

NO. 19

STATION WORKING RULES OF BHUBANESWAR STATION

BG Station:

Date of Issue: 28.06.13

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NOTE:

The Station Working Rules must be read in conjunction with General & Subsidiary Rules, Operating Manual and Block Working Manual. These rules do not in any way supersede any rules in the above books.

1. STATION WORKING RULE DIAGRAM:

The Station Working Rule diagram No. SI/WRD/21199 based on CSTE/East Coast Railway's Signal Interlocking Plan No. SI/21199 shows the complete lay out of the yard, siding, normal position of points, the Signaling and Interlocking arrangements & Gradients. This must be referred to for giving details of the point numbers and signals when reporting accidents.

2. GENERAL LOCATION:

- 2.1. Bhubaneswar is a 'Special' class six lined station on the Howrah – Visakhapatnam Main line Double line electrified (BG) section of East Coast Railway. It is situated at Km. 436.280 from Howrah. The station is provided with Standard-II (R) Interlocking and equipped with Central Panel/VDU and Multiple Aspect Colour Light Signals. Trains between MCS-BBS and RTN-BBS on UP & DN main line sections are worked under Automatic Block System as laid down in Chapter-IX of General and Subsidiary Rules book. Automatic signals are controlled by Track Circuits. Similarly, trains on common line between BBS-RTN section is worked under Automatic Block System as laid down in Chapter-IX of General and Subsidiary Rules. The station is worked under Automatic Block System of GR & SRs.

[Refer GR 9.01 (1) (a), (b), (c), (i), (ii), 9.01 (2), 9.02 (1) (2) (3) (4) (5) and SRs thereto, GR 9.11 (1) (2) and SRs thereto GR 9.12, SR 9.12.01, SR 9.12.02, 9.12.03, 9.12.04, 9.12.05, GR 9.13, 9.14 and SRs thereto and GR 9.15, Chapter-IX of General Rules and SR thereto and Block Working Manual Chapter-VII, GR 9.03 (1) (a), (b), (c), (d), (e), (f), (g) (2), 9.04 (a) & (b), 9.06 (1), (2), (3), 9.07 (1), (2), (3), (4), (5), (6), (7) SR 9.07.01, 9.07.02, GR 9.08 (1), GR 9.10 (1) (2), SR 9.12.06 and 9.12.07]

2.2. BLOCK STATIONS, IBH, IBS ON EITHER SIDE AND THEIR DISTANCE AND OUTLAYING SIDINGS:**i. BLOCK STATIONS ON EITHER SIDE AND THEIR DISTANCES:**

Bhubaneswar station is situated between Mancheswar (Code: MCS) at HWH end situated at a distance of 6.636 Km. and Retang (Code: RTN) at VSKP end situated at a distance of 11.6 Km. Auto signaling is provided between (BBS-MCS) and (BBS-RTN) sections.

ii. IBH/IBS/OUT LYING SIDING/DK STATION:

There is no IBS either side of the station. There are no DK stations in both sides of the station.

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iii. **AUTOMATIC BLOCK SIGNALLING SECTION:**

The UP & DN line between MCS-BBS has been divided into a series of automatic block signaling section each of which is the portion of the running line between two consecutive stop signals and the entry into each of which is governed by a stop signal.

In UP direction the section is divided into four numbers (viz. (UP Advanced Starter) SA32–GSA1, GSA1-GSA3, GSA3-AS5 & AS5-S1) of Automatic Block signaling section. Similarly, in DN direction, the section is divided into four numbers (SA34-GSA2, GSA2-GSA4, GSA4-GSA6 & GSA6-DN Home Signal of MCS) of Automatic Block signaling sections. Entry into each section is governed by a stop signal. Continuous track circuits have been provided into control aspect of the Auto signals.

UP & DN line between BBS-RTN has been divided into a series of automatic block signaling section each of which is the portion of the running line between two consecutive stop signals. In UP direction the section is divided into nine numbers (Viz. SA33–AS241, AS241–AS237, AS237-GSA233, GSA233–AS229, AS229-GSA225, GSA225-GSA221, GSA-221-AS217, AS217-AS213 & AS213-UP Home Signal of RTN) of Automatic Block Signaling section. Similarly, in DN direction, the section is divided into ten numbers (SA14-AS214, AS214–AS218, AS218–GSA222, GSA222–GSA226, GSA226–AS230, AS230-GSA234, GSA234-AS238, AS238-AS242, AS242-AS246 & AS246-DN Home Signal of BBS) of Automatic Block Signaling sections. Entry into each section is governed by a stop signal. Continuous track circuits have been provided into control aspect of the Auto signals.

Single line Auto Signaling is provided between BBS-RTN section on Common line. Common line between BBS-RTN has been divided into a series of automatic block signaling section both in UP & DN direction, each of which is the portion of the running line between two consecutive stop signals. In UP direction the section is divided into nine numbers (Viz. SA31-AS243, AS243-AS239, AS239-GSA235, GSA235-AS231, AS231-GSA227, GSA227-GSA223, GSA223-AS219, AS219-AS215 & AS215-UP Home Signal of RTN) of Automatic Block Signaling section. Similarly, in DN direction, the section is divided into nine numbers (SA18-AS216, AS216-AS220, AS220-GSA224, GSA224-GSA228, GSA228-AS232, AS232-GSA236, GSA236-AS240, AS240-AS244 & AS244-DN Home Signal of BBS) of Automatic Block Signaling sections. Entry into each section is governed by a stop signal and direction of Traffic is set. Continuous track circuits have been provided into control aspect of the Auto Signals.

DIRECTION SETTING PANEL FOR COMMON LINE:

Direction of Traffic in common line is set by a pair of direction setting panels available at Station Master's Panel room.

For establishing direction of traffic RTN–BBS block section, RTN is the “Controlled station” side and BBS is the “Controlling station” side and henceforth BBS station will be referred as ‘A’ and RTN will be referred as ‘B’.

Detailed of indications and operation of direction setting panel is given in Appendix-B.

2.2.iv **PASSENGER HALT:**

Vani Vihar (Code: BNBH) is situated at Km. 433.0 between Bhubaneswar and Mancheswar. Lingaraj Temple Road [Code: LGTR] is situated at Km. 440.9 between Bhubaneswar and Retang station.

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2.3. **BLOCK SECTION LIMITS ON EITHER SIDE OF THE STATION ON DIFFERENT DIRECTIONS:**

NIL

STATION LIMIT:

UP LINE:

From Auto Signal No. AS5 to UP Advanced Starter Signal of BBS Station.

DN LINE:

From Auto Signal No. AS246 to DN Advanced Starter Signal of BBS Station.

FOR COMMON LINE:

From Auto Signal No. AS244 to DN Advanced Starter Signal of BBS Station.

2.4 **GRADIENTS:**

a) **TOWARDS HWH END: (ALL LINES)**

From	To	Gradient
CSB	CH:146.90 M	1 in 442.64 'F'
CH: 146.90 M	Towards Block Section	1 in 400 'F'

b) **TOWARDS HWH END: (FOR MAIN LINES)**

From	To	Gradient
CSB	CH:146.90 M	1 in 442.64 'F'
CH:146.90 M	CH:1013.5 M	1 in 400 'F'
CH:1013.5 M	CH:2072.64 M	1 in 350 'F'
CH:2072.64 M	CH:2255.52 M	Level.
CH:2255.52 M	CH:3474.72 M	1 in 286 'R'

c) **TO WARDS HWH END: [SIDING & COACH MAINTENANCE LINES]**

From	To	Gradient
CSB	CH: 600.0 M	1 in 400 'F'
CH: 600.00 M	CH:1195.24 M	1 in 1123 'R'
CH:1195.24 M	CH:1440.70 M	Level.
CH:1440.70 M	Towards Block section	Level.

d) **TOWARDS VSKP END: (ALL LINES)**

From	To	Gradient
CSB	CH: 915.0 M	1 in 442.64 'R'
CH: 915.0 M	CH: 1221.0 M	1 in 592 'F'
CH: 1221.0 M	CH: 1360 M	1 in 177 'F'
CH: 1360 M	CH: 1946.5 M	1 in 150 'F'
CH: 1946.5 M	CH: 1964.32 M	LEVEL
CH: 1964.32 M	CH: 2696.32 M	1 in 150 'R'

2.5 **LAYOUT:**

The Station is provided with six running lines and nineteen non running lines viz. Saloon siding on VSKP end whereas Shunting Neck, Three IOH lines, Four Coach Maintenance lines, Three Spare Lines, Stabling Line, Sail Siding, Two Goods Shed Lines on HWH end, Two Berthing Lines and Trip Shed.

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SALOON SIDING:

The Saloon siding at VSKP end of the yard with one side entry is taking off from Common Loop (Line No.1). The entrance point No. 60A and corresponding derailing switch point No. 60B are motor operated from panel/VDU at SM's office.

Entrance & Exit from the Saloon Siding is being controlled by Shunt Signals No. SH(6,10)A & SH27A/B respectively, operated from panel/VDU at Panel Room.

SHUNTING NECK:

The Shunting Neck at HWH end of the yard with one side entry is taking off from Line No. 2 at CH: 711 M. The Shunting Neck is isolated from Line No. 2 with provision of a DS at CH: 639 M. Entrance & Exit from the Shunting Neck is being controlled by Shunt Signal No. SH5H & SH32 respectively, operated from Panel/VDU at Panel Room.

IOH LINES, LINE NO. 1, 2 & 3, COACH MAINTENANCE LINES, LINE NO. 1, 2, 3 & 4, SPARE LINES, LINE NO. 5, 6 & 7, STABLING LINE, SAIL SIDING, GOODS SHED LINES, LINE NO. 8 & 9 BERTHING LINES, LINE NO. 1 & 2, TRIP SHED AND SHUNTING NECK:

All the above mentioned non running lines/sidings are situated at HWH end of the yard with a common one side entry is taking off at CH: 724 M in the yard with reverse position of motor operated point No. 43 working as isolation/derailing switch. Entrance towards these non running lines/sidings is being controlled by Shunt Signals No. SH (32) & SH (16, 18, 20, 22, 24, 28)A up to the STOP BOARD at CH: 728.90 M. A common Shunt Signal No. SH5 (A-H) governs all the exit from these non running lines/sidings. Beyond the mentioned STOP BOARD at CH: 728.90 M, the Entrance & Exit to the respective non running lines/sidings is being controlled by operating various non-interlocked points as shown in Station Working Rule Diagram at different chainages of the yard. These non-interlocked hand points are operated by an arc lever at site. All the movements beyond the SB at CH: 728.90 M is being controlled by Hand Signals in responsibility of Shunting Master.

PLAT FORMS:

- 1) Line No. 1 (Common Loop) : H.L.P.F.
- 2) Line No. 3 & 4 (DN Main & Common Loop) : H.L.P.F.
- 3) Line No. 6 (UP Loop) : H.L.P.F.

2.5.1 RUNNING LINES, DIRECTION OF MOVEMENT & HOLDING CAPACITY IN CSR:**DIRECTION OF TRAFFIC:**

The trains coming from MCS end are UP trains and the trains coming from RTN end are DN trains.

HOLDING CAPACITIES:

Line No. 1	Common Loop	654.0	Meters	(Electrified)	From Starter to GJ
Line No. 2	DN Loop	720.0	Meters	(Electrified)	From Starter to GJ
Line No. 3	DN Main	720.0	Meters	(Electrified)	From Starter to GJ
Line No. 4	Common Loop	715.0	Meters	(Electrified)	From Starter to GJ
Line No. 5	UP Main	793.0	Meters	(Electrified)	From Starter to SH
Line No. 6	UP Loop	860.5	Meters	(Electrified)	From Starter to SH

2.5.2 NON RUNNING LINES AND THEIR CAPACITIES IN CAL:

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1	Saloon Siding	180.0	Meters	(Electrified)	From SH to SB
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1.	IOH lines, line No. 1	102.2	Meters	(Electrified)	From FM to DE
2.	IOH lines, line No. 2	143.2	Meters	(Electrified)	From FM to DE
3.	IOH lines, line No. 3	185.2	Meters	(Electrified)	From FM to DE
4.	Coach Maintenance lines, line No. 1	600.0	Meters	(Electrified)	From FM to DE
5.	Coach Maintenance lines, line No. 2	506.226	Meters	(Electrified)	From FM to DE
6.	Coach Maintenance lines, line No. 3	532.3	Meters	(Electrified)	From FM to DE
7.	Coach Maintenance lines, line No. 4	425.68	Meters	(Electrified)	From FM to DE
8.	Spare lines, line No. 5	425.686	Meters	(Electrified)	From FM to DE
9.	Spare lines, line No. 6	425.686	Meters	(Electrified)	From FM to DE
10.	Spare lines, line No. 7	424.66	Meters	(Electrified)	From FM to DE

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1.	Stabling Line	82.0	Meters	(Electrified)	From PT to DE
2.	SAIL Siding	647	Meters	(Electrified)	From PT to DE
3.	Goods Shed Lines, line No.8	280	Meters	(Electrified)	From FM to DE
4.	Goods Shed Lines, line No.9	265	Meters	(Electrified)	From FM to DE
5.	Berthing Line No. 1	647.0	Meters	(Electrified)	From FM to DE
6.	Berthing Line No. 2	596.50	Meters	(Electrified)	From PT to DE
7.	Shunting Neck	330.65	Meters	(Electrified)	From SH to SB
8.	Trip Shed	-		(Electrified)	

2.5.3.a. ANY SPECIAL FEATURES IN THE LAYOUT: All points of sidings and non running lines having 1 in 8 ½ turnouts.

b. SPECIAL RESTRICTIONS:

- i) Hand shunting/fly shunting is prohibited at both ends of the yard.
- ii) The overrun lines must not be used for stabling of vehicle or harboring an engine with or without vehicle. If though an accident or unavoidable circumstances they become obstructed, it ceases to be substitute for adequate distance for taking off the concerned loop line Home Signal and trains shall be passed as per SR 3.69.03.
- iii) Shunting is not permitted unless the engine is leading towards the falling gradients.
- iv) No 'C' class ODC will be allowed to run with OHE power 'ON' under ROB at Km. 437/1-2 between BBS-RTN on both UP and DN Lines due to restricted vertical clearances [vide CRS's observation No. R12049/12/2002-SBC/250 dtd. 09.03.2002 item No. xi].

c. SPECIAL INSTRUCTIONS:

- (i) All UP & DN Berthing lines except line no.3 & 6 are track circuited. In case of failure of track circuit/ axle counter the clearance of the concerned line should be ensured physically before a train is piloted.
- (ii) Whenever a non signal movement has taken place over a point operated by motor whether facing or trailing direction, SM on duty shall operate the points to normal and reverse for the purpose of setting the point. After clamping and padlocking the points and the indication is correctly available, further movement may be permitted over the points.
- (iii) Movement of non-insulated push trolley is prohibited between BBS-MCS and BBS-RTN section vide SR 15.25.04 (c).

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- (iv) Admission of UP and DN stopping goods trains are prohibited on line No.1 (Common Loop) due to non standard CSLs.
- (v) Speed over turn outs on directional loop lines i.e. on line No. 1, 2, 4 & 6 are 30 KMPH as per CRS Sanction No. 695 dtd. 24.09.09.
- (vi) Backing of train in Automatic block section is not permitted.
- (vii) DN Main Starter Signal No. 28 is placed on the Right Hand Side of track due to less track centre between line No. 2 and Line No. 3.

2.6 **LEVEL CROSSINGS:**

- i) There is a 'Special' class mid-section manned interlocked level crossing gate No. 186 situated at Km. 430/33-35(UP) & 430/34-36 (DN) between Bhubaneswar and Mancheswar Station. Telephone communication is provided between the gate lodge and the Cabin Master on duty at South Cabin/MCS.
- ii) There is a 'Special' class mid-section manned interlocked level crossing gate No. 187 situated at Km. 432/7-9 between Bhubaneswar and Mancheswar Station. Telephone communication has been provided between the gate lodge and the Cabin Master on duty at South Cabin/MCS.
- iii) There is a 'Special' Class mid-section manned interlocked level crossing gate No. 188 situated at Km. 433/23-25 [UP] & 433/26-24 [DN] between Bhubaneswar and Mancheswar Station. Telephone communication is provided between the Gate Lodge and SM on duty at Bhubaneswar.
- iv) There is a 'Special' Class mid-section manned interlocked level crossing gate No. 190 situated at Km. 441/1-3 (UP) & 441/4-2 (DN) between Bhubaneswar and Retang Station. Telephone communication is provided between the Gate Lodge and SM on duty at Central Panel/Bhubaneswar.
- v) There is a 'C' Class mid-section manned interlocked level crossing gate No. 191 situated at Km. 443/3-5 (UP) & 443/6-4 (DN) between Bhubaneswar and Retang Station. Telephone communication is provided between the Gate Lodge and SM on duty at Retang.
- vi) There is a 'C' Class mid-section manned interlocked level crossing gate No. 192 situated at Km. 443/23-25 (UP) & 443/26-24 (DN) between Bhubaneswar and Retang Station. Telephone communication is provided between the Gate Lodge and SM on duty at Retang.

3. **SYSTEM AND MEANS OF WORKING:**

Trains are worked under Automatic Block System in between MCS-BBS and BBS-RTN for double line section and BBS-RTN for single (common) line in accordance with GR 9.01 (1) (a), (b), (c), (i), (ii), 9.01 (2), 9.02 (1) (2) (3) (4) (5) and SRs thereto, GR 9.10 (1) (2), GR 9.11 (1) (2) and SRs thereto GR 9.12, SR 9.12.01, SR 9.12.02, 9.12.03, 9.12.04, 9.12.05, GR 9.13, 9.14 and SRs thereto and GR 9.15 and Block Working Manual Chapter-VII and Chapter-IX of GR and GR 9.03 (1) (a), (b), (c), (d), (e), (f), (g) (2), 9.04 (a) & (b), 9.06 (1), (2), (3), 9.07 (1), (2), (3), (4), (5), (6), (7) SR 9.07.01, 9.07.02, GR 9.08 (1), SR 9.12.06 and 9.12.07.

4. **SYSTEM OF SIGNALING AND INTERLOCKING:**

- 4.1 This Station is provided with Standard-II (R) interlocking with Multiple Aspect Colour Light Signaling having maximum equipment of signals. The aspects and indications of the MACLS is governed by GR 3.08 (4) (b) and 3.37.

The Station is provided with central panel (EI) interlocking and having no end cabins. All signals and points are electrical operated from the central panel/VDU provided at Panel Room. Calling-on signals are provided below Home signals (i.e. in both UP & DN directions) as per GR 3.13 (1) (b), (2) (3) (4) & (6) (b). Central panel with miniature push buttons or VDU are provided in the Panel Room to electrically control all signals, points, etc. The control panel is provided with SM's key which shall always remain in the personal custody of the SM on duty in terms of SR 3.36.03 (a).

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A two-position switch is provided on the control panel through which SM (Panel) on duty can select the mode of operation (i.e. from Panel or VDU)

(The details of stand by operation from VDU is given under Appendix-'B1')

4.1.1 TRACK CIRCUITS:

All the running lines are provided with track circuits except line no.3 and 6. The non-running lines/Sidings are also non track circuited. In addition there are continuous short length track circuits in advance of Advanced Starter Signals and Home signal in both the directions are also provided. For Calling-on signals (65M Rail length) track circuits are also provided in rear of the Home signals in both directions are provided. Indications for the above track circuits are available on panel/VDU at Panel Room. Yellow light on panel indicates track clear when signal route is set and Red light indicates track occupied condition. Normally the track shows no indication when the track is free & no signal route is set over it. Only point indication glows continuous. Continuous track circuits have been provided into control aspect of the Auto signals between BBS-MCS and BBS-RTN sections in both UP & DN main line as well as Common line between BBS-RTN.

4.1.2 AXLE COUNTER:

- (i) Analog Axle Counters are provided on berthing portions of Line No. 3 & 6 in the yard for counting Axles 'IN' and counting axles 'OUT' which indicate whether the concerned berthing track monitored by analog axle counters is clear or occupied.
- (ii) Fiberglass trolley wheels are to be provided for push trolleys in lieu of trolley suppression track circuits.
- (iii) In case of failure of analog Axle Counter the re-setting of axle counter must be done as per the procedure given in Appendix-"B". In the event of failure of Axle Counter/ Track circuit the clearance of loop line and main lines will be ensured by physical check by the SM on duty and train shall be admitted as per GR 3.69 and SR thereto.

TAKING OFF CALLING-ON SIGNAL:

Miniature colour light Calling-on signal is provided below the Home signals in terms of GR 3.13 (6) (b). A Calling-on signal will be taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF' due to failure or any other reason or for admission of train on blocked line. To dispatch a train, when Starter cannot be taken 'OFF' due to failure of track circuit or failure of starter Signal, the Calling-on Signal can be taken 'OFF'. Calling-on signals are also provided below the UP Starter Signal Nos.17, 19, 25 & 29. A Calling-on signal shows no light in the 'ON' position and Yellow light when taken "OFF".

To take 'OFF' Calling-on Signal, the train must come to a stop at the foot of the Starter/Home Signal occupying the track circuit provided in rear of the signal. When a train occupies the track circuit, a 'RED' light strip will appear in the panel. The particular route on which train is intended to be received or dispatched shall be set by operating the panel push button and group button or by signal and route button or by crank handling in the event of failure of operation of points through panel/VDU. After the route is set, the Calling-on Signal button shall be pressed simultaneously along with concerned route button for 2-3 seconds and released.

For taking off Calling-on signal provided below the Home signal, the time delay of 60 seconds is required and no time delay is required for taking off Calling-on signal provided below the Starter signal. When the Calling-on signal clears i.e. a Yellow light glows at the concerned Calling-on signal on the panel.

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Every such operation has to be recorded by the on duty SM along with the reasons to do so. Every such operation is registered in respective Calling-on counters. The Calling-on signal route can be released after the signal cancellation button is pressed after complete arrival of the train.

NOTE:

SM on duty is to ensure that no through signals are given while receiving/dispatching a train on Calling-on.

CRANK HANDLE:

When any point fails to operate normally by the route setting operation through panel/VDU it is inevitable to operate the points with crank handle. The SS (Platform) on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle. For motor operated points shall be followed as per Operating Manual Para 20.06.

CRANK HANDLE

CONTROL POINTS

CH-1	-----	42
CH-2	-----	48, 54, 56.
CH-3	-----	44, 62
CH-4	-----	60
CH-5	-----	46
CH-6	-----	41, 49
CH-7	-----	53, 59
CH-8	-----	57, 61,65
CH-9	-----	51, 63,67
CH-10	-----	43, 45
CH-11	-----	47
CH-12	-----	55

These crank handles are interlocked with the signaling and interlocking system at this station and normally locked inside the RKT instrument at the respective Crank Handles Locations. Crank handle keys can be taken out only when all signals are in Normal Position and the route is not locked for whatever reasons. Crank Handle can be released by obtaining common

‘TRANS’ push button and concerned Crank Handle control push button simultaneously. When the keys are taken out no signal can be taken “OFF” over the particular route on the points nominated by that Crank Handle. This key can be electrically transmitted at both ends locations of the yard for manual operation of the defective points.

SS (Platform) on duty shall personally ensure the clamping and padlocking of all facing and trailing points. An emergency Crank handle register shall be maintained by the SM (Panel) on duty at the station as per Para 20.06 (d) of the Operating Manual. Correct setting clamping and padlocking of the points devolve on the SS (Platform) on duty.

(Details of use of Crank Handle are as per Appendix-‘B’).

The cases of the motor point should be promptly reported to the concerned signal maintainer/signal inspector for immediate rectification.

SHUNT SIGNAL:

Individual shunt signals 5, 6, 7, 10, 21, 22, 23, 24, 27,& 32 are provided for shunting purpose.

EMERGENCY CROSS OVER:

One emergency cross over is provided in either end of the yard.

EMERGENCY POINT OPERATION [BLACK WITH RED DOT]

Emergency point operation facility is provided to operate the point from the panel in case of failure of track circuit. A push button [Black with Red dot] is provided on the panel. If such operation is necessary, the SM (Panel) on duty after ensuring that emergency point key is 'IN' & no vehicle is standing on the concerned point shall press the emergency point operation button along with relevant point button simultaneously. Then retaining point button pressed emergency point button to be released and the point group normal button or point group reverse button is to be pressed for operating the point to 'Normal' or 'Reverse'. The on duty SM (Panel) should keep a proper record of all such operations.

EMERGENCY ROUTE RELEASE COUNTER:

This counter is provided to register the number of operations made for emergency cancellation of route. The SM (Panel) must record the last number registered on the counter while taking over/handing over duty.

EMERGENCY ROUTE RELEASE INDICATION (WHITE) EMERGENCY ROUTE RELEASE BUTTON (WHITE WITH RED DOT):

The panel interlocking is based on the principle of 'DEAD APPROACH LOCKING'. As such when a route is set and signal is taken 'OFF' on the route, the route gets locked. Normally the route is released by the passage of the train over the route. When it becomes necessary to alter the route after the signal has been taken 'OFF' vide SR 3.36.02 (a), the concerned signal must be put back to Danger by simultaneously pressing the signal cancellation button and the concerned signal button. After this first the emergency route release button (white with red dot) positioned in the top of panel to be pressed and subsequently the concerned signal button is to be pressed releasing the emergency route release button. A Yellow light will lit indicating that the timer is working. After 120 seconds, the Yellow light along with the Yellow strip of light will disappear suggesting the route has been released.

In case the route illumination (Yellow strip lights) does not disappear, it suggests that the route is not released/cancelled. In such case the concerned S&T staff should be advised immediately to get the emergency route release button sealed after rectification of fault if any.

Each operation of emergency cancellation of route is recorded in the emergency route release counter by registering the next higher number. All such operations and the new number should be recorded in the station diary and in the train signal register.

4.2 **CUSTODY OF RELAY ROOM KEY AND PROCEDURE FOR ITS HANDING OVER AND TAKING OVER BETWEEN STATION MASTER AND S&T MAINTENANCE STAFF:**

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The Relay room should be kept locked with two separate locks. The arrangement should be such that one key is kept with the on duty SM & the other key with the Signal Maintainer. Whenever required the SM (Panel) shall handover the key to the maintainer with proper acknowledgement in the basement/ relay room key register. The maintainer on receipt of the key from the SM (Panel) may use the same and the key in his custody to open the basement/ relay room by inserting the keys one after another separately into the earmark locks. After completion of the work, the relay room is to be locked using both the keys separately and designated key should be handed over to the SM (Panel) on duty.

The details of transaction is to be properly recorded in the basement/relay room key register maintained at the station and duly signed by the SM (Panel) and maintainer respectively.

4.3 **POWER SUPPLY:**

1. A changeover switch is provided in the Panel Room with the three power supplies viz., Up AT, Dn AT and Local, for changing the switch to the required supply position. A luminous indicator above the circuit breaker for each supply indicates the availability of the supply.
2. Normally the switch will be kept towards UP AT or DN AT position. Whenever power block is to be given on the line, the on duty SM (Panel) must ascertain that power is available on the other AT. E.g.: If power block is to be given on the UP line, DN AT must be available and vice-versa.
3. In case of failure of one of the AT supply without any power block, the on duty SM (Panel) has to check whether the circuit breaker has tripped. (Three circuit breakers are provided in the changeover switch board, one for each supply and their normal position is down and when tripped it goes up.) In case of failure of both AT supplies, the Local supply shall be utilized by operating the switch.
If the circuit breaker is tripping even after resetting, no attempt shall be made to hold it by any other mean and a message shall be given to the AEE and CTFO/PSI for prompt rectification.
4. Whenever there is a failure of power supply in one AT the SM (Panel) shall take prompt action to inform to all concerned for the rectification. The SM (Panel) himself, during his daily checks, shall test the availability of power supply on both ATs and make an entry in the Station Diary duly initiating action for rectification of failure, if any.
5. IPS (Integrated Power Supply) arrangement has been provided at the station to take care of the signaling system as well as to avoid blanking of signals in case of power failure. In case of AT/GRIDCO Power failure the IPS takes care of the signaling system approximate for 6 to 8hrs.

One Indication panel for monitoring of IPS voltage has been provided in the Panel Room. The Indication panel shall display the voltage of IPS as well as health of the IPS provided to operate signaling gears. Audio Visual alarm has been provided in the panel to guide on duty SM (Panel) to take action in case of low voltage or no voltage or any defect in IPS is shown in the SM (Panel). Details indications and alarm have been described below:

SM INDICATION PANEL FOR IPS:

- Call S&T - Red indication
- Signal system shut down - Red indication
- Emergency start DG - Red indication
- Start DG - Red indication
- Stop DG - Green indication

To acknowledge the indication on panel two push buttons are provided. Besides this the panel also has digital display of IPS battery voltage.

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When ever alarm appears on the SM panel due to any fault in the IPS system or due to low battery voltage on duty shall acknowledge the alarm by pressing the push button provided on the panel. Pressing on the push button shall mute the buzzer but relevant indication will continue to show till the fault is rectified by S&T staff. After acknowledgement of the alarm on duty SM (Panel) shall immediately inform S&T staff at station regarding the alarm.

5 **TELECOMMUNICATIONS:**

- a) The Station is connected to Khurda Road Control by a telephone on the BSDP-BRAG & KUR-PUI Control Circuit.
- b) Magneto Telephone is provided between BBS-MCS & BBS-RTN.
- c) Railway auto telephone is provided in the Panel Room.
- d) Telephone communication is provided between Station Master on duty and both end Crank Handle Locations.
- e) Telephone is provided between (i) SM on duty at Central Panel/BBS and L.C. Gate at Km. 433/23-25 [UP] & 433/24-22 [DN] (ii) SM on duty at Central Panel/BBS and L.C. Gate at Km. 441/1-3 [UP] & 441/4-2 [DN].
- f) VHF set is provided at the station.
- g) The station is connected to KUR-BHC traction control circuit.

NOTE:

- i) For obtaining line clear VHF should be used as a last alternative and not as a sole means of a communication.
- ii) VHF & Walkie-talkie sets should not be used for unnecessary discussion with Loco Pilot/Guards and any other staff.

6 **SYSTEM OF TRAIN WORKING:**

The movement of trains is controlled by section controller on duty whose orders shall be complied with provided they do not contravene any provisions of General Rules, Subsidiary Rules, Station Working Rules, Block Working Manual, Operating Manual and any other safe working instructions issued from time to time.

In the event of suspension of control working the SM on duty shall work independently in conjunction with the Station Superintendent/Station Master of adjoining Block Stations and shall be responsible to ensure that there is no undue delay to train operation in general.

6.1 **DUTIES OF TRAIN WORKING STAFF IN EACH SHIFT:**

The following is the complement of operating staff provided at the station in three shifts for train passing duty.

SMR [Non- Gaz.]	1 (One)	Supervising.
SS (PF)	1 (One)	in each shift
SM (Panel)	1 (One)	in each shift.
SM (Line Clear)	1 (One)	in each shift
Yard Master	1 (One)	in each shift.
STM	1 (One)	in each shift.
Traffic points man	4 (Four)	in each shift
Token Porter	1 (One)	in each shift

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The above staff shall work as per roster issued from time to time by Divisional Railway Manager (P) and these rosters shall be conspicuously displayed in the SMR (Non-Gaz.)'s office (Details duties are given in Appendix-'D').

6.1.2 RESPONSIBILITY FOR ASCERTAINING CLEARANCE OF LINES AND ZONES OF RESPONSIBILITY:

The SM on duty is responsible to ascertain the clearance of the nominated line between BSLB/first facing point and advanced starter signal in each direction.

6.1.3 ASSURANCE OF THE STAFF IN THE ASSURANCE REGISTER:

All staff before taking up independent charge of their duties at this station shall make a written declaration in the Assurance Register that they have read the SWR thoroughly and understood the system of working in force at the station and must sign such declaration.

No Railway servant shall be entrusted with any duty involving the safety of the public unless the SMR [Non- Gaz.] is satisfied that the concerned staff is competent for the post. No Railway servant unless duly examined and certified shall be allowed to work the points and signals. The SMR [Non- Gaz.] is responsible to see that all the staff are well conversant with the Station Working Rules of the Station and their signature obtained in the Assurance Register after he is satisfied that they have thoroughly understood the working Rules of the Station. In case of class-IV staff, their signature/thumb impression must be obtained after explaining full about their duties and responsibility.

The SMR [Non-Gaz.] is personally responsible for maintaining the Assurance Register and for obtaining declaration from the staff working under him. The Assurance Register must be maintained in two parts one for Group-'C' staff and other for Group-'D' staff & duplicate copy of the Assurance Register must be maintained and kept in the personal custody by the SMR [Non- Gaz.]

The declarations are to be renewed in the following cases:

- (i) Whenever there is any change in the Station Working Rules,
- (ii) For any staff who have not worked at the station or were away from the station for a period of 15 days and over.

6.1.4 USE OF PRIVATE NUMBER BOOKS AND IDENTIFICATION NUMBER SHEETS:

Sufficient Private Number books and identification number sheets in sealed covers shall always be kept in stock by SMR (Non-Gaz.) under lock and key by maintaining one register for this purpose.

6.2 CONDITIONS FOR GRANTING LINE CLEAR:

(a) DOUBLE LINE SECTION:

Granting line clear to UP and DN trains is not required as per BWM 7.05 (1) and GR 9.01 (c) (i) & 9.01 (2).

(b) SINGLE LINE SECTION:

Line Clear is required for establishing direction of traffic. Before granting line clear to a DN train, SM on duty at Panel Room shall ensure that (i) the block section between BBS-RTN is clear and private number exchanged between SM/RTN & SM/BBS (ii) the line is clear 180 mtrs. beyond the DN Home Signal. [Refer GR 9.13 (1) (2) and Rule No. 7.15 & 7.17 of Block Working Manual].

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6.2.1 **ANY SPECIAL CONDITIONS TO BE OBSERVED WHILE RECEIVING OR DESPATCHING A TRAIN:**
NIL

6.2.1.1 **SETTING OF POINTS AGAINST BLOCK LINE:**

When a running line is blocked by stabled load wagon, vehicle or by a train which is to cross or give precedence to another train or immediately after the arrival of a train, the points in rear shall be set against the blocked line except when shunting or any other movement is required to be done on-that line. [Refer SR 3.51.06 (a)].

If all the lines at a station happen to be blocked, when line clear has been granted to a train, the point should be set for the line occupied by a stabled load or a Goods train. [Refer SR. 3.51.06 (b)].

The above precautions shall be taken in addition to the observance of other precautions. [Refer SR 5.04.01 & SR 5.23.01].

A clear remark in 'RED' ink shall be made immediately in the train signal register indicating time and number of running line blocked. [Refer SR 5.23.01 (a)]

6.2.1.2 **RECEPTION OF A TRAIN ON BLOCKED LINE:**

Whenever trains are to be admitted on an obstructed line the Calling-on signal may be taken off. If Calling-on signal failed then the SS on duty at PF shall authorize the on duty TPM with form T/509 indicating the reason for such admission the line number and the nature of obstruction on that line.

Before handing over the authority the SS on duty at PF shall ensure the correct setting clamping and padlocking of both facing and trailing end of the concerned route vide SR 3.69.03.

A stop hand signal shall be exhibited by the SS (PF) on duty at a distance of not less 45 mtrs from the point of obstruction to indicate to the Loco Pilot as to whose the train shall be brought to a stand.

6.2.1.3 **RECEPTION OF TRAIN ON NON-SIGNALLED LINE:**

Before receiving a train on non-signaled line, the SS (Platform) in consultation with SM (Panel) shall ensure that:

- a. The train is brought to a stand at the first stop signal.
- b. The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand.
- c. All points over which the train has to pass are correctly set, the facing and Trailing points are clamped and padlocked.
- d. The Loco Pilot is authorized to pass the approach stop signals at 'ON' through a written authority T/369 (3b). [Refer GR 5.10].

6.2.1.4 **DESPATCH OF TRAIN FROM NON-SIGNALLED LINE:**

When ever a train is to be dispatched from a non-signaled line, a starting order on form T/511 shall be given by SS (Platform) to the Loco Pilot to start from the non-signaled line. The line is to be set in the desired direction from which the train is to be started. Both the facing and trailing points are to be clamped and padlocked. The SS (Platform) on duty shall depute points man to display proceed hand signal at the first facing point [Refer SR 5.11.1].

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6.2.1.5 **DESPATCH OF TRAIN FROM LINE PROVIDED WITH COMMON STARTER SIGNAL:**
NIL

- 6.2.1.6 .a. For receiving UP & DN trains on common loop, the clearance of the overrun line should be ensured.
b. Continuous track circuited is provided in the entire section of the station yard. In case of failure of track circuits, the clearance of the nominated line has to be ensured physically before Piloting 'IN' a train.

6.3 **CONDITIONS FOR TAKING "OFF" APPROACH SIGNALS:**

The SM on duty shall nominate a clear line not only up to the starter but also for an adequate distance beyond it for reception of trains. [Refer GR 3.36, 3.37, 3.40, 3.47, 3.49, 4.17, 9.03 (1) (d) and SR 3.36.01, 3.36.02, 3.36.04, 3.40.01, 3.40.02, 4.17.02 and Block Working Manual and Safe Working Instructions issued from time to time].

6.3.1 **RESPONSIBILITY OF STATION MASTER FOR RESTORATION OF SIGNALS TO "ON":**

If a signal once taken 'OFF' for reception/dispatch of a train, has to be, in an emergency put back to 'ON' In case of reception signal, the route over which the train would pass shall not be altered until after the train has come to stand unless the route has to be altered to avert an accident. In case of departure signal, before changing the points or allowing any other movements the "Authority to Proceed" if any, handed over to the Loco Pilot must be withdrawn and the Loco Pilot of the train concerned shall be advised of the change in writing and his acknowledgement will be obtained in a memo. [Refer SR 3.36.02 (a) & (b)]

6.4 **SIMULTANEOUS RECEPTION/DESPACTCH AND PRECEDANCE OF TRAINS:**

The following simultaneous reception and dispatch facilities are provided at this station.

1.	Reception of an UP train on line No. 1 (Common loop)	Reception of a DN train on line No. 4 OR dispatching of an UP train from line No. 4 or 5 or 6.
2.	Reception of an UP train on line No. 4 (Common loop)	Reception of a DN train on line No. 1 or 2 or 3 OR dispatching of an UP train from line No. 1 or 5 or 6.
3.	Reception of an UP train on line No. 5 (UP Main)	Reception of a DN train on line No. 1 or 2 or 3 OR dispatching of an UP train from line No. 6.
4.	Reception of an UP train on line No. 6 (UP Loop)	Reception of a DN train on line No. 1 or 2 or 3 or 4 OR dispatching of an UP train from line No. 1 or 4 or 5.
5.	Reception of a DN train (via DN line) on line No. 1 (Common loop)	Reception of an UP train on line No. 4 or 5 or 6 OR dispatching of a DN train from line No. 2 or 3 or 4 OR reception of a DN train on line No. 4 via Common line.
6.	Reception of a DN train (via DN line) on line No. 2 (DN Loop)	Reception of an UP train on line No. 4 or 5 or 6 OR dispatching a DN train from the line No. 3 or 4 OR reception of DN train on line No. 4 via Common line.
7.	Reception of a DN train (via DN line) on line No. 3 (DN Main)	Reception of an UP train on line No. 4 or 5 or 6 OR reception (via common line)/ dispatch of DN train on/from line No. 4.
8.	Reception of a DN train (via DN line) on line No. 4 (Common loop)	Reception of an UP train on line No. 5 or 6 OR dispatching a DN train from the line No. 1 or 2 or 3.
9.	Reception of a DN train (via Common line) on line No. 1	Reception of an UP train on line No. 4 or 6 OR dispatching of a DN train from line No. 3 or 4.

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	(Common loop)	
10.	Reception of a DN train (via Common line) on line No. 2 (Common loop)	Reception of an UP train on line No. 4 or 6 OR dispatching of a DN train from line No. 3 or 4.
11.	Reception of a DN train (via Common line) on line No. 3 (Common loop)	Reception of an UP train on line No. 4 or 6 or dispatch of a DN train from line no.4
12.	Reception of a DN train (via Common line) on line No. 4 (Common loop)	Reception of an UP train on line No. 6 OR dispatching of a DN train from line No. 1 or 2 or 3.

ADEQUATE DISTANCE (SIGNAL OVERLAP):

To take off the Home signals for admission of a train, the adequate distance (Signal Overlap) as mentioned below shall be kept clear. [Refer GR 3.40 and SR thereto].

CLEARANCE OF ADEQUATE DISTANCE

FOR UP TRAINS:		
Line No.	From	To
1.	Common Loop line starter signal No. 25.	The far end of Over Run line with point No. 48 & 60 are 'Normal'.
4.	Common Loop Line starter signal No. 19.	The DS No. 54B, keeping it in open condition OR UP Advanced Starter Signal No. 33 OR UP MID Advanced Starter Signal No. 31.
5.	UP Main Line starter signal No. 29.	The UP Advanced Starter Signal No. 33 OR UP MID Advanced Starter Signal No. 31.
6.	UP Loop Line starter signal No. 17.	The UP Advanced Starter Signal No. 33 OR UP MID Advanced Starter Signal No. 31.
FOR DN TRAINS:		
1.	Common Loop Line starter signal No. 16.	The DN Advanced Starter Signal No. SA34 OR the DS point No. 55 when point No. 63 is 'Normal'
2.	DN Loop Line starter signal No. 18.	The DS point No. 51B OR The DN Advanced Starter Signal No. SA34 when point No. 63 & 65 are 'Normal' and Point No. 57 is reversed.
3.	DN Main Line starter signal No. 28.	The DN Advanced Starter Signal No. SA34 or DS No.51.
4.	Common Loop Line starter signal No. 20.	The DN Advanced Starter Signal No. SA34 OR the DS point No. 53B when point 61 is 'Normal'.

6.4.1 RECEPTION OF TRAINS:

Before admitting a train on any line, it must be ensured that the correct route setting indication for the respective line shows "YELLOW" indication. To receive a train for which line clear is given, the SM on duty shall nominate a clear line in consultation with the section controller on duty. He shall personally satisfy himself that the nominated line is clear and free from all obstructions by verifying the track circuit indication in the panel or by physical verification of the nominated route in case of failure of track circuit. He shall suspend all non isolated shunting and there after set the points of the

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nominated route by means of push button switches provided on the control panel. He shall then verify from the visual indication available in the panel that points are set to the desired route.

Home Signal of the concerned route cannot be taken off from panel board if the track circuit indication does not show clear indication on the panel board. In such case, the train can be admitted with calling-on signal provided below Home Signal. Unless the first track circuit in rear of Home Signal does not show "RED" indication, Calling-on signal of the concerned line cannot be taken off.

After correct setting of points, the SM on duty shall operate the concerned push button on the control panel for clearing the reception signal. He shall verify on the panel that the correct reception signal is cleared. Alternatively point operation and signal clearing shall be done by one operation by pressing signal button and route button. If for any reason after clearing the Signal, it is required to put back the signal a time delay of 2 minutes shall be observed before altering the points (Refer SR 3.36.02). Immediately on arrival of the train the points should be set to a clear line and reminder collars to be used by the SM on duty on the concerned push button.

6.5.(i) **COMPLETE ARRIVAL OF TRAINS BETWEEN MCS-BBS AND RTN-BBS SECTION (FOR DOUBLE LINE SECTION):**

The entire block section between MCS-BBS and RTN-BBS on both UP and DN Lines are monitored by Automatic Block Signaling and the position of the auto section whether 'occupied' or 'clear' is indicated in a panel board at Panel Room. Both side Advanced Starters are controlled by signal in advance of auto section. As soon as train enters in to that auto section, the "RED" indication appears in the panel board. After whole train clears the first auto section, clear indication "GREEN" appears on the panel board of auto section. When the train clears the track circuit No. 1T1 provided beyond the UP Home Signal, this indicates complete arrival of the UP train. When the train clears the track circuit No. 2T1 provided beyond the DN Home Signal, this indicates complete arrival of the train in DN train. Thereafter, SM on duty shall inform to the SM of the rear station regarding complete arrival of the train indicating the number and description of the train and its arrival time supported by a Private Number.

If a train passes through the station without confirming the last vehicle indicator then SR 4.17.02 and SR 4.17.03 shall be followed.

If a train will arrive without the last vehicle indicator then action shall be taken by the SM on duty as per GR 4.17 & SR thereto.

On occasions when motor trolley follows a train the points shall not be operated until the following motor trolley is admitted on the same line. In the event of motor trolley is delayed in the section, the SM on duty shall take action in terms of SR 15.25.08.

(ii) **COMPLETE ARRIVAL OF TRAINS BETWEEN RTN-BBS SECTION:**

The entire block section between RTN-BBS on single (common) line are monitored by Automatic block signaling and the position of the auto section whether 'occupied' or 'clear' is indicated in a panel board at Panel Room. Both side advanced starters are controlled by signal in advance of auto section. As soon as train enters in to that auto section, the "RED" indication appears in the panel board. After whole train clears the first auto section, clear indication "GREEN" appears on the panel

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board of auto section. When the train clears the UP mid Advanced Starter Signal No. SA31, this indicates complete arrival of the train in DN train.

If a train passes through the station without confirming the last vehicle indicator then SR 4.17.02 and SR 4.17.03 shall be followed.

If a train will arrive without the last vehicle indicator then action shall be taken by the SM on duty as per GR 4.17 & SR thereto.

On occasions when motor trolley follows a train the points shall not be operated until the following motor trolley is admitted on the same line. In the event of motor trolley is delayed in the section, the SM on duty shall take action in terms of SR 15.25.08.

6.6 **DESPATCH OF TRAINS BETWEEN BBS-MCS AND BBS-RTN (DOUBLE LINE SECTION):**

SM (Panel) on duty shall take off the concerned departure signals. As soon as a train starts he shall inform to the concerned Station Master of adjacent station indicating the number and description of the train and its departure time. SM on duty at adjacent station shall acknowledge the same supported by private number and shall take off the concerned reception signals. On complete arrival of the train, he shall inform to the Station in the rear indicating the number, and description of the train and its arrival time supported by a private number.

Before dispatching a train into concerned section, the SM on duty shall intimate to the concerned gateman in advance to close and lock the gate against road traffic.

The 'OFF' aspect of the route starter and Advanced Starter is the authority to proceed into the automatic block section. [Refer GR 9.01 (1) (a), (b), (c), (i), (ii), 9.01 (2), 9.02 (1) (2) (3) (4) (5) and SRs thereto 9.10 (1) (2), 9.11 (1) (2) and SRs thereto 9.12 and SRs thereto 9.13 and SRs thereto 9.14 SRs thereto and 9.15 and Block Working Manual Chapter-VII.

DESPATCH OF TRAINS BETWEEN BBS-RTN (SINGLE LINE SECTION):

For dispatching a train in UP direction, SM (Panel) on duty shall establish direction of traffic. Before establishing direction of traffic in UP direction, SM on duty at Panel shall ensure clearance of the block section under exchange of Private Number with SM/RTN. Private Numbers exchanged shall be recorded in the Train Log Registers at both stations. Then the following procedures shall be adopted:-

SM on duty at Dispatching Station

1.
 - (a) Shall take off the concerned Starter Signal & Advanced Starter Signal.
 - (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 signaling section controlled by the starter.-
 - (i) Direction arrow illuminates in red.

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SM on duty at Receiving Station

2.
 - (a) Acknowledges supported by a Private Number.
 - (b) Direction arrow illuminates in red
3.
 - (a) Shall take 'OFF' the Home Signal.
 - (b) 'Signals normal' lamp (white) extinguishes.
 - (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

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- (ii) 'Signals normal' lamp (white) appears. Number.
 4. (d) 'Signals normal' lamp (white) appears.
 (a) Acknowledges. (e) Direction arrow illuminates in white,
 (b) Direction arrow illuminates in white, indicating block section is clear of all trains.
 indicating block section is clear of all trains.

[Refer GR 9.06, 9.08 (1), 9.13 and Rule No. 7.13 to 7.17 and Chapter-VII of Block Working Manual]

6.7 **TRAINS RUNNING THROUGH:**

The procedure detailed in Para 6.4, 6.5 & 6.6 shall be observed. The SM is responsible to observe/watch the condition of the vehicles on a passing train and shall wave green hand signal horizontally until anything wrong is noticed on train. For this purpose the SM on duty shall stand in such a position that he sees a clear view of the passing train and that his hand signals can clearly be seen by the Loco Pilot and Guard of the train. He shall depute his points man with hand signals to the other side of the passing train to observe the passing train and shall exhibit danger hand signal to draw the attention of the Guard and Loco Pilot of a train. If, he notices any unsafe condition with the passing train, he shall also report to the SM on duty for taking further suitable action in terms of SR [Refer GR 3.37, 3.38, 4.17, 4.42 & 4.42.2 (d)].

The SM on duty is responsible to see that a train passes complete with its last vehicle indicator. If a train passes without last vehicle indicator or its authorized substitute, action shall be taken as per General and Subsidiary Rules. [Refer GR 4.17 & SR 4.17.02]

6.8 **WORKING IN CASE OF FAILURE:**

PROCEDURE TO BE FOLLOWED FOR WORKING OF TRAINS DURING FAILURE /SUSPENSION OF INTERLOCKING/SIGNALS/POINTS:

A. **DEFECTIVE SIGNALS:**

When signals become defective, the procedure laid down in GR & SR shall be followed. A signal in the 'OFF' position is the final indication that the points are correctly set for the route for which it applies and if it is found impossible to take 'OFF' a signal, the setting of points on the route to which it applies shall be inspected by the SS (Platform) on duty before the signal is declared as defective irrespective of what is indicated by the position of the route. [Refer GR 3.68 to 3.71, 3.80 and SR 3.68.01 (c)].

In the event of Automatic Block signal becoming defective, the trains shall work in accordance with GR 9.12 & SR 9.12.01, 9.12.02, 9.14.01 (b) and relevant Paras of BWM, Chapter-VII.

In the event of Semi-Automatic signal becoming defective the trains shall work in accordance with GR 9.14 (1) (2) & 9.14.01 (a) (b) & SR 9.14.02

In case of disconnection of signal and interlocking for repairs and maintenance, procedure laid down in GR and relevant SRs shall be followed. In the event of signal showing no lights, SM on duty shall before giving line clear initiate action in accordance with the procedure prescribed in GR and the relevant SRs. [Refer GR 3.49 (4), 3.51 and 3.68 to 3.77]

B) **INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:**

However, before declaring a signal is defective, the setting of the point on the route to which it applies shall be inspected by the SS (Platform) irrespective of the position of the switches point laid down in GR with relevant SRs shall be followed. [Refer GR 3.68, 3.70 & SR 3.77.01(b)]

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Initiate action in accordance with the procedure prescribed in GR and relevant Subsidiary Rules there to. [Refer GR 3.49 (4) and 3.68, 3.77]

C) DEFFECTIVE INTERLOCKING:

When interlocking becomes defective the SS (Platform) on duty shall be responsible for correct setting, clamping and padlocking of points for admission of train. [Refer SR 3.69.03 (c)].

In the event of Automatic Block signal becoming defective the trains shall work in accordance with GR 9.12 & SR 9.12.01 & 9.12.02 and relevant Paras of BMW, Chapter-VII.

In the event of Semi-Automatic signal becoming defective the trains shall work in accordance with GR 9.14 (1) (2) & 9.14.01 (a) (b) & SR 9.14.02.

D) DEFFECTIVE/DAMAGED POINTS:

When any point fails to operate normally by the route setting operation through panel/VDU it is inevitable to operate the points with crank handle. The SS (Platform) on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle. For motor operated points shall be followed as per operating manual Para 20.06.

<u>CRANK HANDLE</u>	-----	<u>CONTROL POINTS</u>
CH-1	-----	42
CH-2	-----	48, 54, 56.
CH-3	-----	44, 62
CH-4	-----	60
CH-5	-----	46.
CH-6	-----	41, 49
CH-7	-----	53, 59
CH-8	-----	57, 61, 65
CH-9	-----	51, 63, 67
CH-10	-----	43, 45
CH-11	-----	47.
CH-12	-----	55.

These crank handles are interlocked with the signaling and interlocking system at this station and normally locked inside the RKT instrument at the respective Crank Handles Locations.

Crank handle keys can be taken out only when all signals are in Normal Position and the route is not locked for whatever reasons. Crank Handle can be released by obtaining common 'TRANS' push button and concerned Crank Handle control push button simultaneously. When the keys are taken out no signal can be taken "OFF" over the particular route on the points nominated by that Crank Handle. This key can be electrically transmitted at both ends locations of the yard for manual operation of the defective points.

SS (Platform) on duty shall personally ensure the clamping and padlocking of all facing and trailing points. An emergency Crank handle register shall be maintained by the SS (Platform) on duty at the station as per Para 20.06 (d) of the Operating Manual. Correct setting clamping and padlocking of the points devolve on the SS (Platform) on duty. (Details of use of Crank Handle are as per Appendix-'B').

The cases of the motor point should be promptly reported to the concerned signal maintainer/signal inspector for immediate rectification.

NOTE:

Both end of points need to be clamped and padlocked due to all the interlocked points are motor operated. The above procedure shall also be followed in case of non-signal movement.

E] **TRACK CIRCUIT:**

In the event of failure of circuit in the yard train shall be admitted into the yard after piloting 'IN' before piloting a train into the yard, the clearance of the track must be ensured by physical verification by SS (Platform) on duty.

AXLE COUNTER:

In case of failure of axle counter in the station yard, the clearance of the concerned line should be ensured physically before a train is piloted. If the axle counter fails between the block sections, resetting procedure will be adopted as per SWR (Appendix-'B'). if the axle counter indication does not appear 'Green' after the 1st train passed & continues to show 'RED' condition after resetting, the concerned block section shall be suspended & failure intimation to be given to Sectional Signal Maintainer /JE/SE (Signal) for rectification.

F] **RECEPTION OF TRAIN ON OBSTRUCTED LINE:**

Whenever trains are to be admitted on an obstructed line the Calling-on signal may be taken off. If calling-on signal failed then the SS on duty at PF shall authorize the on duty TPM with form T/509 indicating the reason for such admission the line number and the nature of obstruction on that line.

Before handing over the authority the SS on duty at PF shall ensure the correct setting clamping and padlocking of both facing and trailing end of the concerned route vide SR 3.69.03.

A stop hand signal shall be exhibited by the SS on duty at a distance of not less 45 mtrs. from the point of obstruction to indicate to the Loco Pilot as to whose the train shall be brought to a stand.

6.9 **PROVISIONS FOR WORKING OF MOTOR TROLLIES:**

Motor trolleys are to run in accordance with Rules laid down in SR 15.25.08.

7.0 **BLOCKING OF THE LINES:**

Whenever a running line is blocked either by loose vehicles or by stabling train or by a train which is to cross or give precedence to another train, the points at either end should immediately be set against the blocked line except during shunting movement and the concerned berthing route button (UN OR UN1) and group "TRANS" button is to be pressed to inactivate the concerned route button. A RED flashing indication appears near the route button on panel/VDU. To activate the route button concerned route button along with the Group 'RELEASE' button is to be pressed. After route button is activated the flashing indication will disappear. And also reminders collars shall be placed on the

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concerned point push button controlling the blocked line. A clear remark in 'RED' ink shall be made immediately in the train signal register and a record shall be made in the Station Master's diary also. Stable load register is also to be maintained. The stable load or loose vehicles are to be secured to prevent rolling down of vehicles. [Refer GR 5.23 and SR 5.23.01]

SECURING OF VEHICLES:

As far as practicable, loose vehicle shall not be allowed to stand on the running line. However under unavoidable circumstances, if it is necessary to detach vehicle from a train or to stable a train and

leave them standing on the running line, the SS (PF) on duty shall be responsible to secure the vehicle/stable loads to prevent rolling down of vehicles and arrest obstruction and fouling. Special care should be taken to secure special type vehicles fitted with roller bearing while standing in siding or on running lines, as they are liable to roll easily. [Refer GR 5.23 & SR 5.23.01]

USE OF REMINDER BLOCK COLLARS:

Whenever any running line is blocked or when a train is stopped to cross another train or detained for any other reason, even for a short while or during shunting operations, the reminder collars shall be used by the SM (Panel) on duty on the push button concerned. [Refer SR 3.36.03 (b)]

ALTERATION OF A POINTS TO A CLEAR LINE WHENEVER A RUNNING LINE IS BLOCKED:

- (a) When a running line is blocked by stable load, wagon, vehicles or by a train, which is to cross or to give precedence to another train or immediately after the arrival of a train at the station etc, the points at either end should immediately be set against the blocked line except when any shunting or any other movement is required to be done immediately in that direction on that line.
- (b) If all the lines at a station happen to be blocked, when "Line Clear" has been granted to a train, the points should be set for the line occupied by a stable load or a goods train in that order, so that in case of any mishap, the chances of causalities are minimized. In case all the lines are occupied by passenger carrying trains, points should be set for a loop line to negotiate of which the speed of the incoming train would be reduced, which in turn would minimize the consequences/causalities. While doing so, points may be set for a loop occupied by a train, if any, whose engine is facing the direction of approach of the incoming train rather than for a loop occupied by a train whose passenger coach will incase, of collision, receive the impact.

8.A. SHUNTING:

Shunting will be carried out at the station in accordance with General Rule and relevant Subsidiary Rules and Block Working Manual. [Refer GR 5.13, 5.14, 5.16 to 5.23 & SR thereto Rule No. 7.07, 7.08, 7.18 & 7.19 of Block Working Manual]

The Shunting Master, Dy. Chief Yard Master, SM or TPM on duty is authorized to supervise shunting operation. Normally shunt signals provided below starter signals, back shunt signals, Calling-on signals, caution aspect of starter signals and individual shunt signals shall be used for shunting operations. The official supervising shunting shall ensure the correct setting, clamping and padlocking of points in case of non-signaling movements.

The SS (Platform)/Dy.CYM on duty and the official supervising shunting shall co-operate with each other regarding shunting operations. Neither reception signals nor departure signals shall be taken 'OFF' unless the shunting is isolated and the path of incoming/outgoing train is free from obstructions. The over-run line may be used as shunting neck.

B. FOR DOUBLE LINE SECTION:

- (a) Shunting may be perform on line/lines 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.

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- (b) In case shunting obstruct or is likely to obstruct the main running line, the SM on duty at Panel shall ensure that manually operated stop signal as also the last stop signal is kept at 'ON' and the 'A' marker light is kept extinguish at the semi automatic stop signal.
- (c) Shunting shall be performed between the outer most points at the approaching end and the last stop signal of the station on either direction. [Refer Rule No. 7.07 (1) of BWM]
- (d) No shunting shall be permitted outside the outer most point at the approaching end of the station. [Refer Rule No. 7.07 (2) of BWM]
- (e) No shunting shall be permitted outside the last stop signal. [Refer Rule No. 7.07 (3) of BWM]

C. FOR SINGLE LINE SECTION:

Rule No. 7.18 of BWM to be followed.

8.1 SHUNTING IN THE SIDING:

SALOON SIDING:

The Saloon siding at VSKP end of the yard with one side entry is taking off from Common Loop (Line No. 1). The entrance point No. 60A and corresponding derailing switch point No. 60B are motor operated from Panel/VDU at Panel Room. Entrance & Exit from the Saloon Siding is being controlled by Shunt Signals No. SH6A, 10A & SH27A/B respectively, operated from Panel/VDU at Panel Room.

IOH LINES, LINE NO. 1, 2 & 3 COACH MAINTENANCE LINES, LINE NO. 1, 2, 3 & 3A SPUR LINES, LINE NO. 4 & 5, STABLING LINE, SAIL SIDING, GOODS SHED LINES, LINE NO. 1 & 2:

All the above mentioned non running lines/sidings are situated at VSKP end of the yard with a common one side entry is taking off at CH: 702.0m in the yard with reverse position of motor operated point No. 43 working as isolation/derailing switch as well. Entrance towards these non running lines/sidings is being controlled by Shunt Signals No. SH (30) & SH(16,18,20,22,24,28)A,SH32 up to the STOP BOARD at CH: 728.90m. A common Shunt Signal No. SH5 (A-G) governs all the exit from these non running lines/sidings. Beyond the mentioned STOP BOARD at CH728.90m, the Entrance & Exit to the respective non running lines/sidings is being controlled by operating various non-interlocked points as shown in Station Working Rule Diagram at different chainages of the yard. These non-interlocked hand points are operated by an arc lever at site. All the movements beyond the SB at CH: 728.90m is being controlled by Hand Signals in responsibility of Shunting Master.

9.0 A WORKING OF TRAINS DURING FAILURE OF ALL SIGNALS(IN DOUBLE LINE) AUTOMATIC BLOCK SYSTEM LIKELY TO LAST FOR SOME TIME AND CAUSE SERIOUS DELAY WHILE MEANS OF COMMUNICATIONS ARE AVAILABLE (REF SR 9.12.01):

- (a) The Station Master shall inform the controller and the concerned Station Master of the affected section.
- (b) Station Master shall advise the Loco Pilot and guard of each train of the fact before allowing it to enter the affected section.
- (c) SM on duty at the station in rear of the affected section shall obtain line clear as per SR 9.12.01 (c) supported by private number and ID No.
- (d) Line clear shall be granted by the station master of the station in advance when the following conditions are fulfilled:-
 - i) The whole of the last proceeding train has arrived complete.
 - ii) The line on which it is intended to receive the train is clear up to starter and for a distance of 180 meters beyond it.
 - iii) All signals behind the said train have been put back to 'ON'.
 - iv) All points have been correctly set and all facing points locked for the admission of the train on said line.
 - v) On obtaining line clear, Station Master shall hand over to the Loco Pilot.

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- An Authority to proceed on prescribed form T/D 912 to pass departure/Gate signals/ Automatic Stop Signal/Semi Automatic Signal.
 - A Caution Order: Speed restriction for First train is 25 KMPH. Subsequent trains may run on normal speed.
- (e) Before handing over the “authority to proceed”. SM (Panel) on duty shall ensure that all points over which train will pass shall be correctly set and all facing points locked.
- (f) The station master of the station in advance shall receive the train by taking-off the reception signals and give train arrival report supported by a private number.
- (g) Train signal register book shall be brought into use and all entries regarding train working shall be recorded in TSR. Section controller shall be advised about movement of all trains in the affected section.
- (h) As soon as signals are put right by the competent authority normal working of trains on automatic block system shall be resumed after exchange messages with private numbers by the SMs concerned assuring that section is clear, controller’s advice shall be obtained before resumption of normal working.
- (i) All records in connection with train working on this system shall be retained at the station for inspection by the Transportation Inspector of the section.

B WORKING OF TRAINS DURING FAILURE OF ALL SIGNALS (IN DOUBLE LINE) AUTOMATIC BLOCK SYSTEM LIKELY TO LAST FOR SOME TIME AND CAUSE SERIOUS DELAY WHEN NO MEANS OF COMMUNICATIONS ARE AVAILABLE (REF SR 9.12.02):

- i) SM shall stop the train and advice the Loco Pilot and guard of the circumstances.
- ii) All points over which trains will run will be correctly set and facing points to be locked accordingly.
- iii) The SM to issue T/B 912, which includes the following documents to the Loco Pilot of each train.
- a) Authority to proceed without line clear.
 - b) Caution Order Speed - 25 KMPH when view ahead is clear.
10 KMPH when view ahead is not clear.
 - c) Authority for Loco Pilot to pass departure signal/automatic signal/semi- automatic/Gate Stop Signal at on in the section.
- iv) Subsequent trains shall be allowed to enter the affected section after an interval of 15 minutes.
- v) Starter signal can be taken off.
- vi) When view ahead is not clear, the Asst. Loco Pilot or Brakes man/Guard shall be sent in advance with hand signal to guide the movement.
- vii) The Guard shall keep sharp loop out in the rear and be prepared to exhibit hand signal and flare signal to prevent the approach of a train from rear and protect it, if necessary as per extent rules.
- viii) When approaching the station ahead, Loco Pilot to stop the train at the HOME SIGNAL and sound one continuous long whistle.
- ix) After the train has been brought to a stand outside the HOME SIGNAL, SM (Panel) shall take off the signal to admit the train.
- x) If within 5 minutes neither the signal is taken off nor any one turns up from the station, Loco Pilot/Guard shall take action to inform the SM (Panel) and protect the train in rear as per rules.
- xi) On arrival at station, the Loco Pilot shall handover T/B 912 to the SM on duty to keep it in his personal custody for inspection by Transportation Officials.
- xii) On restoration, SM of both stations are to ensure that the section is clear of trains supported by PNs, Section controller to be consulted and order number to be obtained to resume normal working.

C WORKING OF TRAINS UNDER AUTOMATIC BLOCK SYSTEM (DOUBLE LINE) DURING OBSTRUCTION OF ONE LINE WHEN SIGNALS ARE OPERATED AND COMMUNICATIONS ARE AVAILABLE (REF SR 9.12.03):

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- (a) Before introducing Temporary Single Line working station master at either end of the affected section shall be ensured the line on which Temporary Single Line working shall be introduced is clear and free from obstruction to this effect obtain written certificate from Guard/Loco Pilot/PWI/Traction Foreman.
- (b) Single line working shall be introduced between nearest station having cross over between up and down line.
- (c) Temporary Single Line working shall be introduced in consultation with control and message shall be exchanged between station masters of both stations supported by private number.
- (d) For all trains running on wrong direction and for each first train running right direction Line Clear shall be obtained on phone supported by Private Number and Identification Number shall be exchanged when line clear is obtained on control phone.
- (e) For trains running in the wrong direction, Line Clear shall be given when:-
- i) The whole of the last preceding train has arrived complete.
 - ii) The line on which the train is to be received is clear up to the fouling mark or starter, if any at the trailing end.
 - iii) All points at the approaching end on the said line are correctly set and facing point locked.
- I. For each first train to run on right direction line clear shall be given when:-
- The last train running on the wrong direction has arrived complete at the station at the other end and private number exchanged.
 - Line is clear for at least 180 meters beyond the First Stop Signal.
- II. Subsequent train shall be allowed to follow each other on automatic signal indication provided the SM of the rear station is intimated by the SM of advance station that he is ready to admit the train supported by private number.
- ❖ The following documents shall be given to the Loco Pilot of all trains running on wrong direction and each first train on right direction.
- 1) Paper Line Clear Ticket with PN & ID No. (DN – T/D 1425 & UP T/C 1425).
 - 2) An authority on prescribed form (T/A-912).
 - 3) Caution Order:-

Speed restriction for first train is 25 KMPH and subsequent train may run on normal speed. Loco Pilot of first train shall inform to Gangman/Gateman /Keyman on the way regarding TEMPORARY SINGLE LINE working. The Caution Order shall also have following particulars:-

1. The line on which TEMPORARY SINGLE LINE working is introduced.
 2. The kilometreage at which the obstruction exists on other line.
 3. Speed restrictions if any.
- All fixed signals for the train running on right direction shall be taken off.

- (f) Trains running on wrong line shall be piloted out at dispatching station on T/A 912 and piloted in at the receiving station on authority of T/369 (3b).
- (g) On receipt of written message from Loco Pilot/Guard/PWI/Traction Foreman that the obstruction is removed and line is free for passage of trains, station master shall issue message to the station master at the other end of the affected section supported by private number. Normal working shall be resumed after ensuring clearance of the section with consultation of control.

D WORKING OF TRAINS UNDER AUTOMATIC BLOCK SYSTEM (DOUBLE LINE) DURING OBSTRUCTION OF ONE LINE WHEN NO MEANS OF COMMUNICATIONS ARE AVAILABLE (REF SR 9.12.04):

1. Before introducing single line working the SM at either end of the affected section must have information in writing from the Guard/Loco Pilot/TFO that one line is clear.

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2. If the SM of the station in advance of the obstructed section receives such information, he shall inform to the SM at the other end controlling the entry of trains into the obstructed block section through the Guard of a train. If there is no guard train dispatched message sent through one of his station staff/gang man who may proceed on foot or by using push trolley or any Public transport.
3. After sending message, SM shall not dispatch any train until the arrival of any engine/engine with brake van rake from the opposite side. He may send a train engine/light engine to open communication.
4. On receipt of the message, the SM of the controlling entry into the obstructed section shall sent acknowledgement through the Loco Pilot of train engine/light engine/engine with B-van to open communication.
5. If the information about the obstruction is recovered by the SM of station controlling entry of trains into the obstructed section shall send message and also line clear enquiry message to the SM at other end of the section through one of his station staff/Gangman who may proceed to on foot or by push trolley or by using public transport.
6. SM on receipt of such message shall arrange to send acknowledgement by the said railway employ, which shall proceed on foot or by any train/engine. A conditional line clear reply message shall be given for the line clear enquiry message.
7. After the SMs of the station on either end of the obstructed section have become aware of the obstruction, the trains shall continue to work as and when trains are worked on single line, when suspension of panel and no communication is available.
8. When obstruction is removed and both the SMs are informed trains shall be worked as per SR 9.12.02.
9. If any means of communication is available the procedure detailed in SR 9.12.03 shall be observed.

E WORKING OF TRAINS UNDER AUTOMATIC BLOCK SYSTEM (IN DOUBLE LINE) DURING FAILURE OF MEANS OF COMMUNICATION WHEN SIGNALS ARE OPERATED (REF SR 9.12.05):

- a. The Station Master of the station in rear of the affected section shall in consultation with the Section Controller, or with the Station Master of the station immediately in rear of his station, if Section Controller is not available, ascertain the number and description of train (s) in the section and the expected time of arrival at his station. He shall then decide the sequence for allowing the trains into the affected section keeping in view the order of precedence and make out a list in duplicate under his stamp and signature indicating the number and description of the trains in the sequence in which the trains shall be allowed to leave his station.
- b. Before the first trains of the series so listed, is allowed to enter the affected section, it shall be brought to a stop. A Caution Order shall be issued to the Loco Pilot and Guard detailing the circumstances and advising the Loco Pilot to bring his train to stop outside the First Stop Signal of the station in advance and sound the prescribed code of whistle and thereafter be guided by the instruction of the Station Master of the station in advance. The Loco Pilot shall also be given a copy of the list (mentioned in sub-rule (a) to be handed over to the Station Master of the station in advance.
- c. On arrival of the train at the station in advance of the affect section, the Loco Pilot shall hand over the list to the Station Master and the latter shall paste the same and make necessary entries in the log register about the number and description of the trains according to the sequence shown therein. As and when the train actually passes/arrives his station he shall score out the train number and description from the list indicating the time of its arrival/passing, until and unless he is advised otherwise by the Station Master of the station in rear in the similar manner.
- d. After sending out the list through the Loco Pilot as per sub rule (b) above, the Station Master of the station in rear shall paste the other copy in his train log register. Subsequent train (s) of the list need not be stopped out of course, provided they are allowed to enter the affected section in the same sequence as detailed in the list. As each train enters the section, he shall also score out the train number and description from his list.
- e. If due to any operational exigencies, it becomes necessary to change the sequence for running of the trains in the affected section or on the completion of the movement of all the trains in the list

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already sent, a fresh list shall be prepared with necessary remark for any change in the sequence of the previous list and action taken for working of the subsequent trains as per fresh list in the same manner as indicated in sub rule (b) to (d) above.

F. PROCEDURE FOR WORKING OF TRAINS UNDER AUTOMATIC BLOCK SYSTEM (SINGLE LINE) DURING SUSPENSION OF THE PANEL WORKING AND WHEN NO MEANS OF COMMUNICATION ARE AVAILABLE. (REFER SR 9.12.06):

In event of suspension of the panel working between two consecutive block stations when direction of traffic cannot be established and when no means of communication are available, trains shall be worked between the station concerned in the manner laid down in SR 6.02.04 along with the Authority (T/B602) in which authority to pass signal in 'ON' position may be scored out. In order to pass automatic signals in "ON" position, an authority in the prescribed form T/A-912 shall be issued. This form shall indicate the individual number of Automatic/Semi-automatic signal passed by Loco Pilot in case of departure signal(s), the Loco pilot shall pass such signal(s) only on being hand signaled past by a competent Railway servant. In case of Gate signal(s), the Loco pilot shall pass such signal(s) cautiously up to the level crossing where he shall ascertain that the gates are closed and locked against the road traffic and proceed hand signal is displayed by the Gateman before he proceeds further.

G. PROCEDURE FOR WORKING OF TRAINS UNDER AUTOMATIC BLOCK SYSTEM (SINGLE LINE) DURING SUSPENSION WHEN DIRCTION OF TRAFFIC CANNOT BE ESTABLISHED BUT LINE CLEAR CAN BE OBTAINED FROM THE BLOCK STATION IN ADVANCE BY ONE OF THE FOLLOWING MEANS WHICH SHALL BE USED IN THE ORDER OF PREFERENCE LAID DOWN BELOW (REFER SR 9.12.07):

H. REPORT OF FAILURE:

Rule No. 7.24 of BWM is to be followed.

10. VISIBILITY TEST OBJECT:

The Line No. 1 (Common Loop) starters signals on either direction during day and night are the visibility test objects for UP and DN lines vide GR 3.61 (2) (b) (iii).

11. ESSENTIAL EQUIPMENTS AT THE STATION:

(Details are given in Appendix-'E')

12. FOG SIGNAL MEN NOMINATED TO BE CALLED IN CASE OF FOG: FOG SIGNALING:

In case of thick, foggy or tempestuous weather impairing visibility, whenever it is necessary to indicate to the Loco Pilot of an approaching train the locality of a signal, the SM on duty at station shall arrange for signaling in terms of General Rules 3.61 and Subsidiary Rules thereto. The assurance of the staff shall be obtained in the month of OCTOBER every year in the Fog Signal Register vide SR 3.61 as a token of their acknowledgement in fog signaling Rules.

Fog signalmen shall be detailed for duty at stations being recruited partly from the station traffic staff and partly from Engineering Gang man and must not be substitutes or casual labour but regular employees of the railway.

STATION DETONATOR REGISTER (OPT/124)

A Register regarding detonator is maintained at the station.

INSTRUCTIONS:

- a. This register contains the following parts.

Part. - I: Particulars of fog signal men posted at the station from time to time.

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- Part – II: Particulars of receipt and stock of detonating (fog) signals at the station to be filled in whenever detonators are used or received.
- Part – III: Periods of fogs, fog signalmen on duty and details of detonators used.
- Part – IV: Particulars of issue and testing of fog signals at the station.
- b. As soon as a man is posted to or detailed for duty at a station as a Fog Signalman, the Station Master must satisfy himself that the man is fully acquainted with and understands the rules relating to the placing of detonating (fog) signals at stations during thick or foggy weather. As an assurance of this, the Station Master shall take the signature or thumb impression of such men in the appropriate column of Part - I of this register.
- c. In charge of the station shall ensure that the information maintained in the register is kept up to date and is accurate in all respects.
- d. Transportation inspectors shall check the registers and also the stock of detonators on hand each time they visit the station and initial with date as an indication having done so.

APPENDICES

- APPENDIX-A : WORKING OF LEVEL CROSSING GATES
- APPENDIX-B : SYSTEM OF SIGNALING AND INTERLOCKING AND COMMUNICATION AND ARRANGEMENTS AT THE STATION.
- APPENDIX-B1 : STAND BY OPERATION OF SIGNALS, POINTS, CRANK HANDLES, SIDING POINTS BY VDU (P.C)
- APPENDIX-C : ANTI COLLISION DEVICE (RAKSHA KAVACH)
- APPENDIX-D : DUTIES OF TRAIN PASSING STAFF AND STAFF IN EACH SHIFT
- APPENDIX-E : LIST OF ESSENTIAL EQUIPMENT PROVIDED AT THE STATION
- APPENDIX-F : RULES OF WORKING OF DK STATION, HALTS, IBH, IBS AND OUTLYING SIDINGS
- APPENDIX-G : RULES FOR WOKING OF TRAINS IN ELECTRIFIED SECTIONS

1.0 WORKING OF 'SPECIAL' CLASS INTERLOCKED LEVEL CROSSING GATE NO. 188 SITUATED AT KM. 433/23-25 [UP] & 433/24-22 [DN] BETWEEN BBS-MCS:

1.1 BRIEF DESCRIPTION:

1.	No. of Level Crossing Gate	:	188
2.	Engineering or Traffic gate	:	Engineering.
3.	Under control of station master or permanent way inspector.	:	SE (P.Way)/BRAG.
4.	Location at Km.	:	433/23-25 [UP] & 433/24-22[DN]
5.	At station	:	---
6.	In between station	:	BBS-MCS
7.	BG/MG/NG	:	BG
8.	Single line/double line/multiple line	:	Double line
9.	Normal position	:	Open
10.	Interlocked/ Non-Interlocked	:	Interlocked
11.	Means of Interlocking	:	Semi Automatic Gate Stop Signal
12.	Provision of gate signal at Km.	:	-
13.	Signaling arrangement	:	Semi Automatic Gate Stop Signal in both UP & DN direction
14.	Means of communication Telephone.	:	Telephone with SM (Panel)
15.	Width of the level crossing gate	:	9.40 m
16.	Type of road	:	Others
17.	Name of road	:	Municipality Road
18.	Metalled /Non-Metalled	:	Metalled
19.	Approach road	:	Bituminous
20.	Width of the road	:	9.20 m
21.	Angle of road crossing (in case of the SKEW gates)	:	-
22.	Road gradients (if any)	:	[a] North/East Side - Level
		:	[b] South/West Side – Level
23.	Road alignment (straight/Curve)	:	[a] North/East Side - Straight
		:	[b] South/West Side - Straight
24.	Provision of height gauges	:	Provided
25.	Type of barriers	:	Lifting barriers
26.	Length of check rails	:	12.60 m
27.	Road surface in between level crossing gates.	:	C.C. Block
28.	Length of rumble strip/ speed breakers.	:	9.20 m
29.	Road signs	:	Available
30.	Speed breakers indication board	:	Available
31.	TVU	:	1638400, August' 2012
32.	Census next due on	:	August' 2015
33.	Demarcation for placement of detonators.	:	Available
34.	No. of gateman working	:	03
35.	Nearest Railway Medical Assistance	:	Mancheswar
36.	Nearest Private Medical Assistance available (if any)	:	Bhubaneswar
37.	List of equipment available (Yes/No)	:	Yes

1.2.A. EQUIPEMENTS TO BE AVAILABLE AT THE GATE:

1.	LED tri-color hand signal lamp	3
2.	Hand Signal Flag Green	1 mounted on stick
3.	Hand Signal Flag Red	3 mounted on sticks
4.	Banner Flag Red	3
5.	Posts for exhibiting red banner flag	2
6.	Spare Chains with Padlocks	2 with stop mark
7.	Detonators	10 in tin case
8.	Gate lamps	2
9.	Tommy Bar	1
10.	Mortar Pan	1
11.	Spade/Fowrah	1
12.	Rammer	1
13.	Pick Axe	1
14.	Tin Case for Flags	1
15.	Cane for oil	1
16.	Water pot/Bucket	1
17.	Canister for Muster roll	1
18.	Set of spare spectacles of gateman wearing glasses	1
19.	Board demarcating protection of level crossing gate diagram in case of obstruction on gate	1
20.	Basket	1
21.	Whistle	1
22.	Wall clock	1
23.	Small Chain with padlock	2

B. RECORDS TO BE KEPT AT GATE LODGE:

In addition to the above equipment, following records shall also be kept at the Gate Loge.

- i) Gate Working Instructions in Hindi/English.
- ii) Gate Working, Instructions in local vernacular language.
- iii) Gateman Rule Book in local vernacular language.
- iv) List for tools and books.
- v) Duty Roster.
- vi) Certificate for working as gateman.
- vii) Bio-data particulars of Gatemen, including date of passing vision test, initial/refresher course, safety camp, etc.
- viii) Accident Register.
- ix) Record of last census of road traffic at Level Crossing gate.
- x) Public Complaint Book.
- xi) Inspection Book.
- xii) S&T register.

1.2. C. Approach Warning has been provided.

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1.3 INTERLOCKING AND NORMAL WORKING:

This gate is interlocked with Semi Automatic Gate Stop Signal in both UP & DN direction. The interlocking is achieved by mechanically Ground lever frame & closure of the L.C.Gate Boom. The normal position of the gate is open. A four-lever ground frame is provided at the gate lodge. When it is necessary to close the gate for passage of a train, the Station Master on duty shall inform the Gateman to close and lock the gate.

The function of the lever frames are illustrated below:

- Lever No. 1 Spare
- Lever No. 2 Boom locking lever
- Lever No. 3 UP Semi Automatic Gate Stop Signal
- Lever No. 4 DN Semi Automatic Gate Stop Signal

The Gateman on duty shall then close the barriers of the L.C. Gate by operating winch. The key 'X1' is to be extracted from the winch, which will be inserted in the lever of GF2. When GF2 reversed locks the booms of the gates and releases GF3, GF4 and Key X2. GF3 and GF4 reversed along with Key X2 inserted in EKT will clear UP Semi Automatic Gate Stop Signal and DN Semi Automatic Gate Stop Signal respectively.

One panel is provided at the gate lodge.

INDICATIONS ON LC GATE PANEL:

- (i) Both UP and DN Gate signals & Road signal indications are available in the level crossing gate indication panel.
- (ii) Approach warning indication is available in the level crossing gate indication panel. Audible warning and visual warning for road traffic is provided from 2 Km. in rear from the L.C. Gate in both UP & DN direction. When a train approaches red indication glows with buzzer. The buzzer continues till the level crossing gate is closed against road traffic and locked.
- (iii) Both level crossing gate closed and locked indications are available. A white indication shows when gate is closed and lock indication (Red) appear in the panel when signal is taken off. Emergency gate release indication 'red' glows when gate lock becomes free after two minutes of emergency operation.

FAILURE OF TRACK CIRCUIT CONTROLLING LC GATE:

In case of failure of track circuit controlling level crossing gate, Emergency gate release facility is provided. One sealed Emergency button is available in level crossing gate panel, after putting back the signals ON, seal is to be broken and pressed for emergency operation. After lapse of two minutes lock free indication will glow and then key can be extracted from EKT for opening of level crossing gate. After passage of the train this signal levers to be normalized and this lock lever to be made normal. This will be inserted in the winch and unlock to open the gate by operating the winch.

To avoid the detention to the road traffic at the Level Crossing gate, the gate signals should not be taken off too early in advance and L.C. Gate should not be kept closed for more than 10minutes at a stretch. [Refer SR 16.03.01 (b)]

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1.4. INTIMATION TO GATEMAN:

- i) Station Master shall advise the gateman through telephone, the number, description, direction and expected time of the passage of the train at the gate.
- ii) Station Master will convey this advice to the gateman before obtaining /granting line clear.
- iii) It should be the duty of the gateman to ensure that the gate is closed in time, so that there is no detention to the train or excessive detention to road traffic.

1.5 DUTIES OF GATEMAN:**1) ALERTNESS:**

The gateman shall be alert and be prepared to take immediate action, should danger be apprehended. Keys of the gate shall be in his personal custody.

2) POSITION DURING PASSAGE OF TRAINS:

During passage of trains, gateman will stand in the manner indicated below:

- i) Gateman will stand attentively in front of the gate lodge facing the approaching train.
- ii) In day time, gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.
- iii) In night time, gateman shall hold lighted hand signal lamp with white light facing the track.
- iv) He shall keep the whistle slung around his neck from a cord.

3) ROUTINE DUTIES OF GATEMAN:

- i) Gateman shall place red banner flag during emergencies and obstruction on the track.
- ii) Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
- iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.
- iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle / wagons / train / battery box on fire, shifted load, falling material like brake blocks, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.
- vi) Gateman shall also be prepared to repeat any signal which guard may give to Loco Pilot on walkie – talkie or in any other way.
- vii) If lifting barriers / leaf gates get damaged or becomes out of order, the gateman shall use the spare chain with disc and padlocks for securing the gate against road traffic.
- viii) Gateman shall report to the nearest SM, Gang mate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.
- x) At the gate whose signal have become defective, the gateman shall close and lock and lifting barriers / leaf gates on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the Loco Pilot to report the defect at the next station.
- xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
- xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.

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- xiii) Gateman shall work the gate as per Gate Working Instructions and remain well conversant with these instructions.
- xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
- xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- xvi) Gateman shall keep the road surface well watered and rammed in case of unmetalled roads.
- xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- xviii) Gateman on electrified section shall watch that road vehicles / animals passing from gate are within the height loading gauge provided on either side of the level crossing gate.
- xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.

4) **ACTION IN CASE OF UNUSUAL OCCURRENCE ON TRAIN:**

In case gateman observes anything unusual with a passing train, he shall take following action.

- i) He shall take prompt action to warn the Loco Pilot / guard of the passing train by showing red flag by day and red light by night.
- ii) He shall simultaneously try to draw the attention of the Loco Pilot / guard by whistling continuously, shouting, gesticulating, throwing ballast on the brake van or by any other means.
- iii) If Loco Pilot/guard fails to take notice, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of private number.
- iv) In case of train parting, gateman shall not show stop hand signal but shall show prescribed signal for train parting.
- v) He shall endeavor to attract the attention of the Loco Pilot/guard by whistling continuously, shouting, gesticulating and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible.
- vi) In case the train does not stop, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of private number.

5) **ACTION IN AN EMERGENCY AT THE LEVEL CROSSING:**

- i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
 - ii) Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connecting by telephone, regarding the defects/obstructions at the gate, under exchange of private number.
 - iii) If there is no response from the Station Master after two or three attempts, he shall first protect the gate and then inform on phone.
- a) The gateman shall protect the line as under:-
- i) If both lines are obstructed the gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.
 - ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.

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- iii) Gateman shall then proceed to protect the gate along with detonators, LED tri-color hand signal lamp and red flag by day and red hand signal lamp by night.
- iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in Para iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
- vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- viii) Thereafter, he shall light up and fix the LED tri-color hand signal lamp to warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

b) Other action to be taken by Gateman:

- i) At night gateman shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub Para (a) above.
- ii) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers / leaf gates or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall take immediate action.
- iii) He shall note down the particulars of the road vehicle, vehicle number, name of the Driver, owner and relay these details to the nearest Station Master or Permanent Way Inspector regarding the particulars and obstructions at the level crossing gate, through messenger or other means available.

1.6 FAILURE OF TELEPHONIC COMMUNICATION:

When Telephonic Communication fails or it does not get any response from the Gateman despite 2 or 3 attempts, the following procedure should be adopted:

- i) If the telephone fails at the gate connected with the Station at the dispatching end, station master shall then issue a caution order to the Loco Pilot of the departing train.
- ii) Station master shall advise the Loco Pilot to whistle continuously and proceed cautiously while approaching the gate.
- iii) In case the gate signal is ON he should stop short of gate signal and follow the procedure vide GR 9.15.
- iv) In case of an approaching train, the Station Master shall advise the Station Master at the dispatching end, under exchange of private number that the telephone at the gate has failed.
- v) The Station Master at the dispatching end shall then issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vi) Station master will also advise the gateman through gang man/patrolman/Loco Pilot of the first train that the telephone has become defective.

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- vii) Station master should also advise S & T staff responsible for maintenance of the telephone to rectify the defect at the earliest.
- viii) Normal working will be resumed only after S & T staff rectify the telephone and issue reconnection/ fit memo for the same.

1.7 FAILURE OF SEMI AUTOMATIC GATE SIGNAL:

(a) In case the semi automatic gate signal is at ON and "A" marker is illuminated, he should stop short of gate signal for one minute during day time and two minutes during night time, then proceed cautiously and follow the procedure laid vide GR 9.02.

(b) In case the semi automatic gate signal is at ON and "A" marker is extinguished, he shall sound the prescribed code of whistle to warn the Gateman and bring his train to stop in rear of the signal and if after waiting one minute during day and two minutes during night, the signal is not taken off he shall draw his train ahead cautiously up to the level crossing.

If the gate man is available and exhibiting hand signals, proceeded further past the level crossing gate cautiously, or

If the gate man is not available or is available but not exhibiting hand signals, stop in rear of the rear of the level crossing and after ascertaining that gates are closed against road traffic and on getting hand signals from the gateman, and in his absence from Assistant Loco Pilot, the Loco Pilot shall sound the prescribed code of whistle and cautiously proceed up to the next stop signal complying with GR 9.02. (Refer GR 9.15)

- (c) Station master should also advise S & T staff responsible for maintenance of the auto signal to rectify the defect at the earliest.
- (d) Normal working will be resumed only after S & T staff rectify the auto signal and issue reconnection/fit memo for the same.

1.8 FAILURE OF LIFTING BARRIERS OR LEAF GATES:

- i) When the gate cannot be closed due to failure of lifting barriers or leaf gates, the gateman will immediately inform the Station Master on duty, under exchange of private number, and ensure the lifting barriers or leaf gates do not foul the track.
- ii) He shall immediately fix red banner flag by day and red light by night on the post at that end first from which the train is approaching and then at the other end.
- iii) Gateman shall secure the gate against road traffic by means of safety chains and padlocks.
- iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light to the Loco Pilot of the approaching train.
- v) Station Master on duty shall issue caution order to the Loco Pilot of departing trains.
- vi) He shall also advise the Station Master at the dispatching end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vii) Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- viii) Normal working will resumed only after maintenance staff repair the lifting barrier/ leaf gates and issue reconnection/ fit memo for the same.

NOTE:

Authority to pass signals at "ON" position as per rules shall also be issued to the Loco Pilots of both departing and arriving trains.

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1.9 FAILURE OF GATE KEY WITH THE GATE IN CLOSED POSITION WHEN GATE KEY CANNOT BE EXTRACTED FOR OPENING THE GATE:

- (i) If the gate key cannot be extracted from the winch, the gate leaves or the key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange private number.
- (ii) Emergency operation facility is provided at the gate lodge for opening the gate in case of emergency. In such case the gate man on duty shall open the gate by applying emergency operation.
- (iii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of trains as prescribed for non-interlocked gates, should be adopted.
- (iv) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- (v) He shall also advise the Station Master at the dispatching end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vi) Station Master shall advise S & T staff responsible for maintenance of winch/gate leaves/key transmitter to rectify the defect at the earliest.
- (vii) Normal working will be resumed only after S & T staff repairs the winch/gate leaves/key transmitter and issue reconnection/ fit memo for the same.

1.10 FAILURE OF GATE KEY WITH THE GATE IN OPEN CONDITION:

- i. If the gate key cannot be extracted from the winch, gate lever or key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange of private number.
- ii. Emergency operation facility is provided at the gate lodge for opening the gate in case of emergency. In such case the gate man on duty shall open the gate by applying emergency operation.
- iii. Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- iv. Gateman shall secure the gate against road traffic by means of chains and padlocks and pass trains on hand signals.
- v. Station Master on duty shall issue caution order to the Loco Pilot of a departing train.
- vi. He shall also advise the Station Master at the dispatching end, under exchange of private number to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vii. Station Master shall advise S & T staff responsible for maintenance of winch/gate leaves/key transmitter to rectify the defect at the earliest
- viii. Normal working will resumed only after S & T staff repair the winch/gate leaves/key transmitter and issues reconnection/ fit memo for the same.

1.11 DEFECTIVE GATE SIGNALS:

- (a) The gateman shall treat the semi automatic gate signal as defective and must not take off them under following circumstances:
 - (i) If gate signals can be taken "OFF" without closing the gate, or
 - (ii) The key can be extracted from the operating winch when the gate is in open condition.
- (b) If the Gate or the Gate Signal becomes defective in "OFF" position, the gateman will make all efforts to put it at "ON" position even by cutting signal wires, if necessary.
- (c) The gateman will immediately advise the Station Master on duty, under exchange of private number, regarding defective gate signals.

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- (d) Thereafter, the gate must be treated as non interlocked and procedure for reception/ dispatch of trains as prescribed for failure of gate semi automatic signals should be adopted.
- (e) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.
- (f) Station Master on duty will issue caution order to the Loco Pilot of a departing train.
- (g) He shall also advise the Station Master at the dispatching end, under exchange of private number; to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (h) Station Master shall advise S & T staff responsible for maintaining the gate signal to repair the same at the earliest
- (i) Normal working will be resumed after S & T staff rectifies the defective gate signal and issue reconnection/ fit memo for the same.

1.12 OBSTRUCTION AT THE GATE:

- i) If the gate is broken by a road vehicle which is fouling the track or if lifting barriers/ leaf gates or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall immediately fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gateman shall advise the Station Master on duty, regarding the defects/obstructions at the gate, under exchange of private number.
- iii) Station Master on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- iv) If there is no response from the Station Master after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gateman shall then rush with detonators, LED tri-color hand signal lamp and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect gate as per Para 1.5 (5) above.
- vi) Thereafter he shall protect the gate from the other direction also.
- vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and relay these details to the Station Master who shall not start the train unless he has been assured by the gateman that the road vehicle or the lifting barriers/ leaf gates are not fouling the track.
- viii) The Station Master shall also inform the Station Master at the dispatching end, under exchange of private number, asking him not to dispatch any train in the block section from his end, until the track has been cleared of all obstruction.
- ix) After the track has been cleared of all obstructions the gateman shall inform the Station Master accordingly, under exchange of private number.
- x) Station Master shall then issue a caution order to Loco Pilot of all trains to proceed cautiously, and pass the reception/departure signal at "ON" position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and there after exhibit green hand signal, if the gate is not obstructed.
- xii) Station Master shall advise maintenance staff responsible fir maintaining the lifting barriers/leaf gate to repair the same at the earliest.
- xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers/ leaf gates and issue reconnection/ fit memo for the same.

1.13 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road

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vehicle or derailment which is visible to the gateman, the gateman and Station Master will adopt the procedure given under item No. 1.12 above. If the obstruction fouls the Level Crossing Gate, gate man must keep the gates closed against road traffic till the track is cleared of the obstruction.

2.0 WORKING OF 'SPL' CLASS LEVEL CROSSING GATE NO. 190 SITUATED AT KM. 441/1-3 [UP] & 441/4-2 [DN] IN BETWEEN BBS-RTN:

2.2 BRIEF DESCRIPTION:

1	No. of Level Crossing Gate	:	190
2	Engineering or Traffic gate	:	Engineering.
3	Under control of station master or permanent way inspector.	:	SE(P.Way)/BRAG.
4	Location at Km.	:	441/1-3 [UP] & 441/4-2[DN]
5	At station	:	---
6	In between station	:	BBS-RTN
7	BG/MG/NG	:	BG
8	Single line/double line/multiple line	:	Triple line
9	Normal position	:	Open
10	Interlocked/ Non-Interlocked	:	Interlocked
11	Means of Interlocking	:	Semi automatic Gate stop signal
12	Provision of gate signal at Km.	:	-
13	Signaling arrangement	:	Semi Automatic Gate Stop Signal in both UP & DN direction
14	Means of communication Telephone.	:	Telephone with SM (Panel)
15	Width of the level crossing gate	:	8.40 (UP), 9.0 (DN)
16	Type of road	:	Others
17	Name of road	:	Municipality Road
18	Metalled /Non-Metalled	:	Metalled
19	Approach road	:	Bituminous
20	Width of the road	:	8.6 mts
21	Angle of road crossing (in case of the SKEW gates)	:	-
22	Road gradients (if any)	:	[a]North/East Side – 1:40 [b] South/West Side – Level
23	Road alignment (straight/Curve)	:	[a] North/East Side – Straight/Curve [b] South/West Side - Straight
24	Provision of height gauges	:	Provided
25	Type of barriers	:	Lifting barriers
26	Length of check rails	:	12.20 (UP), 12.70 (DN)
27	Road surface in between level crossing gates.	:	Bituminous
28	Length of rumble strip/ speed breakers.	:	W-8.50, E-8.40
29	Road signs	:	Available
30	Speed breakers indication board	:	Available
31	TVU	:	1214848, August' 2012
32	Census next due on	:	August' 2015
33	Demarcation for placement of detonators.	:	Available
34	No. of gateman working	:	03
35	Nearest Railway Medical Assistance	:	Khurda Road
36	Nearest Private Medical Assistance available (if any)	:	Bhubaneswar
37	List of equipment available (Yes/No)	:	Yes

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2.2.A. EQUIPEMENTS TO BE AVAILABLE AT THE GATE:

1.	LED tri-color hand signal lamp	3
2.	Hand Signal Flag Green	1 mounted on stick
3.	Hand Signal Flag Red	3 mounted on sticks
4.	Banner Flag Red	3
5.	Posts for exhibiting red banner flag	2
6.	Spare Chains with Padlocks	2 with stop mark
7.	Detonators	10 in tin case
8.	Gate lamps	2
9.	Tommy Bar	1
10.	Mortar Pan	1
11.	Spade/ Fowrah	1
12.	Rammer	1
13.	Pick Axe	1
14.	Tin Case for Flags	1
15.	Cane for oil	1
16.	Water pot/Bucket	1
17.	Canister for Muster roll	1
18.	Set of spare spectacles of gateman wearing glasses	1
19.	Board demarcating protection of level crossing gate diagram in case of obstruction on gate	1
20.	Basket	1
21.	Whistle	1
22.	Wall clock	1
23.	Small Chain with padlock	2

B. RECORDS TO BE KEPT AT GATE LODGE:

In addition to the above equipment, following records shall also be kept at the Gate Lodge.

- i) Gate Working Instructions in Hindi/English.
- ii) Gate Working, Instructions in local vernacular language.
- iii) Gateman Rule Book in local vernacular language.
- iv) List for tools and books.
- v) Duty Roster.
- vi) Certificate for working as gateman.
- vii) Bio-data particulars of Gatemen, including date of passing vision test, initial/refresher course, safety camp, etc.
- viii) Accident Register.
- ix) Record of last census of road traffic at Level Crossing gate.
- x) Public Complaint Book.
- xi) Inspection Book.
- xii) S&T register.

2.2. C. Approach Warning has been provided

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2.3 INTERLOCKING AND NORMAL WORKING:

This gate is interlocked with Semi Automatic Gate Stop Signal in both UP & DN direction. The interlocking is achieved by mechanically Ground lever frame & closure of the L.C. Gate Boom. The normal position of the gate is open. A Five-lever ground frame is provided at the gate lodge. When it is necessary to close the gate for passage of a train, the Station Master on duty shall inform the Gateman to close and lock the gate.

The function of the lever frames are illustrated below:

- Lever No. 1 Boom locking lever.
- Lever No. 2 DN Gate Stop Signal GSA-234.
- Lever No. 3 UP Gate Stop Signal GSA-233.
- Lever No. 4 DN Mid Gate Stop Signal GSA-236.
- Lever No. 5 UP Mid Gate Stop Signal GSA-235.

The Gateman on duty shall then close the barriers of the L.C. Gate by operating winch. The key 'G1' is to be extracted from the winch, which will be inserted in the lever of GF1. When GF1 reversed locks the booms of the gates and releases GF2, GF3, GF4 and GF5 & Key G2. GF2 and GF3 reversed along with Key G2 inserted in EKT will clear DN Gate Stop Signal No. GSA-234 and UP Gate stop signal GSA-233. When GF4 or GF5 reversed along with Key G2 inserted in EKT will clear DN Mid Gate Stop Signal No. GSA-236 and UP Mid Gate stop signal GSA-235 respectively.

One panel is provided at the gate lodge.

INDICATIONS ON LC GATE PANEL:

- (i) Both UP and DN Gate signals for UP & DN line as well as for Common line & Road signal indications are available in the level crossing gate indication panel.
- (ii) Approach warning indication is available in the level crossing gate indication panel. Audible warning and visual warning for road traffic is provided from 2 Km. in rear from the L.C. Gate in both UP & DN directions for UP & DN line as well as for Common line. When a train approaches red indication glows with buzzer. The buzzer continues till the level crossing gate is closed against road traffic and locked.
- (iii) Both level crossing gate closed and locked indications are available. A white indication shows when gate is closed and lock indication (Red) appear in the panel when signal is taken off. Emergency gate release indication 'red' glows when gate lock becomes free after two minutes of emergency operation.

FAILURE OF TRACK CIRCUIT CONTROLLING LC GATE:

In case of failure of track circuit controlling level crossing gate, Emergency gate release facility is provided. One sealed Emergency button is available in level crossing gate panel, after putting back the signals ON, seal is to be broken and pressed for emergency operation. After lapse of two minutes lock free indication will glow and then key can be extracted from EKT for opening of level crossing gate.

After passage of the train this signal levers to be normalized and this lock lever to be made normal. This will be inserted in the winch and unlock to open the gate by operating the winch.

To avoid the detention to the road traffic at the Level Crossing gate, the gate signals should not be taken off too early in advance and L.C gate should not be kept closed for more than 10minutes at a stretch. (Refer SR 16.03.01 (b))

2.4. INTIMATION TO GATEMAN:

- i) Station Master shall advise the gateman through telephone, the number, description, direction and expected time of the passage of the train at the gate.
- ii) Station Master will convey this advice to the gateman before obtaining /granting line clear.
- iii) It should be the duty of the gateman to ensure that the gate is closed in time, so that there is no detention to the train or excessive detention to road traffic.

2.5 DUTIES OF GATEMAN:**1) ALERTNESS:**

The gateman shall be alert and be prepared to take immediate action, should danger be apprehended. Keys of the gate shall be in his personal custody.

2) POSITION DURING PASSAGE OF TRAINS:

During passage of trains, gateman will stand in the manner indicated below:

- i. Gateman will stand attentively in front of the gate lodge facing the approaching train.
- ii. In day time, gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.
- iii. In night time, gateman shall hold lighted hand signal lamp with white light facing the track.
- iv. He shall keep the whistle slung around his neck from a cord.

3) ROUTINE DUTIES OF GATEMAN:

- i) Gateman shall place red banner flag during emergencies and obstruction on the track.
- ii) Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.

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- iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.
- iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle / wagons / train / battery box on fire, shifted load, falling material like brake blocks, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.
- vi) Gateman shall also be prepared to repeat any signal which guard may give to Loco Pilot on walkie – talkie or in any other way.
- vii) If lifting barriers / leaf gates get damaged or becomes out of order, the gateman shall use the spare chain with disc and padlocks for securing the gate against road traffic.
- viii) Gateman shall report to the nearest SM, Gang mate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.
- x) At the gate whose signal have become defective, the gateman shall close and lock and lifting barriers / leaf gates on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the Loco Pilot to report the defect at the next station.
- xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
- xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- xiii) Gateman shall work the gate as per Gate Working Instructions and remain well conversant with these instructions.
- xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
- xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- xvi) Gateman shall keep the road surface well watered and rammed in case of unmetalled roads.
- xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- xviii) Gateman on electrified section shall watch that road vehicles / animals passing from gate are within the height loading gauge provided on either side of the level crossing gate.
- xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.

4) **ACTION IN CASE OF UNUSUAL OCCURRENCE ON TRAIN:**

In case gateman observes anything unusual with a passing train, he shall take following action.

- i) He shall take prompt action to warn the Loco Pilot / guard of the passing train by showing red flag by day and red light by night.

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- ii) He shall simultaneously try to draw the attention of the Loco Pilot / guard by whistling continuously, shouting, gesticulating, throwing ballast on the brake van or by any other means.
- iii) If Loco Pilot/guard fails to take notice, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of private number.
- iv) In case of train parting, gateman shall not show stop hand signal but shall show prescribed signal for train parting.
- v) He shall endeavor to attract the attention of the Loco Pilot/guard by whistling continuously, shouting, gesticulating and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible.
- vi) In case the train does not stop, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of private number.

5) **ACTION IN AN EMERGENCY AT THE LEVEL CROSSING:**

- i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
 - ii) Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connecting by telephone, regarding the defects/obstructions at the gate, under exchange of private number.
 - iii) If there is no response from the Station Master after two or three attempts, he shall first protect the gate and then inform on phone.
- a) The gateman shall protect the line as under (for double line):-
- i) If both lines are obstructed the gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.
 - ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
 - iii) Gateman shall then proceed to protect the gate along with detonators, Battery Operated LED based flashing lamps and red flag by day and red hand signal lamp by night.
 - iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
 - v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in Para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
 - vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.

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- vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
 - viii) Thereafter, he shall light up and fix the Battery Operated LED based flashing lamp to warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.
- b) The Gateman shall protect the line as under (for single line):-**
- (i) Gate man shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the direction from which a train is expected to arrive first.
 - (ii) Then he will similarly plant the other red banner flag by day and red light by night towards the other direction 5 meters away from the site of obstruction.
 - (iii) Gatemen shall then proceed to protect the gate along with detonators, battery operated LED based flashing lamp and red flag by day and red hand signal lamp by night.
 - (iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night towards the direction from which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 meters on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
 - (v) Thereafter, he shall proceed towards the other direction, showing red hand signal, similarly place detonators as described in Para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
 - (vi) Having returned to the gate, he must then like steps to remove the obstruction and warn the Loco pilot of the approaching train.
 - (vii) In case the Gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as the can go.
 - (viii) Thereafter, he shall light up battery operated LED based flashing lamp to warn the Loco Pilot and stop the approaching train by waving this red flag by day red hand signal lamp by night repeatedly.
- (c) Other action to be taken by Gateman:**
- (i) At night Gateman shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub Paras (a) and (b) above.
 - (ii) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers / leaf gates or any other part of the gate foul the track, or if there is any other obstruction at the gate, the Gateman shall take immediate action.
 - (iii) He shall note down the particulars of the road vehicle, vehicle number, name of the Driver, owner and relay these details to the nearest Station Master or Permanent Way Inspector regarding the particulars and obstructions at the level crossing gate, through messenger or other means available.

2.6 FAILURE OF TELEPHONIC COMMUNICATION:

When Telephonic Communication fails or it does not get any response from the Gateman despite 2 or 3 attempts, the following procedure should be adopted:

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- i) If the telephone fails at the gate connected with the Station at the dispatching end, station master shall then issue a caution order to the Loco Pilot of the departing train.
- ii) Station master shall advise the Loco Pilot to whistle continuously and proceed cautiously while approaching the gate.
- iii) In case the gate signal is ON he should stop short of gate signal and follow the procedure vide GR 9.15.
- iv) In case of an approaching train, the Station Master shall advise the Station Master at the dispatching end, under exchange of private number that the telephone at the gate has failed.
- v) The Station Master at the dispatching end shall then issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vi) Station master will also advise the gateman through gang man/patrolman/Loco Pilot of the first train that the telephone has become defective.
- vii) Station master should also advise S & T staff responsible for maintenance of the telephone to rectify the defect at the earliest.
- viii) Normal working will be resumed only after S & T staff rectify the telephone and issue reconnection/ fit memo for the same.

2.7 FAILURE OF SEMI AUTOMATIC GATE SIGNAL:

- (a) In case the semi automatic gate signal is at ON and "A" marker is illuminated, he should stop short of gate signal for one minute during day time and two minutes during night time, then proceed cautiously and follow the procedure laid vide GR 9.02.
- (b) In case the semi automatic gate signal is at ON and "A" marker is extinguished, he shall sound the prescribed code of whistle to warn the Gateman and bring his train to stop in rear of the signal and if after waiting one minute during day and two minutes during night, the signal is not taken off he shall draw his train ahead cautiously up to the level crossing.
 - (i) If the gate man is available and exhibiting hand signals, proceeded further past the level crossing gate cautiously, or
 - (ii) If the gate man is not available or is available but not exhibiting hand signals, stop in rear of the rear of the level crossing and after ascertaining that gates are closed against road traffic and on getting hand signals from the gateman, and in his absence from Assistant Loco Pilot, the Loco Pilot shall sound the prescribed code of whistle and cautiously proceed up to the next stop signal complying with GR 9.02. [Refer GR 9.15]
- (c) Station master should also advise S & T staff responsible for maintenance of the auto signal to rectify the defect at the earliest.
- (d) Normal working will be resumed only after S & T staff rectify the auto signal and issue reconnection/fit memo for the same.

2.8 FAILURE OF LIFTING BARRIERS OR LEAF GATES:

- i) When the gate cannot be closed due to failure of lifting barriers or leaf gates, the gateman will immediately inform the Station Master on duty, under exchange of private number, and ensure the lifting barriers or leaf gates do not foul the track.
- ii) He shall immediately fix red banner flag by day and red light by night on the post at that end first from which the train is approaching and then at the other end.

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- iii) Gateman shall secure the gate against road traffic by means of safety chains and padlocks.
- iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light to the Loco Pilot of the approaching train.
- v) Station Master on duty shall issue caution order to the Loco Pilot of departing trains.
- vi) He shall also advise the Station Master at the dispatching end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vii) Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- viii) Normal working will resumed only after maintenance staff repair the lifting barrier/ leaf gates and issue reconnection/ fit memo for the same.

NOTE:

Authority to pass signals at "ON" position as per rules shall also be issued to the Loco Pilots of both departing and arriving trains.

2.9 FAILURE OF GATE KEY WITH THE GATE IN CLOSED POSITION WHEN GATE KEY CANNOT BE EXTRACTED FOR OPENING THE GATE:

- i) If the gate key cannot be extracted from the winch, the gate leaves or the key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange private number.
- ii) Emergency operation facility is provided at the gate lodge for opening the gate in case of emergency. In such case the gate man on duty shall open the gate by applying emergency operation.
- iii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of trains as prescribed for non-interlocked gates, should be adopted.
- iv) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- v) He shall also advise the Station Master at the dispatching end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vi) Station Master shall advise S & T staff responsible for maintenance of winch/gate leaves/key transmitter to rectify the defect at the earliest.
- vii) Normal working will be resumed only after S & T staff repairs the winch/gate leaves/key transmitter and issue reconnection/ fit memo for the same.

2.10 FAILURE OF GATE KEY WITH THE GATE IN OPEN CONDITION:

- i) If the gate key cannot be extracted from the winch, gate lever or key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange of private number.
- ii) Emergency operation facility is provided at the gate lodge for opening the gate in case of emergency. In such case the gate man on duty shall open the gate by applying emergency operation.
- iii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of trains as prescribed for non-interlocked gates should be adopted.

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- iv) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass trains on hand signals.
- v) Station Master on duty shall issue caution order to the Loco Pilot of a departing train.
- vi) He shall also advise the Station Master at the dispatching end, under exchange of private number to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vii) Station Master shall advise S & T staff responsible for maintenance of winch/gate leaves/key transmitter to rectify the defect at the earliest
- viii) Normal working will resumed only after S & T staff repair the winch/gate leaves/key transmitter and issues reconnection/ fit memo for the same.

2.11 DEFECTIVE GATE SIGNALS:

- (a) The gateman shall treat the semi automatic gate signal as defective and must not take off them under following circumstances:
- (b) If gate signals can be taken "OFF" without closing the gate, or
- (c) The key can be extracted from the operating winch when the gate is in open condition.
- (d) If the Gate or the Gate Signal becomes defective in "OFF" position, the gateman will make all efforts to put it at "ON" position even by cutting signal wires, if necessary.
- (e) The gateman will immediately advise the Station Master on duty, under exchange of private number, regarding defective gate signals.
- (f) Thereafter, the gate must be treated as non interlocked and procedure for reception/ dispatch of trains as prescribed for failure of gate semi automatic signals should be adopted.
- (g) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.
- (h) Station Master on duty will issue caution order to the Loco Pilot of a departing train.
- (i) He shall also advise the Station Master at the dispatching end, under exchange of private number; to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (j) Station Master shall advise S & T staff responsible for maintaining the gate signal to repair the same at the earliest
- (k) Normal working will be resumed after S & T staff rectifies the defective gate signal and issue reconnection/ fit memo for the same.

2.12 OBSTRUCTION AT THE GATE:

- i) If the gate is broken by a road vehicle which is fouling the track or if lifting barriers/ leaf gates or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall immediately fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gateman shall advise the Station Master on duty, regarding the defects/obstructions at the gate, under exchange of private number.
- iii) Station Master on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- iv) If there is no response from the Station Master after two or three attempts, he shall first protect the gate and then inform on phone.

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- v) Gateman shall then rush with detonators, Battery Operated LED based flashing lamp, and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect gate as per Para 2.5 (5) above.
- vi) Thereafter he shall protect the gate from the other direction also.
- vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and relay these details to the Station Master who shall not start the train unless he has been assured by the gateman that the road vehicle or the lifting barriers/ leaf gates are not fouling the track.
- viii) The Station Master shall also inform the Station Master at the dispatching end, under exchange of private number, asking him not to dispatch any train in the block section from his end, until the track has been cleared of all obstruction.
- ix) After the track has been cleared of all obstructions the gateman shall inform the Station Master accordingly, under exchange of private number.
- x) Station Master shall then issue a caution order to Loco Pilot of all trains to proceed cautiously, and pass the reception/departure signal at "ON" position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and there after exhibit green hand signal, if the gate is not obstructed.
- xii) Station Master shall advise maintenance staff responsible for maintaining the lifting barriers/leaf gate to repair the same at the earliest.
- xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers/ leaf gates and issue reconnection/ fit memo for the same.

2.13 **OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:**

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gateman and Station Master will adopt the procedure given under item No. 2.12 above. If the obstruction fouls the Level Crossing Gate, gate man must keep the gates closed against road traffic till the track is cleared of the obstruction.

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SYSTEM OF SIGNALING AND INTERLOCKING AND COMMUNICATION AND ARRANGEMENTS AT THE STATION

This is a 'Special' class station Standard-II (R) Interlocking (with isolations and is provided with Electronic Interlocking System). The points and Signals etc. are power operated from composite miniature central panel or VDU installed in the Station Master's Office. The Station is equipped with Multiple Aspect Colour Light Signaling.

1.1 DESCRIPTION OF PANEL:

The yard layout is depicted on the panel and the panel is fixed parallel to the track so that when the Station Master faces the panel, the yard drawing of the panel corresponds to the actual layout. A Visual Display Unit (Computer) is provided in the SM's office as a stand by option.

(The description and function of Visual Display Unit is given in Appendix-"B-1")

1.2 POINT PUSH BUTTON:

Points are normally operated automatically along with route setting operation. However, required points can be operated individually also. For this point push buttons, BLACK in colour is fitted over the point layout on the panel board. The individual operation of the electric point machine is controlled by these point push buttons in conjunction with the point group button (black with red dot) (N) or (R) as per requirement, fitted on the top of panel board.

- 1.2.1 When a point is set and locked in Normal position, a 'YELLOW' strip light on straight line indication appears suggesting that the point is in NORMAL position.
- 1.2.2 When a point is set and locked in REVERSE position, a 'YELLOW' strip light in reverse indication appears suggesting that the point is in REVERSE position.
- 1.2.3 When the points of any route have been correctly set and relevant signal is taken 'OFF', 'RED' indication appears near the points indicating that the concerned points are locked either in NORMAL or REVERSE.
- 1.2.4. When the points are neither set nor locked either in NORMAL or in REVERSE correctly, the normal and reverse indication will not be there but the indication will start flashing till such time the point is housed and locked properly in one of the positions. In such case points are to be set both ways by crank handle and clamped and padlocked. This indication will flash during point operation also.
- 1.2.5 All points over running lines are operated by electric point machines.
- 1.2.6 The cause for non setting of the point in the desired position shall be checked up by the SS (PF) on duty according to GR and SR 3.68.01 (c). If there is a defect other than an

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obstruction, this point shall be considered defective and action shall be taken for clamping and padlocking of these points in the desired position by the SS (PF) on duty himself for all trains according to SR 3.69.03 (c). In such case both ends of the point shall be clamped and padlocked.

1.2.7 **DESCRIPTION OF POINT PUSH BUTTON:**

a) **HWH END POINTS:**

Sl. No.	Button No.	Colour	Description
1.	41A/B WN	BLACK	Crossover point between UP and DN main lines.
2.	43 WN	BLACK	DS for isolation of all non running lines at CH: 724 m
3.	45A/B WN	BLACK	Crossover point between Shunting neck & the line connected to Hot Axle-cum Parcel siding.
4.	47A/B WN	BLACK	Crossover between DN Main line and the line connected to Hot Axle-cum Parcel siding.
5.	49A/B WN	BLACK	Crossover point between UP and DN main lines.
6.	51 A/B WN	BLACK	DS for isolation Entry/ dispatch point for Line No. 1 & 2 at HWH end.
7.	53A/B WN	BLACK	Entry/dispatch point for Line No. 4 at HWH end.
8.	55 WN	BLACK	DS for isolation of hot axle siding cum parcel siding from running lines.
9.	57A/B WN	BLACK	Crossover point between L2 & L3 at HWH end.
10.	59A/B WN	BLACK	Cross over point between L5 & L6.
11.	61A/B WN	BLACK	Crossover point between L3 & L4 at HWH end.
12.	63A/B WN	BLACK	Cross over point between L1 & L2.
13.	65A/B WN	BLACK	Cross over point between L2 & L3 HWH end.
14	67 WN	BLACK	Entry/dispatch point for Line No. 1 & 2 at HWH end.

b) **VSKP END POINTS:**

Sl. No.	Button No.	Colour	Description
1.	42A/B WN	BLACK	Crossover point between Common line and DN main lines.
2.	44A/B WN	BLACK	Cross over point between L5 & L6.
3.	46A/B WN	BLACK	Cross over point between L4 & L5.
4.	48A/B WN	BLACK	Entry/dispatch point for Line No.1 & 2 at VSKP end.
5.	54A/B WN	BLACK	Crossover point between L3 & L4 at VSKP end.
6.	56A/B WN	BLACK	Entry/dispatch point for Line No. 2 at VSKP end.
7.	60A/B WN	BLACK	Cross over point between Saloon siding and L1.
8.	62A/B WN	BLACK	Cross over point between UP line & Common Line.

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1.2.8 DESCRIPTION OF POINT GROUP BUTTON:

These are two buttons at the top of panel one for Normal and one for Reverse. These are coloured Black with red dot. The button is operated in conjunction with point button to operate the concerned point to the required setting.

1.3 SIGNAL PUSH BUTTON:

These are RED coloured push button on the panel near the stop signals on the panel. These are operated in conjunction with Route button (white coloured) to take 'OFF' the signals.

1.3.1(i) DESCRIPTION OF SIGNAL BUTTONS:

Sl. No.	Button No.	Colour	Description
1.	C1 A/B/C/D	RED with WHITE Dot	UP Calling-on signal for line No. 1, 4, 5 & 6.
2.	1 A/B/C/D	RED	UP Home signal for line No. 1, 4, 5 & 6.
3.	2 A/B/C/D	RED	DN Home Signals for line No. 1, 2, 3 & 4.
4.	C2 A/B/C/D	RED with White dot.	DN Calling-on signal for line No. 1, 2, 3 & 4.
5.	4 A/B/C/D	RED	DN Mid Home Signals for line No. 1, 2, 3 & 4.
6.	C4 A/B/C/D	RED with White dot.	DN Mid Calling-on signal for line No. 1, 2, 3 & 4.
7.	SH5	YELLOW	Shunt signal for line No. 1, 2, 3, 4, 5, 6 and hot axle
8.	SH6	YELLOW	Shunt signal for line No. 1, 2, 3, 4, 5, 6, saloon siding.
9.	SH7	YELLOW	Shunt signal for line No. 1, 2, 3, 4, 5, & 6.
10.	SH10	YELLOW	Shunt signal for line No. 1, 2, 3, 4, 5, 6 and Saloon siding.
11.	16	RED	Common Loop (Line L-1) Starter.
12.	SH16	YELLOW	Shunt signal for dispatch from Common Loop (L-1).
13.	17	RED	UP Loop Line Starter.
14.	C17	RED with White dot	UP Calling-on signal provided below Starter Signal No. 17.
15.	SH17	YELLOW	Shunt signal provided below Starter Signal No. 17.
16.	18	RED	DN Loop Line Starter.
17.	SH18	YELLOW	Shunt signal provided below Starter Signal No. 18.
18.	19	RED	Common Loop Line L-4 Starter.

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19.	C19	RED with White dot	Common Calling-on signal provided below Starter Signal No. 19.
20	SH19	YELLOW	Shunt signal provided below Starter Signal No. 19.
21.	20	RED	DN Common Loop Line L-4 Starter.
22.	SH20	YELLOW	Shunt signal for dispatch from L-4.
23.	SH21	YELLOW	Shunt signal for dispatch from L-3.
24.	SH22	YELLOW	Shunt signal for dispatch from L-5.
25.	SH23	YELLOW	Shunt signal for dispatch from L-2.
26.	SH24	YELLOW	Shunt signal for dispatch from L-6.
27.	25	RED	Common Loop L1 Line Starter.
28.	C25	RED with White dot	Common Calling-on signal provided below Starter Signal No. 25.
29.	SH25	YELLOW	Shunt signal provided below Starter Signal No. 25.
30.	SH27	YELLOW	Shunt signal for dispatch from Saloon siding.
31.	28	RED	DN Main Starter.
32.	SH28	YELLOW	Shunt signal for dispatch from L-3.
33.	29	RED	UP Main Line Starter.
34.	C29	RED with White dot	UP Main Calling-on signal provided below Starter Signal No. 29.
35.	SH29	YELLOW	UP Main Line signal provided below Starter Signal No. 29.
36.	SA31	RED	UP MID Advanced Starter (Semi Automatic).
37.	SH32	YELLOW	Shunt signal for dispatch from shunting neck.
38.	SA33	RED	UP Advanced Starter (Semi Automatic).
39.	SA34	RED	DN Advanced Starter (Semi Automatic).

- (ii) Auto working display panel for BBS-MCS and BBS-RTN Automatic signaling section is provided adjacent to the control cum indication panel.

1.3.2 **SIGNAL INDICATIONS:**

The indications of various aspects of signals provided in this yard are as follows.

- i) **RED:**
Red indication 'Danger' aspects and signifies stop dead till the signal is taken off.
- ii) **SINGLE YELLOW:**
Single yellow indicating 'caution' aspect and signifies proceed cautiously preparing to stop dead at the next stop signal.

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- iii) **DOUBLE YELLOW:**
Double yellow indicates 'attention' aspect and signifies proceed and prepared to pass the next signal at a restricted speed.
- iv) **GREEN:**
Green indicates 'clear aspect and signifies proceed'. The aspects of the signals are obtained at any time as shown on the panel.

1.4 **ROUTE BUTTONS:**

1.4.1 Route buttons are provided separately on each running line on the panel for initiation of route. Common route buttons are also provided for taking off starters. An individual route button is provided for taking off Advanced Starter for clearing the signals. It is necessary to operate the signal button and the concerned route button simultaneously for taking "OFF" concerned signal.

1.4.2 **DESCRIPTION OF ROUTE BUTTONS:**

Sl. No.	Button No.	Colour	Description
1	L1-UN	WHITE	Route button for 1D, 2A, 4A route for Common loop L/1 line set to main line.
2	L1-UN1	WHITE with BLACK dot	Route button for 1D, 2A, 4A route set to overrun line and for routes C-1D, C-2A, C-4A, SH6B, SH5F, SH7F, SH8B, SH10B for common loop L-1.
3	L2-UN	WHITE	Route button for 2B, 4B route set to DN loop L/2 set to main line.
4	L2-UN1	WHITE WITH BLACK DOT	Route button for 2B, 4B route set to overrun line and for routes C-2B,C-4B, SH5E, SH6C,SH7E,SH10C for DN loop L-2 .
5	L3-UN	WHITE	Route button for 2C, 4C, C-2C, C-4C,SH5D, SH6D, SH7D & SH10D routes for DN Main L-3.
6	L4-UN	WHITE	Route button for 1C set to Mid line, 2D & 4D set to main line route for common loop L-4 line.
7	L4-UN1	WHITE WITH BLACK DOT	Route button for 1C set to UP main line, 2D & 4D set to overrun line and for routes C-2D, C4D, SH5C, SH6E, SH7C & 10E for common loop L-4.
8	L4-UN2	WHITE WITH BLACK DOT	Route button for 1C set to DS 46B.
9	L5-UN	WHITE	Route button for 1B route set to Mid line and for route SH5B for UP Main L-5.
10	L5-UN1	WHITE WITH BLACK DOT	Route button for 1B route set to UP main line and for route SH6F, SH7B, SH10F & Calling on signal No.C1B for UP Main Line L-5.

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11	L6-UN	WHITE	Route button for 1A route set to UP main line for UP loop L-1.
12	L6-UN1	WHITE WITH BLACK DOT	Route button for 1A route set to mid line and for routes C-1A, SH5A, SH6G, SH7A & SH10G for UP loop.
13	31AT- UN	WHITE	Common route button for UP starter signal Nos. (17,19,25,29)B, Calling-on signal Nos. (17,19,25,29)B & Shunt signal No. SH(17,19,21,23,25,27,29)B up to UP mid Advanced Starter Signal No. 31.
14	33AT- UN	WHITE	Common route button for UP starter signal Nos. (17,19,25,29)A, Calling-on signal Nos. (17,19,25,29)A & Shunt signal No. SH(17,19,21,23,25,27,29)A up to UP Advanced Starter Signal No. 31.
15	34AT- UN	WHITE	Common route button for all DN starter signals (16.18.20.28) & shunt signal SH(16/18/20/22/24/28)B for shunting up to DN Advanced Starter Signal No. 34.
16	31 UN	WHITE	Route button for UP Advanced Starter Signal No. 31 for Common Line.
17	33 UN	WHITE	Route button for UP Advanced Starter Signal No. 33 for UP Line.
18	34 UN	WHITE	Route button for DN Advanced Starter Signal No. 34 (Semi automatic signal).
19	S/SDG UN	S/SDG	Route button for shunting to saloon siding with shunt signal No. SH(6,10)A.
20	HA/SDG- UN	WHITE	Route button for shunting to hot axle siding with shunt signal No. SH5G.
21	C/M/YD - UN	WHITE	Common Route button for shunting towards IOH lines, C. Maintenance Lines, Spur lines, good shed lines, with shunt signal No. SH (16/18/20/22/24/28) A and SH (32).
22	SH NECK- UN	WHITE	Route button for shunting to shunting neck with shunt signal No. SH5G.
23	A/S UN	WHITE	Route button for shunting to stabling line with shunt signal No. SH(25-27)C.

CRANK HANDLE PUSH BUTTON:

1.	CH-1	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 42 along with "TRANS" Push Button
2.	CH-2	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 48, 54, & 56 along with

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			“TRANS” Push Button
3.	CH-3	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 44, 62 along with “TRANS” Push Button
4.	CH-4	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 60 along with “TRANS” Push Button
5.	CH-5	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 46. along with “TRANS” Push Button
6.	CH-6	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 41. 49 along with “TRANS” Push Button
7.	CH-7	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 53. 59 along with “TRANS” Push Button
8.	CH-8	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 57. 61 & 65 along with “TRANS” Push Button
9.	CH-9	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 51, 63 & 67 along with “TRANS” Push Button
10.	CH-10	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 43, 45 along with “TRANS” Push Button
11.	CH-11	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 47 along with “TRANS” Push Button
12.	CH-12	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 55 along with “TRANS” Push Button.

MISCELLANEOUS PUSH BUTTONS:

1.	SM'S EMERGENCY POINT/KEY operation key.		This Key is to be inserted and operated in the event of Emergency Point operation.
2.	SM'S PANEL KEY.		To lock the control panel to prevent unauthorized operation.
3.	GROUP TRANS BUTTON	WHITE WITH BLACK DOT.	To be pressed to initiate Slot of Crank Handle along with concerned Crank Handle Button.

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4	GROUP RELEASE PUSH BUTTON	WHITE WITH BLACK DOT.	To be pressed to withdraw/Normalize the control of slot/Crank Handle operation along with concerned Slot/ Crank Handle push Button.
5	POINT GROUP NORMAL PUSH BUTTON	BLACK WITH RED DOT.	To be pressed to initiate “NORMAL” setting of point along with concerned point push button.
6	POINT GROUP REVERSE PUSH BUTTON	BLACK WITH RED DOT.	To be pressed to initiate “REVERSE” setting of point along with concerned point push button.
7	EMERGENCY ROUTE RELEASE PUSH BUTTON	WHITE WITH RED DOT.	To be pressed for emergency Route Release.
8	SIGNAL CANCELLATION PUSH BUTTON	RED	To be pressed for canceling a signal which is already then “OFF” or to release a Rout after passage of train.
9	SIGNALLAMP FAILURE / POINT FAILURE ACKNOWLEDGEMENT	RED WITH WHITE DOT	To be pressed for acknowledging signal lamp failure/ point failure Buzzer.
10	BUTTON HELD ACKNOWLEDGEMENT PUSH BUTTON	WHITE WITH RED DOT.	To be pressed for silencing button Held Buzzer in case of any push button remains pressed after the button is released.
11	Panel/PC switch		Required for selection of operation from PC or Panel.
12	DN AUTO GN	RED	King button for Auto working of advanced starter signal SA-34.
13	UP AUTO GN	RED	King button for Auto working of advanced starter signal SA-33.
14	UP AUTO GN	RED	King button for Auto working of mid advanced starter signal SA-31.

1.5 **MICRO LOCK INDICATION:**

A Micro lock Indication is provided on the top of the panel for noting the failure of the Micro lock of SSI unit. This EI unit consists of two Micro lock called Micro lock system ‘A1’ and system ‘B’. These two systems status (ON/OFF) will be indicated separately on the panel. If the Micro lock unit is ON, ‘GREEN’ indication will appears and if OFF ‘RED’ indication appears. If the any one of the “ON” line system fails automatically “OFF” line system will change to ‘ON’ line with a gap of 120 seconds. A system failure buzzer is provided on the panel board. To stop the Micro lock unit buzzer, SM (Panel) on duty has to press the system failure acknowledgement button provided on the top of the panel and intimate the same to ESM/JE/SE in charge for rectification of failure.

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1.6 **POINT FAILURE INDICATION (RED) /POINT FAILURE BUZZER/POINT FAILURE MUTING BUTTON (RED WITH WHITE DOT):**

Whenever there is failure of point due to non-setting, point failure indication flashing light appears near the point failure-muting button besides audible Buzzer. The buzzer stops when the point failure-muting button is pressed, but the flashing light above the muting button shall continue to glow. The flashing light at the concerned point zone can identify the defective point. After the failure is rectified, the flashing light above the muting button will disappear.

1.7 **FAILURE OF LED SIGNAL LAMP AND MUTING BUTTON:**

Led signal lamps have been used at this station. In case of failure of signal lamps will be indicated by the appearance of 'RED' light on panel and the flashing of the concerned signal aspect along with available buzzer which can be stopped by pressing the acknowledgement button but the RED light will glow till replacing the lamp, rectifies the failure. For rectification of failure SM (Panel) on duty should inform the ESM/JE/SE about the signal which has failed.

1.8 **EMERGENCY ROUTE RELEASE COUNTER:**

This counter is provided to register the number of operations made for emergency cancellation of route. The SM (Panel) must record the last number registered on the counter while taking over/handing over duty.

1.9 **EMERGENCY ROUTE RELEASE INDICATION (WHITE) EMERGENCY ROUTE RELEASE BUTTON (WHITE WITH RED DOT):**

The panel interlocking is based on the principle of 'DEAD APPROACH LOCKING'. As such when a route is set and signal is taken 'OFF' on the route, the route gets locked. Normally the route is released by the passage of the train over the route. When it becomes necessary to alter the route after the signal has been taken 'OFF' vide SR 3.36.02 (a), the concerned signal must be put back to Danger by simultaneously pressing the signal cancellation button and the concerned signal button. After this first the emergency route release button (white with red dot) positioned in the top of panel to be pressed and subsequently the concerned signal button is to be pressed releasing the emergency route release button. A Yellow light will lit indicating that the timer is working. After 120 seconds, the YELLOW light along with the YELLOW strip of light will disappear suggesting the route has been released.

In case the route illumination (YELLOW strip lights) does not disappear, it suggests that the route is not released/cancelled. In such case the concerned S&T staff should be advised immediately to get the emergency route release button sealed after rectification of fault if any. Each operation of emergency cancellation of route is recorded in the emergency route release counter by registering the next higher number. All such operations and the new number should be recorded in the station diary and in the train signal register.

1.10 **EMERGENCY POINT OPERATIONS (BLACK WITH RED DOT):**

Emergency point operation facility is provided to operate the point from the panel in case of failure of track circuit. A push button [Black with Red dot] is provided on the panel. If such

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operation is necessary, the SM (Panel) on duty after ensuring that emergency point key is 'IN' & no vehicle is standing on the concerned point shall press the emergency point operation button along with relevant point button simultaneously. Then retaining point button pressed emergency point button to be released and the point group normal button or point group reverse button is to be pressed for operating the point to 'Normal' or 'Reverse'. The on duty SM (Panel) should keep a proper record of all such operations.

1.11 **BUTTON HELD ACKNOWLEDGE (WHITE WITH RED DOT):**

All push button are self-restoring type. A button held acknowledgement push button along with a white light is positioned at the top of the panel. When any button gets stuck in pressed condition, a buzzer will sound along with flashing white light indication. The SM (Panel) shall stop the buzzer by pressing the button held acknowledgement button (white with Red dot). The buzzer will stop but the flashing white light will continue to glow until the pressed button is normalized. SM (Panel) on duty shall try to find out the pressed button for normalization or otherwise inform the maintenance staff to rectify.

1.12 **OVERLAP TIME RELEASE (WHITE LIGHT):**

Separate indications (White Light) for each overlap is provided near the starter signal to indicate the free or locked condition of overlap. This indication light will glow when overlap is locked by any Home Signal route and there will be no light when overlap is free. The locked indication starts flashing when the approaching train clears the rear end point zone track and occupies the berthing track. After a time release of 120 seconds the white flashing light will disappear indicating concerned overlap is free.

1.13 a. **TRACK CIRCUITS:**

All the running lines are provided with track circuits except line No. 3 & 6. The non-running lines/Sidings are also non track circuited. In addition there are continuous short length track circuits in advance of Advanced Starter Signals and Home signal in both the directions are also provided. For Calling-on signals (65M Rail length) track circuits are also provided in rear of the Home signals in both directions are provided. Indications for the above track circuits are available on panel/VDU at Panel Room. Yellow light on panel indicates track clear when signal route is set and Red light indicates track occupied condition. Normally the track shows no indication when the track is free & no signal route is set over it. Only point indication glows continuous. Continuous track circuits have been provided into control aspect of the Auto signals between BBS-MCS and BBS-RTN sections in both UP & DN main line as well as Common line between BBS-RTN section where as Steel girder bridge portion for DN main line at CH: 811M at HWH end are monitored by axle counter.

NOTE:

Before taking off reception and dispatch signals for UP and DN directions the SM (Panel) on duty should ensure that the entire route including overlap and berthing portion is clear of all obstructions by observing the indication of the track. The track indication will exhibit Red Light when track is occupied and 'YELLOW' light when track is clear.

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b. **AXLE COUNTER:**

- (i) Analog Axle Counters are provided on berthing portions of Line No. 3 & 6 in the yard for counting Axles 'IN' and counting axles 'OUT' which indicate whether the concerned berthing track monitored by analog axle counters is clear or occupied.
- (ii) Fiberglass trolley wheels are to be provided for push trolleys in lieu of trolley suppression track circuits.
- (iii) In case of failure of analog Axle Counter the re-setting of axle counter must be done as per the procedure given in Appendix-"B". In the event of failure of Axle Counter/ Track circuit the clearance of loop line and main lines will be ensured by physical check by the SM on duty and train shall be admitted as per GR 3.69 and SR thereto.

c. **PROCEDURE FOR RESETTING IN THE EVENT OF FAILURE OF AXLE COUNTER (WITH IN STATION YARD):**

When the analog Axle Counter fails, 'RED' indication will appear in the SM's panel. The SM on duty shall then physically verify the particular section. After physical verification if there is no obstruction over the line he shall advise the on duty TPM to open the line Verification box located by the side of the track and press the button. One 'YELLOW' indication appears in the panel. SM on duty shall then press line nominated button after inserting the common resetting key. The 'RED' and 'YELLOW' indications will disappear from the panel and 'GREEN' indication will appear.

The Veeder Counter provided on the panel will record next higher number indicating the number of such operations for the particular axle counter section. If 'GREEN' indication does not appear on the reset panel and 'RED' indication continues to appear, the sectional ESM/JE(S)/SE(s), may be advised that the concerned Axle Counter has failed and to attend for rectification.

The SM on duty shall pilot the trains if any, till the rectification.

Separate register shall be maintained in the Station to record every operation of resetting and the number in the veeder counter in addition this should be recorded in TSR. While taking over/handing over duties the SM shall record in the TSR the number displayed in the veeder counter and shall acknowledge the same.

1.14 **AUTOMATIC BLOCK SIGNALING:**

The UP & DN line between MCS-BBS has been divided into a series of automatic block signaling section each of which is the portion of the running line between two consecutive stop signals and the entry into each of which is governed by a stop signal.

In UP direction the section is divided into four numbers (viz. (UP Advanced Starter) SA32–GSA1, GSA1-GSA3, GSA3-AS5 & AS5-S1) of Automatic Block signaling section. Similarly, in DN direction, the section is divided into four numbers (SA34-GSA2, GSA2-GSA4, GSA4-

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GSA6 & GSA6-DN Home Signal of MCS) of Automatic Block signaling sections. Entry into each section is governed by a stop signal. Continuous track circuits have been provided into control aspect of the Auto signals.

UP & DN line between BBS-RTN has been divided into a series of automatic block signaling section each of which is the portion of the running line between two consecutive stop signals. In UP direction the section is divided into nine numbers (Viz. SA33–AS241, AS241–AS237, AS237–GSA233, GSA233–AS229, AS229–GSA225, GSA225–GSA221, GSA221–AS217, AS217–AS213 & AS213–UP Home Signal of RTN) of Automatic Block Signaling section. Similarly, in DN direction, the section is divided into ten numbers (SA14–AS214, AS214–AS218, AS218–GSA222, GSA222–GSA226, GSA226–AS230, AS230–GSA234, GSA234–AS238, AS238–AS242, AS242–AS246 & AS246–DN Home Signal of BBS) of Automatic Block Signaling sections. Entry into each section is governed by a stop signal. Continuous track circuits have been provided into control aspect of the Auto signals.

Single line Auto Signaling is provided between BBS-RTN section on Common line. Common line between BBS-RTN has been divided into a series of automatic block signaling section both in UP & DN direction, each of which is the portion of the running line between two consecutive stop signals. In UP direction the section is divided into nine numbers (Viz. SA31–AS243, AS243–AS239, AS239–GSA235, GSA235–AS231, AS231–GSA227, GSA227–GSA223, GSA223–AS219, AS219–AS215 & AS215–UP Home Signal of RTN) of Automatic Block Signaling section. Similarly, in DN direction, the section is divided into nine numbers (SA18–AS216, AS216–AS220, AS220–GSA224, GSA224–GSA228, GSA228–AS232, AS232–GSA236, GSA236–AS240, AS240–AS244 & AS244–DN Home Signal of BBS) of Automatic Block Signaling sections. Entry into each section is governed by a stop signal and direction of Traffic set. Continuous track circuits have been provided into control aspect of the Auto Signals.

1.15 **DIRECTION SETTING PANEL FOR COMMON LINE:**

Direction of Traffic in common line is set by a pair of direction setting panels available at Station Master's Panel room.

For establishing direction of traffic RTN–BBS block section, RTN is the “Controlled station” side and BBS is the “Controlling station” side and henceforth BBS station will be referred as ‘A’ and RTN will be referred as ‘B’.

INDICATIONS:

- (a) Two groups of arrow are provided on the panel. One on either side, the other 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 DN direction. Each arrow will be illuminated by white or red lights. White light appears when 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 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’

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- (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 '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 who makes over as also whop takes over charge shall record in the Train log register the number recorded by the digital counters.

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/DN 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', 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 buttons 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 ion the personal custody of the Station Master on duty so as to prevent inadvertent or unauthorized operation of various controls in the panel.

ESTABLISHING DIRECTION OF TRAFFIC:

For establishing direction of traffic, Rule No. 7.15 of BWM is to be followed.

MODE OF OPERATION:

1. **Normal Operation:**
Rule No. 7.16 (1) of BWM is to be followed.
2. **Emergency operation during track circuit failure:**
Rule No. 7.16 (2) of BWM is to be followed.

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Movement of trains: For movement of trains Rule No. 7.17 is to be followed. For an example for dispatching of an UP train on Common line, the following procedure shall be adopted:-

SM on duty at Dispatching Station

SM on duty at Receiving Station

- | | |
|---|---|
| <p>1.
(a) Shall take off the concerned Starter Signal & Advanced Starter Signal.
(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 signaling section controlled by the starter.-
(i) Direction arrow illuminates in red.
(ii) 'Signals normal' lamp (white) appears.</p> <p>4.
(a) Acknowledges.
(b) Direction arrow illuminates in white, indicating block section is clear of all trains.</p> | <p>2.
(a) Acknowledges supported by a Private Number.
(b) Direction arrow illuminates in red</p> <p>3.
(a) Shall take 'OFF' the Home Signal.
(b) 'Signals normal' lamp (white) extinguishes.
(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.</p> |
|---|---|

Suspension and resumption of working of trains under Automatic Block system on single line:

Rule No. 7.20 of BWM is to be followed.

Failure of indication on the Panel:

Rule No. 7.23 of BWM is to be followed.

2.0 STATION MASTER's PANEL CONTROL KEY:

The panel is fitted with SM (Panel) lock up key to prevent any simultaneous operation of the panel. The SM (Panel) on duty is the only authorized person to operate the panel and the panel key must always remain in his personal custody vide SR 3.36.03 and GR 5.08. The key locks the panel board and no operations are possible. In case of emergency, signals can be put back to danger by operating concerned signal button and signal cancel button without releasing the panel locks also. However, the provisions, of SR.3.36.02 shall be followed while replacing the signals to 'ON'.

2.1 CRANK HANDLES:

When any point fails to operate normally by the route setting operation or through the concerned point button through panel, it is inevitable to operate the points with crank handle. Station Master on duty shall personally ensure clamping and padlocking of all facing and trailing points enroute. Crank handles are interlocked with signals and interlocking system. The CH push button (Blue) and group button (white with black dot) is provided at the top of the panel board. This button has two indications, viz., WHITE and RED. The WHITE

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indication suggests that the crank handle key is in its interlocked position of the panel. This is called 'Crank Handle Key' 'IN' indication.

The Red indication suggests that the crank handle key is locked and not free for extract from RKT. This is called 'Crank handle key locked' indication. The Crank Handle is normally kept in a locked glass fronted wooden box in panel room and the key is with SM on duty. This crank handle is common to all points and is to be taken along with CH key for manual operation of point.

For extracting CH key from RKT SM has to press relevant CH button and group trans button simultaneously. The white light besides the CH button starters flashing. After extraction of CH key from RKT at Location box flashing white light disappears. On extraction of CH key from RKT, the points in that particular group are in operation from the panel. After completion of point operation the CH key will be retransmitted to the station. Electrically by inserting the CH key in RKT at Location box and turned the white flashing indication appears on the panel board. The flashing will be stopped and steady indication appears on pressing concerned CH button and group release button (white with black dot).

2.2. **SETTING OF ROUTE AND TAKING OFF RECEPTION SIGNALS:**

For setting a route all the concerned points must be set by operation of relevant point button and group button one at a time in the desired position or by operating signal button and route Button. As soon as the required points are set to the required position, the concerned signal for the route will clear and a 'YELLOW' strip of light will appear on the entire route confirming that the Route is set and locked. The signal 'off' indication will appear on the panel.

2.3. **SETTING OF ROUTE AND TAKING OFF DEPARTURE SIGNALS:**

For setting a particular route for departure of a train, all the concerned points must be set by operation of point button and group button one at a time in the desired position or by operating signal button and route button.

When 120 mts ahead of the 1st auto section is clear, then advanced starter signal of concerned section can be taken off.

To take off the starter signal the concerned signal button to be pressed and at the same time common Route button to be pressed for two to three seconds and released. This will clear starter signal and a YELLOW strip of light will appear on the route from the concerned starter to the advanced starter.

2.4.i. **TAKING OFF CALLING-ON SIGNAL:**

Miniature colour light Calling-on signal is provided below the Home signals in terms of GR 3.13(6)(b). A Calling-on signal will be taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF' due to failure or any other reason or for admission of train on blocked line. To dispatch a train, when Starter cannot be taken 'OFF' due to failure

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of track circuit or failure of starter Signal, the Calling-on Signal can be taken 'OFF'. Calling-on signals are also provided below the Starter Signal 17, 19, 25 & 29. A Calling-on signal shows no light in the 'ON' position and Yellow light when taken "OFF".

To take 'OFF' Calling-On Signal, the train must come to a stop at the foot of the Starter/Home Signal occupying the track circuit provided in rear of the signal. When a train occupies the track circuit, a 'RED' light strip will appear in the panel. The particular route on which train is intended to be received or dispatched shall be set by operating the panel push button and group button or by signal and route button or by crank handling in the event of failure of operation of points through panel. After the route is set, the Calling-on Signal button shall be pressed simultaneously along with concerned route button for 2-3 seconds and released.

For taking off Calling-on signal provided below the Home signal, the time delay of 60 seconds is required and no time delay is required for taking off Calling-on signal provided below the Starter signal. When the Calling-on signal clears i.e. a Yellow light glows at the concerned Calling-on signal on the panel. Every such operation has to be recorded by the on duty SM along with the reasons to do so. Every such operation is registered in respective Calling-on counters.

NOTE:

SM on duty is to ensure that no through signals are given while receiving/dispatching a train on Calling-on.

ii. **SHUNT SIGNALS:**

Individual shunt signals 5, 6, 7, 10, 21, 22, 23, 24, 27 & 32 are provided for shunting purpose.

2.5 **RELEASE/CANCELLATION OF ROUTE:**

Normally when a train is received on any route and dispatched, the route illumination will disappear automatically after passage of the train suggesting that the route is released.

NOTE:

UP and DN Calling-on signals are to be manually cancelled after the passage of the train to cancel the route. Advanced starter signals of concerned section is to be manually cancelled after passage of the train to cancel the route.

2.6. **REPLACEMENT OF SIGNALS TO 'ON':**

Signals are replaced to 'ON' automatically by the passage of a train pass the signal. It will not be possible to re-clear the signal again unless the due process for clearing the signal is repeated again. For replacement of any signal to 'ON' position manually, the respective signal button and the signal cancellation button (RED) to be pressed simultaneously.

2.7 **INTERLOCKING OF SIGNALS/POINTS:**

All running line points are fitted with facing point locks in the point machine and are electrically detected by the relevant Home signals and starters.

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2.8. Signals once taken 'OFF' can be put back to danger in case of emergency by pressing concerned signal button and signal cancellation button even when the panel is locked up with Station Master's key.

2.9. **PILOTING OF TRAINS IN TO STATION YARD:**

Whenever Home signal becomes defective, the train can be admitted by taking off the Calling-on signal. Whenever both the Home Signal & Calling on Signal failed all trains will be "Piloted IN" vide SR 3.69.03(a) & (c).

The SM (Panel) on duty shall nominate a clear line in consultation with SM on duty at Platform for admission of incoming train. He shall also apprise the SM on duty at Platform to set clamp and padlock the nominated route points and ensure the clearance of any obstruction on the route before admission of the train. The SM on duty shall set the points of the nominated route from the Panel/VDU. If the points cannot be set from the Panel then the points of the nominated route will be set by the TPM on duty through the help of Crank Handle. The TPM on duty shall clamp and padlock the concerned points of the nominated route under the supervision of SS (PF) on duty in both the cases.

The same procedure shall also be adopted when the route illumination fails to appear on the Panel or during non-signaled movement. The TPM on duty at Panel shall take the crank handle key after signing in the crank handle register and set both the facing and trailing points and clamp and padlock the same under supervision of the SS on duty at the platform. Then SS on duty at platform shall give a private number to the SM on duty at Panel as an assurance of having done so.

The SS on duty at platform shall then issue the written authority T/369(3b) to the TPM for piloting IN the train. While going to "Pilot IN" the train, the TPM shall check the points and satisfy himself that the route is correctly set, clamped and padlocked in favour of the concerned route.

After the train has brought to a dead stop at the Home signal the TPM shall hand over the pilot memo to the Loco Pilot board the engine and display proceed hand signal to pass the defective signal.

NOTE:

- (1) The SS (Platform) on duty shall personally supervise the correct setting, clamping and padlocking of the facing and trailing points, and ensure clearance on the nominated route for admission of a train.
- (2) The keys of padlock of such padlocks shall be in the personally custody of the SS on duty at Platform or any other authorized operating officials till such movement is either completed or alternatively cancelled.

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2.10 PILOTING OF TRAINS - OUT OF STATION YARD:

When the starter signal has become defective, the SM (Panel) shall apprise the same to the SS on duty at platform. The TPM on duty at Panel shall take the crank handle key after signing in the crank handle register and correctly set, clamp & padlock for the outgoing train under the supervision of the SS on duty at platform. Then SS on duty at platform shall give a private number to the SM on duty at Panel as an assurance of having done so. Then he shall authorize the TPM to handover the pilot memo T/369(3b) along with other authority to the Loco Pilot of the train and display proceed hand signal at the foot of the starter signal vide SR 3.71.01.

In case of advanced starter signal has become defective, such signal shall be passed on the written authority on the prescribed form T/A-912. The TPM shall handover the authority T/A-912 after the train stopped. [Refer SR 9.14.01].

NOTE:

- (1) The SS (Platform) on duty shall personally supervise the correct setting, clamping and padlocking of the facing and trailing points of the nominated route for the outgoing train.
- (2) The keys of padlock of such padlocks shall be in the personally custody of the SS on duty at Platform or any other authorized operating officials till such movement is either completed or alternatively cancelled.

2.11 SHUNTING:

1. For shunting, Shunt signals/Calling-on Signals & Caution aspect of Starter signals shall be used.
2. For back shunting individual shunt signal No. 5, 6, 7, 10, 21, 22, 23, 24, 27 & 32 are provided at the yard respectively for shunting back to the station yard in desired direction. The particular route on which it is intended to do shunting is to be set by operating the desired points individual from the point or by pressing the shunt signal button and the required route button simultaneously for 2-3 seconds. When the route is set and locked correctly YELLOW strip of lights will appear on the route and the concerned shunt signal shall display 'OFF' aspect.

3.0 DESCRIPTION OF SIDING:**SALOON SIDING:**

The Saloon siding at VSKP end of the yard with one side entry is taking off from Common Loop (Line No. 1). The entrance point No. 60A and corresponding derailing switch point No. 60B are motor operated from panel/VDU at Panel Room. Entrance & Exit from the Saloon Siding is being controlled by Shunt Signals No. SH6A, SH8A, SH10A & SH27A/B respectively, operated from panel/VDU at Panel Room.

HOT AXLE CUM PARCEL SIDING:

The Hot Axle cum Parcel Siding at HWH end of the yard with one side entry is taking off from Running Line at CH: 514.0 m with normal position of motor operated point No. 51 and corresponding isolation/derailing switch motor operated point No. 55. Entrance & Exit from

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the Hot Axle cum Parcel Siding is being controlled by Shunt Signals No. SH5G & SH30 respectively, operated from panel/VDU at Panel Room.

IOH LINES, LINE NO. 1, 2 & 3 COACH MAINTENANCE LINES, LINE NO. 1, 2, 3 & 3A SPUR LINES, LINE NO. 4 & 5, STABLING LINE, SAIL SIDING, GOODS SHED LINES, LINE NO. 1 & 2:

All the above mentioned non running lines/sidings are situated at VSKP end of the yard with a common one side entry is taking off at CH: 724.0m in the yard with reverse position of motor operated point No. 43 working as isolation/derailing switch as well. Entrance towards these non running lines/sidings is being controlled by Shunt Signals No. SH (30) & SH (16, 18, 20, 22, 24, 28)A up to the STOP BOARD at CH: 728.90m. A common Shunt Signal No. SH5 (A-H) governs all the exit from these non running lines/sidings. Beyond the mentioned STOP BOARD at CH:730.2m, the Entrance & Exit to the respective non running lines/sidings is being controlled by operating various non-interlocked points as shown in Station Working Rule Diagram at different chainages of the yard. These non-interlocked hand points are operated by an arc lever at site. All the movements beyond the SB at CH: 730.2m is being controlled by Hand Signals in responsibility of Shunting Master.

3.1 LEVEL CROSSINGS:

- i) There is a 'Special' class mid-section manned interlocked level crossing gate No. 186 situated at Km. 430/33-35(UP) & 430/34-36 (DN) between Bhubaneswar and Mancheswar Station. Telephone communication is provided between the gate lodge and the Cabin Master on duty at South Cabin/MCS.
- ii) There is a 'Special' class mid-section manned interlocked level crossing gate No. 187 situated at Km. 432/7-9 between Bhubaneswar and Mancheswar Station. Telephone communication has been provided between the gate lodge and the Cabin Master on duty at South Cabin/MCS.
- iii) There is a 'Special' Class mid-section manned interlocked level crossing gate No. 188 situated at Km. 433/23-25 [UP] & 433/26-24 [DN] between Bhubaneswar and Mancheswar Station. Telephone communication is provided between the Gate Lodge and SM on duty at Bhubaneswar.
- iv) There is a 'Special' Class mid-section manned interlocked level crossing gate No. 190 situated at Km. 441/1-3 (UP) & 441/4-2 (DN) between Bhubaneswar and Retang Station. Telephone communication is provided between the Gate Lodge and SM on duty at Central Panel/Bhubaneswar.
- v) There is a 'C' Class mid-section manned interlocked level crossing gate No. 191 situated at Km. 443/3-5 (UP) & 443/6-4 (DN) between Bhubaneswar and Retang Station. Telephone communication is provided between the Gate Lodge and SM on duty at Retang.
- vi) There is a 'C' Class mid-section manned interlocked level crossing gate No. 192 situated at Km. 443/23-25 (UP) & 443/26-24 (DN) between Bhubaneswar and Retang Station. Telephone communication is provided between the Gate Lodge and SM on duty at Retang.

4.0. VERIFICATION OF LINE CLEARANCE BY STATION MASTER ON DUTY FOR RECEPTION OF TRAIN INTO STATION YARD:

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In the Station yard, a route on the running line comprises of entrance, berthing and dispatch portion of the yard and this portion of the yard should be clear of any obstruction for the passages of any train or for any other movements. The clearance of the route including overlap must be ensured by the SM (Panel) on duty personally through Luminous indications of track before any movement of trains are permitted on the concerned route subject to the other conditions such as locking of the point's etc.

4.1. **CRANK HANDLING EMERGENCY OPERATION OF POINTS:**

Crank handle operation is interlocked with the Signaling and interlocking system at this station. Key for Crank handles are normally locked inside the RKT instrument at the Location box, can be taken out only when all the signals leading are in the 'normal' position and the route is not blocked for whatever reasons. Crank handle can be released by operating common 'TRANS' push button and control push button simultaneously. When this key is taken out, no signal to the concerned point can be taken 'OFF' in the yard. This key can be electrically transmitted at both ends of the yard.

On account of the doubtful operation of any track circuit by a light vehicle including self-propelled vehicle such as motor trolley or light engine or tower wagon, indicating the occupancy of track, it is necessary that the SS (Platform) on duty satisfies himself that the said vehicle has cleared the point zone track circuits by observing the track indications of the track on either side of the crossovers by positively checking the 'entrance' and 'exit' track circuits are showing occupancy and clearance in accordance with the train movement.

4.2. **INSTRUCTIONS REGARDING STABLING OF TRAINS ON RUNNING LINES:**

When a train is stabled on a running line for a duration exceeding ten hours, the use of the said running line for passing the trains 'IN' 'THROUGH' or 'OUT' at the station shall be done with a lot of care and diligence. SM (Panel) on duty shall meticulously observe the proper functioning of the relevant track circuits (occupancy/clearance) while admitting a train. Such observance should continue for a minimum of four to five trains thereafter. If the SM (Panel) on duty is not satisfied with the proper functioning of the track circuits on which the train was earlier stabled, the signals leading on the line shall be suspended and the S & T maintenance staff shall be informed for attending to this.

5.0. **EMERGENCY OPERATIONS:**

The following are the instructions for emergency operations.

5.1. **CANCELLATION BUTTON AND VEEDER COUNTER:**

For the purpose of emergency operations there is an emergency 'Route cancellation'. There is a 'veeder counter' for counting emergency operations involving operation of the emergency route cancellation button (provided at the top of the panel). The SM (Panel) on duty must press the emergency route cancellation button and the signal button in accordance with 1.9 confirming to the section for which emergency route release is desired.

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An indication will appear indicating that the timer has started operating and after a lapse of 120 seconds, the desired route will be release, provided all other conditions are favorable for route release.

5.2. The veeder counter registers the number of such emergency cancellation operations. SM (Panel) on duty should specify the cause for its usage giving the particulars of causes and the time of operation as related to a particular train etc., in the train signal register as well as in a separate register meant for this purpose. The detailed operational instructions are as follows:

5.3. **EMERGENCY OPERATIONS–CANCELLATION OF THE LOCKING OF POINTS NOT RELEASED AFTER THE PASSAGE OF THE TRAIN FOR WHATEVER REASON:**

If the locking of the route does not get released for one reason or the other after passage of the train, it is necessary to take recourse to the following emergency operations.

- a) Firstly, it must be ensured that the signal is in the normal position.
- b) Operation as detailed in Para 1.9 to be followed.

6.0 **LOCKING OF RELAY ROOM:**

The Relay room should be kept locked with two separate locks. The arrangement should be such that one key is kept with the on duty SM (Panel) & the other key with the Signal Maintainer. Whenever required the SM (Panel) shall handover the key to the maintainer with proper acknowledgement in the basement/ relay room key register. The maintainer on receipt of the key from the SM (Panel) may use the same and the key in his custody to open the basement/ relay room by inserting the keys one after another separately into the earmark locks. After completion of the work, the relay room is to be locked using both the keys separately and designated key should be handed over to the SM (Panel).

The details of transaction is to be properly recorded in the basement/relay room key register maintained at the station and duly signed by the SM (Panel) and maintainer respectively.

7.0 **MAINTENANCE OF S & T INSTALLATION and ADHERENCE TO MAINTENANCE SCHEDULES:**

7.1. Regular maintenance of the S&T installations, adherence to schedules of maintenance testing of points, track circuits, associated interlocking apparatus cables and the interlocking functional tests is must for safe and satisfactory working of these installations at this station.

7.2. The tests, checks and replacements etc. shall confirm to the schedules of maintenance as indicated in the Signal Engineering Manual as also as per the current and extant instructions/circulars on the subject.

8.0. **PROCEDURE TO BE FOLLOWED INCASE OF FAILURE OF AN INTERLOCKING GEAR:**

8.1. In case of failure of any interlocking gear at the station, the failure report should be communicated by the SM (Panel) to the sectional Maintainer, the signal inspector of the section and others through a memo as per GR and SR 3.51.04 and 3.68.04 and document all such transactions.

8.2. When a Loco pilot reports about the failure of Automatic signal, the failure report should be communicated to the sectional maintainer, the signal inspector of the section and others through a memo as per GR and SR 3.51.04 and 3.68.04 and document all such transactions.

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- 8.3. **INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:**
Before declaring a signal as defective, the setting of the point on the route to which it applies shall be inspected by the SM (Panel) on duty irrespective of the position of the buttons.
- 8.4. **RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:**
After receipt of this information, the sectional Maintainer shall attend to the failure after giving a Disconnection Memo. After rectification of the fault, the Sectional Maintainer shall give Reconnection Memo detailing the rectification. Thereafter the SM (Panel) on duty shall personally check this defective apparatus. After satisfying himself that the gear is in good and proper working order, he shall resume the normal working of the said defective apparatus in terms of SR 3.68.04 (c) and (d).
- 9.0. **PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:**
Whenever any normal maintenance or special works for major renewals etc., are involved, the Signal and Telecom should preplan these works. Field staff and the Inspector of the section should give to the SS (Platform) in writing 'Advance Intimation' about this work in terms of G and SR 15.08.01.
- 10.0 **EMERGENCIES:**
Notwithstanding, anything contained in the aforesaid Paras when equipment is found defective and unsafe for passage of trains, the Signal and Telecom staff must at once suspend the working of the equipment and associated installations and issue 'Suspension Memo' explaining the seriousness of the defect or damage to the interlocking installation to the SS (Platform) and take the SS (Platform) acknowledgement. After this, the usual practice of exchange of disconnection memo and reconnection memo can follow. The Station Master must act promptly on such messages and take adequate precaution treating the S & T installation as defective and pass trains over the affected interlocking equipment's according to extant instructions as contained in GR and SR 3.77.
- 11.1 **PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNALS AND POINTS AND USE OF CRANK HANDLE:**
- 11.2 When the crank handle key is removed from RKT for operation of the defective motor operated points, the responsibility for its safe custody rests with the SS (Platform) on duty, till it is replaced back in RKT.
- 11.3 The cases of failure of motor operated points should be promptly reported to the concerned Signal maintainer/Signal Inspector for rectification.
- 11.4 Whenever an Emergency Crank Handle is required to be used by a signal official for maintenance work or attending to failure, the signal official will give a disconnection memo to the Station master on duty and after making necessary entries in the Emergency Crank Handle Register. The SM (Panel) on duty will obtain the acknowledgement of the signal official in the Emergency Crank Handle Register and then hand over to him the Emergency Crank Handle. The points will be treated as defective until the Emergency Crank Handle is returned back to the SM (Panel) on duty.
- 11.5 Before parting with the Emergency Crank Handle either for attending failures or for maintenance work by Signal maintenance officials, the SM (Panel) on duty will ensure that

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the reception and departure signals are put back to 'ON' position. The points for the affected lines should be treated as non-interlocked. The SS (Platform) on duty is responsible for introduction of non-interlocked working and the trains will be piloted 'IN and 'OUT' duly clamping and padlocking both facing and tailing points over which the train is to pass, as per GR 3.69 and 3.70 with relevant SRs. The SS (Platform) on duty will be personally responsible for setting and locking of points for reception and dispatch of all trains.

- 11.6 The Emergency Crank Handle Register is to be maintained vide OM 20.06 note (d) by the SS (Platform) on duty wherein the particulars of the usage of the Emergency Crank Handle must be recorded.

12.0 **SUSPENSION OF LAST STOP SIGNALS:**

When the Block Instrument is suspended for whatever reason, the last stop signals controlled by the Block Instrument must be treated as suspended and trains shall be piloted 'OUT'.

- 12.1 The SM on duty shall not grant 'LINE Clear' unless he has ensured that the lamps of fixed signals which apply to the train are burning. If the signal lights can not be kept burning, the SM on duty before giving 'LINE CLEAR' shall initiate action in accordance with the procedure prescribed in GR 3.61 to 3.72 and relevant SRs vide GR 3.49 (4).

13.7 **SIGNAL LIGHTS:**

The Station Master on duty at 00.00 hours (2nd night shift) must also ensure from panel board that all the signal lights are glowing properly and brightly. This fact must be recorded in the Diary under a separate entry and confirm to the Section Controller on duty.

13.8 **CORRECTING TIME IN STATION CLOCK:**

The Station Master shall set the time in his clock according to the time signal given by the Section Controller on duty at 16.00 hours every day according to GR and SR 4.01.01 and 4.01.02 alarm.

14.0 **TELECOMMUNICATIONS:**

- a) The Station is connected to Khurda Road Control by a telephone on the BSDP-BRAG & KUR-PUI Control Circuit.
- b) Magneto Telephone is provided between BBS-MCS & BBS-RTN.
- c) Railway auto telephone is provided in the Panel Room.
- d) Telephone communication is provided between Station Master on duty and both end Crank Handle Locations.
- e) Telephone is provided between (i) SM on duty at Central Panel/BBS and L.C. Gate at Km. 433/23-25 [UP] & 433/24-22 [DN] (ii) SM on duty at Central Panel/BBS and L.C. Gate at Km. 441/1-3 [UP] & 441/4-2 [DN].
- f) VHF set is provided at the station.
- g) The station is connected to KUR-BHC traction control circuit.

NOTE:

- i) For obtaining line clear VHF should be used as a last alternative and not as a sole means of a communication.
- ii) VHF & Walkie-talkie sets should not be used for unnecessary discussion with Loco Pilot/Guards and any other staff.

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VISUAL DISPLAY UNIT (VDU)

NOTE:

The stand by system (VDU) has provided with the Conventional panel for the operation of Signals, Points and Crank Handles.

1.0 SYSTEM OVERVIEW:

In addition to the panel, an operator console (VDU) consists of a Pentium 4 CPU with a high resolution 46" colour monitor; keyboard and pointing device (mouse) are provided. Both the serial ports (Com1 and Com2) in the CPU are connected to the Microlok II CPU board for exchange of control and indication messages. The Software is installed to display the Station Yard Mimic Panel diagram on the VDU and that it allows access to all functions through pop-up menus. When a particular function is selected, an appropriate Menu will appear on the screen by selecting a required operation clicking by the Left button of the pointing device (mouse) a function (Signal clear and cancellation, Route release, Point operation, etc.) can be executed.

The Computer (VDU) or panel any one may be used for controlling and monitoring the station, however indications on the Station yard mimic diagram of VDU and panel will be dynamically updated.

1.1 SELECTION OF CONTROL:

This VDU (Computer) is provided as a standby of conventional panel for the operation of signals, points and crank handles from the Mimic panel diagram. A Mimic panel diagram will be displayed on the VDU, which is an exact replica of operation cum indication panel and suits the yard plan as per SI Plan 21199. One two-position switch (Red colored) is provided on the conventional panel along with the SM's Key used for selection of Panel or VDU called PANEL/PC Change over switch.

SM (Panel) of the station can select any of the controls, for the selection of one control to another there are certain procedures to be followed for the control transfer. The procedure to be followed as mentioned below.

PANEL/ PC KEY and PC CONTROL KEY:

To prevent the unauthorized operation by other than on duty SM (Panel) in VDU this facility is provided on VDU. On duty SM/ASM need to track the pointer to the "PC CONTROL KEY" icon and click the KEY OUT menu by the left button of the mouse, by this a Password window will appear. SM (Panel) need to enter the password and press the OK Button provided on the Password window. This will lock all the controls in VDU except the Signal cancellation of All Cleared Signal routes. The PC CONTROL Key is nothing but a SM's KEY in the conventional panel.



PANEL TO VDU (PC-COMPUTER) CHANGE OVER:

1. Ensure that SM's Key is in 'ON' position.

2. Ensure that PANEL/PC Change over switch is in PANEL mode.
3. Click the PANEL/ PC key provided in the left top corner of the VDU. (A pop-up menu will appear)



4. Click the first Menu – PC REQUEST. (A password required window will appear in the centre of the screen).
5. Enter the proper USER NAME and PASSWORD in the required text boxes by selecting with mouse, after entering so click the OK button.
6. Now both the PANEL and PC indications will start Flashing.
7. Change the PANEL/PC change over switch to PC mode in the conventional panel.
8. Now the PC indication will steady and Panel indication will disappear.
9. Click the PC CONTROL KEY and click the KEY IN menu. (A password required window will appear in the centre of the screen).



- 1.2. Enter the USER NAME and PASSWORD and click the OK button.

Now the overall control is transferred to VDU, The entire operation can be possible from the VDU.

VDU (PC-COMPUTER) TO PANEL CHANGE OVER:

1. Turn the PANEL/ PC change over switch to PANEL mode.
2. Now both the PANEL and PC indications will start Flashing.
3. Click the PANEL/ PC key provided in the left top corner of the VDU. (A pop-up menu will appear)
4. Click the second Menu – PANEL ACKNOWLEDGE. (A password required window will appear in the centre of the screen).
5. Enter the proper USER NAME and PASSWORD in the required text boxes by selecting with mouse, after entering so click the OK button.
6. Now the PANEL indication will be steady and the PC indication will disappear.

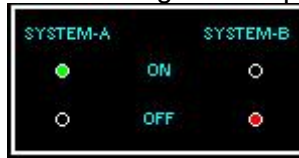
Now the overall control is transferred to PANEL, The entire operation can be possible from the PANEL.

OPERATIONAL PROCEDURE:

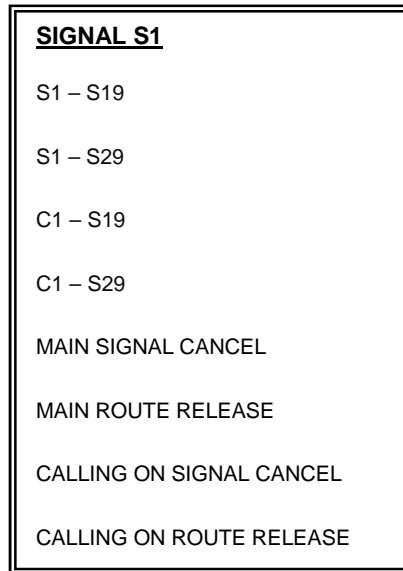
VDU INDICATIONS:

MICROLOK II (EI) INDICATIONS:

In Panel/ PC there are two system indication, Green indication mentioning the On-line system and the Red indication mentioning the sleep mode system.

**SIGNAL OPERATION:**

To Take-Off a Signal with the desired route the SM (Panel) needs to track the mouse pointer over the concerned Signal on the VDU, after clicking by the left button on the mouse a popup menu will appear as below:

**(a) SETTING A ROUTE:**

To set a route of a signal, click on a possible route of the signal, after done so the route initiated Red indication will appear on the replacement track of the signal. And all the relevant points Normal/ Reverse set indications will starts flashing if it is not available in the required position. After setting of point in the route required condition (Flashing indication will be steady) a complete yellow route set indication will appear from the Replacement Track of the signal to the last track of overlap of the route also the points will be locked (A Point locked can be ensured from the Red Steady indication will appear near the point). Finally a Route locked Yellow Steady indication will appear on the just below the signal. The signal will be Taken-Off now. The yellow route set indication will turn to red when the train occupies the track circuit.

CONDITIONS FOR SETTING A ROUTE:

The following condition to be ensured before setting the route by the SM (Panel).

1. All the Crank handles of the required route related points to be in Key in condition.

(b) CANCELING A ROUTE/ EMERGENCY ROUTE RELEASE:

To cancel a signal route when the route is set and the signal in taken off, click on the signal cancellation menu (Main/Calling on) of the concerned signal, the signal will

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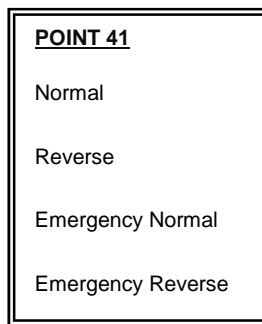
immediately go to ON aspect, after doing so click on the Route release menu the route locked indication will starts flashing for 120 sec, After the completion of 120 sec the locked route will be released and veeder counter provided for the route release in the conventional panel will change to next higher digit which should be recorded by SM/ASM.

SHUNT SIGNAL OPERATION:

To setting and Canceling the signal route for the shunt signal the same procedure shall be followed as explained in Signal Operation.

POINT OPERATION:

To Operate the Point the SM (Panel) needs to track the mouse pointer to concerned point's Normal/Reverse indications on the VDU, after clicking by the left button on the mouse a popup menu will appear as below:



- (a) **REVERSE TO NORMAL OPERATION:**
Track the pointer to NORMAL menu and click, a Normal flashing indication will appear, the indication will be steady after the point is set to Normal.
- (b) **NORMAL TO REVERSE OPERATION:**
Track the pointer to REVERSE menu and click, a Reverse flashing indication will appear, the indication will be steady after the point is set to reverse.
- (c) **EMERGENCY NORMAL OPERATION:**
When the Point zone Track circuits/ Axle counters failed without any Point lock condition by any signal routes, a point can be operated by the Emergency Point operation. Before doing the emergency operation A Emergency Point Operation Key to be KEY IN by clicking the KEY IN menu, after the completion of the Emergency point operation, the Key to be KEY OUT by clicking KEY OUT menu.

Track the pointer to EMERGENCY NORMAL menu and click, a Normal flashing indication will appear, the indication will be steady after the point is set to Normal.

After the Emergency point operation a specific veeder counter provided in the Domino panel board will change to its next higher digit and this number should be recorded in the register provided for this purpose by the SM (Panel).

(d) **EMERGENCY REVERSE OPERATION:**

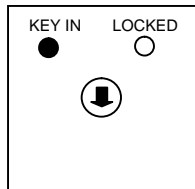
When the Point zone Track circuits/ Axle counters failed without any Point lock condition by any signal routes, a point can be operated by the Emergency Point operation. Before doing the emergency operation A Emergency Point Operation Key to be KEY IN by clicking the KEY IN menu, after the completion of the Emergency point operation the Key to be KEY OUT by clicking KEY OUT menu.

Track the pointer to EMERGENCY REVERSE menu and click, a Reverse flashing indication will appear, the indication will be steady after the point is set to reverse.

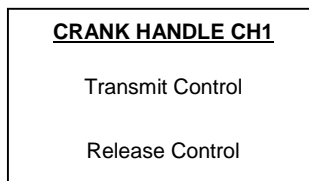
After the Emergency point operation a specific veeder counter provided in the Domino panel board will change to its next higher digit and this number should be recorded in the register provided for this purpose by the SM (Panel).

CRANK HANDLE OPERATION:

To Transmit or Release control of the Crank Handle, click on the crank handle button provided like the following button on the VDU.



The appearing pop-up menu gives details of the possible commands on the Crank Handle



For Transmitting the Crank Handle KEY to the field personnel SM (Panel) has to click transmit control menu. After transmission the KEY IN indication will starts flashing, now the KEY can be extracted from the EKT. After extracting the key from the EKT, the key IN indication will disappear.

When the Manual point operation is over, after putting the KEY in the EKT, A KEY IN flashing indication will appear on the panel. Now the SM (Panel) has to Release the control for the Steady indication by clicking release control menu

A Crank handle locked indication will appear when the particular point has locked by any of the possible signal routes.

LINE BLOCK FEATURES IN VDU:

To block line through VDU concerned route button (UN/UN1) to be right clicked. Then option of blocking/unblocking line feature will appear. When clicking for “block the line” option, flashing Red indication near route button will appear indicating the line has been blocked. To unblock, click the “unblock the line” features, then ‘flashing red indication’ will disappear indicating that line has been unblocked.

In case of System-A and System-B of EI failure, after resumption, the blocked line/lines route button is to be inactivated again by adopting the above procedure with entries in the train signal resister and SM’s diary.

ANTI COLISION DIVICE (RAKSHA KAVACH)

=== NIL ===

(P.K.DAS)
DSTE(P)/BBS

(B.PANDA)
DOM/KUR

1. **STATION MANAGER (NON-GAZ):**

He is the over all In-charge of the station. He is responsible for the efficient discharge of duties devolving upon all the Staff employed at the station whether permanent or temporary according to Station Working Rules, Manuals & Safe Working Instructions. He shall get himself well conversant with the detailed working of Station and panel, points and signals etc.

He is responsible for maintaining the Assurance Register up-to-date. He shall conduct surprise night inspection and safety meetings/fire drills etc. as per instructions issued from time to time. He shall see that all the departments under his control are functioning efficiently and staff working safely according to the rules in force.

He shall see that all signals, points and the whole machinery at the station are in proper working order. He shall report all the defects to the concerned officials.

He shall satisfy himself that the staff employed under him at this station are well conversant with Station Working Rules and perform their duties correctly. He is responsible for maintaining SWR, other Rule books and Assurance Register up to date.

He shall see that all safety records are maintained properly and all rules prescribed in G & SR, Block working manual, Operating manual and other relevant directions issued from time to time by competent authorities are followed rigidly by all concerned and any irregularities if noticed are reported promptly to the authorities concerned.

He shall see that all accidents are promptly reported, attended to and GA-3 along with accident message is submitted to the concerned officers in time. He shall see that the staff are civil and helpful to all users of railway.

He shall frequently visit the platform, Panel Room, etc. in order to maintain an effective supervision over the said staff and their working. He shall see that station premises are kept neat and clean.

He is responsible for booking all Group-‘C’ and Group-‘D’ staff for PME and Refresher Course / Safety camp in their due time. His Special attention is drawn out to Chapter II of General and Subsidiary Rules and GR 5.01 to 5.08 with relevant Subsidiary Rules, Chapter–XXII of Operating Manual.

He shall see that all equipments, apparatus and instruments including signal and interlocking gears are in proper working order and all failures are promptly reported to officials concerned for repairs/rectifications.

He shall see that the law and order in the station area is taken care of with the help of G.R.P. and R.P.F.

(B.PANDA)
DOM/KUR

He shall ensure compliances of all Operating & Safety and Commercial records maintained at the station. He is responsible for overall supervision in the station.

1.1. **ASSURANCE REGISTER:**

All staff before taking up independent charge of their duties shall make a written declaration in the Assurance Register that they have read the station working Rules thoroughly and understood the system of working in force at the station and must sign such declaration.

No Railway servant shall be entrusted with any duty involving the safety of the public unless the SMR (NON-GAZ) is satisfied that the concerned staff is competent for the post. No railway servant unless duly examined and certified shall be allowed to work the points and signals. The SMR (NON-GAZ) is responsible to see that all the staff are well conversant with the Station Working Rules of the Station and their Signatures are obtained in the Assurance Register after he is satisfied that they have thoroughly understood the working rules of the station. In case of group 'D' Staff, their signatures / thumb impression must be obtained after explaining fully about their duties and responsibility.

The SMR (NON-GAZ) is personally responsible for maintaining the assurance register and for obtaining declaration from the staff working under him. The Assurance Register must be obtained in two parts. One for Group-'C' and the other for Group-'D' staff. A duplicate copy of the Assurance Register must be maintained and kept in the personal custody by the Station Manager.

The declarations are to be renewed in the following cases.

- i). Whenever there is a change in the station working rules.
- ii). For any staff who have not worked at the station or were away from the station for a period of 15 days and over.

1.2. **USE OF PRIVATE NUMBER AND IDENTIFICATION NUMBER SHEETS:**

Sufficient private number Books and Identification number sheets in sealed covers shall always be kept in stock by SMR (NON-GAZ) under Lock and key by maintaining one register for this purpose.

1.3. **ACCIDENTS:**

Accidents shall be recorded, reported and immediate action shall be taken by the SMR (NON-GAZ) in accordance with the instructions laid down in the accident manual. Whenever the SM on duty at panel receives report of an accident, he shall take all necessary precautionary measures to protect the traffic and shall arrange earliest possible assistance as required at the site of accident. He shall frame the accident messages and report and follow up all safety principles without delay.

2. STATION SUPERINTENDENT (PLATFORM):

- He will work on the Platform and remain responsible for the efficient working of station during his duty.
- i). Being a Notice station, maintenance of Caution Order Register and preparation & issuance of Caution Order for all trains during tenure of his duty is devolved on him.
 - ii). Nomination of line for admission of Coaching Trains and right time departure of all trains. He shall deal with all passenger amenities and complaints by traveling public.
 - iii). Prompt attendance on all Coaching trains to ensure loading and unloading is completed in time and to avoid complaints of any kinds from the traveling public.
 - iv). Eliminating detention to the Coaching and goods trains at station and outside signal.
 - v). He shall see that shunting operation is supervised by an authorized person and is carried out as per rules.
 - vi). Ensure proper coordination with all departments for quick movement for trains within the yard and expedite reception/dispatch of trains to and from the yard and platform.
 - vii). Ensure promptly attention to vehicles marked sick and reduce detention to such damaged/defective vehicles to lesser duration.
 - viii). Maintain close liaison with control office in all matters relating to train operation, yard clearance and coaching stock.
 - ix). He is responsible for safe functioning of all machineries at the station.
 - x). Ensure proper provision and function of other passenger amenities like drinking water, water coolers, lights, fans, waiting halls, retiring rooms, enquiry, reservation counter etc.
 - xi). He shall ensure alertness of all staff working at the station and maintain discipline, law and order, cleanness in co-ordination with other departments.
 - xii). In the absence of Station Manager (Non-Gaz), the duties of Station Manager (Non-Gaz) will devolve on him.
 - xiii). During failure/suspension of Panel working the SS (Platform duty) is responsible for piloting of all trains in terms of relevant rules as laid down in General and Subsidiary rules and to ensure correct setting, clamping and padlocking of concerned points, on route (either in the event of piloting 'IN' or piloting 'OUT' of trains) and further ensuring the route on which the trains is to pass is free and clear of all obstructions. He shall maintain all the authorities as required during the abnormal working condition. While doing so he shall ensure by SM (Panel) to the effect of setting, clamping and padlocking of route supported by private number before issuing pilot memo.
 - xiv). In the event of resorting to Calling-on signal operation, the SS (Platform duty) shall be responsible for ensuring the clearance of the concerned route.
 - xv). He will be responsible for correct use of the Crank Handles and associated Crank Handle Controlling Keys.
 - xvi). He will assist the Panel SM on duty in punctual running of trains by supervising loading, unloading, attaching, detaching by all trains and all other activities connected with train operations as and when necessary.
 - xvii). In the event of any traffic blocks and disconnection or suspension of any working in field gears or installations, either for normal maintenance works or repairs by the Engineering, S&T & TRD department or any other department concerned in the point

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zones of the yard the S.S. on duty at PLATFORM/YARD MASTER shall be present at the site for necessary coordination with panel SM in all matters of safe and expeditious train operations.

- xviii). In case of any accident in the Station yard, in addition to SMR (Non-Gaz), S.S/Yard Master shall be present at the site for maintaining the necessary coordination between the Panel SM and any other field officials at the site for expediting all such operations as are needed for effecting quick relief and the restoration work.
- xix) He shall be responsible for ensuring the clearance of the concerned route during failure of track (s) by physical verification by exchanging private number with SM (Panel) before piloting IN/OUT the train.
- xx) He shall ensure for the ringing of the station bell if and when required.
- xxi) He shall ensure punctuality of coaching trains.
- xxii) He shall ensure safe movement on the following shunting activity i.e.
 - a. Attaching/detaching of Saloon.
 - b. Backing train from one line to other to free Platform.
 - c. Reversal of Power from one end to other.
 - d. Amalgamating to pair of the coaching train before sending to coaching complex.
 - e. Co-ordinate with SM of Panel to ensure proper programme of shunting activity.
 - f. Reception/Dispatch of the train during failure of signal.
- xxiii) **Issue late certificate to all passenger for failing to catch connecting trains due to late arrival.**
The SS (PLATFORM)'s special attention is drawn to the GR 5.01 to 5.23 where details are indicated.

3. **SM (PANEL):**

He is responsible for operation of panel Board for reception/dispatch of trains and for shunting operations. He shall carry out the test in person about the working of reception signal(s) & emergency cross over points once daily when no train is due to arrive and no train is due to leave and record the results of the test in the station diary vide SR 5.01.03 (c) (ii) and SR 5.01.03 (d). He shall maintain coordination with SS on duty at platform in train movement. He shall take suitable action in case of emergencies as required under rules in vogue in consultation with SS on duty at platform. He shall nominate line for admission of train in consultation with the section controller on duty. He shall plan with the section controller about the crossing of train and shall give in and out report to the Section Controller. He shall be responsible for protection of Blocked line by any means. He shall be responsible for transmitting Crank Handle and maintenance of Crank Handle Register and Failure Register. He shall speak to Section Controller on duty and shall work as per his advice in passing of trains. Arrival / departure report of trains shall be convened in time. He shall see that safety equipments pertaining to panel are available as per norms in good working order.

In the event of failure of points/signals, he shall depute the SS (PF) for ensuring correct setting, clamping and padlocking of points before piloting a train.

4. STATION MASTER (LINE CLEAR):

He shall assist the SM (Panel) for working “Line Clear” duties. He is responsible for granting and obtaining line clear in accordance with General and Subsidiary Rules, Block Working Manual and Station Working Rules. He shall maintain Train Signal Register properly. He shall ensure closure of mid section interlocked Level Crossing Gates when required for taking ‘OFF’ signals for granting/obtaining “Line Clear”. He shall exchange alright signals with the Loco Pilot and Guard and ensure the complete arrival of the train before closing the block section. He will be responsible for correct use of Crank Handles and associated with the Crank Handle controlling Keys.

He shall make entry in the diary the condition of all the running lines, at the time of handing over charge. These entries shall be countersigned by the SM coming on duty and taking over charge. This will not however relieve the SM of his responsibility to ensure by physical check, that the respective lines are clear of obstruction before admission of any train on it. The SM on duty who makes an entry in the Train Signal Register shall continue till all the entries pertaining to the trains are completed vide SR 14.07.01 (a), (b), (c) & (d). He is also responsible for ensuring that the work is carried out in safe and proper manner.

During failure of track circuit/axle counter of a concerned route, he shall apprise the SS on duty at platform to ensure the clearance of the same by physical verification through exchanging private number.

In the event of failure of points / signals he shall take the assistance of S.S. on duty at the platform for physical verification and for correct setting, clamping and padlocking of points before the train is piloted. He shall be responsible to ensure that the staff under his control discharge their duties properly and shall report all irregularities and unusual incidents to Station Manager (Non-Gaz)/ SS on duty at platform and all concerned promptly. His special attention is drawn to Chapter-II of G & SR and GR 5.01 to 5.08 with relevant Subsidiary Rules thereto.

5. DEPUTY CHIEF YARD MASTER / YARD MASTER:

He is over all in-charge in his shift of the yard and shall be responsible for smooth functioning of the yard. He shall see that all staff working under him discharge their duties efficiently and safety in accordance with the station working Rules and paras 5.13 to 5.21 of General and subsidiary Rules thereto.

- i). Performance and utilization of shunting Engine
- ii). Proper Planning of the day's programme
- iii). Proper formation and marshalling of trains.
- iv). Placement/drawn out of loads/empties in different sidings as per time schedule keeping coordination to all department.
- v). Execution of advance planning keeping coordination with Station Manager (Non-Gaz) in regard to movement of Tourist/V.I.P./ Parent line leagues as well as rescheduling of trains.

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- vi). Keeping close watch over placement/drawn out of coaching rakes to and from the washing lines, repairing lines, sick line and platform lines etc. Staff must be deputed in rear coach towards dead end at the time of backing rakes. He shall work in coordination with the Station Manager (Non-Gaz)/ Station Superintendent (PLATFORM) /Station Master (Panel) on duty as well as with other departments for safe, efficient and punctual running of services.
- vii). He shall be responsible for efficient working of the yard in his shift of duty. He shall supervise the formation, placement and drawn-out of rakes. He shall supervise the work of shunting master and other shunting staff and avoid idling of shunting engine hours. He shall ensure that the placement and drawn out are made in time in various sidings and ensure that coaching and goods vehicles are not detained unnecessarily. Timely placement of coaching rakes in the washing lines; repair lines and platform lines are the important duties of the yard supervisor.
- (viii) In case of any accident in the yard the Dy. Chief Yard Master/Yard Master, in addition to other staff, shall be present at the site for maintaining the necessary coordination between the Station Manager (Non-Gaz)/ Station Superintendent (Platform)/SM (Panel) and any other field officials at the site for expediting all such operations as are needed for effecting quick relief and restoration work.

6. **SHUNTING MASTER/TRAFFIC POINTSMAN:**

- (i) He shall work under the direction of the Dy. Chief Yard Master/Yard Master/Station Superintendent (Platform) on duty.
- (ii) He shall see that shunting is carried out in a proper and safe manner, as per G.R. 5.13, 5.14 and 5.16 to 5.19, 8.09, 8.10, 8.12, 8.13 to 8.15 and relevant SRs there to.
- (iii) In case of shunting in coaching complex, he shall ensure correct setting of points before displaying proceed hand signal for the movement.
- (iv) In case of shunting in station yard during failure of either starter or shunt signal, the concerned points are to be correctly set, clamped and padlocked before displaying proceeding hand signal to the Loco Pilot/shunter.
- (v) He shall have thorough knowledge of the yard and shall follow the station working rules and safe working instructions issued from time to time.
- (vi) He shall couple/uncouple vehicles under the supervision of Dy. Chief Yard Master/SS/Guard of the train.
- (vii) He shall do timely placement and drawn out of rakes to and from the platforms.
- (viii) He shall do prompt placement/drawn out to and from various sidings as per time scheduled.
- (ix) He shall see that no vehicle is left fouling the adjacent line and secure the vehicles in various sidings.
- (x) He shall protect the line in emergency if required.
- (xi) He shall protect any damage/defect points and report to the SMR (Non-Gaz) /SS (PF)/SM (Panel) on duty for further necessary action.
- (xii) He shall perform any other duties entrusted on him by his supervisors in the execution of railway work.

7. TRAFFIC POINTS MAN 'A'/'B'/ TOKEN PORTER:

He shall work under the instructions of SMR (NON-GAZ)/SS (Platform)/SM (Panel)/ Dy.CYM/YM on duty and follow the GR 2.05 to 2.11 and other relevant rules as laid down in G & SR. He shall remain responsible for: –

- a). Correct Setting and Locking and Crank Handling of points for reception / dispatch of trains and shunting operation.
- b). Coupling and uncoupling vehicles.
- c). Protection of line in an emergency.
- d). Piloting and hand signaling of trains when necessary and handing over caution orders and / or any other line clear authorities to the Loco Pilot and guards of the Trains.
- e). Attending off side to observe safe running of through trains and correct display of hand signals.
- f). Securing of vehicles as per GR 5.23 and SR thereto.
- g). Being conversant with the layout of the yard and compliance of rules relating to shunting operations.
- h). Observing General Rules 5.13 to 5.21 and relevant Subsidiary Rules during shunting.
- i). Clearing and lighting of hand signal lamps, if required oiling the clamps & padlocks if necessary.
- j). Loading and unloading of parcels and luggage packages, goods and guard's boxes to and from the trains and watching the packages and other materials by properly stocking in the station premises.
- k). Cleaning and dusting of SM's Room, Furniture's and equipments.
- l). Working as Fog Signal man as and when required.
- m). Filling up the FIRE buckets with sand / water.
- n). Getting train intact Arrival Register (T/1410) signed by the guard / Loco Pilot as and when required.
- o). Any other duties entrusted to him by the SMR (Non-Gaz)/SS (PF)/SM (Panel)/ Dy.CYM/YM on duty from time to time.
- p). Ringing the station bell if necessary.
- p). Knowledge of hand signals and their use.

GENERAL

1. A set of Flags and Battery operated LED based flashing lamps will be the part of essential equipment of the staff while on duty. He shall not leave the station except when required by the SMR (Non-Gaz)/ SS (PF)/SM (Panel) on duty or with his permission and shall comply with subsidiary Rules 4.42.02 (b) (i) & (d).
2. Staff working at the station must be able to distinguish up and down line clear tickets and educated in distinguishing other operational forms & documents, delivered to Loco Pilot and Guards.

A list of Essential Safety Equipment's which should be kept readily available in good working order with necessary relief stock.

Sl. No.	Description	Station
1.	Detonator Signals	20
2.	Battery operated LED based flashing lamps.	12
3.	Hand Signal Flags	12 Sets (12 Red & 12 Green)
4.	Safety chain with Padlocks.	8 Nos.
5.	Clamps with padlocks	12 (4 at station and 4 in each goomty)
6.	Wedges/Skids	12
7.	Fire and Sand Buckets.	6
8.	Reminder Collar	8
9.	Fire extinguisher	4 (DCPT).
10.	First Aid Box	1
11.	Stretcher	1
12.	Power Block Collar	2

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RULES FOR WORKING OF DK STATIONS HALTS, IBH, IBS, AND OUTLYING SIDINGS

1.1 **MID-SECTION OUTLAYING SIDING:**

There is no mid-section siding on either end of block section

1.2 **IBH, IBS/DK STATION:**

There is no IBH or IBS or DK station on either end of block section

1.3 **HALT STATION:**

A]. Vani Vihar (BNBH) is situated at Km. 433.0 between Bhubaneswar and Mancheswar.

B]. Lingaraj Temple Road [LGTR] is situated at Km. 440.9 between Bhubaneswar and Retang.

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