EAST COAST RAILWAY

WALTAIR DIVISION

STATION WORKING RULES OF BORRA GUHALU [BGHU] [BROAD GAUGE]

Date of Issue:
Date brought in force:

Ref: Lr No: 2000/Safety (A&R)/19/36 of Rly. Board dated 27.10.05.

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

1. STATION WORKING RULE DIAGRAM:

The Station Working Rule diagram no: SI/WRD/23167 based on CSTE/E.Co.Rly Signal Interlocking Plan No.SI-23167 shows the complete layout of the yard, normal position of points, the Signalling and Interlocking arrangements, Gradients within the station limits. This must be referred to for giving details of the points and Signals when reporting accidents.

2. DESCRIPTION OF STATION:

Borra Guhalu (code: BGHU) is a standard-II (R) 'B' class station with MACLS on the Kottavalasa - Kirandul single line B.G. section of E.Co.Rly on 'D' Special route. It is situated at km 72.867 from KTV and provided with centrally operated by VDU.

2.1. GENERAL LOCATION:

a)	Name of the station	BORRA GUHALU
b)	Class of station	'B' class
c)	Section	Kottavalasa-Kirandul
d)	Double line/Single line	Single line
e)	Electrified/Non Electrified	Electrified
f)	Gauge BG/MG/NG	BG
g)	Railway	East Coast Railway
h)	Route	'D' Special
i)	Situated at	Km 72.867
j)	Reckoned from	Kottavalasa
k)	Operation	Centrally operated with VDU.

2.2. BLOCK STATIONS, IBH, IBS ON EITHER SIDE AND THEIR DISTANCE AND OUT LYING SIDINGS:

S.No	Adjacent BlockStation	Distance	Direction
1.	CHIMIDIPALLI	9.006 km	KTV end
2.	KARAKAVALASA	11.256 km	KRDL end
3.	Provision of IBS	Nil	

(CH SRINIVAS)
DSTE/Proj/VSKP

(K.V.S.R.K KISHORE)
Sr.DOM/M/WAT

S.No	Adjacent BlockStation	Distance	Direction
4.	Automatic signal	Nil	
5.	DK station/Outlaying sidings	Nil	
6.	Passenger halt	Nil	

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

Between Stations	The Point from which the Block section commences	The Point at which the 'Block Section' ends
BGHU-KVLS.	From UP Advanced starter signal no. 21 of BGHU.	DN Advanced starter signal no. 22 of KVLS.
BGHU-CMDP.	From DN Advanced starter signal no. 22 of BGHU.	UP Advanced starter signal no. 21 of CMDP.

2.3.1. STATION SECTION:

From the UP Advanced Starter signal No.21 to DN Advanced Starter Signal No.22

2.3.2. STATION LIMIT:

From UP Distant Signal to DN Distant Signal.

2.4. GRADIENTS:

a) From the Centre of the station building towards CMDP:

Chainage in Mtrs from CSB		Stretch	Gradient
From	To		
0.000 F/CSB	830.200M	830.200M	1 in 260 Falling
830.200M	1400.00M	569.80M	1 in 60 Falling
1400.00M	1558.00M	158.00M	1 in 100 Falling
1538.00M	2329.00M	791.00M	1 in 60 Falling
2329.00M	2448.00M	119.00M	1 in 100 Falling
2448.00M	5257.00M	2809.00M	1 in 60 Falling
5257.00M	In to section	--	1 in 100 Falling

b) From the Centre of the station building towards KVLS:

Chainage in Mtrs from		Stretch	Gradient
From	To		
0.000 F/CSB	536.50M	536.50M	1 in 260 Raising
536.50M	2684.00M	2147.50M	1 in 60 Raising
2648.00M	2779.00M	131.00M	Level
2779.00M	3621.00M	842.00M	1 in 60 Raising
3621.00M	In to section	---	1 in 70 Raising

2.5. A) LAY OUT:

Sl no	Running/Non Running line	Electrified/Non Electrified
1.	Line no-1 (Loop Line No.1)	Electrified

2.	Line no-2 (Main Line)	Electrified
3.	Line no-3 (Loop Line No.2)	Electrified

B) PLATFORMS:

i) One High level passenger platform on Line No.1 is provided with measurement of 376MX6.2M.

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

Direction of traffic:

The trains coming from KVLS and are proceeding towards CMDP are DN trains and the trains coming from CMDP and proceeding towards KVLS are UP trains.

Holding Capacities of lines in CSL:

S.No	Running lines	Name of the Line	Clear Standing Room	Whether Electrified/ Non Electrified
1.	Line No 1	Loop Line No.1	720 M (From STR to STR)	Electrified
2.	Line No 2	Main Line	720 M (From STR to STR)	Electrified
3.	Line No 3	Loop Line No.2	720 M (From STR to STR)	Electrified

2.5.2. NON RUNNING LINES AND THEIR CAPACITY IN CSR:

a) Hot Axle siding:

One Hot Axle Siding takes off from Line No.1 at CMDP end of the yard and terminated into a dead end. The hot Axle Siding is isolated from Line No.1 with motor operated derailing switch. Similarly another Hot Axle Siding takes off from Line No.3 at KVLS end of the yard and terminated into a dead end. The hot Axle Siding is isolated from Line No.3 with motor operated derailing switch.

Holding Capacities of Siding in CSL/CAL:

S.No	Name of the Line	Clear Standing Room	Whether Electrified/ Non Electrified
1.	Hot Axle Siding	14 M (From GJ to DE)	Electrified
2.	Hot Axle Siding	28 M (From GJ to DE)	Electrified

2.5.3. ANY SPECIAL FEATURES IN THE LAYOUT:

a) Slip Siding: One Slip Siding is provided towards KTV end of the yard beyond DN Advanced Starter Signal No.22 and the Slip Siding point No.31 which is interlocked with Tokenless Block Instrument of section BGHU-CMDP. The Slip Siding point is normally set to Slip Siding.

b) Repeater signals for UP Advanced Starter Signal No.21 and DN Starter Signal No.10 on Line No.1 are provided due to poor visibility of those signals.

2.6. LEVEL CROSSINGS:

S No	LC gate No. & KM	Class of Gate	Type of interlocking	Section
1.	KK-20, Km No: 74/27	'A' Class Engineering.	Interlocked	BGHU-KVLS

3. SYSTEM AND MEANS OF WORKING:-

A) Trains are worked under "Absolute Block System" in accordance with the provisions of GR 7.01 (1) (a) 8.01 (1) (a) & (c) , 8.01 (2) (b), 8.03 (2) (a) (b) (c) (ii), 14.01 to 14.07, 14.08 (b), 14.09 to 14.11, 14.13 and Block Working chapter IV part II in either directions.

B) **BLOCK INSTRUMENT:**

a) Handle type Token-less Block Instrument of co-operative type is provided for BGHU-KVLS and BGHU-CMDP block sections in Station Master's room vide BWM 4.01 (b) and GR 14.01 (a) which shall be operated by the Station Master on duty as per the provisions of GR Chapter-XIV of G & SR and Block Working Manual Chapter-IV Part-ll.

b) Taking "OFF" of the last stop signal is the authority for the loco pilot to proceed into the concerned Block Section vide GR14.08(b)(iv) and BWM 4.02(1)(b).

c) SM's lock up key is provided for the instrument for locking the same to prevent unauthorized operation vide BWM 4.31. The key of the block instrument must be in the personal custody of SM on duty.

d) The single line token less block instruments are provided with attached telephone communication with the adjacent station of the concerned section.

4. SYSTEM OF SIGNALLING AND INTERLOCKING:

4.1.

a) ***Standard of Interlocking:*** This Station is provided with Standard-II (R) with Electronic Interlocking.

b) ***Type of signals:*** Multiple Aspect Colour Light Signals. The aspects and indications of the MACLS is governed by GR.3.08 (4) (b) & 3.07 (4).

c) The Station is provided with centralized Electronic Interlocking (EI). All signals and points are electrically operated centrally from the VDU provided at SM's Office.

d) ***Method of operation:*** VDU is provided with a stand by VDU in the Station Master's office to centrally control all signals, points and crank handles etc. The SM's Key which is provided with SM's Key box shall always remain in the personal custody of the station master on duty in terms of GR 3.36 (3). The details of operation from VDU is given under APPENDIX-'B'.

e) ***Provision of axle counter/Track circuits on running lines:*** Track circuits are provided in the yard as 1AT, 1T1, 31T, 22AT, 33AT, 33BT, 35BT, 10T, 12T, 14T, L1T1, L1T2, L1T3, L2T1, L2T2, L2T3, L3T1, L3T2, L3T3, 9T, 11T, 13T, 34BT, 32AT, 32BT, 21AT, 2T and 2AT. Indications for the above track circuits/ Axle counters are available on VDU at SM's office. When a signal is cleared the route indication 'Yellow' strip appears for the particular route set and 'Red' light appears as the train occupies the track circuit.

f) ***Calling on signals:*** Calling-on signals are provided below Home signals (i.e. in both UP & DN lines) as per GR.3.13 (1) (b), (2) (3) (4) & (6) (b).

g) IBS is not provided at this station.

h) ***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 handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle for motor operated points shall be followed as per operating manual para-20.06.

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

These crank handles are interlocked with the signaling and interlocking system at this station and normally locked inside the RKT instrument at the respective Crank Handles Locations. Crank handle keys can be taken out only when concerned signals are not taken 'OFF' and the route is not locked for whatever reasons. Crank Handle can be released by tracking mouse pointer on to the concerned crank handle icon, which will enable two options i.e Transmit control and Release control then by clicking the Transmit control. When the keys are taken out no signal can be taken 'OFF' over the particular route on the points nominated by the crank handle. This key can be electrically transmitted at both ends locations of the yard for manual operation of the defective points. The failure of motor operated points must be ensured by physical checking that there is no obstruction for the same.

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 20.06(d) of the operating Manual. Correct setting, clamping and padlocking of the points devolve on the SM on duty. (Details of use of Crank Handle as per Appendix-'B').

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

When Crank handle operation is resorted to, the concerned counter will be incremented. The same should be recorded in the register provided for with the reason by SM on duty.

i) TAKING OFF CALLING-ON SIGNAL:

Miniature colour light Calling-on signal is provided below the Home signals in terms of GR.3.13 (6)(b). A Calling-on signal shows no light in the 'ON' position and White 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. Before taking 'OFF' Calling on signal during failure of track circuit, the track over which the train is going to be admitted must be checked physically by SS/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 (1AT, 2AT as the case may be) in rear of the signal. (The detailed procedure is given in Appendix-B)

Note: SM on duty should ensure that no through train signals are given while receiving a train on Calling-on Signal.

j) SHUNT SIGNALS:

Shunt back signal SH-3(A/B/C) is provided towards CMDP end of the yard and SH-4(A/B/C) is provided towards KVLS end of the yard.

k) EMERGENCY CROSS OVER:

NIL

l) MOTOR OPERATED POINS:

All the running line points including the take off point for Hot Axle siding on Line No.1 & 3 are operated with Electrical point machines.

m) EMERGENCY/CRANK HANDLE KEYS AND THEIR CUSTODY:

The Crank Handle location boxes are painted with yellow and black diagonal strips and pad locked. The key of Crank handle location is kept in the custody of the SM on duty. One Crank Handle is kept in the custody of SM on duty for operation of points in case of emergency. Telephone communication is provided in the crank handle location box.

n) INDICATIONS OF POINTS/SIGNALS/TRACL CIRCUITS/AXLE COUNTERS:

All point and signal indications in the yard will be displayed in the mimic diagram of the VDU as per the site condition. Normally no indications are displayed in the mimic diagram when track circuits are cleared; red indication is displayed when the same are occupied. Axle counter clear or occupied indications are displayed in the mimic diagram.

o) DISCRIPTION OF VISUAL DISPLAY UNIT(VDU):

Details described in Appendix-'B'.

p) L.C.GATE OPERATION:

Details described in Appendix-'A'.

q) EMERGENCY POINT OPERATION:

Emergency point operation facility is provided to operate the points from the VDU in case of failure of point controlling track circuit.

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. The user name is ECOR and the password of this station is BGHU. On clicking the concerned point icon, a pop-up menu is displayed carrying four options: 1) Normal 2) Reverse 3) Emergency Normal 4) Emergency Reverse. For emergency operation of concerned point, drag the pointer to either emergency normal or emergency reverse whichever is desired. A normal or reverse flashing indication will appear and the indication will become steady after the point is set to normal or reverse, whichever is desired. After the completion of Emergency point operation, the key is to be KEY OUT by clicking KEY OUT menu. The user name and password is to be given for KEY OUT also. This action will be recorded in a counter. All such operations will be registered in the emergency point operation counter Register. Each operation of emergency point operation shall be recorded in the station diary and in the register meant for this purpose.

r) EMERGENCY ROUTE RELEASE COUNTER:

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

s) EMERGENCY ROUTE RELEASE INDICATION:

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), click the mouse on the concerned signal. After clicking by the Right 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 aspect. After doing so click on the route release menu, then conformation pop up menu will appear. Click on the ok button, the route locked indication will start flashing for 120 second. After completion of 120 seconds, the white light along with the White/yellow strip of light will disappear conveying the route has been released. This action will be recorded in a counter. The counter will increment the number for each and every action. In case the route illumination (White strip lights) does not disappear, it suggests that the route is not released/cancelled. In such case the concerned S&T staff should be advised immediately to release the route. Each operation of emergency

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

t) <u>AXLE COUNTER:</u>

Axle counters are provided for sections between BGHU-KVLS and BGHU-CMDP for last vehicle verification.

The position of the Block section whether cleared or occupied are reflected in the VDU provided in the Station Master's office which shows 'GREEN' when the Block Section is clear and 'RED' when occupied. Whenever a train enters in to the Block Section, "Block Section Clear" indication 'GREEN' for the particular block section disappears and 'RED' indication appears.

After complete arrival of the train the 'RED' indication will disappear and 'GREEN' indication will appear. If after the complete arrival of the train the 'RED' indication does not change to 'GREEN' it should be assumed as Block Instrument failure for the particular section and necessary action as per GR.14.13 is to be followed. The axle counters are interlocked with the respective block instruments for that section. If axle counter fails, Advanced Starter signal shall not take OFF and the concerned instrument shall remain locked in last operated position.

A resetting arrangement for resumption of the system in case of failure of axle counter has been provided in the SM office of the adjacent Block stations after being assured by both the SM that the last vehicle has arrived complete at the receiving station by exchanging Private Number then resetting to be complied with. (Details of resetting procedure are given in APPENDIX-'B' of this SWR).

4.2. <u>CUSTODY OF RELAY ROOM KEY AND PROCEDURE FOR ITS HANDING OVER AND TAKING OVER BETWEEN STATION MASTER AND S&T MAINTENANCE STAFF:</u>

Custody of Relay room key and procedure for its handover and taking over between SM and S&T staff has to follow the procedure as per JPO issued by COM and CSTE vide No. JPO/02/2012 dated 29.08.2012. Relay room is provided with two independent locks. The key of one lock shall be in the personnel custody of Station Master on duty and the key of other lock shall be in the custody of S&T Maintainer. In the event of necessity such as for attending failure, or regular maintenance, on being requisitioned by S&T maintainer, SM shall hand over the key to the Maintainer. On completion of the work, maintainer shall lock the relay room and shall return the key to SM. The particulars of such transactions shall be entered by the SM in the relay room key register vide OM 2015 Para No.13.16.

4.3. POWER SUPPLY:

i) The station works on 230V single phase power supply. The normal power supply is from the auxiliary transformer (25KVA Rating) connected to OHE traction distribution.

ii) Standby power supply: (a) 1st standby power supply: Chattishgarh State Electricity Board Supply. (b) 2nd stand by power supply: DG set.

iii) An Auto changeover switch is provided in the Station Master's Office with the two power supplies viz., AT and Local supply for automatic selection from available source or changing the switch position to the required supply manually. A luminous indicator provided above the circuit breaker for each supply indicates the availability of the supply.

iv) Normally the switch is kept in auto mode. Whenever power block is to be given, the power supply will be automatically changed to Local supply.

v) In case of failure of the AT Supply without any power block, the on duty 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 Up and when tripped it goes down). In case of failure of both AT supplies, the Local supply shall be utilized by operating the switch. If the circuit breaker is tripping even after resetting, no attempt shall be made to hold it by any means and a message shall be given to concerned SSE [Elect.] and SSE/PSI [OHE] for prompt rectification.

vi) For IPS system which provides supply to EI, a manual changeover switch is provided at SM's Office with the two power supplies viz., selected supply from CLS panel and DG supply for changing the switch to required supply position manually.

vii) Normally manual changeover switch is kept in selected supply from CLS panel position, if in case any emergency, changeover switch is changed to DG supply position by on duty SM.

viii) There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

REMOTE MONITORING ASM BOX: Remote monitoring ASM Box gives alarm to the ASM for the following fault conditions:-

a) 50% depth of discharge (DoD) of battery. In this condition audio/visual alarm comes, which can be acknowledged with audio cut-off.

b) 60% DOD, which warns for emergency. The alarm for this condition is same as for condition 1.

c) 70% DOD, which signals system, shut-down. In this condition signal feed is cut-off and all DC-DC converters continue working. Audio alarm continues till power supply is restored.

d) Any of the module fails, which calls for 'call S&T'.

e) Whenever there is a failure of power supply in AT or Local 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 AT and Local and make an entry in the Station Diary duly initiating action for rectification of failure, if any.

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

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

5. TELECOMMUNICATIONS:

i). The station is connected to KTV-KRPU control Circuit.

ii). The station is connected to KTV-KRPU traction power control circuit.

iii). Railway Auto Telephone provided at the station is connected to Divisional Exchange at WAT through Exchange at ARK.

iv). Telephones attached to Token less Block Instruments are connected to adjacent stations on either side.

v). Hot line Telephone communication is provided between BGHU-KVLS and BGHU-CMDP stations.

vi). Telephone communication is provided between Station Master on duty to UP CH locations and to DN CH Locations.

vii). Telephone communication is provided between Station Master on duty and A-Class LC Gate No.KK-20 at Km No.74/27.

viii). 25w VHF set is provided at the station for emergency communication.

ix). BSNL telephone is provided at this station.

x). CUG phone is provided at this station with SM on duty.

5.1. FAILURE OF COMMUNICATION: -

a) In the event of total failure of communications between the adjacent block stations SR 6.02.04 shall be observed for working the train.

b) In the event of partial interruption/failure of communications between the adjacent block stations SR 6.02.06 shall be observed for working the train.

6. SYSTEM OF TRAIN WORKING:

6.1. DUTIES OF TRAIN WORKING STAFF:

The movement of trains is controlled by section controller on duty whose orders shall be complied with provided they do not contravene any provisions of General Rules, Subsidiary Rules, Station Working Rules, Block working manual and any 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 Stations and shall be responsible to ensure that there is no undue delay to train operation in general.

6.1.1. TRAIN WORKING STAFF IN EACH SHIFT:

STAFF IN EACH SHIFT:

Station Master	1
TPM/TP	1

The above staff shall work as per roster issued from time to time by Divisional Railway Manager (P) and these rosters shall be conspicuously displayed in the Station Master's office.

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

The SM on duty is responsible to ascertain the clearance of the nominated line between UP Advanced Starter signal and DN Advanced starter signal. The private number book should be under the custody of SM on duty that is authorized to use it.

6.1.3. ASSURANCE OF THE STAFF IN THE ASSURANCE REGISTER:

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

No Railway servant shall be entrusted with any duty involving the safety of the public unless the SS (Supervisor) 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 (Supervisor) is responsible to see that all the staff are well conversant with the Station Working Rules of the Station and their signature obtained in the Assurance Register after he is satisfied that they have thoroughly understood the working Rules of the Station. In case of Class-IV staff, their signature/thumb impression must be obtained after explaining full about their duties and responsibility.

The SS (Supervisor) is personally responsible for maintaining the Assurance Register and for obtaining declaration from the staff working under him. The

Assurance Register must be maintained in two parts one for Group-'C' staff and other for Group-'D' staff & duplicate copy of the Assurance Register must be maintained and kept in the personal custody by the SS (Supervisor).

Fresh assurance shall be obtained in the Assurance Register when:
1. He joins at the station as a new member.
2. There is any change in the Station Working Rules.
3. He resumes duty at the station after an absence of 15 consecutive days or more.

6.2. CONDITIONS FOR GRANTING LINE CLEAR:

A) For section BGHU-CMDP:

i). The conditions laid down in GR 8.03 (2) (a) (b) (c) (ii) shall be complied with SM on duty before line is considered clear and line clear is granted for section BGHU-CMDP.

ii). Line shall not be considered clear and line clear shall not be granted to a UP train unless:

a) SM ensures the reception signals pertaining to a train are in 'ON' position and glowing properly vide GR 3.49 (4).

b) Whole of the last train passed over the section has arrived completely.

c) UP Home signal /calling-on signal No. 1(A/B/C) and/or C-1(A/B/C) is put back to 'ON' position.

d) Line is clear up to DN Advanced Starter Signal No.22 of BGHU.

B) For section BGHU-KVLS:

i). The conditions laid down in GR 8.03 (2) (a) (b) (c) (ii) shall be complied with SM on duty before line is considered clear and line clear is granted for section BGHU-KVLS.

ii). Line shall not be considered clear and line clear shall not be granted to an DN train unless:

a) SM ensures the reception signals are in 'ON' position and glowing properly vide GR 3.49 (4).

b) Whole of the last preceding UP train has arrived completely.

c) DN Home signal/calling-on signal No. 2A/B/C and/or C-2A/B/C is put back to 'ON' position.

e) Line is clear up to UP Advanced Starter Signal No.21 of BGHU.

6.2.1. ANY SPECIAL CONDITIONS TO BE OBSERVED WHILE RECEIVING OR DESPACTHING A TRAIN:-

NIL

(CH SRINIVAS)
DSTE/Proj/VSKP

(K.V.S.R.K KISHORE)
Sr.DOM/M/WAT

6.2.1.1. SETTING OF POINTS AGAINST BLOCKED LINE:

When a running line is blocked by stabled load wagon, vehicle or by a train which is to cross or give precedence to another train or immediately after the arrival of a train at the station etc., the points at either end should immediately be set against the blocked line except when shunting or any other movement is required to be done on that line [Refer SR.3.51.06 (a)]. If all the lines of a station happen to be blocked, when line clear has been granted to a train, the points should be set for the line occupied by a stabled load or a goods train in that order so that, in case of mishap, the chance of causalities are minimized [Refer SR.3.51.06 (b)]. In case of all the lines are occupied by Coaching train, points should be set for a loop line to negotiate with the speed of incoming train would be reduced which in turn, would minimize the consequences/causalities.

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

6.2.1.2. RECEPTION OF A TRAIN ON BLOCKED LINE:

Trains are to be admitted on a blocked line, by taking off calling-on signal as per GR 5.09(2) (a) or if calling signal cannot be taken off, trains are to be piloted in on a written authority on Form T/509 given by SM on duty and delivered by a competent railway servant to the Loco Pilot of the train as per GR 5.09 (2)(C)(3)(4)(5) and SR 5.09.01.

6.2.1.3. RECEPTION OF TRAIN ON NON-SIGNALLED LINE:

Before receiving a train on Non-Signaled line, the SM shall ensure that-

a) The train is brought to a stand at the first stop signal.
b) The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand.
c) All over which the train has to pass are correctly set, the facing and trailing points are clamped and padlocked and
d) The driver is authorized to pass the approach stop signals at ON through a written authority [Refer GR 5.10].

6.2.1.4. DESPATCH OF TRAIN FROM NON-SIGNALLED LINE:

Whenever a train is to be dispatched from a Non-Signalled line a starting order on form T-511 shall be given to the driver to start from the Non-Signalled line [Refer SR.5.11.1].

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

NIL

6.2.1.6. ANY SPECIAL CONDITIONS:

a) SPECIAL RESTRICTIONS:

1. Shunting in the face of an approaching train is prohibited at both ends vide SR.8.09.02 (b) (ii).

2. As the yard gradient is 1 in 260, no train shall be stabled on the main lines without live engine.

3. Engine to be attached towards falling gradient while Shunting towards both end of the yard as per GR.S:20(b).

b) SPECIAL INSTRUCTIONS:

Motor trolleys are not permitted on "following line clear " between BGHU –CMDP and BGHU-KVLS as per SR.15.25.03(b)(xiii)

6.3. CONDITIONS FOR TAKING "OFF" APPROACH SIGNALS:-

i). Conditions for taking off approach signals are governed by GR 3.40(1) (b), 3.40(2) (b), 3.40(3) (b) for Single line section BGHU-CMDP and BGHU-KVLS.

ii). Calling-on signal may be taken off for the admission of train in the event of failure of Home signal in terms of SR 3.69.02(a) or for the admission of a train on obstructed line in terms of GR 5.09 and SRs thereto.

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

Station master should ensure that signal is put back to 'ON' after passage of the train as per GR 3.36 (2) (B), 14.01 and SR 4.17.01.

6.4. SIMULTANEOUS RECEPTION/DESPACTH, CROSSING AND PRECEDANCE OF TRAINS:

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

1.	Reception of a DN train on Line No.1 setting overlap to DS 35B (Loop Line No.1).	AND	Reception of an UP train on Line No.3. OR Dispatch of another DN train from Line No.2 or 3.
2.	Reception of a DN train on Line No.3 setting overlap to DS 33B (Loop Line No.3).	AND	Reception of an UP train on Line No.1. OR Dispatch of another DN train from Line No.1 or 2.
3.	Reception of an UP train on Line No.1 setting overlap to DS 32B (Loop Line No.1).	AND	Reception of a DN train on Line No.3. OR Dispatch of another UP train from Line No.2 or 3.
4.	Reception of an UP train on	AND	Reception of a DN train on Line

	Line No.3 setting overlap to DS 34B (Loop Line No.3).		No.1. OR Dispatch of another UP train from Line No.1 or 2.

ADEQUATE DISTANCE: (SIGNAL OVERLAP)

To take off the Home signals for admission of a train, the adequate distance (overlap) as mentioned below shall be kept clear. [Refer GR.3.40 (3) (b) and SR thereto]

CLEARANCE OF ADEQUATE DISTANCE (SIGNAL OVERLAP)

FOR UP TRAINS		
Line No.	**From**	**To**
1	UP starter Signal No.13	DS point No.32B or UP Advanced starter signal No.21.
2	UP starter Signal No.11	UP Advanced Starter Signal No.21.
3	UP starter Signal No.9	DS point No.34B or UP Advanced starter signal No.21.

FOR DOWN TRAINS		
Line No.	**From**	**To**
1	DN starter Signal No.10	DS point No.35B or DN advanced starter signal No.22.
2	DN starter Signal No.12	DN advanced starter signal No.22.
3	DN starter Signal No.14	DS point No.33B or DN advanced starter signal No.22.

6.5. COMPLETE ARRIVAL OF TRAINS:

The entire block section between BGHU-CMDP and BGHU-KVLS are monitored by axle counter system and the position of the block section whether 'Occupied' or 'Clear' is indicated on VDU at SM's office. As soon as train enters in to that block section the RED indication appears on VDU. After whole train clears the block section GREEN indication appears on the VDU. This confirms the complete arrival of train and the SM on duty shall give 'Train out of Block Section' report to the sending end station on seeing the section clear indication GREEN on the VDU.

If a train passes through the station without confirming the last vehicle indicator, the Station Master on duty shall advise the station in advance to stop the train for last vehicle verification and he need not to withhold closing of block section in rear. He shall obtain confirmation under exchange of private number about the complete arrival of the train with its last vehicle from the station in advance and subsequent trains may be dispatched.

In case of failure of Axle counter the SM 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 SM on duty shall satisfy himself the complete arrival of the train by verification of the Last Vehicle Indicator vide SR 4.16.05 that the train arrived complete. In case a train passes incomplete, action shall be taken as per SR.4.17.02, the "Train out of Block Section" report 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 & Loco pilot shall be issued with caution order to proceed cautiously and stop sort of any obstruction as per SR.4.17.03. On occasions when motor trolley follows a train the points shall not be operated until the following motor trolley is admitted on the same line. In event of motor trolley is delayed in the section the SM on duty shall take action in terms of SR.15.25.03 (b) (vi).

6.6. DESPATCH OF TRAINS:

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. He shall suspend all non-isolated shunting and then shall take "OFF" the concerned route starter and advanced starter signal. The 'OFF' aspect of the advanced starter is the authority to proceed into the block section. As soon as the train passes the advanced starter signal, Train entering section indication will appear on the VDU. The SM will then send the train entering given section signal to the station in advance.
[Refer GR 3.38, 3.42, SR 3.36.04(b), 3.42.04 and BWM 2.07.5(a)]

The Station Master on duty shall watch the safe passage of the train with its last vehicle indicator. After the train passes the advanced starter complete he shall send the train entering block section signal to the station in advance. If a train worked without guard or break van the instruction laid down in Subsidiary

ISSUE OF CAUTION ORDERS:

Whenever in consequent of the line being under repairs or for any other reasons special precautions are necessary, a caution order detailing the kilometer and speed at which train should run with reasons for taking such precautions shall be handed over to the Guard and Loco pilot in terms of GR 4.09 and SRs thereto.

6.7. TRAINS RUNNING THROUGH:

The procedure detailed in Para 6.4, 6.5 shall be observed. The Station Master is responsible to observe/watch the condition of the vehicles on a passing train and shall wave green hand signal horizontally until anything wrong is noticed on train. For this purpose the Station Master on duty shall stand in such a position that he sees a clear view of the passing train and that his hand signals can clearly be seen by the Loco Pilot and Guard of the train. He shall also depute the

TPM on duty to the other side, for passing the train. The TPM on duty shall wave Green hand signal horizontally. He shall show danger hand signal if he notices anything is wrong and reports the same to the SM on duty.

The Station Master 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 3.40,3.42, 4.17, 4.42, & SR 4.42.02 (b) (i), (ii), (iii), (c) & (d)]

6.8. WORKING IN CASE OF FAILURE:

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

a) TRACK CIRCUITS:

In case of failure of track circuits, the clearance of the concerned line should be ensured physically before a train is piloted.

b) AXLE COUNTER:

If the axle counter fails between the block sections, resetting procedure will be adopted as per Para 6 & 6.1 of SWR (APP-B). If the axle counter indication does not appear 'GREEN & continues to show 'RED' condition after resetting, the concerned block section shall be suspended & failure intimation to be given to sectional signal Maintainer /JE/SE (signal) for their rectification.

c) BLOCK INSTRUMENTS:

In the event of failure of block instrument, the concerned block instrument shall be suspended till its rectification and trains shall work as per GR (Refer SR 6.02.03, 6.02.04 & 6.02.06)

During this period of time the authority will be T/369(3b) with identification number and private number issued from the station in advance written both in figure and words.

d) RECEPTION OF A TRAIN ON OBSTRUCTED LINE:

Trains are to be admitted on a blocked line, by taking off calling-on signal as per GR 5.09(2)(a) or if calling signal cannot be taken off, trains are to be piloted as per GR 5.09(2)(C)(3)(4) (5) and SR 5.09.01.

e) RECEPTION OF A TRAIN ON NON-SIGNALLED LINE:

Before receiving a train on Non-Signaled line, the SM shall ensure that-

1. The train is brought to a stand at the first stop signal.
2. The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand.
3. The points all over which the train has to pass are correctly set, the facing and trailing points are clamped and padlocked and

4. The driver is authorized to pass the approach stop signals at ON through a written authority [Refer GR 5.10].

f) <u>DEFECTIVE SIGNALS:</u>

Whenever 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. [Refer GR 3.68 to 3.71, 3.80 and SR 3.68.01 (c)].

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 laid down in GR 3.74.

g) <u>DEFECTIVE INTERLOCKING</u>:

When interlocking becomes defective the SS/SM on duty shall be responsible for correct setting, clamping, padlocking of points for admission of train. [Refer SR 3.69.03 (c) & 3.69.01].

h) <u>DEFECTIVE/DAMAGED POINTS</u>:

When any point fails to operate normally by route setting operation through VDU, it is inevitable to operate the points with crank handle. The SS/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 shall be followed as per operating manual 2015 para No 2.18, 2.19. Station master on duty shall personally ensure the clamping and padlocking of all facing and trailing points. An emergency crank handle register shall be maintained by SM at the station as per para 20.06(d) of the Operating manual. Correct setting, clamping and padlocking of the points devolve on SM on duty. (Details of use of crank handle as per Appendix-'B'). The cases of the failures of the point should be promptly reported to the concerned signal maintainer/JE/SE (signal) for their immediate rectification.

6.9. <u>PROVISIONS FOR WORKING OF TROLLIES/ MOTOR TROLLIES/ MATERIAL LORRIES ETC"</u>:

a) Motor trolleys shall be worked as per GR 15.25 and SRs there to, BWM 5.11(1) (2), 5.12, 5.13, 5.14(2) (a) and circulars and orders issued from time to time. Material trolleys shall be worked as per GR 15.27 and SRs there to and in accordance with the provisions of Block Working Manual.

b) Tower wagons shall be worked as per GR 17.08 and SRs there to and BWM 4.39 and other circulars and orders issued from time to time.

c) Push trolleys shall run under block protection only vide SR 15.25.09(e).

d) Trolleys, Motor Trolleys, Lorries which are not insulated shall not be allowed to run except on line clear.

e) Motor Trolleys/Tower Wagon/Material Lorries are not likely to actuate the Axle Counter correctly.

f) 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.

Note: Trolleys which are to be run on track circuit area shall be insulated as per SR 15.20.02.

7. BLOCKING OF THE LINES:

Whenever a running line is blocked either by loose vehicles or by stabling train or by a train which is to cross or give precedence to another train, the points at either end should immediately be set against the blocked line except during shunting movement. 'Line Block' is to be activated on VDU by SM on duty following procedure laid in para No.5.4.1 & 5.4.2 of Appendix-B. 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) SECURING OF VEHICLES: -

As far as practicable, loose vehicle shall not be allowed to stand on the running line. However under unavoidable circumstances, if it is necessary to detach vehicle from a train or to stable a train and leave them standing on the running line, the SS on duty shall be responsible to secure the vehicle/stable loads to prevent rolling down of vehicles and arrest obstruction and fouling.

Note: Special care should be taken to secure special type vehicles fitted with roller bearing while standing in siding or in running lines. [Refer GR 5.23 & SR 5.23.01]

B) REMINDER FOR BLOCKING LINES:

Whenever any running line is blocked or when a train is stopped to cross another train or detained for any other reason, even for a short while or during shunting operations, 'Line Block' is to be activated on VDU by SM on duty following procedure laid down in para No. 5.4.1 & 5.4.2 of Appendix-B. [Refer SR 3.36.03 (b)].

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

When a running line is blocked by stable load, Wagon, vehicles or by a train which is to cross or to give precedence to another train or immediately after the arrival of a train at the station etc. the points at either end should immediately be set against the blocked line except when any shunting or any other movement is required to be done immediately in that direction on that line.

If all the lines at a station happen to be blocked when "Line Clear" has been granted to a train, the points should be set for the line occupied by a stable load or a goods train in that order, so that in case of any mishap the chances of causalities are minimized. In case all the lines are occupied by passenger carrying trains, points should be set for a loop line to negotiate of which the speed of the incoming train would be reduced, which in turn would minimize the consequences/causalities. While doing so points may be set for a loop occupied by a train, if any, whose engine is facing the direction of approach of the incoming train rather than for a loop occupied by a train whose passenger coach will in case of collision receive the impact.

D) LOADING AND UNLOADING OF VEHICLES ON RUNNING LINES:

Except small loading and unloading of vehicles on running line is prohibited unless permitted by DOM vide SR 5.19.01.

8. SHUNTING:

8.1. GENERAL PRECAUTIONS:

Shunting will be carried out at the station in accordance with General Rule and relevant Subsidiary Rules and Block working Manual [Refer GR 3.46, 3.52 to 3.56, 5.13, 5.14, 5.16 to 5.23, 8.05, 8.06, 8.14 and 8.15]. The SS/SM on duty is authorized to supervise shunting operation. Normally back shunt, shunt below starters and starter signals shall be used for shunting operations. The official supervising the shunting shall ensure the correct setting, clamping and padlocking of points in case of Non-Signaled movements.

The SS/SM on duty and the official supervising shunting shall cooperate with each other regarding shunting operations. Neither reception signals nor departure signals shall be taken 'OFF' unless the shunting is isolated and the path of incoming or outgoing train is free from obstructions. The overrun line may be used as shunting neck.

NOTE:
For any non-signaled movement physical verification of the clearance of the crossover points shall be ensured by the Guard/SM on duty for supervising shunting operations.

a) CUSTODY OF KEYS AND PAD LOCKS DURING SUCH MOVEMENT:

The key of the pad locks of such points shall be in the personal custody of the operating official vested with this responsibility till such time movements are completed. The operating official vested with the responsibility of supervising the Non-Signaled movement of the engine/train/vehicle must return the key

along with pad locks to the SM on duty after completion of the said movement or alternatively when such a move is cancelled.

b) <u>AUTHORITY FOR SHUNTING OPERATIONS:</u>

The SM on duty shall issue written shunting authority on form T/806 to the Driver through guard of the train when the non-signaled shunting is resorted to. This memo shall be withdrawn whenever shunting is to be suspended for reception and dispatch of train if the line on which shunting is performed is not isolated. After shunting is completed the order shall be collected from the driver cancelled and pasted with the record foil as per SR 5.13.02.

Note: Points both facing and trailing are to be clamped and padlocked for all non-signaled movements. Further it must be ensured that the entrance and exit track circuit are clear as also the intervening track of the cross over is clear of any obstruction and certified so by the operating official (who is responsible for shunting supervision) before the SM on duty resumes normal working either for reception or dispatch of trains in the station yard or through the station yard.

c) <u>NON-SIGNALLED MOVEMENTS:</u>

All signaled movements in the yard either of train or of an engine with or without vehicles shall be from one stop signal to next stop signal or stop board and no half way movements are permitted and if such movements are permitted in unavoidable situations it should be considered as non-signalled movement and precautionary measures should be taken such as clamping and pad locking of points enroute both interlocked and non-interlocked points including derailing switches according to SR 5.3.05 and 5.14.03.

8.2. <u>SHUNTING IN FACE OF AN APPROACHING TRAIN</u>:

Shunting is face of an approaching train is strictly prohibited at both ends of the yard.

8.3. <u>PROHIBITION OF SHUNTING, SPECIAL FEATURES IF ANY</u>:

i) Hand shunting is prohibited at both ends of the yard vide GR 5.20.
ii) Fly shunting is prohibited at both ends of the yard vide SR 5.21.01 (c).
iii) Engine to be attached towards falling gradient while Shunting at both ends of the yard.

8.4. <u>SHUNTING ON SINGLE LINE:</u>

i) ***Within station section*:** Shunting within station may be carried on within the station section up to Advanced starter, provided the necessary Reception Signals are kept at ON vide GR 8.010 (1). But this shall be done only when there is no approaching train since shunting in the face of an approaching train is prohibited at this station.

ii) ***Beyond station section*:** Governed by GR 8.12.

iii) ***Beyond opposite first stop signal*:** Unless the line is blocked back, the line outside the first stop signal shall not be obstructed vide GR 8.13.

iv) ***During failure of Block instrument*:** Block back messages shall be exchanged between Station master at either end of the section which is intended to be obstructed supported by private number. Both the Station Masters shall fix line block collars on respective Block Instruments and shall continue shunting provided the Block section is clear.

8.5. SHUNTING IN THE SIDING TAKING OFF FROM THE STATION YARD:

While performing shunting in the siding it should be authorized by issuing T/806 clearly mentioning the limits up to which shunting is permitted as also the lines occupied in shunting. The relevant provisions of GR 5.14 and SR thereto shall be meticulously followed.

9. ABNORMAL CONDITION:-

a) RULES TO BE OBSERVED IN THE EVENT OF ABNORMAL CONDITIONS:

i). ***Partial interruption/Failure:***

In the event of suspension of Block instrument and during partial failure of other available means of communication, the procedures detailed below shall be followed for working of trains in different situations.

1) Failure/Suspension of Block Instrument or track circuit or Axle Counters-
Line clear shall be obtained on the Telephone attached to the block instrument or station telephone exchanged ID number and supported by Private Number.
2) Failure/Suspension of Block Instrument or Track Circuit or Axle Counters or Telephone attached to the Block instruments or station fixed telephones-
Line clear shall be obtained on Railway auto Phone or BSNL phone by exchanging identification number supported by a private number.
3) Failure/Suspension of Block Instrument or Track Circuit or Axle Counters or Telephone attached to the Block instruments or station fixed telephones or Railway auto Phone or BSNL phone –
Line clear shall be obtained on control phone by exchanging identification number supported by a private number.
4) Failure/Suspension of Block Instrument or Track Circuit or Axle Counters or Telephone attached to the Block instruments or station fixed telephones or Railway auto Phone or BSNL phone or control phone –
Line clear shall be obtained on the VHF set by exchanging identification number supported by a private number.

The authority to proceed for the Loco pilot is T/369(3b) bearing identification number and private number received from the station in advance written both in figure and words. [Refer SR 6.02.06 & Chapter-V of BWM].

ii). ***The authority to proceed in occupied block section in case of obstruction of line or accident:***

Rules and regulations for working of trains on obstructed line in case of obstructions or accident on the authority of Block Ticket T/A 602 when communications are available shall be followed in accordance with the provisions of SR 6.02.02 and 06.02.05.

iii). In the event of trains delayed in the block section, GR 6.04 and relevant SRs shall be followed.

iv). Failure/passing of Intermediate Block stop signal at 'ON' position: Not applicable.

v). Failure of Axle counter Block/BPAC: Procedure to be followed vide GR 14.13.

vi). Failure of MTRC: Not applicable.

b) <u>PROCEDURE FOR EMERGENCY OPERATION OF POINTS BY CRANK HANDLE:-</u>

The detailed Procedure for emergency operation of points by Crank Handle of motor operated points shall be followed.

Crank handle operation is interlocked with the signaling and interlocking system at this station. Key of crank handles normally locked inside the RKT instrument at the respective Crank Handles Locations. Crank handle keys can be taken out only when all signals leading over the points are in the Normal position and the route is not locked for whatever reasons. Crank Handle can be released by tracking mouse pointer on to the concerned crank handle icon, which will enable two options i.e Transmit control and Release control then by clicking the Transmit control the key can be extracted from the concerned RKT. When this key is taken out, no signal to the concerned point can be taken 'OFF' in the yard. This key can be electrically transmitted at both ends of the yard.

On account of the doubtful operation of any track circuit by a light vehicle including self-propelled vehicle such as Motor trolley or light Diesel/electrical engine or tower wagon, indicating the occupancy of the track. It is necessary that SM on duty satisfies himself that the said vehicle has cleared point zone track circuits by observing the track indications of the track on either side of the cross over by positively checking the entrance and exit track circuits are showing occupancy and clearance in accordance with the train movement.

<u>PROCEDURE FOR EMERGENCY OPERATION OF POINTS WITH POINT ZONE TRACK CIRCUIT/AXLE COUNTER FAILURE AND EMERGENCY ROUTE RELEASE:</u>

Emergency point operation facility is provided to operate the point from the VDU in case of failure of point controlling track circuit.

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. The user name is ECOR and the password of this station is BGHU. On clicking the concerned point icon, a pop-up menu is displayed

carrying four options: 1) Normal 2) Reverse 3) Emergency Normal 4) Emergency Reverse. For emergency operation of concerned point, drag the pointer to either emergency normal or emergency reverse whichever is desired. A normal or reverse flashing indication will appear and the indication will be steady after the point is set to normal or reverse, whichever is desired. After the completion of Emergency point operation, the key is to be KEY OUT by clicking KEY OUT menu. The user name and password is to be given for KEY OUT also. This action will be recorded in a counter. All such operations will be registered in the emergency point operation counter Register. Each operation of emergency point operation shall be recorded in the station diary and in the register meant for this purpose.

Rules regarding locking of points and damaged points vide GR 3.39 and GR 3.77 to be followed.

c) CERTIFICATION OF CLEARANCE OF TRACK BEFORE CALLING-ON SIGNAL OPERATION IS INITIATED:-

Before taking off Calling –on signal during failure of track circuit/axle Counter, the route and the clearance of the track over which train would pass to be verified by SM on duty.

d) REPORTING OF FAILURE OF POINTS, TRACK CIRCUITS/AXLE COUNTER AND INTERLOCKING:-

Whenever there is a failure of points, Track circuits/axle counter or any interlocking gear at station, the failure should be reported by SM on duty to the concerned Signaling Maintenance Staff on duty responsible for attending to the failure and only after receipt of the written memo from the Signaling Maintainer for rectification of the fault, SM should restore the normal working. The entries in failure register to be done with message to the section controller.

9.1. TOTAL FAILURE OF COMMUNICATION:

In the event of total failure of communication on double line, trains shall run on the authority to proceed without line clear in terms of SR 6.02.03 & on single line, as per SR 6.02.04.

9.2. TEMPORARY SINGLE LINE WORKING ON DOUBLE LINE SECTION:

Not Applicable.

9.3. DESPATCH OF TRAINS UNDER AUTHORITY TO PROCEED WITHOUT LINE CLEAR OR TO ASSIST THE CRIPPLED TRAIN:

i). In the event of total failure of communication, trains shall run on the authority to proceed without line clear in terms of SR 6.02.03.

ii). In the event of necessity to send a train to assist the crippled trains, SR 6.02.05 shall be followed.

10. VISIBILITY TEST OBJECT:

The signal lights of DN Starter Repeater Signal No.10 of line No.1 and UP Starter Signal No.13 of Line No.1 are earmarked to serve as visibility test object during day and night vide GR 3.61.02 (b) (iii) & SR's thereto.

11. ESSENTIAL EQUIPMENT AT THE STATION:

(Details are given in Appendix-'E')

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

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

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

12.1. STATION DETONATOR REGISTER (OPT/124)

A Register regarding detonator is maintained at the station.

12.2. INSTRUCTIONS:

a) This register contains the following parts.

Part. - I	:	Particulars of fog signal men 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 up to 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.

13. APPENDICES:

APPENDIX-A : WORKING OF LEVEL CROSSING GATES

APPENDIX-B : SYSTEM OF SIGNALLING AND INTERLOCKING AND

COMMUNICATION ARRANGEMENTS AT THE STATION.

APPENDIX-C : ANTI COLLISION DEVICE (RAKSHA KAVACH)

APPENDIX-D : DUTIES OF TRAIN PASSING STAFF AND STAFF IN EACH SHIFT.

APPENDIX-E : LIST OF ESSENTIAL EQUIPMENT PROVIDED AT THE STATION.

APPENDIX-F : RULES FOR WORKING OF DK STATIONS, HALTS, IBH, IBS AND OUTLYING SIDINGS.

APPENDIX-G : RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS.

CERTIFICATE

"NOTHING IN THESE RULES SHALL BE READ AS CANCELLING AMENDING OR MODIFYING ANY GENERAL AND SUBSIDIARY RULES, BLOCK WORKING MANUAL RULES AND OPERATING MANUAL. THESE RULES CANCEL ALL PREVIOUS STATION WORKING RULES OF "BORRA GUHALU".

(CH SRINIVAS)
DSTE/Proj/VSKP

(K.V.S.R.K KISHORE)
Sr.DOM/M/WAT

APPENDIX 'A'

WORKING OF LEVEL CROSSING GATES AT BORRA GUHALU STATION

1. GENERAL:

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 :	KK-20
2.	Engineering or Traffic Gate :	Engineering gate ('A' class)
3.	Under control of Station Master / Permanent Way Inspector:	SSE [P.Way]/ARK
4.	Location at KM:	74/27
5.	At Station:	Mid-Section
6.	In between stations:	BGHU-KVLS
7.	BG / MG / NG :	BG
8.	Single line / Double line / Multiple line:	Single Line
9.	Normal Position:	Open to Road Traffic.
10.	Interlocked / Non-Interlocked:	Interlocked.
11.	Means of Interlocking	Interlocked with Gate Signals.
12.	Provision of Gate signal at Kms.	(i) Up Direction : 74/23-24 (ii) Dn Direction: 75/1-2.
13.	Signaling arrangements:	(i) UP Direction : 3GS. (ii) DN Direction : 4GS.
14.	Means of Communication – Telephone / Bell etc	Telephone connection with SM/BGHU.
15.	Width of level crossing gate:	7.6 M.
16.	Type of road (NH / SH / Others) :	Others.
17.	Name of Road :	-
18.	Metalled / non-metalled :	Metalled.
19.	Approach road :	BT Road
20.	Width of the road :	5.6 M
21.	Angle of road crossing (in case of the skew gates):	90 Degree.
22.	Road gradient (if any)	(i) North / East side: Flatter than 1 in 30. (ii) South / West side: Flatter than 1 in 30.
23.	Road alignment (straight/curve)	i) North / East side: Straight. ii) South / West side: Straight.
24.	Provision of height gauges:	Provided
25.	Type of Barriers:	Coupled Lifting Barrier.
26.	Length of Check rails :	9.6 M
27.	Road surface in between L-Xing gates:	Level.
28.	Length of Rumble strip / speed breakers:	8.40 M
29.	Road signs:	Provided

APPENDIX-'A'

30.	Speed breaker indication board:	Provided
31.	TVU:	39080 OF 29.1.2016..
32.	Census next due on :	Jan 2019.
33.	Demarcation for placement of Detonators:	Provided
34.	No. of Gatemen working:	2 Two
35.	Nearest Railway Medical Assistance	Railway Health unit, Araku.
36.	Nearest Private Medical Assistance available (if any):	Ananthagiri
37.	List of equipment available Yes / No:	Yes

1.2. EQUIPMENTS:

	Items	**Quantity / Numbers**
1.	Hand Signal Lamp Tri Colour	3Nos
2.	Hand Signal Flag Green	1 No with mounted stick
3.	Hand Signal Flag Red	3 Nos
4.	Banner Flag Red	3 Nos
5.	Posts for exhibiting red banner flag	2 Nos
6.	Spare chains with padlocks	2 with stop marker
7.	Detonators	10 in each case
8.	Gate lamps	2Nos
9.	Tommy Bar	1 No
10.	Mortar Pan	1 No
11.	Spade / Fowrah	1 No
12.	Rammer	1 No [in case of asphalted road this may not be provided.]
13.	Pick Axe	1 No [in case of asphalted rod this may not be provided]
14.	Tin case for flags	1No
15.	Can for oil	1No
16.	Water port / Bucket	1No
17.	Canister for Muster Roll	1No
18.	Set of spare spectacles of gateman wearing glasses	1No
19.	Board demarcating protection of level crossing gate diagram in case of obstruction on gate	1No
20.	Basket	1No
21.	Whistle	1No
22.	Wall Clock	1No
23.	A Small size chain for use in case of failure of gate boom lock	2No

1.3. RECORDS TO BE KEPT AT GATE LODGE:

In addition to the above equipment, following records shall also be kept at the gate lodge.

APPENDIX-'A'

1. Gate Working Instructions in Hindi/English.
2. Gate Working Instructions in Local vernacular language
3. Gateman Rule Book in Local vernacular language.
4. List for tools and books.
5. Duty registers.
6. Certificate of Competency for working as gateman.
7. Bio-data particulars of Gateman, including date of passing vision test, Initial/refresher course, safety camp etc.
8. Accident Register.
9. Records of last census of road traffic at level crossing gate.
10. Public Complaint Book.
11. Inspection Book.

1.4. MODE OF OPERATION:

Gate shall normally be kept open to the road traffic. Whenever it is required to close the gate, SM on duty shall inform the gate man on duty about the direction and description of the train intended to receive or dispatch, Procedure given in annexure para 1 to be followed.

1.5. DUTIES OF GATEMEN:

1. COMPETENCY: Gateman working at this gate should have competency certificate applicable to perform duty at this gate issued by the sectional JE/SE (P.Way).

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

3. POSITION DURING PASSAGE OF TRAINS:

During passage of trains, gate man will stand in the manner indicated below: -

i. Gate man will stand attentively in front of the gate-lodge facing the approaching train.

ii. In daytime, gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.

iii. In night time, gateman shall hold lighted hand signal lamp with white light facing the track.

iv. He shall keep the whistle slung around his neck from a cord.

4. ROUTINE DUTIES OF GATEMAN:

i. Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously.

ii. Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrive and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.

iii. He shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.

iv. Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.

v. Gateman shall also be prepared to repeat any signal which guard may give to Loco pilot on walkie-talkie or in any other way.

vi. If lifting barriers get damaged or becomes out of order, the gateman shall use the spare chain with disc and padlock for securing the gate against road traffic. Gate man shall report to the station master, gang mate or permanent way inspector any defect in his gate or apparatus pertaining to it, as soon as possible.

vii. Gateman shall wear badge and prescribed uniform while on duty at level Crossing gate.

viii. Gateman shall ensure that he is having competency certificate in his possession while on duty.

ix. Gateman shall work the gate as per gate working instructions and remain well conversant with this instruction.

x. Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.

xi. Gateman shall see that the channel for the flange of the wheel is kept clean.

xii. Gateman shall keep the road surface well-watered and rammed in case of unmetalled roads.

xiii. Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.

xiv. Gateman on electrified section shall watch that road vehicles/animals passing from gate are within the height loading gauge provided on either side of the level crossing gate.

xv. Gateman shall prevent tress passing by persons or cattle to the maximum extent.

xvi. He should note down the registration number of vehicle which damage the gate.

xvii. Locking arrangement of gate should be checked daily.

5. ACTION IN CASE OF UNUSUAL OCCURANCE ON TRAIN:

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

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

ii). He shall simultaneously try to draw the attention of the Loco pilot / guard by whistling continuously, shouting, gesticulating, throwing ballast on the brake van or by any other means.

iii). If Loco pilot / guard fails to take notice, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of private number.

iv). In case of train parting, gateman shall not show stop hand signal but shall show prescribed signal for train parting.

v). He shall endeavour to attract the attention of the Loco pilot / guard by whistling continuously, shouting, gesticulating and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible.

vi). In case the train does not stop, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of private number.

6. ACTION IN AN EMERGENCY AT THE LEVEL CROSSING:

i). In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.

ii). Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connected 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 gateman shall protect the line as under:-

a) On Single line section:

i). If both lines are obstructed the Gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.

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

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

iv). Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters 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 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.

v). Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.

vi). Having returned to the gate, he must then take steps to remove the obstruction mobilizing any assistance locally available and warn the Loco pilot of the approaching train.

vii). In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.

b) <u>Other action to be taken by Gateman:</u>

i). At night Gateman shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub paras (a) and (b) above.

ii). If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall take immediate action.

iii). He shall note down the particulars of the road vehicle, vehicle number, name of the Driver, owner and relay these details to the nearest Station Master or Permanent Way Inspector regarding the particulars and obstructions at the level crossing gate, through messenger or through means available.

1.6. <u>ENGINEERING ITEMS:</u>

Please see para 916, 918, 919 of IRPWM for visibility requirements at level crossings, provision of speed breakers on the approaching roads of level crossings and census of traffic at level crossings.

APPENDIX-'A'

ANNEXURE

WORKING INSTRUCTIONS FOR "A" CLASS INTERLOCKED LEVEL CROSSING GATE SITUATED AT KM 74/27 (KK-20) BETWEEN BGHU-KVLS.

(General Instructions are common for all types of Manned Level Crossing Gates)

1. Mode of Operation:

i) Gate shall normally be kept open to road traffic, whenever it is required to close Gateman on duty shall ensure clearance of road traffic, operate the Electrical lifting barrier as per the following procedure, After receiving information and description about the train intended to receive /dispatch from SM.

a) Key-'P' is obtained from the winch after closing the LC gate releases 1GF.

b) '1GF' when reversed, locks LC gate boom and releases Key-'Q'.

c) Key-'Q' is inserted in the EKT-1 & turned.

d) KEY IN contact of EKT-1 along with switch 3GS or 4GS reversed will clear UP Gate Stop signal 3GS or DN Gate Stop signal 4GS respectively.

i)

ii) Immediately after departure of the train, Station Master/ Cabin master/ Cabin man shall information the gateman through telephone connected at his end, the number, description, direction and expected time of passage of the train at the gate.

iii) If the telephone is connected to the station at the receiving end, this advice shall be given by the station Master/Cabin master /Cabin man to the gateman as soon as he receives train entering section advice from the dispatching Station.

iv) If the actual running time of the train from either end of the section is less than 10 minutes, Station Master/ Cabin master/ Cabin man will Convey this advice to the gateman before obtaining/granting line clear.

v) It should be the duty of the gateman to ensure that the gate is closed in time, So that there is no detention to the train or excessive detention to road traffic.

2. Failure of Telephonic Communication:

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

ii). Station Master on duty shall send written advice to the gateman through the porter with full details of number, description and direction of the train.

iii). Gateman on receipt of such advice shall close the gate and transmit the key to the Station Master which will enable them to take 'OFF' reception / departure signals.

iv). When sufficient time is not available because of greater frequency of train service Station Master will issue Pilot In/Out authority to the train Loco Pilot to pass the signal at 'ON' position.

v). In addition Station Master shall also issue a caution order advising the Loco Pilot to whistle continuously and approach the gate cautiously.

vi). The train Loco Pilot shall be instructed to pass the gate cautiously, on being hand signalled by the gateman. If hand signal is not seen, Loco Pilot should be prepared to stop short of the gate and ensure that gate is closed following GR 3.73(2)(b).

vii). In case of an approaching train, the Station Master shall advise the Station Master at the despatching end, under exchange of private number that the telephone at the gate has failed.

viii). The Station Master at the despatching end shall then issue a caution order to the drive before despatching a train in the block section from his end.

ix). He should also advise S&T staff responsible for maintenance of the telephone to rectify the defect at the earliest.

x). Normal working will be resumed only after S&T staff rectify the telephone and issue reconnection / fit memo for the same.

3. <u>Failure of Lifting Barriers</u>:

a) If a gate boom/barrier is damaged, the gateman shall:-

i) Close the level crossing against the road traffic with a chain and pad lock immediately or before allowing the movement of train as the case may be.

ii) Report the fact over telephone or through the loco pilot of a passing train or through a gang man to the station master of the adjacent station and the nearest gang mate.

b) The Station master on duty on receipt of the above information shall arrange to issue caution orders to the loco pilots and guards of all trains entering into the section.

i) To whistle frequently.

ii) To stop 30mts short of the level crossing and be guided by the hand signal given by the gateman.

c) The Station master shall intimate the fact to the Station master at the other end of the block section for issue of caution order with the similar instructions as mentioned in (b) above.

The caution order shall continue to be issued till the defect is rectified. The Station master shall also advise the JE/SE/SSE(Signal), JE/SE/SEE(P way) and other officials concerned for immediate rectification and other necessary action.

d) The loco pilots shall ensure that the level crossing is not obstructed and on being hand signaled by the gateman, negotiate the level crossing cautiously.

e) Necessary entries shall be made in the caution order register and station diary by the Station masters at either end of the affected section.

a. <u>Failure of Gate Key with the gate in closed position, when Gate Key cannot be extracted for Opening the gate</u>:

i). If the gate key cannot be extracted from the EKT-1, then gate man must immediately inform the SS/Dy.SS on duty on telephone, under exchange of private number.

ii). If Emergency Key is available at the gate lodge, gateman will take it out from the sealed box by breaking the seal and open the gate for road traffic-Emergency Key is provided at this gate.

iii). The record of the date and time of breaking the sealed cover of emergency key box shall be recorded and singed with reasons.-Not applicable

iv). Thereafter, the gate must be treated as non-interlocked and produced for reception / Dispatch of trains as prescribed for non-inter locked gates, should be adopted.

v). SS/Dy.SS on duty shall issue caution order to the loco pilot before dispatching a train.

vi). He shall also advise the Station Master at the dispatching end, exchange of private number, to similarly issue caution order to the loco pilot before dispatching a train in block section from his end.

vii). SS/Dy.SS shall advice S&T staff responsible for maintaining the key transmitter to repair the same at the earliest.

viii). Normal working will be resumed only after S&T staff repair the key transmitter and issue re-connection / fit memo for the same.

ix). After rectification, the Emergency key shall be replaced in the Emergency key box and resealed by the S&T maintainer.

b. <u>Failure of the Gate Key with the gate in open condition:</u>

i). If the gate key cannot be extracted from EKT-2, then gateman must immediately inform the SS/Dy.SS on duty on telephone, under exchange of private number.

ii). Thereafter, the gate must be treated as non-interlocked and procedure for reception /dispatch of train as prescribed for non-interlocked gates should be adopted.

iii). The gateman shall secure the gate against road traffic by means of chains and padlocks and pass trains on hand signals.

iv). SS/.Dy.SS on duty shall issue a caution order to loco pilot of a departing train.

v). He shall also advise the SS/Dy.SS at the dispatching end, under exchange of private number, to issue a caution order to the loco pilot before dispatching a train in the block section from his end.

vi). SS/Dy.SS shall advise S&T staff responsible for maintaining the key transmitter to repair the same at the earliest.

vii). Normal working will be resumed only after S&T staff repair the key transmitter and issue re-connection / fit memo for the same.

viii). After rectification, the Emergency Key shall be replaced in the emergency key box and released by the S&T maintainer.

c. Defective Gate Signals:

i) The gateman shall treat the gate as defective and must not lower them under following circumstances:

a) If gate Signals can be taken 'OFF' without closing the gate, or

c) The Key can be extracted from the operation winch when the gate is in open condition, or

d) The Key can be extracted when the gate is in open condition

ii) If the Gate or the Gate Signal or Warmer/Distant Signal becomes defective in "OFF" position, the gateman will make all efforts to put it at "ON" position even by cutting signal wires, if necessary.

iii) The gateman will immediately advise the Station Master on duty, under exchange of private number, regarding defective gate signals.

iv) Therafter, the gate must be treated as non-interlocked and procedure for reception/dispatch as prescribed for non- interlocked gates should be adopted.

v) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.

vi) Station Master on duty will issue a caution order to the LP of departing train.

vii) He Shall also advise the Station Master at the dispatching end, under exchange of private number, to similarly issue a caution order to the LP before Dispatching a train in the block section from his end.

viii) Station Master shall advise S&T staff responsible for maintaining the gate signal to repair the same at the earliest.

ix) Normal working will be resumed only after S&T staff rectifiy the defective gate signal and issue reconnection/fit memo for the same.

d. <u>Obstruction at the Gate</u>:

i). In case of an obstruction at a level crossing protected by station stop signals, the gateman shall at once close the gates across the road and ensure that the stop signals controlling the passage of trains over the obstructed lines are maintained at 'ON'. However, if in the meantime he notices any train coming from either side, he shall be prepared to stop the same by the usage of hand signals and detonators.

ii). In case both lines are obstructed, he shall, first plant a banner flag/red light across the track/metal staff in the direction from which a train is expected to arrive first and then plant the second banner flag/red light across the other track/metal staff, against any train in the opposite direction. The banner flag shall be planted clear of the level crossing and at a distance of about 5 meters from the edge of the road/ obstruction.

iii). He shall thereafter close and lock the gates. Gateman must keep the gates closed against road traffic till the track is cleared of the obstruction.

iv). The gateman shall, if time permits, inform the Station Master about the obstruction and ascertain the position of trains, after he has taken action as per clauses (i) and (ii) above.

v). The gateman shall then proceed in haste, exhibiting a red hand signal, towards the direction from which a train is expected first and place one detonator on the track at a distance of 600m on BG line and three detonators 10m apart at distance of 1200m on BG from the level crossing. Having thus protected one line, he shall immediately return the level crossing, picking up the intermediate detonator on the way and then proceed with the same haste in the opposite direction and protect the other line also in an identical manner. Having duly protected both the lines, the gateman shall return to the level crossing and endeavour to clear the obstruction, mobilizing any assistance locally available.

He shall, however, not leave the level crossing, but shall remain in position to warm the Loco Pilot of any approaching train.

vi). In case only one line is obstructed the aforesaid protection need be done only for the obstructed line.

vii). If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gateman and station master will adopt the procedure given as above.

APPENDIX 'B' TO STATION WORKING RULES OF DILIMILI STATION

(Detail description of signalling and interlocking installations, instructions for working them normally and in emergencies etc. including power supply arrangements).

1. BRIEF DESCRIPTION OF THE SIGNALLING AND INTERLOCKING INSTALLATIONS:

BORRA GUHALU is a Class 'B' station provided with Standard-II (R) Interlocking. The station is provided with Route setting type Electronic Interlocking between points, signals, track circuits and other signaling gears. The station is equipped with Multiple Aspect Colour Light Signaling. All points and signals are power operated through a central **Visual Display unit (VDU)** installed in the SM's Office.

2. DESCRIPTION OF OPERATOR CONSOLE CUM VISUAL DISPLAY UNIT (VDU):

The Operator Console cum Visual Display Unit (VDU) in dual configuration is provided for operation of Signals, points, Crank handles and controls etc. A mimic yard diagram based on SI plan No. SI/23167 will be displayed on the VDU. The VDU is used for controlling and monitoring the station. Indications on the station mimic diagram of VDU will be dynamically updated.

3. SYSTEM OVERVIEW

The PC-based (**operator VDU**) for the operation of Signals, Points, Crank Handles and Siding Controls, etc. The SM of a station (*hereinafter referred as* **operator**) required to be familiar on the specific station's SWR (station working rules).

Operator VDUs consist of CPU with a color monitor, keyboard and pointing device (mouse). Through communication media the exchange of control and indication messages takes place with operator VDU. The Software is installed to display the Station Yard Mimic diagram on the operator VDU and it allows access to all functions by selecting menus with a right click of mouse on the corresponding function icon. By selecting the menu, the function (Signal clear and cancellation, Route release, Point operation, Gate release etc.,) can be executed.

The operator VDU is used for controlling and monitoring the station. However, indications on the Station yard mimic diagram of operator VDU will be dynamically updated.

3.1. DUAL VDUs – MODE OF SELECTION:

The privilege has been given to the operator for controlling the station through VDU-1 or VDU-2 by selection through switch provided on the SM's table.

The operator VDU is having controls to operate the field gears through the Mimic diagram. A Mimic panel diagram displayed on the operator VDU is an exact replica of yard that suits SI plan.

4. CONTROL(S) & INDICATION(S):

4.1. ICONS AND INDICATIONS PROVIDED ON THE VDU:

In addition to mimic yard diagram including signal, points, track circuit, Axle counters, L.C. gates, sidings 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.

SN	ICONS	INDICATIONS	FUNCTIONS	REMARKS
1.	PC Control	Yellow light when key is 'ENABLE'	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'. Yellow light indication appears showing request for Emergency point operation is acknowledged.	Ensures emergency point operation by authorized person	Protected by Pass word. For each operation concerned counter shall register one count higher.
4.	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 if failure persists.

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SN	ICONS	INDICATIONS	FUNCTIONS	REMARKS
5.	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.
6.	CH-1, CH-2, CH-3, CH-4, ------, buttons	Yellow lamp indicates 'KEY IN'. Red lamp indicates ' CH LOCKED'	In normal condition yellow lamp will be lit. Whenever the crank handle is locked in route or otherwise red indication will glow.	
7.	UP train arrival Ack. button	Yellow – Prepared after train arrives completely.	On getting indication SM shall left click on the button icon which shall mute the Arrival buzzer coming from the TLBI instrument.	After complete arrival of train this will be activated
8.	DN train arrival Ack. button	Yellow – Prepared after train arrives completely.		
9.	Line Block button	Red when blocked	SS/Dy. SS 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, SS/Dy. SS has to select the required menu.	When line block is selected the concerned button on the particular line turns to RED.

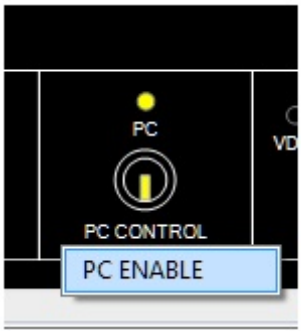
4.2. SM KEY:

SM key is physically provided on VDU change over panel, outside the VDU on SM's Table. This key when inserted in the lock [provided on VDU change over panel] and turned right the VDU becomes operative. The key when inserted in the lock and either turned to left or extracted out from the lock renders the VDU inoperative except for putting back the signals to 'ON' position in case of emergencies. When SM's key is inserted and turned to right a red indication lit above the SM's Key icon on the VDU.

PC Control:

If any one of VDU has shut down for maintenance or in case of failure, after resumed to normal working or rectification, for getting the operations from the

VDU, first enable the PC which is virtual SM's Key. To enable the PC, right click on the PC icon which activates the PC enable option.



Then click on the PC enable option which will enable the password window to appear. After the valid entry of user name and password, the PC will be enabled. The user name is ECOR and the password of this station is BGHU.

4.3. VDU ACTIVE INDICATIONS:

Whenever the VDU is in active condition a RBG sequence will be running in the top right corner of the screen. That is in a flashing sequence in the screen.

4.4. OPERATION AND INDICATION OF POINT:

To operate the point, the operator needs to track the mouse on to the concerned points then click the right button on the mouse. After clicking by the right button on the mouse a pop-up menu will appears as below. Then select the Normal/Reverse option on the menu appearing at the point in the operator VDU.

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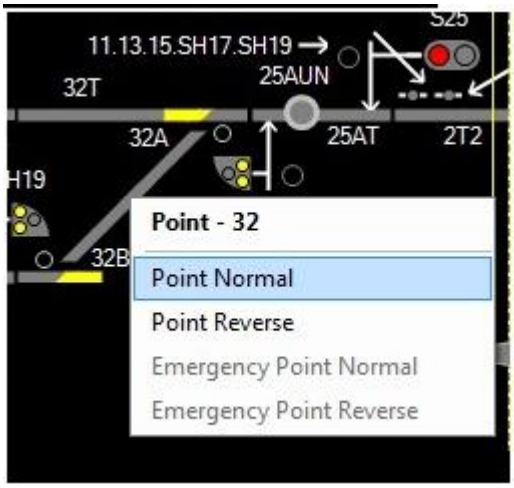

4.4.1. REVERSE TO NORMAL OPERATION:

Click on the **POINT NORMAL** in the menu appearing at the point in the operator VDU, Normal flashing indication will appear, the indication will be steady after the point is set to Normal.

4.4.2. NORMAL TO REVERSE OPERATION:

Click on the **POINT REVERSE** in the menu appearing at the point in the operator VDU, a Reverse flashing indication will appear, the indication will be steady after the point is set to Reverse.

4.4.3. POINT INDICATIONS:

When the point is free a steady yellow strip of light will appear either in the normal portion of point zone (In case of cross over at both ends) or in the reverse portion of point zone depending up on the position of point, indicating that the point is set. When the point is operated from the normal to reverse the strip of light in the normal portion is disappears and starts flashing in the reverse portion and becomes steady when the point is set and detected. Similarly when the point is operated from the reverse to normal the strip of light in the reverse portion is disappears and starts flashing in the normal portion and becomes steady when the point is set and detected. When the point is engaged in a route a yellow indication will appear near the point and red indication appears in the point lock indication showing that the point is locked and cannot be operated now.

4.5. SIGNAL OPERATION:

To take-off a signal on the desired route, the operator needs to Right click the mouse on the concerned signal on the operator VDU. After clicking on the Signal, a pop-up menu will appear as below for route set, signal cancellation and route release operations.

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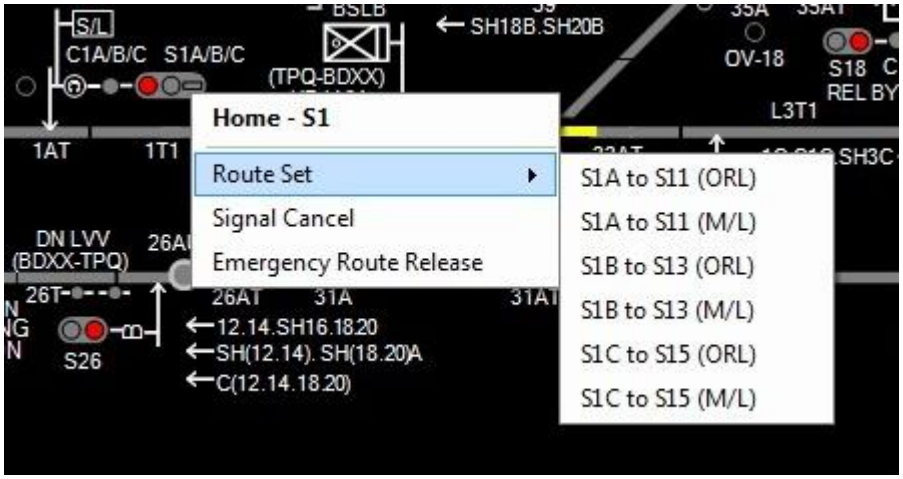


4.5.1. SETTING A ROUTE:

To set a route for a signal, track the mouse on the 'Route set' sub menu which shows all the possible routes of the signal, then click the left button of mouse on the required route on route set sub menu. After doing so, the route gets initiated & Red flashing indication appear on the replacement track of the signal. All the relevant points Normal/ Reverse set indications will start flashing if favorable point detection is not available. After setting of points in the route, overlap and isolation in required condition flashing indication will be steady and a complete yellow 'Route set' indication will appear over the route right from replacement track of the signal to the last track of overlap section of the route. Also the point lock indication will appear through Red indication near the point. Finally a route locked yellow steady indication will appear immediate to rear of the signal. Now the signal will be taken-off. The yellow route set indication will turn to red when the train occupies the concerned track circuit.

4.5.2. SHUNT SIGNAL OPERATION:

To set a route of a shunt signal, 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. After clicking on the Signal, a pop-up menu will appear as above for route set, signal cancellation and route cancellation operations. Track the mouse on the 'Route set' sub menu which displays all the possible routes of the signal, then click the left button of mouse on the required route on route set sub menu. After doing so, desired route will be initiated and the Shunt signal will be taken off.

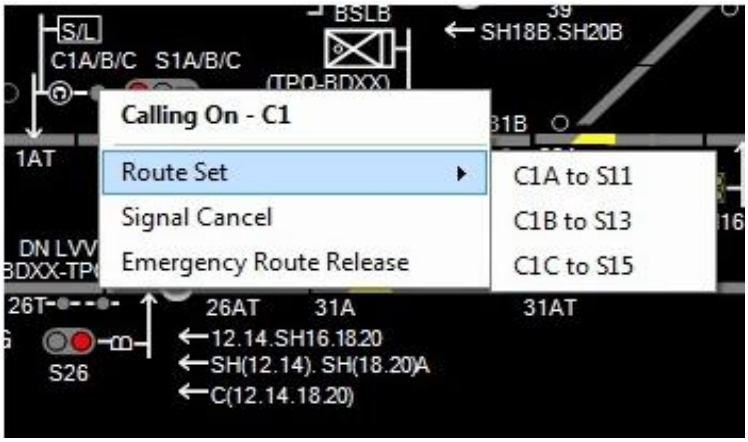
4.5.3. CALLING ON SIGNAL OPERATION:

Calling on signal route set operation follows the same procedure as mentioned for the main signal. For calling on Signal, route is set after a train occupies the approach track circuit in immediate rear of the stop signal. The calling on Signal is cleared after a lapse of 60 Seconds provided other conditions are fulfilled.

(CH SRINIVAS)
DSTE/Proj/VSKP

(K.V.S.R.K KISHORE)
Sr.DOM/M/WAT

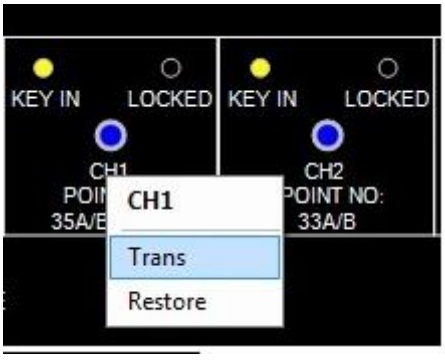
To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit (1AT & 2AT as the case may be) in rear of the signal. When a train occupies the track circuit a RED light strip will appear on the VDU. The particular route on which train is intended to be received shall be set by tracking the pointer in VDU on to the signal below which the calling on signal is provided. Right click on the calling on Signal which will appears a pop-up menu as follows.



Then the SM must drag the pointer and click over the 'route set' sub menu which displays all possible routes then click over the particular Calling on route amongst the various options displayed in the sub menu by the left button of the mouse as a result of which the calling–on signal will blink for 60 seconds. For all home signals the time delay is 60 seconds, the Calling on signal clears i.e. a white light glows at the concerned calling-on signal on the VDU. This action will be recorded in a respective counter of the counter box provided on SM's table. Every such operation shall be recorded by the SS/SM on duty along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train by Signal cancellation only.

4.6. CRANK HANDLE CONTROL OPERATION:

Normally a 'KEY IN' (Yellow) indication will appear on the VDU indicting that the Crank Handle is free. To Transmit or Release control of the Crank Handle, right click on the concerned Crank handle control button provided on the operator VDU.



For Transmitting the Crank Handle KEY to the field personnel, right click on the Crank Handle and select the **Trans** in the menu appeared. 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. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Crank Handle operation along with the latest counter number in a register.

When the Manual point operation is completed, after putting the KEY in the EKT, corresponding Crank Handle KEY IN flashing indication will appear on the VDU. Now the operator has to Release the control for the steady indication, for that right click on the Crank Handle and select the **Restore** in the menu appeared.

A Crank handle locked indication (Red) will appear, when the particular point is locked through the signal route set over it or engaged on route setting in any other way.

4.7. OVERLAP TIME RELEASE:

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

5. EMERGENCY OPERATIONS:

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

5.1. CANCELLING A ROUTE/ EMERGENCY ROUTE RELEASE:

To cancel a signal route when the route is set and the signal in taken-off, click on the signal. After clicking by the right button on the mouse a pop-up menu will appear as shown in Para 4.7 above. Click on the Signal cancel option (Main/ Calling on) of the concerned signal, the signal will immediately go to 'ON' aspect, after doing so click on the Emergency Route release menu a pop up menu will displayed for conformation. By clicking on 'Yes' 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 respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record

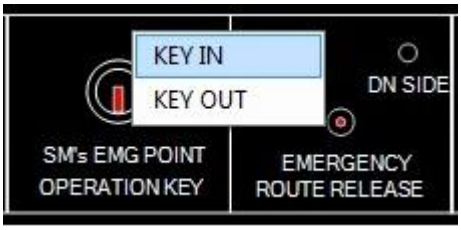
the details of the Route cancellation along with the latest counter number in a register.

5.2. EMERGENCY POINT OPERATION:

When the point zone track circuits failed without any point lock condition through respective signal route(s), 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 obstruction.*

Before doing the emergency operation, SM on duty shall made the Emergency Point Operation Key is to be 'KEY IN'. To 'KEY IN' the Emergency Point Operation key right click on the SM's Emergency point operation key a pop-up menu will be appears as follows.



Click on the KEY IN in the menu appeared and shall provide User name and password for the same as follows.

The user name of this station is 'ECOR' and password of this station is BGHU. Then point operation can be done to either normal or reverse as per requirement.

5.2.1. EMERGENCY NORMAL OPERATION:

Right click on the point, so that a pop-up menu will appear as follows.

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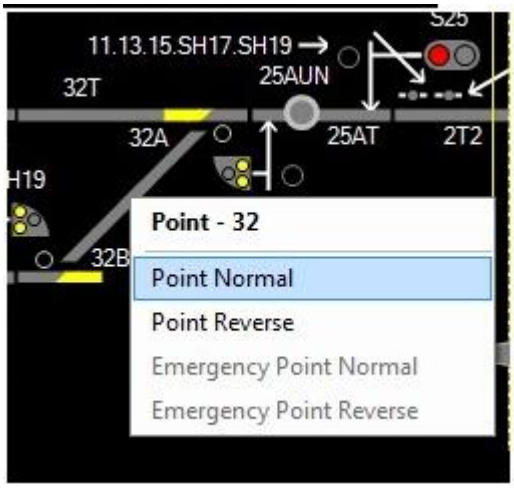


Click on the emergency point normal from the menu then normal flashing indication will appear at the point. Flashing will stop and steady indication will appear after the point is set to Normal. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the details of the Emergency Point Operation along with the latest counter number in a register.

5.2.2. EMERGENCY REVERSE OPERATION:

Right click on the point, so that a pop-up menu will appear as shown above, select the emergency point reverse from the menu then reverse flashing indication will appear at the point. Flashing will stop and steady indication will appear after the point is set to Reverse. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the details of the Emergency Point Operation along with the latest counter number in a register.

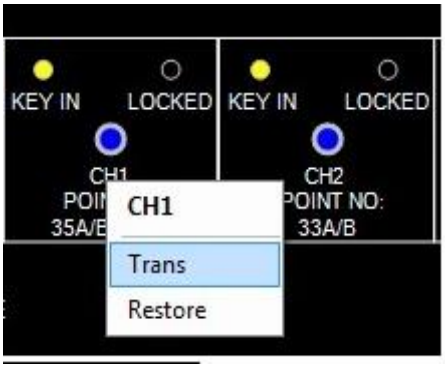
After the completion of the Emergency point operation, the Key to be 'KEY OUT'. Same procedure as mentioned for KEY IN shall be followed for KEY OUT. To 'KEY OUT' the Emergency Point Operation key right click on the SM's Emergency point operation key a pop-up menu will be appears as shown in the Para No.5.2 above. Click on the KEY OUT in the menu appeared and shall provide User name and password. The user name of this station is 'ECOR' and password of this station is DMK.

Note: *The Emergency Point Normal and Emergency Point Reverse options are normally in disabled mode. These are enabled only when the Emergency Key is in position.*

5.3. EMERGENCY CRANK HANDLE RELEASE OPERATION:

When a crank handle is locked due to route set earlier 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 right click on the crank handle control button icon provided like the following on the VDU. On clicking, the 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 click on '**Trans'** menu. After transmission the 'KEY LOCKED' (Red) indication will start to flash for 120 seconds & 'KEY IN' remains steady. After this the 'KEY LOCKED' indication will vanish & 'KEY IN' indication will start to flash. After extracting the key from the RKT, the 'KEY IN' indication will disappear. When the Manual point operation is over, after putting the crank handle key in the RKT, flashing 'KEY IN' indication will appear on the VDU, now the SS/DY. SS on duty shall Release the control for the Steady indication by clicking **'Restore'** menu.

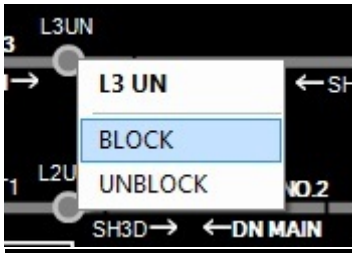
This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Emergency Crank Handle Operation along with the latest counter number in a register.

5.4. LINE BLOCK AND UNBLOCK (REMINDER COLLAR):

When SM on duty requires demarcating a line as Blocked/free he should adopt the following procedure.

5.4.1. LINE BLOCK:

To block/unblock a particular line, right clicking on the route button on concerned line displays 'BLOCK' and 'UNBLOCK' options on the menu as shown below.



Then select the Line block option. After selecting the Line block option that particular line will be blocked for berthing portion on that particular line. The Line block 'RED' colour indication will be displayed after the successful application of such a blocking process on the VDU, during which no signal will be taken off for that line.

5.4.2. LINE UNBLOCK:

To release the blocking of any particular line, the SM on duty should select the Line Unblock option. After selecting the line unblock option that particular line will be available for the train movement leading to the all possible track circuit section.

6. DIGITAL AXLE COUNTER:

Digital Axle Counters are provided as a Last Vehicle Checking Device (LVCD) for block sections between BGHU-CMDP and BGHU-KVLS.

The position of the Block section whether cleared or occupied are reflected in the VDU provided in the Station Master's office which shows 'GREEN' when the Block Section is clear and 'RED' when occupied. Whenever a train enters into the Block Section, "Block Section Clear" indication 'GREEN' for the particular block section disappears and 'RED' indication appears.

After complete arrival of the train the 'RED' indication will disappear and 'GREEN' indication will appear. If after the complete arrival of a train the 'RED' indication does not change to 'GREEN' it should be assumed as Block Instrument failure for the particular section and necessary action as per GR.14.13 is to be followed. The axle counters are interlocked with the respective block instruments for that section. If Axle Counter fails, Advanced Starter signal shall not come to 'OFF' and the concerned instrument shall remain locked in last operated position for that section.

In case of failure of Digital Axle Counter, the SM on duty should resort to resetting of the same along with the SM on duty of adjacent station after confirming that the whole of the train sent by sending station has been arrived at the receiving station. The resetting of the LVCD shall be initiated as mentioned below at both the stations after exchanging the Private Number vide G&SR 4.17, 4.17.01.

A Reset Box is provided on SM's table for each LVCD section to reset the Axle Counter in case of failure of LVCD. Reset Box gives the status of the block section i.e. Clear (GREEN), occupied (RED), preparatory reset (Miniature GREEN) and power on indications (WHITE). It also having the Reset Key, push button for resetting the LVCD and a counter is provided to record the operation.

6.1. RESETTING OPERATION FOR LVCD (DIGITAL AXLE COUNTER):

After complete arrival of train, if the LVCD of the section does not clear and Block section clear indication (Green) does not appear in the VDU, the receiving

station SM shall apprise the sending station SM through telephone for resetting the Axle Counter giving the details of last train that has arrived complete at his station and the block section is clear.

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 the SM of sending station authenticated by exchanging Private number.

Then the SM on duty shall adopt the following resetting procedure at both the sending and receiving stations individually.

a) On being advised by SM of BGHU Station, SM of CMDP/KVLS should perform the following step by step procedure from (b) to (i) for resetting the Digital Axle Counter.

b) SM of BGHU Station and CMDP/KVLS Station shall then Insert SM's reset key, and turn right.

c) Press simultaneously both the Push button and the Reset Key which are provided on the Reset Box for at least 5 seconds continuously at BGHU and CMDP/KVLS station.

d) Release SM's Reset Key and Push button.

e) Turn the SM's Reset Key to left and remove it.

f) The system goes to preparatory reset state and preparatory reset miniature indication (Green) glows on the Reset box. The counter reading incremented after a gap of 5 seconds approximately.

g) The counter reading should be recorded in the concerned register by SM on duty.

h) One train is to be piloted out in the section to make the system normal.

i) The SM on duty shall record it in the Train Signal Register indicating the resetting operations in detail i.e. train number, time, Private Number exchanged with SM of sending station and giving reasons for the resetting operation.

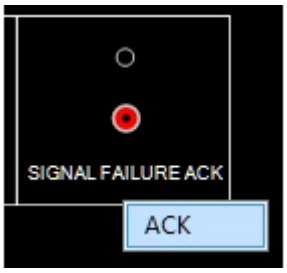
j) If the axle counter works properly, then Block Section cleared indication 'Green' will appear on the Reset box and the concerned Block working will be normalized after arrival of train which is piloted out.

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

APPENDIX-'B'

7. SIGNAL LAMP FAILURE INDICATION AND BUZZER ACKNOWLEDGMENT:

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



8. POINT FAILURE INDICATION (RED), POINT FAILURE BUZZER AND POINT FAILURE ACKNOWLEDGEMENT:

Whenever there is a failure of point due to non-setting, point failure indication flashing light appears near the point 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 at the concerned point zone shows the defective point. After the failure is rectified, the flashing light above the 'POINT FAILUR ACK' button will disappear.

9. COUNTERS:

The following counters are provided in the Counter Box on SM's table for recording the actions such as emergency point operation, emergency route release etc.

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.

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In addition to the above counters, a counter is provided on the Reset Box of each Block section LVCD. The increment in counter number for each and every such action should be recorded by the SS/SM on duty who shall record the details of the Operation along with the latest counter number in a register.

10. TRACK CIRCUITS:

Both UP & DN main lines, UP & DN loop lines and all the point zones are track circuited as L1T1, L1T2, L1T3, L2T1, L2T2, L2T3, L3T1, L3T2, L3T3, 33AT, 33BT, 35BT, 32AT, 32BT, 34BT.

Approach track circuits 1AT & 2AT of 5 Rail lengths for Calling on Signal are provided in rear of the Up and DN Home signals respectively. In addition there are short length track circuits 1T in advance of UP Home Signal and 2T in advance of DN Home Signal are also provided. Similarly there are 5 Rail length track circuits 21T beyond UP Advanced Starter Signal for replacement of Last Stop Signal and Slip Siding Point zone track circuit 31T beyond the DN Advanced Starter Signal No.22. From the last trailing point in either side of yard to Advanced Starter Signals are also track Circuited i.e 22AT and 21AT in DN and UP directions respectively.

Indications for the above track circuits are available on VDU. Yellow Strip on VDU indicates Route is set and track is clear and Red strip indicates Track is in occupied condition.

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 cross overs by positively checking the entrance and exit track circuits are showing occupancy and clearance in accordance with the train movement.

11. RELEASE/CANCELLATION OF ROUTE:

Normally when a train is received on or dispatch from any route, 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 on SM on duty intends to cancel the route set by him shall follow the procedure for cancellation of route described in Para No.5.1 of Appendix-B above. If the route is not released even after resorting to cancellation the SM on duty should inform the Signal Maintainer/JE/SSE for its rectification.

Note: *UP & DN Calling on Signals and UP & DN Advanced Starter Signals are to be manually cancelled after the passage of the train to release the route. In both the cases after passage of train, cancel the signal to release the route.*

12. 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 on duty shall follow the Para No.5.1 of Appendix-B.

13. PILOTING OF TRAINS IN TO STATION YARD:

Whenever Home signal becomes defective, trains can be admitted by taking off Calling-on signal. Whenever both Home signal and Calling-on signal failed, all trains will be piloted in vide SR. [Refer SR 3.69.03(a) & (c)].

The SM on duty shall nominate a clear line and shall advise the TPM on duty at station to set the nominated route with the help of crank handle if the points cannot be set from the VDU. Then the TPM shall set the facing and trailing points and clamp and padlock the same under the supervision of SM on duty.

The SM on duty shall then hand over the written authority (T/369(3b) to the TPM for piloting the train. While going towards Home signal the TPM shall check the points and satisfy himself that the route is correctly set.

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

NOTE:

a) The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of the facing points, if any and ensure clearance on the nominated route vide SR [Ref. SR 3.69.03(c)].

b) The keys of padlock of the clamps put ON to the points on the route for piloting In or piloting OUT shall be in the personally custody of the SM on duty or any other authorized operating officials till such time the train / engine / vehicle has utilized the route or alternatively such movement is cancelled.

14. PILOTING OF TRAINS - OUT OF STATION YARD:

When the starter signal has become defective, the Station Master on duty shall advise the on duty TPM to set all points correctly for the outgoing trains. Then he shall clamp and padlock the same under the supervision of SM on duty. Then the SM on duty shall hand over the pilot memo T/369(3b) (along with the other authority if necessary) to the on duty TPM. The TPM on duty shall hand over the authority to the Loco pilot of the train and display proceed hand signal at the foot of the starter vide SR. [Refer SR 3.70.01].

In case the advanced starter signal has become defective, such signal shall be passed on the written authority on the form T/369(3b). The TPM shall hand over the pilot memo in form T/369(3b) to the Loco pilot after the train stopped. [Refer SR 3.70.02].

15. SHUNTING:

Caution aspect of starter signals are used for shunting up to Advanced Starter. For back shunting individual shunt signal No.3 and 4 are provided at East and

West side of the yard respectively for shunting back to the station yard in desired direction. For taking OFF Shunt signals please refer Para No. 4.7.2 of APPENDIX-B.

16. 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 entrance, berthing and dispatch portion of the yard shall be kept clear of any obstruction for the passages of any train or for any other movements. The clearance of the route including overlap must be ensured by the DY.SS/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.

17. 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 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 maintenance staff be informed to attend.

18. 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.

19. RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:

After receipt of the failure information, the sectional Maintainer shall attend to the failure after giving a 'Disconnection Memo'. After rectification of the fault, the Sectional Maintainer shall give 'Reconnection Memo' detailing the rectification. Thereafter the 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).

APPENDIX-'B'

20. 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 G and SR.15.08.01.

21. EMERGENCIES:

Notwithstanding, anything contained in the aforesaid paras when equipment is found defective and unsafe for passage of trains, the Signal and Telecom staff must at once suspend the working of the equipment and associated installations and issue 'Suspension Memo' explaining the seriousness of the defect or damage to the interlocking installation to the 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 GR and SR.3.77.

22. PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNAL OR POINTS AND USE OF CRANK HANDLE:

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

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

3. One common emergency Crank Handle key is provided for certain group of Motor operated Points. This is mechanically riveted to the Key of RKT. This Key along with Crank Handle can be released from the RKT by pressing the RKT Push Button provided near the RKT. In case of failure of Point Motor the SM on duty will take out the Crank Handle, set the Point manually by inserting Crank Handle in the Motor.

4. When the Crank Handle key is removed from RKT for operation of the defective Motor Operated Points, the responsibility for its safe custody rests with the ASM/SM on duty till it is replaced back in RKT.

5. The failure of Motor Operated Points should be promptly reported to the concerned Signal Inspector/ESM for immediate rectification.

6. Whenever a Crank Handle key is required to be used by a Signal Official for maintenance/attending to failure, the Signal Official will give a disconnection memo to the Station Master on duty and after making necessary entries in the Crank Handle register, the Station Master on duty will obtain acknowledgement

of the Signal Official in the Crank Handle Register and then handover to him the Crank Handle key for the Points concerned. All the Points will be treated as defective till the Crank Handle key is returned back to Station Master on duty.

7. Before parting with the 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 all the lines should be treated as Non-interlocked and the Station Master on duty is responsible for introduction of Non-interlocked working 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.

8. The Crank Handle Register is to be maintained in the following pro-forma by the Station Master on duty wherein the particulars of usage of the Crank Handle must be recorded:

   a. Date:
   b. Point Number which failed or required to be tested:
   c. Time failure:
   d. Disconnection memo number received from S&T Staff:
   e. Signature of SM/Signal Official to whom the Emergency Crank Handle is handed over:
   f. Time Emergency Crank Handle is sent out:
   g. Individual Point numbers, and Line number nominated for admission of dispatch for which Points are set, Clamped and Padlocked:
   h. Train number to be admitted or dispatched:
   i. Signature of the Station Master on duty to ensure correct setting, Clamping and Padlocking of the Points:
   j. Date and Time fault rectified.
   k. Time of Emergency Crank Handle received back by SM on duty:
   l. Signature and Designation of the Signal Official who rectified the fault:

23. INTERLOCKING OF SIGNALS WITH BLOCK INSTRUMENTS:

23.1. INTERLCOKING WITH HOME SIGNALS:

All the UP and DOWN HOME Signals are Electrically interlocked with the respective TLBI so that the handle of the TLBI Instrument cannot be turned from TRAIN COMING FROM position to LINE CLOSED position of UP or DOWN direction as the case may be unless the respective Home Signals is put back to NORMAL position and the respective Block Section monitored by Axle Counter is clear of trains.

23.2. INTERLCOKING WITH ADVANCED STARTER SIGNALS:

The UP Advanced Starter Signals No.21 is electrically interlocked with respective TLBI of section BGHU-CMDP so that this Signal cannot be taken OFF until the Handle of the concerned Block Instrument is in' TRAIN GOING TO' position.

The DN advanced starter signal No.22 is interlocked with TLBI of section BGHU-KVLS so that this Signal cannot be taken OFF until the Handle of the concerned Block Instrument is in 'TRAIN GOING TO' position.

23.3. SUSPENSION OF LAST STOP SIGNALS:

When the TLBI for section BGHU-CMDP is suspended with its handle in any position for whatever reason the concerned Last Stop Signals controlled by the TLBI must be treated as suspended and trains shall be Piloted Out.

When the TLBI for section BGHU-KVLS is suspended with its handle in any position for whatever reason the concerned Last Stop Signals controlled by the TLBI must be treated as suspended and trains shall be Piloted Out.

24. NORMALISATION OF THE BLOCK SECTION AXLE COUNTER AND OF BLOCK WORKING BY RESETTING FEATURE:

1. Digital Axle Counters are provided on both the Block Sections between BGHU-CMDP and BGHU-KVLS.

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

3. If any Block proving Axle Counter [LVCD] section fails, the Last Stop Signal at the rear station 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 last Vehicle Checking Device is to be resorted to in either Section.

4. No train shall be allowed on signal to leave a station in any particular direction unless:

   Block Section clear indication is available for the relevant Axle Counter section portion and Last Stop Signal is taken OFF. [Refer Para No: 6.1 of appendix 'B' for procedure of resetting of LVCD Axle counter].

25. POWER SUPPLY ARRANGEMENT FOR SIGNALLING INSTALLATIONS:

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

i). Normal supply from AT connected to OHE traction distribution [230V 50HZ].

ii). Stand by supply – (a) 1st standby power supply: Orissa State Electricity Board Supply. (b) 2nd stand by power supply: DG set.

Normal power supply [Single-phase 230V-50 HZ] to the signalling and interlocking installation at the station is drawn from the traction power sources through ATs. Whenever traction power supply fails the SM on duty shall operate the changeover switch provided in the SM's office connecting the power supply

from the healthy sources to the installation in case the knob is not in Auto mode.

The 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 Elect. Staff and S&T maintenance staff.

i). An Auto change over switch is provided in the SM's office with the two power supplies viz., AT and local for the changing the switch automatically to the available supply. The availability of the supply is indicated by luminous indicator above the circuit breaker for each supply.

ii). Normally the switch will be kept in Auto Mode. If the Switch kept towards AT position, whenever power block is to be given on the line the on duty SM on duty must ascertain that power is available on the other AT and change over the switch to the desired position.

iii). In case of failure of one of the AT supply without any power block the on duty 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 down and when tripped it goes UP].

In case of failure of both AT supplies without any power block the local supply shall be utilized by operating the changeover switch. If the circuit breaker is tripping even after resetting, no attempt shall be made to hold it by any means and a message shall be given to concerned SSE [Elect.] and SSE/PSI [OHE] for prompt rectification.

iv). Whenever there is failure of power supply in one AT the SM on duty shall take prompt action to inform to all concerned for rectification.

The on duty SM himself during each shift shall check & test the availability of power supply on both ATs and make an entry in the station dairy duly initiating for rectification of failure if any.

v). For IPS system that provides supply to EI, a manual changeover switch is provided at SM's Office with the two power supply viz., selected supply from CLS panel and DG supply for changing the switch to required supply position manually.

vi). Normally manual changeover switch is kept in selected supply from CLS panel position, if in case any emergency changeover switch is changed to DG supply position.

vii). There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

APPENDIX-'B'

26. WORKING OF INTEGRATED POWER SUPPLY [IPS, INDICATIONS & ACTION TO BE TAKEN BY SM ON DUTY:

Power supply to the signalling installation is fed through Integrated Power Supply System [IPS] installed in the S&T power supply room. For IPS system, a manual changeover switch is provided at SM's Office with the two power supply viz., selected supply from CLS panel and DG supply for changing the switch to required supply position. Normally manual changeover switch is kept in selected supply from CLS panel position, if in case any emergency changeover switch is changed to DG supply position. There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

The IPS system is connected with battery as a backup power source for safe working during transition of power and in case no 230 AC supply is available due to any reason.
In the event of failures of all the sources of 230V 50HZ AC supply, the signalling system shall be fed by backup battery bank connected to IPS for a limited power of 8 to 10 hours. The health of the battery bank is monitored through one IPS Monitoring Panel provided in the SM's room which shall display the voltage of 110V DC battery bank provided as backup source of power supply. Depending up on the health of the battery bank and the system the following indications/alarm will appear on the remote monitoring panel. The indications/alarm, their implications and action to be taken by SM on duty is tabulated below:

SN	Instruction	Health of Battery Bank/Equipment.	Visual Indication	Audio Indication	Action to be taken by SM on duty
A	-	50% DOD	Red	Alarm	Alarm shall be acknowledged by SM on duty.
B	-	60% DOD	Red	Alarm	-do-
C	System shutdown	70% DOD	Red	Alarm	Signal feed cut off and all DC-DC converters to Work. Audio alarm will continue till power Supply is restored.
D	Call S&T staff.	Equipment fault.	Red	Alarm	Failure of any module will give the alarm in ASM's panel. Alarm shall be acknowledged by SM on duty for

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SN	Instruction	Health of Battery Bank/Equipment.	Visual Indication	Audio Indication	Action to be taken by SM on duty
					audio cut off.

On duty 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 Remote monitoring ASM console due to any reason when both traction power and local power failed the SM on duty shall inform concerned Electrical staff immediately. In case ' call S&T staff ' or 'system shut down' indication appear on the remote monitoring panel of IPS and/ or mal functioning of the remote monitoring panel SM on duty shall inform the same to concerned S&T staff immediately.

NOTE: [i] DOD indicates depth of discharge of battery bank of IPS [ii] In case of failure of all AC supply sources, IPS battery bank can provide power supply maximum up to 3 to 4 hours before system shut down indication of APS.

APPENDIX-'C'

APPENDIX 'C' TO STATION WORKING RULES OF BORRA GUHALU STATION ANTI COLLISION DEVICE [[RAKSHA KAVACH]:

-NIL-

APPENDIX 'D'

DUTIES TO BE PERFORMED BY THE STAFF AT BORRA GUHALU STATION:

STATION MASTER (IN CHARGE):

i) He shall come on duty after taking complete rest and shall not perform his duty under the influence of liquor , drugs or intoxicants.

ii) He Shall handle the block instrument himself when on duty and shall not permit any unauthorized person to manipulate or handle the block panel/ block instrument and block telephone.

iii) He shall keep the station master's control keys of block instruments in his personal custody whenever, he is required to leave his office even for a short duration.

iv) He shall maintain TSR and other connected record/documents in good Shape and ensure that all entries are completed and are up to date.

v) He shall attend the control and given arrival departure of trains promptly and shall carry out instruction given by superiors provided these do not Violate safety rules & procedures.

vi) He shall inform the Technician/JE/SE(Sig) through a written message, any failure of signal or block working etc. and invariably enter these failures in Signal Failure Register.

vii) In case of any accident, he shall inform the Section Controller & Station Manager/Station Superintendent immediately. He shall give all the information available with him in regard to the nature, places, cause and assistance etc. in respect of the accident.

viii) He shall communicate reasons for late start of outgoing trains and late arrival of incoming trains to control.

ix) He shall keep his reference books (trains working manuals) up to date, Posted with latest correction slips and shall keep himself fully conversant With the extant rules. He shall keep his books readily available for Inspection when asked to do so.

x) He shall not absent himself from duty without prior permission of his superiors. He shall not leave his duty unless properly relieved by his reliever and shall not exchange his duty without prior permission of his superiors.

xi) He shall not consider himself relieved of duty unless, he has completed transactions of trains for which he has given /obtained line clear till the complete arrival of such trains.

APPENDIX-'D'

xii) He shall always obey the lawful orders of his superiors so long as they do not contravene any of the extant rules in force.

xiii) In case of any abnormal working, he shall also perform the duties assigned to panel ASM/SM.

SS/SM/VDU:

He is responsible for trains passing during his shift as per OM 2015 para No.2.02.

i) He shall come on duty after taking complete rest and shall not perform his duty under the influence of drugs or intoxicants.

ii) When on duty or when called upon to do so, in case of emergency, he shall be responsible for obtaining and granting line clear to trains as per SWR &GR.

iii) He shall handle the control panel himself when on duty and shall not permit any unauthorized person to manipulate panel.

iv) He shall keep the SM's control panel in his personal custody whenever, he is required to leave his office even for a short duration.

v) while coming on duty, he shall ensure that all points and signals are in good working order and all the registers, records, pertaining to train passage are completed in all respect before taking over the charge.

vi) He shall personally ensure that conditions for taking 'off' the reception signals are fulfilled and the clearance of line is verified as per SWR before actually pressing the relevant button for taking off the signals.

vii) He shall ensure from indications available in the panel that the signals are burning brightly and are giving correct indications.

Viii) He shall ensure that proper indications of points, signals, track circuits crank handle, level crossing gate etc., are displayed at their proper places.

ix) He shall ensure that all Shunting operations are carried out as per extant orders and GR 5.19 and SRs thereof.

x) He shall inform the Technician/JE/SE (Sig) in writing or through a written message, any failure of track/signals/points/keys or panels etc. and shall invariably enter these failures in Signals Failure Register.

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TRAFFIC POINTSMAN/TOKEN PORTERS:

He shall work under the orders of Dy.SS/SM on duty as per OM 2015 para No.2.02.

i) He shall obey all lawful orders of the ASM/SM/SS on duty or official in- charge supervising the shunting during the course of shunting operations including coupling or uncoupling of vehicles, wagons, fixing rubber washers, closing wagon doors, displaying hand signals etc.

ii) He shall exhibit danger signal to the official supervising the shunting if vehicles are fouled during the shunting operation.

iii) He shall pilot the trains in case of abnormal working and when ordered by the SS on duty.

iv) He shall be in proper neat and clean uniform while on duty.

v) He shall come on duty after taking complete rest and shall not perform duty under the influence of liquor, drugs, or intoxicants.

vi) Neither shall he absent himself from duty nor shall he exchange his duty without prior permission of his superiors.

vii) He shall not leave his duty unless properly relieved or authorized by his superiors.

viii) He shall set the points properly in non-interlocked yard and man them for all shunting movements and shall not interfere with the points while the vehicles are standing and or passing over them.

ix) He shall be responsible to see that fouling marks are kept clear after completion of shunting.

x) He shall always commence his duty equipped with hand signal lamps during night and flags during day.

xi) He shall verify the correct setting of route before delivering required papers to the Loco Pilot either though taking 'OFF' the relevant shunt signal or by personal observation.

xii) In case of track failure he shall assist the SM to ascertain the clearance of line.

xiii) He shall be responsible for lighting up of the indicators in the evening and putting out in the morning time fixed by DRM office and ensure that these re burning brightly at night.

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APPENDIX-'E'

APPENDIX 'E' TO STATION WORKING RULES OF BORRA GUHALU STATION:

ESSENTIAL EQUIPMENT:

A list of essential equipment's is given below which shall be maintained in good Working order.

Sl. No	Description	Station
1	Detonators	20
2	Battery operated LED based flashing Hand Signal lamps	3(1 spare)
3	Hand Signal Flags	3(1spare)sets
4	Safety chains with Pad locks	6
5	Clamps with Padlocks	8
6	Fire Extinguishers DCPT	2
7	Fire & Sand buckets	5
8	First Aid Box	1
9	Stretcher	1
10	Blanket	1
11	Iron skids	6

APPENDIX 'F' TO STATION WORKING RULES OF BORRA GUHALU

WORKIG OF D.K.STATIONS, HALTS, IBS AND OUTLYING SIDINGS:

---NIL----

APPENDIX- 'G'

BORRA GUHALU STATION

RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS:

DETAILS OF WORKING RULES OF 25KV AC TRACTION.