EAST COAST RAILWAY
SAMBALPUR DIVISION

Sl.No. SWR/HATB/11

STATION WORKING RULES OF HATIBARI STATION (CODE:HATB)

BG/MG/NG: Broad Gauge
Date of issue: 01.08.2022
Date brought into force:- 05.08.22

NOTE: The Station Working Rule (SWR) must be read in conjunction with General and Subsidiary Rules and Block Working Manual. These rules do not in any way supersede any rule in the above books.

1. STATION WORKING RULE: -

1.1 **STATION WORKING RULE DIAGRAM NO.** **:-** SI/WRD **–** 22200
1.2 **SIGNAL INTERLOCKING PLAN NO**. **:-** SI–22200/ALT-A
The Station Working Rule diagram and Signal Interlocking Plan shows the complete lay out of the yard, siding, normal position of points, the signaling and interlocking arrangements, gradients and level crossings within the station limits. This must be referred to for giving details of the point's number and signals when reporting accidents.

2. DESCRIPTION OF STATION: -

HATIBARI is a four-line station situated in Sambalpur-Talcher section at KM 27.340 from SBP junction and KM 590.340 from HWH via. Sambalpur. It is Standard –II (R) interlocked Class'B' station with EI and having Absolute Block System of Working. HASSDAC at both JUJOMURA and MANESWAR ends have been provided at the station for last vehicle check.

2.1 GENERAL LOCATION:-

a)	Name of the station	: HATIBARI (HATB)
b)	Class of station	: 'B' class
c)	Section	: Sambalpur Jn.–Talcher
d)	Double line/Single line	: BG,Double line.
e)	Electrified/Non Electrified	: Electrified
f)	Railway	: East Coast Railway
g)	Route	: 'D'
h)	Situated at	: KM 27.340 from Sambalpur.
i)	Reckoned from	: KM 590.340 from Howrah
j)	Number of cabins	: NIL
k)	PI/EI	: EI with dual VDU Terminals (One VDU is working and other as standby).

2.2 BLOCK STATIONS, IBH, IBS ON EITHER SIDE AND THEIR DISTANCE AND OUTLYING SIDINGS: -

i)	Talcherend	:	JUJOMURA(Code: JUJA) inter distance 11.678 K.M.
ii)	Sambalpur end	:	MANESWAR(Code:MANE) inter distance 12.320 K.M.
iii)	Passenger Halt	:	Nil
iv)	Flag station	:	Nil
v)	Outlying siding	:	Nil
vi)	D.K. station	:	Nil.
vii)	IBH	:	Nil.
viii)	IBS	:	Nil.

2.3 BLOCK SECTION LIMITS: -

Between stations	The point from which 'Block section' commences.	The point at which 'Block section' ends.
Between HATB - JUJA (UP Line)	UP Advanced starter signal No.25 of HATB.	Up to facing point No. 31A of JUJA station.

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Between JUJA - HATB(DN Line)	DN Advanced starter signal No.26 of JUJA.	Block Section Limit Board of HATB station on DN line.
Between MANE - HATB (UP Line)	UP Advanced starter signal No.25 of MANE	Up to facing point No. 31A of HATB station.
Between HATB - MANE (DN Line)	DN Advanced starter signal No.26 of HATB.	Up to facing point No. 31A of MANE station.

2.3.1 **STATION SECTION:**

The portion in between BSLB and DN Advanced starter signal no.26 on DN line and the portion between top point no. 31A & UP Advance starter no. 25 on UP line is the station section of HATB station.

2.3.2 **STATION LIMIT:**

The portion from UP Distant signal to UP Advanced starter signal of HATB on UP line and DN Distant signal to DN Advanced starter signal on DN line is the station limit of the Station.

2.4: **GRADIENT: -**

(a) FROM THE CENTER OF STATION BUILDING TOWARDS SAMBALPUR(UP LINE)

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	1560.00	1560.00	1 in 1200R
1560.00	2360.00	800.00	1 in 155 R
2360.00	2680.00	320.00	LEVEL
2680.00	3320.00	640.00	1 in 200R
3320.00	3540.00	220.00	1 in 175 R
3540.00	3760.00	220.00	1 in 265 F
3760.00	Block Section	----	LEVEL

(b) FROM THE CENTER OF STATION BUILDING TOWARDS SAMBALPUR(DN LINE)

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	1563.80	1563.80	1 in 1200R
1563.80	2360.00	796.20	1 in 155 R
2360.00	2700.00	340.00	LEVEL
2700.00	3000.00	300.00	1 in 230R
3000.00	3520.00	520.00	1 in 160 R
3520.00	3760.00	240.00	1 in 265 F
3760.00	Block Section	----	LEVEL

(c) FROM THE CENTER OF STATION BUILDING TOWARDS TALCHER (UP LINE)

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	760.00	760.00	1 in 1200 R
760.00	2490.00	1730.00	1in 160 R
2490.00	2720.00	230.00	1 in 165F
2720.00	3220.00	500.00	1 in 200 F
3220.00	3780.00	560.00	LEVEL
3780.00	Block Section	----	1 in 200 R

(d) FROM THE CENTER OF STATION BUILDING TOWARDS TALCHER (DN LINE)

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	760.00	760.00	1 in 1200 R
760.00	2485.90	1730.00	1in 160 R
2485.00	2960.00	230.00	1 in 165F
2960.00	3440.00	500.00	1 in 240F
3440.00	3750.00	560.00	LEVEL
3750.00	Block Section	----	1 in 190 R

2.5 **LAY OUT: -**

(i)	No. of running lines	:	4 (Four).
(ii)	No. of sidings	:	01No.(One), 1) T.M Siding taking off from line no.1 at SBP end, CSL-292.0M (SH to DE).
(iii)	No. of Passenger platform	:	02Nos. (Two), 1) High level Pass. Platform (580M x10.00M) beside line No-1. 2) High Level Pass. Platform (580M x 6.5M) beside Line No.4.
(iv)	No. of goods shed platform	:	Nil
(v)	No. of siding platform	:	01 No. (One) working platform (300M x 3.0M) beside Track Machine Siding.
(vi)	FOB	:	01 No. at CH-100.00M,2.7 M Wide & 28.36M Span.

2.5.1 **RUNNING LINES, DIRECTION OF MOVEMENTS AND HOLDING CAPACITY IN CSL:**

DESCRIPTION	CSL	Electrified/ Non-Electrified	ISOLATION PROVIDED	
			TOWARDS JUJA	TOWARDS MANE
Line No.1 (Common Loop)	736.7 mtrs. (Str. to Str.)	Electrified	ORL	ORL
Line No.2 (DN Main)	848.9mtrs. (SH. To Str.)	Electrified	----	----
Line No.3 (UP Main)	781.2mtrs. (S.S. to Str.)	Electrified	----	----
Line No.4 (UP Loop)	755.1 mtrs. (Str. to SS)	Electrified	ORL	DS

(II) **DIRECTION OF MOVEMENTS: -**

(a) Trains arriving from JUJOMURA are DN trains.
(b) Trains arriving from MANESWAR are UP trains.

2.5.2 NON-RUNNING LINES AND CAL

Sl. No.	Description	Takes off	CSL	Exit	Operation
1	Track Machine Siding	Line No.1 at MANE end of the yard.	292.0M (SH to DE).	One way	Setting point No. 37 from SM's VDU for shunting train to TM Siding at MANE end.

2.5.3 **ANY SPECIAL FEATURES IN THE LAYOUT: -** Nil.

2.6 **LEVEL CROSSINGS: (STATION SECTION) –** NIL

2.7 **LEVEL CROSSINGS: (IN BLOCK SECTION)-** 02(Two)

Sl. No.	Location	K.M.& No.	Normal Position	Class	Type	Operation	Communication
1.	Between MANE-HATB	23/21-23(UP) 23/22-24(DN) ST-18	Closed to road traffic	'C'	Non Interlocked	Winch operated lifting barrier	Voice Logger Telephone with SM office/HATB
2.	Between MANE-HATB	17/5-7(UP) 17/6-8(DN) ST-15	Closed to road traffic	'C'	Non Interlocked	Winch operated lifting barrier	Voice Logger Telephone with SM office/MANE

Note:-Train Actuated Warning Device has not been provided at above Level Crossing Gates.
(Working of Level Crossing Gates is given in detail in appendix 'A')

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3. SYSTEM AND MEANS OF WORKING:-

(Rule No: - Chapter XIV of G&SR, Chapter III&V of BWM)

i.	System of working.	:	Absolute Block system.
ii.	Type of block instrument.	:	Non-Co-operative type
iii.	Block Instrument.	:	DLBI for both HATB-JUJA & HATB-MANE sections.
iv.	Block Telephone.	:	Provided with respective block instruments.
v.	Staff responsible for their operations.	:	S.M. on duty.
vi.	Custodian of keys.	:	S.M. on duty.

4. **SYSTEM OF SIGNALLING AND INTERLOCKING: -**

4.1.1 **STANDARD OF INTERLOCKING AND TYPE OF SIGNALLING:** This Station is provided with Standard-II (R) Electronic Interlocking with Multiple Aspect Colour Light signals. The Home signals and Advance Starter signals are interlocked with respective block instruments. Starter signals are released by Advance Starter Signals.

4.1.2 **TYPE OF SIGNALS**:
Multiple Aspect Colour Light Signals. The aspects & indications of MACLS are governed by GR:3.08(4)(b)

a) **Minimum equipment of signal**– Distant, Home, Starter and Advanced starter signals in either direction.

b) The Station is provided with **central Electronic Interlocking (EI)** and having no end cabins. All signals and points are electrically operated from the VDU provided in SM's Office.

c) **Method of operation**:

VDU one as working other as standby are provided in the Station Master's office to electrically control all signals and points. (The details of operation from VDU is given under Appendix-'B')

d) **Provision of axle counter and Track circuits**:

I. TRACK CIRCUIT: -

All the lines including point zones between Home and Advanced starter signal on either direction are track circuited. The position of the running lines including point zones i.e. occupied/clear is indicated in the illuminated diagram at the Station Master's office. Normally there will be no indication of track circuits. It shows 'Red' when the line is occupied and 'yellow' when the line is clear provided the route is set.(Detailed track circuits given in appendix-B)

II. AXLE COUNTER:

Block sections HATB-MANE & HATB-JUJA are monitored by axle counter system. High Availability Single Section Digital axle counters have been provided for last vehicle check for sections HATB-MANE & HATB-JUJA on both UP & DN line.

The position of block section i.e. clear/occupied is reflected on the reset box panel provided in the Station Master's office which shows 'GREEN' when the block section is clear and 'RED when the block section is occupied. The occupation and clearance of the axle counter section are also indicated on VDU by RED & GREEN light respectively.

A reset box consisting of a counter and one resetting key with a push switch and four indications i.e. 'RED', 'GREEN', 'YELLOW' and miniature GREEN with locking arrangement for each pair of axle counter, kept at the station master's office. 'RED' and 'GREEN' indicates occupation and clearance of Block section respectively, 'YELLOW' indication glows when power is ON and miniature GREEN glows when resetting operation is initiated, after passage of a train the Axle counter will show clear indication. The resetting key of this panel is kept locked and sealed in a separate box. The key of the box is kept under the custody of SM on duty.

Whenever a train enters into the block section, block section clear indication 'GREEN' disappears and occupied indication 'RED' appears. If after the complete arrival of the train, 'RED' indication does not change to 'GREEN', it should be assumed as failure of axle counter and subsequently block instrument failure, necessary action as per GR 14.13 to be followed. The axle counter is interlocked with Block instruments of concerned section.

A visual indication is provided in front of SM to enable him to report to ESM/JE signal when one Axle counting system fails.

e) **CALLING-ON SIGNALS:** Calling-on signals are provided below Home signals(i.e. in both UP& DN directions) and below Starter signals as per GR.3.13 (1) (b), (2) (3) (4) & (6) (b).Miniature colour light Calling-on signal is provided below the Home signals in terms of GR.3.13 (6) (b). A Calling-on signal shows no light in the 'ON' position and Yellow light when taken "OFF". 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 and for shunting purpose(Calling-On cannot be taken off when both 1st & 2nd track circuit in advance of Home signal are shown red simultaneously). Before taking 'OFF' Calling-on signal during failure of track circuit the route and clearance of the track over which the train is to be admitted must be checked physically by SM on duty.

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit in rear of the signal. When a train occupies the track circuit a RED light strip will appear on the VDU. The particular route on which train is intended to be received shall be set by selecting the desired route and SM on duty shall left click on the same after a train occupies the approach track circuit in rear of the signal. The Calling-on signal below Home signals is cleared after a lapse of 60 seconds i.e. a Yellow light glows at the concerned Calling-on signal on the VDU. The Calling-on signal below Starter signals is cleared immediately without any time delay, i.e. a Yellow light glows at the concerned Calling-on signal on the VDU. For every such operation veeder counter provided for the purpose counts next higher count. Each such operation shall be recorded by the SM on duty along with the reasons to do so. The calling-on signal route cannot be released automatically after complete arrival of the train. To release the route after passage of train SM on duty has to cancel the signal.

NOTE:

i) Before taking "OFF" Calling-on signal during failure of track circuit, the clearance of track over which the train is intended to be received must be verified physically.

ii) SM on duty to ensure that no through signals are given while receiving a train on Calling-on signal.

f) **STATION MASTER'S OPERATING VDU: -**

The Station is provided with central Electronic Interlocking (EI). All signals and points are electrically operated from the VDU provided at SM's Office. A standby VDU is also provided to switch over the system in case of failure of working VDU. The VDU in Station Master's office electrically controls all signals, points, crank handle keys, etc. The VDU is provided with SM's key, user name and password which shall always remain in the personal custody of the Station Master on duty in terms of SR 3.36.03(a).

NOTE: All operations and Indications shall be carried out through VDU only **.**The details of operation from VDU is given under APPENDIX-'B'.

4.1.3 **CRANK HANDLE**

When any point fails to operate normally by the Route Setting operation through VDU, it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handle keys 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-2.19 and para 20.06 of Appendix-B.

CRANKHANDLE		**CONTROL POINTS**
CH-1	----------	31A/B.
CH-2	----------	33A/B, 36A/B.
CH-3	----------	34A/B, 35A/B.
CH-4	----------	37A/B.
CH-5	----------	32A/B

These crank handle keys are interlocked with the signaling and interlocking system at this station and normally locked inside the EKT instrument at respective Crank Handles Locations. Crank handle keys can be taken out only when signals are not taken 'OFF' and the route is not locked for whatever reasons. Crank Handle key can be released by SM by tracking the mouse pointer on to the concerned crank handle button icon. This will enable two options to be displayed on the menu i.e. Crank handle Transmit control and Crank Handle Release control. To release the crank handle key, SM should click the Crank handle 'TRANSMIT' control option. After transmission the KEY, IN indication will start 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 keys are taken out no signal can be taken "OFF" over the particular route on the points nominated by that Crank Handle.

SM 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 on duty at the station as per Para 2.19 of the Operating Manual. Correct setting, clamping and padlocking of the points devolve on the SM on duty. The cases of failure of motor point should be promptly reported to the concerned signal maintainer/SSE (Signal) for immediate rectification.

One Emergency key provided at SM's room to release all crank handles of the station during failure of both the VDUs. To release the crank handle key, SM shall turn the Emergency key. After the completion of 120 sec, the crank handle keys will be released at all location boxes.

4.1.4 **SHUNT SIGNALS:**

Independent shunt signals SH-3(A-C) at MANE end and SH-4(A-D) at JUJA end have been provided on main line for back shunt movement. Independent shunt signal SH-15 is provided on the main line for forward shunting movement. Dependent Shunt signal SH-11, SH-12, SH-13, SH-14 & SH-17 are provided below respective starter for forward shunting. Independent Shunt signal SH-20 on track machine siding line for shunting movement from the siding line.

4.1.5 **POINT AND TRAP INDICATORS** :- NIL

4.1.6 **REPEATING SIGNAL (ELECTRIC/BANNER TYPE)** :- NIL

4.1.7 **EMERGENCY CROSS OVER** :- NIL

4.1.8 **L.C. GATE OPERATION / Working** :- (Given in Appendix A)

4.1.9 **ANTI COLLISION DEVICE** :- NIL

4.1.10 **TRAIN PROTECTION & WARNING SYSTEM** :- NIL

4.1.11 EMERGENCY POINT OPERATION (BLACK WITH RED DOT): -

Emergency point operation facility is provided to operate the point from the VDU in case of failure of point controlling track circuit. If such operation is necessary, the SM on duty shall ensure that no vehicle is standing on the concerned point track circuit. Then Emergency Point Operation Key is to be made "KEY IN" by clicking the 'KEY IN' menu. The user name and password is to be logged in. Track the pointer to 'EMERGENCY NORMAL/REVERSE' menu and click. A NORMAL/REVERSE flashing indication will appear and the indication will become steady after the point is set to Normal or Reverse. This action will be recorded in a counter. The counter will increase by next number for each and every such operation; this number should be recorded by the SM on duty who shall record the details of the Emergency Point Operation along with the latest counter no. in the concerned register and SM's diary.
After the completion of the Emergency point operation, the Key to be 'KEY OUT' by clicking 'KEY OUT' menu. The user name and password is not required for "KEY OUT" operation.

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

The Electronic 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.

When the route is set and the signal taken-off, click on the signal. After clicking by the left button on the mouse, a pop-up menu will appear. Click on the cancellation menu (Main/Calling on) of the concerned signal, the signal will immediately go to 'ON' position. After doing so, click on the Route release menu the route locked indication will starts flashing for 120 sec & the Emergency Route Release Indication (UP/DN as the case may be) will flash for the entire time interval. After the completion of 120 sec, the locked route will be released. This action will be recorded in a counter. The counter number will increase to next higher number for each and every such operation, this number should be recorded by the SM on duty who shall record the details of the Route cancellation along with the latest counter number in the register and SM's diary.

In case the route is not released, the concerned S&T staff should be advised for rectification of fault, if any.

NOTE: Details of signalling and interlocking are given in Appendix 'B' of the SWR.

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

Custody of Relay Room key and procedure for its handover and taking over between SM & S&T staff has to follow the procedure as per Para No.13.16 of Operating Manual (2015), JPO/02/2012, dated 29.08.2012, RB JPO issued vide No.2021/Sig/21/Safety Performance, dated.10.06.2023.

The provision of double locks in relay room includes all relay rooms, relay huts, goomties, LC Gate relay huts/goomties within station limits and cabins provided as an extension of station relay room for housing signaling gears in station yard.

The Relay room & extended relay rooms within the station limits shall have double locking system of operating and S&T Locks. One Godrej Lock shall be provided on the door of Relay Room by the Station Master. This lock is named as operating lock. The key shall be kept in the safe custody in the key- box with the SM on duty. Likewise, one Godrej lock shall be provided on the door of Relay Room by the Signal Maintainer/ Signal Supervisor of the Station /Section.

Names of the S&T staff authorized for opening of Relay Room is to be entered in the first page of Relay Room Key Register and jointly certified by SSE/Signal In-Charge and TI In- Charge of the Section. In emergency, if any S&T staff other than authorized wants to open Relay room, he must inform DSTE through Signal Fault Control. Signal Fault Control shall convey the permission of DSTE to SS/SM by giving Signal Fault Control order number.

Whenever relay room is to be opened either for scheduled maintenance or during failures or for maintenance activities/construction works. The concerned Maintainer/Signal Supervisor will inform SM on duty for opening of Relay Room with reason. SM on duty will verify his identity from the list of authorized S & T Staff recorded in the first page of Relay Room Key register or as advised by Signal Fault Control in emergency. SM shall give the key of operating lock to S&T staff, after the entry is made in the Relay Room and also with Red Ink in TSR. Relay Room key shall not be handed over by SM on duty to any Group D staff of S&T department. On completion of work, the concerned Signal Maintainer/ Signal Supervisor shall properly close Relay Room door and lock it with both the locks and then return the key of operating lock to the SM on duty making the entry in the relay room register.

When the key of Operating Lock is returned by S& T staff to SM on duty, he shall first verify the Relay Room for proper locking and then keep the key in safe custody and acknowledge it on the Relay-Room key register. If the relay room key is handed over to the Signal staff regarding the interference in safety gears the train shall be piloted in and out. For attending Failures of S& T gears within relay Rooms, the following steps shall be taken :

Entry to be made in S& T failure register by SM on duty and failure Memo has to be issued to S& T staff. S& T staff shall not take the Relay Room Key for attending failures and open the Relay Room unless the failure is recorded in Signal failure register. If disconnection is required, Disconnection Memo has to be given by S& T staff to SM on duty. Failure Memo should be acknowledged and entry in relay room key register to be made by S& T staff before obtaining Station Master's key. Relay Room key for Schedule maintenance shall be taken once in a calendar Month during monthly inspection by Sectional Supervisor. Relay room can be opened by following above procedure for special maintenance activities like cable insulation testing, block/ disconnection memos, selection/ locking table testing, maintenance work inside relay room by Electrical and Engineering staff, during failures, data logger resetting and inspection by Divisional and Headquarter officials, Track Circuit adjustments & voltage monitoring during monsoon and whenever required during rains. Works required by S& T Construction & open line staff for preparatory works and during commissioning. In each such case, the Construction Staff Shall follow the detailed guidelines issued regarding working on signaling gears under the charge of open line.

In case of emergencies such as fire, flood, earthquake etc., Open Line Section Engineer (Signal) / Signal Maintainer & SS/SM shall jointly decide the need for opening the Relay Room. Section Engineer Signal HQ at Divisional Control Office and Section controller shall be advised respectively. In case of communication failure during such emergencies, Open Line Signal Maintainers/ Supervisors and SS/SM on duty shall jointly decide the need for opening the Relay Room and communicate later on to respective controls. In case key is lost /misplaced, it shall be reported to S&T control as well as section control for either lock. In normal course the spare key with respective custodians shall be used. In emergency situation, lock may be broken under advice to Section Control as well as S&T control. New lock shall be procured and provided.

In case SM on duty comes to know of relay Room opening by unauthorized means or by unauthorized person or by any Group-D' Staff, the signaling system shall be suspended by him and matter immediately reported to Section Controller for necessary action. Senior section Engineer/ Signal & TI of the respective section will check the station records of relay room opening during their inspections and cross check it with data logger/counter reading if provided. Discrepancy, if any, shall be immediately inquired into and advised to Sr DSTE & Sr DOM by numbered control message from the station immediately for further action.

4.3 [A] **POWER SUPPLY: -**

Power signalling and interlocking installations and the ancillary field units are fed from the following sources of power supply.

Normally supply from UP AT/DN AT connected to OHE traction distribution [230V 50 Hz]

Stand by supply from Odisha State Electricity Board (OSEB) [Single phase 230V 50 Hz]

Normal power supply [Single phase 230V 50 Hz] to the Signalling & Interlocking installation at the station is drawn from the traction power sources. Whenever traction power supply fails SS/SM on duty shall operate the rotary change over switch provided in the CLS power panel at SM's office connecting the power supply to the healthy sources for the installation.

The SS/SM on duty however maintain the record of power failures either of the traction supply or local supply and he must promptly report the failure of any one or both the power sources immediately through the section controller and to the concerned Electrical staff and S&T maintenance staff.

a) A changeover switch is provided in the SM's office with the three power supply i.e. UP AT, DN AT and Local power supply for changing the switch to the required supply position. Luminous indicators are provided above the circuit breaker for each supply to indicate the availability of the supplies.

b) Normally the switch will be kept towards AUTO position. Whenever the power block is to be given on the line, on duty SS/SM must ascertain the power is available on the other AT and change over the switch to desired position e.g. if power block is to be given on the UP line, DN AT must be available and vice versa.

c) In case of failure of the AT supply without any power block, on duty SS/SM 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 upwards and when tripped it goes downwards. In case of failure of both AT supplies without any power block, the local supplies shall be utilized by operating the changeover switch. If the circuit breaker is tripping even after resetting, no attempts shall be made to hold it by any other means and a message shall be given to the AEE/GEN and CTFO/PSI/TRD/GEN for prompt rectification.

d) During the non-availability of both the AT supplies SM on duty shall keep the rotary change over switch towards the local supply to feed available local supply to the installation.

Whenever there is a failure of power supply in one AT, the on duty SS/SM shall take prompt action to inform to all concerned for the rectification. The on duty SS/SM himself, during his daily checks, shall test the availability of power supplies on both AT's and make entry in station dairy initiating action for rectification of failure, if any.

[B] **REMOTE MONITORING ASM BOX:**

Remote monitoring ASM box gives alarm to the ASM for the following fault conditions:-

(i) 50% DOD (Depth of Discharge) of Battery. In this condition Audio/Visual alarm comes which can be acknowledged with audio cut off.

(ii) 60% DOD (Depth of Discharge) of Battery, which warns for emergency. The Alarm for this condition is same as for condition 1.

(iii) 70% DOD (Depth of Discharge) of Battery, power to the signal will be cut-off however all DC-DC converters will continue to work. Audio alarm will continue till power supply restored.

(iv) If any of the Modules fails, "Call S&T" alarm will appear.

Whenever there is a failure of power supply in one AT, the SM shall take prompt action to inform to all concerned for the rectification. The SM himself, during his daily checks, shall test the availability of power supply on both AT's and make an entry in station diary duly initiating action for rectification of failure, if any.

5.0 **TELECOMMUNICATION FACILITIES: -**

(i) Telephone attached with Block Instruments for either side Block Section
(ii) Station to Station fixed telephone (Hot line) is provided
(iii) Station is provided with Auto telephone connected with Railway Exchange
(iv) BSNL telephone is provided.
(v) The station is connected to SAMBALPUR-ANGUL control circuit by a control telephone.
(vi) Station to station 25 Watt VHF communication is provided.
(vii) Telephone is provided between Station and both end crank handle locations.
(viii) Telephone is provided between Station and L.C No.ST-18 at KM 23/21-23(UP),23/22-24(DN) (between HATB-MANE).
(ix) Telephone connected with traction power control.

NOTE:

(i) For obtaining line clear, VHF should be used as a last alternative and not as a sole means of communication.
(ii) VHF and Walkie Talkie sets should not be used for unnecessary discussions with Loco Pilots, Guards or any other staff.

5.1 **FAILURE OF COMMUNICATION: -**

The on duty SM shall use the above electrical communication instruments stated in Para-5 from item no. (i) to (vi) strictly in order of preference for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication between the adjacent block stations the SM on duty shall work vide SR 6.02.06. In the event of total failure of communications SR 6.02.03shall be observed for working the trains.

(Details are mentioned in Appendix 'B' of the SWR.)

6.0 **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 General Rules, Subsidiary Rules, Station Working Rules, Block Working Manual and other safe working instructions issued from time to time. In the event of suspension of control working, the Station Master on duty shall work independently in conjunction with the Station Master of adjoining block station and shall be responsible to ensure that there is no undue delay to train operation in general.

DUTIES OF TRAIN WORKING STAFF: -

Details of duties of operating staff are mentioned in Appendix 'D' of the SWR.

6.1.1 **TRAIN WORKING STAFF: -**

The following are the complement of train working and operating staff provided at the station to work in each shift.

SL. NO.	DESIGNATION	ROSTER	NO. OF STAFF IN EACH SHIFT	HRS. OF DUTY
1.	Station Manager (in-charge)----------	Continuous	01	09hrs
2.	SM-----	Continuous	01	08 hrs.
3.	TPM-B/ TPM-A	Continuous	01	08 hrs.

The above staff shall work as per the rosters issued by Sr.DPO/SBP from time to time and these rosters shall be conspicuously displayed in the SM office.

6.1.2 **RESPONSIBILITY OF ASCERTAINING CLEARANCE OF THE LINE: -**

The SM on duty is responsible to ascertain the clearance of the nominated line between outer most facing points of concerned line.

6.1.3 **ASSURANCE OF STAFF IN 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 and thoroughly understood the system in force and must sign in such declaration.

No Railway servant shall be entrusted with any duty involving safety of the public unless the station in-charge 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 is responsible to see that all the staff are conversant with the Station Working Rules and their signatures 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 signature/thumb impression must be obtained after explaining fully about their duties and responsibilities.

The station superintendent is responsible personally for maintaining the Assurance Register and for obtaining declaration of the staff working under him. The Assurance Register must be maintained 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 personal custody of the Station Superintendent (In- Charge).The declaration shall be renewed in the following cases: -

Whenever there is a change in the Station Working Rules.

For any staff, who have not worked at the station or were away from the station for a period of 15 days or more.

6.2 CONDITIONS FOR GRANTING LINE CLEAR: -

The conditions laid down in GR8.01(1)(a),(b(c)8.01(2)(b), 03(1)(a),(b),(c)(ii)8.03(2)(a),(b),(c)(iii) and BWM 2.07(3) & (4) shall be complied with before the line is considered clear and 'Line Clear' is granted for a train by on duty SM.

[A] For Single line Section:-NA

[B] For double line Section:-

i) The whole of the last preceding train has arrived complete .

ii) All necessary signals have been put back to 'ON' behind the said train.

iii) The line is clear up to the BSLB for DN trains and up to outermost facing point 31A for UP trains.

NOTE-If the light of the reception signal is found not glowing, line clear shall not be granted for train till such time it is ensured that concerned driver is notified of the fact in writing by the SM of the station to which such line clear is to be granted.[Ref GR:3.49(4), 8.01(1)(a),(b)(c), 8.01(2)(b),8.03(1),(a),(b),(c)(ii)8.03(2)(a),(b),(c).

iv) **OUTLYING SIDING: -** NIL.

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

6.2.1.1 **SETTING OF POINTS AGAINST BLOCKED LINE: -**SR 3.51.06

All Points shall normally be set for the straight except when authorized by special instruction. When a running line is blocked by stable load, wagon, vehicle or by train which is to cross or give precedence to another train or immediately after arrival of a train at the station, the points in rear should immediately be set against the blocked line except when shunting or for any other movement towards the blocked line is required to be done vide 3.51.06 (a). if all the lines at the station happen to be blocked then SR.3.51.06 (b) will be followed.

Safety Point Alarm Unit (SPAU):

A safety point alarm unit is provided on the SM table with different indications: On complete arrival of a train at the station, the SM has to set the points immediately against the occupied line as per SR 3.51.06. In case the SM forgets to alter the points, after a time lag of 02 minutes, an audible buzzer will be heard from this instrument along with the 'RED' indication of the line on which the train has arrived. The SM shall then press 'ACK' button to mute the buzzer, and immediately set the required points against the line on which the train has arrived. On setting the points against the occupied line, the RED indication will disappear. In case SM fails to set the required points against the occupied line a fault message will be triggered SMS will be sent to concerned station mobile and all concerned. If all the lines of a station happen to be blocked when line clear has been granted to a train the safety point alarm will not work and the point should be set for the line occupied by a stable load or a goods train by SM on duty, in that order so that, in case of any mishap, the chance of causalities minimized. In case of all the lines are occupied by passenger trains points should be set for a loop line to negotiate which the speed of incoming train would be reduced, which in turn would minimize the consequences/causalities vide SR 3.51.06 (b). These precautions shall be taken in addition to the observance of other precautions as contained in SR 5.04.01 and SR 5.23.01.

6.2.1.2 **RECEPTION OF TRAIN ON BLOCKED LINE: -** GR 5.09

Whenever trains are to be admitted on an obstructed line the SM on duty shall take off calling on signal. But during failure of calling on signal he 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 SM on duty shall ensure the correct setting clamping and padlocking of both facing and trailing end of the points of concerned route vide SR 3.69.03.

A stop hand signal shall be exhibited by the SM on duty at a distance of not less 45mts. from the point of obstruction to indicate to the Loco pilot as to where the train shall be brought to a stand.

6.2.1.3 **RECEPTION OF TRAIN ON NON-SIGNALLED LINE-** In case of reception of a train on non-signaled line the Station Master shall follow GR 5.10 & SR thereto.

6.2.1.4 **DESPATCH OF TRAINS FROM NON-SIGNALLED LINE -**In case of dispatch of a train on non-signaled line the Station Master shall follow GR 5.11 & SR thereto.

6.2.1.5 **DESPATCH OF TRAINS FROM LINE PROVIDED WITH COMMON STARTER SIGNAL: -**

Not Applicable

6.2.1.6 SPECIAL RESTRICTIONS:-

(i) Speed is raised to 30 KMPH on first loop lines on either side of main line and over its turnouts. However, no train shall be allowed to negotiate at a speed more than 15 KMPH if it involves negotiating more than one crossover at a time.

(ii) No load shall be stabled in non isolated lines without a live Locomotive is attached otherwise vehicle should be secured vide RB's letter No.2012/SAFETY(A&R)/19/1 dated 04.12.20218.

(iii) No load shall be stabled in non-isolated lines without a live locomotive is attached otherwise vehicle should be secured vide RB's letter No.2012/SAFETY(A&R)/19/1 Dated.04.12.2018.

6.2.1.7 **SPECIAL INSTRUCTIONS**:-

To avoid premature release of overlap on Line No. 2, overlap release will initiate after clearance of rear portion of point zone track circuit is clear and train should be drawn ahead to initiate overlap release.

6.3 **CONDITIONS FOR TAKING 'OFF' APPROACH SIGNAL: -**

Reception of trains is governed by General Rule 3.36, 3.38, 3.40, Subsidiary Rule 3.42.02 (a) (iv), 3.42.03, 3.36.04 and other relevant provisions of General and Subsidiary Rules, Block Working Manual and Station Working Rules of the station to be followed.

Adequate distances to be kept clear vide General Rule 3.40(3) (a) (b) for reception of trains.

A. **CLEARANCE OF ADEQUATE DISTANCE**:-

To take off the Home signal for admission of a train the adequate distance (signal overlap) as mentioned below shall be kept clear: -

Sr. No.	Line No.	UP TRAIN		DN TRAIN	
		FROM	TO	FROM	TO
1.	Line No.1 (Common loop)	Starter signal No.17	Up to Advanced Starter signal no.25 or up to the end of overrun line.	Starter signal No.12.	DN to the advanced starter signal no.26 or up to the end of the overrun line.
2.	Line No. 2 (DN Main Line)	----	----	Starter signal No.14	Up to the advanced starter signal no.26
3.	Line No.3 (UP Main line)	Starter signal No.13	Up to Advanced starter signal no.25.	----	----
4.	Line No.4 (UP Loop line)	Starter signal No.11	Up to Advanced Starter signal no.25 or up to the end of overrun line.	----	----

Before admitting a train on any line, it must be ensured that the track indication for the respective line indicates 'WHITE' indication in the VDU. To receive a train, for which line clear is granted, the SM on duty shall nominate a clear line in consultation with the Section Controller on duty. SM shall personally satisfy himself that the nominated line is clear and free from all obstructions by seeing the track circuit indication on VDU or by physical verification of the nominated route in case of failure of track circuit. He shall suspend all non-isolated shunting and thereafter set the points of the nominated route through VDU. He shall then verify from the visual indication available in the VDU that points are set to the desired route.

In case any of the track circuit on the concerned route shows occupied by RED indication even though the other conditions are satisfied, the operation through VDU by the SM on duty will not permit the concerned signal to be taken off. However, reception of train will be possible in such cases with the "Calling On" signal fixed below Home signal at either end. Calling-on signal can be taken off if either of the first two track circuits provided beyond the Home signal is in picked up condition.

Miniature Colour light calling on signal is provided below the Home signals in terms of GR 3.13(6)(b). A calling-on signal shows no light in the 'ON' position. The calling on signal is taken off for reception of a train when the Home signal above it cannot be taken off due to failure of track circuit or any other reason or for admission of a train on blocked line.

B. TAKING OFF CALLING-ON SIGNAL

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit in rear of the signal. When a train occupies the track circuit a RED light strip will appear on the VDU. The particular route on which train is intended to be received shall be set by tracking the pointer in VDU on to the signal below which the calling on signal is provided. Various options in terms of the total routes over which the signal will lead to will appear on the menu. Then the SM must drag the pointer and click over the particular Calling-on route amongst the various options displayed in the menu by the left button of the mouse as a result of which the signal lock indication below the signal will start flashing for 60 seconds. Calling-on signal below Home signal will then clear. i.e., a White light glows at the concerned calling-on signal on the VDU. Calling-on signal below Starter signal will clear immediately, i.e. without any time delay, a White light glows at the concerned calling-on signal on the VDU. Every such operation has to be recorded by the on duty SM along with the reasons to do so. The calling-on signal route cannot be released automatically after complete arrival of the train. To release the route after passage of train SM on duty has to cancel the signal.

NOTE:

i) Before taking "OFF" Calling-on signal during failure of track circuit, the clearance of track over which the train is intended to be received must be verified physically.

ii) SM on duty to ensure that no through signals are given while receiving a train on Calling-on signal.

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

If for any reason after taking off signals, it is required to put back the signal and alter the route, in terms of Subsidiary Rules 3.36.02(b) (ii), a time delay of 2 minutes shall be observed before the points can be altered.

6.4 **SIMULTANEOUS RECEPTION, DESPATCH, CROSSING & PRECEDENCE OF TRAINS:**

According to the existing interlocking at this station, the simultaneous reception and dispatch of trains are permitted as stipulated below. SM shall work the trains vide SR 3.47.01 & 3.47.02 simultaneously in compliance to GR 3.40.

(i)	While receiving an UP train on line no.1 setting overlap to overrun line.	Despatch of an UP train from L3/L4.
(ii)	While receiving an UP train on line no. 3.	Reception and Despatch of a DN train on L1/L2 .
(iii)	While receiving an UP train on line no. 4 setting overlap to overrun line.	Dispatch a UP train from line no. R1/R3 or Reception & Despatch of a DN train on L1/L2
(iv)	While receiving an UP train on line no. 4 setting overlap upto advanced starter no. 25..	Reception & Despatch of a DN train on L1/L2 .
(v)	While receiving a DN train on line no.1 setting overlap to overrun line.	Dispatch of a DN train from L2 or Reception & Dispatch of an UP train on L3/L4.
(vi)	While receiving a DN train on line no.1 setting overlap up to advanced starter no. 26.	Reception & Dispatch of an UP train on L3/L4 .
(vii)	While receiving a DN train on line no.2.	Reception & Dispatch of an UP train on L3/L4 .

6.5 **COMPLETE ARRIVAL OF TRAIN: -**

(Rule no. GR 4.16, SR 4.17.01, 4.17.02, GR 14.10)

a**)** **STAFF RESPONSIBLE TO VERIFY COMPLETE ARRIVAL: -** SM on duty.

b) **MODE OF VERIFICATION**: Through AXLE COUNTER.

6.5.1 **L.V. VERIFICATION THROUGH AXLE COUNTER**: -

Entire block section at both sides of the station is monitored by axle counter system and the position of block section whether clear or occupied is indicated in the VDU. As soon as a train enters in to the block section, the 'RED' indication appears in the axle counter indication panel as well as on the VDU. After the whole train clears the block section, 'GREEN' indication appears on the axle counter indication panel as well as on the VDU. This confirms the complete arrival of train and the SM on duty shall give train out of section report on seeing the section clear (GREEN) indication in the panel. GR 14.10.

6.5.2 **L.V. VERIFICATION WHEN AXLE COUNTER FAILS:-**

In case of failure of axle counter, the Station Master on duty shall obtain complete arrival certificate from the Guard of the train in the complete arrival register (T/1410) maintained at the station for stopping train. For through passing train the station master on duty shall satisfy himself about complete arrival of train by verification of the last vehicle indicator vide GR 4.16 that the train is complete. In case a train arrives/passes incomplete, action shall be taken as per Subsidiary Rules 4.17.02. 'The train out of block section signal' shall be withheld to the station in rear until complete arrival certificate is received from the station in advance supported by a Private Number.

Train passing on adjacent line shall be stopped and Guard and Loco pilot shall be issued with caution order to proceed cautiously and stop short of any obstruction as per SR. 4.17.03.

6.5.3 **L.V. VERIFICATION WHEN MOTOR TROLLEY FOLLOWING:-**

On occasions when motor trolley follows a train, the points shall not be altered until the following motor trolley is admitted on the same line. In the event of motor trolley is delayed in the section the Station Master on duty shall take action in terms of SR15.25.03 (b)(vi).

6.6 **DESPATCHING OF TRAINS: -**

Dispatch of trains are governed by General Rules 3.36, 3.38, 3.42, 5.11,14.08 & 8.01 Subsidiary Rule 3.36.04(b), 3.42.04,3.42.05(a)and Block Working Manual 2.07(5)(a)(b) and other provisions of General Rules, Subsidiary Rules, Block Working Manual and Station Working Rules of the station.

To dispatch a train, the Station master on duty having obtained line clear for that train, shall set the route for the outgoing train correctly and satisfy himself by observing the visual indication on the VDU, shall ensure the closure of the Level Crossing gate in section. He shall then take "OFF" the concerned Starter signal and Advance starter signal. The 'OFF' aspect of the route Starter and Advanced Starter is the authority to proceed into the block section.

The Station Master on duty shall watch the safe passage of the train with its last vehicle indicator. After the train passes the Advance starter complete, he shall send the train entering block section signal to the station in advance. If a train worked without Guard or Brake Van the instruction laid down in Subsidiary Rule & safety circulars shall be followed.

If a train worked without Guard or Brake Van the instructions laid down in Subsidiary Rules 4.25.02 and 4.23.02 shall be followed.

6.6.1 **PUTTING BACK SIGNALS TO 'ON' IN CASE OF EMERGENCY: -**

If a signal once taken 'Off' for reception/dispatch of a train has to be, in an emergency, put back to 'ON', the procedure laid down in Subsidiary Rules 3.36.02 shall be followed. In case of reception of train, route shall not be altered until the train has come to a stand outside Home signal. In case of departure signal before changing route, the SM shall take action as per SR 3.36.02(b)(ii).

6.7 TRAINS RUNNING THROUGH: -

a) The provision of GR 3.40, 4.17, 4.42 with relevant SRs and SR 3.42.02 (a) (iv) and other relevant provision of BWM shall be observed.
b) The sequence for taking 'OFF' signals for run through trains is governed by SR3.42.02 (a)(iv)
c) In every case in which trains are permitted to run through on a non isolated line, all shunting shall be stopped and no vehicle unattached to an engine or not properly secured in accordance with rule 5.23 may be kept standing on a connected line which is not isolated from through line vide SR 4.11 (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 Rule. [Ref. GR 3.42,4.17,4.42 and SR 4.42.02(b)(i)(ii).

e) The SM is responsible to observe/watch the condition of the vehicles on a train and shall wave green hand signal horizontally as per Subsidiary Rule 4.42.02 (b) until anything wrong is noticed on train. For this purpose the SM on duty shall stand in such a position that a clear view of the passing train is seen by him 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 signal to the other side of the passing train who shall exhibit hand danger signal to draw the attention of the guard/Loco Pilot of the train in case of observing any unsafe condition/abnormalities of the train. He shall also report to the SM on duty for taking further suitable action in terms of SR 4.42.02(d).

6.8 WORKING IN CASE OF FAILURE OF POINTS AND SIGNAL: -

In case of failure of S&T equipments on duty Station Master shall work in accordance to GR 3.68, 3.69 and 3.70 and SRs thereto.

6.8.1 PROCEDURE TO BE FOLLOWED INCASE OF FAILURE OF A SIGNAL & INTERLOCKING INSTALLATION:-

Whenever there is a failure of points, signals, track circuits or any other interlocking gear at the station that includes level crossing gate(s), if any etc. the SM on duty shall follow the procedure detailed in GR 3.68, 3.69,3.70, 3.74 and SR thereto. In case of defective approach signals, the trains will be piloted in vide SR 3.69.06 In case of defective departure signals, trains will be piloted out vide GR 3.70 & SR 3.70.01, 3.70.02& 3.70.03.

6.8.2 TRACK CIRCUIT

In the event of failure of track circuit in the yard concerned signal shall be suspended and trains shall be admitted on Calling-On signal. If Calling-On signal fails then trains shall be piloted 'IN'. Before piloting a train in to the yard the clearance of the track must be ensured by physical verification.

6.8.3 AXLE COUNTER

Block sections MANE-HATB & HATB- JUJA are monitored by digital axle counter system. Dual detection digital axle counters have been provided for last vehicle checking for section MANE-HATB & HATB- JUJA on both UP & DN line.

A pair of digital axle counter is provided between MANE& HATB (beyond Advanced starter of MANE & in advance of Home signal of HATB on UP Line), another pair of digital axle counter is provided for DN line of HATB-MANE (beyond Advanced starter of HATB & in advance of Home signal of MANE on DN Line) for counting the axles 'IN' and for counting the axles 'OUT' to indicate whether the block section is clear of trains as well as to verify the last vehicle of the incoming train.

Similarly a pair of digital axle counter is provided between JUJA & HATB(beyond Advanced starter of JUJA & in advance of Home signal of HATB on DN Line), another pair of digital axle counter is provided for UP line of HATB-JUJA (beyond Advanced starter of HATB & in advance of Home signal of JUJA on UP Line) for counting the axles 'IN' and for counting the axles 'OUT' to indicate whether the block section is clear of trains as well as to verify the last vehicle of the incoming train.

The position of block section i.e. clear/occupied is reflected on the reset box panel provided in the Station Master's office which shows 'GREEN' when the block section is clear and 'RED when the block section is occupied.

A reset box consisting of a counter and one resetting key with a push switch and three indications i.e. 'RED', 'GREEN', 'YELLOW' and GREEN miniature with locking arrangement for each pair of axle counter is kept at the station master's office. 'RED' and 'GREEN' indicates occupation and clearance of Block section respectively, 'YELLOW 'indication glows when power is ON and GREEN miniature glows when resetting operation is initiated and after passage of a train the Axle counter will clear. The resetting key of this panel is kept locked and sealed in a separate box. The key of the box is kept under the custody of SM on duty.

Whenever a train enters into the block section, block section clear indication 'GREEN' disappears and occupied indication 'RED' appears. If after the complete arrival of the train, 'RED' indication does not change to 'GREEN', it should be assumed as block instrument failure and necessary action as per GR 14.13 to be followed. The axle counter is interlocked with Block instruments of concerned section.

A visual indication is provided in front of SM to enable him to report to ESM/JE Signal when one Axle counting system fails.

Details of resetting procedure are mentioned in Appendix-F.

6.8.4 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 Station Master on duty before the signal is declared as defective irrespective of what is indicated by the position of the route.

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, Station Master on duty shall before giving line clear, initiate action in accordance with the procedure prescribed in GR and the relevant SRs. [Refer GR 3.68, 3.69, 3.70, 3.71, 3.72, 3.74, 3.75, 3.76, 3.77, 3.49, 3.52 & 3.56].

6.8.5 BLOCK INSTRUMENT

In the event of partial failure of block instrument the concerned block instrument shall be suspended till its rectification and trains shall work as per GR. 14.13 & SR 6.02.06. UP and DN Advance Starter signals are electrically interlocked with block instruments , so that the same cannot be taken off unless the concerned block instrument is in line clear position. When the concerned block instrument is suspended in line clear position, the concerned Advance Starter signal must also be treated as suspended.

During this period in the double line section i.e. MANE-HATB and HATB-JUJA section trains shall be worked on authority to proceed T/369(3b) vide Chapter-III part-II of BWM.

UP and DN Home signals are electrically interlocked with respective block instruments. Block instrument can be normalized from TRAIN ON LINE to LINE CLOSED position after complete arrival of the trains. However the Home signals can be taken off in case of failure of block instrument.

6.8.6 DEFFECTIVE INTERLOCKING

In the event of interlocking becoming defective, the points will be treated as defective. The SM on duty on receipt of this information will immediately introduce non-interlocking system of working at the station. Trains will be piloted in or out as the case may be. The SM on duty shall be responsible for correct setting, clamping and padlocking of both facing & trailing points for admission of train.

6.8.7 DEFFECTIVE/DAMAGED POINTS

When any point fails to operate normally by the route setting operation through VDU, it is inevitable to operate the points with crank handle. The SM 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 para-20.06 of Appendix- 'B' and 2.19 of Operating manual.

The responsibility of correct setting of points, clamping and padlocking the points for reception and dispatch of trains at the station, rests with SM on duty himself.

6.8.8 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 Station Superintendent/Station Master. [Refer GR 3.68, 3.70 & SR 3.77.01(b)]. Initiate action in accordance with the procedure prescribed in GR and relevant SRs there to. [Refer GR 3.49(4) and 3.68, 3.77]

6.8.9 **ISSUE OF CAUTION ORDER: -** Whenever in consequence of the line being under repair or for any other reason special precautions are necessary, a caution order detailing the kilometers and speed at which a train shall travel and the reasons for taking such precautions shall be handed over to the driver in terms of GR 4.09 and SR thereto.

6.9 **WORKING OF MOTOR TROLLEY, MATERIAL LORRIES ETC: -**

(a) Motor Trolleys are run in accordance with Subsidiary Rules 15.25.03 to 15.25.07.
(b) Material Trolleys will work in accordance with Subsidiary Rules 15.27.05 to 15.27.08.
(c) Rail Dolleys will work in accordance with Subsidiary Rules 15.27.10.

The following precautions must be taken:

i) The section where axle counters are provided in lieu of track circuits, trolleys, motor trolleys, Lorries etc which are not insulated, shall not be allowed to run except on line clear.

ii) Motor trolleys/tower wagons/material Lorries are not likely to actuate the axle counter correctly. When they are to run over the sections split by axle counters, the whole section to be treated as one and next train to be started after the first train has arrived complete.

iii) In all other respects, the working of a light Motor trolley shall conform to the rules laid down for ordinary trolleys while running without block protection and to those laid down for motor trolleys while running under block protection or following another light motor trolley or a motor trolley.

7. BLOCKING OF LINES: -

If any running line is blocked by a train, the line must be isolated by setting the concerned points against that line. 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. 'Line Block' is to be activated on VDU by SM on duty following procedures as laid down in para No. 6.2.1.1 of SWR. 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 SR 3.36.3(b), GR 5.23 and SR 5.23.01(a)]

7.1 **LINE BLOCK FEATURE IN VDU** -Line block feature identical to conventional panel is incorporated in VDU panel for blocking of a running line which is blocked either by loose vehicles or by stabling of a train or by a train which is to cross or give precedence to another train. For blocking/unblocking of line, SM on duty has to click the mouse near the route button provided on running line and a popup menu Blocking & Unblocking will appear. By selecting the blocking option the said line is blocked and reception signal pertaining to that line cannot be taken off. For unblocking the line SM on duty has to select the unblocking option from popup menu. Similarly Blocking/Unblocking feature is provided near the advanced starter signals of both end of the station for Blocking/Unblocking the block section. By selecting the blocking option no train can be dispatched to the block section.

7.2 **SECURING OF VEHICLES:**-

No load shall be stabled in non-isolated lines without a locomotive is attached. As far as practicable, loose vehicles shall not be allowed to stand on the running line. However, under unavoidable circumstances, if it is necessary to detach vehicles from a train or to stable a train and leave them standing on running line, SM on duty shall be responsible to secure vehicles/stable loads in accordance with GR 5.23 and relevant SRs to prevent rolling down of vehicles and arrest obstruction & fouling of line.

NOTE: Special care shall be taken to secure special type vehicles fitted with roller bearings while standing in siding or on running lines.

7.3 **ALTERING OF POINTS TO A CLEAR LINE WHEN RUNNING LINE IS BLOCKED**:-SR 3.51.06

a) When a running line is blocked by stable load e.g, wagons, vehicles or by a train which is to cross or give precedence to another train or immediately after arrival of a train at the station etc. the points in rear should immediately be set against the blocked line except when shunting or another movement is required to be performed in that direction on the same line.

b) If all the lines at a station happens 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 a case of mishap, the chances of casualties are minimized.

c) In case all the lines are occupied by passenger carrying trains points should be set for a loop line, to negotiate which the speed of the incoming train would be reduced, which in turn would minimize the consequences of casualties. While doing so, points shall 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 a loop line, occupied by a train whose passenger coach will, in case of collision, receive the impact.

d) These precautions shall be taken in addition to the observance of other precautions as contained in SR 5.04.01 & 5.23.01.

7.4.1 **LOADING AND UNLOADING OF VEHICLES ON RUNNING LINE**:-

Loading and unloading from vehicles on running line is prohibited unless permitted by Sr. DOM / SBP vide SR 5.19.01.

At stations where loading and unloading of goods is permitted whether full rake or part thereof, the station master shall ensure that no goods are left fouling any line before and after clearance of the rake from the line. The railway servant supervising loading and unloading shall also ensure that consignment does not foul any line vide SR 5.19.01

If the stations are on gradients, the rake should be properly secured as detailed in SR 5.23.01.

During the time of loading/unloading, the station master shall ensure isolation of the lines(s) as detailed in SR 3.51.06.

8.0 SHUNTING: -

8.1 **GENERAL PRECAUTIONS: -**The rules laid down in GR 3.46, 3.52 to 3.56, 5.13 to 5.23, 8.05(2) (3), 8.06 8.09, 8.10, 8.11, 8.12, 8.13 and 8.14, 8.15 (c) with relevant SRs. All shunt moment shall be supervised by SS/SM/Guard/TPM on duty vide SR 5.13.03 as the case may be. In the event of any non-signaled movement has taken place, the SM on duty shall ensure physical verification of the clearance of the crossover points. The staff supervising shunting shall ensure correct setting of points, clamping and pad locking of points, if necessary.

8.2.1 **SHUNTING IN FACE OF AN APPROACHING TRAIN:**

a) No shunting shall be allowed at both end unless sufficient number of brakes are put on and all precautions are taken to prevent vehicles getting out of control and a live locative is attached towards the falling side of the gradient as specified in para 5.20 of G&SR.
b) Shunting shall be supervised by person as specified in para 5.13 &5.14 of G&SR.
c) While shunting, it shall be ensured that visibility is clear and weather is fair.
d) Hand and loose shunting is strictly prohibited.
e) Stabling of vehicles on non-isolated line of the yard is not permitted without live engine attached or proper securing of vehicles.
f) During attachment and detachment of locomotive , wagon of the train shall be properly secured.
g) Shunting in the face of an approaching train is prohibited

8.3 PROHIBITION OF SHUNTING ANY SPECIAL FEATURES IF ANY:

(i) Hand shunting /Fly shunting/Loose shunting is prohibited at both ends of the yard.
(ii) Shunting with main signal is prohibited.

8.4 **SHUNTING ON SINGLE LINE: -** NA

8.5 **SHUNTING ON DOUBLE LINE:**

(i) When the line clear has been given, no shunting shall be permitted in the block section in rear vide GR 8.06 (1).
(ii) Shunting or obstruction for any other purpose shall not be permitted in the block section in rear unless it is clear and is blocked back Vide GR 8.06(2) and BWM 6.15.
(iii) Shunting or obstruction for any other purpose shall not be permitted in the block section in advance unless it is clear and is blocked forward vide GR 8.06(3)and BWM 6.15.

8.6 SHUNTING IN THE SIDING TAKINGOFF FROM THE STATION YARD: Shunt signal no.SH-20 provided for shunting out of track machine siding and SH-3 for shunting into the track machine siding.

8.6.1 SHUNTING OUTSIDE STATION SECTION:-

Shunting shall not be permitted in block section (i.e. the block section in rear) unless it is clear and blocked back.

(i) Shunting shall not be permitted in block section in advance unless it is clear and is blocked forward.
(ii) When line clear is been given, no shunting shall be permitted in the block section rear vide GR. 8.05[2].
(iii) SHUNTING WITHIN STATION SECTION : Shunting within station section may be carried on provided the necessary signals are kept at 'ON'.
(iv) SR.5.16.01: When reception signals have been taken 'off' for a train on to a line which is not isolated, no shunting movement shall be carried out towards the points over which the incoming train is to pass.
(a) Shunting shall be supervised by authorized staff viz. Yard Master/Assistant Yard Master/ Shunting Master Shunting Jamadar/Points man and all other laid down requirements of shunting needs to be complied.
(b) No shunting shall be carried out during foggy or tempestuous weather impairing visibility.

(v) DURING FAILURE OF BLOCK INSTRUMENT:- the SM on duty shall ensure that there is no train in the block section and the last train has arrived complete clearing the fouling mark while conducting shunting at that end of the block section of which block instrument has been suspended and all necessary precautions have been taken as per rules laid down in GR.

9.0 ABNORMAL CONDITIONS: -

(a) THE RULES TO BE OBSERVED IN THE EVENT OF ABNORMAL CONDITION: -

[I] **PARTIAL FAILURE OF COMMUNICATION: -**

In the event of suspension of Block Instrument and during partial failure of other available means of communications, trains will be worked in terms of Subsidiary Rule 6.02.06 and Chapter-III &Chapter VI of Block Working Manual.

[II] **TRAINS DELAYED IN BLOCK SECTION**: -

If a train carrying passenger does not arrive within 10 minutes or if a goods train does not arrive within 20 minutes after allowing for its normal running time from the station in rear, the SM at the station in advance shall immediately advise the station in rear and the control of this fact. SM shall stop the movement of trains on the adjacent line and issue caution order about the fact. There after SMs at either end of the Block section shall send one Railway servant into block section to collect the whereabouts of train, condition of train and nature of assistance, if any, required. SM on duty shall collect the full particulars from railway servant so deputed and intimate the same to SM at other of block section and to the section control simultaneously for taking action according to circumstances of the case. [Refer GR 6.04 & SRs thereto].

[III] **FAILURE/PASSING OF INTEMEDIATE BLOCK STOP SIGNAL AT ON:-**NIL

[IV] **FAILURE OF LV AXLE COUNTER: -**Details of the operation are given in Appendix 'B' of SWR.

[V] **FAILURE OF MTRC**- Not Applicable.

(b) PROCEDURE FOR EMERGENCY OPERATION OF POINTS BY CRANK HANDLE: -Details of the operation are given in Appendix 'B' of SWR.

(c) CERTIFICATION OF CLEARANCE OF TRACK BEFORE CALLING-ON SIGNAL IS OPERATED

To take 'OFF' a calling on signal during failure of track circuit on the route, the clearance of the track over which the train would pass must be physically checked by the SM on duty. After satisfying himself SM on duty shall initiate the calling-on signal operation. The procedure shall be strictly followed.

(d) **REPORTING FAILURE OF POINTS, TRACK CIRCUIT/AXLE COUNTER AND INTERLOCKING:-**

In case of failure of any interlocking gear at the station, the failure report should be communicated by the SM on duty to the sectional Maintainer, the JE/SE/SSE (SIG) of the Section and others through a memo as per SR 3.68.04 and document all such transactions. In case of failure of any one of the systems in dual detection system an occupied (Red) indication will appear against the display of failed system on the reset box.

9.1 TOTAL FAILURE OF COMMUNICATION ON DOUBLE LINE: -

In the event of total failure of communications between HATB-MANE and HATB-JUJA stations, i.e. when 'Line Clear' cannot be obtained by any one of the following means stated in order of preference, viz. ,

(a) Block Instruments, Track Circuits or Axle counters,
(b) Telephone attached to the Block Instruments,
(c) Station to station fixed telephones wherever available,
(d) Fixed telephones such as Railway auto phones & BSNL phones,
(e) Control telephone, and
(f) VHF sets.

The trains shall be worked in terms of GR.6.02.03, which is summarized in brief as follows:

(i) Each train before being allowed to enter into the Block Section should be stopped and the Guard and Loco Pilot of the train apprised of the situation.

(ii) The SM will hand over an authority i.e. T/C 602 for working of train during total interruption of communication to the Loco Pilot of each train which shall include
a) Authority to proceed without 'Line Clear'.
b) Authority to pass the Last Stop Signal at its "ON" position.
c) A caution order restricting the speed to 25KMPH by day when view ahead is clear and 10KMPH by night or when view ahead is not clear.

(iii) No train shall be allowed to enter the Block Section until there is a clear interval of 30minutes between the train about to leave and the train which has immediately proceeded.

(iv) Fixed signals except the last stop signal may be taken "OFF" for the dispatch of the train and for the reception of the train at the next block station, reception signals may be taken off only after the train has been brought to a stand outside it.

(v) On arrival at the next block station the Loco Pilot shall hand over the authority to proceed without line clear to the SM on duty who will preserve the same for further inspection.

(vi) Before resuming normal working when any means of communication is established. SM of either end must satisfy that there is no train in the block section. [Refer SR 6.02.03].

9.2 (A) TOTAL FAILURE OF COMMUNICATION ON SINGLE LINE: -NA

(**B) TEMPORARY SINGLE LINE WORKING ON DOUBLE LINE SECTION:**

During temporary single line working, when one line is clear and the other line is obstructed, trains shall be worked as per the procedure vide SR 6.02.01 which is summarized as follows:

(a) Before introducing single line working the SM on duty must satisfy that the line on which single line working will be introduced is clear and free from all obstructions.

(b) The Lock and Block instrument will be suspended. The Commutators of Lock & Block Instrument will be kept on "Train on line position".

(c) SM proposing single line working must issue a message with
(i) The cause of introduction of single line working,
(ii) Line on which the single line will be introduced,
(iii) Source of information about the clearance of the line on which single line will be introduced,
(iv) Place of obstruction,
(v) Restriction of speed, If any,
(vi) Assurance about keeping the last stop signal at 'ON' position if the train runs on right line and in case of wrong line all signals are to be kept at 'ON' position etc under the exchange of Private Number.

(d) SM on duty at the other end of the block section will acknowledge the message and confirm the same by a Private Number.

(e) After obtaining line clear for the train from the advance station the Loco Pilot must be given as-.

(i) Authority for Temporary Single Line (TSL) working on double line (T-D/602) indicating there in
- Caution order
- The line on which single line working is introduced.
- The kilometer of obstruction.
- Any other speed restriction, if any existing.
- Endorsement to inform all Gang man and Gateman about the single line working (for the first train only).
- The speed of the first train to be restricted to 25 KMPH subject to other speed restriction.
- Authority to pass Signal in "ON" position

(ii) The approach stop signals at the station in advance may be taken "OFF". In case a train proceeding on wrong line, the train shall be piloted out and at the receiving station, the train shall be piloted 'IN', on the authority of T/510.

On being ensured that the obstructed line is clear and free from all obstructions, the SM will resume normal working after exchanging message with the SM of the other concerned end supported by private number in consultation with the Section Controller on duty when there is no train in the block section.

A goods train or an engine may be allowed on wrong line by blocking back the section without introducing single line working. [Refer SR. 6.02.05(g)(i)]

Whenever total interruption of all communication occurs during single line working on double line, the procedure detailed in GR should be followed. [Refer SR 6.02.02].

9.3 THE AUTHORITY TO PROCEED IN OCCUPIED BLOCK SECTION IN CASE OF OBSTRUCTION ON LINE OR ACCIDENT:

Rules and Regulations for working of trains on an obstructed line in case of obstruction or accident on the authority of Block Ticket (T/A-602) when communications are available shall be followed in accordance with the provisions which is summarized as follows [Refer SR 6.02.05]

After sending a train on block ticket, a following train shall not be dispatched in the same direction unless:

a) The previous Block Ticket is collected and Cancelled or
b) Necessary endorsement is given on the previous block ticket with the advise to wait at the site for a next train to follow or
c) The previous train has met with an accident or has been disabled or
d) The Block ticket has been collected from the Loco Pilot of the previous train by the official in-charge at the site and kept in the personal custody & shall be kept until the arrival of the next train and such assurance is given over the telephone installed at the site quoting the serial number of the Block Ticket so collected.
e) SM will suspend the Absolute Block System of Working and both SMs concerned should arrange for running of trains on the authority of Block Ticket
f) SM at the dispatching end will hand over to the Loco Pilot the block Ticket as the authority which shall include:
   i. Caution Order: Existing Speed Restriction/s shall be indicated in the Caution Order portion. The Speed Restriction to 15 KMPH during clear visibility and 10 KMPH when visibility is obstructed shall be clearly indicated.
   ii. An authority to pass the Stop Signal at “ON” position.

g) Before resumption of normal working a message between the SMs of the concerned stations shall be exchanged with private number.[Ref SR 6.02.05(d)(vi)]
The Block Ticket so issued must be collected by SM of either end with a certificate about the complete arrival of the train with its time and the section is clear of all obstructions from Loco Pilot /Guard of the train and cancelled.

10. **VISIBILITY TEST OBJECT**: -

i) V.T.O. post/Authorized substitutes earmarked to work as V.T.O. Post. – The lights of Line No.1 starters on both ends are earmarked to serve as VISIBILITY TEST OBJECTS vide GR 3.61 (2) (b) (iii).
ii) Distance between CSB and V. T. O. post: - 180 Mts.
iii) Station Master on duty will test the visibility during thick and foggy weather and if visibility is impaired, he will work as per GR 3.61 and SRs thereto.

11**. ESSENTIAL EQUIPMENTS AT THE STATION**: -

This is mentioned in the Appendix ‘E’ of the SWR. Essential equipments shall be kept ready on hand in good condition with necessary relief stock.

12. **FOG SIGNAL MEN NOMINATED TO BE CALLED IN CASE OF FOG: -** In order to indicate to the Loco Pilots of approaching trains the location of signal during thick, foggy and tempestuous weather or during dust storm, the SM on duty shall arrange for fog signalling in terms of General Rule 3.61 and Subsidiary Rules thereto. Assurance of the staff shall be taken in the Fog Signal Register in the month of October every year as token of their having knowledge of Fog Signalling Rules and their use.
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 signalmen posted at the station from time to time.

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) In charge of the station shall ensure that the information maintained in the register is kept upto date and is accurate in all respects.

(c) 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.

CERTIFICATE:-

NOTHING IN THESE RULES SHALL BE READ AS CANCELLING, AMENDING AND MODIFYING ANY OF THE GENERAL RULES, SUBSIDIARY RULES, BLOCK WORKING MANUAL AND OPERATING MANUAL.THESE RULES HENCEFORTH CANCELL ALL PREVIOUS STATION WORKING RULES OF **HATIBARI** STATION.

APPENDICES

APPENDIX 'A'	--	WORKING OF L.C. GATE.
APPENDIX 'B'	--	SYSTEM OF SIGNALLING AND INTERLOCKING AND COMMUNICATION ARRANGEMENTS AT THE STATION.
APPENDIX 'C'	--	ANTI COLLOISION DEVICE (RAKSHA KAVACH).
APPENDIX 'D'	--	DUTIES OF TRAIN PASSING STAFF AND STAFF IN EACH SHIFT.
APPENDIX 'E'	--	ESSENTIAL EQUIPMENTS OF STATION.
APPENDIX 'F'	--	RULES FOR WORKING OF DK STATIONS, PASSENGER HALTS, IBH, IBS AND OUTLYING SIDINGS.
APPENDIX 'G'	--	WORKING OF TRAINS IN ELECTRIFIED SECTIONS.

S.SAINI
DSTE(SIG)/SBP

LINGARAJ GARTIA
DOM(G)/SBP

APPENDIX – 'A'

DETAILS OF LEVEL CROSSING GATES TOGETHER WITH INSTRUCTIONS TO THE OPERATING STAFF (INCLUDING LEVEL CROSSING GATE MEN) ABOUT THEIR NORMAL WORKING, THEIR MAINTENANCE AND THEIR WORKING INCASE OF FAILURES EMERGENCIES WITH SPECIAL PROVISIONS, IF ANY.

1.0 GATE WORKING INSTRUCTIONS OF "C" CLASS ENGG. NON-INTERLOCKED LEVEL CROSSING GATE NO. ST-118 AT Km. 23/21-23(UP) KM 23/22-24(DN) IN BETWEEN HATIBARI-MANESWAR STATIONS.

1.1 GENERAL INSTRUCTIONS: -

1.1.1 **DESCRIPTION OF THE LEVEL CROSSING GATE**: -

Following details shall be maintained at all manned level crossing gates:

1.	Number of level crossing gate	:	ST-18
2.	Engineering or Traffic Gate	:	Engineering
3.	Under control of Station Master or SSE(P.WAY)	:	SSE(P.WAY)
4.	Location at KM	:	23/21-23(UP),23/22-24 (DN)
5.	At station	:	----
6.	In between station	:	HATB-MANE
7.	BG/MG/NG	:	BG
8.	Single line/Doubling Line/Multiple Line	:	Double line
9.	Normal position	:	Closed to road traffic
10.	Interlocked/Non-interlocked	:	Non-Interlocked
11.	Means of interlocking	:	Nil
12.	Provision of gate Signal at Kms	:	Nil
13.	Signaling arrangement	:	Nil
14.	Means of communications /Telephone with or without Voice logger	:	Voice Logger Telephone from gate goomty with SM/ HATB.
15.	Width of Level Crossing Gate	:	7.5 MTRS
16.	Type of Road (NH/SH/Others)	:	Others
17.	Name of Road	:	Village Road
18.	Metaled/Non Metaled	:	Metaled
19.	Approach Road	:	Metaled
20.	Width of the Road	:	5.5 MTRS.
21.	Angle of Road Crossing (in case of the SKEW gates)	:	NIL
22.	Road Gradient (if any)	:	(a) North/East side – 1 in 30
		:	(b) South/West side –1 in 30
23.	Road alignment (straight/curve)	:	(a) North/East side – Straight (b) South/West side - Straight
24.	Provision of height gauge	:	Provided
25.	Type of Barrier	:	Winch Operated Lifting barrier
26.	Length of check Rail	:	9.5 MTRS.
27.	Road surface in between LC gates.	:	CC BLOCK
28.	Length of Rumble strip/speed breakers.	:	5.5 MTRS
29.	Road Signs	:	Provided
30.	Speed breakers indication board	:	Provided.
31.	TVU	:	4069 on 10/2024
32.	Census next due on	:	10/2027
33.	Demarcation for placement of detonators.	:	Provided.
34.	No. of Gatekeepers working	:	02 (12 Hours shift)
35.	Nearest Railway Medical Assistance	:	SBP
36.	Nearest Private Medical Assistance available (if any)	:	HATB
37.	List of equipment available Yes / No.	:	YES

1.2. **EQUIPMENT**:

	ITEMS	QUANTITY/NUMBERS
1.	LED based flashing tri colour hand signal lamp	3
2.	Hand signal Flag Green	1 mounted on sticks
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 (in case of asphalted road this may not be provided)
13.	Pick Axe	1 (in case of asphalted road this may not be provided)
14.	Tin case for flags	1
15.	Water pot/Bucket	1
16.	Canister for Muster Roll	1
17.	Set of spare spectacles of Gatekeeper wearing glasses.	1
18.	Board demarcating protection of level crossing Gate diagram in case of obstruction on Gate	1
19.	Basket	1
20.	Whistle	1
21.	Wall clock	1
22.	Small size chains with padlocks to be used in case of failure of boom lock.	2

1.3 LIST OF REGISTERS PROVIDED AT THE LC GATE LODGE: -

i) Gate working instructions in Hindi / English.
ii) Gate working instructions in local vernacular language.
iii) Gatekeeper Rule Book in Local vernacular language.
iv) List for tools and books.
v) Duty roaster..
vi) Certificate of competency for working as Gatekeeper.
vii) Bio–Data particulars of Gatekeepers, including date of passing vision test, initial/refresher course, safety camp etc.
viii) Accident Register.
ix) Records of last census of road traffic at LC gate.
x) Public complaint Book.
xi) Inspection Book.

1.4 **DUTIES OF GATEKEEPER**:

1. <u>ALERTNESS:</u>

The Gate Keeper on duty shall be alert. He should be prepared to take immediate action, when danger is apprehended. Keys of the gate shall be in his personal custody.

2. <u>POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:</u>

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

i) Gate Keeper will stand attentively in front of the gate – lodge facing the approaching train.

ii) In daytime, Gate Keeper shall hold red and green flags furled up on separate sticks in right and left hands respectively.
iii) In nighttime, Gate Keeper 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 GATE KEEPER:

i) Gatekeeper shall ensure that red banner flag by day and red light by night is placed across the track in case of emergency and obstruction on the track.
ii) Gatekeeper shall ensure that all gate light and hand signal lights are lighted and kept burning continuously from sunset to sunrise.
iii) Gatekeeper shall perform his duties strictly according to the duty roster and shall not leave the gate unless his reliever arrives and takes over charge from him. However, if it is necessary to leave the gate in an emergency, he must close and lock the gate 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) Gatekeeper shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle/wagons /trains/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) Gatekeeper shall also be prepared to repeat any signal which TMR may give to Loco Pilot.
vii) If lifting barriers get damaged or becomes out of order, the Gatekeeper shall use the spare chain with disc and padlocks for securing the gate against road traffic.
viii) Gatekeeper shall report to the nearest Station Master, Gang mate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
ix) Gatekeeper shall wear badge and prescribed uniform while on duty at level crossing gate.
x) Gatekeeper shall ensure that he is having competency certificate in his possession while on duty.
xi) Gatekeeper shall work the gate as per gate working instructions and remain well conversant with these instructions.
xii) Gatekeeper shall ensure that equipments supplied at the gate is in good order and ready for immediate use.
xiii) Gatekeeper shall see that the channel for the flange of the wheel is kept clear.
xiv) Gatekeeper must keep the road surface well-watered and rammed in case of non-metaled roads.
xv) Gatekeeper must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
xvi) Gatekeeper shall prevent tress passing by persons or cattle to the maximum extent.
xvii) Gatekeeper 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.
xviii) Before opening the gate, he shall ensure that the train has passed complete over the level crossing by observing the last vehicle indicator of the train.

4. ACTION IN CASE OF UNUSUAL OCCURRENCE OF TRAIN:

In case Gate Keeper observes anything unusual with a passing train, he shall take following action:

i) He shall take prompt action to warn the Loco Pilot/TMR 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/TMR by whistling continuously, shouting, gesticulating, and throwing ballast on the brake van or by any other means.
iii) If Loco Pilot/TMR fails to take notice, Gate Keeper shall immediately inform the station Master/ HATB to take appropriate action, under exchange of private number.
iv) In case of train parting, Gate Keeper 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/TMR 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, Gate Keeper shall immediately inform the Station Master/HATB to take appropriate action, under exchange of private number.

5. ACTION IN AN EMERGENCY AT THE LC GATE:

i) Place banner flag/red light lamp on the stave on track at 5M away from the check rail end.

ii) Thereafter, if he is unable to remove the obstruction, Gate Keeper shall immediately inform the Station Master on duty 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.

THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER: -

(A) ON ELECTRIFIED SECTION:

i) On noticing that, the whole or part of the OHE or a feeder or a cable falling down, the gate keeper shall ensure that, as far as possible, human beings, animals or vehicles etc. are kept away in order to avoid any contact with the live equipment.

ii) As soon as it is noticed that, Pantograph of an electric rolling stock getting damaged and/or entanglement of the same with the OHE, he shall make every possible effort to stop the train and immediately inform SM on duty.

iii) Any damage to the track or structures of the OHE comes to the notice of on duty GK, he shall immediately inform SM on duty and take all necessary measure for protection of the line as under,

(B) PROTECTION ON DOUBLE LINE:-

i) If both lines are obstructed the Gatekeeper shall plant a red banner flag by day and a red light by night at 5 meters away from the line on which train is expected to arrives first.

ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line at 5 meters away from the site of obstruction.

iii) Gatekeeper shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night.

iv) Gatekeeper 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 and place one detonator on the line. Thereafter he shall proceed to a distance 1200 meters from the level crossing gate and place 3 detonators on the track in10 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 Gate Keeper 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 warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(C) **OTHER ACTIONS TO BE TAKEN BY GATEKEEPER**:

i) At night, Gatekeeper 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 or any other part of the gate foul the track, or if there is any other obstruction at the gate, the Gatekeeper 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 SM and Permanent Way Inspector regarding the particulars and obstructions at the level crossing gate, through messenger or other means available.

1.5 **ENGINEERING ITEMS:**

i) **Visibility :**-

Direction	Side	Visibility Distance
UP	Right	950 m.
	Left	800 m.
DN	Right	800 m.
	Left	900 m.

ii) Speed Breaker: - Speed Breakers of approved design are provided on either side of this Level Crossing gate.

iii) Periodical Census of traffic has been taken and the latest TVU is 4069 on 10/2024.

1.6 SPECIAL INSTRUCTIONS:

1. **MODE OF OPERATION**:

This is a Non-interlocked 'C' Class Engineering L.C. Gate situated at Km: (**23/22-24(DN), 23/21-23(UP)** between HATB-MANE stations. This gate is provided with winch operated coupled lifting barriers. The gatekeeper closes and opens the lifting barriers of gate manually by operating the winch. Telephone connection is provided between the L C. gate lodge and SM's office at SM/HATB station. The level crossing gate is normally closed to road traffic. The SM/HATB shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gatekeeper supported by exchange of private number. When the gatekeeper desires to open the gate for passage of road traffic he should ensure that no PN has been exchanged with the SM/HATB for the passage of train or the whole of the train with last vehicle indicator has passed over the level crossing gate for which the gatekeeper has exchanged private number with the SM/HATB. Before opening the gate for road traffic, he shall display banner flag/danger signal at either side of the track at a distance of 5 meters away from the gate.

2 EXCHANGE OF PRIVATE NUMBERS.

(i) The normal position of level crossing gate being "Closed to Road Traffic" it should always be in closed condition against road traffic, except when, it is opened for passage of road traffic over the level crossing, subject to conditions prescribed below.

(ii) The SM/HATB before permitting each train to enter into the block section, shall ask gatekeeper on the telephone by giving a Private Number whether, gate is closed against road traffic for the passage of train. The gatekeeper only after ensuring that the gate is actually closed and locked against road traffic shall give a Private Number to the SM/HATB in assurance of gate being closed and locked against road traffic.

(iii) The SM/HATB shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gatekeeper supported by exchange of private number.

(iv) When the gatekeeper desires to open the gate for passage of road traffic he should ensure that:

(1)He has not exchanged any private number with the SM/HATB as per (ii) above.

(2)If he has exchanged private number with the SM/HATB, the whole of the train with last vehicle indicator has passed over the level crossing gate and SM/HATB has not

exchanged private number with him for any other movement immediately in rear of that train.

Before opening the gate for road traffic, he shall display banner flag/danger signal at either side of the track at a distance of 5 meters away from the gate. Then he shall open the gate for passing the road traffic, keeping a red flag / red hand signal lamp ready in his hand to stop approaching train if any.

(v) In case the gatekeeper is not responding on the telephone or in case the telephone becomes defective or private number is not received from the gatekeeper, the SM/HATB shall adhere to the procedure prescribed in SR 16.03.04.

(vi) In the event of failure of telephone, if the gate is required to be opened for the passage of road traffic, the gateman shall look out in both directions before opening the gate to ensure that no train is approaching from either end. He shall then plant a banner flag during day and a hand signal lamp with the red light during night, 5 meters away from the gate on the track on either
side. He will thereafter, open the gate for passing the road traffic keeping a red flag / red hand signal lamp ready in his hand to stop approaching train if any.

1.7. **FAILURE OF TELEPHONIC COMMUNICATION:**

When telephonic communication fails or he does not get any response from gatekeeper despite two or three attempts, the following procedure should be adopted:

a. Station Master/HATB shall issue caution order to the Loco Pilot of the departing train.
b. In the caution order, it shall advice the Loco Pilot to whistle continuously and approach the gate cautiously.
c. The Loco Pilot shall be instructed to pass the gate cautiously, on being hand signalled by the gatekeeper. If hand signal is not seen, the Loco Pilot should be prepared to stop short of the gate and depute his Assistant Loco Pilot to see the condition of the gate. If gate is closed, ALP will give all right signal and if gate is not closed, the ALP must close the gate and then give all right signal. In the absence of the ALP, the LP may take the assistance of TMR.
d. In case of an approaching train, the SM shall advise the SM at the dispatching end, under exchange of private number that the telephone at the gate has failed.
e. The SM at the dispatching end shall then issue a caution order to the LP before dispatching a train in the block section from his end.
f. The SM shall advise the GK through gang man/patrol man or the LP of the first train that the telephone has become defective.
g. He should also advise S&T staff responsible for maintenance of the telephone to rectify the same at the earliest.
h. Normal working will be resumed only after S&T staff rectify the telephone and issue reconnection/fit memo for the same.

1.8 FAILURE OF LIFTING BARRIERS:-

i) When the gate cannot be closed due to failure of lifting barriers, the Gate Keeper will immediately inform, the Station Master on duty/HATB under exchange private number, and ensure the lifting barriers of gate 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) Gate Keeper shall secure the gate against road traffic by means of safety chains and padlocks.
iv) After securing the gate against road traffic, Gate Keeper shall show green hand signal flag by day and green light by night to the Loco Pilot of the approaching train.
v) Station Master on duty/ HATB shall issue a caution order to the Loco Pilot of a departing train.
vi) He shall also advise the station Master/ MANE at the dispatching end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train into the block section from his end.
vii) Station Master/ HATB will advise maintenance staff responsible for maintenance of lifting barriers to repair the defect at the earliest.

viii) Normal working will be resumed only after maintenance staff repair the barrier and issue reconnection/fit memo for the same.

1.9 OBSTRUCTION AT THE GATE:-

a. If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gatekeeper 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.
b. Immediately after this, the gatekeeper shall advise the Station Master/ HATB on duty, regarding the defects/obstruction at the gate, under exchange of private number.
c. Station Master/ HATB on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
d. If there is no response from the Station Master/ HATB after two or three attempts, he shall first protect the gate and then inform on phone.
e. Gatekeeper shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gatekeeper under item No.1.4. (5).
f. Thereafter he shall protect the gate from the other direction also.
g. He shall note down the particulars of the road vehicle, name of the Driver, owner and reply these details to the Station Master/ HATB who shall not start the trains unless he has been assured by the gatekeeper that the road vehicle or the lifting barriers are not fouling the track.
h. The Station Master/ HATB shall also inform the Station Master/MANE at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
i. After the track has been cleared of all obstructions the gatekeeper shall inform the Station Master/ HATB accordingly, under exchange of private number.
j. Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
k. Station Master/ HATB shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
l. Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

1.10 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 gatekeeper, the gatekeeper and Station Master/ HATB will adopt the procedure given under item No. 1.9 above. If the obstruction fouls the level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstruction.

1.11 ACCIDENTAL ROLLING DOWN OF TRAIN:

When the Gate Keeper observes that a train is rolling down or immediately after receipt of the information about accidental rolling down of the train the gatekeeper shall:

i) First close the gate against the road traffic.
ii) Then immediately inform the SM on Duty.
iii) He shall not open the gate till he ensured that the train has completely stopped.

CERTIFICATE: -

NOTHING IN THESE RULES SHALL BE READ AS CANCELLING, AMENDING AND MODIFYING ANY OF THE RULES IN GENERAL RULES, SUBSIDIARY RULES, BLOCK WORKING MANNUAL AND OPERATING MANNUAL

APPENDIX – 'B'

DETAILS OF SIGNALLING AND INTERLOCKING INSTALLATIONS, INSTRUCTIONS FOR WORKING THEM NORMALLY AND EMERGENCIES ETC., INCLUDING THE POWER SUPPLY ARRANGEMENTS.

1.0 **BRIEF DESCRIPTION OF THE SIGNALLING & INTERLOCKING INSTALLATIONS**:
This is a 'B' class station provided with Standard –II(R) interlocking. The station is provided with Route setting type Electronic Interlocking system having points, signals, track circuits and other signaling gears. The Station is equipped with Multiple Aspect Colour Light Signaling. All points and Signals etc. are power operated through a central Visual Display Unit (VDU) with a standby installed in the SM's Office.

2.0 **DESCRIPTION OF OPERATOR CONSOLE CUM VISUAL DISPLAY UNIT:**
The Operator Console cum Visual Display Unit (VDU) is provided for operation of Signals, Points, Crank Handles, Siding & other controls etc. A mimic yard diagram based on approved SI plan will be displayed on the VDU. The VDU is used for controlling and monitoring the station. Indications on the Station yard mimic diagram of VDU will be dynamically updated.

2.1 **SYSTEM OVERVIEW**:
An Operator Console consisting of a VDU (colour monitor), with keyboard and pointing device (mouse) connected with a computer (CPU) is provided. The CPU is connected to the Electronic Interlocking (E.I) equipment to exchange control and indication messages. The system is programmed to display the Station Yard mimic 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. A function (clearance of signal or cancellation, Route release, Point operation, etc.) can be executed through selecting the required operation by clicking the Left button of the pointing device (mouse) on the desired function.

2.2 An additional VDU connected with a computer is provided as standby arrangement in case of failure of the working operator console. In case of failure of the working operator console the system shall switch over to the stand by VDU automatically.

2.3. ICONS AND INDICATIONS PROVIDED ON THE VDU
In addition to mimic yard diagram including signal, points, track circuit, Axle counters, L.C.gate, siding as indicated in the WRD, various other ICONS and indications have been provided on the VDU. A brief description of the same are described below.

SL. NO	ICONS	INDICATIONS	FUNCTIONS	REMARKS
1	SM's Key	Yellow light when key is 'IN'	Ensures operation of VDU by authorized person	Protected by pass word
2.	---	Emergency Route release - UP & DN	Flashing indication appears when Emergency route release operation is initiated.	For each operation concerned counter shall register one count higher.
3.	Emergency Point operation key	Yellow light when key is 'IN'	Ensures emergency point operation by authorized person	Protected by password, for each operation concerned counter shall register one count higher.
4.	---	System indication On/Off	Indicates System 'A' or 'B' is in working mode	
5.	Point failure Ack. button	RED	Flashing indication appears when any point fails. SM has to left click on the icon to acknowledge.	Buzzer will sound, on acknowledgement buzzer stops. After verification at site inform S&T staff Immediately.

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6.	Signal failure Ack. button	RED	Flashing indication appears when any signal fails. SM has to left click on the icon to acknowledge.	Buzzer will sound, on acknowledgement buzzer stops. Inform S&T staff Immediately.
7.	CH-1 to CH-5	Yellow lamp indicates 'KEY IN'. Red lamp indicates ' CH LOCKED'	When CH is IN yellow lamp will be lit. Whenever the crank handle is locked in route or otherwise red indication will glow. No light will glow when CH is OUT.	--
8.	UP Block release	Yellow – Prepared for Block release.	On getting indication SM shall left click on the button icon which shall release Block Handle.	After complete arrival of train this will be activated
9.	DN Block release	Yellow – Prepared for Block release.		
10	Line Block	Red when blocked	SM shall point the curser on the icons provided on the berthing track and right click. One drop menu will appear indicating line blocked and un-blocked, SM has to select the required menu.	When line block is selected the concerned icon of track will appear as thick Red.

3.0. OPERATIONAL PROCEDURE THROUGH VDU AND INDICATIONS:

In addition to the mimic yard diagram various other indications will be available on the VDU. The implications of different indications provided and the operational procedure for different functions shall be strictly followed as per the following description.

3.1 ELECTRONIC INTERLOCKING (E.I) SYSTEM INDICATIONS:

Electronic Interlocking Equipment (E.I) at the center can work in either of the two modes i.e, System-'A' or System-'B'. On the VDU (Computer), there are two system indications in which Green indication mentioning the On-line system and the Red indication showing that the system is in power off condition.

3.2 OPERATION PROCEDURE OF SS/SM's KEY :

To prevent the unauthorized operation by any person other than SM on duty this facility is provided on VDU. On duty SM needs to track the pointer to the "SM KEY" icon and click the 'KEY IN' menu by the clicking left button of the mouse, by this a Password window will appear. SM on duty needs to enter the password and press the 'OK' Button provided on the Password window. This will allow operation of all the controls e.g., Signals, Points, L.C.gates and Crank handles, etc. through VDU. In case of SM's key is out, other than signal cancellation operation all other operation cannot be done through VDU. In case incorrect password or user name is entered, no operation can be done. In such cases the same procedure is to be repeated till correct password is entered.

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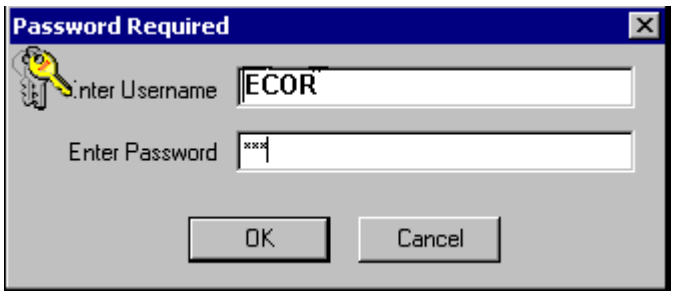


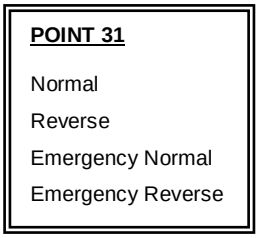
Enter the USER NAME and PASSWORD and click the OK button.
Now the Operating VDU is ready for use & the entire yard can be controlled from the VDU.
Similarly, Station Master is to select the KEY OUT to prevent the unauthorized operation.

3.3 DESCRIPTION OF CROSS OVERS/DS POINTS :-

Sl. No.	Point No.	Description
1	31	Crossover point between UP main line and DN main line at MANE end.
2.	32	Crossover point between UP main line and DN main line at JUJA end.
3.	33	Crossover point between UP main line and UP Loop line at MANE end.
4.	34	Crossover point between DN main line and common loop line no. 1at JUJA end.
5.	35	Crossover point between DN main line and common loop line no. 1 at MANE end.
6.	36	Crossover point between UP main line and UP Loop line at JUJA end.
7.	37	Crossover point between Common loop line and T.M. Siding at MANE end.

3.3.1 OPERATION AND INDICATION OF POINT:

To Operate the Point the SM needs to track the mouse pointer to concerned point's Normal/Reverse indications on the VDU, after clicking by the right button on the mouse a pop-up menu will appear as below:



3.3.2 **REVERSE TO NORMAL OPERATION**:
Track the pointer to NORMAL menu and left click. A Normal flashing indication will appear and the indication will be steady after the point is set to Normal.

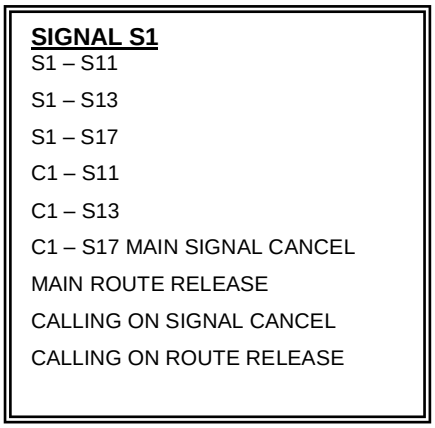
3.3.3 **NORMAL TO REVERSE OPERATION**:
Track the pointer to REVERSE menu and left click. A Reverse flashing indication will appear and the indication will be steady after the point is set to reverse.

3.3.4 **POINT INDICATIONS-**
When the point is free, a steady strip of light will appear in the point zone (In case of cross-over at both ends) indicating the point is in normal/reverse condition. When the point is operated the same strip of light starts flashing till the point is set and becomes steady when the point is set and detected. When the point is engaged in a route RED light will appear near the point indicating that the point is locked and cannot be operated now.

Correction Slip No.04
Date of Issue: 27.09.25

3.4 **PROCEDURE FOR SETTING OF ROUTES AND TAKING OFF SIGNALS:**

To Take-Off a Signal on the desired route the SM on duty needs to track the mouse pointer over the concerned Signal on the VDU, after clicking by the right button of the mouse a pop-up menu will appear as below:



SM on duty will select the route as per the requirement by moving the mouse pointer on the appropriate menu & left clicking on the menu. It will set the route and clear the signal provided all the conditions required to clear the signal are satisfied. Likewise, by following the similar procedure operation of other signals can be done.

3.4.1 **SETTING A ROUTE AND ITS INDICATIONS**:

To set a route of a signal, click on a possible route of the signal, after doing so the route gets initiated & Red-flashing indication will appear on the replacement track of the signal. Point operation is initiated as per the requirement of the desired route and Normal/ Reverse set indications will start flashing if favorable point detection is not available. After setting of points in the route, overlap & isolation flashing indication will be replaced by steady indication and a complete yellow 'Route set' indication will appear from the replacement track of the signal to the last track of overlap section of the route. Also the point's lock indication will appear. 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 immediate rear of the signal. Now the signal will be taken-off. The yellow route set indication will turn to red when different track circuit portion within the route is occupied during passage of a train.

3.4.2 SHUNT SIGNAL OPERATION:

The same procedure as main signal has to be followed as explained above. To set the signal route for shunt signals SM on duty shall put the pointing device on the Shunt signal icon and right click on the same. A drop down menu will appear indicating different actions that can be selected. After selecting the desired route SM on duty shall left click on it. Desired route will be initiated and the Shunt signal will be taken off.

3.4.3 CALLING ON SIGNAL OPERATION:

The same procedure as main signal has to be followed as explained above. To set the signal route for Calling-on signal SM on duty shall put the pointing device on the Calling-on signal icon and right click on the same after a train occupies the approach track circuit in immediate rear of the stop signal. A drop down menu will appear indicating different actions that can be selected. After selecting the desired route SM on duty shall left click on it. Desired route will be initiated and the Calling-on signal below Home will be taken off after a lapse of 60 seconds & below starter without any time delay provided other conditions are fulfilled.

NOTE:

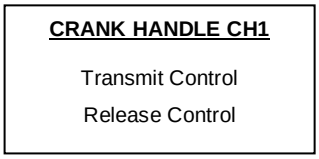
i) Before taking "OFF" Calling-on signal during failure of track circuit, the clearance of track over which the train is intended to be received must be verified physically.

ii) SM on duty to ensure that no through signals are given while receiving a train on Calling-on signal.

3.5 **CRANK HANDLE CONTROL OPERATION:**

Normally a 'KEY IN' (Yellow) indication will appear on the VDU indicating that the crank handle is free. To Transmit or Receive control of the Crank Handle, right click on the crank handle control button icon provided like the following on VDU.

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



To Transmit the Crank Handle KEY to the field personnel, SM on duty has to left click on transmit control menu. After transmission the 'KEY IN' indication will start flashing, now the KEY can be extracted from the EKT at site. After extracting the key from the EKT, the 'KEY IN' indication will disappear. When the Manual point operation is over and after putting CH key in the EKT, 'KEY IN' flashing indication will appear on the VDU, now the SM on duty has to release the control for the steady indication by left clicking on release control menu.

3.6 **LEVEL CROSSING GATE OPERATION:NA**

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

Separate indications (White Light) for each i.e. UP overleap or DN 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 lapse of 120 seconds the white flashing light will disappear indicating concerned overlap is free.

4.0 **EMERGENCY OPERATIONS:**

To carry out different emergency operations the following procedures are to be followed.

4.1 **CANCELING A ROUTE/ EMERGENCY ROUTE RELEASE**:

To cancel a signal route, when the route is set and the signal is taken-off, click on the signal. After clicking by the right button on the mouse, a pop-up menu will appear as shown in Para 3.4 above. Right click on the signal cancel menu (Main/Calling-on) of the concerned signal, the signal will immediately fly back to 'ON' aspect. After doing so, click on the Route release menu the route locked indication will start flashing for 120 sec & the Emergency Route Release Indication (UP/DN as the case may be) will flash for the entire time interval of 120 seconds. After the completion of 120 sec, the locked route will be released. This action will be recorded in a counter. The counter number will increase to next higher number for each such operation. This number shall be recorded by the SM on duty mentioning the details of route cancellation along with the last counter no. in a register provided for the purpose.

4.2 **EMERGENCY OPERATION OF POINTS**:

When the Point Zone Track circuit has failed without any point lock condition by any signal routes, a point can be operated by the Emergency Point operation.

Note: Before resorting to this operation SM on duty shall verify that the point zone is clear of any vehicle occupying the track section and the same is clear of any obstructions.

4.2.1 **EMERGENCY NORMAL OPERATION**

Before doing the emergency operation the Emergency Point Operation Key is to be made "KEY IN" by clicking the 'KEY IN' menu. The user name and password is to be logged in. Track the pointer to 'EMERGENCY NORMAL' menu and left click. A Normal flashing indication will appear and the indication will be steady after the point is set to Normal. This action will be recorded in a counter. The counter number will increase by next number for each such operation, this number shall be recorded by

the SM on duty mentioning the details of Emergency Point Operation along with the last counter no. in a register provided for the purpose and SM's diary.

After the completion of the Emergency point operation, the Key to be made 'KEY OUT' by clicking 'KEY OUT' menu.

4.2.2 EMERGENCY REVERSE OPERATION OF POINTS:

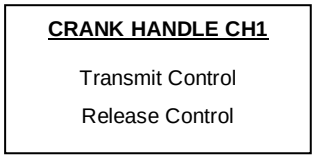
Before doing the emergency operation, Emergency Point Operation Key is to be made 'KEY IN' by clicking the 'KEY IN' menu. The user name and password is to be logged in. Track the pointer to 'EMERGENCY REVERSE' menu and left click. A reverse flashing indication will appear and the indication will be steady after the point is set to Reverse. The counter number will increase by next number for each such operation, this number shall be recorded by the SM on duty mentioning the details of Emergency Point Operation along with the last counter no. in a register provided for the purpose and SM's diary.

After the completion of the Emergency point operation, the Key to be made 'KEY OUT' by clicking 'KEY OUT' menu.

4.2.3**EMERGENCY CRANK HANDLE RELEASE OPERATION:**

When a crank handle is locked due to route set earlier or is not released or otherwise, to transmit or release control of the Crank Handle, SM on duty shall cancel the relevant signal first and then click on the crank handle control button icon provided like the following on the VDU.

On right clicking, 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 on duty has to left click on transmit control menu. After transmission the 'KEY LOCKED' (Red) indication will start flashing& 'KEY IN' remains steady. After a lapse of 120 seconds the 'KEY LOCKED' indication will disappear& 'KEY IN' indication will start to flash indicating crank handle can now be extracted from the location box. After extracting the key from the EKT, the 'KEY IN' indication will disappear. After the manual point operation is over and the crank handle key inserted in the EKT and turned right, flashing 'KEY IN' indication will appear on the VDU, SM on duty shall Release the control for the steady indication by left clicking 'RELEASE CONTROL' menu.

The counter number will increase by next number for each and every such operation, this number shall be recorded by the SM on duty mentioning the details of the Emergency Crank Handle Operation along with the last counter number in the counter register provided for the purpose.

In case both the VDUs fail there is a facility to extract keys from the crank handle locations. A key is provided in the SM's office, on duty SM shall turn the key to right, after a lapse of 120 seconds keys from all the crank handle locations can be extracted for crank handling and setting of points for train operations.

4.3 EMERGENCY GATE OPERATION: NA

4.4 **LINE BLOCK AND UNBLOCK :**

When SM on duty requires demarcating a berthing/stabling line as BLOCKED/FREE and shall adopt the following procedure:

4.4.1 **LINE BLOCK:**

To set the 'LINE BLOCKED', the SM on duty shall select "L. No._ BLOCK" command using the left mouse button, after selecting the Line Block that particular line will be blocked for all the possible Track circuit section on that particular line. After successful line block operation a thick RED indication will appear on the route button icon on the berthing track section or on the stabling line section or on the route section. When a line is blocked it not possible to lower any signal engaging that particular route section.

4.4.2 **LINE UNBLOCK:**

To release the set block of any particular line, the SM should select "L. No.___ UNBLOCK" command using the left mouse button. After selecting the "L. No.___ UNBLOCK" that particular line will be available for the train movement leading to all the possible Track circuit section.

5.0 PROCEDURE FOR RESETTING OPERATION OF LVCD AXLE COUNTER IN SECTION MANE-HATB AND HATB-JUJA.

5.1 High Availability Single Section Digital Axle Counters have been provided on both UP & DN lines of HATB-MANE section and at either side of HATB-JUJA block section. The occupation and clearance of the axle counter section are indicated on VDU by RED & GREEN light respectively**.** When after arrival of a train the LVCD Axle counter does not show clear indication and the 'Section Occupied' indication continues to glow SM on duty shall initiate resetting procedure for the LVCD Axle Counter, monitoring the Block section. Before initiating Resetting procedure SM on duty shall ensure that the train which has left arrived completely at receiving station and block section is clear [free] of trains. If the track indication of that particular block section is showing 'Red" then the following actions shall be performed by the SM on duty.

The receiving station shall inform the sending station as to whether the last train that entered into the section has arrived or not. And, if arrived fully shall so intimate authenticated by exchanging Private number with the sending station before resorting to resetting operation.

As digital Axle counters are provided as LVCD in Block section, resetting is to be done by both of sending end and receiving end individually.

The status of the section LVCD i.e. Clear (GREEN), occupied (RED), preparatory reset (miniature GREEN) and power on indications (YELLOW) are provided in the reset box.

The procedure to be followed for re-setting by both of sending end and receiving end individually is as follows: -

a. Insert SM's LV reset key, turn right and keep pressed.
b. Press LV reset button provided on the panel.
c. Release SM's LV reset key and reset button.
d. Turn left the SM's LV reset key and remove it.
e. The system obtains preparatory reset state and preparatory reset indication (miniature Green) glows on the panel.
f. The counter reading increases by one count after a gap of 5 seconds approximately.
g. The counter reading should be recorded.
h. First train is to be piloted to the section to make the system normal.

The SM on duty shall record in his Train Register the resetting operation giving details of train number, time, Private Number exchanged with SM in rear, giving reasons for the resetting

operation. If the axle counters functioning properly now, then Block Section cleared indication 'GREEN' will appear on the panel and the concerned Block working will be normalized.

If the axle counter section indication does not appear 'Green' and continues to show 'RED' indication, the concerned Block instrument shall remain suspended and failure intimation to be given to sectional signal Maintainer/JE/SE (Signal) for early rectification.

6.0 MAIN SIGNAL LAMP FAILURE INDICATION AND BUZZER ACKNOWLEDGMENT:

LED signal lamps are provided for main signals at this station. In case failure of LED signals will be indicated by the appearance of 'RED' light on VDU along with audible buzzer, which can be acknowledged and muted by pressing the 'SIGNAL FAILURE ACKNOWLEDGEMENT' button icon. However, the RED light will continue to glow until the LED lamp is replaced by a new one. For rectification of failure SM on duty should inform the concerned S&T staff.

6.1 **POINT FAILURE INDICATION (RED), POINT FAILURE BUZZER AND POINT FAILURE ACKNOWLEDGEMENT:**

Whenever there is failure of point due to non-setting, point failure indication flashing light appears near the point button acknowledge button icon along with point failure Buzzer.

The buzzer stops when the point failure acknowledgement button icon is pressed, but the flashing light above the ACK button shall continue to glow. The flashing light on the concerned point can identify the defective point. After the failure is rectified, the flashing light above the 'POINT FAILUR ACK' button will disappear.

6.2 **SHOWING OF COUNTERS:**

Separate Counter box has been provided with electromechanical counters in the SM's office which shows the number of operations that has taken place for following operations.

1. Emergency Route Release counter.
2. Emergency Point Operation counter.
3. Emergency Crank handle release counter.
4. UP Calling On counter.
5. DN Calling On counter.
6. UP LV (MANE-HATB) Reset Counter
7. DN LV(HATB-JUJA) Reset Counter

7.0 **TRACK CIRCUITS:**

All lines are track circuited from Home signal to Advanced starter signals at either direction of the yard. Approach Track Circuit (5 Rail lengths) for Calling-on signal are also provided in rear of the Home signals for both the directions and other signals below which calling-on signals are provided. In addition, there are signal overlap of 120m length track circuits beyond Advanced starter Signals in both the directions of Last Stop Signal. Indications for the above track circuits are available on VDU at SM's office. Yellow strip on VDU indicates 'ROUTE IS SET AND TRACK CLEAR' and Red strip indicates 'TRACK OCCUPIED CONDITION'.

7.1 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 etc., indicating the occupancy/ clearance of track, it is necessary that the Station Master 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.

8.0 **TAKING OFF CALLING-ON SIGNAL:**

Miniature color light Calling-on signal is provided below the Home signals in terms of GR.3.13 (6) (b). A Calling-on signal shows no light in the 'ON' position. A Calling-on signal is taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF' for admission of train on blocked line or due to failure of main signal or due to failure of track circuit or for shunting purpose or due to any other reasons.

To take off Calling-on signal the train must come to stop at the foot of the home signal occupying the track circuit 1AT or 2ATas the case may be in rear of the Home signal, a RED light strip on the concerned track circuit will appear on the VDU. The particular route on which the train is intended to be received shall be set by selecting and setting desired route through VDU by SM on duty. After a lapse of 60 seconds, the Calling-on signal clears. A white light will glow on the concerned Calling-on signal below Home signal provided that first track circuit or second track circuit any one of them is in

picked up condition. For DN Calling-on 2T1 or 2T2 any one of them is in picked up condition and for UP Calling-on 1T1 or 1T2any one of them is in picked up condition.

NOTE:

i) Before taking "OFF" Calling-on signal during failure of track circuit, the clearance of track over which the train is intended to be received must be verified physically.

ii) SM on duty to ensure that no through signals are given while receiving a train on Calling-on signal.

9.1 **RELEASE/CANCELLATION OF ROUTE:**

Normally when a train is received on any route or despatched, the route illumination will disappear automatically after passage of the train suggesting that the route is released. When the route is not released automatically after passage of train over it or when SM on duty intends to cancel the route set by him shall follow procedure for cancellation of route described in para 4.1 of APPENDIX-B above.

NOTE:

UP and DN Calling-on signals are to be manually cancelled after the passage of the train to release the route.

9.2 **REPLACEMENT OF SIGNALS TO 'ON':**

Signals are replaced to 'ON' automatically by the passage of a train beyond 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 SM shall follow para No. 3.4 of APPENDIX-B.

9.3 **INTERLOCKING OF SIGNALS:**

DN Home signal is electrically interlocked with the DLBI of section HATB-JUJA and UP Home signal is electrically interlocked with the DLBI of section HATB-MANE section, so that before the handle of the block instrument can be turned from TRAIN COMING FROM position to LINE CLOSED position, UP or DN Home signal must be in their NORMAL position.

DN Adv.Starter signal is controlled and interlocked with Block Instrument of section HATB-MANE and UP Advanced starter signal is interlocked with Block Instrument of section HATB-JUJA, so that this signal can not be taken OFF until the handle of the concerned block instrument is in LINE CLEAR position.

The Block Instrument cannot be made normal unless the respective Home signal is put back to 'ON' and the respective Block Section monitored by Axle Counter is clear of trains. Signals once taken 'OFF' can be put back to danger in case of emergency by following para No. 3.4 of APPENDIX-B even when the SM's Key is withdrawn from VDU.

9.4 **PILOTING OF TRAINS.**

In the event of failure of both Home signal and Calling ON signal simultaneously, it is inevitable to pilot the train 'IN'. For piloting the train, the setting of route must be ensured by SM on duty personally and for details refer SR 3.69.06 and SR 3.70.02.

9.5 **SHUNTING:**

Caution aspect of Starter signals can be used for forward shunting up to Advanced Starter signal. For back shunting individual shunt signals no. SH3 and SH4 provided at both ends of the yard shall be used, also other independent and dependent shunt signals are provided for shunting operation within the yard. For taking OFF shunt signals refer Para no. 3.4.2 of APPENDIX-B.

10 **VERIFICATION OF LINE CLEARANCE BY STATION MASTER ON DUTY FOR RECEPTION OF TRAIN INTO STATION YARD**:

In the Station yard, a route on the running line comprises of entrance, berthing and dispatch portion of the yard shall be kept clear of any obstruction for the passage of any train or for any other movements. The clearance of the route including overlap must be ensured by the SM on duty personally through VDU indications and/or physical verification 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.

11 **CRANK HANDLING/EMERGENCY OPERATION OF POINTS:**

Crank handle operation is interlocked with the signaling and interlocking system at this station. Key for Crank handle keys are normally locked inside the RKT instrument inside location boxes in the yard and can be taken out only when all the signals leading are at 'ON' position and the route is not locked

for whatever reasons. Crank handle key can be transmitted or released by following procedure as laid down in Para No.3.5 of Appendix-'B'. When this key is taken out, no signal on the concerned point can be taken 'OFF' in the yard. This key can be electrically transmitted to both ends of the yard.

12. **OBSERVATION OF TRACK CIRCUIT AFTER 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 clearance for passing the trains 'IN' 'THROUGH' or 'OUT' at the station shall be done with a lot of care and diligence. Station Master 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 Station Master 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 maintainer/SSE(Signal) to be informed for rectification of the failure.

13. **LOCKING OF RELAY ROOM:** Refer Para No.-4.2 of main SWR.

14. **MAINTENANCE OF S&T INSTALLATION AND ADHERENCE TO MAINTENANCE SCHEDULES**:
Regular maintenance of the S&T installations, adherence to schedules of maintenance testing of points, track circuits, level crossing gates, associated interlocking apparatus cables and the interlocking functional tests is must for safe and satisfactory working of these installations at this station.
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.

15. **PROCEDURE TO BE FOLLOWED INCASE OF FAILURE OF AN INTERLOCKING GEAR**:
In case of failure of any interlocking gear at the station, the failure report should be communicated by the Station Master to the sectional maintainer, the JE/SSE(Signal) 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.

16. **INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:**
Before declaring a point as defective, the setting of the point on the route to which it applies shall be inspected by the Station Master on duty.

17. **RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:**
After receipt of the failure memo, the sectional maintainer shall attend to the failure after giving a 'Disconnection Memo' if required. After rectification of the fault, the Sectional Maintainer shall give 'Reconnection Memo' detailing the rectification. Thereafter the Station Master 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) and RB letter No. 2021/SIG/21/safety performance, dtd:10.06.2023 & amendment issued vide letter No: 2023/TT-IV/9/2, dtd:16.06.2023.

18 **PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:**
Whenever any normal maintenance or special works for major renewals etc., are involved, the Signal and Telecom department should pre-plan these works. Field staff and the Inspector of the section should give to the Station master in writing 'advance intimation' about this work in terms of GR and SR.15.08.01.

19. **EMERGENCIES:**
Notwithstanding, anything contained in the aforesaid paras, as 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 Station master and take the Station Master's 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 G&SR3.77.

20. **PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNAL POINTS AND USE OF EMERGENCY CRANK HANDLE:**

20.1 Whenever a Signal or a Point becomes defective, any movement over the Points on the running lines should be made after clamping and padlocking both the facing and trailing Points on the line by Station Master on duty personally for all trains at the Station.

20.2 In case of failure of Signal or a Point and in case the Point cannot be operated from the VDU, the emergency Crank Handle which is interlocked with the system has to be extracted and the following procedure has to be observed.

20.3 One common emergency Crank Handle is provided for all the Motor operated Points of a group. This is mechanically riveted to the Key of EKT. This Key along with Crank Handle can be released from the EKT by following procedure vide 3.5 of appendix-B. The Station Master on duty in case of Point Motor failure will take out the Crank Handle key set the Point manually by inserting Crank Handle on the Motor.

20.4 When the Crank Handle is removed from EKT for operation of the defective Motor Operated Points, the responsibility for its safe custody rests with the SM on duty till it is replaced back in EKT and sealed by JE/Signal Maintainer.

20.5 The case of failure of Motor Operated Points should be promptly reported to the concerned SE (Signal)/ESM for immediate rectification.

20.6 Whenever an emergency Crank Handle is required to be used by a Signal Official for maintenance of work 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 Station Master on duty will obtain acknowledgement of the Signal Official in the emergency Crank Handle Register and then handover to him the emergency Crank Handle for the Points concerned. All the concerned Points of the group will be treated as defective till the Emergency Crank Handle is returned back to Station Master on duty.

20.7 Before parting with the Emergency Crank Handle either for attending failure or for Maintenance work by Signal Maintenance Officials, the Station Master on duty will ensure that the reception and departure Signals are put back to on position. The Points of concerned crank handle group should be treated as Non-interlocked and the Station Master on duty is responsible for working of trains and the trains will piloted IN and OUT duly clamping and padlocking the Points, both in facing and trailing directions over which the train is to pass, as per GR 3.69 and 3.70 with relevant SR's. The Station Master on duty will be personally responsible for setting and locking of Points, for reception and dispatch of all trains.

21.0 The Emergency Crank Handle Register is to be maintained by the Station Master on duty wherein the particulars of usage of the Emergency Crank Handle must be recorded as per operating manual.

22.0 **INTERLOCKING OF SIGNALS WITH BLOCK INSTRUMENTS:**

22.1 **INTERLCOKING WITH HOME SIGNALS:**

The UP Home Signal is electrically interlocked with the DLBI of section MANE-HATB and DN Home signal is interlocked with DLBI of HATB-JUJA section, so that before the handle of the Block Instrument turned to LINE CLOSED position, concerned Home signals must be in their 'ON' position.

22.2 **SUSPENSION OF LAST STOP SIGNALS:-**

When the block instrument of section HATB-MANE or HATB-JUJA is suspended with its handle in any position for whatever reason the concerned Last Stop Signal controlled by the Block Instrument must be treated as suspended and trains shall be Piloted Out to HATB-MANE & HATB-JUJA sections.

23.0 **NORMALISATION OF THE BLOCK AXLE COUNTER AND OF BLOCK WORKING BY RESETTING FEATURE**:

23.1 High Availability Single Section Digital Axle Counters has been provided on the Block Sections HATB-MANE & HATB-JUJA.

23.2 The occupation and clearance of the axle counter section are indicated on the VDU by 'RED' and 'GREEN' light.

23.3 If any LV Axle Counter section fails, the IBS at the rear of the section cannot be taken 'OFF' and Block instrument at advance Station cannot be turned to 'Line Closed' position after arrival of a train and in such case, resetting of Axle Counter Device is to be resorted to.

23.5. No train shall be allowed on signal to leave a station in any particular direction unless track clear indication is available for the relevant Axle Counter track portion and Last Stop Signal is taken OFF. [Refer Para No. 5 of Appendix 'B' for procedure of resetting of Axle counter].

24.0 **TELECOMMUNICATIONS:**

(i) Telephone attached with double line lock & Block Instrument of HATB-MANE & HATB-JUJA section.

(ii) Station to Station fixed telephone (hot line) is provided

(iii) Station is provided with Auto telephone connected with Railway Exchange

(iii) BSNL telephone is provided.

(v) The station is connected to Sambalpur-Angul control circuit by a control telephone.

(vi) Station to station 25 Watt VHF communication is provided.

(vii) Telephone is provided between Station and both end crank handle locations.

(viii) Telephone is provided at station with C class Level Crossing gate No.ST-18 at Km 23/21-23(UP), 23/22-24(DN).

(ix) Telephone connected with traction power control.

NOTE:

(i) For obtaining line clear, VHF should be used as a last alternative and not as a sole means of communication.

(ii) VHF and Walkie Talkie sets should not be used for unnecessary discussions with Loco Pilots, Guards or any other staff.

(iii) The on duty SM shall use the above electrical communication instruments stated in Para-24.0 from item no. (i) to (vi) strictly in order of preference for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication the SM on duty shall work vide SR 6.02.06.

25.0 **FAILURE OF COMMUNICATION / FAILURE OF BLOCK INSTRUMENTS:**

1) In the event of partial failure/suspension of block instrument, Track circuit & Axle Counter 'Line Clear' shall be obtained over telephone attached to the block instrument or station to station telephone by exchanging identification number and supported by private number as per SR 6.02.06(1)(a) and Chapter–III Part–I of Block Working Manual.

2) In the event of partial failure/suspension of block instrument and block telephone attached to the block instrument, or the Station to station fix telephone 'Line Clear' shall be obtained on Railway auto phone or BSNL phone, by exchanging identification number supported by private number vide SR 6.02.06(1)(b) and Chapter-III Part-I of Block Working Manual.

3) In the event of partial failure/suspension of block instrument, block telephone and station to station fixed telephone or Railway auto phone or BSNL phone, Line Clear shall be obtained over the control phone exchanging identification number and supported by 'Private Number' vide SR 6.02.06(1)(c) and Chapter-III Part-I of Block Working Manual.

4) In the event of partial failure/suspension of block instrument or block telephone attached to the block instrument, or station to station fixed telephone or Railway auto telephone or BSNL phone or control telephone line clear shall be obtained on the VHF sets exchanging ID number supported by PN provided that the instructions contained in SR14.01.02 are followed vide SR6.02.06(1)(d) Chapter-III Part-I of Block Working Manual.

5) In the event of total failure of all communications between HATB-MANE & HATB-JUJA trains shall be worked vide SR 6.02.03.

26.0[A] **POWER SUPPLY ARRANGEMENTS FOR SIGNALLING INSTALLATIONS:**

Power signaling and interlocking installations and the ancillary field units are fed from the following sources of power supply.Normally supply from UP AT/DN AT connected to OHE traction distribution [230V 50 Hz]Stand by supply from Odisha State Electricity Board (OSEB) [Single phase 230V 50 Hz]

Normal power supply [Single phase 230V 50 Hz] to the Signalling& Interlocking installation at the station is drawn from the traction power sources. Whenever traction power supply fails SS/SM on duty shall operate the rotary change over switch provided in the CLS power panel at SM's office connecting the power supply from the healthy sources to the installation.

The SS/SM on duty however maintain the record of power failures either of the traction supply or local supply and he must promptly report the failure of any one or both the power sources immediately through the section controller and to the concerned Electrical staff and S&T maintenance staff.

(i) A changeover switch is provided in the SM's office with the three power supply viz UP AT, DN AT and Local power supply for changing the switch to the required supply position. Luminous indicators are provided above the circuit breaker for each supply to indicate the availability of the supplies.

(ii) Normally the switch will be kept towards AUTO position. Whenever the power block is to be given on the line, on duty SS/SM must ascertain the power is available on the other AT and change over the switch to desired position e.g. if power block is to be given on the UP line, DN AT must be available and vice versa.

(iii) In case of failure of the AT supply without any power block, on duty SS/SM 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 upwards and when tripped it goes downwards. In case of failure of both AT supplies without any power block, the local supplies shall be utilized by operating the change over switch. If the circuit breaker is tripping even after resetting, no attempts shall be made to hold it by any other means and a message shall be given to the AEE/GEN and CTFO/PSI/TRD/GEN for prompt rectification.

(iv) During the non-availability of both the AT supplies SM on duty shall keep the rotary change over switch towards the local supply to feed available local supply to the installation.

Whenever there is a failure of power supply in one AT, the on duty SS/SM shall take prompt action to inform to all concerned for the rectification. The on duty SS/SM himself, during his daily checks, shall test the availability of power supplies on both AT's and make entry in station dairy initiating action for rectification of failure, if any.

[B] WORKING OF INTEGRATED POWER SUPPLY (IPS), INDICATIONS &ACTION TO BE TAKEN BY SS/SM ON DUTY.

Power supply to the signaling installation is fed through IPS installed in the S&T power supply room. The IPS is normally fed through UP AT/DN AT traction power selected by SS/SM. On duty. Standby power supply is through OSEB local supply. One changeover switch is provided in the SM's room for selection of output of either traction power supply or local power supply. The available traction/local supply is fed to the IPS through auto- change over switch provided in IPS.

The IPS system is connected with Battery as a back-up power source for safe working during transition of power and in case when there is no 230V AC supply available due to any reason.

In the event of the failure of all the sources of 230V 50Hz AC supply, the signalling system shall be fed by power generated by back-up battery bank connected to IPS for a limited time of 06 to 08 hours. The health of battery bank is monitored through one IPS monitoring panel provided in the SM's room which shall be display the voltage 110V DC [Battery Bank provided as back-up source of power supply].Depending upon the health of the Battery Bank and the system, the following indication/alarm will appear on the IPS monitoring Panel, their implications and action to be taken by SS/SM on duty is tabulated below.

Sl. No.	Instruction	Health of Battery Bank/ Equipment.	Visual Indication	Audio Indication	Action to be taken by SS/SM on duty
A	-	50%DOD (depth of discharge) (105.9V)	Red	Alarm	Alarm shall be acknowledged by SS/SM on duty
B	-	60% DOD (105.1V)	Red	Alarm	-do-
C	System Shut down	70% DOD (104.3V)	Red	Alarm	Feed to signals gets cut off however all DC-DC converters continue to work. Audio alarm will continue till power supply is restored.
D	Call S&T Staff	Equipment fault	Red	Alarm	If any of the modules of IPS fails this alarm will appear on the SM's panel. Alarm shall be acknowledged by on duty for audio cut-off.

On duty SS/SM in each shift shall check and record the readings, indications etc in the station dairy duly initiating rectification of failures of IPS system, if any.

In the event of failure of IPS monitoring ASM console due to any reason and when both traction power and local power failed the SS/SM on duty shall inform concerned Electrical staff immediately. In case 'Call S&T staff ' or 'System shut down' indication appear on the IPS monitoring panel of IPS and/or mal-functioning of the IPS monitoring panel SS/SM on duty shall inform the same to concerned S&T staff immediately.

NOTE: In case of failure of all AC supply sources IPS Battery Bank can provide power supply maximum up to 06 to 08 hours before system shut down indication of IPS.

27.0 WORKING OF AUTOMATIC FIRE DETECTION AND ALARM SYSTEM:

a) In case of any alarm in any particular area due to fire or dust-Zone number on the LCD display can be seen, note down the zone No. displayed in control panel.
b) The moment the smoke detector detects any smoke particles, the RED LED will blink along with the alarm.
c) Once you find the zone number rush to that particular area where the detector gives alarm.
d) Once you reach the area where the detector is giving the alarm, check whether the alarm is due to the fire or for any other reason.
e) Then call immediately to the staff of concerned department.
f) Call the fire station if required.
g) Take action to extinguish the fire by the fire extinguishers available in the station.
h) To alert the people in case of emergency press "*" sign of the fire which is present inside the key pad together for few seconds. This will enable you to hear the panel alarm.
i) To reset the panel follow the instructions provided by S&T official in station master's room near the fire alarm panel.
j) The control panel will get reset and siren muted.
k) If the power fails on this will enable us to see the red indicator on the panel.
l) In case of failure in power and if the battery is fully charged, the panel can function effectively as long as the charge in the battery is present.

APPENDIX - 'C'

ANTI COLLISION DEVICE (RAKSHA KAVACH)

NIL

S.MOHAPATRA
DEE(TRD)/SBP

LINGARAJ GARTIA
DOM(G)/SBP

APPENDIX - 'D'

1.0 **STATION MANAGER (INCHARGE)**:

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 VDU, points, Crank handle 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 staff under his control working safely according to the rules in force.

He shall see that all signals, points, level crossing gates 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 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 is civil and helpful to all users of railway.

He shall frequently visit the platform, Station, LC gate 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 staffs working under him for PME and Refresher Course / Safety camp in their due time..

He shall see that all equipment, 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 pay special attention towards passenger amenities & coaching trains punctuality and yard feasibility. He shall endeavor for minimizing detention to freight trains by judicious planning of trains staff. He shall pay attention to smooth functioning of goods train to eliminate detentions. He shall attend to all compliance by traveling/trading public.

He shall see that the law and order in the station are alike public agitation, Rail Roko etc. Affecting movement of traffic is taken care of with the help of G.R.P. and R.P.F and civil authorities as per need.

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

His special attention is drawn to chapter No. II of G & SR (Amendment) 2020 and GR 5.01 to 5.08 with relevant SRs. He shall follow the instruction laid down in SR 3.68.01© & (d) and SR 14.07.01 and BWM 2.09 (e). He shall conduct surprise night inspection, safety meetings and fire drills. He shall maintain good public relation as well as look after passenger's amenities and be helpful to travelling public.

1.1 **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 and thoroughly understood the system in force and must sign such declaration.

No Railway servant shall be entrusted with any duty involving safety of the public unless the station in-charge 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 SS is responsible to see that all the staff are conversant with the Station Working Rules 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 Group 'D' staff, their signature/thumb impression must be obtained after explaining fully about their duties and responsibilities.

S.MOHAPATRA
DEE(TRD)/SBP

LINGARAJ GARTIA
DOM(G)/SBP

The station superintendent is responsible personally for maintaining the Assurance Register and for obtaining declaration of the staff working under him. The Assurance Register must be maintained 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 personal custody of the Station Superintendent.

The declaration shall be renewed in the following cases: -

i) Whenever there is a change in the Station Working Rules.
ii) For any staff who has not worked at the station or was away from the station for a period of 15 days or more.
iii) When a staff joins as a new member in the station.

2.0 **USE OF PRIVATE NUMBER BOOKS IDENTIFICATION NUMBER SHEET**:-

Sufficient Private Number books and I.D number sheets in sealed covers shall be kept always in the stock by Station Superintendent under lock and key. He shall maintain a register for this purpose.

3.0 **ACCIDENTS**:

Accidents shall be reported and immediate action shall be taken by the Station Superintendent in charge in accordance with the instruction laid down in the Accident Manual. Whenever the Station Superintendent received 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 message/reports and follow up all safety principles without delay.

4.0 **TESTING OF POINTS AND SIGNALS**:

The Station Superintendent shall test the working of the reception signals daily during the day when there is no train due to arrive / leave the station. He shall also test the working of points, crossings, Crank handle, etc. and record the result in the Station Master's diary.

He has to act as per CH-II of G&SR,GR- 5.01 to 5.08 with relevant SRs and para 2.02 (a) of Optg Manual.

5.0 **SS/STATION MASTER**:

He shall work in 8 hrs. shift for train passing and booking of traffic, coaching returns and other statements shall be prepared and submitted by him in time under the direction of the Station Superintendent in charge. He shall assist the Station Superintendent in charge for the up keep of the station in all aspects.

Station Master on duty who makes an entry in the train signal register must continue on duty till all the entries pertaining to the trains are completed vide Subsidiary Rule 14.07.01.

He is responsible for working beyond this period when called upon to do so in the exigencies of services. He will follow SR 3.68.01© & (d), SR 14.07.01. Their special attention is drawn to Chapter II of G & SR (Amendment) 2020 and GR 5.01 to 5.08 with relevant SRs and para 2.02 (b) of Optg Manual. As an Assistant to the SS, he shall follow the instructions given to him by the Station Superintendent.

6.0 **HANDING OVER AND TAKING OVER CHARGE**:

The Station Superintendent in charge/Station Master on duty shall record in the diary the condition of all the running lines, the caution orders in force at the time of handing over charge. These entries must be counter signed by Station Master coming on duty while taking over charge. This will not, however, relieve any one of the SS/SM of his responsibility to ensure by physical check that the nominated line is clear of all obstructions before admission of any train on it.

7.0 **TRAFFIC POINTSMAN:**

He shall work under the instructions of SM on duty and follow the GR 02.05 to 2.11 and other relevant rules laid down in GR and SR. He shall remain responsible for:

(i) Delivery of authority to proceed and caution order etc. to the Loco Pilot of train.
(ii) Correct setting and locking and crank handling of points for reception/dispatch and shunting operation under the supervision of Station Master.
(iii) Piloting and hand signalling of trains when necessary.
(iv) Knowledge of hand signals, detonators and their use.
(v) Protection of line in emergency and fog signalling.

(vi) Exchange of signals with the Loco Pilot and Guard of passing trains as directed by the Station Master.

(vii) Loading/unloading of parcels, luggage and packages to and from the train and watching the packages and other materials by properly stacking in the station premises.

(viii) Dusting of station office, filling up the fire buckets with sand/water and getting train interact arrival register (T/1410) signed by the Guard as and when required.

(ix) Serving messages and any other duties entrusted to them by the SS/SM from time to time.

(x) Uses of emergency crank handle for setting of points.

(xi) To supervise shunting as per SR 5.13.03.

(xii) They must be thoroughly conversant with the GR 3.38, 3.46, 3.77(I), 5.09, 3.52 to 3.60, 3.62, 5.13, 5.15, 5.16, 5.21, 5.23 & SRs there to and their special attention is drawn to chapter No.II of G & SR (Amendment) 2020 and para 2.02 (f) of Optg Manual also.

(xiv) When necessary, they will work in the Goomties for observing and reporting the complete/incomplete arrival/departure of trains as per the order of the SM on duty in case of failure of Axle Counter/Track Circuit.

(xv) He has to work at Traffic L.C.Gate when required as per the instruction of SS-in Charge and act in accordance with para 2.02 (g) of Operating Manual.

GENERAL

All staff should be in uniform while on duty and follow the rosters issued by DPO/SBP from time to time.

A set of Red and Green flags and Tricolor hand signal lamps will be part of the essential equipments of staff while on duty. They shall not leave the station except when required by the SM on duty or with his permission. They shall comply with SR 4.42.02 (b) & (c).

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APPENDIX - 'E'

ESSENTIAL EQUIPMENTS OF THE STATION

Below is the list of essential safety equipments, which shall be readily available in good working order with necessary relief stock.

Srl No.	Description	Quantity
1.	Detonators	10 in tin case
2.	Battery operated LED based flashing Hand Signal lamps.	04 Nos.
3.	Hand signal flags	04 sets.
4.	Safety chains with pad locks	08 Nos.
5.	Wedges	12 Nos.
6.	Skid	05 Nos.
7.	Fire buckets (with sand and water)	06 Nos.
8.	Clamps with padlocks	12 Nos.
9.	First aid Box	01 No.
10.	Fire extinguisher	02 No.
11.	Stretcher	01No.
12.	Blanket	01 No.
13.	Block suspension Board	02 Nos
14.	"Motor Trolley on Line" boards	02 Nos.

APPENDIX - 'F'

NIL

APPENDIX - 'G'

RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS

STATION WORKING RULES FOR 25KV AC ELECTRIC TRACTION

HATIBARI STATION

1. GENERAL & SUBSIDIARY RULES:

a) The rules applicable to electrified section have been given in chapter-XVII of the General Rules and in the subsidiary Rules made here under for electric traction. The General principles governing operation and maintenance of Traction Overhead Equipment, Electric locomotives, Signal & Telecommunications installations have been given in the A.C. traction manual. These rule books and an extract of the relevant paras of A.C. traction manual, shall be kept with the concerned staff shall make themselves thoroughly familiar with the same (GR. 17.01).

b) Brief reference to important rules required to be followed by Station/ Yard staff in their day-to-day work has been given in this Appendix. These are, however, illustrative and not exhaustive.

2. GENERAL SAFETY PRECAUTIONS:

a) All staff are warned that contract with or very near (within 2 meters, unless protected by a screen as per rules) to live portion of the 25 KV Traction Overhead Equipment is dangerous and shall be strictly avoided.

b) No work on overhead lines or in the zones within 2 meters of any live equipment shall be carried out unless a regular 'PERMIT TO WORK' has been obtained from the authorized Traction staff and the line has been made dead and earthed as per rules (GR 17.04) and ACTM para No.20600 to 20619 Vol. II Part. I.

3. SECTIONING DIAGRAM (Station Working Rules Diagram for Electric Traction)

a) A sectioning diagram No. CON/SWRD/HATB/2022/1 indicating schematically the lines, which have been equipped with, for electric traction is exhibited. The diagram also indicates different electrical sections (Elementary Sections) the Controlling Switches or interrupters), insulated overlaps and section insulators where the overhead equipment is electrically separated. The limits of an electrical section (Sub-Sector or Elementary section) are indicated by the relevant section. A copy of this diagram is also enclosed with these special working rules and will form part of the same.

b) For all-purpose connected with Train movements and Power Blocks, this diagram is the only authorized document to be referred to the normal position of various switches is indicating on the diagram.

4. UNWIRED TRACKS:
No electric locomotive with pantograph raised shall under any circumstances be taken to an unwired sections.

5. OPERATING OF SWITCHES:

a) All switching operations shall be carried out in accordance with the instructions of the Traction Power Controller except in respect of switching operations for local blocks, which may be carried out by authorized traction staff, after they have been granted local blocks by the Station Master in accordance with S.R. 17.04.09 and ACTM para No. 20600,20601 of Vol.II. Part.I.

b) "In case of emergency, authorized and trained station staff may open Isolator switches under specific instructions of the Traction Power Controller (G.R. 17.04.14-B) with exchanging of Private Nos. to perform the operations of the following isolator switches as well as any other isolators within the station limit. Hence every station master shall be fully aware of the location of the isolator switches provided for the control of power supply of OHE at or near the station and shall be conversant with correct method of operating and closing the same (Competency certificate is provided after getting assurance)

For opening the switch: Release the lock of the switch and get the switch handle down with sudden jerk. Now the switch is open. Lock the switch again so that it cannot be closed without releasing the lock.
For closing the switch: Release the lock of the switch and get the switch handle up with sudden jerk. Now the switch is closed. Lock the switch again.
Note: While operating switch, station master must use insulated gloves.
The list of isolators with location number of SBPY are given below.

Sl.No.	Isolator No.	Loc. No.
1.	SM-422	26/28
2.	SM-421	26/37
3.	SS-522	27/24
4.	SS-517	HATB/1009
5.	SS-524	HATB/1008

6. POSITION OF SWITCH HANDLES (ISOLATORS):
When a switch is in the closed position, the operating handle of the switch is at the top.

7. LOCATION OF KEYS OF SWITCHES AND OHE KEY REGISTER:
The keys for the padlocks of various isolator Switches are kept in the ASM's Office in a box with a glass mounted cover (17.04.13). The Station Master shall daily check the keys of switches of the isolators and report any defects or deficiency to the Traction Power Controller. In the event of breaking of glass box the procedure stipulated in SR 17.04.13 (b) has to be strictly followed. If operation (open/close) of isolators is required for the purpose of loading/unloading, the opening time & closing time of isolators with its purpose is to be clearly mentioned in this register.

8. PROCEDURE AND PRECAUTIONS FOR OPERATING ISOLATORS:
The procedure for operation of isolator switches have been given in G.R. 17.04.15 and S.R 17.04.14 (b) Isolator switches shall not be opened when carrying any load. Before opening/closing, on duty SM will get confirmation from TPC supported by Private number. The procedure stipulated in SR 17.04.15(c) must be followed.

Isolator switches may be opened only after ensuring:-

a) If the isolator switch is on the main line, then the adjacent interrupters on either end of isolators switch have been opened.
b) If the isolator switch is controlling supply to yard lines that, either such isolator switch, which is controlling the Elementary Section free of raised pantographs of Electric Locomotives or the interrupters controlling the supply to the yard lines in question is open (GR 17.04.15)

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9. POWER BLOCK:

a) The detailed procedure for obtaining power block has been given in G.R. 17.04.02, 17.03.03 & 17.04.04 and ACTM para 20603,20604,20611,20612 & 20613 which must be rigidly followed except in case of emergency.

b) The sequence of switching operations for granting and cancelling the Power Block for a particular section, are included in the Annexure. These shall be strictly followed by all staff. Failure to follow the sequence indicated is likely to lead to dangerous consequences. The protection of dead section is achieved by blocking the Concerned line in the VDU and placing red button collars on concerned buttons operating points and / or signals.

10. PROTECTION AT THE TIME OF POWER BLOCK:

a) All sections over which the Power Block has been granted shall be protected against entry of Electric Locomotive with pantograph raised from either end during the period of the Power Block (G.R. 17.04) and ACTM 20620, 20621 to 20627 of Vol.II, Part.I strict enforcement of longitudinal and transverse protection as per the Annexure attached shall be ensured before imposing power block. If there is/are locomotives on the section over which the power block to be given, the loco Pilot of such locomotives shall be given a memo by the Station Master on duty to lower the pantograph and not to raise it until further instructions and acknowledgement shall be obtained. The Loco Pilots shall not be given instructions to raise the pantograph till the power block is cancelled.

b) Station Master or station staff conducting shunting operation with electric locomotive shall ensure that under no circumstances, any electric locomotive approaches near the traction structure limiting elementary sections over which the power block has been granted. Limits of each electrical section at a station are shown in the Station Sectioning Diagram.

11. SECTION INSULATORS:

In order to isolate main and loop lines on different grids in the yard. Crossover/Turn-out connecting main and loop lines of different grids of the yard, are provided with section insulators, So that, when one line/or grid is made electrically dead and there be any fault on the same, the other line/grid is not affected. The speed of the electric locomotives with pantograph raised over such section insulators shall not exceed 50 KMPH subject to other speed restriction which may be in force. When one of the two sections separated by a Section Insulator is dead, the pantograph of the electric locomotive on the live section shall not proceed closer than 30 Ft. (10 Meters) towards the section insulator marking the end of the dead section.

12. BREAKDOWN OF TRACTION OVERHEAD EQUIPMENT:

All breakdown or defects noted or reported on the Traction overhead equipment or any other traction equipment including bonding shall immediately be reported to the Traction Power Controller (G.R. 17.03.02) and ACTM Para 20605 of Vol II Part I. Necessary Caution Order should be issued to the Loco Pilot concerned as directed by the Traction Power Controller observing the existing rules regarding issue of caution orders.

13. REGISTER OF MESSAGES:

All message relating to faults on the traction Overhead equipment, operation of switches custody of keys of out-door switches and other important communication in connection with the

operation and maintenance of Traction Overhead equipment shall be recorded serially in a register by both the sender and the receiver indicating the time at which the message are received or exchanged (G.R. 17.04.12) and ACTM Para 20610, Vol II Part I.

14. MOVEMENT OF DIESEL ENGINES OR TRAINS HAULED BY SUCH ENGINES:
Goods or passenger trains hauled by other than electric locomotives may be allowed to pass through the dead section subject to the following conditions:-

a) This has not been prohibited specifically in the power block message.
b) Other than Electric trains hauled by such engines shall be brought to a stand at the station preceding the station/section at which power block is granted and the Station Master of this station shall satisfy himself by personal inspection that there is no electric locomotive in the train.
c) He shall also given a Caution Order to the Loco pilot of such engine or train, warning him of the power block ahead and instructing him to watch for hand signals and observe them.
d) No Station Master shall give line clear or lower signals for a train to run over a section under power block unless he has received an assurance (supported by Private Number) from the Station Master of the preceding station that there is no electric locomotive or Inspection Car with pantograph raised in the train (ACTM 20627, Vol.II, Pt.I).
Note: For purposed of this Rule a Dead Engine dispatched as a vehicle shall not be considered as an Electric locomotives.

15. ELECTRIC LOCOMOTIVES:
Provisions included in A.C. traction Manual must be completed within case of double heading or banking by electric locomotive and precautions indicated therein must be complied with when dispatching locomotive (ACTM 30636, Vol III.).

16. ESM:
Any direct contact or close proximity to 25 KV line conductors is dangerous, the station ESM climbing up the Signal post for removing or fixing or cleaning the signal should not carry any long article which may accidentally touch or come in close proximity to live conductors. The ESM shall also be wanted against bringing any part or body near live conductors.

17. CRANES:
No crane shall be worked on or near Traction Overhead equipment, unless such equipment is first made dead and earthed and an authorized representative of the OHE section is present (S.R. 17.04.07 (a) & (b)).

18. WORK ON ROOF OF ROLLING STOCK:
No person shall climb on the top of the Engine or Tenders or on the roofs of carriages, or wagons, when those vehicles are located beneath Overhead equipment except, when a regular ‘Permit to work’ has been obtained from authorized Traction Staff and the overhead equipment has been made dead and earthed (GR 17.05(02)) and ACTM Para 10402 & 10403 of Vol.I.

19. BLOCK INSTRUMENT OR ANY OTHER ELECTRICAL SIGNALLING EQUIPMENT:
The Station Mast/Cabin master on duty must always watch for any unusual working in the Block instrument or any other signalling equipment, which may arise due to voltage, induced from traction system. The Block instrument or the signalling Equipment must be suspended whenever there is any signs of unusual working and the nearest signal and Telecom, maintenance Inspector may be contacted to inspect and certify the same. In the event of a break of the OHE, the Station Master must immediately check up whether all Block and signalling equipment are working normal before permitting any train movement.

20. TELECOMMUNICATION CIRCUITS:
Refer Para 5.0 of main body and Appendix “B” of this SWR.

The details of the Telecommunication facilities available on the electrified sections and the use of the same have been given at ACTM Para 10213, 10429 of Vol. I and Para 20703 of Vol. II part I.

21. ELECTRIC SHOCK:
The Station Master shall exhibit prominently the instructions issued regarding the treatment to persons suffering from electric shock in the Station/Yard Office and shall ensure that all Class-III staff are familiar with those instructions (shock treatment) chart provided in SM's office.

22. FIRE:
Regarding fire on or adjacent to any electrical equipment refer G R (6:10) and SR there to.

23. Nothing in these rules amends or supersedes any General or subsidiary rules or instructions included in AC Traction Manual. These working rules shall be read as supplement to the aforesaid Rules Books and also to the existing Station Working Rules of the Station.

24. AMENDMENTS OR SUPPLEMENTARY CORRECTION SLIPS:
Any amendment to these Working Rules or any of the Annexure will be notified by a correction slip to the Station Working Rules. The correction slips will be serially numbered and it is the responsibility of SM in charge of a station to bring the contents to the notice of all staff concerned and take their acknowledgement.

25. CONTINUOUS WATCH BY INSPECTING STAFF:
The Inspecting staff of Operating, telecommunication and Traction Departments shall make regular checks at all points to which these special working rules are supplied to ensure that the rules are corrected up-to-date and the staff concerned are fully conversant with the rules and abide by them.

NOTE: Whenever the codes 'GR' & 'SR' appear in these special working rules, please refer to the General and Subsidiary Rules for 25 KV AC Electric Traction, chapter-XVII.

TRACTION DISTRIBUTION

SAFETY PRECAUTIONS AND ESSENTIAL INSTRUCTION FOR RUNNING AND OPERATING STAFF WORKING ON AC TRACTION AREA

DO(S) AND DON'T(s)

A. FOR ALL STAFF

a) DO(s)

1. In case of fire on Electric Traction Equipment of Wires.
   i. Inform traction Power Controller.
   ii. Extinguish fire by special extinguishers, if available.
   iii. Ensure no water jet is used under any circumstances.

2. Anything unusual on Traction Wire or Electric Locomotive inform traction Power Controller or nearest Station Master.

3. In emergency Traction Power Controller can be contacted on emergency telephone system. (Sockets for connecting emergency telephone are provided at intervals of approximately every kilometre and direction to nearest socket is indicated on OHE masts).

b) **DON'T(s)**

1. Do not approach within a range of 2 meters (approximately 7 ft.) of any traction wires or live equipment.

2. Do not work on or near traction wires or any live equipment unless they have been made dead, earthed and permit-to-work obtained from an authorized traction staff.
3. Do not permit unauthorized persons to operate any equipment even if it be for making it dead.
4. Do not disturb any Earthing, bonding or Traction Wires.
5. Do not enter any switching station or remote control centre unless specially permitted and accompanied by authorized traction staff.
6. Do not attempt to turn the person in contact with live traction wire either by touching him or with the help of wooden bamboo pole or by grabbing his clothing or with the help of rubber gloves or any other means. Under such conditions, contact the TPC, ensure switching off power supply and remove the person in contact with the live traction wire by using wooden bamboo pole or by grabbing his clothes or with rubber gloves if available only after ensuring from TPC that the power supply has been switched off.
7. Do not forget to give artificial respiration to the victim.

B. FOR RUNNING STAFF:

a) **DO(s)**

1. Avoid slipping of wheels.
2. Load coal or oil in loose outside the electrified area only.
3. Keep a safe distance of 2 meters (7 feet) from traction wires while working on the locomotives.

b) DON'T(s)

1. Do not lift or raise your tools towards traction wires (keep the tools in their respective position immediately after use).
2. Do not take electric locomotive with raised pantograph to any unwired line, beyond power block working limit board or near the section insulators at the end of section under power block.

3. Do not climb on the locomotive (of any type) on the engine tender for any purpose, while under traction wire unless power is cut-off and permit to work obtained(for watering, use the water column from the ground with the special device provided for this purpose and open tank over by the special device provided.
4. Do not allow long articles like fixing rod, shovel or any other thing to protrude above the engine while on electrified tracks.
5. Do not direct any jet or spray towards the traction wires (jets or water, if necessary, may be used horizontally outside the safety zone of 2 meters (7 feet).

C) FOR OPERATING STAFF

a) **DO(S)**

1. Ensure all staff is conversant with safety precautions.
2. Ensure that no electric loco is stabling with its panto-raised position in the power block section.
3. Report defects in traction wires of any electric locomotive or electric Multiple Unit Promptly to the traction Power controller.
4. Points and signals of the concerned line which give access to the sections under power Block is to be blocked by blocking the concerned line in VDU and placing red button collars on concerned buttons operating points and/or signals.
5. Observe procedures given in station working rules of 25 KV AC Electric Traction while operating isolator switches.
6. Ensure safe custody of isolator switch keys.
7. Ensure the section is protected by traction staff from all directions by banner flag during power block.
8. Suspend working of block and signals if single of unusual working are noticed. Always checkup block instruments at signalling equipment when any breakdown in traction wires occurs.

9. Instruct S & T staff to see that while he goes up the signal post he does not carry any long rod or articles likely to be brought within the danger zone of 2 Mtrs. (Approximately 7 feet) of the traction wires.

c) DON'T(s)

1. Do not permit an electric locomotive or multiple units with raised pantograph to approach any section under power block beyond Power Block working Limit Board or near section insulators.
2. Do not permit any crane to work adjacent to live traction wires.
3. Do not permit your staff to approach live traction wires within the danger zone of 2 meters (approximately 7 feet).
4. Do not permit electric locomotive with raised pantograph to enter any unwired section.
5. Do not take off signals for direct reception for any electric engine or train, if there is a power block within the adequate distance of the singal.

NOTE: This Appendix 'G' super seeds earlier Appendix 'G' to SWR.

PROTECTION OF DEAD SECTION

The protection of a dead section is achieved by the following means:

1. a) In the normal running direction movements of trains are generally controlled by Signals. Protection is obtained by blocking the concerned route on the VDU.

   b) If the points and signals are locally operated they should be locked and the key, controlling the lever or lever frames should be kept with the Cabin Station master on duty. When the signal cabin of lever frames are controlled electrically by Station Master or Cabin Station Master on duty, shall place the warning caps on the relevant slides of Electric slide instrument or on the relevant keys of Electric transmitters or interlocked keys, boxes as the case may be.

   c) This action must be taken care by Cabin Station Master or the Station Master on duty as case may be, in respect of each and every movement prescribed in the Station Working Rules and after completion, confirmation should be given to the Section Controller to enable him to agree for the power block to be issued by the TPC.

   d) In a large yard several warning cap may be required, sufficient number of warning cap should be kept in cabin. The exact number provided is indicated in the SWR.

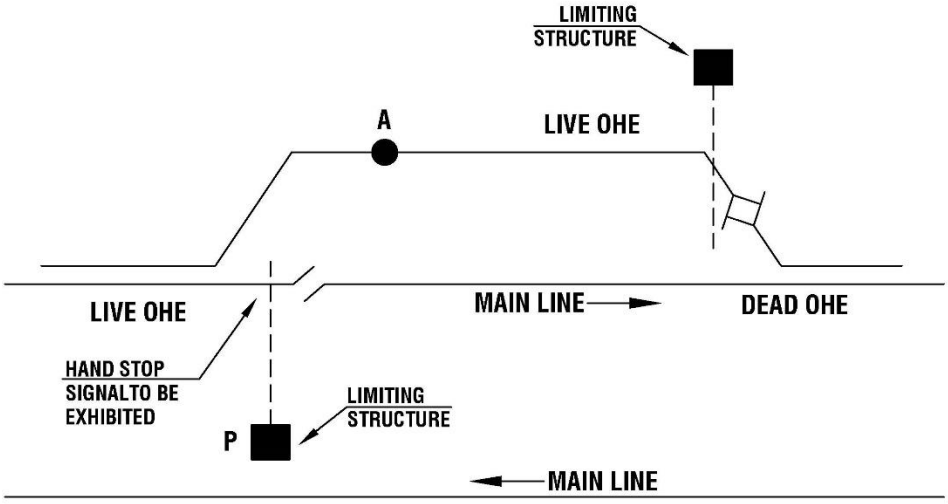
   e) Once a warning cap is placed on the signal knob it shall not be removed except after exchange of messages with private number.

SHUNTING MOVEMENT TOWARDS DEAD SECTION

1) a) In case where no signal exists for controlling the entry of an electric train into the dead section the station master should arrange a hand stop signal to be exhibited at the point up to which alone the electric locomotive is allowed to proceed.

   b) If it is necessary for an electric locomotive to carry on shunting movement towards the dead section the red warning cap placed on knob may be removed to permit the movement provided that a hand stop signal is exhibited and driver is specifically instructed not to move the loco beyond the point.

2) An example of the operation is given figure as shown below:



As per protection of Dead Section Para above the knobs controlling the signals should have red warning caps placed on them to give protection to the dead section. However, if it is essential to carry out at shunting operation with an electric locomotive situated at point 'A' on the loop line to move into the main though the turn out this may be permitted provided that the shunting movement is carried out only up to limiting mast 'P' short of the overlap span where a hand signal is to be exhibited to prevent all movement beyond the point 'P'.

3) Train or shunting movements by other than electric locomotives. i.e by steam or diesel loco's may be permitted to enter the dead section. Provided that the Station Master ensures by personal inspection that the train formation does not include an electric locomotive or OHE inspection Car or EMU with pantograph raised and after issuing necessary caution order. The Red warning Caps may be permitted to be removed to allow such movements.

HANDLING OF ISOLATOR SWITCHES – MANESWAR STATION

1. The Duplicate keys for all outdoor switches shall be kept in locked glass fronted key box duly padlocked under the custody of SM on duty or with Competent OHE officials concerned persons stationed conveniently near the switches as the case may be. The keys shall be issued on demand only to authorised persons whose signatures for receipt shall be obtained in a look maintained for the purpose. The list of authorised OHE Officials who can withdraw the duplicate keys from the SM on duty is displayed at station duly signed by an officer of the Traction Distribution Department. These keys shall be handed over to the authorised officials by the SM or only after obtaining the permission from TPC.

2. In the event of breakage of the glass of the key box the key or keys shall be kept in safe custody of the SM on duty until the glass is replaced. The Traction power controller will keep a record where such keys are kept so that in an emergency he will be able to direct the parties concerned.

3. In an emergency the SM shall operate isolator switches as per specific direction of the Traction Power Controller under exchange of private numbers.

4. Should the traction Power controller wish to give any isolator switch opened or closed he shall as the Junior Engineer's / TRD or SM or any authorised person to carry out the required switching operation. The person concerned shall after carrying out the orders lock the switch either in "Open" or "Closed" position, as the case may be and inform the Traction Power Controller of the action taken. He shall not part with the key until receipt of further orders from the Traction Power Controller. A record of every such operation shall be maintained by TPC as well as by the SM in the power block register in RED ink.

5. Every Station manager or SM on duty shall be fully aware of the location of the isolator switches provided for the control of power supply to Over Head Equipment at the Station and shall be conversant with the correct method of opening and closing of the same in an emergency.

   Details of Isolators to be operated by station master/ assistant station master/ points men during emergency under instructions of Traction Power Controller (TPC).
   (Authority: Advanced Correction Slip No.24, dated 10.01.2013 to Railways Manual of AC Traction (ACTM), Vol-II, Part-I, Para: 20970-5 issued vide ED/(EEM)/Rly. Board's L/No.2001/Elect(G)/138/4 Pt.-I dated 10.01.2013 in consultation with Traffic Transportation Directorate of Railway Board)

INSTRUCTIONS FOR ISOLATOR SWITCH OPERATION

OPERATION OF SWITCHES:

i) All switching operations shall be carried out in accordance with the instructions of the Traction Power Controller (TPC) except in respect of switching operations for local blocks which may be carried out by authorized traction staff after they have been granted local blocks by the Station master on duty in accordance with GR 17.04 and ACTM VOL II Part I Para 20600 and 20601.

ii) In times of emergency, authorized and trained station staff may open isolator switches under specified instructions of the Traction Power controller (TPC).

iii) Every station masters, points man shall be fully aware of the location of isolator switches provided for the control of Power supply to the overhead equipment at or near his station / cabin and shall be conversant with the correct method of opening and closing the same in an emergency (ACTM VOL II Part I Para 20624).

POSITION OF SWITCH HANDLES:

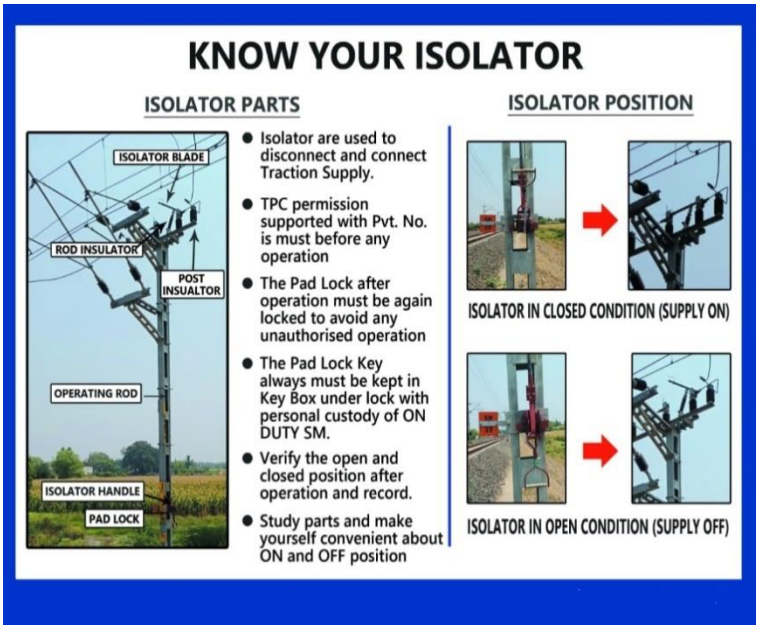
1. When an Isolator is in CLOSED position, the operating handle of the Isolator is at the TOP.
2. When an Isolator is in OPEN position, the operating handle of the isolator is at the BOTTOM.

NOTE: The operation handle of every isolator switch shall always be kept locked either in the open or closed position. Any loss shall be reported immediately to the OHE Section Charge man, Chief Traction Foreman (OHE) and TPC.

PROCEDURES AND PRECAUTIONS FOR OPERATING ISOLATORS:

The procedure for operation of Isolator switches has been give in SR 17.02 (XVIII) which must be rigidly observed. Isolator switch may be opened only after ensuring

1. If the isolator switch is on the main line that the adjacent Interrupters at the feeding end / ends of the adjacent interrupters at the feeding end / ends of the isolator switch has / have been opened.
2. Always use hand gloves and shoes while operating switches.
3. The switch must be operated in a jerk to avoid the arc formation.



Scan QR For Video of Switch Operation

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