shall be made in Red ink.

(3) Whenever Motor trolley/trollies is/are worked as per sub-rule(2) above, a board inscribed "Motor Trolley on line" shall be hung up on the block instrument plunger at both stations which may be removed only on arrival of the trolley/trollies at the other station.

(4) Whenever a Motor trolley/trolleys is/are worked as per sub-rule(2) above, "Train out of block section" signal for the train shall not be sent until the trolley/ trolleys has/have arrived at the other end station. Private Number shall be given for each Motor trolley separately assuring complete arrival of the trolley/ trolleys.

4.29. Working of Outlying sidings.- (1) Outlying sidings taking off the running line, are provided in certain block sections. The points of such sidings, are provided with locking arrangements and the siding lock being operated by a control key which is controlled by the Station Master at one end of the concerned block section as mentioned in the Station Working Rules.

(2) Such outlying siding may be worked either by-

- (a) keeping the concerned block section blocked against entry of trains from either end block station until the train to work the outlying siding completes its work and returns to the starting station, or
- (b) on busy sections where regular train service must not be dislocated by the work inside such siding i.e. where the service has to be maintained even before the shunting train sent into the siding returns to either of the block stations.
- (3) (a) The procedure of working the outlying sidings shall be indicated in the Station Working Rules of stations at either end of the block section. However, to work outlying sidings in terms of sub-rule 2(a) above, Siding Key Register (form T. 98) is maintained at the block station exercising control over the "control key" to operate the points taking off the running line which shall remain under the personal custody of the Station Master.
- (b) Driver shall be given the authority to proceed under the system of working. The authority to proceed shall be retained by the Driver till the train clears the block section when it shall be returned to the Station Master. In case of 'Line Clear Ticket' the Station Master shall cancel it and return to the Driver who shall dispose of the same in the usual way.
- (c) The Guard shall be given the 'Control Key' and his signature obtained on Part I of Form T. 98. After the work in the siding is completed and on the complete arrival of the train at the starting station the Guard shall return the "Control Key" to the Station Master and sign the Part III of Form T. 98 as a certificate that-
 - (i) all points leading to the siding have been correctly set and locked for the main line,
 - (ii) the derails/traps in the siding are set and locked to derail,
 - (iii) all wagons in the sidings are clear of the main line and that nothing has been left fouling the main line, and
 - (iv) the train has arrived out of the section with all vehicles complete.

Note :- If for any reason it becomes necessary to place wagons for loading or unloading in any portion of a siding (other than the loading or unloading points) or in any portion of the branch leading to the siding, a remark to that effect shall be made by the Guard while signing Part III of Form T. 98.

(d) The Station Master on receipt of the "Control Key" shall sign Part II of Form T. 98 and close the block section thereafter.

(e) If the Guard has passed remarks vide note below clause(c) above, the Station Master shall enter the same in the Caution Order Register and issue caution order to all trains entering the siding until the wagons are cleared.

(f) The Station Master of the block station at which the "Control Key" is provided under this rule, is responsible to ensure before obtaining/granting Line Clear for a train to move

over the same block section from which the outlying siding takes off, that the 'control key' is in his custody and confirm the same in the Line Clear enquiry/reply message for the train.

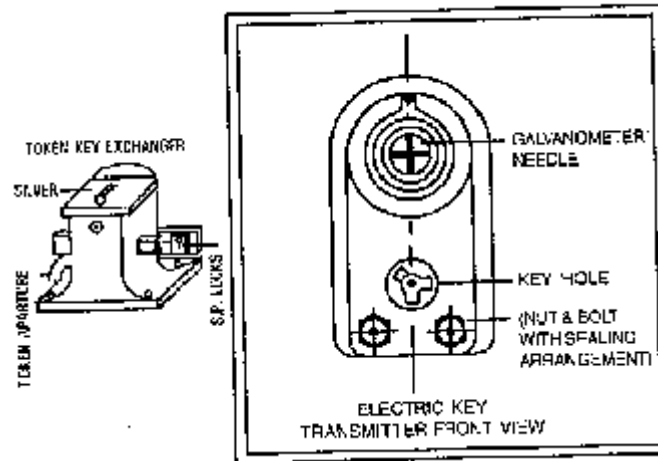
(g) In the event of the 'Control Key' being lost the Station Master shall at once issue a message to the Divisional Operations Manager, Divisional Safety Officer, Divisional Signal and telecommunication Engineer, Divisional Mechanical Engineer, Divisional Electrical Engineer (RS-O); Officer-in-charge/GRP and RPF; Divisional Transportation Inspector, Block Signal Inspector, Signal Maintainer, Loco Foreman, Traction Foreman (Running) (In case of electrified section) Station Masters of the notice station on either side and the Station Masters at the other end block section reporting the loss of control key. Until the lost key is recovered or until the locking arrangement of the points lock is replaced by the signal engineering department, the precautions laid down below shall be observed :-

- (i) The Divisional transportation Inspector of the section shall travel on the Engine foot-plate of the first train to enter the same block section after the loss of key is detected/reported. The Driver shall be given a caution order to stop the train short of the outlying siding points and to proceed further only on being piloted by the Divisional Transportation Inspector to ensure by personal check that the points giving access to the outlying siding are correctly set, clamped and padlocked for the main line before hand signalling the Driver. The key of the padlock shall be kept under his personal custody and to be handed over to the Station Master of the block station at the other end assuring him in writing about the setting and securing of the points. In the event of the Divisional Transportation Inspector is not readily available, this responsibility shall devolve on the Station Master of the block station at anyone end of the block section from where the first train is about to leave after the loss of key is detected/ reported. The Station Master of the block station at which the key is handed over shall then issue a message to the Station Master at the other end block station indicating the padlocking of the point supported by a Private Number.
- (ii) The Station Master of the block station from which trains move over the point in the facing direction, shall issue caution order to Drivers of all such trains to stop at the 'S' marker, ensure that the point is properly set for the main line, clamped and padlocked and then proceed at a speed not exceeding 15 km/h till the entire train clears the point.

(h) Normal working of trains shall be resumed either on the recovery of the lost key or on replacement of the lock. A message cancelling the message issued vide clause(g) above shall also be issued. If the lost key is found subsequent to the replacement of the points lock, a message shall at once be sent to the Block Signal Inspector/Signal Maintainer who shall take the same on his imprest stock.

(i) In the event of a siding key Register being lost at a station, the Station Master shall open a new Register and shall make an entry to this effect in his Station Diary. The speed of the first train to enter the siding or branch shall be restricted to 8 kilometers per hour and a caution order issued accordingly.

(4) To work outlying sidings in terms of sub-rule 2(b) above, key Token exchangers in conjunction with Happers Key Transmitters are provided. The following is a description of these instruments together with the instructions for their operation-



(a) Key Token exchanger :-

- (1) Flap covering the portion of the drum where tokens are inserted.
- (2) Handle of the drum for inserting tokens.
- (3) Key hole.
- (4) The aperture, through which the tokens are delivered from the instrument

(b) Happers Key Transmitter :-

(1) Galvanometer

(2) Key hole .

(c) Operation of Key Token exchanger :-

- (i) Whenever it becomes necessary to extract the key to operate facing points lock of the outlying sidings, the following operations are to be carried out :-
 - (a) Extract a Token from the electrical block instrument (Ball Token type) in accordance with the procedure detailed in BWM Rule 4.09.
 - (b) Place the Token in the recess under the flap of the key token exchanger and turn the handle of the drum to allow the Token to drop.
 - (c) Turn the key in the key token exchanger and extract the same.
 - (d) The Token dropped in exchanger thus gets locked.

The Key, so extracted, is the control key to operate facing points lock.

- (ii) Whenever it is necessary to extract the Token from the key token exchanger so as to bring the electrical block instrument to normal at both stations, the following conditions are to be observed and operations listed below are to be carried out :-

The Competent railway servant responsible for working the outlying siding shall ensure that all vehicles have been properly berthed inside the siding and nothing is left obstructing the block section and no vehicle is left standing inside the siding fouling the running line. The said competent railway servant shall then ensure that the points on the running line are correctly set in favour of the running line. The Control key shall then be extracted from the points lock so as to lock the point. The key so extracted shall be inserted in the key hole of the Happers key transmitter and turned and thus needle of Happers Key Transmitter will be deflected. This will permit the extraction of the key from the

corresponding Happers key transmitter at the other end. The following opeations shall then be caried out :-

- (a) Insert and turn the key, so extracted, in the key hole of the token key exchanger.
 - (b) A Ball token will then drop in the aperture.
 - (c) The token shall then be restored in the electrical block instrument in the manner laid down in Rule 4.10 of BWM.
 - (d) The detailed working procedure is given in the relevant Station Working Rules.
 - (e)
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CHAPTER - IV

PART - II

(Electrical Block Instrument of Tokenless Type)

4.30. Type of Instruments .- The following types of Tokenless Block Instruments are in use on the South East Central Railway :

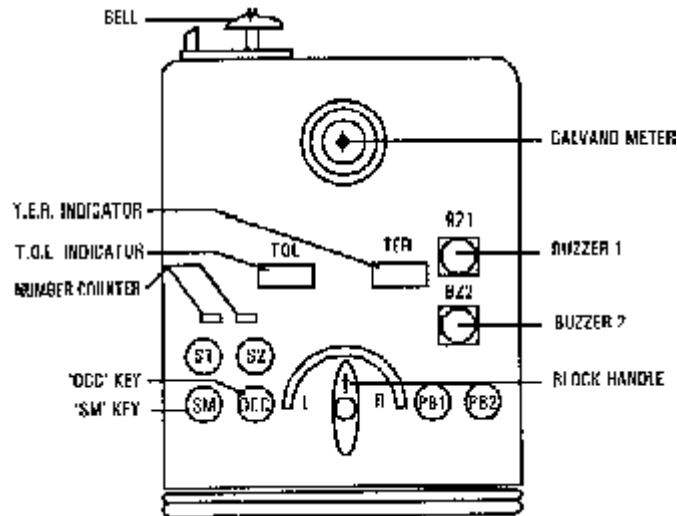
- (i) Diado type.
- (ii) Siemen's push button type, and
- (iii) Kyosan (or Podanur) type.

4.31. Description of Instruments :

The following is a description of each of the above types instruments :

- (1) Daido type.

A sketch of the instrument is given below :-

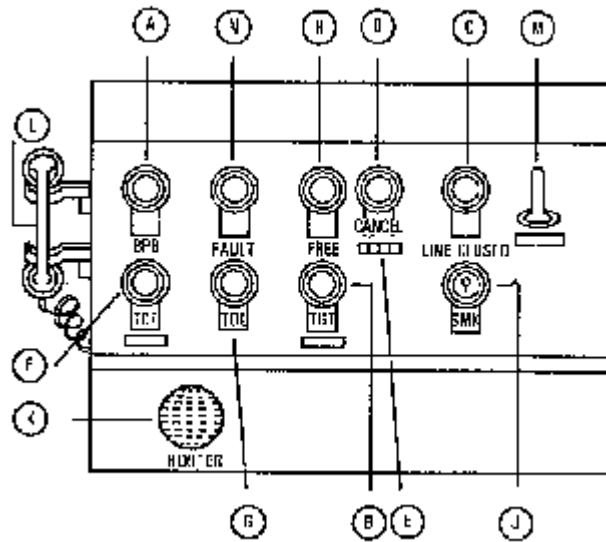


Explanation of Abbreviations :-

PB 1	Push Button 1	For Bell signal.
PB 2	Push Button 2	For releasing the Block Handle of the opposite instrument.
S1	Switch 1	For cancellation of “Line Clear” by sending station before the train has left.
S2	Switch 2	For cancellation of “Line Clear” by the sending station after the Train has entered the Block section and returned to the sending station and received on proper signals.
SM	Station Master’s	Intended to lock the instrument and to prevent unauthorised manipulation of the same during the absence of the Station Master.
OCC	Occupation Key	Authority for Driver of a train to shunt upto the first Stop signal. The key can be taken out only when the Block Instrument handle is in the ‘Line closed’ position thus making it impossible to operate the Block Handle.
BZ1	Buzzer 1	Audible indication at both stations when the train enters the Block section.
BZ2	Buzzer 2	Audible indication at the receiving station when the whole of the train passes within the Home signal.
TOL	“Train on Line”	Provides automatic visual indication at both stations when the train enters the Block Section.
TER	Time Element Relay cancellation	Provides visual indication for the Operation indication of “ Line Clear” after a predetermined time.
Number Counter		Two Number Counters, one attached to each switch S1 and S2 for counting each cancellation operation.
Galvanometer		Detects the flow of current from on Instrument to another when either push button PB1 or PB2 is pressed.
Block Handle		Block Handle can be set at ‘N’ (Line closed), ‘L’ (train going to) and ‘R’ (Train coming from) position. Its is locked by the Block lever lock in all position.
Bell		Single stroke Bell for exchange of Bell Code Signal.

(2) Siemen’s push button type.

A sketch of the instrument is given below :-



The Block Instrument will have the following controls and indications as shown in the sketch :-

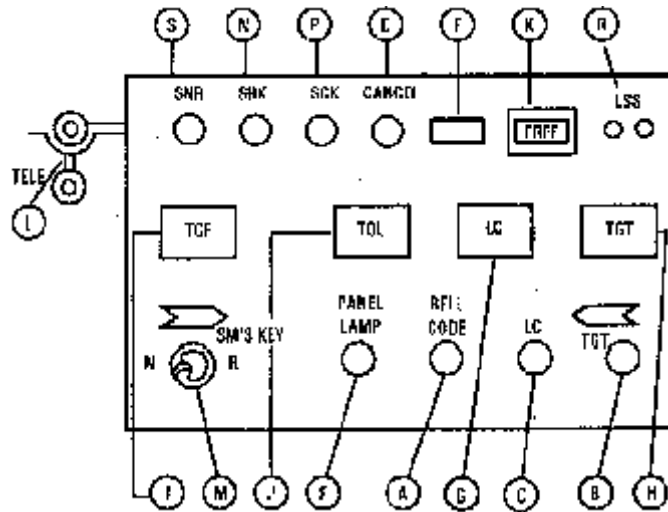
- (i) BPB Button Bell To be operated for Bell signals which are heard at the receiving station. This button is to be operated simultaneously with the button 'TGT' or 'Line Closed' or 'Cancel' when the latter is required to be operated.
- (ii) TGT Button Train going This button is to be (Marked B)
to button operated simultaneously with 'Bell Push Button' by the SM of the sending station. This sets the instrument to 'Train going to condition and receiving station instrument to 'Train coming From' condition. This button is illuminated when the instrument is 'Train going to' condition.
- (iii) L.C. Button Line Closed Line closed button is to be (Marked C)
button operated along with 'Bell Push' button by receiving station to set both instruments of the section to "Line Closed" condition. This button is illuminated when instrument is in 'Line Closed' condition.
- (iv) Cancel Button This button should be operated (Marked D)
(i) to enable cancellation of 'Line Clear' conditions if the train has not entered the Block section.
(ii) to enable sending station to set the instruments to 'Line Closed' condition after the train has pushed back to the sending station.
- (v) ERZ Counter Below the cancellation (Marked E)
button is 'Counter' which registers one higher number each time the 'Cancellation button is operated.

Note : The S.M. handling over and taking over charge respectively should record in the train register book the number exhibited by the counter at the time of change of duties.

- (vi) TCF Indicator Indicator (Marked F) lamp “Train coming from” Indicator illuminates when the instrument is set to ‘Train coming from’ condition.
- (vii) TOL Indicator “Train on Line” Indicator (Marked G) illuminates when the train enters the block section and remain lit simultaneously with TGT or TCF indication.
- (viii) Free Indicator This illuminates at the end (Marked H) of 1/2 minutes after the cancellation button is operated provided the train has not entered the block section.
- (ix) SMK (Marked J) When this key is taken out it will prevent unauthorised manipulation of the block instrument. When taken out the key should be kept in the personal custody of the S.M. on duty. Even if the key is out, the bell code, the “Train coming from” indication and the “Train entering section” audible warning can be received, and “Train on Line” indication and “Train on Line” acknowledgement is possible.
- (x) Hooter (Marked K) This provides audible warning at the receiving station.
 - (i) when a train enters block section.
 - (ii) when the whole train passes within the Home signal.
- (xi) Telephone (Marked L) Telephone attached to the block instrument.
- (xii) SKB (Marked M) This is the authority for the Driver for shunting beyond the last stop signal. When the key is taken out, it prevents from line clear being obtained or line being closed.
- (xiii) Fault Push Button (Marked N) It is a luminous push button which is illuminated in case of any fault in the working of the block instrument. Whenever this button is illuminated it should be pressed to put out the light, if possible. In case the indication persists in spite of pressing this button, the electrical signal maintainer should be called to attend the instrument.

(3) Kyosan (or Podanur) type.-
A sketch of the instrument is given below :-

Kyosan (or Podanur) type Push button type Tokenless single line block instrument.



The Block Instrument will have the following controls and indications as shown in the sketch :-

(A) Controls :

(i) BPB 'Bell Push' Black To transmit Bell Code
 Button button Signals which are heard (Marked A) at the receiving station.

This button is to be pressed simultaneously with button 'TGT' or 'Line Closed' or 'Cancel' when any of their button is required to be operated.

(ii) TGT 'Train Green Button going to' This button is to be operated simultaneously with button 'TGT' or 'Line Closed' or 'Cancel' when any of their buttons is required to be operated.

(ii) TGT 'Train Green Button going to' (Marked B) Push Button This button is to be operated simultaneously push button with 'Bell Push Button' by the SM of the sending station. This sets the instrument to 'Train going to' position and the receiving station instrument to 'Train coming from' position if the conditions permit.

(iii) LCB Line White To be operated with Button Closed 'Bell Push Button' by (Marked C) push button the SM at the receiving station to set both the instruments of the section to 'Line Closed' position.

(iv) Cancel 'Cancel' Red The button is to be Button push button operated along with (Marked D) 'Bell Push Button' -

(a) to enable cancellation of 'Line Clear condition if the train has not entered to block section.

(b) to enable sending station to set the instruments to 'Line Closed' condition from 'Train on Line' position after the train has pushed back to the sending station.

- (v) Panel Lamp (Marked F) 'Panel Lamp' Yellow To illuminated the various indications whenever push button necessary, except the 'free' and 'Train on Line' indications which continue to show then this button is operated.

(B) Indication-Visible :

- (vi) Cancellation Counter (Marked F) This registers one higher number each time the cancellation button' is operated.

Note : SMs handling over & taking over charge should record in the train register book the number exhibited by the counter at the time of change of duties.

- (vii) Line Closed stencilled (Marked G) Line Closed' Indicator instrument White This is stencilled arrow which illuminates at the sending station when the instrument is set to 'train going to' condition.

- (viii) Train going to stencilled Indicator (Marked H) Train going to' indicator Green This is stencilled arrow which illuminates at the sending station when the instrument is set to 'Train going to' condition.

- (ix) Train coming from stencilled indicator (Marked I) Train coming from' indicator Green This is a stencilled arrow indication which illuminates when the instrument is set to 'Train coming from' condition.

Note : These three indication not normally show any indication but are lit only when the BPB button is pressed or the panel lamp button is pressed.

- (x) Train on Line stencilled indicator (Marked J) 'Train on Red Line' Indicator Green This is a stencilled indication illuminated when the train enters the block section and continues to be lit till the train clear the block section and the SM at the receiving station normalises the instrument to 'Line Clear position.

- (xi) Free stencilled indicator (Marked K) 'Free' Indicator Green This is stencilled indication which illuminates 20 seconds after the cancellation button is operated provided the train has not entered the block section.

(C) Indicator Audible :

- (xii) (a) Train on line bell - Gives intermittent audible warning at the receiving station when the train enters the block section. Its muting is done by pressing the BPB button by the SM at the receiving station.
- (b) Train arrival Bell - Gives continuous audible warning at the receiving station when the train has cleared the block section. It is silenced when the Home signal lever or the SM's control slide for the Home signal is normalised.
- Note : SM of receiving station must ensure complete arrival of the train before normalising the instrument to 'Line Closed' condition.
- (c) Single Stroke Bell - Gives audible indication whenever BPB button is pressed on the instrument at the other station.

(D) Auxillary Apparatus :

- (xiii) (a) Block Telephone - Establishes communication
(Marked L) with the SM of the station at the other end of the Block section.
- (b) SMK Station - When this key is taken
(Marked M) Masters key out it will prevent unauthorised manipulation of the block instrument. When taken out the key should be kept in the personal custody of SM on duty. Even if the key is out, the 'bell code', 'Train coming from' indication, ' Train entering section' audible warning can be received and 'Train on line' acknowledgement can be sent.
- (c) Shunting Key - This is an authority to the Driver for shunting beyond last Stop signal. When the key is taken out from an electric lock (provided separately), it prevents any operation of the instruments but allows only reception and transmission of 'Bell Code' and 'Train on line' signals separately.
- (d) SHK Shunting Blue To be pressed when ever
Button key button the shuting key is to be
extracted. (Marked N)
- (e) SCK Slip and Blue To be pressed when ever
Button Catch the slip catch siding
(Marked T) siding control key is to be
key button extracted.
- (f) Last Red for 'ON' Provided with colour
stop signal and green light signal only.
aspect for 'OFF'
indication aspect
(Marked R)
- (g) SNR indicator This is a visual aid to the
(Marked S) SM to verify all his controls/levers etc. are normal. All these indications are lit only when BPB or Panel Lamp Push Button is pressed. They are normally 'OFF'.

4.32 Additional requirements. - The following additional equipments will be provided at the block stations at which instruments are located :-

- (i) A track circuit of 2 rail lengths ahead of the last Stop signal to put back the signal to 'ON' position when the train enters his track circuit. The last Stop signal is put back to 'ON' position and the "Train on line" indication will come up and Buzzer/Hooter will sound at the receiving station of the block section.
- (ii) Electrical Signal Reverser or equivalent electric circuits on the last Stop signal of the despatching station is provided in order to enable the signal to return automatically to 'ON' position when the train enters the block section.
Once the last Stop signal is replaced to 'ON' position, it cannot be taken 'OFF' unless a fresh 'Line Clear' is obtained. The SM will ensure that the last Stop signal if provided has gone back to 'ON' position. SM's slide where provided for the last Stop signal should be returned to normal.
- (iii) An electrical or mechanical lever lock or other equivalent electrical circuits to enter-lock the last Stop signal with the 'Line Clear' indication of the block instrument.
- (iv) 2 track circuits of two rail lengths each in advance of the Home signal. The function of these track circuits is to restore the home signal to 'ON' position and sound the buzzer/hooter at the receiving station when the train has passed within the Home Signal. The sounding of the buzzer/hooter indicates the arrival of the train.

Mode of signalling trains on various electrical instruments of tokenless type. - (1) Mode of signalling of trains on Daido type tokenless block instrument for a train to leave a block section for the block station in advance. –

Despatching Station

Receiving Station

[Block handle in 'Line Closed' position. All signals and signal levers concerned (including SM's concerned slot slides) are in normal position.]

1. Insert SM's key and turns
2. Presses the button PB-1 and sends call attention code of bell signals.
5. Sends 'Attend telephone' code of bell signals.
7. Attends on telephone, gives the name of the station and asks B if he is prepared to receive train No. [Refer BWM Rule 2.07(3)]
9. Repeats the Private Number given by Station Master 'B' and replaces telephone.
11. Sends 'Is line clear enquiry code of signals through button PB-1 and keeps the buttons PB-1 and PB-2 pressed on the last beat for 5 seconds or until the Galvanometer needle vibrates.
14. Turns operating handle to 'Train going to' position.
- 15(a) Takes 'OFF' the last Stop signal (after ensuring that the route is clear and points are correctly set and locked).
- (b) Train enters Block section.

- (c) Last Stop signal returns to 'ON' position.
 - (d) 'Train on line' indication appears automatically.
 - (e) Buzzer I starts operating.
 - (f) Puts back levers of Starter and Advanced Starter and last stop signal control slide to normal position.
17. Sends 'Call attention' code of bell signals through button PB-1.
19. Sends 'Train Entering Block Section' code of bell signals after complying with BWM Rule 2.07 (5).
21. Buzzer 1 stops.

25. Acknowledges 'Call attention' code of bell signals.

27. Turns operating handle to 'Line Closed' position.

28. Acknowledges 'Train out block Section' code of bell signals through PB-1 and keeps "Buttons PB-1 and PB-2" pressed on the last beat for 5 seconds or till the Galvanometer needle vibrates.

[Block handle in 'Line Closed' position. All signals and signal levers concerned (including SM's concerned slot slides) are in normal position.]

3. Inserts SM's key.

4. Acknowledges the call attention code of bell signals by pressing the button the button PB-1.

6. Acknowledges the 'Attend telephone' code of bell signals and attends on telephone.
8. Gives out the name of the station, and if he is prepared to receive, replies, 'Yes' take line clear for train No. Private Number
10. Replace telephone.
12. Turns the operation handle to 'Train coming from' position.
13. Acknowledges the 'Is Line Clear' code of bell signals through button PB-1 and keeps the buttons PB-1 and PB-2 pressed on the last beat for 5 seconds or till the Galvanometer needle vibrates.
16. 'Train on Line' indication appears automatically and Buzzer 1 starts operating.
18. Acknowledges 'Call attention' code of bell signals through button PB-1.
20. Acknowledges 'Train Entering Block section' code of bell signals through PB-1. Buzzer stops.
22. Takes 'OFF' the reception signals (after ensuring that the line nominated is clear and points are correctly set and locked).
23. (a) Train enters the station.
 (b) Buzzer 2 starts operating.
 (c) Reception signals replaced to 'ON' position automatically.
 (d) Puts back levers of reception signals and also the SM's Home signal control slide to normal position and complies with BWM Rule 2.07(6).
24. Sends "Call attention" code of bell signals through PB-1.
26. Sends 'Train out of block Section' code of bell signals through PB-1 and the buttons PB-1 and PB-2 pressed on the last beat for 5 seconds or till the Galvanometer needle vibrates.
29. Turns operating handle to "Line Closed" position and thus buzzer 2 stops.
 (2) Mode of signalling of trains on Siemens Push Button type tokenless block Instrument for a train to leave a block station and proceed to the next block station in advance.

Despatching Station

(Station 'A')

Despatching Station

(Station 'B')

Note : Initially both the instruments are in “Line closed (LC) condition and the Outer and Home or Distant and Home signals, as the case may be, and the last Stop signals, are at ‘ON’ as well as SM’s control slides for Home and Last Stop sigla, pertaining to the block section concerned are in normal position.

1. Insert the S.M.’s key and turns.
2. Sends ‘Call attention’ code of bell signals by pressing ‘Bell Push Button (BPB).

4. Sends ‘attend telephone’ code of bell signals by pressing ‘Bell Push Button’, (BPB).

6. Attends on telephone, gives the name of his station and asks ‘B’ if he is prepared to receive train No. [Refer BWM Rule 2.07(3)]

8. Repeats the Private No. received and replaces telephone.

3. Acknowledges ‘Call attention’ code of bell signals by pressing ‘Bell Push Button’ (BPB).

5. Acknowledges ‘Attend telephone’ code of bell signals by pressing ‘Bell Push Button’ (BPB) and attends on telephone.

6. Gives his station name, and if prepared to receive the train, replies, ‘yes’, obtain line clear for train No. private No.

10. Sends ‘Is Line Clear Enquiry’ code of bell signals by pressing ‘Bell Push Button’ (BPB) & operates ‘Train Going To’ (TGT) button simultaneously while sending the last code of bell signals through the ‘BPB’ & keeps both the buttons pressed till ‘Line Closed’ (LC) indication extinguishes and ‘Train Going To’ (TGT) ‘indication aperas. (Button should not be released earlier).

12. (a) Takes ‘OFF’ the Last Stop signal.
(b) Train enters block section.

- (c) Last Stop signal returns to 'ON' automatically.
 - (d) 'Train on Line' (TOL) indication appears automatically.
 - (e) Replaces Control(s) to operate Last Stop signal to normal.
 - (f) Sends 'Call attention' code of bell signal through ' Bell Push Button (BPB).
14. Sends 'Train Entering Block Section' code of bell signals through 'Bell Push Button' (BPB).

[Refer BWM rule No. 2.07(5)]

- 9. Verifies the correctness of the Private No. and replaces telephone.
- 11. 'Line Closed' indication extinguishes, 'Train Coming From' (TCF) indication appears & then acknowledges 'Is Line Clear Enquiry' code of bell signals by pressing 'Bell Push Button' (BPB).

13. (a) 'Train On Line' indication automatically and audible warning sounds continuously.

- (b) Inserts SM's key and turns.
- (c) Acknowledges 'Call Attention' code of bell signal through 'Bell Push Button' (BPB).
- (d) Audible warning stops.

15. Acknowledges 'Train Entering Block Section' code of bell signals through 'Bell Push Button' (BPB).

- (a) Takes 'OFF' reception signals.
- (b) Train passes Home signal.
- (c) Home signal goes back to 'ON' position automatically.
- (d) Audible warning sounds continuously.
- (e) Normalises the control to operate the Home signal as also SM's slide as also SM's slide control (where provided).

Note : The control to operate Home signal should be normalised only after the whole of the train has arrived complete within the Home signal.

- (e) Audible warning stops.

16. Sends 'Call attention' code of bell signals through 'Bell Push Button' (BPB).]

18. Complies BWM Rule 2.07(6) and after ensuring complete arrival of the train sends 'Train Out of Block Section' code of bell signals through 'bell push Button' (BPB) and on the last bell presses 'Line closed (LC) button simultaneously till such time 'TCF' and 'TOL' indications extinguish and 'Line closed (LC) indication appears.

17. Acknowledges 'Call attention' code of bell signals through 'Bell Push Button' (BPB).

19. 'TGT' and 'TOL' indications extinguish and 'Line closed' (LC) indication appears. Acknowledges 'Train Out of Block Section' code of bell signals through 'Bell Push Button' (BPB).

(3) Mode of signalling of trains on Kyosan (or Podanur) type Push Button tokenless block instrument for a train to leave a block station and proceed to next block station in advance.

Note : Initially both the instruments are in 'Line Closed' condition and the Outer and the Home or Distant and Home signals, as the case may be, and the Last Stop signal are all at 'ON' as well as SM's control slides for Home and last Stop signals pertaining to the block section concerned are in normal position.

Despatching Station

(Station 'A')

Despatching Station

(Station 'B')

1. Inserts SM's key and turns.
2. Sends 'Call attention' code of bell signals by pressing 'Bell Push Button' (BPB).
4. Sends 'attend telephone' code of bell signals by pressing 'Bell Push Button' (BPB).
6. Attends on telephone, gives the name of his station and asks 'B' if he is prepared to receive train No. [Refer BWM rule No. 2.07(3)]

7. Repeats the Private No. received and replaces telephone.

3. Acknowledges 'Call attention' code of bell signals by pressing 'Bell Push Button' (BPB).

5. Acknowledges 'attend telephone' code of bell signals by pressing 'Bell Push Button' (BPB) and attends on telephone.

7. Gives his station name and if prepared to receive the train replies yes, obtain line clear for train No. private No.

8. Verifies the correctness of the Private No. and replaces telephone.

10. Sends 'Is Line Clear Enquiry' code of bell signals by pressing 'Bell Push Button' (BPB) and operates 'Train Going to' (TGT) button simultaneously while sending the last code of bell signals through the BPB and keeps both the buttons pressed till 'Line Closed' (LC) indication extinguishes and 'Train Going to' (TGT) indication appears. (Button should not be released earlier)

12. (a) Takes 'OFF' the last Stop signal.
- (b) Train enters the block section
- (c) Last Stop signal returns to 'ON' automatically.
- (d) 'Train On Line' (TOL) indication appears automatically.
- (e) Replaces _____ control(s) _____ to operate Last Stop signal to normal.
- (f) Sends 'Call Attention' code of bell signals by pressing 'Bell Push Button' (BPB).

11. 'Line Closed' (LC) indication extinguishes 'Train Coming From' (ITCF) indication appears and then acknowledges 'Is Line Clear Enquiry' code of bell signals by pressing 'Bell Push Button' (BPB).

13. (a) 'Train ON Line' indication (TOL) appears automatically and audible warning sounds continuously.
- (b) Inserts SM's key and turns.
- (c) Acknowledges Call attention code of bell signals through 'Bell Push Button' (BPB).
- (d) Audible warning stops

14. Sends 'Train Entering Block section' code of bell signals through 'Bell Push Button' (BPB).
[Refer BWM rule No. 2.07(5)]

15. Acknowledges 'Train Entering Block Section' code of bell signals through 'Bell Push Button' (BPB).

- (a) Takes 'OFF' reception.
- (b) Train passes Home signal.
- (c) Home signal goes back to 'ON' position automatically.
- (d) Audible warning sounds continuously.
- (e) Normalises the control to operate the Home signal as also (where provided).

Note:- The control to operate Home signal should be normalised only after the whole of the train arrived complete within the Home signal.

- (f) Audible Warning stops.

16. Sends 'Call attention' code of bell signals through 'Bell Push Button' (BPB).

17. Acknowledges 'Call attention' code of bell signals through 'Bell Push Button' (BPB).

19. 'TGT' and 'TOL' indications extinguish and 'Line Closed' (LC) indication appears.
Acknowledges Train Out of Block Section' Code of bell signals through 'Bell Push Button' (BPB).

17. Complies BWM Rule 2.07(6) and after ensuring complete arrival of the train sends 'Train out of Block Section' Code of bell signal through 'Bell Push Button' (BPB) and on the last bell presses 'Line Closed' (LC) button simultaneously till such time 'TCF' and 'TOL' indication extinguish and 'Line Closed' (LC) indication appears.

4.34. To cancel a Line clear which has been obtained - Before proceeding to cancel the line clear obtained, the Station Master at the station at which the instrument is in 'Train going to' position, shall personally ensure that the train concerned has not started, the Last Stop signal has been properly but back to 'ON' position and the Station Master's slide for the Last Stop signal concerned is put back to normal, and that they remain so until the cancellation procedure is completed.

- (1) Daido type Tokenless Block instrument.

Despatching Station

Receiving Station

(Block instrument handle at "Train going to" position, concerned Last Stop signal is at 'ON'. Last Stop signal control lever and slide are restored to lever and slides are restored to normal). If the departure signals had been taken 'off' they are replaced to 'ON' position.

1. Sends "Call attention" code of bell signal on PB-1.
3. Sends "Attend Telephone" code of bell signal on PB-1.
5. Takes up telephone calls out station name and asks for his consent.

(Block instrument handle at "Train coming from" position).

2. Acknowledges on PB-1
4. Acknowledges on PB-1 and attends telephone.
6. Ensures that reception signal(s) is/are at 'ON', SM's Home signal slot slide is normal. Calls out station name and then gives his consent on telephone
7. a) Turns switch SL, from normal to cancellation position.
b) The 'Counter' registers next higher number.

- (c) Waits for 2 minutes.
- (d) T.E.R. (Time Element Relay) Indicator operates.
- 8. Sends 'Call attention' code of bell signals.
- 10. Sends cancellation code of bell signals through PB-1 and Keeps the buttons PB-1 & PB-2 pressed for 5 seconds on the last beat.
- 12. Turns switch SL to normal position, Turns Block handle to 'Line Closed' position.
- 9. Acknowledges 'Call Attention' code of bell signals.
- 10. Turns his Block handle to 'Line Closed' position and acknowledges the code of bell signals through PB-1 and keeps PB-1 and PB-2 pressed for 5 seconds.
- (2) Siemen's type tokenless block instrument.

Despatching Station

(Block Instrument handle at "Train going to" position, concerned Last Stop signal is at 'ON' Last Stop signal control lever and slides are restored to lever and slides are restored to normal). If the departure signals had been taken 'off' they are replaced to 'ON' position.

- 1.a) Inserts SM's key & turns

Receiving Station

(Block Instrument displays 'Train Coming From' (TCF) indication.

- b) Operates 'Cancel' button alongwith 'Bell Push' (BPB) Button.
- c) 'Counter (ERZ) registers next higher number.
- 2. Gives 'Call attention' code of bell signal through 'Bell Push' (BPB) button.
- 4. Sends 'Attend Telephone' code of bell signal through BPB and takes up telephone.
- 6. Advises on telephone intention to cancel 'Train Going To' (TGT) condition.

9. Time release 'Free' indication appears 1½ minutes after 'cancel' button is operated.

3.a) Inserts SM's key & turns.

b) Acknowledges 'Call Attention' code of bell signal through 'Bell Push' button (BPB).

5. Acknowledges 'Attend telephone' code of bell signal through BPB and takes up telephone.

7. Acknowledges intention to cancel 'Train Going To' (TGT) condition.

7. Replaces reception signal lever and SM's slide (where provided) to normal, if the signals had been taken 'OFF'.

10. Gives 'Call Attention' code of bell signal through 'Bell Push' Button (BPB) and operates 'Line Closed' (LC) button together with 'Bell Push' Button (BPB) & keeps them pressed.

13. 'Train Going To' (TGT) indication extinguishes. Block Instrument sets to 'Line Closed' (LC) condition. releases buttons.

Note : Buttons should not be released earlier.

11. Acknowledges 'Call Attention' code of bell signal through 'Bell Push' Button (BPB), and co-operates in normalising the instruments by pressing 'Bell Push' Button (BPB) together with 'Line Closed' (LC) button and keeps them pressed.

12. 'Train Coming From' (TCF) indication extinguishes. Block Instrument sets to 'Line Closed' (LC) condition. Releases Buttons.

Note : Buttons should not be released earlier.

(3) Kyosan (or Pondanur) type tokenless block instrument.-

Despatching Station

Block Instrument displays 'Train Going To' (TGT) indication, Home, quarter (where provided), the last Stop signal, signal levers and SM's slide (where provided) are normal. If the departure signals had been taken 'OFF' they are replaced to 'ON' position.

1. a) Inserts SM's key & turns .

b) Operates 'Bell Push' button for sending 'Call attention' signal.

3. Sends 'Attend Telephone' code of bell signal through 'Bell Push' button.

5. Attends block telephone and advises his intention to cancel 'Train Going To' (TGT) condition.

- 7.a) Operates 'Cancellation' push button along with 'Bell Push' button.
 - b) 'Counter' registers next higher number.
8. 'Free' indication appears two minutes after the 'cancellation' button is pressed.
9. Sends 'Call Attention' code of bell signal by pressing 'Bell Push' button and also operates 'Line Closed' button and keeps them pressed. (Checking all relevant signals at 'ON')

- 12a) 'Train Going To' indication (TGT) extinguishes and block instrument sets to 'Line Closed' condition.
 - b) Releases buttons.

Note : Buttons should not be released earlier.

Receiving Station

(Block Instrument displays 'Train Coming From' (TCF) indication.

- 2.a) Inserts SM's key & turns.
 - b) Acknowledges 'Attend Telephone' code of bell signal through 'Bell Push' Button and attends on block telephone.
4. Acknowledges 'Attend Telephone' Code of bell signal through 'Bell Push' button and attends on block telephone.
- 6.a) Acknowledges intention to cancel 'Train Going To' (TGT) condition.
 - b) Replaces reception signal levers and SM's slide (where provided) to normal, if the signals were taken 'OFF'.
10. Acknowledges 'Call Attention' code of bell signal through 'Bell Push' button and cooperates in normalising the instrument by pressing 'Line Closed' button also and keeps the buttons pressed.
- 11.a) 'Train Coming From' indication (TCF) extinguishes and 'Line Closed' indication appears, setting the instrument to 'Line Closed' condition.
 - b) Releases buttons.

Note : Buttons should not be released earlier.

4.35. Normalising of Block Instrument when train returns to the despatching Block Station :-

Before receiving the train back into the station from which it started, the following is the sequence of actions to be taken :-

- (1) Daido type tokenless Block Instrument.

Station 'A'
(Despatching Station)

(Block handle on 'Train Going To' position).

Station 'B'
(Receiving Station)

(Block handle on 'Train coming To' position).

1. Advises Station Master B on telephone the intention to push back the train.
- 3 a) Turns the switch S2 from normal to cancellation position.
 - b) The 'Counter' registers next higher number.
 - c) Takes 'OFF' the reception signals.
 - d) Train enters the station.
 - e) Buzzer 2 for arrival of the train starts operating.
 - f) Replaces the Home Signal lever to normal.
4. Sends 'Train out of Block Section' code of bell signals through PB-1 and keeps the buttons PB-2 pressed for 5 seconds on the last beat or till the galvanometer needle vibrates.

7. Turns switch S2 to normal position.

8. a) 'Turns the Block handle to 'Line Closed' position.

c) Buzzer stops.

2. Gives consent on telephone.

5. Turns his block handle to 'Line Closed' position.

6. Acknowledges 'Train out of Block Section' code of bell signal and keeps buttons PB-1 and PB-2 pressed for 5 seconds on the last beat or till the galvanometer needle vibrates.

(2) Siemen's type tokenless block instrument.

Station 'A'
(Despatching Station)

Block Instrument displays first 'Train Going To' (TGT) and next 'Train on Line' (TOL) indication.

1. a) Inserts SM's Key & truns.
b) Gives 'Call Attention' code of bell signal through 'Bell Push' button (BPB).
3. Gives 'Attend telephone' code of bell signal through 'Bell Push' button (BPB) & takes up telephone.
5. Advises on telephone intention to push back the train into Station 'A'.

7. a) Takes 'OFF' reception signals .
b) Train passes Home signal.
c) Home signal replaced to 'ON' position.
d) Audible warning sounds continuously.
e) Puts back Home signal lever (and SM's slide for it where provided) to normal.
f) Audible warning stops.

Note : The Home signal lever must not be put back to normal until the whole train has arrived inside the last vehicle track circuit otherwise this will cause block failure, and the train arrival audible warning will not sound.

8. a) Verifies complete arrival of the train, ensures all reception signals are put back to 'ON' and operates the 'Cancel' button along with the 'Bell Push' button (BPB).
b) Counter (ERZ) registers next higher number.
8. Gives 'Call Attention' code of bell signal through 'Bell Push' button (BPB) and operates 'Line Closed' button along with 'Bell Push' button.

Station 'B'
(Receiving Station)

Block Instrument displays first 'Train Coming From' (TCF) and next 'Train on Line' (TOL) indications.

2. Acknowledges 'Call Attention' code of bell signal through 'Bell Push' button (BPB).
4. Acknowledges 'Attend Telephone' code of bell signal through Bell Push Button (BPB) and takes up telephone.

6. Acknowledges intention to push back the train and replaces reception signal levers & SM's slide (where provided) to normal if these signals had been taken 'Off'.
10. Acknowledges 'Call Attention' code of bell signal through 'Bell Push (BPB) button, and co-operates in normalising of instruments by pressing 'Line Closed' button along with 'Bell Push' button.
11. 'TCF' and 'TOL' indication extinguishes, Block Instrument set to 'Line Closed' (LC) condition. Releases buttons.

Note : Buttons should not be released earlier.

12. 'TGT' and 'TOL' indication extinguishes. Block Instrument set to 'Line Closed' (LC) condition. Releases buttons.

Note : Buttons should not be released earlier.

Note : The Push back operating is prohibited at stations provided with 'Catch Sliding'.

- 3) Kyosan (or Podanur) Type tokenless block instrument.

Station 'A'
(Despatching Station)

Block Instrument displays first 'Train Going to' and next 'Train on Line' indication.

1. a) Inserts SM's Key & turns.
b) Gives 'Call Attention' code of bell signal through 'Bell Push' button.
3. Gives 'Attend telephone' code of bell signal.
5. Attends block telephone and advises Station Master 'B' on telephone intention to push back the train into Station 'A'.
- 7a) Takes 'OFF' reception signals.
 - b) Train passes Home signal.
 - c) Home signal replaced to 'ON' position automatically.
 - d) As the last vehicle clears out the last vehicle track circuit, Audible warning sounds continuously.
 - e) Puts back Home signal lever and SM's slide (where provided) to normal.
 - f) Audible warning stops.

Note : Home signal lever must not be put back to normal until the whole of the train has arrived inside the last vehicle track circuit, otherwise this will cause block failure and the train arrival audible warning will not sound.

- 8a) Verifies the complete arrival of the train and ensures all reception signals are put back to 'ON'.
 - b) Operates 'Cancel' Push button along with the 'Bell Push' button.
 - c) 'Counter' registers next higher number.
9. Gives 'Call Attention' code of bell signal through 'Bell Push' Button and operates 'Line Closed' button along with 'Bell Push' Button.

Station 'B'
(Receiving Station)

Block Instrument displays first 'Train Coming From' and next 'Train on Line' indication.

2. a) Inserts SM's key & turns.
b) Acknowledges 'Call Attention' code of bell signal through 'Bell Push' button.
4. Acknowledges 'Attend Telephone' code of bell signal and attends on block telephone.
6. Acknowledges intention to push back the train to Station 'A' and replaces reception signal lever(s) & SM's slide (where provided) to normal if these signal(s) had been taken 'OFF'.

10. Acknowledges 'Call Attention' code of bell signal through 'Bell Push' button and cooperates in normalising instruments by pressing 'Line Closed' button along with 'Bell Push' button.
- 11a). 'Train Coming From' and 'Train on Line' indications extinguish and the block instruments set to 'Line Closed' conditions.
- b) Releases buttons.

Note : Buttons should not be released earlier.

Note : The Push back operation is prohibited at stations provided with 'Catch Siding'.

4.36. Shunting between the Last Stop signal and the First Stop signal from the opposite direction [GR 8.11(a) and 8.12] :-

(1) Daido type tokenless block instrument.

Station 'A'

(Shunting to be performed instrument handle in 'Line Closed' position)

1. Informs Station Master 'B' of intention to shunt upto opposing first Stop signal.
3. Inserts Station Master's key and turns.
- 4.a) Takes out the occupation key of the concerned section Block Instrument and removes the Station Master's key locking the Block instrument.
 - b) Hands over the occupation Key to the Driver as his authority to do the shunting.
- 5.a) The Driver completes shunting and returns the occupation key to the Station Master.
 - b) Inserts SM's key and turns and replaces shunting key in the Instrument.
6. Informs Station Master 'B' through PB-1.

Station 'B'

(At the other end of
Block Section)

(Instrument handle in "Line Closed" position.)

2. Gives consent.

7. Acknowledges through PB-1

(2) Siemen's type tokenless block Instrument.

Station 'A'

(Shunting to be performed Block instrument in 'Line Closed' condition. Last Stop signal and First Stop signal are at 'ON' in the direction of 'B'.

- 1.a) Inserts SM's key and turns.
 - b) Gives 'Call Attention' code of bell signal and attends telephone.
3. Informs Station Master 'B' of intention to shunt upto opposing First Stop signal.
- 5.a) Turns SM's key to the maximum extent and takes out the shunting key.
 - b) Hands over the shunting key to the Driver and takes out the SM's key.
- 6.a) After completion of shunting Driver returns the shunting key to the SM.
 - b) Inserts SM's key and turns and replaces shunting key in the instrument.
 - c) Calls attention, and attends telephone and informs 'B' that shunting key has been put back in the instrument.

7. Takes out the SM's key.

Station 'B'

(At the other end of
Block Section)

Block instrument 'Line Closed' condition. Last Stop signal and First Stop signal are at 'ON' in the direction of 'A'.

2. Acknowledges 'Call Attention' code of bell signals, and attends telephone.
4. Acknowledges and gives consent.
8. Acknowledges 'Call Attention' code of bell signal, attends telephone and acknowledges shunting completed, and key returned by 'A' to instrument.

(3) Kyosan (or Podanur) Type tokenless Block Instrument. –

Station 'A'

(Where shunting to be performed)

1. Block Instrument in 'Line Closed' condition. Last Stop signal in the direction of 'B' and Home signal from the direction of 'B' are 'ON'
2. Presses the 'SHK' push button.

3. Takes out the shunting key from the Electric lock.
 4. Hands over the shunting key to Driver and takes out Station Master's key (SMK).
 5. Driver completes shunting and returns shunting key to Station Master.
5. After ensuring that there is no obstruction left between last Stop signal and opposing first Stop signal, inserts Station Master's key in the block instrument and shunting key in the electric lock and turns to normal.

Station 'B'

(At the other end of
Block Section)

Block Instrument in 'Line Closed' condition. Last Stop signal in the direction of 'A' and Home signal from the direction of 'A' are 'ON'.

Note : Shunting between the Last Stop signal is prohibited at station provided with catch siding.

4.37. Shunting between the Last Stop signal and opposing First Stop signal behind a departing train. -

(1) Daido type tokenless block instrument. -

If shunting behind a departing train in accordance with GR 8.11(a) is permitted in the Station Working Rules, the Station Master of the shunting station shall issue the authority for shunting in the prescribed form T/806 after observing the following procedure.

Station 'A'

(Shunting Station)

(Instrument handle 'Train Going To' position and TOL indication shows 'Red')

1. Sends 'Call attention' code of bell signal on PB-1.
3. Sends 'Attend Telephone' code of bell signal on PB-1.
6. Takes up telephone and informs Station Master 'B' of his intention for shunting.

Station 'B'

(Instrument handle "Train coming From" position and TOI indication shows 'Red')

2. Acknowledges.
4. Acknowledges and takes up telephone.
7. Gives Consent.

Note : If the train clears the block section before shunting is completed and thereby block instrument handle at both stations is normalised the Station Master of Station 'A' shall at once follow the procedure detailed in BWM Rule 4.36(i)

(2) Siemen's type tokenless instrument.-

If shunting behind a departing train in accordance with GR 8.11(a) is permitted in the Station Working Rules, the Station Master of the shunting station shall issue “SKB” as the authority for shunting after observing the procedure detailed below :-

Station ‘A’

(Shunting Station)

Block instrument in ‘TGT’ and ‘TOL’ condition and the Last Stop signal ‘ON’.

1. Gives ‘Call attention beat’ and attends telephone.
3. Informs Station Master ‘B’ of intention for shunting between the Last Stop signal and opposing first Stop signal behind a departing train.
5. Inserts Station Master’s key and turns.
6. a) Takes out the shunting key.
b) Hands over the shunting key to the Driver as his authority to do shunting.

Station ‘B’

Block Instrument in ‘TCF’ and ‘TOL’ condition.

2. Acknowledges “Call attention beat” and attends telephone.
4. Gives consent.

Clause (A)- If shunting is completed before the departing train clear Block Section.

- 7.a) After completion of shunting, Driver returns the shunting key to Station Master.
b) Shunting key is replaced in the instrument.

8. After usual reception of the train, sets Block Instrument to “Line Closed” condition.

Clause (B)- If train clears block section before shunting is completed i.e. when Station ‘B’ cannot establish ‘Line Closed’ condition ‘A’ has extracted the shunting key, Station ‘B’ should verify position from Station ‘A’.

- 9.a) After completion of shunting, Driver returns the shunting key to Station Master.
b) Shunting key is replaced in the instrument.

Advise on telephone about completion of shunting.

- 11.a) Acknowledges on telephone about completion of shunting.

- b) Sets instrument to ‘Line Closed’ condition.

(3) Kyosan (or Podanur) type tokenless block instrument-

If shunting behind a departing train in accordance with GR 8.11 (a) is permitted in the Station Working Rules, the Station Master of the shunting station shall issue the authority for shunting in the prescribed form T/806 after observing the following procedure.

Station 'B'

Block Instrument in 'TCF' and 'TOL' condition.

2. Acknowledges 'Call attention' code of bell signal on BPB.
4. Acknowledges "Attend Telephone" code of bell signal on BPB and attend on telephone.
5. Gives consent.

Note: If the train clears the block section before shunting is completed and thereby "Line Closed" condition is established at both stations, the Station Master of Station 'A' shall at once follow the procedure detailed in BWM Rule 4.36(3).

4.38. Shunting outside first stop signal. (Refer GR 8.13)- In addition to the procedure laid down in BWM Rule 3.32, the Station Master shall also observe Rule 4.36(1) , 4.36(2) and 4.36(3) of BWM in case of Daido type; Siemen's type and Kyosan (or Podanur) type tokenless instruments respectively.

4.39. Working of Motor Trolley/4 wheeler Tower Wagon.- (1) Whenever a motor trolley is to be worked in terms of SR 15.25.03 (a) or a 4 wheeler Tower Wagon, the Station Master of the despatching station shall obtain the permission from the Station Master of the other end block station over the block instrument telephone supported by a Private Number provided the block instrument at the respective station is in "Line Closed" condition. The trolley holder Tower Wagon Driver shall be given an authority on form T/369 (3b) as the "AUTHORITY TO PROCEED ". At the receiving station, the trolley/4 wheeler Tower Wagon may be received by taking 'off' reception signals. On arrival of the trolley/4 wheeler Tower Wagon at the other end block station, the trolley holder/4 wheeler Tower Wagon Driver shall deliver T/369 (3b) A to the Station Master certifying that the Trolley/4 wheeler Tower Wagon has arrived complete under his signature. The Station Master shall paste the same in the Train Register. Arrival Report shall be given supported by a Private Number. Records shall be maintained in the Train Register books at both stations in red ink. In case it is necessary to cancel line clear for a Trolley/4 wheeler Tower wagon already obtained, before the Trolley/4 wheeler Tower Wagon was left, messages authenticated by Private Numbers shall be exchanged between the Station Masters concerned and record thereof is maintained in the Train Register.

However, the working of 8 wheeler Tower wagon will be regulated as per the movement of running train on line clear and last stop signal being taken 'OFF'.

(2) Sub-rule(2) and (4) of the Rule 4.28 of Block Working Manual shall be followed for allowing the Motor Trolley/trolleys under SR 15.25.03(b).

(3) Whenever a Tower Wagon or Motor Trolley/ trolleys is/are allowed to run under these rules, a board inscribed "Motor Trolley on Line" shall be hung up on the block instrument at both stations. In addition lever collar/slide collar shall be placed on the slide control to operate the last Stop signal at both stations. These may be removed only after the Tower Wagon or trolley/ trolleys has/have cleared the block section.

4.40. Working of Material Trolley..- Whenever it is necessary to work any material trolley in terms of **SR 15.27.07**, Tokenless type electrical block instruments shall not be operated and Paper Line Clear Ticket shall be given as an authority to proceed which shall be issued in accordance with the procedure laid down in Chapter III (Part I) of Block Working Manual, Entries in red ink shall be made in Train Signal Register indicating the time when the material trolley is placed on line; removed from line arrives the next station or returns to the starting station.

4.41. Working of Material train -Whenever it is necessary to despatch a Material train, line clear shall be obtained in accordance with the procedure detailed in **BWM Rule 4.33** .In case it is to return to the starting station after completion of its work, the procedure detailed in BWM Rule 4.35 shall be observed before the reception signal(s) is are taken off and also to normalise the block instruments at both stations.

4.42. Procedure to be followed when Maintenance party works on sections where Block wires are also carried :-

(i) No work of any description is to be started on section wherein the railway block wires are either carried through overhead aerial wires or through underground cable conductors without the officials responsible for carrying out the work first giving the notice at least on a day prior to the date on which it is intended to commence the work, by message addressed to the Station Masters at either end of the section asking for their acknowledgement in the following form :-

To. Stations A and B Copy BSI..... BM.....

No. Maintenance Party will commence working on wire section..... to..... on (date) from..... (hrs.)

Acknowledge.

The acknowledgement must be obtained before commencing the work. If the acknowledgements are not received within an hour, reminder message shall be issued.

(2) The Station Masters on receipt of the message indicated in sub-rule(1) above shall issue the acknowledgement thereof, endorsing a copy of the same to the addressees mentioned in Rule 4.24(2) (a) ,in the following form :-

To (Here enter the official designation of the Maintenance Official incharge of the party)

Copy to

No..... Your No.....
Dated..... acknowledged.

Block Instrument working for trains between..... (station) and..... (Station)shall remain suspended from Hrs. of (date). Trains shall be worked on Paper Line Clear Ticket till completion of work and the instruments certified by Block Signal Inspector..... (Section).

(3) On completion of the work, the official in charge of the Telegraph maintenance party shall cancel the message issued under sub-rule (1) above on the following form :-

To Station Masters 'A' and 'B'

Copy to Block Signal Inspector..... and Block Maintainer.....

No My message No.....of(date) cancelled.
Telegraph repairs or sectionto..... completed and line normal.

(4) The Block Signal Inspector on receipt of the message indicated in sub-rule (3) above, shall issue S&T (T/351) after testing the instruments at both stations.

(5) The Station Masters on receipt of the message indicated in sub-rule (3) and T/351 as mention in sub-rule(4) above, shall cancel their original messenger issued under sub-rule (3) above, and resume normal working after Testing Line Clear is obtained and cancelled.

4.43. Failure of Electrical block Instruments (Token less type)- (1) The electrical block instrument (Tokenless type) shall be considered as having failed and their working suspended in the following circumstances :-

Daido Tokenless Block Instruments.

- (a) If code signals on the bell are not received distinctly or fail altogether.
- (b) When telephone connection between the two stations fails.
- (c) If the Block Instrument or its battery counter is found unlocked or the seal is found broken in the absence of an authorised representative of the signal Branch.
- (d) If the station cannot take 'off' the last Stop signal after 'Line Clear' has been obtained from station ahead i.e. when the last Stop signal is out of order or suspended.
- (e) If the last vehicle Treadle or Track circuit fails to operate after the passage of the train after the Home signal is thrown back to normal.
- (f) If the TOL indication fails to appear on the Instrument after the train has entered the Block Section in advance.

Siemen's Tokenless Block Instruments.

- (a) If code signals on the bell are not received distinctly or fail altogether.
- (b) When telephone connection between the two stations fails.
- (c) If the Block Instrument or its battery counter is found unlocked or the seal is found broken in the absence of an authorised representative of the Signal Branch.
- (d) If the station cannot take 'off' the last Stop signal after 'Line Clear' has been taken for despatch of a train, i.e. when the last Stop signal is out of order or suspended.
- (e) If the last vehicle Treadle or Track circuit fails to operate after the passage of the train after the Home signal is thrown back to normal.
- (f) If the L.C. (Line Closed) indication at the receiving station disappears and the T.C.F. (Train Coming From) indication does not appear after the Station Master on duty at the sending station has pressed the Bell Push Button and the Train Going to Button.
- (g) If the L.C. (Line Closed) indication at the sending station disappears and the TGT (Train Going To) indication at the sending station does not appear after the Station Master on duty at the sending station has pressed the Bell Push Button and the Train Going To Button.
- (h) If the indication does not appear after 11/2 minutes after operation of 'Cancel' and "BPB" buttons during cancellation of the line clear before train enters the block section.
- (i) If the digital counter at any station fails to register the next higher number while cancelling the "Line Clear" before the train enters the Block section or while setting the instrument to "Line Closed" when a train is pushed back to the despatching station.

KYOSAN (or PODANUR) TYPE Tokenless Block Instrument.

- (a) If code signals on the bell are not received distinctly or failed altogether.
- (b) When telephone connection between the two stations fails.

- (c) If the Block Instrument or its battery counter is found unlocked or the seal is found broken in the absence of any authorised representative of the Signal Branch.
- (d) If the station cannot take 'off' the last Stop signal after 'Train GoingTo' indication appears on the instrument i.e. when the last Stop signal is out of order or suspended.
- (e) If the last vehicle Treadle or Track circuit fails to operate after the passage of the train after the Home signal is thrown back to normal.
- (f) If the indication does not appear 2 minutes after operation of 'Cancel' and 'BPB' buttons during cancellation of the line clear before the train enters the block section.
- (g) If the digital counter at any station fails to register the next higher number while cancelling the 'Line Clear' before the train enters the Block section or while setting the instrument to 'Line Closed' when a train is pushed back to the despatching station.
- (h) If in the "Line Closed" condition the 'Line Closed' indication does not appear on the instrument when the panel lamp button or BPB button is pressed.
- (i) If the L.C.(Line Closed) indication at the receiving station disappears and the TCF (Train Coming From) indication does not appear after the Station Master on duty at the sending station has pressed the Bell Push Button and the "Train Going to " button.
- (j) If the L.C. (Line Closed) indication at the sending station disappears and the TGT (Train GoingTo) indication at the sending station does not appear after the Station Master on duty at the sending station has pressed the Bell Push Button and the "Train Going To" button.
- (k) (i) If the 'Train on Line' indication does not appear after the train has entered the block section.
- (ii) If the intermittent audible warning does not sound at the receiving station when train enters the block section or does not stop when the 'Bell Push' button is pressed at the receiving station.

Daido Tokenless Block Instruments.

- (a) When Block Instrument handle becomes locked.
- (b) If a train arrives at a station without 'Line Clear' having been given for it .
(In this case, the irregularity must be reported as an accident unless the Driver has come under conditions of total interruption vide SR 6.02.05).
- (c) If the last Stop signal can be taken off without 'Line Clear' having been obtained.
- (d) If at the receiving station, the 'Train out of Section' indication appears when a train is in the Block Section.
- (e) If the 'Line Clear" cannot be cancelled as per Rule 4.34 of BWM although the proper manipulation has been done.
- (f) If there is reason to believe that there is contact between the Block and any other circuit.
- (g) If the last stop signal fails to go to 'ON' position as the train passes the signal.

Siemen's Tokenless Block Instruments.

- (a) If a train arrives at a station without the TCF (Train Coming From) and TOL (Train on Line) indications appearing in the Block Instrument at that station pertaining to the Block Section.
(In this case, the irregularity must be reported as an accident unless the Driver has come under conditions of total interruption vide SR 6.02.05).
- (b) If the Last Stop signal can be taken 'off' without; 'Line Clear' having been taken.

- (c) If at the receiving or sending station, 'Line Closed' indication appears when a train is in the Block section.
- (d) If the "Line Clear" cannot be cancelled as per Rule 4.34 of BWM although proper manipulation has been done.
- (e) If there is reason to believe that there is contact between the block and any other circuit.
- (f) If both the instruments pertaining to a block section indicate 'TGT' or indicate 'TCF' at the same time.
- (g) If any instrument indicates both 'TGT' and 'TCF' indications for a particular block section, at the same time.
- (h) If the 'Fault' indication persists even after the "Fault" push button is operated and released.
- (i) If the Last Stop signal fails to go to 'ON' position as the train passes the signal.
- (j) If there is reason to suspect any other abnormality not mentioned above.

KYOSAN (or PODANUR) TYPE Tokenless Block Instrument:-

- a) If the Last Stop signal can be taken 'off' without 'Line Clear' having been taken.
 - b) If at the receiving station, the "train out of section" indication appears when a train is in the block section.
 - (c) If the 'Line Clear' cannot be cancelled as per Rule 4.34, of BWM although the proper manipulation has been done.
 - (d) If the last Stop signal fails to go 'ON' position as the train passes the signal.
 - (e) If a train arrives at a station without TCF (Train Coming From) and TOL (Train On line) indications appearing on the Block Instrument at that station pertaining to the Block section. (In this case, the irregularity must be reported as an accident unless the Driver has come under conditions of total interruption vide SR. 6.02.05)
 - (f) If both the instruments pertaining to a block section indicate 'TGT' or indicate 'TCF' at the same time.
 - (g) If any instrument indicates both 'TGT' and 'TCF' indications for a particular block section, at the same time.
 - (h) If the Station Master's Key is lost or damaged.
 - (i) If the shunting key can be extracted when the instrument is set to 'Train Coming From' condition.
 - (j) (i) If there is contact on line wires.
(ii) If maintenance party is working on line.
 - (k) If there is any indication contrary to the indications as mentioned in various paras of this rule.
 - (l) When any of the instruments of the block section concerned, is under adjustment by maintainer.
 - (m) If there is reason to suspect any other abnormality not mentioned above.
- (2) (a) In case of failure coming under List 'I' above Block Maintainer of the section should be called who is authorised to attend to the same.
- (b) In the case of failure coming under List 'II' above the Station Masters of the stations at which the working of Tokenless Block Instruments has been suspended under this Rule

must on no account permit the defective instruments to be opened by any person not holding a special permit signed by the Divisional Signal and Telecom.Engineer or Asstt. Signal & Telecom. Engineer. This special permit will be addressed to the Station Master of the Station concerned and will specially authorise the opening of the Tokenless Block Instrument during the abnormal conditions. The usual authority for opening Block Instrument as per Rule 4.18 of BWM should not be accepted.

(3) Whenever the electrical block instrument of Tokenless Type fails, the Station Master of the Station at which the Failure has occurred shall take action as detailed in BWM Rule 4.24(2) .Trains shall be worked in terms of BWM Chapter III read in conjunction with SR 6.02.03 between the stations concerned during the period of the Block Instrument remains suspended.

4.44. Testing Line Clear.- (1) Whenever it is necessary to obtain "Testing Line Clear" the Station Master shall ensure that the block section to which the block instrument relates, is clear of all trains. The instrument at one end of the section shall be set to 'Train Going To' "(TGT)" position with or without co-operation of the Station Master at the other end of the section according to the type of block instrument obeying the procedure laid down in Rule 4.33 of BWM except that :- .

(a) In case of Daido Type Instrument :-

- (i) train number and Private Number need not be given and repeated and
- (ii) instead of sending and acknowledging "Is line Clear" signal, "Testing" signal shall be sent and acknowledged.

(b) In case of Siemen's or Kyosan(Podanur) type Tokenless Instrument :-

- (i) 'Call attention' signal shall be sent and acknowledged before the instrument is set to "Train Going To " condition.
- (ii) "Testing" signal shall be sent over the "Bell Push .Button" (BPB) and "Train Going To" (TGT) button shall be operated along with the last beat on the BPB.

(2) The Station Masters of both stations shall then - . operate the Last Stop signal control at their respective stations so as to test the behaviour of the last Stop signal and ensure that the aspect displayed by the respective Last Stop signal corresponds the condition of the block instrument.

(3) The Station Masters of both stations shall then normalise the block instrument in accordance with the procedure detailed under Rule 4.34.

(4) The procedure detailed under sub-rule 1,2and 3 above shall thereafter be repeated by the operation of the block instrument from the other end station of the concerned section.

(5) Entries shall be made in the Train Register Books at both stations and in the remarks column the behaviour of the Last Stop signal shall be recorded.

4.45. Resumption of normal working.- The procedure detailed under rule 4.25 of BWM shall be followed.

4.46. Recording of the number shown on the.- 1) Daido Type Tokenless Block Instrument :-

When taking over charge, the Station Master shall check the number indicated in S1 and S2 counters and record the number in RED' ink in the remarks column of Train Signal Register,

(2) Siemen's Type Tokenless Block Instrument:-

The number exhibited by the 'ERZ' counter should be recorded in 'RED' ink in the remarks column of Train Signal Register by Station Master while taking over charge.

(3) Keysan's Type Tokenless Block Instrument :-

The number exhibited by the number counter should be recorded 'in 'RED'ink in the remarks column of the Train Signal Register by the Station Master while taking over charge.

4.47. The Station Master-in-charge while complying with Rule 2.09 (e) of Block Working Manual shall ensure that recording of numbers required under Rule 4.46 of BWM are correctly recorded.

CHAPTER - V

RULES FOR WORKING OF TRAINS ON THE ABSOLUTE BLOCK SYSTEM ON DOUBLE LINES WITH ELECTRIC BLOCK INSTRUMENTS

5.01 Means of granting Line Clear : (Refer GR 14.01)

A Block station/Cabin may give line clear for a train to the block station/cabin in rear :-

- (a) Manually by means of electrical block instrument, in conjunction with telephone attached to the block instrument, or
- (b) Automatically by means of Track circuits or Axle counters ; Provided that where Axle Counters are provided-

- (i) Count in and count out devices are provided on the track at the commencement and at the end of the block section respectively.
- (ii) The last Stop signal at the block station in rear is so controlled by the axle counter that such signal cannot display an 'off' aspect unless the block section provided with axle counter is clear and the axle counter shows 'clear' indication, and
- (iii) Visual indicators are provided at each block station at either end of the block section provided with axle counter showing the condition of the block section.

In the case of Intermediate Block posts, visual indicators are provided only at the block station in rear and are not provided at the Intermediate Block Posts.

5.02. Authority to Proceed :-

[Refer GR 14.08 (a)]

5.03. Requirement for Double line block instruments :-

- (i) These instruments may be either the three or one wire type.
- (ii) These instruments shall be provided with indications for both up and Down lines between two adjacent block stations. The indicators are to show anyone of the following three positions :-
 - (a) Line Closed, (White),
 - (b) Line Clear, (Green) or
 - (c) Train on line (Red).
- (iii) The last Stop signal shall be so controlled that such signal cannot display an 'off' aspect unless 'Line Clear' indication is obtained on the block instrument.
- (iv) There shall be no opening giving access to the interior of the instrument, through which it may be possible to operate the mechanism by any unauthorised or irregular means.
- (v) Each instrument shall have double locks and shall be kept sealed. One key of the double lock shall be kept under the personal custody of the Station/Switchman and the other in the custody of the Sectional Block Maintainer.
- (vi) The Batteries in cup board shall be locked up and sealed, the keys being kept by the Block Maintainer of the section.
- (vii) Telephones shall be provided in conjunction with Block instruments, but should be separate units.
- (viii) The period of overhaul for these instruments is fixed at 10 years or earlier, if required and the last date of overhaul is printed on each instrument.

5.04. Type of Instrument :-

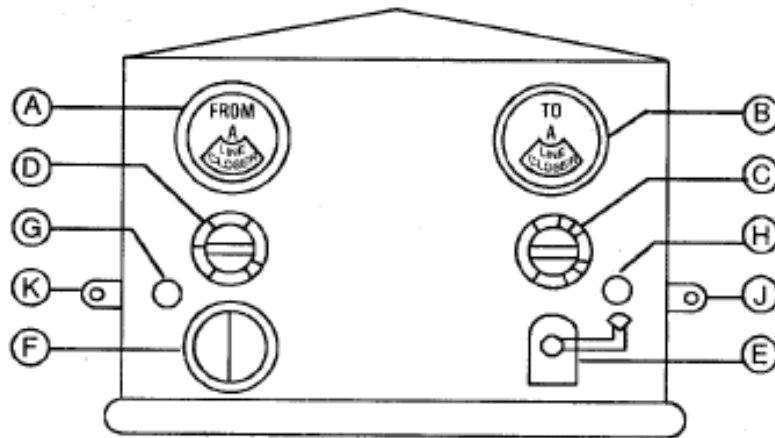
The following types of Double line electrical block instruments are in use on the South Eastern Railway.

- (i) Sykes' three position Lock and Block Instrument.
- (ii) Siemens' (SGE) three position Lock and Block instrument.

5.05. Description of Instruments :-

The following is the description of each of the types of Instruments :-

- (1) Sykes' three position Lock and Block Instrument.



The various parts of the block instruments, as marked in the diagram, and their functions are described below :-

- (i) The part of the block instrument marked (A) in the inward Dial with an indicator appearing through an aperture. This indicator has 3 positions, viz. "Line Closed" (White indication), "Line Clear" *(Green indication) and "Train on Line" (Red Indication), to indicate the condition of the block section in rear. Normally, it shows "Line Closed" position when the block section in rear is clear and line clear has not been signalled.
- (ii) The part of the block instrument marked (B) in the Outward Dial and indicator and the dial indicator shows the same aspect as those of in the inward dial indicator except that it indicates the condition of the block section in advance. Normally, it shows "Line Closed" position when the block section in advance is clear and "Line Clear" has not been obtained.
- (iii) The part of the block instrument marked (C) is the outgoing treadle/Track circuit indicator and may show two indications i.e. white or Green bar. This normally shows "White" bar indicating that the Last Stop signal cannot be taken 'off'. It changes to "Green" bar when "Line Clear" is signalled by the block station in advance and the "Line Clear" push button is kept pressed simultaneously. When it shows "Green" bar it permits the last Stop signal being taken off and changes to "White" bar as soon as the outgoing train operates the outgoing treadle or track circuit.
- (iv) The part of the block instrument marked (D) is the Incoming Treadle/Track circuit indicator. This may show two indications i.e. white or Red bar. This normally shows 'white' bar which changes to 'Red' bar when the plunger is pressed and line clear is given and changes to white again when the incoming train operates the incoming treadle/Track circuit provided the control for the signal with which the incoming treadle/track circuit is controlled, is in its operated position.
- (v) The part of the block instrument marked (E) is the bell signalling key by means of which bell signals are given to the adjoining block station with which the block

instrument is connected. Each time the key is pressed, the gong at the adjoining station gives one beat. The key shall be pressed to the full extent with a slight pause between each stroke, otherwise the bell codes may be indistinct. The bell signalling key shall also be pressed in conjunction with the plunger while granting 'Line Clear'.

- (vi) The part of the instrument marked (F) is the combined plunger and commutator, which shall be pressed to its fullest extent in conjunction with economiser push button so as to give line clear to the block station in rear. This shall be turned to the left to stop the ringing of alarm bell caused due to the train entering the block section. This shall be turned back to normal after ensuring the complete arrival of the train.
- (vii) The part of the instrument marked (G) in the economiser push button which shall be pressed and kept pressed while pressing the plunger or the outward cancelling button.
- (viii) The part of the instrument marked (H) is the Line Clear push button which shall be pressed while sending "Line Clear" signal to the block station in advance and shall be released on receipt of the acknowledgement thereof and on observing "Line Clear" indication on the outward dial indicator and 'Green' indication of the outgoing treadle/track circuit indicator.
- (xi) The part of the instrument marked (J), is the outward cancelling button, which shall be pressed along with economiser push button so as to change the green bar indication to 'white' bar indication of the outgoing treadle/track circuit indicator. This shall be normally kept padlocked and the key kept in the custody of the person responsible for its operation.
- (x) The part of the instrument marked (K) is the inward cancelling button and shall be pressed to cancel Line Clear already given on receipt of an assurance from the block station in rear. It shall be operated only in conjunction with the operation of outward cancelling button at the despatching station. If it is operated independently and released, it will cause the dial indicator to show "Train on Line" and thus putting the instruments out of order. This shall be normally kept pad-locked and the key kept in the custody of the person responsible for its operation.
- (xi) In addition to what have been mentioned in clauses (i) to (x) above, (a) A gong is provided inside the Instrument to announce the bell codes given by the adjacent station on the bell signalling key.

(b) An alarm bell is fitted inside the instrument which gives alarm under the following circumstances :-

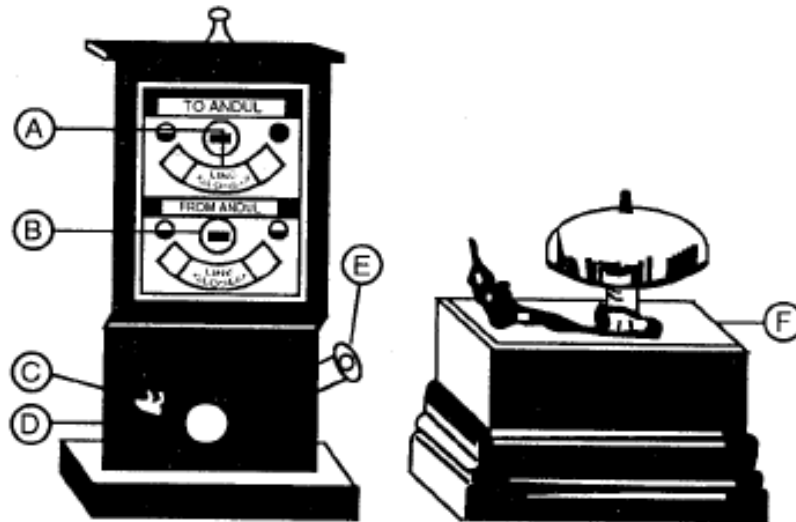
(i) At the despatching station, immediately the train passes the last Stop Signal and operates the outgoing Treadle/Track circuit, the last Stop signal automatically goes back to 'on', the outward dial indicator changes to "Train on Line", the outgoing Treadle/track circuit indicator changes to 'white' and the alarm continues to ring until last stop signal control is replaced to normal.

(ii) At the receiving station, after line clear has been signalled to the block station in rear, as the train enters block section in rear the inward dial indicator automatically changes to "Train on Line" and the alarm continues to ring until the commutator is turned to the left.

(iii) At the receiving station, as the train operates the incoming treadle/track circuit, the incoming treadle/track circuit indicator automatically changes to 'white' and the alarm

continues to ring. The ringing of this alarm is stopped by replacing the control to operate the signal to which the incoming treadle/track circuit is connected to its normal position.

(2) Siemen's (SGE) three position lock and Block instrument.



The various parts of the block instrument, as marked in the diagram and their functions are described below :-

(i) The part of the block instrument marked (A) is for the purpose of indicating the signal received from the block station in advance. It has three indications, "Line Closed", "Line Clear" and "Train on Line" and is fitted with a needle, called upper needle, which may point to any of the three indications. The position of this needle can only be changed by the block station in advance. The indications of this needle refer to trains leaving the station and give a visual indication of the condition of the block section in advance. The indications of the upper needle correspond with those of the lower needle of the corresponding instrument at the station in advance.

(ii) The part of the block instrument marked (B) is for the purpose of indicating the signals sent to the block Stations in rear. It has three indications 'Line Closed', 'Line Clear' and 'Train on Line' and is fitted with a needle, called the lower needle which may point to any of the three indications. The indications of this needle refer to trains approaching a station and give a visual indication of the condition of the block section in rear. The position of this needle is changed by the operation of the commutator by the Station Master/ Switchman of the station at which the instrument is located. The indications of the lower needle correspond with those of the upper needle of the corresponding instrument at the station in rear.

(iii) The part of the block instrument marked (C) is the commutator which can be turned with the bell plunger pressed on the last stroke of the bell code signal sent to the station in rear. A pointer is engraved on the face of the commutator. In the normal position of the commutator, the pointer on it remains vertical and the lower needle of the same instrument as well as the upper needle of the corresponding instrument at the block station in rear points to 'line Closed' which signifies that 'Line Clear' has not been sent to the station in rear. When 'Line Clear' is given for a train to the station in rear, the commutator is turned to the right, the pointer on it is deflected to the right and the lower needle of the same instrument as well as the upper needle of the corresponding instrument at the block station in rear points to 'Line Clear' which signifies that 'Line Clear' has been sent to the station in rear. When line clear has been given for a train to the station in rear and the train enters the block section,

the commutator is turned to extreme left, the pointer on it is deflected to the left and the lower needle of the same instrument as well as the upper needle of the corresponding instrument at the block station in rear points to 'Train on Line' which signifies that the block section is occupied or is otherwise obstructed. The commutator is locked in the 'Train on Line' position only if 'Line Clear' indication has been previously given and remains locked till the train operates the incoming treadle/track circuit, and the control to operate the signal to which the incoming treadle/track circuit is connected is replaced to normal and at stations provided with facing points lock, the Control to operate the first facing points lock is also replaced to normal.

If however, the commutator is turned direct from its normal (Line closed) position to 'Train on Line' position, it does not get locked.

(iv) The part of the block instrument marked (D) is the bell plunger by which code bell signals are sent. Each stroke of the plunger gives one beat on the bell of the corresponding instrument at the other end of the block section. This bell plunger also sets as commutator release plunger. To operate the commutator, it is necessary to press the bell plunger.

(v) The part of the block instrument marked (E), where provided is the SM's key, which is used for locking the commutator in any of its three positions. The key is to be taken out to lock the commutator against operation by unauthorised person(s) and also when temporary single line working is introduced. The commutator must always be locked when the person responsible for the operation of the block instrument leaves his office/cabin. When changing duty this key must be handed over to the reliever by the relieved and a remark to that effect entered in the Train Register Book. A second key is kept in a sealed envelope marked "spare key- Block instrument" and kept locked in the Station safe. It is to be used only when the key in use has been lost or damaged. In such case a message shall be issued to Block Maintainer, Block Signal Inspector, Divisional signal and Tele-communication Engineer and the Divisional Safety Officer. The Police shall also be informed if either key is lost. The lost/damaged key shall be replaced by the Block Signal Inspector and in case of loss of key, the lock of the instrument to be replaced by the Block Signal Inspector.

(vi) The part of the Block Instrument marked (F) is the block bell by which audible bell code signals are received.

5.06. Provision of Treadle/Track circuit :-

(i) Outgoing treadle/track circuit is provided in advance of the last Stop Signal and is connected to this signal. Last stop signal for the purpose of this rule is-

- (a) The advanced starter signal, or
- (b) the starter signal at stations where an advanced starter signal is not provided, or
- (c) the Home signal at Class 'C' stations.

As soon as the engine passes over this treadle/ track circuit, the last stop signal automatically goes back to 'on' position and

(a) In the case of Syke's three position lock and block instrument :-

- (i) the outgoing treadle/track circuit indicator of the despatching station instrument changes from 'Green' to 'White',
- (ii) the outgoing dial indicator of the despatching station and the incoming dial indicator of the receiving station are automatically changed to "Train on line" position and
- (iii) the alarm bell rings at the instruments at both station which stops only when the control to operate the last stop signal is restored to its normal position at the despatching station and the commutator is turned to left at the receiving station.

(b) In the case of Siemen's (SGE) three position lock and block instrument :-

(i) the commutator of the instrument at the receiving station shall be turned to the left while acknowledging the "Train entering block section" signal and then the lower needle of the receiving station and the upper needle of the despatching station to point "Train on line" position, and

(ii) the control to operate the Last Stop signal is restored to normal at the sending station.

(2) An incoming treadle/track circuit is provided at the receiving station and is placed inside the Home signal in the case of 'B' class stations and 'A' class stations provided with loop(s); in advance of the starter signal in the case of 'A' class stations with no loops; and 400 metres beyond the Home signal in the case of 'C' class stations.

As soon as the engine passes over this treadle/ track circuit, the signal mentioned above automatically goes back to 'on' position, and

(a) In the case of Syke's three position lock and block instrument :-

- (i) the incoming treadle indicator automatically changes from 'Red' to 'white',
- (ii) the alarm bell rings and stops only when the control to operate the signal mentioned in (2) above is restored to its normal position.

(b) In the case of Siemen's (SGE) three position lock and block instrument :-

The electrical lock on the commutator is released and it becomes free for its operation after the control to operate the signal mentioned in (2) above is restored to its normal position and at stations having facing points, the control to operate the lock on this facing point is also restored to its normal position.

5.07. Precautions before sending "Line Clear Enquiry" signal [(Refer Rule 2.07(3))]

Before a Stations Master/Switchman asks for "Line Clear", he shall see that :-

(a) the Stop signal controlling the entry of the train into the block section concerned i.e. the last Stop signal is at 'on' position;

(b) the control to operate the Stop signal mentioned in (a) above, is in its normal position;

(c) all entries in the Train Register relating to the movement of the previous train which moved over the same block section have been completed; and

(d) In the case of Syke's three position lock and block instrument, the outward dial and the outgoing treadle indicator of the block instrument pertaining to the block section into which the expected train is to proceed shows "Line Closed" and "white" respectively whereas in the case of Siemen's (SGE) three position lock and block instrument the upper needle of the concerned block instrument points to "Line Closed" position.

5.08. Precautions before sending 'Line Clear' signal [(Refer Rule 2.07(4), GR 8.02,8.03 and 8.04)]

Before a Station Master/Switchman sends "Line Clear" signal to the block station in rear, he shall ensure that-

(a) the conditions prescribed under GR 8.02 for 'A' Class stations; 8.03 for 'B' Class stations and 8.04 for 'C' Class stations are complied with;

(b) the control to operate the Home signal and other relevant approach signals and in addition, at 'A' Class stations, the control to operate the starter signal of the nominated route on which the train is to be received are in their normal position;

(c) all entries in the Train Register relating to the movement of the previous train which moved over the same block section have been completed; and

(d) the inward dial and incoming treadle/track circuit indicator in the case of Syke's three position lock and block instrument pertaining to the concerned block section shows "line closed" and "white" respectively and in the case of Siemen's (SGE) three position lock and block instrument, the lower needle of the concerned instrument points to "line Closed" position and the pointer on the commutator is in its vertical position.

5.09. Mode of signalling of trains on various electrical block instruments, (Double line) :-

(1) Mode of signalling of trains on Syke's three position lock and block instrument for a train to leave a block station and 'proceed to next block station in advance :-

Despatching Station _____ Receiving Station

(Ensure compliance to Rule 5.07 of BWM).

1. Sends "Call attention" code of bell signals,
3. Sends "Attend telephone" code of bell signals.
5. Attends on telephone and gives the name of the station.
7. Ensures correctness of station and asks if he is prepared to receive train No.
(Refer Rule 2.07.3 of BWM).
- 8(a) Repeats the private number given by the receiving station.
9. Replaces telephone. Presses line clear push button and sends "Is Line Clear" code of bell signals and complies with Rule 5.06.1(vii) of BWM.

11. On observing 'Line clear' indication on the outward dial indicator, 'Green' bar indication of the outgoing treadle/track circuit indicator and on receipt of acknowledgement of "Is line clear" enquiry signal, releases 'Line clear push button.

12.(a) Takes 'off' the last Stop signal after ensuring that the route is clear and points, if any, are correctly set and the facing points locked.

(b) Train enters block section

(c) Last Stop signal returns to 'on' position automatically.

(d) Outward dial indicator automatically changes to "Train on Line" Position.

(e) Outgoing Treadle/track circuit indicator changes to 'white' bar.

- (f) Alarm bell starts ringing.
- (g) Puts back the control to operate the last Stop signal to normal.
- (h) Alarm bell stops.
- 14. Sends 'Call attentions' code of bell signals.
 - 16. Sends "Train entering block section" code of bell signals after complying with Rule 2.07(5) of BWM
- 2. Acknowledges 'Call attention' code of bell signal.
- 4. Acknowledges "attend telephone" code of bell signals and attends on telephone.
- 6. Ensures correctness of stations and gives out station name.
- 8. If prepared to receive this train, complies with Rule 5.08 of BWM and replies, 'Yes' take line clear for train No.
Private Number
- 8(b) Ensures correctness of the private number and replaces telephone.
 - 9. Presses economiser push button and then the plunger. Keeping the plunger pressed, the economiser push button shall be released and acknowledgement to the 'Is line clear' enquiry signal shall be given on the bell signalling key keeping the same pressed on its last beat for atleast 2 seconds. The plunger and the bell signalling key shall be released thereafter on observing 'Line clear' indication on the inward dial indicator and 'Red' bar indication of the incoming treadle/track circuit indicator.
- 13 (a) Inward dial indicator automatically changes to "Train on line" Position.
- (b) Alarm bell starts ringing.
- (c) Turns the commutator to the left.
- (d) Alarm bell stops.
- 15. Acknowledges 'Call attention' code of bell signals.
- 17. Acknowledges 'Train entering block section' code of bell signals.
- 18(a) takes 'Off reception signals after ensuring that the nominated line is clear, points are correctly set and the facing points are locked.
- (b) Train enters the station and operates the incoming Treadle/track circuit as mentioned in rule 5.06(2) of BWM.
- (c) Home signal goes back to 'on' automatically.
- (d) Incoming treadle/track circuit indicator changes to "white".
- (e) Alarm bell starts ringing.
- (f) Complies with GR 14.10, SR 4.17.01, and BWM rule 2.07(6)
- (g) Puts back the control to operate the signal mentioned in Rule 5.06(2) of BWM to normal.
- (h) Alarm bell stops.
- 19. Sends "Call attention" code of bell signals.
 - 20. Turns the commutator to the right and thus the inward dial indicator is changed to show 'Line closed' position and then sends 'Train out of block section' code of bell signals.
- 20. Acknowledges "Call attention" code of bell signals.

On observing the "Line Closed" position of the outward dial indicator, acknowledges "Train out of block section" code of bell signals.

Normal conditions of the instruments at both stations are thus restored and can be operated again in the manners described above for the next train to move in the same direction between the stations concerned.

(2) Mode of signalling of trains on Siemen's (SGE) three position lock and block instruments for a train to leave a block station and proceed to the next block station in advance.-

Despatching Station

(Ensure compliance to Rule 5.07 of BWM)
Sends 'Call attention' code of bell signals.

3. Sends "Attend Telephone" code of bell signals.
5. Attends on telephone and gives out station name.
7. Ensures correctness of station and asks if he is prepared to receive train No. [refer Rule 2.07 (3) of BWM]

8(a) Repeats the private number given by the receiving station.

9. Replaces telephone Sends "Is line clear" code of bell signals on the plunger.

12(a) Ensures that the upper needle of the block instrument points to "Line Clear" Position.
Takes 'off' last Stop signal after ensuring that the route is clear, points, if any, are correctly set and the factory points are locked.

(c) Train enters block section.

(d) Last Stop signal returns to "ON" position automatically.

(e) Puts back the control to operate the last Stop signal to normal.

13. Sends "Call attention" code of bell signals.

15. Sends "Train entering block section" code of bell signals after complying with Rule 2.07(5) of BWM.

14. Acknowledges "Call attention" code of bell signals.

16. Acknowledges "Train entering block section code of bell signals and on the last stroke keeping the plunger pressed turns the commutator to extreme left.

17 (a) The lower needle of the block instrument points to "train on line" position.

- (b) The pointer on the commutator points to the left.
- 19(a) Takes 'off' reception signals after ensuring that the nominated line is clear, points are correctly set and the facing points are locked.
- (b) Train enters the station and operates the incoming treadle/track circuit as mentioned in Rule 5.06(2) of BWM.
- (c) Home signal goes back to 'ON' automatically.
- (d) Complies with GR 14.10, SR 4.17.01 and BWM Rule 2.07 (6)
- (e) Puts back the control to operate the signal mentioned in rule 5.06(2) of BWM as also the control to operate the first facing to operate the first facing points lock to normal.
- 20. Sends "Call attention" code of bell signals.
- 22. Sends "Train out of block section" code of bell signals and on the last stroke keeping the plunger pressed turns the commutator to its next right so as to bring the pointer on the commutator to its vertical position and the lower needle of the block instrument in this "Line closed" position Releases plunger.
- 21. Acknowledges "Call attention" code of bell signals.
- 23. Observes that the upper needle of the block instrument points to "Line Closed" position. Acknowledges "train out of block section" code of bell signals.

Normal conditions of the instruments at both stations are thus restored and can be operated again in the manner described above for the next train to move in the same direction between the stations concerned.

5.10. (1) At stations where block instruments are provided in the cabins at either end, the provisions of SR 3.38.01 and 3.42.01 shall be observed by the Station Master at the station and the Switchman/Asst. Station Master in charge of the Cabin in addition to the observance of the procedure for the Cabin in addition to the observance of the procedure for operation of the electrical block instrument detailed under Rule 5.09 of BWM.

(2) It shall be the responsibility of the Switchman/Asstt. Station Master in charge of cabins where block instruments are provided to give an intimation over the telephone to the Station Master at the station immediately on receipt of "Train entering block section" signal from the station in rear.

5.11. Mode of signalling of Motor trolleys /material trolleys 4 wheeler Tower Wagon on various electrical block instruments on Double Line :-

[Refer SR 15.25.03 (a); 15.25.09, 15.27.07 and GR 17.08]

Whenever a Motor trolley or a Material trolley or a 4 wheeler Tower Wagon is to be worked between stations on line clear, the operation detailed below shall be carried out :-

(1) Syke's three position lock and block instrument :-

18. The upper needle of the block instrument points to "Train on line" position.

Receiving Station

2. Acknowledges "call attention" code of bell signals.
4. Acknowledges "Attend Telephone" code of bell signals and attends on telephone.
6. Ensures correctness of station and gives out station name.
8. If prepared to receive the train, complies with Rule 5.08 of BWM and replies "Yes" take line clear for train No....." private number
- 8(b) Ensures correctness of the private number and replaces telephone.
10. Operates SM's key where provided. Acknowledges "Is line clear" code of bell signals on the plunger and on the last stroke, keeping the plunger pressed turns the commutator to right. Releases plunger.
- 11(a) The lower needle of the block instrument points to "Line Clear" position.
 - (b) The pointer on the commutator is deflected to right.

Despatching Station

(Ensures compliance to Rules 5.07 of BWM)

1. Sends "Call attention" code of bell signal.
3. Sends "Attend Telephone" code of bell signals.
 5. Attends of telephone and gives the name of station.
7. Ensures correctness of station and asks if he is prepared to grant line clear for trolley/Tower wagon.

On observing the "Train on line" indication of the outward dial indicator, repeats the Private Number given by the receiving station and replaces telephone.

Receiving Station

2. Acknowledges "Call attention" code of bell signals.
4. Acknowledges "Attend Telephone" code of bell signals and attends on Telephone.
6. Ensures correctness of station and gives out station name.
8. If prepared to grant line clear, complies with rule 5.08 of BWM and replies "Line is clear for trolley/Tower wagon. Private No. and immediately turns the commutator to the left and thus to show "Train on Line" indication on the inward dial indicator. Places "Motor trolley on Line" board on the combined plunger and commutator.

Ensures correctness of the Private Number and replaces telephone.
11. (a) Prepares and hands over an authority on form T/1518 for motor trolley/Tower wagon or on form E.D. 9-18 for material trolley.
 - (b) Ensures that route is clear and points if any, are correctly set and facing points are locked.
 - (c) Takes 'off' Starter signal, other than last Stop signal.
 - (d) Trolley/Tower Wagon enters the block section.

12. Sends "Call attention" code of bell signals.
 14. Sends "Train entering block section" code of bell signals.
13. Acknowledges "Call attention" code of bell signals.
15. Acknowledges "Train entering block section" code of bell signals.
- 16.(a) Takes 'Off reception signals only after the trolley Tower wagon approaches the Distant/Outer signal.
- (b) Trolley/Tower wagon enters into the station.
- (c) Replaces the reception signals to 'on'.
- (d) Motor trolley/Tower wagon Driver returns T/1518 or in the case of Material Trolley, the official charge of material trolley returns ED 9-18 to the Station Master.
- (e) Removes "Motor trolley on line" board.
17. Sends "Call attention" code of bell signals.
19. Turns the commutator to the right. Inward dial indicator shows "Line closed" position and sends "Train out of block section" code of bell signal.
- 21.Sends "Attend telephone code of bell signals.
23. Attends on telephone and informs..... trolley/Tower wagon arrived complete at..... Hrs. Mts. Private No.
25. Verifies correctness of Private Number and replaces telephone.
18. Acknowledges "Call attention" code of bell signals,
20. Acknowledges "Train out of block section" signal on observing "Line Closed" indication on the outward dial indicator.
22. Acknowledges "Attend telephone" code of bell signals and attends on telephone.

Repeats the private number given by the receiving station and replaces telephone.

- Note :** At stations where block instruments are installed in the cabins at either end, the person in charge of such cabin-
- (a) at the despatching station -
 - (i) shall not ask for Line Clear unless he is authorised by the Station Master supported by a Private Number; and
 - (ii) shall on completion of the operation under item No. 9 transmit to the Station Master at the Block Station, the Private Number received from the despatching station and in addition shall observe SR 3.42.01. The Station Master shall issue T/1518 or ED 9-18 as the case may be.
 - (b) at the receiving station, shall follow the provisions of SR. 3.38.01. He shall obtain a Private Number from the Station Master in support of compliance to item number 15(d) of the mode of signalling before he undertakes the operation under item No. 16.

(2) Siement's (SGE) three position lock and block instrument :-

The action to be taken and the operations of this type of block instrument are the same as those of Syke's three position lock and block instrument detailed under sub-rule (1) above except the items mentioned hereunder.

Despatching Station

On observing the upper needle points to "Train on line" position, repeats the private number given by the receiving station and replaces telephone.

Receiving Station

If prepared to grant Line Clear, complies with Rule 5.08 of BWM and replies "Line is clear for trolley/ Tower Wagon. Private Number presses the plunger or keeping the plunger pressed turns the commutator to the left so that the lower needle points to "Train on line" position and the pointer on the commutator deflects to the left. Places "Motor trolley on line" board on the plunger.

Acknowledged "train out of block section" signal on observing the "Line closed" position of the upper needle.

Sends "Train out of block section" signal and on the last stroke keeping the plunger pressed turns the commutator to the next right so as to bring the pointer on the commutator to its vertical position and the lower needle points to "Line closed" position.

Note : All entries in the Train Register in connection with running of Motor trollies/Material trolley/Tower Wagon shall be made in Red ink.

5.12. Mode of signalling of Motor trollies when following a train or another Motor trolley on various electrical block instruments on Double Line : - [Refer SR 15.25.03(b)]

(1) Whenever Motor trollies are to be worked between stations in terms of SR 15.25.03(b), the SM/Switchmen responsible for the operation of block instrument shall, after obtaining line clear for the train or Motor trolley to which the other trolley/trollies shall follow, obtain permission to despatch from the other end SM/Switchman. Such permission shall be given supported by Private Number. If two Motor trollies are to follow a train. Private Number shall be obtained separately for each Motor trolley.

After the permission referred to in sub-rule (1) has been obtained, the Station Master of the despatching station shall prepare "Following line clear authority" as indicated in SR 15.25.03(b) (iv) and hand over the same to the Driver of the rear most Motor trolley. The

leading trolley shall be given a Caution Order permitting the Motor trolley to follow..... train (quoting the Private Number received) and Motor trolley is following.

(3) "Train out of block section" signal shall not be given by the Station Master of the block station in advance unless the last Motor trolley arrives and the "following line clear authority" given to the Driver under sub-rule (2) above, is cancelled by the Station Master. Private Number shall be given for each Motor trolley separately assuring complete arrival of the trolley/trolleys.

(4)(a) At stations where block instruments are operated from the end cabins, the Station Master of the despatching station while advising the Assistant Station Master/Switchman in charge of each cabin to obtain line clear for the train in terms of SR 3.42.01, shall also indicate the particulars of Motor trolley/trolleys which is/are to follow the train. The Assistant Station master/Switchman while asking line clear for the train/Motor trolley, shall include the particulars of the trolley/trolleys which is/are to follow. Similarly the Assistant Station Master/Switchman of the end cabin at the other end block station as well as the Station Master shall include the other end block station as well as the Station master shall include the particulars of the trolley/trolleys while complying with SR 3.38.01(a). After line clear has been granted No. 11 of Rule 5.09 (1) or (II) of Rule 5.09 (2) or (8) of sub-rule (1) and (2) of Rule 5.11 of BWM at the case may be, the Assistant Station Master/Switchman in charge of the cabin shall grant permission for the Motor trolley/trolleys to follow the train over the block instrument telephone supported by Private Number which shall be given separately for each Motor trolley. The Assistant Station master/ Switchman in charge of the end cabin of the despatching station shall record in the Train Signal Register and report the same to the Station master at the station, who shall issue the authority mentioned in sub-rule (2) above.

(b) The Assistant Station Master/Switchman in charge of the end Cabin at the receiving station shall observe the procedure detailed under sub-rule (3) above provided assurance has been received from the Station Master supported by a Private Number about the complete arrival of the last Motor trolley and that the "Following line clear authority" has been collected and cancelled.

(5) A Board with legend "Motor trolley on line" shall placed on the block instrument at the receiving station as soon as permission is given for Motor trolley/trolleys to follow and shall be removed only after " Train out of block section" signal is given to the block station in rear as indicated in sub-rule 3 and 4 (b) above.

(6) All entries in connection with the running of Motor trolleys under these rules shall be made in Red ink.

5.13. (a) In the event of a Motor trolley/Material trolley/4 wheeler Tower wagon returns to the station from which it has started, the Line clear authority as mentioned in Rule 5.11 of BWM, shall be returned to the Station Master of such station who shall cancel the same and issue a message supported by a Private Number. The Station Master of the other end on receipt of the message shall normalise the block instrument.

(b) In case a Motor trolley/Material trolley after entering into the block section is removed from the line and is kept clear of the running line, the person in charge of the trolley shall send the line clear authority to the Station Master of the nearest station certifying that the trolley is kept clear of running line at KM..... The Station Master shall cancel the same and issue a message supported by a private Number to the Station Master at the other end and thereafter the block instrument shall be made to normal.

(c)(i) In case a Motor trolley/Material trolley is required to be placed on line in the section between two block stations, the person in charge of the trolley shall not place the same on the line unless he has obtained a written permission issued by a Station Master of the nearest station. The official incharge of the Material trolley shall send a memo in case of Motor trolley and form ED 9-16 in the case of Material trolley indicating the kilometerage of

the UP or Down line at which he proposes to put his trolley on the line and the station to which he wants to proceed.

(ii) The Station Master on receipt of the same shall block back or block forward the line as the case may be and then send a written permission indicating the Private Number received for blocking forward or back, under his signature and stamp. After the complete arrival of the trolley, the block shall be removed in the usual way.

(iii) The trolley shall be received by taking 'off' the reception signals, if the same is approaching the station on proper line.

5.14. Cancelling Line Clear -

(1) For a train :- If a station has obtained line clear for a train but for some reason has to cancel it before the train has left, the procedure detailed below shall be followed so as to bring the instrument to its normal position. If departure signals were taken 'off' the Station Master shall observe the provisions of SR 3.26.02(b)(ii). In case the block instrument is installed in the cabins and manned by Switchman, the Switchman shall follow the procedure detailed below only if he is satisfied that the train has neither left nor started and that he has been authorised by the Station Master to cancel "Line clear" supported by a Private Number. After line clear has been correctly cancelled and the instrument is brought to normal, the Switchman shall inform the Station Master supported by a private Number, Similarly the Switchman of the receiving station, shall obtain the permission of the Station Master by exchanging Private Number before he permits the Station Master/Switchman of the despatching station to cancel Line Clear.

Syke's three position lock and block instrument.

Despatching Station

(outward dial indicator shows 'Line Clear' and outgoing treadle indicator shows 'Green bar'. All departure signals pertaining to the same block section are at 'ON' and the control to operate the last Stop signal is normal)

Receiving Station

(Inward dial indicator shows "Line clear" and incoming treadle indicator shows "Red bar")

1. Sends "Call attention" code of bell signals.
3. Sends "Attend telephone" code of bell signals.
5. Attends on telephone and informs the receiving station "I intend to cancel Line Clear for train No..... now at (Place) for (here state reason) Private Number"

Unlocks the lock on outward cancelling button and sends "Cancel Last signal" code of bell signals and watch outward dial indicator.

2. Acknowledges "Call attention" code of bell signals.
4. Acknowledge "Attend Telephone" code of bell signals and attends on telephone.

6. If prepared to cancel "Line Clear", ensures that all reception signals pertaining to the same block section are at 'on' and the control to operate the home signal is in its normal position. Informs the despatching station about his readiness to cancel Line Clear and replies "You may cancel line clear for train No now at(Place). Private Number"
8. Unlocks the lock on inward cancelling button and presses the same, inward dial indicator changes to "Line closed" position. Keeps inward cancelling button pressed until incoming treadle indicator changes from 'Red' to 'white' bar and the ringing of the alarm bell stops.
10. (a) Incoming treadle indicator changes from 'Red' to 'White'
(b) Alarm bell stops.
(c) Releases inward cancelling button.
(d) Acknowledges "Cancel last signal" code of bell signals.
Locks up inward cancelling button.
9. As soon as outward dial indicator changes from "Line closed" position, presses economiser push button and the outward cancelling button and keeps them pressed until "Cancel last signal" code of bell signal is acknowledged.
- 11 (a) Outgoing treadle indicator changes from "Green" to "White" bar.
(b) Releases economiser push button and outward cancelling button.
Locks up outward cancelling button.
Siemens (SGE) three position lock and block instrument –

Despatching Station

(Upper needle points to "Line Clear" position. All departure signals pertaining to the same block section are at 'on' and the control to operate the last Stop signal is normal)

- 1.
3. Same as 5.14(1)(a) of BWM

5.

Receiving Station

(Lower needle points to "Line clear" position)

- 2.
4. Same as 5.14(1)(a) of BWM

6.

7. Sends "Cancel last signal" code of bell signals .

Upper needle points to "Line closed" position.

8. Acknowledges "Cancel last signal" code of bell signals and keeping the plunger pressed on the last stroke, turns the commutator to the next left.

(a) Lower needle points to "Line closed" position.

Pointer on the commutator shows vertical position.

(2) For Motor Trolley/4 wheeler Tower Wagon/Material Trolley.

Before the instrument is brought to its normal position, the Station Master and/or the Switchman shall follow the rules laid down in Rule 5.14(1) of BWM as for a train. In addition the Station Master shall withdraw the 'Authority to Proceed' i.e. T/1518 in the case of Motor Trolley/4 wheeler Tower Wagon and ED 9-18 in the case of Material trolley, cancel the same keep the same pasted with the record foil.

Syke's three position Lock and block instrument.

Despatching Station

(Outward dial indicator shows 'Train on line' position. All departure signals are at 'on')

1. Sends 'Call attention' code of bell signal.

3. Sends 'Attend telephone' code of bell signal.

5. Attends on telephone and informs the receiving station 'I intend to cancel line clear for trolley/Tower Wagon. Line clear authority collected here and cancelled. Private No.

7. Sends 'Cancel last signal code of bell signal' code of bell signals.

Ensures that outward dial indicator shows 'Line closed' position.

Receiving Station

(Inward dial indicator shows 'Train on Line' position)

2. Acknowledges 'Call attention' code of bell signals.

4. Acknowledges 'Attended telephone' code of bell signals and attends on telephone.
6. If prepared to cancel 'Line clear' ensures that all reception signals pertaining to the same block section are at 'on' and the control to operate the Home signals is in its normal position. Informs the despatching station about his readiness to cancel line clear readiness to cancel line clear and replies, You may cancel line clear for..... trolley/Tower Wagon. Private Number
8. Turns the commutator to the right. Inward dial indicator shows 'Line closed' position Acknowledges 'cancel last signal' code of bell signals.

(b) siemens (SGE) three position lock and block instrument.-

Despatching Station

(Upper needle points to "Train on line" position. All departure signals are at 'on')

- 1.
3. Same as 5.14 (2)(a) of BWM
- 5.
- 7.

9. Ensures that the upper needle points to "Line closed" position.

Receiving Station

(Lower needle points to "Train on Line" position).

- 2.
4. Same as 5.14(2)(a) of BWM
- 6.
8. Acknowledges "Cancel last signal" code of bell signals and on the last stroke keeping the plunger pressed turns the commutator to next right. Lower needle points to "Line closed" position and the pointer on the commutator shows vertical.

5.15. Block back or Block forward.- The procedure for Block back or Block forward as required under GR 8.14 and the procedure for normalising the instrument after the removal of the obstruction, shall be follows :-

- (1) Block back.

Syke's three position lock and block instrument.-

Shunting Station

(Inward dial and incoming treadle indicator shows "Line closed" and "White bar" position respectively.)

Sends "Call attention" code of bell signals.

Station in rear

(Outward dial and outgoing treadle indicator shows "Line closed" and "White bar" respectively).

Acknowledged 'Call attention' code of bell signals.

3. Sends "Attend telephone" code of bell signals.

5. Attends on telephone and informs "I am blocking back section between (station) and (station) on line (Up or Down) for (state purpose) Private Number"
Turns the commutator to thie left. Inward dial indicator shows "Train on line" position.
4. Acknowledges "Attend telephone" code of bell signals and attends on telephone.
6. If prepared to permit such blocking, replies "Noted. You may block back section.....(Up or Down) for (Station purpose). Private Number"

Ensures outward dial indicator shows "Train on line"
Siemens (SGE) three position lock and block instrument.

Shunting Station

(Lower needle points to 'Line closed' position, pointer on the commutator points to vertical position)

- 1.
3. Same as Rule 5.15 (1) (A) of BWM
- 5.
7. Keeping the plunger pressed, turns the commutator to the left, Lower needle points to 'Train on Line' position and the pointer on the commutator deflects to the left.
(2) Block forward.-

Station in rear

(Upper needle points to 'Line closed' position)

- 2.
4. Same as Rule 5.15 (1) (A) of BWM
- 6.

Ensures that upper needle points to "Train on Line" position.
Syke's three position lock and Block instrument.-

Shunting Station

(Outward dial indicator shows 'Line closed' and the outgoingtreadle indicator shows "white" bar)

1. Sends "Call attention' code of bell signals.

3. Sends 'Attend telephone' code of bell signals.

5. Attends on telephone and informs "I am blocking forward section between (stn) and (stn) on line (Up or Down) for (state purpose). Private Number....."

Ensures that outward dial indicator shows Train on Line" position.

Station in rear

(Inward dial indicator shows "Line closed" and incoming treadle indicator shows 'white' bar)

2. Acknowledges "Call attention' code of bell signals .

4. Acknowledges "Attend telephone" code of bell signals and attends on telephone.
6. If prepared to permit such block, replies "Noted, you may block forward section between..... (stn) and turns the commutator to the left. Inward dial indicator then shows "Train on Line" position.

Siemens (SGE) three position lock and block instrument.-

Shunting Station

(Upper needle points to "Line closed" position)

- 1.
3. Same as BWM Rule 5.15(2) (A).
- 5.
7. Ensures that the upper needle points to "Train on Line" position.

Station in Avance

(Lower needle points to "Line closed" position. Pointer on the commutator points to vertical.

2. Same as BWM Rule 5.15(2) (A).
If prepared to permit such blocking, replies "Noted, you may block forward section between (stn) and (stn) on line (Up or Down) for (state purpose). Private Number and keeping the plunger pressed turns the commutator to the left. Lower needle points to 'Train on Line' position and the pointer on the commutator deflects to the left.

(3) Removal of Block .- (a) When the obstruction is removed and the block section is clear and after the authority issued earlier for blocking the lines is withdrawn and kept in the custody of the Station Master as required under SR 5.13.02, he shall issue a message supported by Private Number over the block instrument telephone to the other end Station Master as follows.-

"Shunting is completed. Block section between (stn) and (stn) on Up/Down line is clear. Private Number"

The Station Master at the other end station shall then reply as follows :-

"Noted, block Section between (stn.) and (stn) on Up/Down line is clear. Private Number"

(b) In case of removing block after blocking forward, the Station Master of the shunting station shall then send "Obstruction removed" code of bell signals which the other end Station Master shall acknowledge and turn the commutator to the right so that the instruments at both stations shows "Line closed" position.

(c) In case of removing block after blocking back, the Station Master of the shunting station shall, while sending "Obstruction removed" bell of code signals, turn the commutator to the right so that the instruments at both stations shows "Line closed" position. The Station Master at the other end shall acknowledge the "Obstruction removed" code of bell signals on observing the "Line closed" indication of the block instrument at his station.

(4) (a) At stations where block instruments are installed in the cabins and manned by Switchman, he shall follow the procedure detailed in sub-rule (1) and (2) above only on being authorised to do so supported by a Private Number by the Station Master at the Station. The Switchman of the cabin shall communicate the Private Number received from the other end

Cabin (1) station to the Station Master at the station so as to enable the latter to issue the authority as required under SR 8.15.01 (d).

(b) Similarly the Switchman of such Cabin shall not remove the block as per sub-rule (3) above unless the Station Master at the station authorises him to do so supported by a Private Number. It shall be the responsibility of the Station Master to withdraw and cancel the authority for shunting as required under SR 5.13.02 before he authorises the Switchman to remove the block.

(5) All entries in the Train Register required under sub-rule (1), (2) and (3) above, shall be made in Red ink.

5.16. Failure of Block Instruments.-In the circumstances listed below, the block instrument either of the affected section or both sections (as indicated) shall be treated as having failed and the concerned section/sections of the block instrument must be suspended.

(1) Syke's three position lock and Block instrument.-

(a) **Both** Sections.-

(i) If code signals on the bell are not received distinctly or fail altogether.

(ii) When telephone connection between two stations fails.

(iii) If there is reason to believe that there is contact between the Block wire and any other circuit.

Note: If an Intermittent contact exists between the Block and other circuits, an irregular movement of the indicator will be observed and possibly irregular heats on the bell. Should a permanent contact exists, the indicator will take up a position, either on the inward or outward Dial, irrespective of any operation of the instrument. A contact between two block wires would cause signals given on one instrument to be repeated on the neighbouring instrument.

(iv) If a train arrives at a station without "Line clear" having been given for it. Such case of irregularity must be reported as an accident unless the Driver is in possession of any "Authority to Proceed" in accordance with SR 6.02.04.

(v) If the Block Instrument or its battery counter is found unlocked or the seal is found broken in the absence of an authorised representative of the signal branch.

(vi) If the incoming treadle/track circuit indicator changes from 'Red bar' to 'White bar' and the inward dial indicator changes from 'Train on Line' to 'Line closed' before the arrival of the train.

(vii) When the dial and incoming/outgoing treadle/ track circuit indicator show erratic movement..

Note: In the case of situation under sub-clauses (iv), (vi) and (vii) above, the working of the Block Instrument must not be resumed by the Block Signal Inspector until permission of the Divisional Signal & Telecommunication Engineer/Assistant Signal & Telecommunication Engineer has been obtained.

(b) Affected section.-

(i) If the outgoing Treadle/Track circuit indicator shows "Green bar" when the block section is occupied, while the outward Dial indicator is showing 'train on Line'.

- (ii) If the Dial Indicator fails to move to "Line Clear" or the Incoming Treadle indicator fails to change to 'red' after the plunger and the bell signalling key has been pressed simultaneously.
- (iii) If the Outgoing Treadle Indicator fails to indicate 'green' after receipt of 'Line clear' from the receiving station.
- (iv) If "Train on Line" indication fails to appear after the commutator has been turned to the left, as when giving "line Clear" for Motor Trolley, etc.
- (v) If the Last Stop signal fails to go to 'on' position as the train passes the signal.
- (vi) If the station cannot take 'off' the Last Stop signal after "Line Clear" has been obtained from the station in advance and the Out-going Treadle Indicator is showing 'green' i.e. when the Last Stop signal is out of order or suspended.
- (vii) If the combined plunger and commutator can be pressed without pressing the Economiser Push Button.
- (viii) If the incoming treadle/track circuit indicator does not change from 'Red' to 'White' on complete arrival of the incoming train.
- (ix) If it is found possible to take 'off' the last Stop signal without obtaining 'Line Clear' indication on the instrument.

Note: (i) In case of failure of alarm bell it will not be necessary to suspend the affected section of the Block Instrument but the matter must be promptly reported for rectification.

(ii) In the case of situation under sub-clauses (i) and (ix) above, the working of the Block Instrument must not be resumed by the Block Signal Inspector until permission of the Divisional Signal & Telecommunication Engineer/Assistant Signal & Telecommunication Engineer has been obtained.

(c) Both sections (not due to failure).-

- (i) Whenever single line working is introduced between the stations concerned.
- (ii) Whenever a Block Instrument has to be opened for attention by the Block maintenance staff.
- (iii) Whenever Telegraph Department or Railway Signal staff have to work on the line wires.

(2) Siemen's three position lock and block instrument.-

(a) Both sections.-

- (i) If code signals on the bell are not received distinctly or fail altogether.
- (ii) When telephone connection between two stations. fails.
- (iii) If there is reason to believe that there is contact between the Block wire and any other circuit.

Note: If an intermittent contact exists between the Block and other circuits an irregular movement of the Pointer will be observed and possibly irregular beats on the bell. Should a permanent contact exists the upper or the Lower Pointer on the face of the Instrument will take up a position, irrespective of any operation of the instrument. A contact between two Block wires would cause signals given on one Instrument to be repeated on the neighbouring Instrument.

- (iv) If a train arrives at a station without line clear having been given for it. In this case the irregularity must be reported as an accident unless the Driver is in possession of an authority to proceed in accordance with SR 6.02.04.

Note: The working of the Block Instrument must not be resumed by the Block Signal Inspector until permission of the Divisional signal and Telecom-Engineer or the Assistant Signal and Telecom. Engineer has been obtained.

- (v) if the Block Instrument or its battery counter is found unlocked or the seal is found broken in the absence of an authorised representative of the Signal Branch.
- (vi) If it becomes possible to turn the block instrument commutator from 'Train on Line' position to 'Line closed' or 'Line Clear' position without the arrival of the train.
- (vii) When the Block instrument shown erratic movement of the indicators or is defective in any other way.

Note: In the cases of situation under sub-clauses (vi) and (vii) above, the working of the Block instrument must not be resumed by the Block Signal Inspector until permission of the Divisional/Assistant Signal and Tele- communication Engineer has been obtained.

(b) Affected Section.-

- (i) if "Train on Line" indication fails to appear after the commutator has been turned to the left, as when giving "Line Clear" for Motor Trolley etc.
- (ii) If the Last Stop signal fails to go to 'on' position as the train passes the signal.
- (iii) if the station cannot taken off the Last Stop signal after 'Line Clear' has been obtained from the station ahead, and the upper needle points to 'green' i.e. when the Last Stop signal is out of order or suspended.
- (iv) If the commutator can be turned without pressing the Plunger.
- (v) if the Commutator cannot be turned from "Train on Line" to "Line Closed" after the complete arrival of the incoming train or the inward TreadleTrack circuit fails to be operated by the incoming train.
- (vi) If it is found possible to take 'off' the last Stop signal without obtaining 'Line Clear' indication on the block instrument.

Note: In the case of situation under sub-clause (vi) above the working of the Block instrument must not be resumed by the Block Signal Inspector until permission of the Divisional/Assistant, Signal and Tele-communication Engineer has been obtained.

(c) Both sections (not due to failure) -

- (i) Whenever single line working is introduced between the stations concerned.
- (ii) whenever a Block Instrument has to be opened for attention by the Block Maintenance staff of the Signal Branch.
- (iii) Whenever Telegraph department staff have to work on the line wires.

5.17. Reporting of failure.- Whenever any block instrument fails and is suspended in terms of BWM Rule 5.16, the Station Master of the Station at which the failure has occurred, Block Signal Inspector, Block maintainer, Deputy Chief Controller and the Section Controller shall take action in terms of BWM Rule 4.24(2) as it relates to them.

5.18. Resumption of normal working.- The procedure detailed under Rule 4.25 of BWM shall be followed except that 'Testing Line Clear' shall be obtained and cancelled as detailed in Rule 5.19 of BWM.

5.19. Testing 'Line Clear'.- Whenever it is necessary to obtain 'Testing Line Clear' and cancel the same, the Station Master/Switchman of both stations/Cabins shall ensure that the block section to which the block instrument relates, is clear of all trains. The block instrument at one end of the section may, if necessary, be operated by the Block Signal Inspector or his authorised representative when the other end Instrument shall be operated by the Station Master/ Switchman. Entries shall also be made in the concerned Train Signal (cum log) Register in red ink by the official conducting the testing under his signature indicating the time when the testing was completed at the respective end. The following operation shall be made thereafter. :-

(1) Syke's three position lock and Block Instrument.-

Station 'A'

1. Sends "Call attention" code of bell signals.
3. Presses "Line Clear push" button and sends "Testing" signal.

1. On observing 'Line Clear' indication on the outward dial indicator, 'Green' bar indication of the outward treadle/track circuit indicator and on receipt of acknowledgement of 'Testing' signal, releases 'Line Clear' push buttons.
- 6 (a) Takes 'off' Last Stop signal to ensure that signal assumes 'off' positions.
- (b) Replaces the last Stop signal to 'on'.
- (c) Sends 'Attend telephone' code of bell signal.
8. Attends on outward cancelling button and sends 'Cancel last signal' code of bell signals and watches outward dial indicator.
10. Unlocks the lock on outward cancelling button and sends 'cancel last signal' code of bell signals and watches outward dial indicator.

9. As soon as outward dial indicator changes from 'Line closed' position, presses economiser push button and outward cancelling button and keeps them pressed until 'Cancel last signal' code of bell signal is acknowledged.
- 14(a) Outgoing treadle indicator changes from 'Green' to 'White' bar.
- (b) Releases economiser push and outward cancelling buttons ;
- (c) Locks up outward cancelling button; and
- (d) Operates the control to take 'off' last Stop signal to ensure that the signal remains at 'on' position.

Station 'B'

2. Acknowledges 'Call attention' code of bell signals.

Presses economiser push button and then the plunger, keeping the plunger pressed, economiser push button shall be released and acknowledgement to the 'Testing signal shall be given on the bell signalling key keeping the same pressed in its last beat for at least 2 seconds. The plunger and the bell signalling key shall be released there after on observing 'Line Clear' indication on the inward dial indicator and 'Red bar indication of the incoming treadle/track circuit indicator.

7. Acknowledges 'Attend telephone' code of bell signal and attends on Telephone.

9. Gives consent.

11. Unlocks the lock on inward cancelling button and presses the same. Inward dial indicator changes to 'Line closed' position and the alarm bell starts ringing. Keeps inward cancelling button pressed until incoming treadle indicator changes from 'Red' to 'White' bar and alarm bell stops ringing.

13(a) Incoming treadle Indicator changes from 'Red' to 'White' and

(b) Alarm bell stops.

(c) Releases inward cancelling button.

(d) Acknowledges 'Cancel last signal' code of bell signals; and

(e) Locks up inward cancelling button.

Note : Station 'B' shall then carry out the operations listed under Station 'A' when Station 'A' shall carry out all operations listed under Station 'B' above.

(2) Siemen's (SGE) three position lock and block instruments .-

Station 'A'

1. Sends "Call attention" code of bell signals.

3. Sends "Testing" code of bell signal.

- 6 (a) Ensures that the upper needle of the block instrument points to "Line Clear" position.
- (b) Takes 'OFF' last Stop signal to ensure that the signal assumes 'OFF' position.
- (c) Replaces the last Stop signal to 'ON'
- (d) Sends "Cancel last Signal" code of bell signal.
- 8 (a) Ensures that the Upper needle points to 'Line closed' position.
- (b) Operates the control to take 'off' Last Stop signal to ensure that the signal remains in 'ON' position.

Station 'B'

- 2. Acknowledges 'Call attention' code of bell signals.
- 4. Acknowledges "Testing" code of bell signal on the plunger and on the last stroke, keeping the plunger pressed turns the commutator to the right. Releases plunger.
- 5(a) The lower needle of the block instrument points to "Line clear" position.
 - (b) The pointer on the commutator is deflected to right.
- 7. Acknowledges "Cancel last signal" code of bell signal and on the last stroke, keeping the plunger pressed turns the commutator to the next left.
- (a) Lower needle points to 'Line closed' position; and
 - (b) Pointer on the commutator shows verticle position.

Note: Station 'B' shall then carry out the operations listed under Station 'A' when Station 'A' shall carry out all operations listed under Station 'B' above.

5.20. Procedure to be followed when Maintenance party work on sections where Block wires are also carried.-

The procedure detailed under para 4.42 of Block Working Manual shall be followed.

5.21. Failure of outgoing treadle and/or the last Stop signal.-

If a Train when passing the last Stop signal of a station fails to change the indication of.-

- (i) In the case of Syke's three position lock and block instrument the outward dial to "Train on line, the outgoing treadle/track circuit indicator from 'green' to 'white' and the last Stop signal from 'off' to 'on' / and
- (ii) In the case of Siemen's three position lock and block instrument-Last Stop signal from 'off' to 'on', the Station Master/Switchman shall- (a) at once replace the last Stop signal to 'on' (b) Inform the block station in advance,
 - (c) Suspend the block instrument after the train clears the block section; and
 - (d) In the case of Syke's three position lock and block instrument, press the economiser push button and the outward cancelling button simultaneously so as to restore the tread and the outward cancelling button simultaneously so as to restore the treadle indicator from 'green' to 'white'.

5.22. Working of trains when Block Instrument fails.-In the event of failure of Block Instrument, trains shall be worked in accordance with the instructions contained in Sr 6.02.03 and paras 3.33 to 3.38 of Block Working Manual by the Station Master on duty.

From the time an interruption occurs until working of Block instrument is resumed, no attempt should be made to take 'off' the last Stop signal for a train to - enter the interrupted section.

In case the failure/suspension of the Block instrument is due to failure of inward treadle/track circuit, the receiving station shall arrange reception of the train complying with SRs 3.69.02 to 3.69.05 as may be applicable. .

In the event of failure of all the means of communication detailed under SR 6.02.03, trains shall be worked in terms of SR 6.02.04.

5.23. Block suspension-(a) When only one section of a Block Instrument is suspended in terms of BWM paras 5.16 (1) (b) or 5.16 (c) or 5.16 (2) (a) or 5.16(2) (c), the official on duty responsible for the operation of the block instrument shall write 'Block Instrument suspended at '...for..... (cause)'. In that particular portion or both portions, as the case may be, of the Train Signal (cum log) register and draw a red line below this entry. As soon as normal working is resumed, an entry to that effect thus 'Block Instrument resumed at ' shall be made in the concerned portion of the Train Signal (cum log) register by the official on duty responsible for its operation at the material time and also draw a red line below the entry.

(b) During the period of suspension of the Block Instrument, the Station Master on duty shall make all entries in connection with train passing in separate Train Signal (cum log) register specially maintained for the purpose at these stations where Block Instruments are operated by Switchman.

(c) When both sections of a Block Instrument have to be suspended, the official on duty responsible for its operation shall secure a red label (as shown below) to the instrument. The same shall be removed immediately after normal working is resumed.



5.24. Line Clear forms at Double line STATIONS.- At all stations on the Double line section, Line clear forms mentioned in para 3.05 of Block Working Manual shall be maintained for their use during temporary introduction of Single line working of trains between stations. Inspecting officials shall see that these forms are properly mentioned.

CHAPTER - VI

WORKING OF TRAINS UNDER AUTOMATIC BLOCK SYSTEM

(*Note* : These rules are to be read in conjunction with Chapter IX of General and Subsidiary Rules Book)

A. RULES APPLICABLE TO BOTH DOUBLE AND SINGLE LINES

6.01. Competency Certificate : -

(1) No person shall be allowed to hold independent charge of operating or issuing instructions for working points and signals at stations unless he holds a competency certificate issued in his favour under SR 3.39.08

(2) No person shall be allowed to operate independently the panel for establishing direction of traffic on single line unless he has passed a satisfactory examination and unless he holds a certificate of competency issued in his favour jointly by DSO and DSTE of the concerned division. This certificate of competency shall be valid for a period of three years.

6.02. Mode of running trains :-

Trains shall run in the direction of traffic obeying the aspects of signals governing the movement.

6.03. Means of Communication :-

Station to Station Telephone is provided between each pair of adjacent stations. In the event of failure of the same, communication may be established between the stations concerned by -

- (i) More telegraph instrument; or

(ii) Control Phone

which shall be used in the order given.

6.04. Train Log Register :-

(1) A train log register shall be kept by the Station master or under his orders.

(2) All messages received or sent on the telephone concerning the movement of trains and the timings of receipt and despatch shall be entered therein immediately after acknowledgment by the person who maintains the same.

(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 which shall be initialled.

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

B. RULES APPLICABLE TO DOUBLE LINES

6.05. Method of signalling trains :-

(1) Movement trains into, through and out of a block station is governed by manual/semi-automatic stop signal(s). The Section Controller shall regulate the movement of traffic between stations in the Automatic Signalling territory. Whenever it is necessary to contract any train at a station either to give precedence to an other train(s) or for any other purpose, the Section Controller shall advise such station, at which the train is to be controlled, by issuing a control order giving detailed instructions. The Station Master shall, after recording the order so received, acknowledge the same supported by a Private Number. If no such order is received, the trains shall be allowed to run in the sequence in which they approach a station. It shall be the responsibility of the Station master of the block station from which working of trains on automatic block system commences to consult and obtain verbal permission of the Section Controller before despatching a train. The Station Master of junction stations shall also consult and determine from the Section Controller the sequence in which train approaching from different directions should be allowed to leave his block station. In the event of interruption of the Control Telephone, the Station Master of each block station shall regulate movement of trains between stations in consultation with the Station Master at the other end block station.

(2) Subject to the provisions of sub-para (1) above and unless otherwise mentioned in the Station Working Rules, the following procedure shall be adopted for signalling trains to run in the signalled direction of traffic from one block station to the other end block station :-

Despatching Station - X

1(a) Complies with SR 3.42.01(c) at stations having end cabins. But at stations having panel/route relay interlocking, takes off concerned departure signals (s) governing departure of trains.

Receiving Station - Y

2. Acknowledges supported by a Private number.

3. Complies with SR 3.38.02 at stations having end cabins. But at stations having Panel/Route Relay interlocking. Takes off the concerned reception signal(s) governing the approach of trains.

(b) As soon as a train starts, informs station 'Y' over telephone indicating the number and description of the train and its departure time.

5. Acknowledges

4. On complete arrival of the train with last vehicle indicator, informs Station 'X' indicating the number and description of the train and its arrival time supported by a Private Number.

(3) At block stations having semi-automatic stop signals governing approach and departure trains, the Station Master may allow such semi-automatic Stop Signal(s) so long as there is no necessity to control a train or trains.

6.06. Recording Movement of trains :-

The messages exchanged for movement of trains under these rules and the time must be entered legibly in ink in the Train Log Register provided for the purpose. The train Log register shall have the columns as indicated in the station working rules.

6.07. Shunting :- (The following rules are to be read in conjunction with General Rules 5.13 to 5.14 and 5.16 to 5.23 with Subsidiary Rules thereto)

1. (a) Shunting may be performed on line/lines only when such line(s) is/are isolated from the main line and or other adjacent line(s) and when the movement of running trains is not affected by such shunting.

(b) In case the shunting obstructs or is likely to obstruct the main running line, the Station Master shall ensure that manually operated stop signal as also the last stop signal is maintained at 'ON' ; and as for semi- automatic stop signal(s) the 'A' marker light is kept extinguished in addition.

(c) Shunting under sub-para (b) above, shall be performed between the outermost points at the approaching end and the last Stop Signal of the Station on either direction.

2. No shunting shall be permitted outside the outermost points at the approaching end of a station unless:-

(a) The lines between the station at which shunting is to be performed and the block station in rear is clear of trains;

(b) Working of trains between the block stations concerned under Automatic Block system is suspended ; and

(c) the line is blocked back.

3. No shunting shall be permitted outside the last stop signal unless :-

(a) the line between the block station at which the shunting is to be performed and the block station in c advance is clear;

(b) working of trains between the block station concerned under Automatic Block system is suspended ; and

(c) the line is blocked forward :-

Provided that when the line between the block station at which shunting is to be performed and the block station in advance is occupied by a train travelling away from the block station, shunting may be permitted behind the train if permitted under the provisions of station working rules which shall take into account the speed, weight, brake power of trains and gradient on the station and as soon as intimation has been received that the train has arrived at the other end block station, working of trains under Automatic Block' system between the stations concerned shall be suspended and the line blocked forward, if it is still obstructed.

6.08. Authority for shunting :-

(1)While permitting shunting under sub-para (1) of para 6.07 above when such shunting cannot be controlled by fixed signals mentioned under SR 5.13.01 or while permitting shunting in Automatic signalling section the Driver shall be given authority for shunting in the prescribed form T/806.

(2) Whenever the authority mentioned in sub-para(1) above is issued after block back or block forward in terms of sub-para (2) or (3) of Para 6.07 above, the Private Number received from the Station Master at the other end block station shall be recorded to it.

(3) Whenever the authority mentioned in sub-para (1) above is issued to permit shunting in terms of sub-para (3) of para 6.07 above, i.e. in rear of a travelling away train, the circumstances under which such shunting is permitted shall be endorsed on the prescribed form (T/806).

6.09. Suspension and resumption of working of trains under Automatic Block system :-

Whenever it becomes necessary to suspend working of trains under Automatic Block System between stations, the Station Master of the block station proposing to suspend working of trains under Automatic Block System say, 'A', and the Station Master of the block station at the other end block station say, 'B' shall exchange messages as under:-

From SM 'A' To SM 'B' Date Time

No. 1. Intend to suspend working of trains under Automatic Block System on UP/Down Line between (Stn.) and (Stn.) for (state purpose). Last train No. UP/Down left/arrived here last at (Time) or has become disabled at KM..... Acknowledge Private Number

The Station Master of the other end block station on receipt of the message indicated above shall verify from his log register about the complete arrival/departure of the last train over the Up/Down line as the case may be or on being satisfied about the disablement of the train shall reply in the following :-

From SM 'B' To SM 'A' Date Time No. 1 Your No. 1 of (date) last train No. Up/Down arrived/left here last at(time) or has become disabled at KM..... working of trains under Automatic Block System on Up/Down line between (Stn.) and will remain suspended as proposed Private No.

After removal of the cause of obstruction and on being satisfied that the Up/Down line as the case may be is clear, the Station Master of Station 'A' shall issue a message proposinig to resume working of trains under Automatic Block System as under :-

From SM 'A' To SM 'B' Date Time

No. 2 My No. 1 your No. 1 of (date). Up/Down Line between (Stn.) and (Stn.) has been cleared on completion of shunting/on complete arrival of at (Stn.) at (time). Propose to resume working of trains between (Stn.) and (Stn.) on Up/Down Line under Automatic Block System. Acknowledge, Private No.

The Station Master of Station 'B' Shall reply as follows:-

From SM 'B' To SM 'A' Date Time

No. 2 My No. 1 your No. 2 of (date). Noted and acknowledged, Resume working of trains under Automatic block system between (Stn.) and (Stn.) on Up/Down line. Private No.

The above messages shall be entered in the Train log register at the respective station in red ink.

6.10. Block Back/Block Forward :- Refer GR 1.02(8) and 1.02(9)

The procedure detailed under para 3.38 of this manual shall be followed.

6.11. Motor trolley :-

The rules contained under SR 15.25.08 shall be followed.

6.12 Equipment of fixed signals :-

Equipment of fixed signals for each direction shall be in accordance with General Rules 9.04 and 9.05 which shall be of colour light type and as indicated in the Station Working Rules. Where, however, an Automatic Stop signal in rear of the Home signal is not provided in terms of 'Note' to General Rule 9.04, distant signal(s) as contained under sub-rules (4), (5) and (6) of General Rule 3.07 shall be provided under approved special instructions.

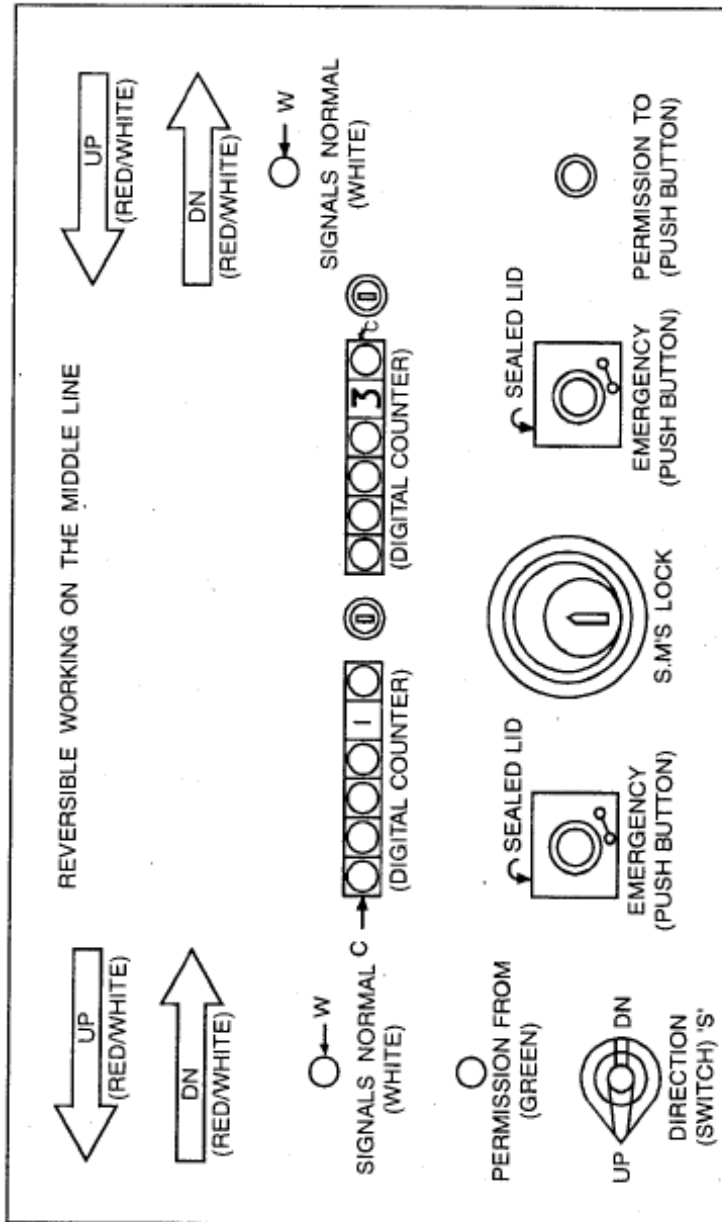
6.13 Authority to Proceed.-

Except as otherwise mentioned under para 6.22 the 'off' aspect of the last stop signal shall constitute an authority to proceed as defined under sub-rule (6) of General Rule 1.02. The last stop signal shall not, however, assume 'off' aspect unless direction of traffic has been established and the line is clear upto the next Automatic Stop signal, or when the next Stop signal is a Manual Stop signal for an adequate distance beyond it.

6.14 Description of panel - Indications and controls.-

(1) Description :-

(a) The following is the diagram of a typical operating panel installed in the Assistant Station Master's Office for establishing direction of traffic.



(b) One half of the panel is the 'Controlled' side and the other half is the "Controlling" side. At Tikiapara and Santragachi Down reception cabin, the panels shall contain only the "Controlling" half while at Santragachi East Cabin and Pansukura these shall contain only the "Controlled" half. For the purpose of these rules the block station at the Howrah end of a block section shall be the controlling station hereafter be referred to as 'A' and the block stations at the Kharagpur end of the same block section shall be the controlled stations and shall hereinafter be referred to as 'B'.

(2) Indications :-

(a) Two groups of arrows are provided on the panel, one on either side, the group on each side pertaining to the block section on that side. Each group consists of two arrows-one for Up direction and the other for Down direction. Each arrow will be illuminated by white or red lights. White light appears when the relevant block section is clear but changes to red

when either the block section is occupied or there is a track circuit failure. Only the arrow corresponding to the direction of traffic established will be illuminated; the other arrow remaining extinguished.

(b) A white 'Signal Normal' lamp (W) on each half of the panel which when illuminated indicates that the signals of that side of the station for the middle line are at 'ON'

(c)(i) A green "Permission from....." lamp(G) on the controlling half of the panel which when illuminated indicates to 'A' that 'B' has pressed the permission button on his panel and thereby permitting 'A' to establish direction of traffic from 'A' to 'B'.

(ii) Under emergency operation, this green lamp will also be illuminated when 'B' presses emergency push button on the controlled half of the panel to enable 'A' to establish direction of traffic from 'A' to 'B'.

(d) A digital counter on each half of the panel (C) is provided to record the number of emergency operations resorted to on that side of the panel. The SM/ASM who makes over as also who takes over charge shall record in the Train log register the number recorded by the digital counters.

(3) Controls :-

(a) Permission button.-

This is mounted on the controlled side of the panel, when it is pressed at block station 'B' for granting permission to 'A' for establishing direction of traffic from 'A' to 'B', a green lamp indication will be illuminated on the panel at 'A'.

(b) Direction switch.-

Up/Down two-position, direction switch(s) is provided on the controlling side of the panel for enabling 'A' to establish direction of traffic from 'A' to 'B' or 'B' to 'A', as may be required.

(c) Emergency Push button (Red).-

There are two emergency push buttons-one on the controlled half and the other on the controlling half of the panel. If on account of failure of track circuit or for any other cause other than occupation of the block section between two block stations, it becomes necessary to change the direction of traffic already established when the direction arrow may show 'Red' indication, emergency push button shall be pressed at both block stations and at controlling station the direction switch shall also be turned in conjunction to the required position. Each operation of emergency push button registers next higher digit on the digital counter of the respective half of the panel. Whenever such operation is resorted to, the SM/ASM at both stations shall record the same in the register specially maintained for the purpose under his initial.

(d) Station Masters Lock up key.-

Whenever it is necessary to operate the panel, this key shall be inserted in the key-hole and turned. Immediately after completion of every operation on the panel, this key must be taken out and kept in the personal custody of the Station Master on duty so as to prevent inadvertent or unauthorised operation of various controls in the panel.

6.15. Establishing direction of traffic :-

For the purpose of these rules 'Up' direction will mean to establish direction of traffic over a block section from controlling station i. e. 'A' to Controlled station i. e. 'B' and the 'Down' direction will mean to establish direction of traffic over a block section from controlled station i. e. 'B' to controlling station i. e. 'A'. The Controlling station shall, in all cases, establish the direction of traffic for the block section between 'A' and 'B' by turning the direction switch of the panel installed at that station to the required position. 'Up' or 'Down' as the case may be. The direction of traffic cannot be altered/established unless all

signals pertaining to the middle line concerning to the same block section' at both stations are at their normal position when turning the switch. Further, except when emergency operation is resorted to, the direction of traffic already established shall not be changed unless the direction arrow pertaining to the same block section is illuminated white indicating the direction to which it was established. Messages ensuring clearance of the same block section supported by Private Numbers shall be exchanged between the Station Masters on duty at both end block stations before establishing direction of traffic as also for reversing direction of traffic already established. Private Numbers so exchanged shall be recorded in the Train log registers at both stations.

6.16. Mode of operation :-

(1) Normal operation .-

(a) Following sequence of operation shall be made in the panel to establish direction of traffic.

(i) For establishing 'Down' direction of traffic.

Controlling Station 'A'

(Controlling half)

3. Ensures (a) 'Up arrow' illuminated white.

(b) 'Signals normal' lamp illuminated.

4. Acknowledges on telephone and gives his consent to change the direction of traffic to 'Down' direction supported by a Private Number provided he is satisfied that the last up train which arrived at 'B' was actually the last Up train despatched from his station.

5. Turns the direction switch to the 'Down' position.

6(a) Up arrow extinguishes.

(b) Down arrow illuminates in white.

7(a) Up arrow extinguishes.

(b) Down arrow illuminates in white.

(ii) For establishing 'Up' direction of traffic.-

Controlled Station 'B'

(Controlled half)

1. Ensures (a) 'Up arrow' illuminated white.

(b) 'Signals normal' lamp illuminated.

Contacts SM on duty at 'A' and requests him to change the direction of traffic from 'Up' to 'Down' detailing the particulars about the complete arrival of the last Up train at his station supported by a Private Number.

Controlling Station 'A'

(Controlling half)

1. Ensures (a) 'Down arrow' illuminated white.

(b) 'Signals normal' lamp illuminated.

Contacts SM on duty at 'B' and seeks his permission to change direction of traffic from 'Down' to 'Up' direction detailing the particulars about complete arrival of the last Down train at his station supported by a Private Number.

5 (a) On observing the green illumination of 'Permission from' lamp, turns the direction switch from 'Down' to 'Up' position.

(b) 'Down arrow' extinguishes and 'Up arrow' illuminates in white.

7. 'Permission from' lamp (Green) extinguishes.

Controlled Station 'B'

(Controlled half)

3. Ensures (a) 'Down arrow' illuminated white.

(b) 'Signals normal' lamp illuminated.

4. Acknowledges on telephone and gives his consent to change direction of traffic to 'Up' direction supported by a Private Number and by pressing 'Permission to.....' button provided he is satisfied that the last Down train which arrived at 'A' was actually the last down train despatched from his station. The button shall be kept pressed till 'Down arrow' extinguishes and 'Up arrow' illuminates in white.

6(a) 'Down arrow' extinguishes.

(b) 'Up arrow' illuminates in white.

(c) Releases 'Permission to.....' button.

2. Emergency operation during Track circuit failure .-

(a) Following sequence of operation shall be made in the panel to establish direction of traffic.

For establishing 'Down' direction of traffic :-

Controlling Station 'A'

(Controlling half)

- 3(a) 'Up arrow' illuminated in red.
(b) 'Signals normal' lamp illuminated.

Controlled Station 'B'

(Controlled half)

- 1.(a) 'Up arrow' illuminated in red.
(b) 'Signals normal' lamp illuminated.
2. Contacts SM on duty at 'A' and requests him to change direction of traffic from 'Up' to 'Down' detailing the particulars about complete arrival of last Up train at his station supported by Private Number.
4. Checks the number and description of last Up train that left his station and if it agrees with that intimated by 'B' asks 'B' to press emergency release button. This shall be supported by a Private Number.
- 6(a) 'Permission from lamp (green) illuminates.
(b) Preses emergency button and simultaneously turns the direction switch from 'Up' to 'Down' position. Keeps emergency button pressed till 'Permission from.....' lamp (green) extinguishes.
(c) Digital counter registers next higher number.
(d) 'Up arrow' extinguishes and 'Down arrow' illuminates in red.
- 8(a) 'Permission from lamp (green) extinguishes.
(b) Releases emergency push button.
- 5(a) Presses emergency release button and keeps the same pressed till 'Up arrow' extinguishes and 'Down arrow' illuminates in red.
(b) Digital counter registers next higher number.

- 7 (a) 'Up arrow' extinguishes and 'Down arrow' illuminates in red.
(b) Releases emergency push button.

(ii) For establishing 'Up' direction traffic. –

Controlling Station 'A'

(Controlling half)

- 1 (a) 'Down arrow' illuminated in red.
(b) 'Signals normal' Lamp illuminated.
 2. Contacts SM on duty at 'B' and seeks his permission to change direction of traffic from 'Down to Up' direction detailing the particulars about complete arrival of last Down train at his station supported by a Private Number.
-
- 5 (a) 'Permission from..... lamp (green) illuminates.
(b) Presses emergency button and simultaneously turns the direction switch from 'Down' to 'Up' position.
 - (c) Keeps emergency button pressed till 'Permission from' lamp (green) extinguishes.
 - (d) Digital Counter registers next higher number.
(e) 'Down arrow' extinguishes and 'Up arrow' illuminates in red.

Controlled Station 'B'

(Controlled half)

3. (a) 'Down arrow' illuminated in red.
(b) 'Signals normal' lamp illuminated.
-
- 4(a) Checks his Train log register for the last down train despatched from his station. If it agrees with that told by 'A', gives his consent supported by a Private Number and then presses emergency release button.
 - (b) Digital counter registers next higher number.
 6. (a) 'Down arrow' extinguishes and UP arrow illuminates in red.
(b) Releases emergency Push button

6.17. Method of signalling trains .-

(1) Movement of trains into, through and out of a block station is governed by manual/Semi Automatic Stop signal(s). The Section Controller shall regulate the movement of traffic between stations in the Automatic Signalling Territory. Whenever it is necessary to control any train at a block station either to give precedence or to cross any train(s) or for any other purpose, the Section Controller shall advise such block station, at which the train is to

be controlled, by issuing a control order giving detailed instructions otherwise trains shall be allowed to run in the same sequence in which they approach a station. Similarly whenever it is necessary to change the established direction of traffic, the section Controller shall advise both the Controlling as also the controlled block stations by issuing control order. Such control order(s) shall be acknowledged by the concerned Station master(s) supported by a Private Number. It shall be the responsibility of the block station from which working of trains on Automatic block on single line commences to consult and obtain verbal permission of the Section Controller before despatching a train. The Station Master of stations where facilities exist for diverting trains from Automatic Block double lines to single line or vice versa shall consult and obtain permission from section Controller before diverting any train. In the event of interruption of the control telephone, the Station Master of each block station shall regulate the movement of trains between stations in consultation with the Station Master at the other end block station.

(2) Subject to the provision of sub-para(1) above and unless otherwise directed in the Station Working Rules, following procedure shall be adopted for signalling trains to run in the direction of traffic established in accordance with the manner detailed under sub-para (1) of para 6.15 of this chapter, from one block to the other end block station.

Despatching Station

- 1.(a) To take off starter at station having end cabins, complies with SR 3.42.01(c) but at stations having panel interlocking. operates the control for the starter.
 - (b) Signals normal' lamp (white) extinguishes.
 - (c) As soon as the train starts, informs the block station in advance over telephone indicating number and description of the train and its departure time.
 - (d) As the train enters the signalling section controlled by the starter.-
 - (i) direction arrow illuminates in red.
 - (ii) 'Signals normal' lamp (white) appears.
4. (a) Acknowledges
 - (b) Direction arrow illuminates in white, indicating block section is clear of all trains.

Receiving Station

- 2 (a) Acknowledges supported by a Private Number.
 - (b) Direction arrow illuminates in red.
- 3 (a) To take off home signal at stations having end canins, complies with SR 3.38.02 but at stations having panel interlocking operates the concerned control on the Home signal.
 - (b) 'Signals normal' lamp (white) existingishes.
 - (c) On arrival of the train complete with Last vehicle indicator, informs block station in rear indicating number and description of the train as also its arrival time supported by a Private Number.
 - (d) 'Signals normal' lamp (white) appears.
 - (e) Direction arrow illuminates in white, indicating block section is clear of all trains.

6.18 Shunting.- (Following rules are to be read in conjunction with General Rules 5.13, 5.14 and 5.16 to 5.23 with subsidiary Rules thereto).

(1)(a) Shunting may be performed on line/lines only when such line or lines is/are isolated from the main line and/or other adjacent line(s) and when the movement of running trains is not affected by such shunting.

(b) In case the shunting obstructs or is likely to obstruct the main running line, the Station master shall ensure that the 'Home' and the 'starter' signals are maintained at 'ON' and the 'A' marker light of Semi Automatic Stop signal(s) is/are kept extinguished.

(c) Shunting under sub-para (b) above, shall be performed between the outermost points of the station.

2(a) No shunting or any other obstruction shall be permitted outside the outermost points against the direction of traffic established unless the line has been blocked back.

(b) No shunting or any other obstruction shall be permitted outside the outermost points in the established direction of traffic unless -

(i) The line between the block station at which shunting is to be performed and the block station in advance is clear.

(ii) Working of trains under automatic block system on single line between the concerned block stations shall be suspended; and

(iii) The line has been blocked back :

Provided that when the line between the block section is occupied by a train travelling away from the station, shunting or obstruction may be permitted behind the train if permitted under the provisions of station working rules taking into consideration the speed, weight and brake power of trains and the gradients in the section, and once such shunting is permitted, no train shall be signalled into the Block Section. As soon as intimation has been received that the last train has arrived at the other end block station, working of trains under automatic block system on signal line shall be suspended and the line shall be blocked back, if it is still obstructed.

6.19. Authority for shunting .-

The rules laid down under para 6.08 of this Chapter shall be applicable.

6.20. Suspension and resumption of working of trains under Automatic Block System on single line.-

Whenever it is necessary to suspend working of trains under automatic block system on single line between two adjacent block stations, the Station Master of the block station proposing to suspend working of trains under automatic block system say 'X' and the Station Master of the block station at the other end block station say 'Y' shall exchange message as under :-

From SM 'X' To SM 'Y' Date Time No.1 Intend to suspend working of trains under automatic block system on the Middle line between(Stn.) and(Stn.) for(State purpose) Last train No Up/Down Left/arrived here last at (Time) or has become disabled at KM
Acknowledge.

Private Number

The Station Master of the other end block station on receipt of the message indicated above shall verify from his log register about the complete arrival/departure of the last train as mentioned in the message above or on being satisfied about the disablement of the train, shall reply in the following from :-

From SM 'Y' To SM 'X' Date Time..... No. 1 Your No. 1 of (date). Last train No. Up/Down arrival/left here last at (Time) or being given to understand about disablement of last Train No. at KM..... I agree to suspend working of trains under automatic block system on the Middle line between(Stn.) and(Stn.) as proposed. Private Number

After removal of the cause of obstruction and on being satisfied that the Middle line between his station and other end block station is clear, the Station Master 'X' shall issue a message proposing to resume working of trains under automatic block system as under :-

From SM 'X' To SM 'Y' Date Time No. 2 My No.1 Your No.1 of(date). Middle line between(Stn.) and(Stn.) is clear due to(reason) at(Stn.) at(Time) Propose to resume automatic block system for working trains on Middle line between (Stn.) and (Station). Acknowledge Private Number

The Station Master of Station 'Y' shall reply as follows:-

From SM 'Y' To SM 'X' Date Time No.2 My No.1 Your No.2 of(date) noted and acknowledged. Resume automatic block system of working trains of Middle line between (station) Private Number

The message shall be entered in the Train log register at the respective stations in red ink.

6.21. Block back.- [Refer GR 1.28(8)]

The procedure detailed under para 3.32 of this manual shall be followed.

6.22 Motor Trolley.-

The rules contained under SR 15.25.08 shall be followed.

6.23. Failure of indications on the Panel .-

(I) Failure due to which panel working need not be suspended

(a) At Controlling Station.

(i) No illumination for direction of traffic established.-

(a) If there is no illumination on the direction arrow after direction switch has been turned to a particular position, the controlling station shall ascertain from the controlled station over telephone about the indication actually shown on the controlled portion of his panel. This controlled station shall intimate the particulars regarding indication on his panel as follows :-

"The direction arrow on the controlled side of my panel is Up/Down-White/Red. Private Number"

(b) if the direction of traffic set up in the controlled portion of the controlled station is in consonance with the position of the direction switch at the controlling station, normal panel working may be resorted to.

(II) "Signals normal" Lamp not illuminated :-

If before change of direction of traffic, the controlling station observes that "Signals normal" lamp at the controlling portion of his panel is not illuminated, he shall ascertain from the switchman on duty in his West Cabin or at station having panel interlocking from the signal indication on his panel that the Down Home and Up Starter signals pertaining to the middle line are at 'ON'. If the said signals are at 'ON', normal panel working may be resorted to by the controlling station.

(III) "Permission from " Lamp not illuminated :-

This lamp shall be illuminated by the operation of 'Permission to..... " button by the controlled station. If this lamp fails to get illuminated, the controlling station shall ascertain from the controlled station if the 'Permission to ' button is being kept pressed by him. If the controlled station has kept the 'Permission to ' button pressed and the 'Permission from ' lamp does not get illuminated at the controlling station, the controlling station shall turn the direction switch to the 'Up' position after observing the sequence of operation listed under sub-clause (ii) of clause(a) of sub-para (I) of para 6.16 of this chapter without the green illumination of 'Permission from 'lamps mentioned under sequence No. 5(1). Normal panel working may be resorted to by the

controlling station, if the 'UP' arrow illuminates in white on his panel after turning the direction switch to the requisite position.

(IV) Direction arrow illuminated in white but starter defective.-

Though the panel may indicate that the block section between the controlling station and the controlled station is clear, it may not be possible to take 'off' up starter signal, being defective. Under such circumstances Normal panel working may be resorted to by the controlling station. In such a case the controlling station shall after ensuring that the Up arrow for the block section concerned is illuminated in white and take action in terms of SR 3.70.01 except that in lieu of T/369 (3b), written authority in the prescribed form T/A 912 and T/511 shall be issued.

(V) Block section clear of all trains but the direction of traffic established last i. e. 'Down' is continuing to be illuminated in red.-

Under such circumstances, direction of traffic is to be changed from 'Down' to 'Up' direction after complying with the sequence of operations laid down under sub-clause (ii) of clause (a) of sub-para (2) of para 6.16 of this chapter. The Controlling Station after ensuring that the Up arrow for the block section concerned is illuminated in red, shall take action in terms of SR 3.70.01 except that in lieu of T/369 (3b), written authority in the prescribed form T/A 912 and T/511 shall be issued.

(VI) Block section clear of all trains but the 'Up' direction arrow illuminated in red. After ensuring arrival of the last Up train at the controlled station confirmed by a Private Number, the controlling station shall take steps in accordance with the instructions contained under SA 3.70.01 except that in lieu of T/369 (3b), written authority in the prescribed form T/A 912 and T/511 shall be issued.

(VII) Position of direction switch not in, correspondence with the direction of traffic established.-

If the position of direction switch does not correspond with the direction of traffic established as indicated by the direction arrow, the Station Master of the Controlling station shall ascertain from the Station Master of the Controlled station as also from the switch man of his West cabin about the indication of traffic set up at their respective places. If the direction of traffic as indicated by the direction arrow at the controlling station agrees with those indicated at his west Cabin as also at the controlled station, the controlling station shall then turn the direction switch the appropriate position. He shall again confirm from the controlled station as also from the Switchman of west Cabin as to whether there is any change in the indication of direction of traffic set up. If there is no change in the indication of direction of traffic set up at these places, it shall be assumed that the direction switch was turned inadvertently before, and normal panel working will be continued.

(b) At the Controlled Station.

(i) No indication for direction of traffic established.-

If there is no illumination on the direction arrow after direction switch has been turned at the controlling station from 'Up' to 'Down' position, the controlled station shall ascertain from the controlling station whether the direction arrow at his station is illuminated in white for 'Down' direction. If this is so, the controlling station shall confirm the same supported by a Private Number. The controlled station shall then take off down starter signal.

(ii) 'Signals normal' lamp not illuminated. -

If the controlled station finds that 'Signals normal' lamp at the controlled portion of the panel is not illuminated at the time of giving permission to the Controlling station for establishing direction of traffic from 'Down' to 'Up' direction, he shall ascertain from the Switchman on duty in his East Cabin or at stations having panel interlocking from the signal indication on his panel that the Up Home and Down Starter signals pertaining to the middle line are at 'ON'. If the said signals are at 'ON', the controlled station shall be in a position to give

permission to the controlling station to enable the later to set direction of traffic for 'Up' direction.

(iii) Direction arrow illuminated in white, but starter defective.-

Though the panel may indicate that the block section between the controlled station and the Controlling station is clear, it may not be possible to take 'off' Down Starter signal, being defective. Under such circumstances normal panel working can be resorted to by the controlled station. In such a case the controlled station after ensuring that the down arrow for the block section concerned is illuminated in white, take action in terms of SR 3.70.01 except that in lieu of T/369 (3b), written authority in the prescribed form T/A 912 and T/511 shall be issued.

(iv) Block section clear of all trains, but the direction of traffic established last i.e. 'Up' is continuing to be illuminated in red. -

Under such circumstances, direction of traffic is to be changed from 'Up' to 'Down' in accordance with the instructions contained under sub-clause(i) of clause(a) of sub-para(2) of para 6.16 of this chapter. The controlled station after ensuring that the Down arrow for the block section concerned is illuminated in red shall take action in accordance with the instruction contained under SR 3.70.01 except that in lieu of T/369 (3b), written authority in the prescribed form T/A 912 and T/511 shall be issued.

(v) Block section clear of all trains, but the 'Down' arrow is illuminated in red. -

(1) After ensuring complete arrival of the last Down train at the controlling station confirmed by a Private Number, the controlled station shall take steps in accordance with the instructions contained under SR 3.70.01, except that in lieu of T/369 (3b), written authority in the prescribed form T/A 912 (Annexure 'B') and T/511 shall be issued.

(2) Failures due to which panel working shall be suspended.-

(a) Conflicting indications of direction arrows :-

When the direction arrows pertaining to a particular block section on the panel at the controlling section and the controlled station indicate different directions or one of them is illuminated in white while the other is red.

(b) Double indication.-

When more than one indication appear on any one direction arrow i.e., red and white both or when both 'Up' and 'Down' direction arrows pertaining to a particular block section illuminated at the same time.

(c) Digital counters at the controlling station and/or at the controlled station not registering next higher number during emergency operation of the panel. -

When the digital counters at the controlling station and/or at the controlled station does not register the next higher number while carrying out any of the operations under sub-para (2) of para 6.16. of this chapter.

(d) Any other abnormality.-

If there is reason to suspect any other abnormality not mentioned above.

6.24. Report of failure. -

Whenever the panel is suspended due to any of the causes mentioned under sub-para (2) of para 6.23 above or on observing any of the failures mentioned under sub-para (1) of para 6.22 above, which does not necessitate suspension of the panel, action shall be taken as in the case of block failure mentioned under sub-para (2) of para 4.24 of this manual.

6.25. Method of working trains during suspension of panel working.-

During the period of suspension of Panel, trains shall be worked between stations in accordance with the rules contained under SR 9.12.07 or 9.12.06 as the situation may demand. But before such procedure is adopted the Station Master at either end of the

concerned block section shall ensure by exchange of messages supported by Private Numbers that the block section is clear of Up/Down train(s).

6.26. Resumption of working trains under automatic block (single line) by means of panel. -

(1) When the panel working on any block section has been again put in working order after suspension, working of trains by means of panel shall not be resumed unless -

(i) The panels have been tested by an authorised official of the signal and Tele-communication branch not below the rank of Block Maintainer, Grade-1;

(ii) A certificate to the effect that the panel has been put to proper working order is handed over to the concerned Station Master by the authorised official mentioned above; and

(iii) The procedure detailed under sub-rule(i) of SR 9.13.07 is observed by the Station Masters concerned.

(2) Whenever normal working is resumed, a message shall be issued cancelling the message shall be issued cancelling the message issued under para 6.24 of this chapter and action taken as per clauses(e) and (f) of sub-para (2) of rule 4.24 of this manual.

CHAPTER VII

MISCELLANEOUS

7.01. Repeal and Saving . -

The Train Signalling Rules issued by the South Eastern Railway in 1982 and subsequently renamed as Block Working Manual in 1987, is repealed except as respect things done or action taking or omitted to be done or taken before such repeal.

**ANNEXURE
SOUTH EAST CENTRALS RAILWAY
SIDING KEY REGISTER**

I

I have received..... key or Keys for Sidings situation on/between
..... at

H M on..... (date).

.....
Station Stamp Signature of Guard
Date 198 Train

II

Guard of Train of (date) has handed over to me
..... Key or Keys for sidings
situated on/between.....at

..... H M on
..... (date).

Station Stamp Signature of Station
Date 198 Master on Duty

III

I certify that the points leading into sidings have been correctly set and locked for the main line and the derails in the sidings set and locked to derail and that all wagons in the sidings are clear of the main line and that nothing has been left fouling the main line. I also certify that my train has arrived out of the section with all vehicles complete.

(IV)

Station Stamp Signature of Station
Date 198 Master on Duty

Note - The control Keys of sidings must be made over by the S.M. on duty to the Guard personally and they must never leave the possession of the Guard from the time they are made over to him until returned by him to the Station Master and under no circumstances should the Keys be entrusted to any other person for any purpose whatever.

APPENDIX - "B"

The books and forms used in S.E.C. Rly. in connection with the movement of trains, specimen of each form is given in the annexure as below :-

- | | | | |
|----|--|--------------------------------|-----------|
| 1. | Train Signal (Cm Log) Register for single-double line(s). | OP/T28 (Rev) | Anx-1 |
| 2. | Train log book at double line section with lock & block cabin. | instrument at end
OP/T28(B) | - Anx - 2 |
| 3. | (a) Caution Order. | T/409 | - Anx - 3 |
| | (b) 'Nil' Caution Order. | T/A409 | - Anx - 4 |

(c) 'Reminder' Caution Order.	T/B409	- Anx - 5
4. Disconnection / Re-connection notice.	T/35	- Anx - 6
5. Advance Authority to pass defective signal.	T/369(i)	- Anx - 7
6. Authority to pass signal in 'On' on defective position	T/369 (3b)	- Anx - 8
7. Shunting Order.	T/806	- Anx - 9
8. Caution Order Register.	T/604	- Anx - 10
9. Authority to proceed for relief engine/train into an occupied block section.	T/A602	- Anx-11
10. Authority to start from a non-signalled line.	T/511	- Anx-12
11. Authority to start from a line with common starter signal.	T/512	- Anx-13
12. Authority for opening communication during total interruption of communication.	T/B602	- Anx - 14
13. Authority for working trains during total interruption of communication on double line.	T/C602	- Anx - 15
14. Authority for temporary single line working on double line section.	T/D602	- Anx - 16
15. Line Clear inquiry message asking line clear for despatch of trains during total failure of communication on single line section.	T/E602	- Anx - 17
16. Conditional line clear message.	T/F602	- Anx - 18
17. Conditional Line Clear ticket (UP).	T/G602	- Anx - 19
18. Conditional Line Clear Ticket (DN).	T/H602	- Anx - 20
19. Message of restoration.	T/I602	- Anx - 21
20. Authority to pass automatic/semiautomatic/ manually operated/gate stop signals..	T/A912	- Anx - 22
21. Authority to proceed without line clear on automatic block signalling territory.	T/B912	- Anx - 23
22. Authority to proceed on Automatic block signalling territory for relief engine / train.	T/C912	- Anx - 24
23. Authority to proceed on Automatic block system during prolonged failure of signals.	T/D912	- Anx - 25
24. Train intact arrival register.	t/1410	- Anx - 26
25. Line clear Inquiry Message (UP/DN).	T/A1425	- Anx - 27
26. Paper line clear ticket (DN).	T/B1425	- Anx - 28
27. Paper line clear ticket (UP).	T/C1425	- Anx - 29
28. Trolley Lorry / OHE Ladder trolley notice.	T/1518	- Anx - 30
29. Motor trolley permit.	T/1525	- Anx - 31
30. Authority to receive a train on an obstructed line	T/509	- Anx - 32

31.	Written permission given by the Guard to Driver when the next station from mid section.	T/609	- Anx - 33
32.	Train examination advise/Report	T/431	- Anx - 34
33.	Competency Certificate for working Points and Signals.	OP/T 1/A	- Anx - 35
34.	Certificate fo competency for working Block Instruments.	OP/T 1/B	- Anx - 36
35.	Token Register	SI/14	- Anx - 37
36.	Disconnection/Reconnection memo for Neale's Blocks Instrumet.	SI/16	- Anx - 38
37.	Controller's Train Control Order Register	OP/T456	- Anx - 39