

**EAST COAST RAILWAY
SAMBALPUR DIVISION**

Sl.No. SWR/HNPA/17

STATION WORKING RULES OF HANDAPA STATION (CODE: HNPA)

BG/MG/NG: Broad Gauge

Date of issue:-21.06.2021

Date brought into force:- 28.06.21

NOTE: -

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

1. STATION WORKING RULE; -

1.1 STATION WORKING RULE DIAGRAM NO. SI/WRD – 22130 (Alt-C)

1.2 SIGNAL INTERLOCKING PLAN NO.:- S.I – 22130 (Alt-C)

The Station Working Rule diagram and Signal Interlocking Plan shows the complete lay out of the yard, siding, normal position of points, the signaling and interlocking arrangements, gradients and level crossings within the station limits. This must be referred to for giving details of the points number and signals when reporting accidents.

2.0 DESCRIPTION OF STATION: -

HANDAPA is a Five-line station situated in Sambalpur- Angul section at KM 673.232 from HWH & 110.715 km from SBP JN. It is Standard – II (R) interlocked 'SPL' Class station with EI and having Absolute Block System of Working. I.B.S on both UP & DN lines between SRGP-HNPA & LVCD axle counters at both ends have been provided at the station for last vehicle check.

2.1 GENERAL LOCATION:-

a)	Name of the station	:	HANDAPA (HNPA)
b)	Class of station	:	'SPL' class
c)	Section	:	Sambalpur Jn.–Angul
d)	Double line/Single line	:	BG, Double line
e)	Electrified/Non Electrified	:	Electrified
f)	Railway	:	East Coast Railway
g)	Route	:	'D'
h)	Situated at	:	KM 673.232 from Howrah & Km 110.715 from Sambalpur
i)	Reckoned from	:	Howrah
j)	Number of cabins	:	NIL
k)	PI/EI	:	EI with two VDU Terminals (One VDU is working and other as stand by).

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

i)	Talcher end	:	BOINDA (Code: BONA) inter distance 7.360 K.M.
ii)	Sambalpur end	:	SARGIPALI (Code: SRGP) inter distance 14.188 K.M.
iii)	Passenger Halt	:	Nil
iv)	Flag station	:	Nil
v)	Outlying siding	:	Nil
vi)	D.K. station	:	Nil.
vii)	IBH	:	Provided at KM103.650F/SBP
viii)	IBS	:	IBS Signal is provided between HNPA-SRGP Stations on both UP & DN Lines at KM 103.650 from SBP

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2.3 BLOCK SECTION LIMITS: -

Between stations	The point from which 'Block section' commences.	The point at which 'Block section' ends.
Between HNPCA-SRGP (UP Line)	UP Advance starter of SRGP	400M beyond UP IB Signal No.S-29 of SRGP.
	UP IB Signal No. S29 of SRGP	Outermost point No 31 of HNPCA station
Between HNPCA-SRGP (DN Line)	DN Advanced starter signal No.26 of HNPCA.	400M beyond DN IB Signal No.S-30 of HNPCA.
	DN IB Signal No. S-30 of HNPCA	Outermost point of 32 of SRGP
Between HNPCA-BONA (UP Line)	UP Advanced starter signal No.25 of HNPCA.	Outermost point No 31 of BONA Station on UP Line
Between HNPCA-BONA (DN Line)	DN facing point No.32A of HNPCA.	DN Advanced Starter Signal No 26 of BONA Station.

2.3.1 STATION SECTION:

The portion in between facing point 31A and UP Advanced starter signal No 25 on UP line and further the portion between DN Advanced starter signal 26 & outermost point 32A the station section of HANDAPA station.

2.3.2 STATION LIMIT:

The portion between DN Distant signal and DN Advanced starter signal No-26 on DN line and the portion between UP Distant signal & UP Advanced starter signal No.25 on UP line is station limit of the Station.

2.4: GRADIENT: -

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

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	785.00	785.00	1 in 1200 R
785.00	820.00	35.00	1 in 1200 R
820.00	1195.00	375.00	1 in 714.28 R
1195.00	1665.00	470.00	1 in 509.76 R
1665.00	1825.00	160.00	1 in 351 R
1825.00	2105.00	280.00	1 in 900 F
2105.00	2405.00	300.00	1 in 460 F
2405.00	2494.60	89.60	LEVEL
2494.60	3375.00	880.40	1 in 170 R
3375.00	5588.00	2213.00	1 in 150 R
5588.00	Block Section	-----	1 in 170 R

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

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	785.00	785.00	1 in 1200 R
785.00	820.00	35.00	1 in 1200 R
820.00	1195.00	375.00	1 in 711.58 R
1195.00	1665.00	470.00	1 in 509.76 R
1665.00	1825.00	160.00	1 in 350 R
1825.00	2105.00	280.00	1 in 900 F
2105.00	2405.00	300.00	1 in 460 F

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2405.00	2494.60	89.60	LEVEL
2494.60	3375.00	880.40	1 in 156 R
3375.00	5588.00	2213.00	1 in 150 R
5588.00	Block Section	----	1 in 170 R

(c) **FROM THE CENTER OF STATION BUILDING TOWARDS TM SIDING**

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	785.00	785.00	1 in 1200 R

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

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	415.00	415.00	1 in 1200 F
415.00	837.60	422.60	1 in 1200 F
837.60	1015.00	177.40	1 in 150 F
1015.00	1475.00	460.00	1 in 179 F
1475.00	1835.00	360.00	1 in 160 F
1835.00	2537.00	702.00	1 in 150 F
2537.00	2955.00	418.00	1 in 160 F
2955.00	3673.00	718.00	1 in 150 F

(e) **FROM SAMBALPUR TO HANDAPA STATION (UP LINE)(For IBS)**

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
Block section	100720.00	-----	1 in 575 R
100720.00	101680.00	960.00	1 in 1100 R
101680.00	102739.00	1059.00	1 in 169 R
102739.00	103420.00	681.00	1 in 156 R
103420.00	106360.00	2940.00	1 in 150 R
106360.00	3673.00(From CSB of HNPA)	682.00	1 in 178 R

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

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
0	415.00	415.00	1 in 1200 F
415.00	837.60	422.690	1 in 1200 F
837.60	1015.00	177.40	1 in 150 F
1015.00	1475.00	460.00	1 in 180 F
1475.00	2595.00	1120.00	1 in 150 F
2595.00	2815.00	220.00	1 in 160 F
2815.00	3615.00	800.00	1 in 150 F

(g) **FROM SAMBALPUR TO HANDAPA STATION (DN LINE)**

Chainage in meter		Inter distance in meter	Gradient (Falling/Raising/Level)
FROM	TO		
Block section	100720.00	-----	LEVEL
100720.00	101610.00	890.00	1 in 645 R
101610.00	102760.00	1150.00	1 in 175 R
102760.00	104200.00	1440.00	1 in 150 R
104200.00	104739.20	539.20	1 in 175 R

104739.20	106800.00	2060.80	1 in 150 R
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2.5 LAY OUT: -

(i)	No. of running lines	:	05 (Five)
(ii)	No. of sidings	:	02, (Track Machine Siding, CSL-288 M SH TO D.END). (Shunting neck, CSL-85 M SH to D.END)
(iii)	No. of Passenger platform	:	03 Nos.(Three), One H.L Passenger Platform (580mx9.44m) beside line No.1 & one Island H.L Passenger platform of dimension (580mx10m) in between Line No-3 and 4.
(iv)	No. of goods shed platform	:	01, Rail Level Goods Platform (650MX15.0M).
(v)	No. of siding platform	:	01 No.TM siding platform (HL), (300X3.0M)
(vi)	FOB	:	01 No. at CH-240.00M and 2.44M Wide.

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

DESCRIPTION	CSL	ISOLATION PROVIDED	
		TOWARDS BONA	TOWARDS SRGP
Line No.1 (Common Loop) and Longer Loop	748 mtrs. (S-11 to S-18) And 1510M (S-7 to S-18)	ORL	ORL
Line No.2 (UP Main)	738 mtrs. (Str. to SH)	----	----
Line No.3 (DN Main)	823 mtrs. (Str to SH)	----	----
Line No.4 (Common Loop.)	715 mtrs. (Str to Str.)	ORL	ORL
Line No.5(Common Loop)	752 mtrs. (Str.to Str.)	ORL	ORL

(II) DIRECTION OF MOVEMENTS: -

- Trains arriving from SARAGIPALI are UP trains.
- Trains arriving from BOINDA are DN trains.

2.5.2 NON-RUNNING LINES.–

Sl. No.	Description	CSL	Takes off from	Exit	Operation
1.	Track Machine Siding at BONA end.	288 M (SH to DE)	ORL of L/4.	One way	Controlled by Shunt signal operated from VDU.
2.	Shunting Neck at SRGP end	85 M (SH to DE)	ORL of L/4	One way	Controlled by Shunt signal operated from VDU.

(i) TM SIDING (BONA END):-

The TM SIDING of CSL 285M (SH to Dead End) takes off from ORL of line No.4 with single side entry and exit at BONA end of the yard. It is isolated by DS point No.40, which is operated from the VDU. Shunt signals SH-6A/B has been provided for shunting movement from the T.M Siding to line No.4& 5. Shunt signals SH (15&17) B has been provided on line No.4 &5 in the yard for shunting movement into the T.M. Siding. In case of failure of shunt signals, points on the route are to be set, clamped and padlocked before reception/dispatch of trains from/to siding through shunting movement. After completion of shunting movement towards or from siding, the siding point 40 DS is to be kept in normal position by on duty SM.

(ii) SHUNTING NECK (SRGP END):-

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The Shunting neck of CSL 85 M (SH to Dead End) takes off from ORL of line No.4 with single side entry and exit at SRGP end of the yard. It is isolated by DS point No. 33 which is operated from the VDU. Shunt signals SH-5A/B are provided for shunting movement from the shunting neck to line No.4 & 5. Starter signals SH-4A/B are provided below starter signals on line

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Nos. 5 and 4 respectively for shunt movement into the shunting neck. In case of failure of shunt signals, points on the route are to be set, clamped and padlocked before any shunting movement is carried out in the shunting neck.

2.5.3 ANY SPECIAL FEATURES IN THE LAYOUT: - CSL of line No.1 & 3 are more than 800M. to avoid premature release of overlap, overlap release will initiate only when rear portion point zone track circuits clear and when

- 7AT1/7AT in UP direction for line No.-1 occupied (for Long Haul train)
- L3T1/L3T2 in DN direction for line No.-3 occupied

2.6 LEVEL CROSSINGS: (STATION SECTION) -.

Sl. No	Location	K.M.& No.	Normal Position	Class	Type	Operation	Communication
1.	Between DN Starter Signals and DN Adv. Starter Signal No.26	109/35-39 UP) 109/36-38 (DN) ST-69	Open to road traffic	'B2' Traffic	Inter locked	Electrically operated	Magneto telephone connection with SM/HNPA

2.7 LEVEL CROSSINGS: (IN BLOCK SECTION)-

Sl. No	Location	K.M.& No.	Normal Position	Class	Type	Operation	Communication
1.	Between SRGP-HNPA	102/1-3 (UP) 102/2-4 (DN) ST-63	Open to road traffic	'B1' Engg	Non Inter locked	Winch operated lifting barrier	Voice Logger Telephone with SM office/SRGP
2.	Between SRGP-HNPA	106/9-11 (UP) 106/10-12 (DN) ST-65	Closed to road traffic	'B2' Engg	Non Inter locked	Winch operated lifting barrier	Voice Logger Telephone with SM office/HNPA

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

3. SYSTEM AND MEANS OF WORKING:-

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

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

4. SYSTEM OF SIGNALLING AND INTERLOCKING: -

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

4.1.2 TYPE OF SIGNALS:

Multiple Aspect Colour Light Signals. The aspects & indications of the MACLS is governed by GR.3.08 (4).

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

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- b) The Station is provided with **central Electronic Interlocking (EI)** and having no end cabins. All signals and points are electrically operated from the VDU provided in SM's Office.
- c) **Method of operation:**
VDU one as working other as standby are provided in the Station Master's office to electrically control all signals and points. (The details of operation from VDU is given under Appendix-'B')
- d) **Provision of axle counter and Track circuits:**
- I. **TRACK CIRCUIT: -**
All the lines including point zones between Home and Advanced starter signal on either direction are track circuited. The position of the running lines including point zones i.e. occupied/clear is indicated in the illuminated diagram at the Station Master's office. Normally there will be no indication of track circuits. It shows 'Red' when the line is occupied and 'yellow' when the line is clear provided the route is set. (Detailed track circuits given in appendix-B)
- II. **AXLE COUNTER:**
Block sections HNPA-SRGP & BONA-HNPA are monitored by digital axle counter system. Dual detection digital axle counters have been provided for last vehicle checking for section HNPA-SRGP & HNPA-BONA on both UP & DN line.
- A pair of digital axle counter is provided for UP line between SRGP & IBS at km 103.650 (beyond Advance starter signal of SRGP and 400M beyond IBS) and another pair between IBS & HNPA (beyond IBS and beyond UP Home signal of SRGP). For DN line, a pair of digital axle counter is provided between HNPA & IBS at km 103.650 (beyond Advanced starter signal of HNPA and 400M beyond IBS) and another pair between IBS & SRGP (beyond IBS and beyond UP Home signal of SRGP) for counting the axles 'IN' and counting the axles 'OUT' to indicate whether the section is clear of trains as well as to verify the last vehicle of the incoming train.
- Similarly, a pair of digital axle counter is provided between BONA & HNPA (beyond Advanced starter of BONA & in advance of Home signal of HNPA on DN Line), another pair of digital axle counter is provided for UP line of HNPA - BONA (beyond Advanced starter of HNPA & in advance of Home signal of BONA on UP Line) for counting the axles 'IN' and for counting the axles 'OUT' to indicate whether the block section is clear of trains as well as to verify the last vehicle of the incoming train.
- The position of block section i.e. clear/occupied is reflected on the reset box panel provided in the Station Master's office which shows 'GREEN' when the block section is clear and 'RED' when the block section is occupied.
- A reset box consisting of a counter and one resetting key with a push switch and three indications i.e. 'RED', 'GREEN', 'YELLOW' and GREEN miniature with locking arrangement for each pair of axle counter is kept at the station master's office. 'RED' and 'GREEN' indicates occupation and clearance of Block section respectively, 'YELLOW' indication glows when power is ON and GREEN miniature glows when resetting operation is initiated and after passage of a train the Axle counter will clear. The resetting key of this panel is kept locked and sealed in a separate box. The key of the box is kept under the custody of SM on duty.
- Whenever a train enters into the block section, block section clear indication 'GREEN' disappears and occupied indication 'RED' appears. If after the complete arrival of the train, 'RED' indication does not change to 'GREEN', it should be assumed as block instrument failure and necessary action as per GR 14.13 to be followed. The axle counter is interlocked with Block instruments of concerned section.
- A visual indication is provided in front of SM to enable him to report to ESM/JE Signal when one Axle counting system fails.

f) **IBS Signal- -**(GR 3.11, SR 3.42.05 and GR 3.75)

The block section between HNPA-SRGP has been split into two block sections by providing Intermediate Block Stop signals at KM 103.650 F/SBP [controlled by SRGP station] for UP line and, at KM 103.650 F/SBP [controlled by HNPA station] for DN line. Intermediate Block stop signals are controlled through double line lock and block instruments at the respective receiving ends. (Trains will be worked vide SR 3.42.05 and GR 3.75)

PROCEDURE TO BE FOLLOWED IN THE EVENT OF A TRAIN RUNNING AWAY(PASSING INTERMEDIATE BLOCK STOP SIGNAL AT 'ON' POSITION):

- i) Whenever a train passes the Intermediate Block Stop Signal at 'ON' without being so authorized by the station Master of rear station over telephone, the Station Master of the rear station on receipt of the audible/visual indication must inform the Station Master of the Advance Station about the entry of the train passing the Intermediate Block stop at 'ON'.
- ii) The Loco Pilot of the train on his arrival at the advance station must report the incident of his passing the Intermediate Block signal at 'ON' and also record in writing the reason for his doing so.
- iii) On receipt of written declaration from the Loco Pilot that the IBS telephone is defective, the Station Master of the advance station will inform the Station Master of the rear station about the matter and also the S&T staff for necessary rectification of the IBS telephone.
- iv) On receipt of the written declaration from the Loco Pilot of runaway train that the IBS telephone is defective and after advising the S&T staff for necessary rectification the resetting should be done to normalize the system as per proper procedure on account of train passing the IBS at ON and the Block instrument also should be normalized in the same way since the runaway train has fully arrived at the advance station. The SM of the advance station before giving permission to the station in rear for resetting the axle counting system should ensure that the train has arrived intact by verifying the last vehicle indicator affixed in rear of the last vehicle of the train or by getting the complete arrival register signed by the guard.
- v) In case of failure of the Loco Pilot of the "Run away train" to report the failure of the telephone, the incident should be treated as breach of Block rule in terms of Rule No 6.16 (a) (iv) and suitable action taken. In such case Intermediate Block signaling and Lock and Block instrument must not be resumed by Block Signal Inspector without permission of ASTE/DSTE.
- vi) While complying with the instruction contained in GR 3.75(3), when the Loco Pilot has to pass the IBS signal at "ON" after waiting for 5 minutes at the signal, he shall proceed cautiously preparing to stop short of any obstruction at a speed not exceeding 15 KMPH when view ahead is clear and 8 KMPH when view ahead is not clear due to curve, obstruction, rain, fog or any other cause until he reaches the foot of the First signal of the Block section in advance obeying any gate stop signal in between the IBS signal and the First stop signal of the Block station in advance as per rules and even if the signal is "OFF" the Loco Pilot shall continue to look out for any possible obstruction and stop short of the same and will act upon its indication only after he has reached it. Before starting, the Loco Pilot shall sound one long whistle, which may be repeated as necessary and shall then start his train on receipt of Guard's signal. Thereafter he shall exchange signals with the guard.
- vii) UP train run away indication or DN Train run away indication as the case may be will appear on the SM's panel.
- viii) UP train run away Buzzer or DN Train run away Buzzer as the case may be will Ring which can be silenced by pressing UP/DN train run away muting push button on the SM's panel.
- ix) Procedure for Resetting to be followed for DN trains and UP trains respectively.

(Details of the working of IBS are mentioned in Appendix – F)

h) **STATION MASTER'S OPERATING PANEL: -**

The Station is provided with central Electronic Interlocking (EI). All signals and points are electrically operated from the VDU provided at SM's Office. A stand by VDU is also provided to switch over the system in case of failure of working VDU. Calling-on signals are provided below Home signals (i.e. in both UP & DN directions). The VDU in Station Master's office electrically controls all signals, points, Gate key, etc., The VDU is provided with SM's key, user name and

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password which shall always remain in the personal custody of the Station Master on duty in terms of SR 3.36.03(a).

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

4.1.3 CRANK HANDLE

When any point fails to operate normally by the Route Setting operation through VDU, it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handle keys are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle for motor operated points shall be followed as per operating manual para-2.19.

CRANK HANDLE	CONTROL POINTS
CH-1	31A/B, 37A/B.
CH-2	40.
CH-3	42A/B.
CH-4	41A/B.
CH-5	32A/B, 34A/B.
CH-6	33.
CH-7	39A/B.
CH-8	35A/B.
CH-9	38A/B.
CH-10	36A/B.
CH-11	46A/B.

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

SM on duty shall personally ensure the clamping and padlocking of all facing and trailing points. An emergency Crank handle register shall be maintained by the SM on duty at the station as per Para 2.19 of the Operating Manual. Correct setting, clamping and padlocking of the points devolve on the SM on duty. The cases of failure of motor point should be promptly reported to the concerned signal maintainer/SSE (Signal) for immediate rectification.

4.1.4 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 Yellow light when taken "OFF". A calling-on signal, will be taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF' due to failure or any other reason or for admission of train on blocked line and for shunting purpose. Before taking 'OFF' Calling on signal during failure of track circuit the route and clearance of the track over which the train will be admitted must be checked physically by SM on duty.

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit in rear of the signal. When a train occupies the track circuit a

RED light strip will appear on the VDU. The particular route on which train is intended to be received shall be set by selecting the desired route and SM on duty shall left click on the same after a train occupies the approach track circuit in rear of the Home signal. The Calling-on signal is cleared after a lapse of 60 seconds (below Home signals) and 0 seconds (below starters) i.e. a Yellow light glows at the concerned Calling-on signal on the VDU. Each such operation shall be recorded by the SM on duty along with the reasons to do so. The calling-on signal route cannot be released automatically after complete arrival of the train. The calling-on signal route

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cannot be released automatically after complete arrival of the train. To release the route after passage of train SM on duty has to cancel the signal. The calling-on signal route can be released after complete arrival of the train or by emergency cancellation.

NOTE:

- i) Before taking "OFF" Calling-on signal during failure of track circuit, the clearance of track over which the train is intended to be received must be verified physically.
- ii) SM on duty to ensure that no through signals are given while receiving a train on Calling-on signal.

4.1.5 SHUNT SIGNALS:

Independent shunt signals SH3 (A-E) at SRGP end and SH4 (A-E) & SH8 (A/B) at BONA end on main line have been provided for back shunt movement. Independent Shunt signal SH-16 on UP main line for backward shunt movement up to Advance starter signal No.26. Independent Shunt signal SH-13 on DN main line has been provided for backward shunt movement up to starter signal No.21. and Shunt signal No. SH-10 has been provided in line No.1 for shunting movement on line No.1. Shunt signal No. SH 6 A/B in T.M. Siding has been provided for shunt movement of trains from T.M. Siding to line No-5 and 4. Shunt signal No. SH 5 A/B in shunting neck has been provided for shunt movement of trains from shunting neck to line No-4 and 5.

Dependent Shunt signal No-SH15 (A/B) below UP Starter signal No-15 and SH-17(A/B) below UP starter signal No-17 have been provided for shunt movement of trains/engine up to UP starter signal No.S-21. & shunting towards Track Machine siding. Shunt signal No-SH11(A/B) below UP Starter signal No-11 have been provided for shunt movement of trains up to Up starter signal No.S-7 and UP starter signal No.S-21. Shunt signal No.SH-19 below UP Starter signal No-19 has been provided for shunt movement of trains up to UP starter signal No.S-21. SH-7 below longer loop starter signal No.S-7 and SH-21 below starter signal No.21 have been provided for shunting of trains/engines up to UP Advanced starter signal No..S-25. Shunt signal No-SH12 below DN Starter signal No-12 and SH-14 below DN starter signal No-14 have been provided for shunting of trains/engine in shunting neck.

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|--------|--|--------------------------|
| 4.1.6 | POINT AND TRAP INDICATORS:- | : -NIL |
| 4.1.7 | REPEATING SIGNAL (ELECTRIC/BANNER TYPE) | :- NIL |
| 4.1.8 | EMERGENCY CROSS OVER | :- NIL |
| 4.1.9 | L.C. GATE OPERATION | :- (Given in Appendix A) |
| 4.1.10 | ANTI COLLISION DEVICE | : -NIL |
| 4.1.11 | TRAIN PROTECTION & WARNING SYSTEM | :- NIL |
| 4.1.12 | EMERGENCY POINT OPERATION (BLACK WITH RED DOT): | |

Emergency point operation facility is provided to operate the point from the VDU in case of failure of point controlling track circuit. If such operation is necessary, the SM on duty shall ensure that no vehicle is standing on the concerned point track circuit. Then Emergency Point Operation Key is to be made "KEY IN" by clicking the 'KEY IN' menu. The user name and password is to be logged in. Track the pointer to 'EMERGENCY NORMAL/REVERSE' menu and click. A NORMAL/REVERSE flashing indication will appear and the indication will be steady after the point is set to Normal or Reverse. This action will be recorded in a counter. The counter will increase by next number for each and every such operation and also, this number should be recorded by the SM on duty who shall record the details of the Emergency Point Operation along with the latest counter no. in the concerned register and SM's diary.

After the completion of the Emergency point operation, the Key to be 'KEY OUT' by clicking 'KEY OUT' menu. The user name and password is to be given for "KEY OUT" also.

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

The Electronic interlocking is based on the principle of 'DEAD APPROACH LOCKING'. As such when a route is set and signal is taken 'OFF' on the route, the route gets locked. Normally, the route is released by the passage of the train over the route. When it becomes necessary to alter the route after the signal has been taken 'OFF' vide SR 3.36.02(a), the concerned signal must be put back to danger.

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

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

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

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

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

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

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

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

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

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

For attending Failures of S& T gears within relay Rooms, the following steps shall be taken :

Entry to be made in S& T failure register by SM on duty and failure Memo has to be issued to S& T staff. S& T staff shall not take the Relay Room Key for attending failures and open the Relay

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

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

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

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

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

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

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

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

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

- a) A changeover switch is provided in the SM's office with the three power supply viz UP AT, DN AT and Local power supply for changing the switch to the required supply position. Luminous indicators are provided above the circuit breaker for each supply to indicate the availability of the supplies.
- b) Normally the switch will be kept towards **AUTO** position. Whenever the power block is to be given on the line, on duty SS/SM must ascertain the power is available on the other AT and change over the switch to desired position e.g. if power block is to be given on the UP line, DN AT must be available and vice versa.
- c) In case of failure of the AT supply without any power block, on duty SS/SM has to check whether the circuit breaker has tripped. Three circuit breakers are provided in the changeover switch board, one for each supply and their normal position is upwards and when tripped it goes downwards. In case of failure of both AT supplies without any power block, the local supplies

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shall be utilized by operating the changeover switch. If the circuit breaker is tripping even after resetting, no attempts shall be made to hold it by any other means and a message shall be given to the AEE/GEN and CTFO/PSI/TRD/GEN for prompt rectification.

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

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

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[B] REMOTE MONITORING SM BOX:

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

- (i) 50% DOD (Depth of Discharge) (105.9V) of Battery. In this condition Audio/Visual alarm comes which can be acknowledged with audio cut off.
- (ii) 60% DOD (Depth of Discharge) (105.1V) of Battery, which warns for emergency. The Alarm for this condition is same as for condition 1.
- (iii) 70% DOD (Depth of Discharge) (104.3V) of Battery, power to the signal will be cut-off however all DC-DC converters will continue to work. Audio alarm will continue till power supply restored.
- (iv) If any of the Modules fails, "Call S&T" alarm will appear.

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

5.0 TELECOMMUNICATION FACILITIES: -

- (i) Telephone attached with Block Instruments for either side Block Section
- (ii) Station to Station fixed telephone (Hot line) is provided
- (iii) Station is provided with Auto telephone connected with Railway Exchange
- (iv) BSNL telephone is provided.
- (v) The station is connected to SAMBALPUR-ANGUL control circuit by a control telephone.
- (vi) Station to station 25 Watt VHF communication is provided.
- (vii) Telephone is provided between Station and both end crank handle locations.
- (viii) Telephone is provided between Station and Traffic interlocked L.C.Gate No.ST-69 at KM 109/35-39(UP) 109/36-38(DN), L.C.Gate No.ST-65 at KM 106/9-11(UP) 106/10-12(DN).
- (ix) Telephone connection is provided between Station and DN IBS signal at KM 103.650 F/SBP.
- (x) Telephone connected with traction power control.

NOTE:

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

5.1 FAILURE OF COMMUNICATION: -

The on duty SM shall use the above electrical communication instruments stated in Para-5 from item No. (1) to (6) strictly in order of preference for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication between the adjacent

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block stations the SM on duty shall work vide SR 6.02.06. In the event of total failure of communications between HNPA-SRGP and HNPA-BONA SR 6.02.03 shall be observed for working the trains.

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

6.0 SYSTEM OF TRAIN WORKING: -

The movement of trains is controlled by Section Controller on duty whose orders shall be complied with, provided they do not contravene any General Rules, Subsidiary Rules, Station Working Rules, Block Working Manual and other safe working instructions issued from time to time. In the event of suspension of control working, the Station Master on duty shall work independently in conjunction with the Station Master of adjoining block station and shall be responsible to ensure that there is no undue delay to train operation in general.

6.1 DUTIES OF TRAIN WORKING STAFF: -

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

6.1.1 TRAIN WORKING STAFF: -

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

SL. NO.	DESIGNATION	ROSTER	NO. OF STAFF IN EACH SHIFT	HRS. OF DUTY
1.	Station Manager (in-charge)----- SS/SM	-Continuous	01	-08 hrs.
2.	PM-B/ PM-A	Continuous	01	-08 hrs.
3.	Sr. GK/GK	E.I.	01	-12 hrs.

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

6.1.2 RESPONSIBILITY OF ASCERTAINING CLEARANCE OF THE LINE: -

The SM on duty is responsible to ascertain the clearance of the nominated line between outer most facing points of concerned line as per GR.14.10.

6.1.3 ASSURANCE OF STAFF IN ASSURANCE REGISTER: -

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

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

The station superintendent is responsible personally for maintaining the Assurance Register and for obtaining declaration of the staff working under him. The Assurance Register must be maintained in two parts, one for Group 'C' and the other for Group 'D' staff. A duplicate copy of the Assurance Register must be maintained and kept in personal custody of the Station Superintendent (In- Charge).

The declaration shall be renewed in the following cases: -

- (i) Whenever there is a change in the Station Working Rules.

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

6.2 CONDITIONS FOR GRANTING LINE CLEAR: -

Before granting line clear for a train, the SM on duty shall ensure that-

- i) The whole of the last preceding train has arrived complete inside the outermost facing points.
- ii) All necessary signals have been put back to 'ON' behind the said train.
- iii) The line is clear up to outermost point 32A for DN trains & up to outermost point 31A for UP trains.

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

- iv).

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 NIL.

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

6.2.1.1 SETTING OF POINTS AGAINST BLOCKED LINE: -

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

Safety Point Alarm Unit (SPAU):

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

6.2.1.2 RECEPTION OF TRAIN ON BLOCKED LINE: -

Whenever trains are to be admitted on an obstructed line, Calling-On signal can be taken off, when Calling-On signal failed, then SM on duty shall authorize the on duty TPM with form T/509 indicating the reason for such admission the line number and the nature of obstruction on that line.

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

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

6.2.1.3 RECEPTION OF TRAIN ON NON-SIGNALLED LINE : NA.

6.2.1.4 DESPATCH OF TRAINS FROM NON-SIGNALLED LINE :NA.

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

6.2.1.6 SPECIAL RESTRICTIONS:

- (I) The overrun line shall not be obstructed for stabling vehicles or harboring an engine. If it is obstructed through any accident or for any cause it ceases to be a substitute for the adequate distance.
- (II) GR 5.20 and SR's thereto apply at the station.
- (III) Speed is raised to 30 KMPH on first loop lines on either side of main line and over its turnouts. However, no train shall be allowed to negotiate at a speed more than 15 KMPH if it involves negotiating more than one crossover at a time.
- (IV) Due to 1 in 150 falling gradient on DN line near DN IB, no goods train shall be allowed in the rear of a coaching train.
- (V) Line No.1 (Long loop line) to be treated as single loop not as twin loop during normal train operation.
- (VI) Stabling of trains on the LONG LOOP is not permitted without 'live engine' attached to it.

(VII) No run through over Long Loop is permitted.

(VIII) On non-isolation lines, no load shall be stabled without a live engine attached or securing of vehicle shall be ensured.

(IX) Stable of two trains on the main line of reception of a train with another train stabled in the front portion of the main line is restricted.

6.2.1.7. SPECIAL INSTRUCTIONS:-

- A. After a non-signal movement has taken place over a point, SM on duty shall operate the point to normal and reverse position for ensuring the correct setting and indication on the VDU. Then after, further signal movement may be permitted over the point.
- B. While receiving normal length trains in UP direction overlap set to Main line on Route-1 or dispatching a train from Route-1 with cross over 36 reverse, track circuit 7AT, 7AT1 & 7AT2 shall be proved clear of trains. Dispatch of normal length UP trains on 2nd crossover of Long Loop should be avoided.

6.3 CONDITIONS FOR TAKING 'OFF' APPROACH SIGNAL: -

Reception of trains is governed by General Rule 3.36, 3.38, 3.40, 4.17, Subsidiary Rule 3.42.02 (a) (iv), 3.42.03, 3.36.02, 3.36.04 and other relevant provisions of General and Subsidiary Rules, Block Working Manual and Station Working Rules of the station to be followed.

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

A. CLEARANCE OF ADEQUATE DISTANCE:-

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

Sr. No.	Line No.	UP TRAIN		DN TRAIN	
		FROM	TO	FROM	TO
1	Line No.1 (Common loop)	Starter signal No.11	Up to the foot of the starter signal No.7 or Up to the foot of the starter signal No.21.	Starter signal No.18	Up to Adv. starter signal No.26 or End of Over run line
2	Line No. 2 (UP Main line)	Starter signal No.19	Up to starter signal No.21.	-----	-----
3	Line No. 3 (DN Main line)	-----	-----	Starter signal No.20	Adv. starter signal No.26.
4	Line No. 4 (Common loop)	Starter signal No.15	End of Over run line or up to starter signal No.21	Starter signal No.14	Up to Adv. starter signal No.26. or End of Over run line
5	Line No.5 (Common loop)	Starter signal No.17.	End of Over run line or up to starter signal No.21	Starter signal No.12	Up to Adv. starter signal No.26.or End of Over run line

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

In case any of the track circuit on the concerned route shows occupied by RED indication even though the other conditions are satisfied, the operation through VDU by the SM on duty will not permit the concerned signal to be taken off. However, reception of train will be possible in such cases with the "Calling On" signal fixed below Home signal at either end provided the first track circuit in advance of Home signal does not show 'RED' indication.

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

B. TAKING OFF CALLING ON SIGNAL

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal/Starter signal, occupying the track circuit in rear of the signal. When a train occupies the track circuit a RED light strip will appear on the VDU. The particular route on which train is intended to be received shall be set by tracking the pointer in VDU on to the signal below which the calling on signal is provided. Various options in terms of the total routes over which the signal will lead to will appear on the menu. Then the SM must drag the pointer and click over the particular Calling- on route amongst the various options displayed in the menu by the left button of the mouse as a result of which the Calling-on signal will blink for 60 seconds. After a lapse of 60 seconds, the Calling-on signal below Home signal will clear. i.e., a White light glows at the concerned calling-on signal on the VDU. Every such operation has to be recorded by the on duty SM along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train or by emergency cancellation.

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NOTE:

- i) Before taking "OFF" Calling-on signal during failure of track circuit, the clearance of track over which the train is intended to be received must be verified physically.
- ii) SM on duty to ensure that no through signals are given while receiving a train on Calling-on signal.

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

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

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

According to the existing interlocking at this station, the simultaneous reception and dispatch of trains are permitted as stipulated below (GR3.47).

(i)	While receiving a DN train on Line No.1	Reception of an UP train on Line No.L4/L5 or dispatch of DN train from Line No. L3/L4/L5.
(ii)	While receiving a DN train on Line No.3	Reception & Departure of UP train on Line No.L1/L2 .
(iii)	While receiving a DN train on Line No.4	Reception & Departure of UP train on Line No.L1/L2 or dispatch of DN train from Line No. L1/L3
(iv)	While receiving a DN Train on Line No.5	Reception & Departure of UP train on line No.L1/L2 or dispatch of a DN train from line No.L1/L3/L4
(v)	While receiving an UP train on Line No.1	Reception of a DN train on Line No.L3/L4/L5 or dispatch of an UP train from line No.L2/L4/L5.
(vi)	While receiving an UP train on Line No.2	Reception & Departure of DN train on Line L3/L4/L5.
(vii)	While receiving an UP train on Line No.4.	Reception of a DN train L1 or dispatch of an UP train from Line No.L1/L2.
(viii)	While receiving an UP train on Line No.5.	Reception of a DN train on L1 or dispatch of an UP train from L1/L2/L4.

6.5 COMPLETE ARRIVAL OF TRAIN: -

(Rule no. GR 4.16, SR 4.17.01, GR4.17.02, GR 14.10)

- a) **STAFF RESPONSIBLE TO VERIFY COMPLETE ARRIVAL: -** SM on duty.
- b) **MODE OF VERIFICATION:** Through AXLE COUNTER.

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6.5.1 L.V. VERIFICATION THROUGH AXLE COUNTER: -

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

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

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

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

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

On occasions when motor trolley follows a train, the points shall not be altered until the following motor trolley is admitted on the same line. In the event of motor trolley is delayed in the section the Station Master on duty shall take action in terms of Subsidiary Rule 15.25.03 (b)(vi).

6.6 DESPATCHING OF TRAINS: -

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

To dispatch a train, the Station master on duty having obtained line clear for that train, shall set the route for the outgoing train correctly and satisfy him by observing the visual indication on the VDU and ensure closure of the L.C.gates in section, Then he shall take "OFF" the concerned Starter signal and Advanced starter signal. The 'OFF' aspect of the route Starter and Advanced Starter is the authority to proceed into the block section. However, a down train can be dispatched upto IBS by observing clearance of the section upto 400m beyond IBS through VDU.

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 Brake Van the instruction laid down in Subsidiary Rule & safety circulars shall be followed.

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

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

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

6.7 TRAINS RUNNING THROUGH: -

- a) The provision of GR 3.40, 4.17, 4.42 with relevant SRs and SR 3.42.02 (a)(iv) and other relevant provision of BWM shall be observed.
- b) The sequence for taking 'OFF' signals for run through trains is governed by SR 3.42.02 (a) (iv)
- c) In every case in which trains are permitted to run through on a non isolated line, all shunting shall be stopped and no vehicle unattached to an engine or not properly secured in accordance with

rule 5.23 may be kept standing on a connected line which is not isolated from through line vide SR 4.11 (2).

- d) The SM on duty is responsible to see that a train passes complete with its last vehicle indicator. If a train passes without last vehicle indicator or its authorized substitute, action shall be taken as per General and Subsidiary Rule. [Ref. GR 3.42,4.17,4.42 and SR 4.42.02 (b) (i),(ii).
- e) The SM is responsible to observe/watch the condition of the vehicles on a train and shall wave green hand signal horizontally as per Subsidiary Rule 4.42.02. (b) until anything wrong is noticed on train. For this purpose the SM on duty shall stand in such a position that a clear view of the passing train is seen by him and that his hand signals can clearly be seen by the Loco Pilot and Guard of the train. He shall depute his points man with hand signal to the other side of the passing train who shall exhibit hand danger signal to draw the attention of the guard/ Loco Pilot of the train in case of observing any unsafe condition/abnormalities of the train. He shall also report to the SM on duty for taking further suitable action in terms of SR 4.42.02(d).

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

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

6.8.1 PROCEDURE TO BE FOLLOWED INCASE OF FAILURE OF A SIGNAL & INTERLOCKING INSTALLATION: -Whenever there is a failure of points, signals, track circuits or any other interlocking gear at the station that includes level crossing gate (s), if any etc. the SM on duty shall follow the procedure detailed in GR 3.68, 3.72, 3.74 and SR thereto. In case of defective approach signals, the trains will be piloted in vide SR 3.69.02, 3.69.03 & 3.69.05. In case of defective departure signals, trains will be piloted out vide GR 3.70 & SR 3.70.01. & 3.70.02.

6.8.2 TRACK CIRCUIT

In the event of failure of track circuit in the yard trains shall be admitted in to yard after piloting 'IN' before piloting a train in to the yard the clearance of the track must be ensured by physical verification.

6.8.3 AXLE COUNTER

In the event of failure of axle counter of concerned block section SM on duty shall initiate resetting of axle counter after ensuring the complete arrival of the train by SM of other end Station. After resetting the first train will be piloted 'OUT' to the concerned Block section for normalizing the system of working. In case failure of Axle counter Block instrument of concerned block section shall be suspended. Detail operations involved in resetting of axle counter are given in Appendix-'B'.

6.8.4 DEFECTIVE SIGNALS:

When signals become defective, the procedure laid down in GR & SR shall be followed. A signal in the OFF position is the final indication that the points are correctly set for the route for which it applies and if it is found impossible to take OFF a signal, the setting of points on the route to which it applies shall be inspected by the Station Master on duty before the signal is declared as defective irrespective of what is indicated by the position of the route, [Refer GR 3.68 to 3.46, 3.52 to 3.56, 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 prescribed in GR and the relevant SRs. [Refer GR 3.51, 3.69, 3.49 (4), 3.68 to 3.77]

6.8.5 BLOCK INSTRUMENT

In the event of partial/total 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 & 6.02.06] During this period 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.

6.8.6 DEFFECTIVE INTERLOCKING

In the event of interlocking becoming defective, the points will be treated as defective. The SM on duty on receipt of this information will immediately introduce non-interlocking system of working at the station. Trains will be Piloted In or Out as the case may be. The SM on duty shall

be responsible for correct setting, clamping and padlocking of both facing & trailing points for admission of train.

6.8.7 DEFFECTIVE/DAMAGED POINTS

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

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

6.8.8 INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:

However, before declaring a signal is defective, the setting of the point on the route to which it applies shall be inspected by the Station Superintendent/Station Master. [Refer GR 3.68, 3.70 & SR 3.77.01(b)]. Initiate action in accordance with the procedure prescribed in GR and relevant Subsidiary Rules there to. [Refer GR 3.49(4) and 3.68, 3.77]

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

6.9 WORKING OF MOTOR TROLLEY, MATERIAL LORRIES ETC: -

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

The following precautions must be taken:

- i) The section where axle counters are provided in lieu of track circuits, trolleys, motor trolleys, Lorries etc which are not insulated, shall not be allowed to run except on line clear.
- ii) Motor trolleys / tower wagons / material Lorries are not likely to actuate the axle counter correctly. When they are to run over the sections split by axle counters, the whole section to be treated as one and next train to be started after the first train has arrived complete.
- iii) In all other respects, the working of a light Motor trolley shall conform to the rules laid down for ordinary trolleys while running without block protection and to those laid down for motor trolleys while running under block protection or following another light motor trolley or a motor trolley.

7. BLOCKING OF LINES: -

Whenever a running line is blocked either by loose vehicles or by stabling train or by a train which is to cross or give precedence to another train, the points at either end should immediately be set against the blocked line except during shunting movement. 'Line Block' is to be activated on VDU by SM on duty following procedures as laid down in para No. 6.2.2. 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, SR5.04.01 (a) and SR 5.23.01(a)]

7.1 LINE BLOCK FEATURE IN VDU -Line block feature identical to conventional panel is incorporated in VDU panel for blocking of a running line which is blocked either by loose vehicles or by stabling of a train or by a train which is to cross or give precedence to another train. For blocking/unblocking of line, SM on duty has to click the mouse near the route button provided on running line and a popup menu Blocking & Unblocking will appear. By selecting the blocking option the said line is blocked and reception signal pertaining to that line cannot be taken off. For unblocking the line SM on duty has to select the unblocking option from popup menu. Similarly Blocking/Unblocking feature is provided near the advanced starter signals of both end of the

station for Blocking/Unblocking the block section. By selecting the blocking option no train can be dispatched to the block section.

7.2 **SECURING OF VEHICLES :-**

As far as practicable, loose vehicles shall not be allowed to stand on the running line. However, under unavoidable circumstances, if it is necessary to detach vehicles from a train or to stable a train and leave them standing on running line, SM on duty shall be responsible to secure vehicles/stable loads in accordance with GR 5.23 and SR 5.23.01 to prevent rolling down of vehicles and arrest obstruction & fouling of line.

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

7.4 **ALTERING OF POINTS TO A CLEAR LINE WHEN RUNNING LINE IS BLOCKED:-**

- a) When a running line is blocked by stable load e.g, wagons, vehicles or by a train which is to cross or give precedence to another train or immediately after arrival of a train at the station etc. the points in rear should immediately be set against the blocked line except when shunting or another movement is required to be performed in that direction on the same line.
- b) If all the lines at a station happens to be blocked when line clear has been granted to a train, the points should be set for the line occupied by a stable load or a goods train in that order so that in a case of mishap, the chances of casualties are minimized.
- c) In case all the lines are occupied by passenger carrying trains points should be set for a loop line, to negotiate which the speed of the incoming train would be reduced, which in turn would minimize the consequences of casualties. While doing so, points shall be set for a loop, occupied by a train if any, whose engine is facing the direction of approach of the incoming train rather than a loop line, occupied by a train whose passenger coach will, in case of collision, receive the impact.

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

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

At stations where loading and unloading of goods is permitted whether full rake or part thereof, the station master shall ensure that no goods are left fouling any line before and after clearance of the rake from the line. The railway servant supervising loading and unloading shall also ensure that consignment does not foul any line vide SR 5.19.001: (a).

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

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

8.0 **SHUNTING: -**

- 8.1 **GENERAL PRECAUTIONS: -** (i) The rules laid down in GR 3.46, 3.52 to 3.56, 5.13 to 5.23, 8.05(2) (3), 8.06 and 8.14, 8.15 (c) with relevant SRs and OM 7.01, 7.07 and 7.08 shall be observed. All shunt moment shall be supervised by Guard/SS/SM/TPM on duty vide SR 5.13.03 as the case may be. In the event of any non-signaled movement has taken place, the SM on duty shall ensure physical verification of the clearance of the crossover points. The staff supervising shunting shall ensure correct setting of points, clamping and pad locking of points, if necessary.

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

When line clear has been given, no obstruction shall be permitted outside the station section but shunting within the station section may go on continuously, provided the necessary signals are kept at "ON" vide GR 8.05 (2).

8.3 **PROHIBITION OF SHUNTING ANY SPECIAL FEATURES IF ANY:**

Hand shunting / Fly shunting / Loose shunting is prohibited at both ends of the yard.

8.4 **SHUNTING ON SINGLE LINE:** Not applicable.

8.5 SHUNTING ON DOUBLE LINE:

- (i) When the line clear has been given no shunting shall be permitted in the block section in rear Vide GR 8.06 (1).
- (ii) Shunting or obstruction for any other purpose shall not be permitted in the block section in rear unless it is clear and is blocked back Vide GR 8.06(2) and BWM 5.15[I][b].
- (iii) Shunting or obstruction for any other purpose shall not be permitted in the block section in advance unless it is clear and is blocked forward Vide GR 8.06(3) and BWN 5,15[2][b].

8.6 SHUNTING IN THE SIDING TAKING OFF FROM THE STATION YARD:

Shunt signal have been provided for shunting purpose in TM siding and shunting neck. However, during failure of shunt signals T/806 shall be issued and clamping & padlocking of all the concerned points must be ensured before making any movement over the same.

8.6.1 SHUNTING OUTSIDE STATION SECTION:-

- (i) Shunting shall not be permitted in block section (i.e., in the block section in rear) unless it is clear and blocked back.
- (ii) Shunting shall not be permitted in block section in advance unless it is clear and is block forward.
- (iii) When line clear is been given, no shunting shall be permitted in the block section rear vide GR. 8.05[2].
- (iv) The line outside the station section and up to the Home Signal shall not be obstructed unless a Railway servant specially appointed in his behalf by the SM who is in-charge of the operations, and unless – The block section into which the shunting is to take place is clear of an approaching train and all relevant and necessary signals are kept “ON” position
- (v) **SHUNTING WITHIN STATION SECTION :**

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If the necessary signals are kept at “ON”, shunting may be carried on within the station section vide GR 8.05[2].

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

9.0 ABNORMAL CONDITIONS: -

- (a) **THE RULES TO BE OBSERVED IN THE EVENT OF ABNORMAL CONDITION: -**
- [I] **PARTIAL FAILURE OF COMMUNICATION: -**

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

- [II] **THE AUTHORITY TO PROCEED IN THE OCCUPIED BLOCK SECTION IN CASE OF OBSTRUCTION OF LINE OR ACCIDENT: -**

In case, it is necessary to allow a train into an obstructed block section due to engine failure, obstruction or accident, a block ticket shall be issued in terms of SR 6.02.05 Absolute Block System on the affected block section shall be suspended and concurrence of the SM at other end shall be obtained and recorded in caution order register, train signal register and SM's diary. On the block ticket (T/A 602) it shall be mentioned in detail the place of obstruction i.e. Engine Km., B/Van Km., whether the train is to return or to wait at the place of obstruction for the arrival of another following train(s) or to proceed to next station and to obey the site officer instructions. A caution order shall be issued restricting the speed to 15 KMPH. in day light hours when the visibility is clear and 10 KMPH at night or whenever view of 800 Mtrs. is not clear. On arrival at the station the block ticket shall be collected with necessary endorsement from Loco Pilot/Guard and cancelled and pasted to its record foil shall be sent to the issuing station for cancellation.

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In case of accident/engineering block assurance from SE/P.WAY concerned shall be obtained that the line is safe for movement of trains before resumption of normal working. When the obstruction is removed and assurance in writing is obtained from SE/P.WAY concerned or Guard/ Loco Pilot the SM on duty may resume normal working after exchanging proper messages supported by Private Number.

[III] TRAINS DELAYED IN BLOCK SECTION: -

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

[IV] FAILURE/PASSING OF INTERMEDIATE BLOCK STOP SIGNAL AT ON:- Mentioned in Appendix 'B'

[V] FAILURE OF LV AXLE COUNTER: -

Details of the operation are given in Appendix 'B' of SWR.

[VI] FAILURE OF MTRC- Not Applicable.

(b) PROCEDURE FOR EMERGENCY OPERATION OF POINTS BY CRANK HANDLE: -

Details of the operation are given in Appendix 'B' of SWR.

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

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

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

In case of failure of any interlocking gear at the station, the failure report should be communicated by the SM on duty to the sectional Maintainer, the JE/SE/SSE (SIG) of the Section and others through a memo as per SR 3.68.04 and document all such transactions.

9.1 (A) TOTAL FAILURE OF COMMUNICATION: -

In the event of total failure of communications between HNPA-SRGP or/and HNPA -BONA i.e. when line clear cannot be obtained by any one of the following means stated in order of preference, viz.

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

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

- (i) Each train before being allowed to enter into the Block Section should be stopped and the Guard and Loco Pilot of the train apprised of the situation.
- (ii) The SM will hand over an authority [T/C 602] for working of train during total interruption of communication to the Loco Pilot of each train which shall include-

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- a) Authority to proceed without 'Line Clear'.
- b) Authority to pass the Last Stop Signal at its "ON" position.
- c) A caution order restricting the speed to 25KMPH by day when view ahead is clear and 10KMPH by night or when view ahead is not clear.
- (iii) No train shall be allowed to enter the Block Section until there is a clear interval of 30minutes between the train about to leave and the train, which has immediately proceeded.
- (iv) Fixed signals except the last stop signal may be taken "OFF" for the dispatch of the train and for the reception of the train at the next block station, reception signals may be taken off only after the train has been brought to a stand out side it.
- (v) On arrival at the next block station the Loco Pilot shall hand over the authority to proceed without line clear to the SM on duty who will preserve the same for further inspection.
- (vi) Before resuming normal working when any means of communication is established. SM of either end must satisfy that there is no train in the block section. [Refer SR 6.02.03].

9.2 TEMPORARY SINGLE LINE WORKING ON DOUBLE LINE SECTION:

During temporary single line working, when one line is clear and the other line is obstructed between HNPA-BONA or/and HNPA-SRGP the trains shall be worked as per the procedure, [Refer SR 6.02.01] which is summarized as follows:

- (a) Before introducing single line working the SM on duty must satisfy that the line on which single line working will be introduced is clear and free from all obstructions.
- (b) The Lock and Block instrument will be suspended. The Commutators of Lock & Block Instrument will be kept on "Train on line position".
- (c) SM proposing single line working must issue a message with
 - (i) The cause of introduction of single line working,
 - (ii) Line on which the single line will be introduced,
 - (iii) Source of information about the clearance of the line on which single line will be introduced,
 - (iv) Place of obstruction,
 - (v) Restriction of speed, If any,

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- (vi) Assurance about keeping the last stop signal at 'ON' position if the train runs on right line and in case of wrong line all signals are to be kept at 'ON' position etc under the exchange of Private Number.
- (d) SM on duty at the other end of the block section will acknowledge the message and confirm the same by a Private Number.
- (e) After obtaining line clear for the train from the advance station the Loco Pilot must be given as-.
- (i) Authority for Temporary Single Line (TSL) working on double line (T-D/602) indicating there in
 - Caution order
 - The line on which single line working is introduced.
 - The kilometer of obstruction.
 - Any other speed restriction, if any existing.
 - Endorsement to inform all Gang man and Gateman about the single line working (for the first train only).
 - The speed of the first train to be restricted to 25 KMPH subject to other speed restriction.
 - Authority to pass Signal in "ON" position
- (ii) A pilot memo T/369(3b) to pass the last stop signal at its 'ON' position. The approach stop signals at the station in advance may be taken "OFF". In case a train proceeding on wrong line, the train shall be piloted out and at the receiving station, the train shall be piloted 'IN', on the authority of T/510.

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

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

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

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

In case, it is necessary to allow a train into an obstructed block section due to engine failure, obstruction or accident, a block ticket shall be issued in terms of SR 6.02.05 Absolute Block System on the affected block section shall be suspended and concurrence of the SM at other end shall be obtained and recorded in caution order register, train signal register and SM's diary. On the block ticket (T/A 602) it shall be mentioned in detail the place of obstruction i.e. Engine Km., B/Van Km., whether the train is to return or to wait at the place of obstruction for the arrival of another following train(s) or to proceed to next station and to obey the site officer instructions. A caution order shall be issued restricting the speed to 15 KMPH. in day light hours when the visibility is clear and 10 KMPH at night or whenever view of 800 Mtrs. is not clear. On arrival at the station the block ticket shall be collected with necessary endorsement from Loco Pilot/Guard and cancelled and pasted to its record foil shall be sent to the issuing station for cancellation.

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

- a) The previous Block Ticket is collected and Cancelled or
- b) Necessary endorsement is given on the previous block ticket with the advise to wait at the site for a next train to follow or
- c) The previous train has met with an accident or has been disabled or
- d) The Block ticket has been cancelled from the Loco Pilot of the previous train by the official –in-charge at the site and kept in the personal custody & shall be kept until the arrival of the next train and such assurance is given over the telephone installed at the site quoting the serial number of the Block Ticket so collected.
- e) SM will suspend the Absolute Block System of Working and both SMs concerned should arrange for running of trains on the authority of Block Ticket
- f) SM at the dispatching end will hand over to the Loco Pilot the block Ticket as the authority which shall include:
 - i. Caution Order: Existing Speed Restriction/s shall be indicated in the Caution Order portion. The Speed Restriction to 15 KMPH during clear visibility and 10 KMPH when visibility is obstructed shall be clearly indicated.
 - ii. An authority to pass the Stop Signal at "ON" position.
- g) Before resumption of normal working a message between the SMs of the concerned stations shall be exchanged with private number.[Ref SR 6.02.05(d)(vi)]
The Block Ticket so issued must be collected by SM of either end with a certificate about the complete arrival of the train with its time and the section is clear of all obstructions from Loco Pilot /Guard of the train and cancelled.

10. **VISIBILITY TEST OBJECT: -**

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

11. **ESSENTIAL EQUIPMENTS AT THE STATION: -** This is mentioned in the Appendix 'E' of the SWR. Essential equipments shall be kept ready on hand in good condition with necessary relief stock.

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

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

STATION DETONATOR REGISTER (OPT/124)

A Register regarding detonator is maintained at the station.

(a) **INSTRUCTIONS:**

This register contains the following parts.

- Part. - I: Particulars of fog signalmen posted at the station from time to time.
- Part – II: Particulars of receipt and stock of detonating (fog) signals at the station to be filled in whenever detonators are used or received.
- Part – III: Periods of fogs, fog signalmen on duty and details of detonators used.
- Part – IV: Particulars of issue and testing of fog signals at the station.
- (b) In charge of the station shall ensure that the information maintained in the register is kept upto date and is accurate in all respects.
- (c) Transportation inspectors shall check the registers and also the stock of detonators on hand each time they visit the station and initial with date as an indication having done so.

CERTIFICATE:-

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

APPENDICES

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

APPENDIX – ‘A’

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

1.0 GATE WORKING INSTRUCTIONS OF “B2” CLASS TRAFFIC INTERLOCKED LEVEL CROSSING GATE OF L.C. NO. ST-69 AT KM 109/35-39(UP), 109/36-38(DN) SITUATED IN BETWEEN DN STARTER AND DN ADV. STARTER SIGNALS OF HNPA STATION.

1.1 GENERAL INSTRUCTION:

1.1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

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

1.	Number of Level Crossing Gate:	ST-69
2.	Engineering or Traffic Gate:	Traffic
3.	Under control of Station Master / SSE(P.WAY)	SM/HNPA
4.	Location at KM:	109/35-39(UP),109/36-38(DN)
5.	At Station:	HNPA
6.	In between stations:	HNPA-SRGP
7.	BG/MG/NG:	BG
8.	Single line / Double line / Multiple line:	Double Line
9.	Normal Position:	Open to Road Traffic.
10.	Interlocked / Non-Interlocked:	Interlocked.
11.	Means of Interlocking	Controlled by-47 in VDU
12.	Provision of Gate signal at Kms.	NIL.
13.	Signaling arrangements:	Interlocked With Station Stop Signal.
14.	Means of communications /Telephone with or without Voice logger	Magneto telephone communication with Gate from SM/HNPA.
15.	Width of level crossing gate:	5.5 M.
16.	Type of road (NH/SH/Others):	Others.
17.	Name of Road:	NH 42 - Papsara Village Road
18.	Metalled / non-metalled:	Metalled
19.	Approach road:	Metalled
20.	Width of the road:	5.5 M
21.	Angle of road crossing (in case of the skew gates):	90 Degree
22.	Road gradient (if any)	North/East side: 1 In 100 South/West side: 1 In 100
23.	Road alignment (straight/curve)	North/East side: Straight South/West side: Straight
24.	Provision of height gauges:	Provided
25.	Type of Barriers:	Electrically Operated Lifting Barrier.
26.	Length of Check rails:	7.5 M
27.	Road surface in between LC gates:	Hexagonal concrete blocks.
28.	Length of Rumble strip / speed breakers:	7.5 M
29.	Road signs:	Available.
30.	Speed breaker indication board:	Provided
31.	TVU:	22830 on 09/2024
32.	Census next due on:	09/2027
33.	Demarcation for placement of Detonators:	Displayed
34.	No. of Gatekeepers working:	02 (12 Hours Shift)
35.	Nearest Railway Medical Assistance	Talcher.
36.	Nearest Private Medical Assistance available (if any):	HNPA.
37.	List of equipment available Yes / No:	Yes

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1.2 EQUIPMENTS:

<u>S N</u>	<u>DESCRIPTION</u>	<u>REQUIREMENT</u>	<u>TO BE USED AS</u>
1.	LED based flashing Tri colour hand signal lamps	Two	One for use and another for spare.
2.	Green hand signal flag	One flag mounted on sticks	To hold in furled condition while passing train.
3.	Red hand signal flag	Two flags mounted on sticks	One to hold in furled condition and another for spare.
4.	Red banner flag mounted with sticks	Double Line-2	In case of obstruction, one flag is to be displayed on each line except on single line it is to be placed on either side of the line.
5.	Spare chains with padlocks	2 chains with 2 padlocks	For securing gate against road traffic in case of gate boom cannot be closed.
6.	Stop boards	2 retro reflective stop boards with stands	To display towards road traffic when gate is secured by gate chains due to failure of booms.
7.	Padlock	One	To lock the door of the gate lodge in case of necessity.
8.	Detonators	(10) Ten in a tin case	For use in case of obstruction of track.
9.	Tommy bar	One	For leveling the soil surface or to clean the channels of rails.
10.	Bucket	One	To keep water.
11.	Whistle	One	For alerting road users on approach of train and LP/Train Manager to call their attention.
12.	Wall clock	One	To note down the timings in PN/Log book
13.	A small size chain for use in case of failure of gate boom/leaf lock.	Two	For securing boom in closed condition in case of failure of boom lock.

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.

- Gate Working Instructions in Hindi/English.
- Gate Working Instructions in Local vernacular language
- Gatekeeper Rule Book in Local vernacular language.
- List for tools and books.
- Duty rosters.
- Certificate of Competency for working as gatekeeper.
- Bio-data particulars of Gatekeepers, including date of passing vision test, Initial/refresher course, safety camp etc.
- Accident Register.
- Records of last census of road traffic at LC gate.
- Public Complaint Book.
- Inspection Book.

1.4 DUTIES OF GATEKEEPER:

1. ALERTNESS:

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

2. POSITION OF GATEKEEPER DURING PASSAGE OF TRAINS:

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

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

3. ROUTINE DUTIES OF GATEKEEPER:

- i) Gatekeeper shall ensure that red banner flag by day and red light by night is placed across the track in case of emergency and obstruction on the track.
- ii) Gatekeeper shall ensure that all gate light and hand signal lights are lighted and kept burning continuously from sunset to sunrise.
- iii) Gatekeeper shall perform his duties strictly according to the duty roster and shall not leave the gate unless his reliever arrives and takes over charge from him. However, if it is necessary to leave the gate in an emergency, he must close and lock the gate against road traffic, before leaving the gate.
- iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- v) Gatekeeper shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle/wagons /trains/battery/box on fire, shifted load, falling material like brake blocks, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.
- vi) Gatekeeper shall also be prepared to repeat any signal which TMR may give to Loco Pilot.
- vii) If lifting barriers get damaged or becomes out of order, the Gatekeeper shall use the spare chain with disc and padlocks for securing the gate against road traffic.
- viii) Gatekeeper shall report to the nearest Station Master, Gang mate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- ix) Gatekeeper shall wear badge and prescribed uniform while on duty at level crossing gate.
- x) Gatekeeper shall ensure that he is having competency certificate in his possession while on duty.
- xi) Gatekeeper shall work the gate as per gate working instructions and remain well conversant with these instructions.
- xii) Gatekeeper shall ensure that equipments supplied at the gate is in good order and ready for immediate use.
- xiii) Gatekeeper shall see that the channel for the flange of the wheel is kept clear.
- xiv) Gatekeeper must keep the road surface well-watered and rammed in case of non-metalled roads.
- xv) Gatekeeper must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- xvi) Gatekeeper shall prevent tress passing by persons or cattle to the maximum extent.
- xvii) Gatekeeper on electrified section shall watch that road vehicles/animals passing from gate are within the height loading gauge provided on either side of the Level crossing gate.
- xviii) Before opening the gate, he shall ensure that the train has passed complete over the level crossing by observing the last vehicle indicator of the train.
- xix) In the event of gate signal becoming defective the gatekeeper shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.

4. ACTION IN CASE OF UNUSUAL OCCURRENCE OF TRAIN.

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

- i) He shall take prompt action to warn the Loco Pilot/TMR of the passing train by showing red flag by day and red light by night.
- ii) He shall simultaneously try to draw the attention of the Loco Pilot/TMR by whistling continuously, shouting, gesticulating, and throwing ballast on the brake van or by any other means
- iii) If Loco Pilot/TMR fails to take notice, Gatekeeper shall immediately inform the Station Master on duty to take appropriate action, under exchange of private number.
- iv) In case of train parting, Gatekeeper shall not show stop hand signal but shall show prescribed signal for train parting.

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- v) He shall endeavor to attract the attention of the Loco Pilot/TMR by whistling continuously, shouting, gesticulating, and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible.
- vi) In case the train does not stop, Gatekeeper shall immediately inform the Station Master, to take appropriate action, under exchange of private number.

5. ACTION IN AN EMERGENCY AT THE LC GATE:-

- i) In case of an obstruction at the level crossing gate, Gate Keeper shall maintain the gate signals, if any, in the 'ON' position by normalizing slot switch/signal knob.
- ii) Thereafter, if he is unable to remove the obstruction, Gate Keeper shall immediately inform the Station Master on duty, by telephone, regarding the defects/obstructions at the gate, under exchange of private number.
- iii) If there is no response from the Station Master after two or three attempts he shall first protect the gate and then inform on phone.

THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER: -

(A) ON ELECTRIFIED SECTION:-

- i) On noticing that, the whole or part of the OHE or a feeder or a cable falling down, the gate keeper shall ensure that, as far as possible, human beings, animals or vehicles etc are kept away in order to avoid any contact with the live equipment.
- ii) As soon as it is noticed that, Pantograph of an electric rolling stock getting damaged and/or entanglement of the same with the OHE, he shall make every possible effort to stop the train and immediately inform SM on duty.
- iii) Any damage to the track or structures of the OHE comes to the notice of on duty GK, he shall immediately inform SM on duty and take all necessary measure for protection of the line as under,

(B) PROTECTION ON DOUBLE LINE:-

- i) If both lines are obstructed the Gatekeeper shall plant a red banner flag by day and a red light by night at 5 meters away from the line on which train is expected to arrives first.
- ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line at 5 meters away from the site of obstruction.
- iii) Gatekeeper shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night.
- iv) Gatekeeper shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters and place one detonator on the line. Thereafter he shall proceed to a distance 1200 meters from the level crossing gate and place 3 detonators on the track in 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
- vii) In case the Gate Keeper observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- viii) Thereafter, he shall warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(C) OTHER ACTIONS TO BE TAKEN BY GATEKEEPER:

- i) At night, Gatekeeper shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub paras (a) and (b) above.
- ii) If the gate is broken by a road vehicle, which is fouling the track or if lifting barriers or any other part of the gate foul the track or if there is any other obstruction at the gate, the Gatekeeper shall take immediate action.

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

1.5 ENGINEERING ITEMS:

- (i) Visibility:

DIRECTION	SIDE	VISIBILITY DISTANCE
UP	Right	1485 M.
	Left	1510 M.
DOWN	Right	620 M.
	left	660 M.

- (ii) Speed Breakers: - Speed Breakers of approved Design are provided on either side of the Level Crossing.

- (iii) Periodical Census of traffic has been taken and the recent TVU is 22830 as on 09/2024

1.6 SPECIAL INSTRUCTIONS:-

1. MODE OF OPERATION:

This is a Manned, interlocked traffic L.C .Gate situated at the SRGP end of the yard in between DN Starter signals and DN Adv. Starter at Km 110.357 {109/35-39(UP), (109/36-38(DN).} This gate is interlocked with Station stop signals. Telephone communication is provided between the L C. gate lodge with SM office of HNPA Station. The level crossing gate is of lifting barrier type and motor operated by means of HAND GENERATOR/MOTOR from panel provided at the gate lodge. The normal position of the gate is open to road traffic.

When it is necessary to close the gate, for taking of signals, the SM on duty shall inform the gatekeeper to close and lock the gate. The gatekeeper on duty shall close the barriers of the LC gate by operating the 'G' push button provided on the panel. Gate man will keep the green push button till gate is closed & locked against road traffic. Then key 'X' is to be extracted from EKT-1 and inserted in EKT-2. This Key 'X' will be transmitted electrically to panel in conjunction with switch "GS" reversed to control concerned signals. Switch 'GS' is provided in the gate lodge to put back the concerned signal to danger in case of emergency by the on duty gatekeeper.

After passage of the Train, the SM on duty shall inform the gatekeeper and click Trans control (47) for transmitting the key back to the gatekeeper for operating the gate. After transmission the key in indication will start flashing in VDU suggesting that the key is transmitted to LC gate. An indication will appear near EKT at gate lodge suggesting the key-X can be extracted from the EKT-2. Key-X is inserted in EKT-1 and push button Y is pressed till the gate is opened. The LC gate shall be so worked as to cause least possible inconvenience to the vehicular traffic consistence with safety as per subsidiary rule 16.03.01 (a).

One emergency key mechanically free & electrically proved is provided in a red sealed glass box for emergency opening of the gate incase of failure in extracting key-X from EKT. Concerned signals will be put back to "ON" position when emergency key is extracted. The date and time of breaking the sealed cover of Emergency Key Box shall be recorded and signed with reasons by the gatekeeper.

Working of emergency key for electrically operated gate.

Normally, crank handle welded with EKT key remains inside the EKT-3 (provided in the sealed red box). When the normal operation (closing/opening) of boom fails from the gate panel, the gate main on duty will inform the SM on duty regarding the failure and seek his permission to use emergency key. After obtaining the permission from SM on duty, the gatekeeper on duty will break the seal of the red box open it and take out the EKT key welded with crank handle from the EKT-3. By using crank handle closing/opening of the booms are to be done. After completing the operation the EKT key welded with crank handle is to be inserted in EKT-3 and the box is to be closed and S&T staff is to be advised to seal the red box.

In the event of failure of UP reception signal or DN dispatch signal or during Non Interlocking working, the Traffic gatekeeper shall be informed and the Train shall be passed in terms of SR 3.69.02, 3.69.03 and 3.70.01 after ensuring correct closing and locking of L.C Gate. During this period the L.C Gate shall be opened only when necessary and safe to do so.

INSTRUCTIONS FOR OPERATION OF SLIDING BOOM:

- a. Sliding boom provided at the near end of gate lodge (sliding barrier – 2) has been padlocked with chain in open position and sliding boom at far end (sliding barrier – 1) in open position has been locked by E-type lock.
- b. In case of breakage of normal boom or LC gate cannot be closed due to failure, the gate man shall release electro-mechanically free Key 'X1' from "EKT-4" provided in the gate lodge. Extraction of Key 'X1' from "EKT-4" will put back the road signals to danger and simultaneously hooter will sound.
- c. The gatekeeper shall insert the Key 'X1' in E type lock provided at far end sliding boom and unlock the emergency sliding boom. He will slide the boom against the road traffic up to the lock post and lock it in closed position by pushing the locking plunger. Locking plunger initially in locked condition can be released by unlocking the E-type lock with the key attached to the chain of the boom. This will also release key "SB-1" attached to the lock post. Key "SB-1" when released locks the far end sliding boom.
- d. The near end sliding boom is normally in padlocked condition and the key is in the custody of gatekeeper. The gatekeeper shall unlock the sliding boom by this key and slide it against the road traffic up to the lock post and lock it in closed position by pushing the locking plunger. The locking plunger is initially in locked condition. This can be freed by unlocking the E-type lock with the help of key "SB-1". This will also release key "SB-2" attached on the lock post. Key "SB-2" when extracted locks the near end sliding boom and key "SB-1". This key "SB-2" is to be transmitted to SM by inserting it in "EKT-5" provided in the gate lodge in conjunction with the GS (gate slot) switch provided in the gate lodge to enable the SM on duty to take off concerned signals.
- e. In case of any damage to sliding boom when it is in closed condition to road traffic, leading to infringement or obstruction on track, the gatekeeper shall normalize the switch 'GS' to put back the concerned signals to danger.
- f. After passage of train, SM on duty shall transmit the gate Key. The gatekeeper shall extract key "SB-2" from "EKT-5", normalize the switch 'GS', unlock the sliding boom and operate the gears in reverse sequence of operation to normalize the sliding boom.

In the event of failure of reception and dispatch signals or during Non Interlocking working the Traffic gatekeeper shall be informed and the Train shall be passed in terms of SR 3.69.02, 3.69.03 and 3.70.01 after ensuring correct closing and locking of L.C Gate. During this period the L.C Gate shall be opened only when necessary and safe to do so.

The LC gate shall be so worked as to cause least possible inconvenience to the vehicular traffic consistence with safety as per subsidiary rule 16.03.01 (a)

2. **INTIMATION TO GATEKEEPER:**

- i) Before taking off reception/ departure signals, Station Master/HNPA shall inform the gatekeeper, the number, description, and direction of the train.
- ii) The gatekeeper shall close the gate and transfer the key to the Station Master/ HNPA The reception/departure signals will then be taken 'OFF'
- iii) In order to ensure that road traffic is not held up for a long time, the Station Master/ HNPA must ensure that the train is ready for departure in all respects before he advises the gateman for closing the gate.
- iv) When a train has to be piloted to and from the station yard or any shunting movement is to be done, the staff deputed to pilot the train to perform the shunting across the gate shall be personally responsible to ensure that the gate is closed against road traffic before allowing any movement across the gate.

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1.7. FAILURE OF TELEPHONIC COMMUNICATION:

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

- i) Station Master on duty /HNPA shall send written advice to the Gate Keeper through the porter with full details of number, description and direction of the train.
- ii) Gate Keeper on receipt of such advice shall close the gate and transmit the key to the Station Master, which will enable him to take 'OFF' reception/Departure signals.
- iii) When sufficient time is not available because of greater frequency of train service, station Master/HNPA will issue written authority to the train Loco Pilot to pass the signal at 'ON' position.
- iv) In addition, Station Master/HNPA shall also issue a caution order advising the Loco Pilot to whistle continuously and approach the gate cautiously.
- v) The train Loco Pilot shall be instructed to pass the gate cautiously, on before signaled by the gatekeeper. If hand signal is not seen, Loco Pilot should be prepared stop short of the gate and ensure that gate is closed following GR.3.73.
- vi) In case of an approaching train, the Station Master/HNPA shall advise the SM/SRGP under exchange of private number, that the telephone at the gate has failed.
- vii) The station Master/SRGP shall then issue a caution order to the Loco Pilot before dispatching a train into the block section from his end.
- viii) He should also advise S&T staff responsible for maintenance of the telephone rectify the defect at the earliest.
- ix) Normal working will be resumed only after S&T staff rectify the telephone and issue reconnection /fit memo for the same.

1.8 FAILURE OF LIFTING BARRIERS:-

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

Note: Authority to pass signals in 'ON' position as per rules shall also be issued to the Loco Pilots of both departing trains.and arriving trains.

1.9. FAILURE OF GATE WHEN THE GATE IN CLOSED POSITION AND CANNOT BE OPENING THE GATE FROM THE GATE PANEL: -

- (i) If the gate cannot be opened then gatekeeper must immediately inform the Station Master on duty on telephone, under exchange private number.
- (ii) Switch GS (Gate Slot) should be in normal position. If the gate cannot be opened from the Gate panel, emergency direct crank handle operation has to be done. The gatekeeper on duty shall obtain permission from SM on duty under exchange of private number for breaking the seal for emergency operation. For this operation, a Red sealed glass box is provided at the gate lodge. A crank handle welded with EKT is provided in the sealed box. After breaking the seal, the EKT

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has to be taken out from the box which is mechanically free. Unlock the Barrier 'A' and Barrier 'B' by crank handle. Then the crank handle is to be inserted into the hole provided in the mechanism box rear door. For opening the barrier, rotate the crank handle anti clock wise direction. As soon as the crank handle is inserted electrical operation is automatically cut off and remains cut off till crank handle is removed from the hole. In addition to above facilities, individual operation of barriers is also provided. For individual barrier operation, barrier "A" and "B" can be operated from pedestal individually.

- (iii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- (iv) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- (v) He shall also advise the Station Master at the other end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vi) Station Master shall advise S & T staff responsible for maintenance of transmitter to rectify the defect at the earliest.
- (vii) Normal working will be resumed only after S & T staff repairs the pedestal/gate operating panel/key transmitter and issue reconnection/ fit memo for the same.

1.10. FAILURE OF GATE WHEN THE GATE IN OPEN CONDITION:

- 1. If the gate cannot be closed from Gate panel then gatekeeper must immediately inform the Station Master on duty on telephone, under exchange of private number.
- 2. The gatekeeper on duty shall obtain permission from SM on duty under exchange of private number for breaking the seal for emergency operation. For this operation, a Red sealed glass box is provided at the gate lodge. A crank handle welded with EKT is provided in the sealed box. After breaking the seal, the EKT has to be taken out from the box which is mechanically free. Then the crank handle is to be inserted into the hole provided in the mechanism box rear door. For closing the barrier, rotate the crank handle clock wise direction. As soon as the crank handle is inserted electrical operation is automatically cut off and remains cut off till crank handle is removed from the hole. In addition to above facilities, individual operation of barriers are also provided. For individual barrier operation, barrier "A" and "B" can be operated from pedestal individually.
- 3. Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- 4. Station Master on duty shall issue caution order to the Loco Pilot of a departing train.
- 5. He shall also advise the Station Master at the dispatching end, under exchange of private number to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- 6. Station Master shall advise S & T staff responsible for maintenance of pedestal/gate operating panel/key transmitter to rectify the defect at the earliest
- 7. Normal working will be resumed only after S & T staffs repair the pedestal/gate operating panel/key transmitter and issues reconnection/ fit memo for the same.

1.11. OBSTRUCTION AT THE GATE:

- i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gatekeeper shall immediately normalize GS switch to put back concerned signals and then fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gatekeeper shall inform the Station Master / HNPA on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) Station Master / HNPA on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- iv) If there is no response from the Station Master/ HNPA after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gatekeeper shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of Gatekeeper under item No.1.4. (5).
- vi) Thereafter he shall protect the gate from the other direction also.

- vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and reply these details to the station Master/ HNPA who shall not start the trains unless he has been assured by the Gatekeeper that the road vehicle or the lifting barriers are not fouling the track.
- viii) The Station Master/ HNPA shall also inform the station Master /SRGP at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the gatekeeper shall inform the Station Master/ HNPA accordingly, under exchange of private number.
- x) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
- xi) Station Master/ HNPA shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- xii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.
- xiii) Station Master/ HNPA shall then issue a caution order to Loco Pilots of all trains to proceed cautiously, and pass the gate signal at 'ON' position on green hand signal of the Gatekeeper, if the gate is broken, but is clear of any obstruction.

1.12. OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gatekeeper, the gatekeeper and Station Master will adopt the procedure given under item No.1.12 above. If the obstruction fouls the level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstructions.

1.13. ACCIDENTAL ROLLING DOWN OF TRAINS:-

When the gatekeeper seen that a train is rolling down or immediately after receipt of the information about accidental rolling down of the train the gatekeeper shall:-

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

CERTIFICATE: -

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

2.0 GATE WORKING INSTRUCTIONS OF “B2” CLASS ENGG. NON-INTERLOCKED LEVEL CROSSING GATE NO.ST-65 AT KM 106/9-11(UP), 106/10-12(DN) IN BETWEEN SARAGIPALI – HANDAPA STATIONS.

2.1 GENERAL INSTRUCTIONS: -

2.1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

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

1.	Number of level crossing gate	:	ST-65
2.	Engineering or Traffic Gate	:	Engineering.
3.	Under control of Station Master or SSE(P.WAY)	:	PWI
4.	Location at KM	:	106/9-11 (UP), 106/10-12 (DN)
5.	At station	:	----
6.	In between station	:	SARAGIPALI – HANDAPA
7.	BG/MG/NG	:	BG
8.	Single line/Doubling Line/Multiple Line	:	Double line
9.	Normal position	:	Close to road traffic
10.	Interlocked/Non-interlocked	:	Non-Interlocked
11.	Means of interlocking	:	Nil
12.	Provision of gate Signal at Kms	:	(a) UP Gate Signal: Nil (b) DN Gate Signal: Nil
13.	Signaling arrangement	:	Nil
14.	Means of communications /Telephone with or without Voice logger	:	Voice logger telephone from Gate goomty with SM office /HNPA
15.	Width of Level Crossing Gate	:	7.5 MTRS
16.	Type of Road (NH/SH/Others)	:	Others
17.	Name of Road	:	Village Road
18.	Metaled/Non Metaled	:	Metaled
19.	Approach Road	:	Metaled
20.	Width of the Road	:	5.5 MTRS.
21.	Angle of Road Crossing (in case of the SKEW gates)	:	Nil
22.	Road Gradient (if any)	:	(a) North/ East side - 1 in 30 (b) South/ West side – 1 in 30
23.	Road alignment (straight/curve)	:	(a) North/East side – Curve (b) South /West side – Curve
24.	Provision of height gauge	:	Provided
25.	Type of Barrier	:	Winch Operated Lifting barrier
26.	Length of check Rail	:	9.50 MTRS.
27.	Road surface in between LC gates.	:	CC BLOCK
28.	Length of Rumble strip/speed breakers.	:	5.5 MTRS
29.	Road Signs	:	Provided
30.	Speed breakers indication board	:	Available.
31.	TVU	:	12110 on 09/2024
32.	Census next due on	:	09/2027
33.	Demarcation for placement of detonators.	:	Provided.
34.	No. of Gatekeepers working	:	02 (12 Hours shift)
35.	Nearest Railway Medical Assistance	:	Talcher
36.	Nearest Private Medical Assistance available (if any)	:	HNPA
37.	List of equipment available Yes / No.	:	YES

2.2. EQUIPMENT:

ITEMS	QUANTITY/NUMBERS
1. LED based flashing tri colour hand signal lamp	3
2. Hand signal Flag Green	1 mounted on sticks
3. Hand Signal Flag Red.	3 mounted on sticks
4. Banner Flag Red	3
5. Posts for exhibiting red banner flag	2
6. Spare chains with padlocks	2 with stop mark
7. Detonators	10 in tin case
8. Gate Lamps	2
9. Tommy Bar	1
10. Mortar Pan	1
11. Spade/Fowrah	1
12. Rammer	1 (in case of asphalted road this may not be provided)
13. Pick Axe	1 (in case of asphalted road this may not be provided)
14. Tin case for flags	1
15. Water pot/Bucket	1
16. Canister for Muster Roll	1
17. Set of spare spectacles of Gatekeeper wearing glasses.	1
18. Board demarcating protection of level crossing Gate diagram in case of obstruction on Gate	1
19. Basket	1
20. Whistle	1
21. Wall clock	1
22. Small size chains with padlocks to be used in case of failure of boom lock.	2

2.3 RECORDS TO BE KEPT AT GATE LODGE.

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

- i) Gate Working Instructions in Hindi/English.
- ii) Gate Working Instructions in Local vernacular language
- iii) Gatekeeper Rule Book in Local vernacular language.
- iv) List for tools and books.
- v) Duty rosters.
- vi) Certificate of Competency for working as gatekeeper.
- vii) Bio-data particulars of Gatekeepers, including date of passing vision test, Initial/refresher course, safety camp etc.
- viii) Accident Register.
- ix) Records of last census of road traffic at LC gate.
- x) Public Complaint Book.
- xi) Inspection Book.

2.4 DUTIES OF GATEKEEPER:

1. ALERTNESS:

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

S.SAINI
DSTE(SIG)/SBP

L. B. JENA
Sr. DEN (East)/SBP

LINGARAJ GARTIA
DOM(G)/SBP

2. POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:

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

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

3. ROUTINE DUTIES OF GATE KEEPER:

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

4. ACTION IN CASE OF UNUSUAL OCCURRENCE OF TRAIN:

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

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

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

5. ACTION IN AN EMERGENCY AT THE LC GATE:

- i) Place banner flag/red light lamp on the stave on track at 5M away from the check rail end.
- ii) Thereafter, if he is unable to remove the obstruction, Gate Keeper shall immediately inform the Station Master on duty by telephone, regarding the defects/obstructions at the gate, under exchange of private number.
- iii) If there is no response from the Station Master after two or three attempts he shall first protect the gate and then inform on phone.

THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER: -

(A) ON ELECTRIFIED SECTION:

- i) On noticing that, the whole or part of the OHE or a feeder or a cable falling down, the gate keeper shall ensure that, as far as possible, human beings, animals or vehicles etc. are kept away in order to avoid any contact with the live equipment.
- ii) As soon as it is noticed that, Pantograph of an electric rolling stock getting damaged and/or entanglement of the same with the OHE, he shall make every possible effort to stop the train and immediately inform SM on duty.
- iii) Any damage to the track or structures of the OHE comes to the notice of on duty GK, he shall immediately inform SM on duty and take all necessary measure for protection of the line as under,

(B) PROTECTION ON DOUBLE LINE:-

- i) If both lines are obstructed the Gatekeeper shall plant a red banner flag by day and a red light by night at 5 meters away from the line on which train is expected to arrives first.
- ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line at 5 meters away from the site of obstruction.
- iii) Gatekeeper shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night.
- iv) Gatekeeper shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters and place one detonator on the line. Thereafter he shall proceed to a distance 1200 meters from the level crossing gate and place 3 detonators on the track in 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
- vii) In case the Gate Keeper observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.

- viii) Thereafter, he shall warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(C) OTHER ACTIONS TO BE TAKEN BY GATEKEEPER:

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

2.5 ENGINEERING ITEMS:

i) **Visibility :-**

Direction	Side	Visibility Distance
UP	Right	990 m.
	Left	1220 m.
DN	Right	990 m.
	Left	1220 m.

- ii) Speed Breaker: - Speed Breakers of approved design are provided on either side of the Level Crossing .
- iii) Periodical Census of traffic has been taken and the latest TVU is 12110 on 09/2024.

2.6 SPECIAL INSTRUCTIONS:

1. MODE OF OPERATION:

This is a Non-interlocked 'C' Class Engineering L.C. Gate situated at Km 106/9-11 (UP), 106/10-12 (DN) between SRGP - HNPA stations. This gate is provided with winch operated coupled lifting barriers. The gatekeeper closes and opens the lifting barriers of gate manually by operating the winch. Telephone connection is provided between the L C. gate lodge and SM's office at SM/ HNPA station. The level crossing gate is normally closed to road traffic. The SM/ HNPA shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gateman supported by exchange of private number. When the gatekeeper desires to open the gate for passage of road traffic he should ensure that no PN has been exchanged with the SM/ HNPA for the passage of train or the whole of the train with last vehicle indicator has passed over the level crossing gate for which the gatekeeper has exchanged private number with the SM/ HNPA. Before opening the gate for road traffic, he shall display banner flag/danger signal at either side of the track at a distance of 5 meters away from the gate.

2. EXCHANGE OF PRIVATE NUMBERS.

- i) The normal position of level crossing gate being "Closed to Road Traffic" it should always be in closed condition against road traffic, except when, it is opened for passage of road traffic over the level crossing, subject to conditions prescribed below.
- ii) The SM/ HNPA before permitting each train to enter into the block section, shall ask Gatekeeper on the telephone by giving a Private Number whether, gate is closed against road traffic for the passage of train. The Gateman only after ensuring that the

gate is actually closed and locked against road traffic shall give a Private Number to the SM/ HNP(A) in assurance of gate being closed and locked against road traffic.

- iii) The SM/ HNP(A) shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gatekeeper supported by exchange of private number.
- iv) When the gatekeeper desires to open the gate for passage of road traffic he should ensure that:
 - a) He has not exchanged any private number with the SM/ HNP(A) as per (ii) above.
 - b) If he has exchanged private number with the SM/ HNP(A), the whole of the train with last vehicle indicator has passed over the level crossing gate and SM/ HNP(A) has not exchanged private number with him for any other movement immediately in rear of that train.

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

- v) In case the Gatekeeper is not responding on the telephone or in case the telephone becomes defective or private number is not received from the Gateman, the SM/ HNP(A) shall adhere to the procedure prescribed in SR 16.03.04.
- vi) In the event of failure of telephone, if the gate is required to be opened for the passage of road traffic, the gateman shall look out in both directions before opening the gate to ensure that no train is approaching from either end. He shall then plant a banner flag during day and a hand signal lamp with the red light during night, 5 meters away from the gate on the track on either side. He will thereafter, open the gate for passing the road traffic keeping a red flag / red hand signal lamp ready in his hand to stop approaching train if any.

2.7. FAILURE OF TELEPHONIC COMMUNICATION:

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

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

2.8 FAILURE OF LIFTING BARRIERS:-

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

2.9 OBSTRUCTION AT THE GATE:-

- i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gatekeeper shall immediately fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gatekeeper shall advise the Station Master/ HNPA on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) Station Master/ HNPA on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- iv) If there is no response from the Station Master/ HNPA after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gatekeeper shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gatekeeper under item No.2.4. (5).
- vi) Thereafter he shall protect the gate from the other direction also.
- vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and reply these details to the Station Master/ HNPA who shall not start the trains unless he has been assured by the gatekeeper that the road vehicle or the lifting barriers are not fouling the track.
- viii) The Station Master/ HNPA shall also inform the Station Master/SRGP at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the gatekeeper shall inform the Station Master/ HNPA accordingly, under exchange of private number.
- x) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
- xi) Station Master/ HNPA shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- xii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

2.10 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gatekeeper, the gatekeeper and Station Master/ HNPA will adopt the procedure given under item No. 2.9 above. If the obstruction fouls the level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstruction.

2.11 ACCIDENTAL ROLLING DOWN OF TRAIN:

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

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

CERTIFICATE: -

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

APPENDIX – ‘B’**DETAILS OF SIGNALLING AND INTERLOCKING INSTALLATIONS, INSTRUCTIONS FOR WORKING THEM NORMALLY AND EMERGENCIES ETC. INCLUDING THE POWER SUPPLY ARRANGEMENTS.****1.0 BRIEF DESCRIPTION OF THE SIGNALLING & INTERLOCKING INSTALLATIONS:**

This is a ‘SPL’ class station provided with Standard –II(R) interlocking. The station is provided with Route setting type Electronic Interlocking system having points, signals, track circuits and other signaling gears. The Station is equipped with Multiple Aspect Colour Light Signaling. All points and Signals etc. are power operated through a central Visual Display Unit (VDU) with a standby installed in the SM’s Office.

2.0 DESCRIPTION OF OPERATOR CONSOLE CUM VISUAL DISPLAY UNIT:

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

2.1 SYSTEM OVERVIEW:

An Operator Console consisting of a VDU (colour monitor), with keyboard and pointing device (mouse) connected with a computer (CPU) is provided. The CPU is connected to the Electronic Interlocking (E.I) equipment to exchange control and indication messages. The system is programmed to display the Station Yard Mimic diagram on the VDU and that it allows access to all functions through pop-up menus. When a particular function is selected, an appropriate Menu will appear on the screen. A function (clearance of signal or cancellation, Route release, Point operation, etc.) can be executed through selecting the required operation by clicking the Left button of the pointing device (mouse) on the desired function.

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

2.3. ICONS AND INDICATIONS PROVIDED ON THE VDU

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

SL. NO	ICONS	,	FUNCTIONS	REMARKS
1	SM’s Key	Yellow light when key is ‘IN’	Ensures operation of VDU by authorized person	Protected by pass word
2.	---	Emergency Route release - UP & DN	Flashing indication appears when Emergency route release operation is initiated.	
3.	---	Emergency Gate release	Flashing indication appears when Emergency gate release operation is initiated.	
4.	Emergency Point operation key	Yellow light when key is ‘IN’	Ensures emergency point operation by authorized person	For each operation concerned counter shall register one count higher.
5.	---	System indication On/Off	Indicates System ‘A’ or ‘B’ is in working mode	
6.	Point failure Ack. Icon.	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.
7.	Signal failure Ack. icon	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.
8.	CH-1 to CH10	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.	--
9.	'DN Train Entering Section' muting	Yellow - acknowledged	On getting alarm/buzzer SM shall left click on the button icon to acknowledge it.	
10.	'UP Train Entering Section' muting	Yellow - acknowledged	On getting alarm/buzzer SM shall left click on the button icon to acknowledge it.	
11.	UP Block release	Yellow – Prepared for Block release.	On getting indication SM shall left click on the button icon which shall release Block Handle.	After complete arrival of train this will be activated
12.	DN Block release	Yellow – Prepared for Block release.		
13.	L.C.Gate control-47	Yellow lamp indicates 'Gate Closed'. Red lamp indicates 'Gate LOCKED'.	SM shall right click on the button icon to select menu to Transmit / Receive/emergency operation of gate as required.	In case of emergency operation 'Emergency gate release' indication will appear. For each operation concerned counter shall register one count higher.
14	Line Block	Red when blocked	SM shall point the curser on the icons provided on the berthing track and right click. One drop menu will appear indicating line blocked and un-blocked, SM has to select the required menu.	When line block is selected the concerned berthing portion of track will appear as thick Red line.

3.0. OPERATIONAL PROCEDURE THROUGH VDU AND INDICATIONS:

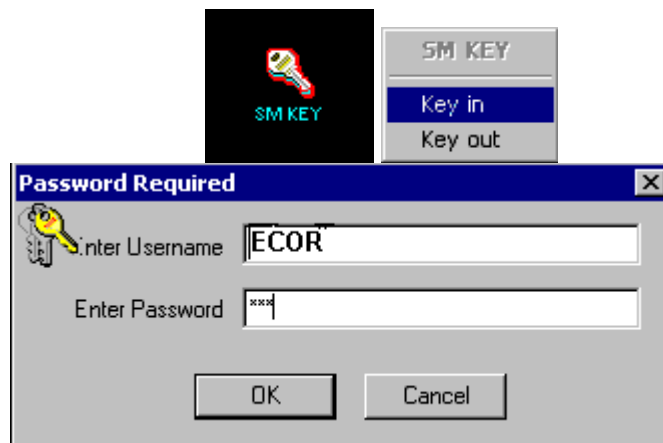
In addition to the mimic yard diagram various other indications will be available on the VDU. The implications of different indications provided and the operational procedure for different functions shall be strictly followed as per the following description.

3.1 ELECTRONIC INTERLOCKING (E.I) SYSTEM INDICATIONS:

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

3.2 OPERATION PROCEDURE OF SS/SM's KEY :

To prevent the unauthorized operation by any person other than SM on duty this facility is provided on VDU. On duty SM needs to track the pointer to the "SM KEY" icon and click the 'KEY IN' menu by the clicking left button of the mouse, by this a Password window will appear. SM on duty needs to enter the password and press the 'OK' Button provided on the Password window. This will allow operation of all the controls e.g., Signals, Points, L.C.gate and Crank handle, etc. through VDU. In case incorrect password or user name is entered, no operation can be made. In such cases the same procedure is to be repeated till correct password is entered.



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

Now the Operating VDU is ready for use & the entire yard can be controlled from the VDU. Similarly, Station Master is to select the KEY OUT to prevent the unauthorized operation.

1.1.1.1 DESCRIPTION OF CROSS OVERS/DS POINTS :-

Srl No	Point No.	Description
1	31	Crossover point between UP Main line and DN Main line at SRGP end.
2.	32	Crossover point between DN main line and UP Main line at BONA end.
3.	33	DS point isolating ORL of Loop line No.4 with Shunting Neck at SRGP end.
4.	34	Crossover point between DN main line and UP Main line at BONA end.
5.	35	Crossover point between loop line No-4 and DN Main line at SRGP end.
6.	36	Crossover point between loop line No-1 and UP Main line at BONA end.
7.	37	Crossover point between UP and DN Main Line at SRGP end.
8.	38	Crossover point between Loop line No.4 and DN main line at BONA end.
9.	39	Crossover point between Loop line No.4 and Loop line No-5 at SRGP end.
10.	40	DS point isolating ORL of Loop line No.4 with T.M. siding at BONA end.
11.	41	Crossover point between Loop line No.1 and UP main line at SRGP end.
12.	42	Crossover point between Loop line No.4 and Loop line No-5 at BONA end.
13.	46	Crossover point between Longer loop line and UP Main line at BONA end with over run line.

3.3 OPERATION AND INDICATION OF POINT:

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

PIONT 31

Normal
Reverse
Emergency Normal
Emergency Reverse

3.3.1 REVERSE TO NORMAL OPERATION:

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

3.3.2 NORMAL TO REVERSE OPERATION:

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

3.3.3 POINT INDICATIONS-

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

3.4 PROCEDURE FOR SETTING OF ROUTES AND TAKING OFF SIGNALS:

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

SIGNAL S1

S1 – S11
S1 – S19
S1 – S15
S1 – S17
C1 – S11
C1 – S19
C1 – S15
C1 – S17
MAIN SIGNAL CANCEL
MAIN ROUTE RELEASE
CALLING ON SIGNAL CANCEL
CALLING ON ROUTE RELEASE

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

3.4.1 SETTING A ROUTE AND ITS INDICATIONS:

To set a route of a signal, click on a possible route of the signal, after doing so the route gets initiated & Red-flashing indication will appear on the replacement track of the signal. Point operation is initiated as per the requirement of the desired route and Normal/ Reverse set indications will start flashing if favorable point detection is not available. After setting of points in the route, overlap & isolation flashing indication will be replaced by steady indication and a complete yellow 'Route set' indication will appear from the replacement track of the signal to the last track of overlap section of the route. Also the points lock indication will appear. A Point locked can be ensured from the Red Steady indication will appear near the point. Finally a Route locked Yellow Steady indication will appear on the immediate rear of the signal. Now the signal

will be taken-off. The yellow route set indication will turn to red when different track circuit portion within the route is occupied during passage of a train.

3.4.2 SHUNT SIGNAL OPERATION:

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

3.4.3 CALLING ON SIGNAL OPERATION:

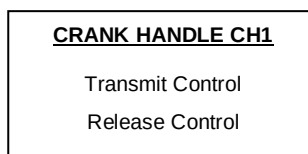
The same procedure as main signal has to be followed as explained above. To set the signal route for CALLING ON signals SM on duty shall select the desired route and left click on the same after a train occupies the approach track circuit in immediate rear of the stop signal. The signal is cleared after a lapse of 60 seconds provided other conditions are fulfilled.

3.5 CRANK HANDLE CONTROL OPERATION:

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



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

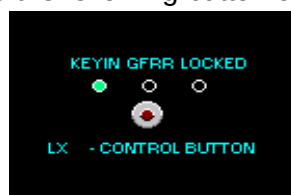


To Transmit the Crank Handle KEY to the field personnel, SM on duty has to click transmit control menu. After transmission the 'KEY IN' indication will start flashing, now the KEY can be extracted from the RKT at site. After extracting the key from the RKT, the 'KEY IN' indication will disappear. When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

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

3.6 LEVEL CROSSING GATE OPERATION:

To Transmit or Release control of the Level crossing gate, click on the Level crossing control button icon provided like the following button on the VDU.



The appearing pop-up menu gives details of the possible commands on the Level crossing gate.

LEVEL CROSSING 47

Transmit Control
Release Control
Emergency Gate Release

Normally no indication will be available on the VDU indicating that the gate control key is out and gate is open. When it is required to close the gate SM on duty shall intimate the gate man to close the gate. On instructed by the SM on duty the gate man shall close and lock the gate and after reversing the concerned slot lever he shall transmit the gate control key to station by inserting and transmitting the key in the RKT. A flashing yellow indication will appear on the VDU seeing which SM on duty shall receive the control by clicking on the L.C. Gate control button icon and select 'Receive'. The flashing indication shall become steady. When the key is required to be transmitted to the Gate man, SM on duty has to transmit the control by clicking on transmit control. After transmission, the KEY IN indication will start flashing, now the KEY can be extracted from the RKT for opening the gate. For closing the gate, the gateman after closing the gate insert the key in the EKT. KEY IN flashing indication will appear on the VDU. Now the SM has to release the control for the steady indication. The locked indication will appear when the LC Gate has locked by initiation of any of the possible signal routes.

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

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

4.0 **EMERGENCY OPERATIONS:**

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

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

To cancel a signal route, when the route is set and the signal is taken-off, click on the signal. After clicking by the left button on the mouse, a pop-up menu will appear as shown in Para 3.4 above. 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 the route locked indication will start flashing for 120 sec & the Emergency Route Release Indication (UP / DN as the case may be) will flash for the entire time interval. After the completion of 120 sec, the locked route will be released. This action will be recorded in a counter. The counter number will increase to next higher number for each such operation 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 no. in a register.

4.2 **EMERGENCY OPERATION OF POINTS:**

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

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

4.2.1 **EMERGENCY NORMAL OPERATION**

Before doing the emergency operation the Emergency Point Operation Key is to be made "KEY IN" by clicking the 'KEY IN' menu. The user name and password is to be logged in. Track the pointer to 'EMERGENCY NORMAL' menu and click. A Normal flashing indication will appear and the indication will be steady after the point is set to Normal. This action will be recorded in a counter. The counter number will increase by next number for each such operation and also, this number should be recorded by the SM on duty who shall record the details of the Emergency Point Operation along with the latest counter no. in a register.

After the completion of the Emergency point operation, the Key to be 'KEY OUT' by clicking 'KEY OUT' menu. The user name and password is to be given for "KEY OUT" also.

4.2.2 EMERGENCY REVERSE OPERATION OF POINTS:

Before doing the emergency operation, Emergency Point Operation Key is to be made 'KEY IN' by clicking the 'KEY IN' menu. The user name and password is to be logged in. Emergency reverse menu is to be clicked. Track the pointer to 'EMERGENCY REVERSE' menu and click. A Reverse flashing indication will appear and the indication will be steady after the point is set to reverse. The counter number will increase by next number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Emergency Point Operation along with the latest counter number in the register and SM's diary.

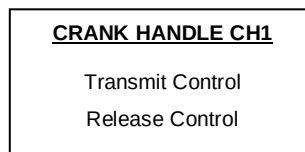
After the completion of the Emergency point operation, the Key to be 'KEY OUT' by clicking 'KEY OUT' menu. The user name and password is to be given for 'KEY OUT' also.

4.2.3 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 click on the crank handle control button icon provided like the following on the VDU.



On clicking, the appearing pop-up menu gives details of the possible commands on the Crank Handle.



For Transmitting the Crank Handle KEY to the field personnel SM on duty has to click transmit control menu. After transmission the 'KEY LOCKED' (Red) indication will start to flash for 120 seconds & 'KEY IN' remains steady. After a lapse of 120 seconds 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 emergency crank handle key in the RKT, flashing 'KEY IN' indication will appear on the VDU, Now, the SM on duty shall Release the control for the Steady indication by clicking 'RELEASE CONTROL' menu.

The counter number will increase by next 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 the counter register.

4.3 EMERGENCY GATE OPERATION:

L.C. Gate control can be released and the gate can be opened by this operation when LC gate control remains in locked condition due to setting of any of the signal routes over it or otherwise. For releasing the gate by the Emergency operation the SM on duty has to cancel the signal by signal cancellation control of the relevant signal. Then he has to click the Emergency Gate release control in the Gate pop-up menu. Now the 'LOCKED' (Red) indication will flash for 120 seconds & after the time has elapsed the 'LOCKED' (Red) indication will vanish. Now the SM on duty shall transmit the 'GATE CONTROL' in this condition and 'KEY IN' indication starts flashing. Now the KEY can be extracted from the RKT at Gate Lodge and gate can be opened. This

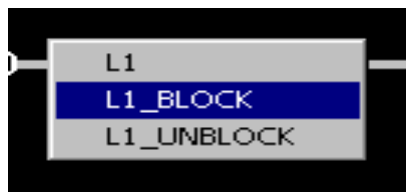
action will be recorded in a counter. The counter will increase by next number for each and every such operation and also, this number should be recorded by the SM manually in a register. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Emergency Gate Operation along with the latest counter no. in a register.

4.4 **LINE BLOCK AND UNBLOCK:**

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

4.4.1 **LINE BLOCK:**

To set the 'LINE BLOCKED', the SM on duty shall select "L. No._ BLOCK" command using the left mouse button, after selecting the Line Block that particular line will be blocked for all the possible Track circuit section on that particular line. The 'TRACK BLOCK' yellow colour indication will be displayed after the successful application of such a blocking process on the VDU.



4.4.2 **LINE UNBLOCK:**

To release the set block of any particular line, the SM should select "L. No.____ UNBLOCK" command using the left mouse button. After selecting the "L. No.____ UNBLOCK" that particular line will be available for the train movement leading to all the possible L1 Track circuit section.

5.0 **PROCEDURE FOR RESETTING OPERATION OF LVCD (DIGITAL) AXLE COUNTER IN SECTION HNP(A-SRGP AND HNP(A-BONA.**

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

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

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

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

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

- Insert SM's LV reset key, turn right and keep pressed.
- Press LV reset button provided on the panel.
- Release SM's LV reset key and reset button.
- Turn left the SM's LV reset key and remove it.
- The system obtains preparatory reset state and preparatory reset indication (miniature Green) glows on the panel.

- f. The counter reading increases by one count after a gap of 5 seconds approximately.
- g. The counter reading should be recorded.
- h. First train is to be piloted to the section to make the system normal.

The SM on duty shall record in his Train Register the resetting operation giving details of train number, time, Private Number exchanged with SM in rear, giving reasons for the resetting operation. If the axle counters functioning properly now, then Block Section cleared indication 'GREEN' will appear on the panel and the concerned Block working will be normalized.

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

6.0 MAIN SIGNAL LAMP FAILURE INDICATION AND BUZZER ACKNOWLEDGMENT:

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

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

Whenever there is failure of point due to non-setting, point failure indication flashing light appears near the point button 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 can identify the defective point. After the failure is rectified, the flashing light above the 'POINT FAILURE ACK' button will disappear.

6.2 SHOWING OF COUNTERS:

The following counters are provided for recording the actions such as emergency point operation, emergency route release etc. as shown in figure below would be displayed in rectangular boxes on SM table

1. Emergency Route Release.
2. Emergency Point Operation.
3. Emergency Crank handle release.
4. Emergency gate release

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.

7.0 TRACK CIRCUITS:

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

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

8.0 TAKING OFF CALLING-ON SIGNAL:

Miniature color light Calling-on signal is provided below the Home signals in terms of GR.3.13 (6)(b). A Calling-on signal shows no light in the 'ON' position. A Calling-on signal is taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF' for admission of

train on blocked line or due to failure of main signal due to any other reason and for shunting purpose.

To take off Calling-on signal the train must come to stop at the foot of the home signal, occupying the track circuit (1AT, 2AT etc). as the case may be) in rear of the Home signal. When a train occupies the track circuit, a RED light strip will appear on the VDU. The particular route on which the train is intended to be received shall be set by selecting and setting desired route through VDU by SM on duty. After a lapse of 60 seconds, the Calling-on signal clears. Calling-On signal below Home signal white light will glow at the concerned Calling-on signal on the VDU.

9.1 RELEASE/CANCELLATION OF ROUTE:

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

NOTE:

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

9.2 REPLACEMENT OF SIGNALS TO 'ON':

Signals are replaced to 'ON' automatically by the passage of a train beyond the signal. It will not be possible to re-clear the signal again unless the due process for clearing the signal is repeated again. For replacement of any signal to 'ON' position manually, the SM shall follow para No. 3.4 of APPENDIX-B.

9.3 INTERLOCKING OF SIGNALS:

DN Advanced starter is interlocked with IB section of HNP-A-SRGP and UP Advanced starter signal is interlocked with Block Instrument of section HNP-A-BONA in Line Clear position.

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

9.4 PILOTING OF TRAINS IN TO STATION YARD.

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

9.6 SHUNTING: To be corrected

Caution aspect of Starter signals can be used for forward shunting up to Advanced Starter signal. Independent shunt signals SH3(A-E) at SRGP end and SH4(A-E) and SH8(A/B) at BONA end on main line have been provided for back shunt movement. Shunt signal SH13 on DN Main line and SH16 on UP main line shall be used for forward shunt movement up to Advanced starter signal. SH-15 below starter signal No-15 & SH-17 below starter signal No-17 shall be used for forward shunting movement into Track Machine Siding and up to UP Advanced starter signal.

Shunt signal No-SH11(A/B) below UP Starter signal No-11 have been provided for shunt movement of trains up to Up starter signal No.S-7 and UP starter signal No.S-21 and Shunt signal No. SH-10 has been provided in line No.1 for shunting movement on line No.1. Shunt signal No.SH-19 below UP Starter signal No-19 has been provided for shunt movement of trains up to UP starter signal No.S-21. SH-7 below longer loop starter signal No.S-7 and SH-21 below starter signal No.21 have been provided for shunting of trains/engines up to UP Advanced starter signal.

The Shunt signal No. SH-6 in T.M.siding shall be used for shunting movement of trains from siding to Line No-4 & 5. SH-12 below DN starter signal No-12 & SH-14 below DN starter signal No-14 shall be used for forward shunting movement into shunting Neck and up to DN Advanced starter signal. The shunt signal No. SH-5 in Shunting Neck shall be used for shunting movement

of trains from siding to Line No-4 & 5. For taking OFF Shunt signals refer Para no. 3.4.2 of APPENDIX-B.

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

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

11 CRANK HANDLING/EMERGENCY OPERATION OF POINTS:

Crank handle operation is interlocked with the signaling and interlocking system at this station. Key for Crank handle keys are normally locked inside the RKT instrument inside Location boxes in the yard and can be taken out only when all the signals leading are in the 'normal' position and the route is not locked for whatever reasons. Crank handle key can be transmitted or released by following procedure as laid down in Para No.3.5 of Appendix-'B'. When this key is taken out, no signal to the concerned point can be taken 'OFF' in the yard. This key can be electrically transmitted to both ends of the yard.

12. OBSERVATION OF TRACK CIRCUIT AFTER STABLING OF TRAINS ON RUNNING LINES:

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

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

14. MAINTENANCE OF S&T INSTALLATION AND ADHERENCE TO MAINTENANCE SCHEDULES:

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

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

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

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

16. INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:

Before declaring a point as defective, the setting of the point on the route to which it applies shall be inspected by the Station Master on duty.

17. RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:

After receipt of the failure 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) and RB letter No. 2021/SIG/21/safety performance, dtd:10.06.2023 & amendment issued vide letter No: 2023/TT-IV/9/2, dtd:16.06.2023.

18 PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:

Whenever any normal maintenance or special works for major renewals etc., are involved, the Signal and Telecom department should preplan these works. Field staff and the Inspector of the section should give to the Station master in writing 'advance intimation' about this work in terms of GR and SR.15.08.01.

19. EMERGENCIES:

Notwithstanding, anything contained in the aforesaid paras, as when equipment is found defective and unsafe for passage of trains, the Signal and Telecom staff must at once suspend the working of the equipment and associated installations and issue 'Suspension Memo' explaining the seriousness of the defect or damage to the interlocking installation to the Station master and take the Station Master's acknowledgement. After this, the usual practice of exchange of disconnection memo and reconnection memo can follow. The Station Master must act promptly on such messages and take adequate precaution treating the S&T installation as defective and pass trains over the affected interlocking equipment's according to extant instructions as contained in GR and SR.3.77.

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

- 20.1 Whenever a Signal or a Point becomes defective, any movement over the Points on the running lines should be made after clamping and padlocking both the facing and trailing Points on the line by Station Master on duty personally for all trains at the Station.
- 20.2 In case of failure of Signal or a Point and in case the Point cannot be operated from the VDU, the emergency Crank Handle which is interlocked with the system has to be extracted and the following procedure has to be observed.
- 20.3** One common emergency Crank Handle is provided for all the Motor operated Points of a group. This is mechanically riveted to the Key of EKT. This Key along with Crank Handle can be released from the EKT by following procedure vide 3.5 of appendix-B. The Station Master on duty in case of Point Motor failure will take out the Crank Handle key set the Point manually by inserting Crank Handle on the Motor.
- 20.4 When the Crank Handle is removed from EKT for operation of the defective Motor Operated Points, the responsibility for its safe custody rests with the SM on duty till it is replaced back in EKT and sealed by JE/Signal Maintainer.
- 20.5 The case of failure of Motor Operated Points should be promptly reported to the concerned SE (Signal)/ESM for immediate rectification.
- 20.6 Whenever an emergency Crank Handle is required to be used by a Signal Official for maintenance of work attending to failure, the Signal Official will give a disconnection memo to the Station Master on duty and after making necessary entries in the emergency Crank Handle register, the Station Master on duty will obtain acknowledgement of the Signal Official in the emergency Crank Handle Register and then handover to him the emergency Crank Handle for the Points concerned. All the Points will be treated as defective till the Emergency Crank Handle is returned back to Station Master on duty.
- 20.7 Before parting with the Emergency Crank Handle either for attending failure or for Maintenance work by Signal Maintenance Officials, the Station Master on duty will ensure that the reception and departure Signals are put back to on position. The Points of 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.

- 21.0 The Emergency Crank Handle Register is to be maintained by the Station Master on duty wherein the particulars of usage of the Emergency Crank Handle must be recorded as per operating manual.
- 22.0 **INTERLOCKING OF SIGNALS WITH BLOCK INSTRUMENTS:**
- 22.1 **INTERLOCKING WITH HOME SIGNALS:**
The DN Home Signal is electrically interlocked with the DLBI of section HNP(A)-BONA and UP Home signal is interlocked with DLBI of HNP(A)-SRGP section, so that before the handle of the Block Instrument can be turned from TRAIN COMING FROM position to LINE CLOSED position, UP or DN Home signal must be in their NORMAL position.
- 22.2 The DN Advanced starter signal is controlled and interlocked with Axle counter of IB section between HNP(A)-SRGP & UP Advanced starter signal is interlocked with Block Instrument of section HNP(A)-BONA so that this signal cannot be taken OFF until the handle of the concerned Block Instrument is in 'LINE CLEAR' position.
- 22.3 **SUSPENSION OF LAST STOP SIGNALS:-**
When the block instrument of section HNP(A)-SRGP or HNP(A)-BONA is suspended with its handle in any position for whatever reason the concerned Last Stop Signal controlled by the Block Instrument must be treated as suspended and trains shall be Piloted Out to HNP(A)-BONA or HNP(A)-SRGP sections.
- 23.0 **NORMALISATION OF THE BLOCK AXLE COUNTER AND OF BLOCK WORKING BY RESETTING FEATURE:**
- 23.1 Digital Axle Counters have been provided on both the Block Sections i.e. HNP(A)-BONA and HNP(A)-SRGP.
- 23.2 The occupation and clearance of the axle counter section are indicated on the VDU by 'RED' and 'GREEN' light.
- 23.3 If any 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.
- 23.5 No train shall be allowed on signal to leave a station in any particular direction unless: -
Track clear indication is available for the relevant Axle Counter track circuited portion and Last Stop Signal is taken OFF. [Refer Para No:5 of appendix 'B' for procedure of resetting of LVCD Axle counter].
- 24.0 **TELECOMMUNICATIONS:**
- i) Telephone attached with double line lock & Block Instrument of HNP(A)-BONA section and Tokenless Block Instrument of HNP(A)-SRGP section.
 - ii) Station to Station fixed telephone (hot line) is provided
 - iii) Station is provided with Auto telephone connected with Railway Exchange
 - iv) BSNL telephone is provided.
 - v) The station is connected to Sambalpur-Angul control circuit by a control telephone.
 - vi) Station to station 25 Watt VHF communication is provided.
 - vii) Telephone is provided between Station and both end crank handle locations.
 - viii) Telephone is provided between Station and Traffic L.C.Gates No.ST-69 at KM 109/35-39(UP),109/36-38(DN) and Engg. L.C.gate No- ST-65 at KM 106/9-11(UP),106/10-12(DN).
 - ix) Telephone is provided between Station & DN IBS signal post.
 - x) Telephone is provided at traction power control.

NOTE:

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

- (ii) VHF and Walkie Talkie sets should not be used for unnecessary discussions with Loco Pilots, Guards or any other staff.
- (iii) The on duty SM shall use the above electrical communication instruments stated in Para-24.0 from item No. (i) to (vi) strictly in order of preference for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication the SM on duty shall work vide SR 6.02.06.

25.0 FAILURE OF COMMUNICATION / FAILURE OF BLOCK INSTRUMENTS:

- 1) In the event of failure/suspension of block instrument, Track circuit & Axle Counter 'Line Clear' shall be obtained over telephone attached to the block instrument or station to station telephone by exchanging identification number and supported by private number as per SR 6.02.06 (a) and Chapter-III Part-I of Block Working Manual.
- 2) In the event of failure/suspension of block instrument and block telephone attached to the block instrument, or the Station to station fix telephone 'Line Clear' shall be obtained on Railway auto phone or BSNL phone, by exchanging identification number supported by private number vide SR 6.02.06 (1)(b) and Chapter-III Part-I of Block Working Manual.
- 3) In the event of failure/suspension of block instrument, block telephone and station to station fixed telephone or Railway auto phone or BSNL phone, Line Clear shall be obtained over the control phone exchanging identification number and supported by 'Private Number' vide SR 6.02.06(1) (c) and Chapter-III Part-I of Block Working Manual.
- 4) In the event of failure / suspension of block instrument or block telephone attached to the block instrument, or station to station fixed telephone or Railway auto telephone or BSNL phone or control telephone line clear shall be obtained on the VHF sets exchanging ID number supported by PN provided that the instructions contained in SR14.01.02 are followed vide SR 6.02.06 (1) (d) Chapter-III Part-I of Block Working Manual.
- 5) In the event of total failure of all communications between BONA-HNPA, trains shall be worked vide SR 6.02.03 and in the event of total failure of all communications between BONA-JRPD, trains shall be worked vide SR 6.02.04 .

26.0 A) POWER SUPPLY ARRANGEMENT FOR THE SIGNALLING INSTALLATION

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

- i) Normally supply from AT connected to OHE Traction distribution [230 V 50 Hz].
- ii) Stand by supply from Odisha State Electricity Board (OSEB) [Single phase 230V-50Hz].
- iii) Normal power supply [Single phase 230V-50Hz] to the Signaling & Interlocking installation at the station is drawn from the traction power sources. Whenever traction power supply fails SS/SM on duty shall operate the rotary change over switch provided in the CLS power panel at SM's office connecting the power supply from the healthy sources to the installation.
- iv) The SS/SM on duty however maintain the record of AT power supply/ local supply and he must promptly report the failure of AT supply immediately through the section controller and to the concerned Electrical Staff and S&T maintenance staff.
 - a) A change over switch is provided in the SM's office with the three power supplies viz UP AT, DN AT supply and local power supply for changing the switch to the required supply position. The availability of the supply is indicated by luminous indicator above the circuit breaker for each supply.
 - b) Normally the switch will be kept towards auto position. Whenever the power block is to be given on the line, on duty SS/SM must ascertain the power is available on the local supply and other AT and change over the switch to desired position.
 - c) In case of failure of AT supply without any power block, on duty SS/SM has to check whether the circuit breaker has tripped. (Three circuit breakers are provided in the changeover switch board, one for each supply and their normal position is UP and when tripped, it goes DN). In case of failure of AT supply without any power block, the local supplies shall be utilized by operating the changeover switch if required.
 - d) If the circuit breaker is tripping, even after resetting, no attempts shall be made to hold it by any other means and a message shall be given to the AEEE/GEN and CTFO/PSI/ TRD/GEN for prompt rectification.
 - e) Whenever there is failure of AT supply, the on duty SS/SM shall take prompt action to inform to all concerned for the rectification. The on duty SS/SM himself, during his daily checks, shall test the availability of AT power supply and make entry in station dairy duly initiating action for rectification of failure, if any.

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

- i) Power supply to the signaling installation is fed through IPS installed in the S&T power supply room. The IPS is normally fed through AT traction power. Standby power supply is through local supply. One change over switch is provided in the SM's room for selection of output of AT traction power supply or local power supply. The available traction/local supply is fed to the IPS through auto-change over switch provided in IPS.

- ii) The IPS system is connected with Battery as a back-up power source for safe working during transition of power and in case no 230v AC supply is available due to any reason.
- iii) In the event of failure of all the sources of 230V, 50 Hz AC supply, the signalling system shall be fed by power generated by back-up battery Bank connected to IPS for a limited power of 08 to 10 hours. The health of battery bank is monitored through one IPS monitoring Panel provided in the SM's room which shall be display the voltage 110V DC [Battery bank provided as back-up source of power supply]. Depending upon the health of the Battery Bank and the system, the following indication/alarm will appear on the Remote Monitoring Panel, their implications and action to be taken by SS/SM on duty is tabulated below.

SN	Instruction	Healthy of Battery Bank /Equipment	Visual Indication	Audio Indication	Action to be taken by SS/SM on duty
A	-	50% DOD (Depth of Discharge) (105.9V)	Red	Alarm	Alarm shall be acknowledged by SS/ SM on duty.
B		60% DOD (105.1V)	Red	Alarm	----Do----
C	System Shutdown	70% DOD (104.3V)	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 SM's panel. Alarm shall be acknowledged by SS/SM on duty for audio cut-off.

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

In the event of failure of remote monitoring SM console due to any reason when traction power and local power failed, the SS/SM on duty shall inform concerned Electrical staff immediately.

In case ' Call S&T staff' or 'system shut down' indication appear on the remote monitoring panel of IPS and/or mal-functioning of the remote monitoring panel SS/SM on duty shall inform the same to concerned S&T staff immediately.

NOTE: In case of failure of all AC supply sources IPS Battery Bank can provide power supply maximum up to 08 to 10 hours before system shut down indication of IPS.

27.0 WORKING OF AUTOMATIC FIRE DETECTION AND ALARM SYSTEM:

- In case of any alarm in any particular area due to fire or dust-Zone number on the LCD display can be seen, note down the zone No. displayed in control panel.
- The moment the smoke detector detects any smoke particles, the RED LED will blink along with the alarm.
- Once you find the zone number rush to that particular area where the detector gives alarm.
- Once you reach the area where the detector is giving the alarm, check whether the alarm is due to the fire or for any other reason.
- Then call immediately to the staff of concerned department.
- Call the fire station if required.
- Take action to extinguish the fire by the fire extinguishers available in the station.
- To reset the panel follow the instructions provided by S&T official in station master's room near the fire alarm panel.
- The control panel will get reset and siren muted.
- If the power fails on this will enable us to see the red indicator on the panel.
- In case of failure in power and if the battery is fully charged, the panel can function effectively as long as the charge in the battery is present.

APPENDIX - 'C'

ANTI COLLISION DEVICE (RAKSHA KAVACH)

NIL

APPENDIX - 'D'**1.0 STATION MANAGER (INCHARGE):**

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

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

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

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

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

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

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

He is responsible for booking all staffs working under him for PME and Refresher Course / Safety camp in their due time. His Special attention is drawn out to chapter II of General and Subsidiary Rules and GR 5.01 to 5.08 with relevant Subsidiary Rules, Chapter – 02 of Operating Manual.

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

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

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

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

His special attention is drawn to chapter No.II of G & SR (Amendment) 2012 and GR 5.01 to 5.08 with relevant SRs. He shall follow the instruction laid down in SR 3.68.01© & (d) and SR 14.07.01 and BWM 2.09 (e). He shall conduct surprise night inspection, safety meetings and fire drills. He shall maintain good public relation as well as look after passenger's amenities and be helpful to travelling public.

1.1 ASSURANCE REGISTER:

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

No Railway servant shall be entrusted with any duty involving safety of the public unless the station in-charge is satisfied that the concerned staff is competent for the post. No Railway servant unless duly examined and certified shall be allowed to work the points and signals. The SS is responsible to see that all the staff are conversant with the Station Working Rules and their signature obtained in the Assurance register after he is satisfied that they have thoroughly

understood the working rules of the station. In case of Group 'D' staff, their signature/thumb impression must be obtained after explaining fully about their duties and responsibilities.

The station superintendent is responsible personally for maintaining the Assurance Register and for obtaining declaration of the staff working under him. The Assurance Register must be maintained in two parts, one for Group 'C' and the other for Group 'D' staff. A duplicate copy of the Assurance Register must be maintained and kept in personal custody of the SMR.

The declaration shall be renewed in the following cases: -

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

2.0 USE OF PRIVATE NUMBER BOOKS IDENTIFICATION NUMBER SHEET :-

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

3.0 ACCIDENTS:

Accidents shall be reported and immediate action shall be taken by the Station Superintendent in charge in accordance with the instruction laid down in the Accident Manual. Whenever the Station Superintendent received report of an accident, he shall take all necessary precautionary measures to protect the traffic and shall arrange earliest possible assistance as required at the site of accident. He shall frame the accident message/reports and follow up all safety principles without delay.

4.0 TESTING OF POINTS AND SIGNALS:

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

5.0 SS/STATION MASTER:

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

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

He is responsible for working beyond this period when called upon to do so in the exigencies of services. He will follow SR 3.68.01© & (d), SR 14.07.01. Their special attention is drawn to Chapter II of G & SR (Amendment) 2000 and GR 5.01 to 5.08 with relevant SRs. As an Assistant to the SS, he shall follow the instructions given to him by the Station Superintendent.

6.0 HANDING OVER AND TAKING OVER CHARGE:

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

7.0 TRAFFIC POINTSMAN:

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

- (i) Delivery of authority to proceed and caution order etc. to the Loco Pilot of train.
- (ii) Correct setting and locking and crank handling of points for reception/dispatch and shunting operation under the supervision of Station Master.
- (iii) To couple and uncouple vehicles under the supervision of Station Master/Guard when shunting operation is in progress.
- (iv) Piloting and hand signalling of trains when necessary.
- (v) Knowledge of hand signals, detonators and their use.
- (vi) Protection of line in emergency and fog signalling.
- (vii) Exchange of signals with the Loco Pilot and Guard of passing trains as directed by the SM.
- (ix) Loading/unloading of parcels, luggage and packages to and from the train and watching the packages and other materials by properly stacking in the station premises.

- (x) Dusting of station office, filling up the fire buckets with sand/water and getting train arrival register (T/1410) signed by the Guard as and when required.
- (xi) Serving messages and any other duties entrusted to them by the SS/SM from time to time.
- (xii) Uses of emergency crank handle for setting of points.
- (xiii) To supervise shunting as per SR 5.13.03.
- (xiv) They must be thoroughly conversant with the GR 3.38, 3.46, 3.77(I), 5.09, 3.52 to 3.60, 3.62, 5.13, 5.15, 5.16, 5.21, 5.23 & SRs there to and their special attention is drawn to chapter No.II of G & SR (Amendment) 2000 also.
- (xv) When necessary, they will work in the Goomties for observing and reporting the complete/incomplete arrival/departure of trains as per the order of the SM on duty in case of failure of Axle Counter/Track Circuit.

GENERAL

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

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

APPENDIX - 'E'

ESSENTIAL EQUIPMENTS OF THE STATION

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

Srl No.	Description	Quantity
1.	Detonators	10 in tin case
2.	Battery operated LED based flashing Hand Signal lamps.	04 Nos.
3.	Hand signal flags	04 sets.
4.	Safety chains with pad locks	12 Nos.
5.	Wedges	12 Nos.
6.	Skid	06 Nos.
7.	Fire buckets (with sand and water)	06 Nos.
8.	Clamps with padlocks	16 Nos.
9.	First aid Box	01 No.
10.	Fire extinguisher	02 No.
11.	Stretcher	01No.
12.	Blanket	01 No.
13.	Block suspension Board	02 Nos
14.	"Motor Trolley on Line" boards	02 Nos.

APPENDIX - 'F'**IBH:RULES FOR WORKING INTERMEDIATE BLOCK SIGNALLING BETWEEN HNP-A-SRGP**

The block section between HNP-A-SRGP has been split into two block sections by providing Intermediate Block Stop signals at KM 103.650 F/SBP [controlled by SRGP station] for UP line and, at KM 103.650 F/SBP [controlled by HNP-A station] for DN line.. Intermediate Block stop signals are controlled through double line lock and block instruments at the respective receiving ends.

- a] The Block working for section between HNP-A-SRGP on UP and Down lines is controlled by the provision of Double line Lock and Block Instruments (SGE type) and are provided at SRGP and HNP-A stations. The UP Advanced starter signal No.25 of SRGP and DN Advanced Starter signal No.26 of HNP-A are controlled by the clearance of IB section through respective IB section monitoring axle counters and the IB Home signals are controlled in turn through the line clear position of respective Double line lock and block instruments and respective LV section monitoring axle counter at the receiving stations.
- b] Trains between intermediate block signal to respective Home signal of Station in advance are worked by means of SGE type lock block instrument vide GR 3.75, 4.09, 5.07, 14.01 to 14.14 of the G & SR and chapter V of BWM.
- c] Last stop signal to the intermediate block stop signal is controlled by Electronic Axle counter and are worked under absolute block system in terms of G & SR 14.01, 14.13.
- d] **INDICATIONS PROVIDED FOR I.B. SECTION.**
The indications of signals of IB in both down and up directions are provided at HNP-A Station and SRGP Station.

SECTION SRGP-HNP-A:

SN	Signal Aspect [S-25]	IB Section Indication [25 AXT]	UP IB Home Aspect	Block Section Indication	Remarks.
1	Green	Green Illuminated, when LSS of taken off. When train enters the section, RED illuminated	-	-	Advanced starter No:25 is taken off to dispatch a train up to IB Home.
2	Red	Red Illuminated	-	-	IB Section is occupied.
3	-	-	Green	Green Illuminated, When IB Home taken off. When train enters the section, RED illuminated	IB Home taken off for train up to Home of HNP-A.
4	-	-	Red	Red Illuminated	Block section is occupied or IB Home passed at danger.

SECTION HNPA-SRGP

SN	Signal Aspect [S-26]	IB Section Indication [26 AXT]	DN IB Home Aspect	Block Section Indication	Remarks.
1	Green.	Green Illuminated When Signal is taken off. When train enters the section, RED illuminated	-	-	Advanced starter No:26 is taken off to dispatch a train up to IB Home.
2	Red.	RED Illuminated	-	-	IB section occupied.
3	-	-	Green	Green Illuminated when IB Home is taken off. When train enters the section, RED illuminated	IB Home taken off for train up to home of SRGP.
4	-	-	Red	Red Illuminated	Block section is occupied or IB Home passed at danger.

E] Buzzer/Bell

One audio Multimedia speaker has been provided in the SM room at HNPA and SRGP to detect Train Entering section for outgoing trains. After train passes the intermediate block stop signal, the buzzer/bell will start ringing. On hearing the buzzer/bell the SS/SM in rear must acknowledge the same by clicking on IB train entering section [TES] muting button to stop the buzzer/bell and then send train entering section report to the station in advance who shall turn commutator of the Double Line Lock and Block Instrument from the Line Clear position to 'Train On Line position' and acknowledge train entering section following the procedures laid down vide Block Working Manual.

F] In the event of failure of I.B. track circuit [i.e. track clear indication not available] which shall not permit taking 'OFF' last stop signal, it should be ensured by SS/SM on duty at the dispatching station through exchange of private number with the SS/SM of the receiving station that the last train that has passed the last stop signal of his station has fully arrived at receiving station, before allowing the next train to enter in to the section, such permission to the next train shall be granted and the section HNPA-SRGP as the case may be shall be treated as single section by issuing the pilot memo when normalization of the system is not possible. In such case, line clear has to be taken on lock and block instrument. Trains are to be dispatched from the station only after obtaining line clear till such time track circuit or last stop signal is restored to normal.

CLOSING OF IBS:-

If the electrical block instruments provided at the station on either side of an IBP or the track circuiting provided beyond IBS or the axle counters provided at either end of block section fail, the IBS shall be treated as defective and the IBP shall be deemed to be closed and section between stations on either side of the IBP shall be treated as one block section.

G] NORMALIZATION OF THE TRACK CIRCUIT AND OF BLOCK WORKING BY RESETTING FEATURE:

- i] No train should be allowed to leave station in any particular direction unless I.B track clear indication is available for the relevant track circuited portion of I.B.section and last stop signal can not be taken off also.
- ii] A Resetting arrangement for the resumption of I.B. Axle counter under failure condition through co-operative feature of both the SM on duty at either end station of the Block section is provided, which should only be resorted to after the train that was lastly sent arrives fully at the receiving station and is certified in this respect by the SM at the receiving station through exchange of private number.
- iii] For monitoring of I.B. section working & re-setting of I.B. Axle counters, Track Indications and Re-setting arrangements are provided with button HNPA and SRGP stations. Counters are also

provided for the purpose of recording the re-settings for the I.B. Axle Counters in case of failures in IB section.

iv] The SM on duty at HNPA station shall maintain a separate register for use of resetting at IB Axle Counters wherein every operation of the resetting shall be recorded giving details of date of use, train number, time, number registered in the counter on Veeder Counter and reasons for resetting and initial each such entry.

v] The procedure for resetting of the I.B. Axle counters in terms of clause [g].ii above shall be as follows:

SECTION SRGP-HNPA ON UP LINE:

	DISPATCHING STATION [SRGP]		RECEIVING STATION [HNPA]
1	SM/SRGP on duty shall call the attention of SM/HNPA of station through Telephone for granting Permission to re-set I.B. Axle counter zone as well as Train Passed signal with Danger [train run away condition] giving details of last train left the station into the section.	1	<p>SM on duty at HNPA after verifying that the said dispatched train arrived fully, shall exchange private number with SM on duty at SRGP and gives permission to re-set by pressing the 'Permission Granting' Push button provided.</p> <p>"Permission Granting" & "Permission Restore". "Permission Granting", SM will find a "yellow" colour Indication above the Push button.</p> <p>For each such operation the permission granting counter shall increase by one digit.</p> <p>SM on duty shall make an entry of changed permission granting counter number in counter register</p>
2	<p>On getting permission to reset from HNPA, a Green indication will appear on {permission Received from HNPA} above permission Acknowledgement button. Which shall be acknowledged by SM on duty by pressing 'Permission received from HNPA' acknowledgement push Button and flashing indication will become steady.</p> <p>On duty SM at SRGP will then turn IB Reset key the key. Indication changed from Red to Green in color. Then the SM will press the IB reset Push button for getting IB Axle counter to be reset. On doing the above process for resetting of the IB Axle counter first train has to be piloted. On passing of the first piloted train IB. Axle counter will get reset.</p> <p>In case of train passed at danger, the aforesaid resetting procedure is to carried out and no need of first train piloting.</p> <p>For each such operation the IB. reset counter provided shall increase by one digit. SM on duty shall make an entry of changed Reset counter number in re-setting register.</p>	2	<p>SM on duty at SRGP shall withdraw the permission by releasing the 'Permission Granting' Push button provided. After pressing of Pushbutton, "Permission restore" button, the yellow color indication above the Push button will go to Blank.</p>

SECTION HNP(A)-SRGP ON DN LINE:

	DISPATCHING STATION [HNP(A)]		RECEIVING STATION [SRGP]
1	SM on duty HNP(A) shall call the attention of SM of SRGP station through Telephone for Permission granting to re-setting I.B. Axle counter zone as well as Train Passed signal with Danger [train run away condition] giving details of last train left the station into the section.	1	<p>SM on duty at SRGP after verifying that the said dispatched train arrives fully, shall exchange private number with SM on duty at HNP(A) and gives permission to re-set 'Permission Granting' Push button provided after pressing of Push button, press "Permission Granting" button, SM will find a "yellow" color Indication above the Push button.</p> <p>For each such operation the permission granting counter provided shall increase by one digit.</p> <p>SM on duty shall make an entry of changed permission granting counter number in counter register</p>
2	<p>On getting permission to reset from SRGP, a flashing indication will appear above permission Acknowledgement button, which shall be acknowledged by SM on duty by pressing 'Permission received from SRGP acknowledgement push Button and flashing indication will become steady.</p> <p>On duty SM at HNP(A) will then turn IB Reset key. Then the SM will press the IB Reset Push button red for getting IB. Axle counter to be reset.</p> <p>After doing the above process for resetting of the IB Axle counter first train has to be piloted. On passing of the first piloted train IB.Axle counter will get reset.</p> <p>In case of train passed at danger, the aforesaid resetting procedure is to be carried out and no need of first train piloting.</p> <p>For each such operation the IB. reset counter provided in SM's room shall increase by one digit. SM on duty shall make an entry of changed Reset counter number in re-setting register.</p>	2	SM on duty at SRGP shall withdraw the permission by Push button provided. After pressing of Push button press "Permission button, the yellow color indication above the Push button will go to Blank.

H] DISPATCH OF TRAINS:

Dispatch of trains is governed by the provision of G &SR 3.42, 3.70 and Block working manual rules.

I] From HNP(A) towards SRGP.

Train will be dispatched in accordance with the General Rules 3.42, 3.70., 3.75, 4.35 and 8.01 and subsidiary Rules thereto.

J] HNPA TO IBS ON DOWN LINE:

The SM on duty shall ensure that the portion of line between Advanced Starter and 400 Mtrs beyond IBS at their respective ends is clear of obstruction and indication to this effect is available and shall also ensure any non-isolated shunting at their respective ends suspended and shunting authority issued if any is withdrawn and kept in his custody.

K] IBS SIGNAL TO THE STATION IN ADVANCE:

The SM on duty HNPA shall obtain line clear over lock & Block instrument from the station in advance to dispatch a train passed the IBS signal and shall take off the IBS signal by means of taking of signal No.30 of HNPA for DN line.

After the train passes the DN IBS a buzzer will ring. On hearing the buzzer/bell the SM must acknowledge the same by pressing train entering section [TES] muting button to stop the buzzer/bell and then send train entering section report to the station master of the station in advance who in turn will turn commutator of the Double line Lock and Block Instrument from the line clear position to Train On Line position and acknowledge train entering section. After dispatch of a train from HNPA into the Block section and intermediate Block Post in case when the intermediate stop signal is not taken 'off' but the buzzer has started ringing, this may be either due to the train passing intermediate Block stop signal at 'ON' position or due to failure of the track circuit in advance of that intermediate Block Signal. The SM on duty will then inform the matter to SCR on duty and concerned S&T official.

The procedure must be rigidly followed irrespective of the fact whether line clear for train has been received from station in advance or not and this must be recorded in the Train Signal Register and SM's diary book of both the Stations.

L] (i) Dispatch of trains towards SRGP station in case of failure of the DN Advanced Starter signal as the case may be at HNPA Station due to failure of "Axle Counter" device or otherwise-

If the failure of the Advanced starter of HNPA due to the failure of axle counting device or the indication lamp (repeated by indication lamp) showing 'Red' light either due to power failure or due to any other cause the re-setting "Button" provided with Veeder counter at the SM office for resorting to the normal function of the signal should be operated accordingly to the following instruction. Whenever the DN Advanced starter signal of HNPA is found defective by the Station Master the following procedure shall be adopted.

On receipt of this information, the SM on duty after ensuring that all trains which had left his Block Station had arrived complete and intact at SRGP station (by exchanging Private Number with the SM SRGP & confirming this), shall press the resetting button Icon of the axle counter. When the resetting is successful, it shall be indicated by a green light provided in the panel. The use of this resetting button is registered on the veeder Counter and the SM should record this giving the details of the occasion with timings in the Veeder Counter register kept in the station.

If it is not possible to restore normal working of the IBS by use of the resetting button, the ESM-in-charge of the section shall be served with a written memo to attend the defective signal and rectify the same. The ESM-in-charge of the section on being served with a memo by the SM, shall attend the failure and rectify the fault. The ESM after ensuring that all S&T gears relating to defective signal have been attended to and are in working order except the axle counter which needs re-setting shall establish communication with SM concerned and ask him to reset the axle counter by pressing the reset push button. There after the SM on duty, after ensuring that all the trains which had left his Block Station had arrived complete and intact at SRGP (by exchanging of P.N with SM/SRGP confirming this) shall press the resetting button provided and resume the normal working.

- M] DESPATCH OF TRAINS IN CASE OF FAILURE OF INTERMEDIATE BLOCK STOP SIGNAL:**
- [a] When a driver finds an intermediate Block Stop signal at 'ON' Position he shall stop his train in rear of the signal and advise the guard of the fact by sounding long continuous whistle and shall then contact the Station Master of the Block Station in rear over the signal post telephone provided for the purpose vide SR.3.75.01[i].
- [b] If the SM of HNP station, on being contacted over Telephone by the driver, finds that the signal is defective, he shall, after obtaining "Line Clear" for the train from the station in advance, authorize the driver on the telephone to pass intermediate Block Signal at "ON" and enter the block section ahead. He shall give Driver the Private Number and identification Number under which he has received "Line Clear" for the train from the station in advance.
The driver shall then sound one short, one long and one short whistle and, on receipt of Guard's signal shall proceed ahead duly exchanging signals with him.
The station Master on being contacted by the Driver on signal post telephone if he is unable to obtain "Line Clear" for the train due to total interruption of communications, shall call for the Guard's through the Driver and on being contacted by guard, he shall advise the guard of the circumstances and give a Private Number for the train to proceed up to the next block station. The guard shall prepare a memo in duplicate authorizing the Driver to proceed with the Private Number received from the Station Master. In such case the speed of the train shall be restricted as prescribed in GR 3.75(3).
- [c] In such case the Driver shall pass the IB signal at "ON" and proceed cautiously and be prepared to stop short of any obstruction, at a speed not exceeding 15 Kilometers an hour if he has a good view of the line ahead otherwise, at a speed not exceeding 8 kilometers an hour and report the failure to the Station Master at the block station ahead.
While complying with the instructions contained in GR 3.75(3), when the Driver has to pass IB signal at "ON" after waiting for 5 minute at the signal, he shall proceed cautiously preparing to stop short of any obstruction at a speed not exceeding 15KMPH when view ahead is clear and 8 KMPH when view ahead is not clear due to curve, obstruction, rain, fog or any other cause until he reaches the foot of the next stop signal and even the signal is "OFF" the Driver shall continue to look out for possible obstruction short of the same and will act upon its indication only after he has reached it. Before starting, the Driver shall sound one long whistle which may be repeated as necessary and shall then start his train on receipt of Guard's signal. Thereafter he shall exchange signals with the Guard.
On reaching the block station ahead the Driver shall report the failure of the signal to the Station Master. If, the telephone is provided at the intermediate Block Stop signal Post is out of order the Driver will pass the IB signal as per GR 3.75(3) & SR 3.75.02, and on reaching the block station ahead, the Driver shall report the failure of the signal to the SM, Following train shall not be allowed to leave HNP unless the complete arrival of the receiving train is certified by the SM on duty at SRGP under exchange of Private Numbers.
The station Master of the block station working the intermediate block stop signal on becoming aware that such a signal is defective shall, before dispatching the train, treat the entire section up to the block station immediately ahead of the intermediate block post as one block section and issue a written authority to the driver to pass the defective intermediate Block Stop Signal at "ON" without stopping at the signal in accordance with the procedure prescribed by special instruction.
A written authority as mentioned in GR 3.75(4) shall be in Form T/369[3b] in which the Private Number and identification Number obtained from the station in advance in support of the "Line Clear" shall be recorded. Display of "Proceed hand signal at the foot of defective Intermediate Block Stop Signal may be dispensed with.
- [d] However, if the SM on the Block station immediately in rear of an intermediate Block Signal is aware that UP/DN intermediate Block Signal is defective shall before Dispatching a train shall verify that all trains which had left his Block Station had arrived complete and intact at SRGP station (by exchanging Private Number with SM SRGP Station) shall press the resetting button of Axle counter equipment. Thereafter driver shall be handed over the authority of T-369[3b] to pass IBS Signal at "ON" position where in, the Private Number and identification number obtained for line clear, shall also be written. The use of this re-setting push button is registered on the veeder counter and SM should record this usage giving details of the occasion with timings in the veeder Counter/register and also train registers.

[N] INDICATION CUM RESETTING PROVISION AT HNP:

Provided for following light indications:

- a) Yellow indications for the track- circuited portion by Axle Counter, which remain normally lit to indicate that the track is clear. These lamps extinguish as soon as the train passes the last stop signal and in their place two red indication are lit to indicate that the track is occupied.
- b) Red indications for the last stop signal replacement track circuit which remain lit so long this track- circuit is occupied or in under failure condition.
- c) Red indication ahead of the IBS Signal, which are lit if the train passes the IBS signal in "ON" Position. The indication continues to glow till such time the lock and block working is resumed through emergence re-setting feature.
- d) Red indications just ahead of IBS Signal for the IBS signal replacement track circuit. The indication normally remain Yellow and are lit either during occupation by a train or during failure of this track circuit.
- e) Yellow indications for the block section for receiving trains. The indication shall normally remain yellow indication and shall be lit only when the incoming train passes the IBS signal. It remains lit till such time train arrives fully and Block Instrument is normalized.

[O] RE SETTING PROVISION IN THE SM's OFFICE AT HNP STATION:

In case of failure of DN IB axle counter resetting procedure is to be applied after exchanging PN by SM of both stations. Permission will be given by SM SRGP by pressing Permission granting button. Permission receives indication Green will appear at SM's Panel. After receiving Permission granting indication SM/HNP will press Reset Button. Similar operation will be carried out in reverse way for Resetting in case of Up IB axle Counter failure.

[P] SPECIAL INSTRUCTION IN CASE OF A TRAIN PASSING IBS AT 'ON' POSITION:

- I] In case train run away indication appears the SM receiving Station shall not turn the block instrument handle to line clear position and SS/SM at sending station shall not take any action to dispatch the third train unless the second train which passed the IB signal in the 'ON' position has actually arrived and its complete arrival is verified by the receiving station.
- II] Every case of a train passing IB signal at 'ON' position without strictly following the provision of GR 3.75 should be treated as a breach of block rule by the driver and action to be taken accordingly.
- III] When train run away indication appears at the dispatching Station without any train in the section, the IBS system should be treated as failed and Signal Maintainer should be advised. All the subsequent trains shall be Piloted OUT after duly taking line clear treating entire section as one Block section as per GR 3.75(4).
- IV] Whenever a train after having obtained line clear passes IBS (when not taken off) in "ON" position the train run away indication appears at the dispatching station and train entering section indication appears at the receiving station, under such circumstances no further train shall be allowed in the section till the said train arrives completely at the receiving station i.e., station in advance, and its complete arrival received at the receiving station i.e. station in rear supported by Private Number treating the entire block section as single section.
- V] If any train passes IB Signal at 'ON' position when there is a train in the Section between IBS and the station ahead, the train run away indication will appear at both receiving and dispatching station. Under such circumstances the SM in the receiving station shall not turn the Block instrument to Line Clear position and SM at sending station shall not dispatch the (3rd) train, unless the 2nd train which passes the IBS in the 'ON' position has actually arrived and its complete arrival is verified by the receiving station.
- VI] Permission button to be pressed for the runaway train by breaking and opening the seal only after verifying that the last vehicle of the runaway train has arrived in tact and ensured by exchange of private number with the SM of the sending station. In case of failure of Axle Counter equipment at the sending station, permission button may also be pressed for normalizing the system only after verifying that there is no train in the section and after duly exchanging Private number with the SM of the sending station.
- VII] Whenever a train run away indication appears when there is a train in the section, no further train should be allowed in the section till resetting is done..

- VIII] Before any re-setting operation is done, the Dispatching station should advise the receiving station giving details of the last train that has entered the section and should ensure by exchanging of private number that the last train has arrived complete at receiving station.

Every Case of re-setting shall be entered in a register in the following proforma.

Date and time	Train No. Last entered the block section	Private No. of station ahead for Complete Arrival of the train Under Col.2	Veeder Counter No Before resetting operation completed	Train No. Entering Block section Immediately after the resetting operation	Remarks	Signature of SS/SM
1	2	3	4	5	6	7

- IX] If resetting is not possible under item as mentioned above, the system should be treated as failed and train will work treating the entire section up to the Block Station immediately ahead of the IBS Post as one block section as per GR 3.75(4).

X] ACTION TO BE TAKEN WHEN A TRAIN PASSES INTERMEDIATE BLOCK STOP SIGNAL AT 'ON'

a) By SM of Block Station in advance of the Intermediate Block Stop signal.

- I] Shall not turn the Block Instrument commutator to "Line Closed" Position Unless the complete arrival of the train which passed IBS at "ON" position is ensured, without any exception even for such a train which leaves the rear station after obtaining line clear and passes IBS at "ON" position, since there is a chance of leaving a vehicle or vehicles in the Axle Counter area where the function of Axle Counter also fail.
- II] In case the bottom needle of the SGE type block instrument is in its 'Line closed' position action should be taken to turn the block instrument commutator to 'TOL' Position vide BWM 5.16(2)(iv) and must not turn to "Line closed" and then to "Line clear" position unless the train which had passed the "Intermediate Block Stop Signal" in the 'ON' position arrives complete and its complete arrival is verified. SM of Block Station in rear of the intermediate Block Stop Signal must ensure that last stop signal controlling entry of trains into the section between the last stop signal and the intermediate Block Stop Signal is in its 'ON' position and shall under no circumstances take 'OFF' or attempt to take 'OFF' the said last Stop signal even if the Axle counter/Track circuit section from his block station up to and including the adequate distance beyond the Intermediate Block Stop signal shows 'clear,' unless the train which had passed the intermediate Block Stop signal in the 'ON' position arrives complete at the block station in advance and its complete arrival is verified, and the SM of the block station in advance intimate the number, description and the arrival time of the last train arrived from, under exchange of Private number.

b) By the SM of both the block stations in rear and in advance of the intermediate Block Stop Signal.

- I] After the complete arrival of the last train, according to the information received vide sub-para (a) above, the SM of the block station in advance shall communicate the same to the SM of the station in rear supported by a Private Number which shall be acknowledged by the later by issuing Private Number. Thereafter the SM of the dispatching station and the SM of the receiving station shall operate the 'Resetting ' and 'reset' panel respectively in conjunction. This simultaneous operation will cause the 'counter' to 'reset panel' at the departure end of the dispatching station to illuminate then the station Master shall operate the push button which in turn will record the next higher number in the counter.
- II] The SM of the Block Station in advance shall then take steps or authorize Station master of the receiving station supported by a Private Number to normalize the block instrument.

- III] Record of Private Number exchanged and the number shown in the counters shall be maintained by the concerning SM in the train signal (Cum log) Register/Train Log Register.
It is to be noted that in terms of GR3.75 whenever intermediate block stop; signal is at 'on' a driver must stop his train in rear of the signal and contact the SM of the block Station in rear on the telephone provided on the signal post who will authorize him to pass the signal in 'ON' position supported by Private Number and identification number which were taken for the line clear from the station in advance. If the telephone is not provided or is out of order, the driver, after waiting for 5 minutes shall pass it at "ON" but he must report the failure to the SS/SM at the Block Station ahead after following the provision in GR.3.75(3). This would mean that the driver shall either get an authority on telephone from the station master or must report at the station ahead about the failure of the telephone. If none of those provisions are complied with, it should be taken as breach of Block Rules.
- Q] (a) In the event of failure of IBS signal in the "OFF" position or cannot resume to "ON" position immediately after it has been passed by a train, the station master controlling the signal shall take steps to put back the IBS signal to "ON" position and treat IBS signal failed and train shall be dispatched treating entire section between his station and station in advance as one Block section.
- R] **RUNNING OF MOTOR TROLLEYS ON IBS ZONE:**
i) While allowing motor trolley/4 wheeler tower wagon/material trolley etc., entire section between HNPA-SRGP shall be treated as one block section and shall be issued T-369 (3B) for passing IBS at "ON" position.
ii) After the complete arrival of the said Motor Trolley/4 wheeler tower wagon/material trolley etc., at the station ahead, Station Master at adjacent station shall exchange Private Number in token of complete arrival and then shall resume normal working by resetting the Axle Counter as stated in the SWR.
iii) Motor Trolleys shall not be allowed on following line clear.
NOTE:- Backing of train on the portion of line after passing the intermediate Block Stop signal normally shall not be allowed, However, if it becomes inevitable to back, such backing may be done with great caution as mentioned in SR 3.75.04.
- S] **SIGNAL POST TELEPHONE:**
A telephone socket (RE Type portable telephone kept with drivers) with a RED Press button at the bottom is provided at the foot of each IB signal and is meant for driver to contact the SS/SM in rear by pressing the RED button. The driver of the train encountering the IB signal at 'ON' position shall contact the station in rear to find out the occupancy or otherwise of the block section ahead.
- T] **NORMAL POWER SUPPLY TO IBS GOOMTIES :**
Normal power supply to the Signaling and Interlocking installation at the IBS goomty drawn from UP & DN AT supply in addition to local power supply with auto changeover panel.

APPENDIX - 'G'**RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS****STATION WORKING RULES FOR 25KV AC ELECTRIC TRACTION****MANESWAR STATION****1. GENERAL & SUBSIDIARY RULES:**

- a) The rules applicable to electrified section have been given in chapter-XVII of the General Rules and in the subsidiary Rules made here under for electric traction. The General principles governing operation and maintenance of Traction Overhead Equipment, Electric locomotives, Signal & Telecommunications installations have been given in the A.C. traction manual. These rule books and an extract of the relevant paras of A.C. traction manual, shall be kept with the concerned staff shall make themselves thoroughly familiar with the same (GR. 17.01).
- b) Brief reference to important rules required to be followed by Station/ Yard staff in their day-to-day work has been given in this Appendix. These are, however, illustrative and not exhaustive.

2. GENERAL SAFETY PRECAUTIONS:

- a) All staff are warned that contract with or very near (within 2 meters, unless protected by a screen as per rules) to live portion of the 25 KV Traction Overhead Equipment is dangerous and shall be strictly avoided.
- b) No work on overhead lines or in the zones within 2 meters of any live equipment shall be carried out unless a regular 'PERMIT TO WORK' has been obtained from the authorized Traction staff and the line has been made dead and earthed as per rules (GR 17.04) and ACTM para No.20600 to 20619 Vol. II Part. I.

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

- a) A sectioning diagram No. TRD/SWRD/MANE/2023/1 indicating schematically the lines, which have been equipped with, for electric traction is exhibited. The diagram also indicates different electrical sections (Elementary Sections) the Controlling Switches or interrupters), insulated overlaps and section insulators where the overhead equipment is electrically separated. The limits of an electrical section (Sub-Sector or Elementary section) are indicated by the relevant section. A copy of this diagram is also enclosed with these special working rules and will form part of the same.
- b) For all-purpose connected with Train movements and Power Blocks, this diagram is the only authorized document to be referred to the normal position of various switches is indicating on the diagram.

4. UNWIRED TRACKS:

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

5. OPERATING OF SWITCHES:

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

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

For opening the switch: Release the lock of the switch and get the switch handle down with sudden jerk. Now the switch is open. Lock the switch again so that it cannot be closed without releasing the lock.

For closing the switch: Release the lock of the switch and get the switch handle up with sudden jerk. Now the switch is closed. Lock the switch again.

Note: While operating switch, station master must use insulated gloves.

The list of isolators with location number of SBPY are given below.

<u>Sl. No.</u>	<u>Isolator No.</u>	<u>Loc. No.</u>	<u>Sl. No.</u>	<u>Isolator No.</u>	<u>Loc. No.</u>
1.	SM – 437	109/25	4.	SS - 538	110/34
2.	SM – 438	109/30	5.	SS - 540A	HNPA/G19A
3.	SS - 537	HNPA/1049	6.	SS - 540B	HNPA/G1A

5. **POSITION OF SWITCH HANDLES (ISOLATORS):**

When a switch is in the closed position, the operating handle of the switch is at the top.

6. **LOCATION OF KEYS OF SWITCHES AND OHE KEY REGISTER:**

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

7. **PROCEDURE AND PRECAUTIONS FOR OPERATING ISOLATORS:**

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

8. **POWER BLOCK:**

- a) The detailed procedure for obtaining power block has been given in G.R. 17.04.02, 17.03.03 & 17.04.04 and ACTM para 20603,20604,20611,20612 & 20613 which must be rigidly followed except in case of emergency.
- b) The sequence of switching operations for granting and cancelling the Power Block for a particular section, are included in the Annexure. These shall be strictly followed by all staff. Failure to follow the sequence indicated is likely to lead to dangerous consequences. The protection of dead section is achieved by blocking the Concerned line in the VDU and placing red button collars on concerned buttons operating points and / or signals.

9. **PROTECTION AT THE TIME OF POWER BLOCK:**

- a) All sections over which the Power Block has been granted shall be protected against entry of Electric Locomotive with pantograph raised from either end during the period of the Power Block (G.R. 17.04) and ACTM 20620, 20621 to 20627 of Vol.II, Part.I strict enforcement of longitudinal and transverse protection as per the Annexure attached shall be ensured before imposing power block. If there is/are locomotives on the section over which the power block to be given, the loco Pilot of such locomotives shall be given a memo by the Station Master on duty to lower the pantograph and not to raise it until further instructions and acknowledgement shall be obtained. The Loco Pilots shall not be given instructions to raise the pantograph till the power block is cancelled.
- b) Station Master or station staff conducting shunting operation with electric locomotive shall ensure that under no circumstances, any electric locomotive approaches near the traction structure limiting elementary sections over which the power block has been granted. Limits of each electrical section at a station are shown in the Station Sectioning Diagram.
- c) Strict enforcement of longitudinal and transverse protection as per the Appendix-G attached shall be ensured before imposing power block.
- {The detailed procedure for protection during power block has been given in 17.04.16(d)}

11. SECTION INSULATORS:

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

12. BREAKDOWN OF TRACTION OVERHEAD EQUIPMENT:

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

13. REGISTER OF MESSAGES:

All message relating to faults on the traction Overhead equipment, operation of switches custody of keys of out-door switches and other important communication in connection with the operation and maintenance of Traction Overhead equipment shall be recorded serially in a register by both the sender and the receiver indicating the time at which the message are received or exchanged (G.R. 17.04.12) and ACTM Para 20610, Vol II Part I.

14. MOVEMENT OF DIESEL ENGINES OR TRAINS HAULED BY SUCH ENGINES:

Goods or passenger trains hauled by other than electric locomotives may be allowed to pass through the dead section subject to the following conditions:-

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

Note: For purposed of this Rule a Dead Engine dispatched as a vehicle shall not be considered as an Electric locomotives.

15. ELECTRIC LOCOMOTIVES:

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

16. ESM:

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

17. CRANES:

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

18. WORK ON ROOF OF ROLLING STOCK:

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

19. BLOCK INSTRUMENT OR ANY OTHER ELECTRICAL SIGNALLING EQUIPMENT:

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

20. TELECOMMUNICATION CIRCUITS:

Refer Para 5.0 of main body and Appendix "B" of this SWR.

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

21. ELECTRIC SHOCK:

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

22. FIRE:

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

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

24. AMENDMENTS OR SUPPLEMENTARY CORRECTION SLIPS:

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

25. CONTINUOUS WATCH BY INSPECTING STAFF:

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

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

TRACTION DISTRIBUTION

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

DO(S) AND DON'T(s)

A. FOR ALL STAFF

S. MOHAPATRA
DEE(TRD)/SBP

LINGARAJ GARTIA
DOM(G)/SBP

a) DO(s)

1. In case of fire on Electric Traction Equipment of Wires.
 - i. Inform traction Power Controller.
 - ii. Extinguish fire by special extinguishers, if available.
 - iii. Ensure no water jet is used under any circumstances.
2. Anything unusual on Traction Wire or Electric Locomotive inform traction Power Controller or nearest Station Master.
3. In emergency Traction Power Controller can be contacted on emergency telephone system. (Sockets for connecting emergency telephone are provided at intervals of approximately every kilometre and direction to nearest socket is indicated on OHE masts).

b) DON'T(s)

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

B. FOR RUNNING STAFF:**a) DO(s)**

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

b) DON'T(s)

1. Do not lift or raise your tools towards traction wires (keep the tools in their respective position immediately after use).
2. Do not take electric locomotive with raised pantograph to any unwired line, beyond power block working limit board or near the section insulators at the end of section under power block.
3. Do not climb on the locomotive (of any type) on the engine tender for any purpose, while under traction wire unless power is cut-off and permit to work obtained (for watering, use the water column from the ground with the special device provided for this purpose and open tank over by the special device provided).
4. Do not allow long articles like fixing rod, shovel or any other thing to protrude above the engine while on electrified tracks.
5. Do not direct any jet or spray towards the traction wires (jets or water, if necessary, may be used horizontally outside the safety zone of 2 meters (7 feet)).

C) FOR OPERATING STAFF**a) DO(S)**

1. Ensure all staff is conversant with safety precautions.
2. Ensure that no electric loco is stabling with its panto-raised position in the power block section.

3. Report defects in traction wires of any electric locomotive or electric Multiple Unit Promptly to the traction Power controller.
4. Points and signals of the concerned line which give access to the sections under power Block is to be blocked by blocking the concerned line in VDU and placing red button collars on concerned buttons operating points and/or signals.
5. Observe procedures given in station working rules of 25 KV AC Electric Traction while operating isolator switches.
6. Ensure safe custody of isolator switch keys.
7. Ensure the section is protected by traction staff from all directions by banner flag during power block.
8. Suspend working of block and signals if single of unusual working are noticed. Always checkup block instruments at signalling equipment when any breakdown in traction wires occurs.
9. Instruct S & T staff to see that while he goes up the signal post he does not carry any long rod or articles likely to be brought within the danger zone of 2 Mtrs. (Approximately 7 feet) of the traction wires.

c) DON'T(s)

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

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

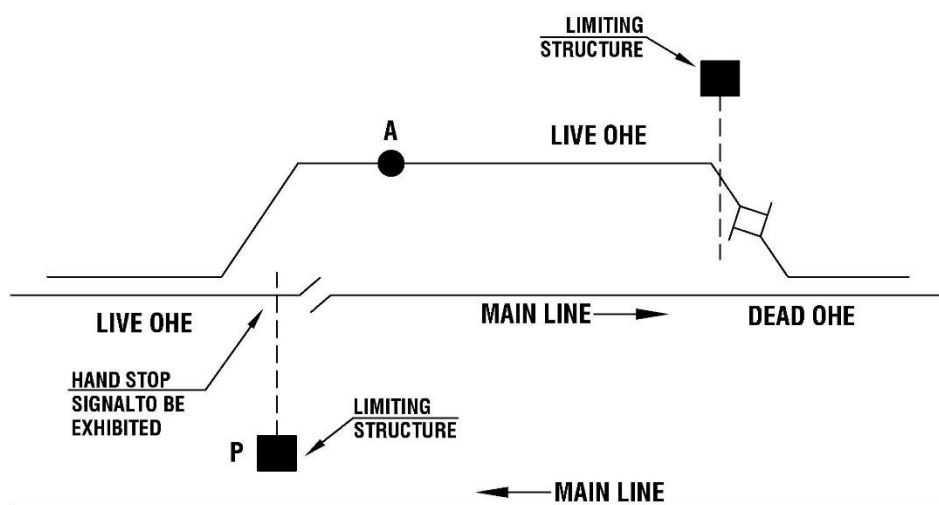
ANNEXURE-C**PROTECTION OF DEAD SECTION**

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

1. a) In the normal running direction movements of trains are generally controlled by Signals. Protection is obtained by blocking the concerned route on the VDU.
- b) If the points and signals are locally operated they should be locked and the key should be kept with the Station Master on-duty.
- c) This action must be taken care by the Station Master on duty as case may be, in respect of each and every movement prescribed in the Station Working Rules and after completion, confirmation should be given to the Section Controller to enable him to agree for the power block to be issued by the TPC.

SHUNTING MOVEMENT TOWARDS DEAD SECTION

- 1) a) In case where no signal exists for controlling the entry of an electric train into the dead section the station master should arrange a hand stop signal to be exhibited at the point up to which alone the electric locomotive is allowed to proceed.
- b) If it is necessary for an electric locomotive to carry on shunting movement towards the dead section the section can be unblocked to permit the movement provided that a hand stop signal is exhibited and LP is specifically instructed not to move the loco beyond the point.
- 2) An example of the operation is given figure as shown below:



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

- 3) Train or shunting movements by other than electric locomotives. i.e by steam or diesel locos may be permitted to enter the dead section. Provided that the Station Master ensures by personal inspection that the train formation does not include an electric locomotive or OHE inspection Car

or EMU with pantograph raised and after issuing necessary caution order. The line block may be permitted to be unblocked to allow such movements.

ANNEXURE-D**HANDLING OF ISOLATOR SWITCHES – BRUNDAMAL & SIDING**

1. The Duplicate keys for all outdoor switches shall be kept in locked glass fronted key box duly padlocked under the custody of SM on duty or with Competent OHE officials concerned persons stationed conveniently near the switches as the case may be. The keys shall be issued on demand only to authorised persons whose signatures for receipt shall be obtained in a book maintained for the purpose. The list of authorised OHE Officials who can withdraw the duplicate keys from the SM on duty is displayed at station duly signed by an officer of the Traction Distribution Department. These keys shall be handed over to the authorised officials by the SM or only after obtaining the permission from TPC.
2. In the event of breakage of the glass of the key box the key or keys shall be kept in safe custody of the SM on duty until the glass is replaced. The Traction power controller will keep a record where such keys are kept so that in an emergency he will be able to direct the parties concerned.
3. In an emergency the SM shall operate isolator switches as per specific direction of the Traction Power Controller under exchange of private numbers.
4. Should the traction Power controller wish to give any isolator switch opened or closed he shall as the Junior Engineer's / TRD or SM or any authorised person to carry out the required switching operation. The person concerned shall after carrying out the orders lock the switch either in "Open" or "Closed" position, as the case may be and inform the Traction Power Controller of the action taken. He shall not part with the key until receipt of further orders from the Traction Power Controller. A record of every such operation shall be maintained by TPC as well as by the SM in the power block register in RED ink.
5. Every Station manager or SM on duty shall be fully aware of the location of the isolator switches provided for the control of power supply to Over Head Equipment at the Station and shall be conversant with the correct method of opening and closing of the same in an emergency.

Details of Isolators to be operated by station master/ assistant station master/ points men during emergency under instructions of Traction Power Controller (TPC).

(Authority: Advanced Correction Slip No.24, dated 10.01.2013 to Railways Manual of AC Traction (ACTM), Vol-II, Part-I, Para: 20970-5 issued vide ED/(EEM)/Rly. Board's L/No.2001/Elect(G)/138/4 Pt.-I dated 10.01.2013 in consultation with Traffic Transportation Directorate of Railway Board)

SN	Isolator switch No.	OHE Location No.	SN	Isolator switch No.	OHE Location No.
1.	SM-199	521/15	24.	SS-STR-07	SEBD-04/101D
2.	SM-200	521/22	25.	SS-STR-07A	SEBD-05/16
3.	SM-201	519/33	26.	SS-STR-10	SEBD-05/63A
4.	SM-202	519/40	27.	SS-STR-11	SEBD-01/06
5.	SS-241	520/5	28.	SS-STR-12	SEBD-03/47
6.	SS-241A(N/O)	BXQ/1085	29.	SS-STR-13	SEBD-04/48
7.	SS-242	521/1A	30.	SS-STR-14	SEBD-01/17
8.	SS-243(N/O)	BXQ/1087	31.	SS-VAL-01(N/O)	MAVB-01/02
9.	SS-244(N/O)	521/4	32.	SS-VAL-02	MAVB-01/19A
10.	SS-245	BXQ/3067	33.	SS-VAL-03	MAVB-01/21A

S. MOHAPATRA
DEE(TRD)/SBP

LINGARAJ GARTIA
DOM(G)/SBP

SN	Isolator switch No.	OHE Location No.	SN	Isolator switch No.	OHE Location No.
11.	SS-245A	BXQ/3035	34.	SS-VAL-04	MAVB-03/43
12.	SS-245B	MAVB-00/2A	35.	SS-VAL-05	MAVB-03/44
13.	SS-246	BXQ/1100	36.	SS-VAL-06	MAVB-04/24A
14.	SS-247	BXQ/1081	37.	SS-VAL-06A	MAVB-04/47
15.	SS-247A(N/O)	BXQ/1013	38.	SS-VAL-07	MAVB-04/26A
16.	SS-KTPL-01	KTPL/04	39.	SS-VAL-07A	MAVB-04/48
17.	SS-STR-01	SEBD-03/XO-3	40.	SS-VAL-08	MAVB-03/01B
18.	SS-STR-02	SEBD-03/06	41.	SS-VAL-09	MAVB-03/02B
19.	SS-STR-03	SEBD-03/22	42.	SS-VAL-09A	MAVB-03/37B
20.	SS-STR-04	SEBD-03/24	43.	SS-VAL-10	MAVB-04/25
21.	SS-STR-05	SEBD-04/37	44.	SS-VAL-11	MAVB-02/31A
22.	SS-STR-06	SEBD-04/101B	45.	SS-VAL-11A	MAVB-03/30A
23.	SS-STR-06A	SEBD-05/15			

INSTRUCTIONS FOR ISOLATOR SWITCH OPERATION

OPERATION OF SWITCHES:

- i) All switching operations shall be carried out in accordance with the instructions of the Traction Power Controller (TPC) except in respect of switching operations for local blocks which may be

carried out by authorized traction staff after they have been granted local blocks by the Station master on duty in accordance with GR 17.04 and ACTM VOL II Part I Para 20600 and 20601.

- ii) In times of emergency, authorized and trained station staff may open isolator switches under specified instructions of the Traction Power controller (TPC).
- iii) Every station masters, points man shall be fully aware of the location of isolator switches provided for the control of Power supply to the overhead equipment at or near his station / cabin and shall be conversant with the correct method of opening and closing the same in an emergency (ACTM VOL II Part I Para 20624).

POSITION OF SWITCH HANDLES:

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

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

PROCEDURES AND PRECAUTIONS FOR OPERATING ISOLATORS:

The procedure for operation of Isolator switches has been given in SR 17.04.15 which must be rigidly observed. Isolator switch may be opened only after ensuring

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

