

SI No. SWR/SBP/32

EAST COAST RAILWAY
SAMBALPUR DIVISION

STATION WORKING RULES OF SAMBALPUR STATION (CODE:SBP)

BG/MG/NG: Broad Gauge

Date of issue:-13.11.2014.

Date brought into force:-

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.** S.I./WRD- 22011, ALT-B

1.2 **SIGNAL INTERLOCKING PLAN NO.:** - S.I – 22011, 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 Signalling 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. DESCRIPTION OF STATION: -

SAMBALPUR is a seven-line junction station situated in Jharsuguda –Titlagarh section at KM 562.900 from Howrah. It has single line sections at Titlagarh & Talcher end and converged in to double line section at Jharsuguda end. It is Standard –II (R) interlocked, Class ‘B’ station equipped with Central Panel of Route Relay Interlocking & Multi Aspect Colour Light Signals. The Central Panel is provided with Route Relay Interlocking installation of Siemens type based on two-button operation, one at entrance and other at exit.

2.1 GENERAL LOCATION:-

- | | | | |
|-------|----------------------------------|---|---|
| 2.1.1 | NAME OF STATION | : | SAMBALPUR (SBP) |
| 2.1.2 | CLASSIFICATION OF STATION | : | ‘B’ class |
| 2.1.3 | NAME OF THE SECTION | : | Jharsuguda -Titlagarh, Non-RE, BG section |
| 2.1.4 | ROUTE | : | ‘D’ Spl. |
| 2.1.5 | LOCATION | : | KM 562.900 from Howrah. |

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

- i) Jharsuguda end - SARAL (Code: SLRA) inter distance 7.43 K.M.
- ii) Titlagarh end - HIRAKUD (Code: HKG) inter distance 6.7 K.M.
- iii) Talcher end - Sambalpur city (Code: SBPY) inter distance 6.10 KM
- iv) Passenger halt: - NIL

- v) Flag Station: - SAMBALPUR ROAD (Code-SBPD) situated at KM 561.080 (between SBP-SLRA & SBP-SBPY) from HWH and 1.820 KM from SBP.
- vi) Outlying siding: - NIL
- vii) D.K. station: - NIL
- viii) IBH: - NIL
- ix) IBS: - NIL.

2.3 **BLOCK SECTION LIMITS:** -

| Between stations | The point from which 'Block section' commences. | The point at which 'Block section' ends. |
|------------------------------|---|--|
| Between SBP-HKG | UP Advanced starter signal No.37 of SBP | DN Advanced starter signal of HKG Station. |
| Between SBP- SBPY | UP Advanced starter signal No.44 of SBP | DN Advanced Starter of Signal of SBPY Station. |
| Between SBP- SRLA UP Line | Outer most point of point no.53A of SBP station on UP Line. | UP Advanced starter signal of SRLA Station. |
| Between SBP-SRLA DN Line | DN Advanced Starter Signal No 42 of SBP. | BSLB of SRLA station on DN Line. |

2.3.1 **STATION SECTION:**

The portion between DN Advanced starter signal No 42 of DN Line & outer most point No.53A of UP line at SRLA end & UP Advanced starter signal No 44 at SBPY end to UP Advanced starter signal No 37 at HKG end is the station section of SBP station.

2.3.2 **STATION LIMIT:**

The portion between DN Distant signal at HKG end to DN Advanced starter signal 42 on DN line and UP Distant signal at SRLA end & up to DN Distant signal at SBPY end is the station limit of SBP station.

2.4: **GRADIENT:** -

(a) **FROM THE CENTER OF STATION BUILDING TOWARDS SRLA & SBPY**

| CHAINAGE IN METER | | INTER DISTANCE | GRADIENT |
|-------------------|---------------|----------------|------------|
| FROM | TO | | |
| 0 m | 426.0m | 426.0m | 1 in 400 F |
| 426.0m | 1135.40m | 576.251m | 1 in 470 F |
| 1135.40m | 1159.60m | 331.650m | LEVEL |
| 1159.60m | 1870.0m | 68.35m | 1 in 150 R |
| 1870.0m | 1960.0m | 400m | LEVEL |
| 1960.0m | 2864.0m | 150m | 1 in 350 F |
| 2864.0m | 2873.0m | 400m | LEVEL |
| 2873.0m | Block section | --- | 1 in 208 R |

(b) FROM THE CENTER OF STATION BUILDING TOWARDS HIRAKUD

| CHAINAGE IN METER | | INTER DISTANCE | GRADIENT |
|-------------------|---------------|----------------|-------------|
| FROM | TO | | |
| 0 M | 457.0 m | 450m | LEVEL |
| 457.0 m | 1710.0m | 1253m | 1 in 1000 F |
| 1710.0m | 1890.0m | 180m | LEVEL |
| 1890.0m | 2133.0m | 243m | 1 in 670 R |
| 2133.0m | 2320.0m | 187m | 1 in 200 R |
| 2320.0m | 3295.0M | 975m | 1 in 150 R |
| 3295.0M | Block section | --- | 1 in 125 R |

2.5 LAY OUT: -

- i) No. of running lines :- 7 (Seven)
- ii) No. of sidings :- 18 (Eighteen)
- ii) No. of Passenger platform :- 04, (One High level Passenger Island Platform (590 m X11.20m) in between Line No.-1 & Passenger Bay line (1A) and another High level Island Passenger Platform between line No 2 & 3 (470m X9.50m).
- iii) No. of goods shed platform :- One, beside ARME & ART Siding (250mX12m)
- iv) No. of Saloon siding platform :- One, beside Saloon Siding (120mX7.0m)
- v) FOB: - One, connecting PF-1 with PF-2 & PF-3.

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

| SL No | DESCRIPTION | CSL | ISOLATION PROVIDED | |
|-------|-----------------------------|---------------------------|--------------------|-----------------------|
| | | | TOWARDS HKG end | TOWARDS SRLA/SBPY end |
| 1 | Line No.1 (Common Loop) | 690.1 mtrs. (Str. To Str) | ORL | ORL |
| 2 | Line No.2 (Common Loop) | 719.1 mtrs. (Str. To Str) | ----- | ORL |
| 3 | Line No.3 (Common Loop) | 737.5 mtrs. (Str. To Str) | Derailing Switch | ---- |
| 4 | Line No.4 (Goods Loop) | 738.8 mtrs. (Str. To Str) | Derailing Switch | Derailing Switch |
| 5 | Line No.5 (Goods Loop) | 738.5 mtrs. (Str. To Str) | Derailing Switch | Derailing Switch |
| 6 | Line No.6 (Goods Loop) | 673.2 mtrs. (Str. To BJ) | Derailing Switch | ORL |
| 7 | Line No.1A (Pass Bay Line) | 282.2 mtrs. (Str. To SB) | -- | Derailing Switch |

(II) DIRECTION OF MOVEMENTS: -

- a. Trains arriving from SARLA end are UP trains.
- b. Trains arriving from HIRAKUD & SAMBALPUR CITY end are DN trains.

2.5.2 **NON-RUNNING LINES AND CSL:** -
(A)

| Sl. No. | DESCRIPTION | CAL / CSL | TAKES OFF LINE NO. | EXIT | OPERATION |
|---------|-----------------------------------|---|--|----------|---------------------------|
| 1 | Line No.7 (Engine Escape Line) | 414.31 mtrs. (Str to Str) | Line No.6 | Both Way | Operated from Panel. |
| 2 | Line No.8 (ART & ARME Siding) | 169 mtrs. (Str to SB for ART) 54 mtrs (Str to SB for ARME) | Line No.7 | Both Way | Operated from Panel. |
| 3 | Engg Siding | 180.0M | LINE No-8 | One way | Operated from Panel |
| 4 | IOC Siding (i) | 176.1 M | LINE No-7 | One way | Operated from Panel |
| 5 | IOC Siding (ii) | 112.0 M | LINE No-7 | One way | Operated from Panel |
| 6 | IOC Siding (iii) | 84.6 M | LINE No-7 | One way | Operated from Panel |
| 7 | Proposed washing line | 406.35 M | Washing line No1 at SLRA end & Shunting neck at HKG end. | Both way | Hand point |
| 8 | Washing line, Line No.1 | 406.35M | Proposed washing line at HKG end & Line-No-8 at SLRA/SBPY end. | Both way | Hand point |
| 9 | Washing line, Line No.2 | 406.35M | Washing line-1 | Both way | Hand point |
| 10 | Rake stabling Line | 332.30M | Washing line-2 | One way | Hand point |
| 11 | Sick Line | 95M | Washing line-1 | One way | Hand point |
| 12 | IOH Shed L-1 | 139.86M | Sick Line | One way | Hand point |
| 13 | IOH Shed L-2 | 92.26M | IOH Shed L-1 | One way | Hand point |
| 14 | Engine escape line (Line No-2 A) | -- | Pass bay line | One way | Operated from Panel |
| 15 | Saloon siding (Line No-3 A) | 130M | Engine escape line | One way | Hand point control by 97. |
| 16 | Shunting neck (SLRA end) | 456.4M | Line No.5 | One way | Operated from RRI Panel |
| 17 | Shunting neck (SBPY end) | 485 M | Line No.3 | One way | Operated from RRI Panel |
| 18 | HIW siding | -- | Shunting neck at HKG end. | One way | Operated from RRI Panel |

(B) DESCRIPTION OF NON RUNNING LINES-

- (I) **Line No.7 (Engine Escape Line)-** Engine Escape Line of CSL 414.31 mtrs (Str to Str) takes off from line no. 6 has entry and exit at both ends. The line is isolated by point No. 77A at SRLA end. Points at either end of engine escape line are operated from the operating panel. Starter signal No. 34A/B at SRLA end and Starter signal No. 29 at HKG end are provided for despatching of train from the Engine Escape line. Entry of train from SRLA/SBPY end is controlled by shunt signal SH5F & SH 15C, where as entry from HKG end is controlled by SH4E.
- (II) **ART & ARME Siding:** - ART & ARME Siding of CSL 169 mtrs. & 54 mtrs (Str to SB) respectively take off from line No. 7. It has entry and exit at both ends. The siding is isolated by point No. 91 at SRLA/SBPY end. ART is connected to Engine Escape line at HKG end by Hand Point controlled by 95 & ARME siding is connected by Hand point controlled by 86 at SRLA/SBPY end. Starter signal No. 36A/B, Calling on signal No C 36 A/B and Shunt signal No SH 36A/B/C at SRLA/SBPY end are provided for despatching of train from ART siding and Starter signal No. 31, Calling on signal No C 31 and Shunt signal No SH 31 (A – F) at HKG end are provided for despatching of train from ARME siding.
- (III) **ENGG. Siding:** - Engg siding with CSL 180.0 mtrs takes off from ART&ARME siding, has Single side entry and exit. The entry & exit Points to Engg. Siding is operated from the operating panel. Shunt signal No. SH-29F, SH-31F and SH-14A/B are provided for to and from movements.
- (IV) **IOC Siding (I):** - IOC siding of CSL 176.1 M takes off from the extended portion of line No. 7 at HKG end of yard and is isolated by DS point No. 76. This DS point is operated from the operating panel. Shunt signal nos. SH-12A/B, SH-29E, SH-31E are provided for to and from movements in the siding. In case of failure of shunt signal or for carrying out any non-signal movement, points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (V) **IOC Siding (II):** - IOC siding of CSL 112.0 M takes off from the line No. 7 at HKG end of yard and is isolated by DS point no. 72A. This DS point is operated from the operating panel. Shunt signal no. SH-10A/B, SH-29D, SH-31D are provided for to and from movements in the siding. In case of failure of shunt signal or for carrying out any non-signal movement, points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (VI) **IOC Siding (III):** - IOC siding of CSL 84.6 M takes off from line no. 7 at HKG end of yard and is isolated by DS point no. 70A. This DS point is operated from the operating panel. Shunt signal no. SH-8A/B, SH-29C, SH-31C are provided for to and from movements in the siding. In case of failure of shunt signal or for carrying out any non-signal movement, points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (vii) **Engine escape line-** Engine escape line with one side entry and exit takes off from pass bay line i.e. Line No-1A at SBPY/SLRA end and isolated by DS point no. 85B. The entrance point is operated from the operating panel. Shunt signal no. SH-32A/B/C is provided on the Engine escape line for movements from the siding. Shunts signal no. SH-13A is for movement into the siding.
- (viii) **Saloon Siding:** - Saloon siding (CSL of 130m) with one side entry and exit takes off from Engine escape line at SRLA/SBPY end. The siding points are hand points operated by ground

Lever at site. Whenever it is required to admit a train into the Saloon siding its control button 97 is pressed along with Group Trans button (WHITE WITH BLACK DOT), which will enable the SM to extract the key 'N' from the RKT at RRI cabin. Key 'N' will unlock the Hand Plunger Lock, then the siding point can be set to reverse position, clamped, padlocked and train can be placed in the Saloon siding. After the completion of work the siding point shall be normalised and locked by means of Hand Plunger Lock. The key 'N' is to be carried to RRI cabin and transmitted to the panel through RKT. SM on seeing the key-in flashing indication on the panel shall press the buttons 97 and group release button (WHITE WITH BLACK DOT) to get steady WHITE indication on the panel.

- (ix) **Proposed washing line:** - Proposed washing line of CSL 406.35 mtrs with both side entry and exit, takes off from Washing line No1 at SLRA end & extended portion of Line No.3 at HKG end. Entry and exit points of this siding are hand-operated points. Points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (x) **Washing line-1-** Washing line-1 of CSL 406.35 mtrs with both side entry and exit, takes off from proposed washing line at HKG end & Line-No-8 at SLRA end. Entry and exit points of this siding are hand-operated points. Points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (xi) **Washing line-2** -Washing line of CSL 406.35 mtrs with both side entry and exit, takes off from washing line-1. Entry and exit points of this siding are hand-operated points. Points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (xii) **Rake stabling line-**Rake stabling line of CSL 332.30 mtrs with single side entry and exit, takes off from washing line no. 2. Entry and exit points of this siding are hand-operated points. Points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (xiii) **Sick Line:** - Sick line of CSL 95 mtrs with single side entry and exit, takes off from Washing line-1 at SRLA/SBPY end. Entry and exit points of this siding are hand-operated points. Points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (xiv) **IOH Shed L-1-** IOH shed of CAL 139.86 mts with single side entry and exit, takes off from sick line at SRLA/SBPY end. Points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (xv) **IOH Shed L -2-** IOH shed of CAL 92.26 mts with single side entry and exit, takes off from IOH Shed -1 line at SRLA/SBPY end. Points are to be set, clamped and padlocked before any shunting movement is undertaken in the siding.
- (xvi) **Shunting Neck:** - Shunting neck of CSL 456.4mtrs (SH-11A/B to SB) takes off from line No.5 with single side entry and exit at SRLA/SBPY end of the yard. It is isolated by DS point no. 55 which is operated from the control panel. Shunt signal SH-11A/B is provided for shunting movement from the shunting neck & SH (18, 20, 22, 28, 30, 32) C, SH40 are provided in the yard for shunting movement into the shunting neck.
- (xvii) **Shunting Neck:** - Shunting neck of CSL 485 mtrs (SH- SH) takes off from line no.3 at HKG end with single side entry and exit. It is isolated by DS point no. 92 at HIW siding end, which is operated from the control panel. Shunt signal SH-41 is provided for shunting movement to HIW siding & SH 16 A/B is provided in the shunting neck for shunting movement up to SH 46 A/B

and SH 48 (A–C). Shunt signals SH 35, 39 B & SH50 are provided for shunting operation towards shunting neck.

- (xix) **HIW siding:** - HIW Siding takes off from shunting neck at HKG end with single side entry and exit. It is isolated by DS point no. 92, which is operated from the control panel. Shunt signal SH-50 is provided for shunting movement from HIW siding to SBP yard. Shunt signals SH 41 is provided for movement of a train to HIW siding. (Detail siding rules is given separately)

2.5.3 **ANY SPECIAL FEATURES IN THE LAYOUT:** - NIL

2.6.1 **LEVEL CROSSINGS: (STATION SECTION)-**

| Sl. No | Location | K.M. | Normal Position | Class | Type | Operation | Communication |
|--------|---|-----------------|----------------------|-------|-------------|-------------------------------------|----------------------------------|
| 1 | Between UP starter & UP Adv. starter signals. | 563.300 (JT-25) | Open to Road Traffic | 'Spl' | Interlocked | Electrical Operated Lifting Barrier | Telephone connection with SM/SBP |

2.6.2 **LEVEL CROSSINGS: (IN BLOCK SECTION) :**

| Sl. No | Location | K.M. | Normal Position | Class | Type | Operation | Communication |
|--------|------------------|-----------------|------------------------|-------|-----------------|--------------------------------|-----------------------------------|
| 1 | Between SBP-SRLA | 557/4 (JT-24) | Open to Road Traffic | 'B-2' | Interlocked | Winch Operated Lifting Barrier | Telephone connection with SM/SRLA |
| 2 | Between SBP-HKG | 566/1-2 (JT-26) | Open to Road Traffic | 'Spl' | Interlocked | Winch Operated Lifting Barrier | Telephone connection with SM/SBP |
| 3 | Between SBP-HKG | 568/2 (JT-27) | Closed to Road Traffic | 'C' | Non-Interlocked | Winch Operated Lifting Barrier | Telephone connection with SM/HKG |

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

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

Trains are worked under Absolute Block System in accordance with the provision of GR 1.02(7), 1.02(3), 1.02(33), 8.01(1)(a)(b) & (c), 8.01(2)(b), 8.03(1)(a), (b), (c) (ii) and (2)(a)(b)(c)(ii), 8.05(2)&(3), 8.03, 8.06, 8.14 and 14.01 to 14.14, and Block Working Manual Chapter-IV, Part-II & VI and Operating Manual.

Diado type Token less Block Instrument (co-operative type) is provided for working of trains between SBP-SBPY & SBP-HKG Block section and SGE Double Line Block Instrument (Non-co-operative type) is provided for working of trains between SBP-SRLA. The block instrument shall be operated by the SS/Station Master on duty of RRI Cabin as per the provision of GR Chapter-XIV, Block Working Manual Chapter –IV, Part-II & Chapter-VI. Line Clear is Granted /obtained through block Phone attached with the Block Instrument. Taking 'OFF' the Last Stop Signal is the authority for the Loco Pilot to proceed into the concerned Block Section Vide GR 14.08(a) (b) (IV).

Lock UP key is provided for locking the Instruments to prevent unauthorised manipulation of the Instruments. The key of the Block Instruments must be in the personal custody of the on duty Station Master of the RRI Cabin.

- (i) **SEALING OF EMERGENCY OPERATION BUTTONS/KEYS:** - All “emergency operation buttons” on the Station Master’s control panel of RRI Cabin shall be kept sealed in normal condition by S&T staff. Whenever any emergency operation is initiated. SS/SM on duty shall break open the seal of the concerned button to make the button operative. Immediately after completion of emergency operation SS/SM on duty shall inform concerned S&T staff for resealing of the concerned button.

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

Manually operated Multi Aspect Colour Light Signalling in accordance with General Rules No.3.07 (4) (5) (6) and (7), 3.08(4)(b) & (c) 3.09, 3.10, 3.11, 3.17, 3.19, 3.20, 3.24(4) 3.27(a) 3.32(l) and (2) are provided to govern the movement of trains into and out of the yard.

“Calling on” Signals are provided below the Home and Starter Signals in terms of 3.13 (6(b)).

Shunt Signals are provided for controlling Shunting movement in Sambalpur Station yard in accordance with GR 3.14.

4.1 **TRACK CIRCUITS:**

All running lines of Sambalpur yard are track circuited. Only when any running line is clear, miniature “WHITE” strip of lights illuminate on indication panel through out the line so initiated. However when a running line is occupied by any vehicle/train, a ‘RED’ strip of light illuminates through out the berthing line till such time it is cleared.

4.1.1 **FAILURE OF TRACK CIRCUITS:**

In the event of failure of track circuits, before permitting any movement on such track circuited portion, SS/SM operating the SM’s panel shall confirm the clearance of the said portion of track from SS/SM on platform duty at center, under exchange of private number. The SS on platform duty shall physically check and ensure the clearance of nominated line. He shall confirm the same to panel SS/SM on duty in RRI cabin, under exchange of private number. SS/SM on duty in RRI cabin shall then permit any movement over the route either for reception or dispatch of train or for any shunting operations. However, the SS/SM on Line clear duty at RRI cabin shall assist the SS/SM on platform duty at center for physical verification of the line.

4.1.2 **AXLE COUNTER :**

The entire Block Sections between SBP-SBPY, SBP-HKG including both UP and Down Line of SBP - SRLA are monitored by Digital/Universal axle counter system. These pair of axle counters will monitor track and count the axles “IN” and axles “OUT” to indicate whether the respective sections are clear of trains or not.

The position of the Block section whether ‘clear’ or ‘occupied’ are reflected in the axle counter reset box panel provided in the Station Master office at RRI Cabin. It shows “GREEN” when block section is clear and “RED” when block section is occupied.

A pair of Digital axle counter is provided between SBP and SLRA for DN line one beyond DN advanced starter of SBP and another just in advance of BSLB of SLRA station and another pair on UP line one in advance of Advanced starter signal of SLRA and other in advance of UP home signal near to outermost point of SBP Station. Similarly, there is one pair axle counter each is provided between SBP-SBPY and SBP-HKG, one just ahead of UP advanced starter signals of SBP and the other just ahead of DN advanced starter signal of HKG/SBPY station for

counting the axles 'IN' and 'OUT' to indicate whether the block section is clear of trains as well as to verify the last vehicle of the incoming train.

Normally, when there is no train in the block section the axle counter shows "GREEN". Whenever a train enters into Block section, Block section clear indication "GREEN" for the particular section disappears and "RED" indication appears. After the complete arrival of the train, if the "RED" indication does not change to "GREEN", it should be assumed as Block Instrument failure for the particular section and necessary action as per GR.14.13 is to be taken. The axle counters are interlocked with the respective Block Instruments for that section. Unless Block section clear indication appears on the panel, it will not be possible to grant "line clear" or normalize the Block Instruments.

4.1.3 CRANK HANDLE:

Crank Handles are provided in location huts located at either end of the yard nearer to the point zone for manually setting of the electric motor operated points in the event of failure/defects of the points. The crank Handle at the location huts are released by the operation of control push button by the Dy.SS/SM on duty of the RRI Cabin.

| CRANK HANDLE | CRANK POINTS |
|--------------|----------------------|
| CH-1 | 52,56,60 |
| CH-2 | 54,58,62,64 |
| CH-3 | 66,74 |
| CH-4 | 68,70,72,76,78,80,82 |
| CH-5 | 51,69,67 |
| CH-6 | 53,59,61,65 |
| CH-7 | 55,57,63,73 |
| CH-8 | 71,75,77,89,91,93 |
| CH-9 | 79,81,83,85,87, |
| CH-10 | 92 |

The 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 Handle Locations. Crank handle keys can be taken out only when all signals are in normal Position and the route is not locked for whatever reasons. Crank Handle can be released by operating common 'trans' push button (GSB) and concerned Crank Handle control push button simultaneously. When the keys are taken out no signal can be taken "OFF" over the particular route on the points nominated by that Crank Handle. This key can be electrically transmitted to both end locations of the yard for manual operation of the defective points.

The failure of motor operated points must be ensured by physical checking at site that there is no obstruction. SM on duty at RRI Cabin shall personally ensure the clamping and padlocking of all facing & trailing points. An emergency Crank handle register shall be maintained by the SM on duty at the RRI Cabin as per Para 20.06(d) of the Operating Manual. Correct setting clamping and padlocking of the points is the responsibility of SM on duty. (Details of use of Crank Handle as per Appendix-'B').

4.1.4 TAKING 'OFF' CALLING ON SIGNAL:

- (a) Miniature colour light calling on signal is provided below the Home and starter 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/dispatch of a train when the Home/Starter signal above it cannot be taken 'OFF' due to failure of that signal or any track circuit failure in the route or any other reason or for a train to be admitted on blocked line.

To take 'OFF' calling on signal, the train must come to a stop at the foot of the Home Signal occupying the Calling-on-Signal track circuit in the rear of the signal. When a train occupies the Track circuit, a 'RED' light strip will appear on the panel. The particular route on which the train is intended to be received shall be set by operating individually by the panel push button and group button or by signal and route button pressing or by crank handling in the event of failure of operation of point through panel. After the route is set, the calling on signal button shall be pressed simultaneously along with the concerned route button for 2-3 seconds and released. After a lapse of 120 seconds, the calling on signal clears i.e. Yellow light glows at the concerned calling on signal on the panel.

- (b) Calling on signals is also provided below all Up and Dn. starter signals. When starter signal cannot be taken off due to failure of track circuit, failure of Block Instrument or failure of Up Advanced starter, the calling on signal can be taken off for despatch of train.

To take off calling on signal provided below Up and Dn. starter signal, the route must be correctly set and Dy.SS/SM on duty of RRI cabin must satisfy about the clearance of the route including fouling.

4.1.5 **POSITION AND OPERATION OF POINTS: -**

The positions of all points are shown in station Working Rule Diagram and also on operating panel. All points are power operated through Station Master's control panel apparatus. All cross over points on running line are independently worked by electric point machine and have built in locking and detection arrangement.

4.1.6 **ELECTRICAL KEY TRANSMITTER (EKT): -**

EKTs with crank handle keys are provided at both end locations for the operation of points in case of failure of point motors. The keys for the crank handles are transmitted electrically to the crank handle locations for operating the points by crank handles. EKT are provided at L.C. gate lodge at kilometer 563.300 for opening and closing of gate.

4.1.7 **IBS: NIL**

4.1.8 **POINTS AND TRAP INDICATOR: NIL**

4.1.9 **REPEATER (BANNER TYPE): NIL**

4.1.10 **SHUNT SIGNALS: -**

Both dependant (below starter) & independent shunt signals are provided for shunting movement in the yard.

4.1.11 **ANTI COLLOISION DEVICE: - NIL**

4.1.12 **EMERGENCY CROSSOVER:- NIL**

4.1.13 **LC GATE OPERATION:- Given in Appendix 'A'**

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

As per JPO/02/2012 of 29.08.2012, the following procedure shall be adopted for opening of Relay Room :-

The Relay room of station 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 SSTE 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 Room unless the failure is recoded 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 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. Ne lock shall be procured and provided.

In case SS/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 **POWER SUPPLY :**

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

- i) Normal supply from OSEB supply, three phase 440V- 50HZ.
- ii) Stand by supply – two Diesel Generator power supply – three phase, 440V-50HZ.

The availability of the normal power supply is indicated by a stencil indicator “M1” on the Operating panel. M2 is spare; M3 is for DG set supply.

The Indications in the Indication panel provided in the SM Room is lit through Inverter power supply. In the event of failure of local power supply, a power supply failure buzzer/indication appears on the SM panel. The Station Master on duty shall acknowledge by pressing the acknowledgement button provided on the panel. The buzzer will mute however, the indication will glow till the local power supply comes. The power supply backup through inverter can stand upto 01 hr. So, the SM on duty has to advise his staff to start the Diesel Generator provided in the Diesel Generator Room in the RRI compound within 01 hour of local power supply failure. Then the Diesel Generator will extend power supply to panel and indication “M3” will glow on the panel. When the normal power supply is restored, the same will be switched over automatically. Whenever power is switched over to normal supply a buzzer appears. This should be acknowledged by the SM on duty by pressing the Acknowledgement button and then he will stop the Diesel Generator. All the above events will be logged in the datalogger.

5.0 **TELECOMMUNICATION FACILITIES: -**

1. Telephone attached with Block Instruments for either side Block Sections.
2. Station to Station fixed telephone (Hot line) is provided
3. Station is provided with Auto telephone connected with Railway Exchange
4. BSNL telephone is provided.
5. The station is connected to BLGR-JSG & SBP-ANGUL control circuits by control telephones.
6. Station to station 25 Watt VHF communication is provided.
7. Telephone is provided between Station and both end crank handle locations and siding locations.
8. Telephone connection is provided between station and LC gates at Km 563.300 & KM 566/1.

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 block stations the SM on duty shall work vide SR 6.02.06. In the event of total failure of communications in SBP-HKG & SBP-SBPY sections, SR 6.02.04 shall be observed and in the event of total failure of communications in SBP-SLRA section, SR 6.02.03 shall be observed for working of trains.

6.0 SYSTEM OF TRAIN WORKING

The movement of train is controlled by the section controller on duty, whose orders must not be violated unless the said orders do not contravene any General Rules, Subsidiary Rules, Station Working Rules and Safe Working Principles of the Station. In the event of suspension of Control Phone, the Dy. Station Superintendent will work independently through direct communication available with the Station Master of the adjoining Block Stations and ensure that the preference is given to more important trains and no avoidable detention occurs to goods trains also. The working of trains will be governed by the provision of General Rules, 3.08, 3.13, 3.14, 3.17, 3.20, 3.30, 3.39, 3.40, 3.46, 3.61, 4.16, 8.01, 8.03, 8.05, 8.06, 8.15, 14.01, 14.02, 14.04, 14.05, 14.06, 14.07, 14.13, 14.14, 16.03 and Subsidiary Rules thereto, together with Chapter-IV, Part-II & Chapter-VI of Block Working Manual.

6.1.1 DUTIES OF TRAIN WORKING STAFF IN EACH SHIFT :

The following is the complement of the train working staff at the station in each shift.

| | | |
|--------|---|----|
| (i) | Station Manager-I (Supervisory) | 01 |
| (ii) | Station Superintendent (On platform duty) | 01 |
| (iii) | SS/Dy SS / SM (at RRI Cabin) | 02 |
| (iv) | Shunting Jamadar | 01 |
| (v) | Traffic Points Man (at Center) | 02 |
| (vi) | Traffic Points Man (at RRI cabin) | 01 |
| (vii) | Traffic Points Man (for yard shunting) | 02 |
| (viii) | Traffic Gate man | 01 |

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

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

The complete yard is track circuited and depicted in RRI indication panel board. Dy.SS/SM on duty in RRI Cabin is responsible for ascertaining clearance of Line by observing indication on the RRI panel.

6.1.3 ASSURANCE OF STAFF IN THE ASSURANCE REGISTER:

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

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

The Station Manager is personally responsible for maintaining the Assurance Register and for obtaining declaration from the staff working under him. The Assurance Register must be maintained in two parts one for Group-‘C’ staff and other for Group-‘D’ staff & duplicate copy of the Assurance Register must be maintained and kept in the personal custody by the Station Manager.

The declarations are to be renewed in the following cases:

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

6.1.4 **USE OF PRIVATE NUMBER BOOKS AND IDENTIFICATION NUMBER SHEETS:**

Sufficient private number books and identification number sheets in sealed covers shall always be kept in stock by Dy.SS, under lock and key by maintaining one register for this purpose.

6.2 **CONDITIONS FOR GRANTING LINE CLEAR: (GR 8.03 (1) & (2))**

[A] For double line Section- (SBP-SLRA)

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 point No 53A.
- ii) All necessary signals have been put back to 'ON' behind the said train.
- (iii) The line is clear up to the outermost point No 53A for an UP train.

[B] For Single Line Section- (SBP-HKG & SBP-SBPY)

- (i) The whole of the last preceding train has arrived complete.
- (ii) All the necessary signals are put back to 'ON' behind the said train.
- (iii) Block section is clear of trains running in the direction towards the block station for which such line clear is being given.
- (iv) The line is clear up to the Advanced starter signal of station nearest to expected train.

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 Loco Pilot is notified of the fact in writing by the SM of the station to which such line clear is to be granted.[Ref GR:3.49(4) ,8.01(1)(a),(b)(c), 8.01(2)(b),8.03(2),(a),(b),c(ii),8.03(1))(a),(b)(c)(ii).

6.2.1 **OUTLYING SIDING: - NIL**

6.2.2 **ANY SPECIAL CONDITIONS TO BE OBSERVED WHILE RECEIVING OR DESPATCHING A TRAIN – NIL**

6.2.3 **SPECIAL RESTRICTIONS**

- 1) Shunting in the face of an approaching train is prohibited.
- 2) Hand shunting, fly shunting is prohibited at both ends of the yard.
- 3) The over run line must not be used for stabling of vehicles or harboring an Engine with or without vehicles.
- 4) Shunting shall not be permitted at either end of the yard unless the engine is leading towards the falling gradient.
- 5) Speed is raised to 30 KMPH on first loop lines on either side of main line and over its turnouts at HKG end. 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

6.2.3.1 **SPECIAL INSTRUCTIONS**

- 1) Before taking "OFF" the Home signal when overlap is set upto end of ORL/DS point the SM on duty shall ensure the clearance of the line up to the end of ORL/DS point.
- 2) Before taking 'OFF" the home signal when overlap is set upto edge of L.C. gate SM on duty shall ensure the clearance of the line up to the edge of L.C. gate.

- 3) Dy. SS/SM on duty must ensure that before taking 'OFF' calling –on signals, trains must be brought to a stop at the foot of the respective starter signals. After ascertaining that the trains stopped at the foot of the respective starter signal and physical verification of track clearance, taking 'OFF' of calling-on signals is to be initiated.

6.2.4 **SETTING OF POINTS AGAINST BLOCKED LINE**

When a running line is blocked by stabled load wagon, vehicle or by a train which is to cross or give precedence to another train or immediately after the arrival of a train, the points at either end should be set against the blocked line except when shunting or any other movement is required to be done on-that line. [Refer SR 3.51.06 (a)]. If all the lines at a station happen to be blocked, when line clear has been granted to a train, the point should be set for the line occupied by a stabled load or a Goods train [Refer SR. 3.51.06 (b)].

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

The SS/SM on Platform duty shall secure the wagon, vehicle or the train stabled through station TPM/TP and inform to SS/SM on duty at RRI cabin supported by PN. He shall also record all particulars in the Stabled load register maintained at the station.

After getting the PN from SS/SM on Platform duty that stabled load wagon, vehicle / train has been properly secured, the SS/SM on Line clear duty shall immediately make a clear remark in 'RED' ink in the train signal register indicating time and Number of running line blocked. [Refer SR 5.23.01(a)].

Reminder collars shall be placed on the concerned 'Route Buttons by the SS/SM on panel duty.

6.2.5 **RECEPTION OF A TRAIN ON BLOCKED LINE**

Whenever trains are to be admitted on an obstructed line it is necessary that the train is received by Calling–On Signals provided bellow the Home Signal or piloted IN on a written authority given by the SM on duty & delivered by a competent Railway servant to the Driver of the train. [Refer GR 5.09 & SRs there to].

6.2.6 **RECEPTION OF TRAIN ON NON-SIGNALLED LINE**

Before receiving a train on non-signalled line, the SM shall ensure that

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

6.2.7 **DESPATCH OF TRAIN FROM NON-SIGNALLED LINE.**

Whenever a train is to be dispatched from a non-signalled line, a starting order on form T-511 shall be given to the Loco Pilot to start from the non-signalled line. [Refer SR.5.11.1]

6.2.8 **DESPATCH OF TRAIN FROM LINE PROVIDED WITH COMMON STARTER SIGNAL.**

Whenever a train is to be dispatched from a line provided with common starter signal the Loco Pilot should move according to the route indicator provided in the concerned starter signal.

6.3 CONDITIONS FOR TAKING 'OFF' APPROACH SIGNALS:

Reception of train is governed by rules laid down in GR 3.36, 3.38, 3.40, 3.46 and 4.17 with relevant SRs. 3.36.01, 3.36.04(a) 3.40.01 to 3.40.03, 3.42.02(a) (iv), 4.42.03 and other relevant provisions General and Subsidiary Rules, Block Working Manual, Operating Manual & Station Working Rules.

- (i) All the points on the route are correctly set and locked and interlocked level crossing gate is closed.
- (ii) All non-isolated shunting operations on adjoining lines are suspended & shunting authorities have been withdrawn.
- (iii) The adequate distance to be kept clear for taking 'OFF' Home Signals vide GR 3.40 has been reduced and reckoned from Starter Signals.
- (iv) SS/SM on duty operating the Panel is responsible for operation of panel for reception /dispatch of trains.
- (v) SS/SM on duty at RRI Panel shall consult with SS/SM on platform duty for nomination of the platform line for admission of a coaching train. But in the event of failure of Track circuit, SS/SM on platform duty shall be advised to physically check the line. SS/SM on platform duty shall check the clearance of nominated platform line and inform to the SM at RRI cabin, under exchange of private number. Then the panel SS/SM shall take off signals or pilot the train.
- (vi) For receiving other trains, the Panel SM of RRI cabin shall nominate a clear line in consultation with the SS/DySS/SM on duty (Line Clear) in RRI cabin. He shall personally satisfy himself that the nominated line is clear and free from all obstructions by verifying the WHITE light track indications in the panel. He shall set the points of the nominated route by means of push button switches provided in the control panel. He shall then verify from the visual indication available in the panel that points are set to the desired route.

Unless the track circuit for the concerned line is clear even with the other conditions satisfied, the operation of panel button by the Dy.SS on duty will not permit the concerned Home Signal to be taken 'OFF'. After correct setting of points, the Dy.SS on duty shall operate the concerned push button on the panel for taking 'OFF' the reception signal. He shall then verify on the panel that the correct reception signal is taken 'OFF'. Alternatively point operation and signal taking 'OFF' can be done by one operation by pressing signal button and route button.

If, for any reason, after taking 'OFF' signal it is required to put back the signal and alter the route, a time delay of two minutes shall be observed before the points can be altered as per SR 3.36.02.

6.3.1 CROSSING OF TRAIN :

In addition to the procedure mentioned under para "Reception of trains", rules Laid down in SR 3.47.01 and SR 3.51.06 shall be followed.

The SM on duty shall be very careful to see that unless the first incoming train has come to a stop by clearing fouling mark of the route on which the train is admitted shall not be interfered for admission of a second train in the adjacent line from the opposite direction.

6.3.2 RESPONSIBILITY OF Dy SS/SM FOR RESTORATION OF SIGNALS TO 'ON':

If a signal once taken 'OFF' for reception/despatch of a train has to be put back to 'ON' in an emergency, the procedure laid down in GR 3.36.02 shall be followed. In case of reception of a train the point shall not be altered until the train has come to a stand outside Home Signal. In case of departure signal, before charging the route, the acknowledgement of the Loco Pilot shall be obtained in a memo.

6.4 **SIMULTANEOUS RECEPTION/DESPATCH, CROSSING AND PRECEDENCE OF TRAINS:**

| | | |
|--------|--|---|
| (I) | Reception of a DN train from HKG on Line No.1 | Reception of an UP train from SLRA or DN train from SBPY on L3/L4/L5/L6 OR Dispatch of DN train towards SLRA or UP train towards SBPY from L3/L4/L5/L6 |
| (II) | Reception of a DN train from HKG on Line No.2 | Reception of an UP train from SLRA or DN train from SBPY on L3/L4/L5/L6 OR Dispatch of DN train towards SLRA or UP train towards SBPY from L3/L4/L5/L6 |
| (III) | Reception of a DN train from HKG on Line No.3 | Reception of an DN train from SBPY on L1 & L-1A OR Dispatch of UP train towards SBPY from line No1, L-1A or 2 |
| (IV) | Reception of a DN train from HKG on Line No.4 | Reception of an UP train from SLRA or DN train from SBPY on L1, L-1A or L3. OR Dispatch of UP train towards SBPY from L1/L2/L3 |
| (V) | Reception of a DN train from HKG on Line No.5 | Reception of an UP train from SLRA or DN train from SBPY on L1, L-1A /L3. OR Dispatch of DN train towards SLRA or UP train towards SBPY from L1/ L-1A /L2/L3/L4. |
| (VI) | Reception of a DN train from HKG on Line No6 | Reception of an UP train from SLRA or DN train from SBPY on L1/ L-1A /L3. OR Dispatch of DN train towards SLRA or UP train towards SBPY from L1/ L-1A /L2/L3/L4/L5. |
| (VII) | Reception of an UP train from SLRA on Line No-1 or L-1A | Reception of a DN train from HKG on L4/L5/L6. OR Dispatch of UP train towards HKG from L2/L3/L4/L5/L6 (While receiving a train on Line No, -1A despatch of UP train on L1 towards HKG is possible). |
| (VIII) | Reception of DN train from SBPY on Line No-1 or L-1A | Reception of a DN train from HKG on L3/ L4/L5/L6. OR Dispatch of UP train towards HKG from L2/L3/L4/L5/L6 (While receiving a train on Line No, -1A despatch of UP train on L1 towards HKG is possible). |
| (IX) | Reception of an UP train from SLRA or DN train from SBPY on Line No-3. | Reception of a DN train from HKG on L1/L2/L4/L5/L6. OR Dispatch of an UP train towards HKG from L1/L2/L4/L5/L6. |

| | | |
|-----|--|--|
| (X) | Reception of an UP train from SLRA or DN train from SBPY on Line No-4 or 5 or 6. | Reception of a DN train from HKG on L1/L2. OR Dispatch of an UP train towards HKG from L1/L2/L3. |
|-----|--|--|

6.4.1 ADEQUATE DISTANCE (SIGNAL OVERLAP):

To take 'OFF' the Home Signals for admission of a train, the adequate distance as mentioned below shall be kept clear in terms of GR 3.40 and SRs thereto. (CRS's dispensation is obtained vide letter No-301 of date 30.06.2009.)

6.4.2 CLEARANCE OF ADEQUATE DISTANCE (SIGNAL OVERLAP):

| LINE NO. | FOR UP TRAINS | | FOR DOWN TRAINS | |
|-----------|------------------|---|------------------|--|
| | FROM | TO | FROM | TO |
| Line No.1 | UP Starter No.17 | End of ORL OR upto UP Adv Starter No 37 | DN Starter No.18 | End of ORL OR upto Advanced Starter No44. |
| Line No.2 | UP Starter No.27 | Edge of LC Gate at Km 563.300 | DN Starter No.30 | End of ORL OR upto Advanced Starter No44 |
| Line No.3 | UP Starter No.19 | End of D.S.Point No.64 or UP Adv Starter No 37. | DN Starter No.20 | Up to Advanced Starter No 42/44 |
| Line No.4 | UP Starter No.21 | End of D.S.Point No.62B or UP Adv Starter No 37. | DN Starter No.22 | Up to Advanced Starter No 42. |
| Line No.5 | UP Starter No.23 | End of D.S.Point No.62B or UP Adv Starter No 37. | DN Starter No.24 | End of DS Point no.55 or Up to Advanced Starter No 42. |
| Line No.6 | UP Starter No.25 | End of D.S.Point No.62B or UP Adv Starter No 37 . | DN Starter No.26 | End of ORL or Up to Advanced Starter No 42. |

6.5 COMPLETE ARRIVAL OF TRAIN:

The entire block sections between SBP-SRLA (Both UP & DN Line), SBP-SBPY & SBP-HKG are monitored by axle counter system and the position of the block section whether clear or occupied are indicated in the panel. When the block section is clear, 'GREEN' indication appears in the panel. As soon as a train enters into the block section, the GREEN indication disappears and 'RED' indication appears in the panel. As soon as the train clears the Block Section, the 'RED' indication disappears and 'GREEN' indication appears in the panel. This confirms the complete arrival of the train and the Dy.SS on duty shall give, "TRAIN OUT OF BLOCK SECTION" report on seeing the section clear (GREEN) indication on the panel.

If a train passes the Station without confirming the Last Vehicle Indicator then the Dy SS on duty shall advise the Station in advance to stop the train to see the complete arrival of the train under exchange of private number and he shall close the Block Instrument of the concerned section vide GR 4.17 (3).

After obtaining confirmation about the complete arrival of the said train under exchange of private number he may send another train into the block section.

In case of failure of axle counter, the SM on duty shall obtain complete arrival certificate from the guard of the train in the Complete Arrival Register (T/1410) maintained at the station for stopping train .For through passing train the SM on duty shall satisfy himself that the

complete arrival of the train by verification of the Last Vehicle Indicator vide SR 4.16.05 that the train arrived complete.

Train passing on adjacent lines shall be stopped and Guard & Loco Pilot shall be issued with Caution Order to proceed cautiously & stop short of any obstruction as per SR4.17.03.

On occasion when a motor trolley following a train, the point shall not be altered until the following motor trolley is admitted on the same line. In the event of motor trolley delays in the section, the SM on duty shall take action as per SR 15.25.03(b)(vi).

6.5.1 **CHECKING OF COMPLETE ARRIVAL OF TRAIN DURING FAILURE/SUSPENSION OF AXLE COUNTERS:**

The Dy.SS/SM on duty shall depute a pointsman with Private Number book during failure/suspension of axle counter for checking the complete arrival of the train. The points man shall be responsible for watching the last vehicle indication of all trains and give one assurance Private Number to the SM through a nearby telephone available at the location box.

6.6 **DESPATCH OF TRAINS :**

Despatch of train is governed by General Rules 3.38, 3.42, 14.08 and SR 3.36.04, 3.42.01(b) 3.42.02(a)(iv), 3.42.03, 3.42.04 and BWM 6.09, 5.33 & other relevant provisions of GR, SR, BWM and SWR. For despatch of a train, the Dy.SS on duty having obtained "Line Clear" for a train, shall set the out going route correctly and satisfy himself by observing visual indication on the control panel. (For coaching trains, the SS on duty at the platform shall advise the Dy.SS on duty at RRI Cabin to obtain "Line Clear" and take 'OFF' departure signal supported by a Private Number on completion of loading, un-loading, etc.)

Before dispatching a train to SBP-HKG section, the SM on duty RRI Cabin shall arrange to close the interlocked L.C.gate No.JT-25 at Km 563.300, ensure that LC.gate at KM 568/2 is closed & the GK of engineering interlocked LC gate at KM 566/1 has been advised of details of the train, it's direction, etc., as per gate working instructions, then he shall take 'OFF' the departure signal. Likewise, before dispatching a train to SBP-SLRA section, the SM on duty RRI Cabin shall ensure that Gatekeeper of interlocked LC.gate at KM 557/4 has been advised of details of the train, it's direction, etc., as per gate working instructions, then he shall take 'OFF' the departure signal The Loco Pilot shall start the train on seeing the aspects of the route Starter and Advanced Starter. The SM on duty shall watch the passage of train with last vehicle indicator. After the train passes the Advanced Starter complete, he shall send the "Train Entering Block section" report to the station in advance.

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 General 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(i).

6.7 **TRAINS RUNNING THROUGH :**

For run through trains, the signals should be taken 'OFF' as per the sequence and instructions laid in SR 3.42.02(a)(iv). While the train passes RRI Cabin, the SM on duty shall observe/watch the condition of the train and exchange hand signal with the train Driver and Guard and take necessary action in accordance with the GR 4.42(2) & SR 4.42.02 to 4.42.07.

In case the view of the passing train is otherwise obstructed, the SM on duty shall depute one staff to exchange signal for the purpose at a place from where the view of the train can be seen.

The SM on duty shall obtain “Line Clear” from the station in advance and shall take 'OFF' the reception and departure signal in time to avoid detention to the through train.

6.8 WORKING IN CASE OF FAILURE:

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

(I) SUSPENSION / FAILURE OF SIGNALS :

When signals become defective, the procedure laid down in GR 3.68 to 3.71 and SRs thereto shall be followed.

(a) FAILURE OF TRACK CIRCUIT:

In the event of failure of track circuit on any nominated route, the SM on duty at RRI cabin shall advise the SS/Dy.SS on Platform duty to physically check and confirm its clearance. The SS on platform duty shall physical check and ensure the clearance of nominated line. He shall confirm the same to SS/SM on duty in RRI cabin, under exchange of private number. DySS/SM on duty in RRI cabin shall then permit any movement over the route either for reception or despatch of train or for any shunting operations. However, the SS/SM on Line clear duty at RRI cabin shall assist the SS/Dy. SS on platform duty at center for physical verification of the line.

(b) 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 normalising the system of working. Details of operations involved in resetting of axle counter are given in Appendix-'B'.

(c) BLOCK INSTRUMENT:

In the event of partial interruption/ failure of block instrument the concerned block instrument shall be suspended till its rectification and trains shall work as per GR. [Refer GR 6.02.03, 6.02.04 and SR 6.02.06].

At the time of failure of Block Instrument between SBP-SBPY & SBP-HKG the authority will be Paper Line Clear Ticket (T/C 1425) with Identification number & Private Number issued from the Station in advance.

During the failure of Block Instrument between SBP-SRLA; the authority will be T/369(3b) with identification number and Private Number issued from the station in advance written both in figure and words.

(d) RECEPTION OF TRAIN ON OBSTRUCTED LINE:

Whenever trains are to be admitted on an obstructed line it is necessary that the train be piloted “IN” on a written authority given by the Dy. SS on duty and delivered by a competent Railway servant to the Loco Pilot of the train. [Refer GR 5.09 & SRs there to].

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

Before receiving a train on non-signalled line, the SM shall ensure that

- i) The train is brought to a stand at the first stop signal.
- ii) The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand.

- iii) All points over which the train has to pass are correctly set and the facing points clamped and Pad locked.
- iv) The Loco Pilot is authorized to pass the approach stop signals at 'ON' through a written authority. [Refer GR 5.10].

(f) **DEFECTIVE SIGNAL:**

(i) APPROACH SIGNAL :

In the event of suspension/failure of Home Signal/ Routing Signal, the calling-on signal may be taken 'OFF' for reception of a train. If the calling on signal also becomes defective, the train shall be worked in accordance with GR 3.69 and SRs thereto. If the defective stop signal can not be kept at 'ON', SR 3.68.02 shall be followed. Before taking 'OFF' calling on Signal, the SS/SM of RRI panel must ensure clearance of track between the calling on signal and next stop signal ahead in the direction of movement either by track circuit indication or by physical verification through SS/SM on platform duty or SS/SM on duty on Line Clear duty of RRI cabin under exchange of private number, in case of failure of track circuit.

(ii) DEPARTURE SIGNAL:

In the event of Starter Signal becomes defective, calling on signal may be taken 'OFF' in accordance with GR 3.13(6)(b) and GR 3.45 for despatch of train and if the calling on signal is also defective, train shall be worked in accordance with GR 3.70 and SRs thereto. Before taking 'OFF' calling on signal below starter signal, the SS/SM of RRI panel must ensure clearance of track between the calling on signal and the next stop signal ahead in the direction of movement either by track circuit indication or by physical verification through SS/SM on platform duty or SS/SM on duty on L/C duty of RRI cabin under exchange of private number, in case of failure of track circuit.

In the event of Advanced Starter Signal becomes defective, "Paper Line Clear Ticket" will be given to the Driver to pass the last stop signal at 'ON' for single line section.

In the event of Advanced Starter Signal becomes defective, a Pilot Memo (T/369 (3b)) will be given to the Driver to pass the last stop signal at 'ON' for the double line section.

UP Advanced Starter is interlocked with Route Starter Signal. In case of failure of Advanced Starter/Block Instrument, the Starter Signal cannot be taken 'OFF' & in that case the calling on signal provided below starter signal can be taken 'OFF'.

(g) **PILOTING OF TRAIN INTO STATION YARD:**

Whenever Home Signal and Calling on Signal provided below Home Signal cannot be taken 'OFF' for reception of a train, the procedure laid down in SR 3.69.03(a) & (c) shall be followed for piloting 'IN' the train. The SS/SM, operating the panel at RRI Cabin shall nominate a clear line for admission of incoming train. He shall advise the SS/SM on platform duty to set clamp and padlock both the trailing & facing points of the nominated route nearest to station yard. Then outermost and farthest points are to be set, clamped and padlocked by the SS/SM on Line Clear duty of RRI Cabin. The SS/SM on platform duty after ensuring the correct setting of nominated points of the concerned line nearest to the station shall exchange PN with SS/SM on Line Clear duty.

After satisfying about the correct setting clamping & padlocking of all the facing & trailing points concerned for the admission of the train on the route, the SS/SM on Line Clear duty of RRI cabin shall hand over the written authority T/369(3b) to the TPM for piloting the train from the defective Home Signal. After the train has been brought to a dead stop at the Home Signal, the

TPM shall hand over the pilot memo to the Loco Pilot, board the engine & shall display proceed hand signal to pass the defective Home Signal at 'ON' position.

NOTE: -

1. The SS/SM on duty (L/C) at RRI cabin shall personally supervise the correct setting, clamping and padlocking of the facing and trailing points at farthest end and ensure clearance of the nominated route vide SR [Ref-SR3.69.03(c)] Likewise, the SS/SM on platform duty at center shall personally supervise the correct setting, clamping and padlocking of the facing and trailing points of the route nearest to platform and then exchange PN with SS/SM on Line clear duty. They shall coordinate with each other for safe admission of a train during failure of signals and interlocking.
2. The Key of padlock of the clamps put on to the points on the route for piloting In or piloting OUT shall be in the personal custody of the SS/SM on duty or any other authorized operating officials till such time the train/engine/vehicle has utilized the route or alternatively such movement is cancelled.
3. The SM on duty at RRI should ensure closer of the Interlocked LC gate before piloting in the train under exchange of Private Number with the gateman on duty.

(h) **PILOTING OF TRAINS OUT OF STATION YARD:**

When the starter signal has become defective, the SS/SM at operating panel shall take 'OFF' calling on signal for despatch of train. When both starter signal and calling on signal can not be taken 'OFF', then both the trailing and facing points for the despatch of the train shall be clamped and padlocked after ascertaining the clearance of the route (both facing and trailing) and the Loco Pilot shall be given pilot memo (T/369 (3b) to pass the defective starter at 'ON' position.

The SS/SM, operating the panel at RRI Cabin shall advise the SS/SM on platform duty to set clamp and padlock the outermost and farthest points of the nominated route in trailing & facing direction. SS/SM on Line Clear duty of RRI Cabin shall set, clamp and padlock the points nearest to platform. The SS/SM on platform duty after ensuring the correct setting of nominated points of the concerned line shall exchange PN with SS/SM on Line Clear duty. Then the SS/SM on Line Clear duty after getting PN from SS/SM on platform duty shall hand over the Pilot out memo to the Loco Pilot for dispatching a train.

In case of Advanced Starter has become defective or Token less Block Instrument is suspended for Single Line Section, such signal shall be passed on the authority of "Paper Line Clear Ticket".

For double line section the Advanced Starter Signal shall be passed on the authority (T/369(3b)).

NOTE: -

1. The SS/SM on duty (L/C) at RRI cabin shall personally supervise the correct setting, clamping and padlocking of the facing and trailing points nearest to platform and ensure clearance of the nominated route vide SR [Ref-SR3.69.03(c)] Likewise, the SS/SM on platform duty at center shall personally supervise the correct setting, clamping and padlocking of farthest points of the nominated route in trailing & facing direction and exchange PN with SS/SM on Line clear duty. They shall coordinate with each other for safe despatch of a train during failure of signals and interlocking.

2. The Key of padlock of the clamps put ON to the points on the route for piloting In or piloting OUT shall be in the personal custody of the SM on duty or any other authorized operating officials till such time the train/engine/vehicle has utilized the route or alternatively such movement is cancelled.
3. The SM on duty at RRI should ensure closer of the Interlocked LC gate before piloting in the train under exchange of Private Number with the gateman on duty.

(i) **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 of RRI cabin irrespective of the position of the switches of point as laid down in GR with relevant SRs shall be followed. [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]

(j) **DEFECTIVE INTERLOCKING:**

During failure/suspension of interlocking gears, all points concerned both facing and trailing must be clamped and padlocked for reception & despatch of train. The SM on duty of RRI Cabin is responsible for ensuring correct setting and locking of points (both facing & trailing) before permitting any movement over them.

In case of disconnection of signal and interlocking for repairs and maintenance, procedure laid down in GR and relevant SRs shall be followed. In the event of signal showing no lights, SM on duty shall before giving line clear initiate action in accordance with the procedure prescribed in GR and the relevant SRs. [Refer GR 3.51, 3.69, 3.49 (4), 3.68 to 3.77]

(k) **DEFECTIVE/DAMAGED POINT:**

In case of points controlled by RRI Cabin become defective, the procedure laid down in OM 20.06 should be followed for setting of the points by crank Handle.

6.9 **PROVISION FOR WORKING OF MOTOR TROLLIES, MATERIAL TROLLIES AND TOWER WAGONS ETC:**

Motor Trollies & Material Trollies, Tower Wagons shall be worked as per GR 15.25, 15.27, 17.08 and SR thereto, Block Working Manual 4.39, 4.40, 5.11(2), 5.12, 5.13, 5.14(2)(b) and Circulars and Orders issued from time to time. Material Trollies shall be worked as per GR 15.27 and SRs thereto and in accordance with the provision of BWM.

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.

7.0 BLOCKING OF LINES:

- (i) A clear remark in Red Ink shall be made immediately in the Train Signal Register indicating time and number of running Line blocked and record shall be made in SM's Diary by SM on duty at RRI cabin.
- (ii) Loose vehicles stabled in the sidings and on running lines must be secured in accordance with GR 5.23 and SR thereto. It is the responsibility of the incharge of the shunting operation to ensure that the loose vehicles in the siding and running lines are secured properly after the completion of the shunting operations.
- (iii) When a running line is obstructed, points at either end shall be set against blocked line and precautions shall be taken by the SM on duty in accordance with SR 5.23.01.
- (iv) When a line is obstructed for any reason, magnetic RED button collars should be placed on relevant route button for the obstructed line on the operating panel and the obstructed line shall be protected by the SM on duty in accordance with SR 3.36.03(b) and 5.04.01.
- (v) Except smalls loading and unloading of vehicles on Running line is prohibited unless permitted by Sr.DOM vide SR 5.19.01.

7.1 SECURING OF VEHICLES :

Rules laid down in GR 5.23 and SR 5.23.01 shall be followed. Special care should be taken to secure special type vehicles fitted with roller bearings while standing on running lines vide SR 5.23.01(b).

7.2 USE OF REMINDER BLOCK COLLAR:

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

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

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

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/ Shunting Jamadar/points man on duty vide SR 5.13.03 as the case may be.

In the event of any non-signaled movement, physical verification of the clearance of the crossover points shall be ensured.

The staff supervising shunting shall ensure correct setting of both facing and trailing 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 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 (HKG and SBPY end):.

- (i) If the necessary signals are kept at 'ON' shunting may be carried on within the station section provided the block section is clear of approaching train.
- (ii) The line outside the station section and upto the Home Signal shall not be obstructed unless a Railway Servant specially appointed on his behalf by the Station Master on duty who is the in-charge of the operations and unless the block section into which the shunting is to take place is clear of approaching train and all relevant & necessary signals are kept at "ON" position (GR 8.12).
- (iii) The line outside the first stop signal shall not be obstructed unless line has been blocked back.

8.5 SHUNTING ON DOUBLE LINE (SLRA end):

- (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 blocked back Vide GR 8.06(2) and BWM 6.15.
- (iii) Shunting or obstruction for any other purpose shall not be permitted in the block section in advance unless it is clear and blocked forward Vide GR 8.06(3) and BWM 6.15.

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

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

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 in rear vide GR. 8.05[2] & GR 8.12.
- (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:

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) PARTIAL FAILURE: -

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

- 1) Failure/Suspension of Block Instrument or Track Circuit or Axle counters-
Line Clear shall be obtained on the Telephone attached to the Block Instrument or station telephone exchanging ID number and supported by Private Number.
- 2) Failure/Suspension of Block Instrument or Track Circuit or Axle Counters or telephone attached to the Block Instruments or station fixed telephones-
'Line clear' shall be obtained on Railway auto phone or BSNL phone by exchanging Identification Number supported by a Private Number.
- 3) Failure/Suspension of Block Instrument or Track Circuit or Axle counters or telephone attached to the Block Instruments or station-to-station fixed telephone or Railway auto phone or BSNL phone.
'Line clear' shall be obtained on control phone by exchanging Identification Number supported by a Private Number.
- 4) Failure / suspension of block instrument or 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 set exchanging ID number supported by Private Number provided that the instructions contained in SR 14.01.02 are followed vide SR 6.02.06(i)(d), Chapter-III part-I of Block Working Manual.

The authority to proceed for the Loco Pilot on Double line territory is T/369(3b) bearing identification Number and Private Number received from the station in advance written both in figure and words. [Refer SR 6.02.06 & Chapter –IV, part-II & VI of BWM].

(ii) THE AUTHORITY TO PROCEED IN OCCUPIED BLOCK SECTION IN CASE OF OBSTRUCTION ON LINE OR ACCIDENT.

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

(iii) TRAINS DELAYED IN BLOCK SECTIONS:

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. 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. In case of double line section, SMs at either end of the Block section shall immediately stop all trains proceeding in to the block section on adjacent line in either direction and warn the Loco Pilots and Guards of such trains by issue of suitable Caution Orders [Refer GR 6.04 & SRs thereto].

(iv) **FAILURE /PASSING OF INTERMEDIATE BLOCK STOP SIGNAL:-** Not Applicable.

(v) FAILURE OF AXLE COUNTER BLOCK:-

The entire Block Sections between SBP-SBPY, SBP-HKG including both UP and DN Line of SBP - SRLA are monitored by axle counter system. These pair of axle counters will monitor track and count the axles "IN" and axles "OUT" to indicate whether the respective sections are clear of trains or not.

Normally, when there is no train in the block section the axle counter shows “GREEN”. Whenever a train enters into Block section, Block section clear indication “GREEN” for the particular section disappears and “RED” indication appears. After the complete arrival of the train, if the “RED” indication does not change to “GREEN”, it should be assumed as Block Instrument failure for the particular section and necessary action as per GR.14.13 is to be taken. The axle counters are interlocked with the respective Block Instruments for that section. Unless Block section clear indication appears on the panel, it will not be possible to grant “line clear” or normalize the Block Instruments.

(vi) **FAILURE OF MTRC:-** Not Applicable.

(c) **PROCEDURE FOR EMERGENCY OPERATION OF POINTS BY CRANK HANDLE. :-**

(i) Crank Handle keys are provided in location huts located at either end of the yard nearer to the point zone for manually setting of the electric motor operated points in the event of failure/defects of the points. The crank handle key at the location huts are released by the operation of control push button by the Dy.SS/SM on duty of the RRI Cabin.

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 Handle Locations. Crank handle keys can be taken out only when all signals are in normal position and the route is not locked for whatever reasons. Crank Handle can be released by operating common ‘trans’ push button (GSB) and concerned Crank Handle control push button simultaneously. When the keys are taken out no signal can be taken “OFF” over the particular route on the points nominated by that Crank Handle. This key can be electrically transmitted to both end locations of the yard for manual operation of the defective points.

The failure of motor operated points must be ensured by physical checking at site that there is no obstruction. SM on duty at RRI Cabin shall personally ensure the clamping and padlocking of all facing & trailing points. An emergency Crank handle register shall be maintained by the SM on duty at the RRI Cabin as per Para 20.06(d) of the Operating Manual. Correct setting clamping and padlocking of the points is the responsibility of SM on duty. (Details of use of Crank Handle is given in Appendix-‘B’).

(ii) Emergency point operation facility is provided to operate point in the event of failure of track circuit controlling the point. The points can be set by operation of the emergency point button [EWN] and the point button [WN] concerned (after unlocking the EWN control lock) provided the point concerned was not engaged earlier or not locked. This electrical lock (Ignition type) is provided on the operating panel close to EWN button. The Panel Station Master is responsible for correct operation of the emergency buttons by breaking the seal and record the operations in the register.

(iii) Once a signal (either a stop signal or a shunt signal) is taken off, the route including signal overlap in case of main signal gets back locked and the set route cannot be altered or interfered with unless the signal concerned is put back to “ON” position and the route is cancelled by emergency three button operation. After the initiation of such emergency three-button operation, the complete route gets cancelled provided there is no train on the approach track. If there is a train/vehicle on the approach track, the route gets approach locked and can be released only after the countdown of 120 seconds by the timer.

(iv) A complete route of signal comprises of one or more Route sections (as also the overlap in case of a stop signal) and whenever any route section or overlap is not released by either passage of the train or by emergency cancellation of the entire route as already mentioned above, the emergency cancellation of the Route Section with the co-ordination of the SSE

(Sig)/SE (Sig)/RRI on duty can be done and such cancellation is recorded in the counter fitted on the panel.

(v) For emergency opening of the LC Gate before completion of train movement or if the route given for a train has not been released, then emergency gate release operation has to be initiated in the following manner. Signal cancellation button and the concerned signal button has to be pressed. Then emergency gate release button along with control 90 button has to be pressed. A flashing Red indication will appear on the top of the emergency gate release button. When the Gate lock indication disappears (i.e. after 120 seconds) gate key can be transmitted by pressing gate key and group trans button simultaneously for opening the gate.

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

During the failure of track circuit, before taking off “Calling on” signal, the clearance of the track on the entire route between stop signal to signal must be certified by the field Station Master to the Panel Station Master.

In all cases of Reception/Dispatch of a train by taking off the “Calling on” signal, necessary particulars including the train No. “Calling on” signal No. and the Number Registered on the corresponding veeder counter should be recorded in a Register maintained for the purpose.

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

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

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 Station and others through a memo as per SR 3.51.04 and 3.68.04 and document all such transactions.

After receipt of the written memo, the JE/SE/SSE (SIG)/ signal Maintainer shall attend to the failure giving a Disconnection Memo. After rectification of the fault, the Sectional Maintainer shall give a Reconnection Memo detailing the rectification. Thereafter the SM on duty shall personally check the 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), (d), (e) & (f).

9.1.(A) TOTAL FAILURE OF COMMUNICATION (SINGLE LINE SECTION):

In the event of total interruption of communication occurring between SBP-SBPY or SBP-HKG Stations, i.e when line clear can not be obtained by 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 whenever available
- d. Fixed telephone such as Railway auto telephone & BSNL phone
- e. Control telephone
- f. VHF sets

actions shall be taken as per SR 6.02.04. The train which is to be despatched to the affected section will be stopped and the Loco Pilot and Guard of the train shall be informed about the fact.

Before dispatching the light engine /main engine/motor trolley /Tower wagon/Trolley /Cycle trolley/Moped trolley/Diesel car/rail motor car/EMU rake, the SM on duty shall hand over a Authority for opening of communication during total failure interruption of communication on Single Line Section to the driver /motorman/Guard/SM who is being sent to open communication, which includes.

- (i) An authority to proceed without “Line Clear” in the prescribed form (T/B 602).
- (ii) A Caution Order restricting to speed of the train to 15Kmph by day when the view ahead is clear and 10 Kmph during night or when view ahead is obstructed in addition to other speed restrictions in force (T/B409).
- (iii) Paper Line Clear Ticket to pass the Last Stop Signal at ‘ON’ position.
- (iv) A “Line Clear” enquiry message (T/E602) asking “Line Clear” for the awaiting train (T/F602).
- (v) A conditional “Line Clear” message for the light engine to return with or without a train attached, supported by a Private Number.

On arrival of the engine at the next station, the conditional “Line Clear” message and enquiry message shall be collected by the SM on duty who shall prepare conditional “Line Clear” ticket (T/G602 or T/H602) for engine to return either light or a train attached to it and conditional “Line Clear” reply message for the enquiry message, giving “Line Clear” for the train waiting at the other end shall be handed over to the Driver of the light engine. On return trip, the Loco Pilot will come on booked speed subject to any other speed restriction in force.

As soon as any one of the means of communication has been restored the conditional “Line Clear” working of train shall be cancelled when there is no train in the affected block section and messages shall be exchanged supported by Private Number. The section controller shall be informed.

9.1.B TOTAL FAILURE OF COMMUNICATION BETWEEN SBP-SRLA (DOUBLE LINE SECTION):

In the event of total failure of communications between SBP-SRLA i.e. when line clear cannot be obtained by any one of the following means stated in order of preference, viz.

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

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

- (i) Each train before being allowed to enter into the Block Section should be stopped and the Guard and Loco Pilot of the train apprised of the situation.
- (ii) The SM will hand over an authority for working of train during total interruption of communication to the Loco Pilot of each train which shall include-
 - a) Authority to proceed without ‘Line Clear’. [T/C 602]
 - b) Authority to pass the Last Stop Signal at its “ON” position, i.e. T/369(3b).
 - 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 30 minutes 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 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 with out 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 SBP-SRLA the trains shall be worked as per the procedure, which is summarized as follows:

- (a) Before introducing single line working the SM on duty must satisfy that the line on which single line working will be introduced is clear and free from all obstructions.
- (b) The Lock and Block instrument will be suspended. The Commutators of Lock & Block Instrument will be kept on "Train on line position".
- (c) SM proposing single line working must issue a message with
- (i) The cause of introduction of single line working,
 - (ii) Line on which the single line will be introduced,
 - (iii) Source of information about the clearance of the line on which single line will be introduced,
 - (iv) Place of obstruction,
 - (v) Restriction of speed, If any,
 - (vi) Assurance about keeping the last stop signal at 'ON' position if the train runs on right line and in case of wrong line all signals are to be kept at 'ON' position etc under the exchange of Private Number.
- (d) Dy.SS/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 chainage 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 restrictions.
 - 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/369(3b).

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

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

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

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

Rules and Regulations for working of trains on an obstructed line in case of obstruction or accident on the authority of Block Ticket (T/A-602) when communications are available shall be followed in accordance with the provisions which is summarized as follows [Refer SR 6.02.05] After sending a train on block ticket, a following train shall not be dispatched in the same direction unless:

- a) The previous Block Ticket is collected and Cancelled or
- b) Necessary endorsement is given on the previous block ticket with the advise to wait at the site for a next train to follow or
- c) The previous train has met with an accident or has been disabled or
- d) The Block ticket has been cancelled from the driver 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 driver 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:**

Common Loop line No.1 Starter Signals at both ends are nominated as V.T.O to enable the SM on duty to take action in terms of GR 3.61 and SRs there to. The light of these signals shall be verified from the V.T.O platform earmarked for this purpose at the center of platform No.1, in between two starters by the SM on duty.

11. **ESSENTIAL EQUIPMENTS OF THE STATION:**

The list of the essential equipments is mentioned in Appendix –‘E’ which shall be kept ready on hand in good condition with necessary relief stock.

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

In case of thick, foggy, tempestuous weather or during dust storm impairing visibility, whenever it is necessary to indicate to the Driver of an approaching train the locality of signal, the Station Superintendent on duty at Station shall arrange for signaling in terms of GR 3.61 and SR there to. The assurance of the staff shall be obtained in the month of OCTOBER every year in the Fog Signal Register vide SR.3.61 as a token of their knowledge in the Rules of Fog Signalling.

Fog signal men shall be detailed for duty at stations being recruited partly from the station traffic staff & party from Engineering Gangman and must not be substitute or casual labour but the 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 SAMBALPUR STATION.

APPENDICES

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

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.

GATE WORKING INSTRUCTIONS OF “SPL” CLASS TRAFFIC INTERLOCKED LEVEL CROSSING GATE AT KM 563.300 (No.JT-25) IN BETWEEN UP STARTER AND UP ADVANCED STARTER SIGNALS OF SBP STATION.

1. GENERAL INSTRUCTIONS: -

1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:-

| | | |
|-----|--|--|
| 1. | Number of Level Crossing Gate: - | JT-25 |
| 2. | Engineering or Traffic Gate: - | Traffic. |
| 3. | Under control of Station Master/Permanent Way Inspector: SM/SBP. | |
| 4. | Location KM | 563.300 |
| 5. | At. Station: - | SBP. |
| 6. | In between stations: - | SBP-HKG |
| 7. | BG/MG/NG: - | BG. |
| 8. | Single line/Double line/Multiple line: - | Single Line. |
| 9. | Normal Position: - | Open to road traffic. |
| 10. | Interlocked/Non Interlocked: - | Interlocked. |
| 11. | Means of interlocking: - | EKT |
| 12. | Provision of Gate signal at Km. | I) UP line-NIL ii) DN line-NIL |
| 13. | Signalling arrangement: - | Nil. |
| 14. | Means of Communication: | Telephone Connection from Gate Goomty with RRI Cabin of SBP. |
| 15. | Width of level crossing Gate: - | 9.0 m. |
| 16. | Type of road. (NH/SH/Others): - | Others (Municipal) |
| 17. | Name of Road: - | Khetrampur |
| 18. | Metaled/NonMetaled: | Metaled |
| 19. | Approach Road: - | ASP |
| 20. | Width of the road: - | 9.0 m. |
| 21. | Angle of road crossing (In case of the skew Gates) | ---- |
| 22. | Road gradient (If any) | i) East side _____ ii) West side _____ |
| 23. | Road alignment (Straight/Curve): - | i) East side. _____ ii) West side. _____ |
| 24. | Provision of height gauges: - | Not provided. |
| 25. | Type of Barriers: - | Electrical operated Lifting barriers. |
| 26. | Length of checkrails: - | 11 Meter. |
| 27. | Road surface in between Level Xings Gates | Hexagonal blocks |
| 28. | Length of speed breakers: - | 9.0 M. |
| 29. | Road signs: - | Available |
| 30. | Speed breaker indication board: - | Provided. |
| 31. | TVU: - | 196761 on 05/2013. |
| 32. | Census next due on: - | 05/2016 |

| | | |
|-----|---|-----------|
| 33. | Demarcation for placement of Detonators: - | Provided. |
| 34. | No. of the Gateman working: - | 03. |
| 35. | Nearest Railway Medical Assistance: - | Sambalpur |
| 36. | Nearest Private Medical Assistance available (if Any) | Sambalpur |
| 37. | List of equipment available Yes//No: - | Yes. |

1.2. EQUIPMENTS:-

| <u>SI</u> <u>No</u> | <u>ITEMS</u> | <u>QUANTITY</u> |
|------------------------|--|-------------------------|
| 1. | Tri colour Torch | : 03 |
| 2. | Hand Signal Flag Green | : 01 (Mounted on stick) |
| 3. | Hand Signal Flag Red | : 03 |
| 4. | Banner Flag Red | : 03 |
| 5. | Posts for exhibiting red banner flag | : 02 |
| 6. | Spare chains with padlocks | : 02 (with stop mark) |
| 7. | Detonators | : 10 in tin case |
| 8. | Gate lamps | : 02 |
| 9. | Tommy bar | : 01 |
| 10. | Motor pan | : 01 |
| 11. | Spade/Fowrah | : 01 |
| 12. | Rammer | : 01 |
| 13. | Pick axe | : 01 |
| 14. | Tin case for flag | : 01 |
| 15. | Cane for oil | : 01 |
| 16. | Water pot/Bucket | : 01 |
| 17. | Canister for Muster Roll | : 01 |
| 18. | Set of spare spectacles of gateman wearing glasses | : 01 |
| 19. | Board demarcating protection of level crossing Gate diagram in case of obstruction on gate | : 01 |
| 20. | Basket | : 01 |
| 21. | Whistle | : 01 |
| 22. | Wall clock | : 01 |
| 23. | Small size chain with padlocks to be used in case of failure of gate boom lock. | 02 |

1.3 THE GATEMAN SHALL BE PROVIDED WITH FOLLOWING REGISTERS: -

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

1.4 DUTIES OF GATEMAN:

1. **ALERTNESS:** The Gateman 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 GATE KEEPER DURING PASSAGE OF TRAINS:

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

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

3. ROUTINE DUTIES OF GATEMAN:

- i) Gateman shall ensure that red banner flag by day and red light by night is placed across the track whenever the Gate is kept in open condition during emergencies or obstruction on track.
- ii) Gateman shall ensure that all Gate lamps and hand signal lamps are lighted and kept burning continuously from sunset to sunrise.
- iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the Gate unless 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 Gates against road traffic, before leaving the Gate.
- iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle/wagons /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) If lifting barriers get damaged or becomes out of order, the Gateman shall use the spare chain with disc and padlocks for securing the Gate against road traffic.
- vii) Gateman shall report the SM & Signal Inspector any defect in his Gate or apparatus pertaining to it, as soon as possible.
- viii) Gateman shall wear badge and prescribed uniform while on duty at level crossing Gate.
- ix) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- x) Gateman shall work the Gate as per Gate working instructions and remain well conversant with these instructions.
- xi) Gateman shall ensure that equipment supplied at the Gate is in good order and ready for immediate use.
- xii) Gateman shall see that the channel for the flange of the wheel is kept clear.
- xiii) Gateman must keep the road surface well-watered and rammed in case of unmetalled roads.
- xiv) Gateman must be vigilant to see that inconvenience to road users due to closure of Gates should be to the minimum possible extent.
- xv) Gateman shall prevent tress passing by persons or cattle to the maximum extent.

4. ACTION IN CASE OF UNUSUAL OCCURRENCE OF TRAIN.

In case Gateman observes any thing unusual with a passing train, he shall take following action:

- i) He shall take prompt action to warn the Loco Pilot/guard of the passing train by showing red flag by day and red light by night.
- ii) He shall simultaneously try to draw the attention of the Loco Pilot /guard by whistling continuously, shouting, gesticulating, and throwing ballast on the brake van or by any other means.

- iii) If Loco Pilot /guard fails to take notice, Gateman shall immediately inform the SM on duty to take appropriate action, under exchange of private number.
- iv) In case of train parting, Gateman shall not show stop hand signal but shall show prescribed signal for train parting.
- v) He shall endeavor to attract the attention of the Loco Pilot /Guard by whistling continuously, shouting, gesticulating, and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible.
- vi) In case the train does not stop, Gateman shall immediately inform the SM to take appropriate action, under exchange of private number.

5. ACTION IN EMERGENCY AT THE LEVEL CROSSING:-

1. In case of an obstruction at the level crossing Gate, he shall place banner flag/red light lamps on the stave on track at 5 m. away from the edge of the road at Level Crossing.
2. Thereafter, if he is unable to remove the obstruction, Gateman shall immediately advise the SM on duty/SBP regarding the defects/obstructions at the Gate, under exchange of private number.
3. If there is no response from the SM on duty after three attempts, he shall first protect the Gate and then inform on phone.

The Gateman shall protect the line as under: -

- (a)
 - i) Gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the direction from which a train is expected to arrive first.
 - ii) Then he will similarly plant the other red banner flag by day and red light by night towards the other direction 5 meters away from the site of obstruction.
 - iii) Gateman shall then proceed to protect the Gate along with detonators and red flag by day and red hand signal lamp by night.
 - iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night towards the direction from 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 which was placed at boom.
 - v) Thereafter, he shall proceed towards the other direction, showing red hand signal, similarly place detonators as described in (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
 - vi) Having returned to the Gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
 - vii) In case the Gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
 - viii) Thereafter, he shall warn the Loco Pilot and stop the approaching train by waving his red flag by day, red hand signal lamp by night repeatedly.

(b) Other actions to be taken by Gateman:

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

- iii) He shall note down the particulars of the road vehicle, vehicle number, name of the driver, owner and relay these details to the SM 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 | 600M |
| | Left | 800M |
| DN | Right | 600M |
| | Left | 800M |

- (ii) Speed Breaker :- Speed Breakers of approved design are provided on either side of this Level Crossing Gate.
- (iii) Periodical Census of traffic has been taken and the latest TVU is 196761 on 05/2013.

1.6 **SPECIAL INSTRUCTIONS:**

1. **MODE OF OPERATION :-**

This interlocked L.C. Gate is situated at the HKG end of the yard in between UP Advanced starter signal and UP starter signals at Km 563.300. This gate is interlocked with station stop signals. Telephone connection is provided between the L C. gate lodge with SM on duty of RRI/SBP Station. The level crossing gate is of lifting barrier type and motor operated by means of HAND GENERATOR/MOTOR from the panel provided at the gate lodge. The normal position of the gate is open to road traffic.

Before taking off reception/departure signals the SM on duty at SBP RRI Cabin shall inform the gate man about the train number & directions and advise him to close and lock the gate. The gate man shall after satisfying himself that the level crossing is clear of all obstructions shall sound the hooter and close the barriers of the LC gate. For closing the barriers, press the CLOSE push button (YELLOW) continuously provided on the panel till the barriers come down and get locked in the locking device. As soon as the barriers reach the closed position AMBER LEDs glow (provided in panel) and on getting locked, GREEN LEDs will glow indicating that boom has been locked. (In case GREEN LED for the connected barrier is not glowing after closing the gate, however, the AMBER LEDs are glowing then the emergency push button can be only pressed for locking the booms for taking of the signals. The emergency locking operation should be done only after physical verification of locking at both the lock posts. After the LC gate is closed and locked against road traffic Key 'X' can be extracted from EKT-1. Key 'X' thus extracted is inserted in EKT-2 and transmitted electrically to panel in conjunction with switch GS (gate slot) reversed. This releases concerned UP/DN signals respectively. On doing, so SM on duty will get the 'white' flashing ling and GFRR indication on the control Panel. When SM acknowledges the gate key by pressing control push button 90 along with GSRB button simultaneously he will get the steady white light indication on Panel, then SM on duty shall take off the relevant signals.

After passage of train, on duty SM/ SBP RRI cabin shall grant permission and transmit the Gate key to the gateman by pressing gate control 90 and group GSB simultaneously. The yellow indication starts flashing at SM's control Panel and gate man will get red indication near the EKT which indicates that the key 'X' can be extracted from EKT-2 after turning the GS switch to normal position. Then Key 'X' is extracted from EKT-2 and inserted in EKT-1 and turned.

For opening the LC gate barriers press the OPEN push button (GREEN) continuously till both the barriers start opening and reach to the (fully opened)vertical position from horizontal position. Motors will cut off after the booms achieve the desired vertical angle.

In case of emergency Key 'K' (chained with Boom Crank Handle) is extracted from EKT-3, Electro-Mechanically free, provided at Gate Lodge (in a locked and sealed red box). The crank handle can be used for manual operation of individual lifting barriers by crank handling in case of emergency.

Extraction of Key 'K' shall put back all the relevant signals at 'ON'. Switch GS (Gate Slot) is provided in the gate lodge to put back the concerned UP & DN signals to 'ON' by the gateman in case of emergency.

OPERATION OF ELECTRIC LIFTING BARRIER DURING 24V DC POWER FAILURE (Hand Generator Mode-During Power Failure)

In case of power failure (24 V DC), the barriers cannot be operated from the panel. But the barriers can be operated simultaneously by use of hand generator as mentioned below.

Put the Mode selector switch on the panel to MANUAL position.

- i) To **close** the barriers rotate the lever on the main control panel in **clock-wise direction** till both the barriers reach the horizontal and locking takes place.
- ii) To **open** the barriers rotate the lever on the main control panel in **anti-clock-wise direction**. Both the Locks will open first and the barriers will start rising. Keep cranking till the required position is achieved.

OPERATION OF ELECTRIC LIFTING BARRIER WHEN 24 V DC POWER SUPPLY AS WELL AS HAND GENERATOR FAILS. (During Power Failure and failure of hand generator)

In case of failure of 24 V DC power supply as well as fault in the hand generator system a provision of hand cranking of each barrier has been provided.

1. Insert the crank handle, which can be obtained from the emergency key box RKT 'K', on the slot provided in with the barrier pedestal.
2. Now crank in the anticlockwise direction to open the barrier, first the lock will open and then the barrier will start rising.
3. Crank in the clockwise direction till the barriers are fully closed. Keep cranking till the locking takes place.

INDICATIONS PROVIDED ON CONTROL PANEL FOR OPERATION OF ELECTRICAL LIFTING BARRIER

1. RED colour emergency push button which is to be pushed in case any or both of the booms do not get locked (GREEN indicators do not light up). It will be used only after physical verification of locking at both the lock posts.
2. LED INDICATOR (AMBER) LAMP (At the Top) which glows when power supply is available. NO GLOW will indicate that hand generator has to be used. It glows continuously.
3. SELECTOR SWITCH which allows you to choose operation on Manual or Auto mode.
4. LED INDICATOR (AMBER) LAMP (2 No.s) - Glows when the plunger of the barriers has been detected. Meaning thereby that the barrier has reached its Horizontal position.
5. YELLOW COLOUR push button which has to be kept pressed till the barriers reach the horizontal position.
6. LED INDICATOR LAMP (GREEN) (2 No.s) glows when the barrier has been securely LOCKED. The lamp will turn off as soon as the lock has been opened.
7. GREEN COLOUR push button which has to be kept pressed till the barriers reach the fully open position.

8. Mode Selector Switch provided in Operating panel to be kept either in Auto position or Manual position as per requirement. It is only to be kept in Manual position for using hand generator when power supply fails or else it is to be kept in AUTO position.
9. 'Power' indicator LED will glow continuously if power supply is available.

Gate is locked when a signal is taken off. Locking of the gate is released only when the train movement for which signals are taken off is completed. For emergency opening of the LC Gate before completion of train movement or if the route given for a train has not been released, then emergency gate release operation has to be initiated in the following manner. Signal cancellation button and the concerned signal button has to be pressed. Then emergency gate release button along with control 90 button has to be pressed. A flashing Red indication will appear on the top of the emergency gate release button. When the Gate lock indication disappears (i.e. after 120 seconds) gate key can be transmitted by pressing gate key and group trans button simultaneously for opening the gate.

In case of failure of lifting barriers of level crossing gate due to failure/damage of gate boom etc., emergency sliding boom can be used as auxiliary gate without piloting IN and OUT of train. This emergency sliding boom cannot be used during normal working condition of main boom.

INSTRUCTIONS FOR OPERATION OF SLIDING BOOM:

- a. Sliding boom provided at the near end of gate lodge has been padlocked with chain in open position and sliding boom at far end 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 'S' from "SB EKT-1" (sliding boom EKT-1) provided in the gate lodge. Extraction of Key "S" from the EKT will put back the road signals to danger and the hooter will sound simultaneously.
- c. The gate man shall insert the Key "S" 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 and lock it in closed position by pushing the locking plunger. The 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 SB1 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 gateman. The gateman shall unlock the sliding boom by this key and slide it against the road traffic 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 attached to the chain of the boom and "SB1" concurrently. This will also release key "SB2" attached to the near end lock post. Key SB-2 when extracted locks the near end sliding boom and key SB-1. This key "SB2" is to be transmitted to SM RRI cabin by inserting it in SB EKT-2 provided in the gate lodge in conjunction with the GS (gate slot) switch provided in the gate lodge to enable the SM on duty RRI cabin 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 gateman 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 gateman shall extract SB-2 key from SB EKT-2, 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 Gateman 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 GATEMAN: -**

- i) Before taking off reception/departure signals SM/SBP at RRI Cabin shall inform the gateman, the number, description, and direction of the train.
- ii) The gateman shall close the gate and transmit the key to the SM/SBP.
- iii) The reception/departure signals will then be taken 'OFF'
- iv) In order to ensure that road traffic is not held up for a long time, the SM RRI Cabin /SBP must ensure that the train is ready for departure in all respects before he advises the gateman for closing the gate.
- v) 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.

3. **FAILURE OF TELEPHONIC COMMUNICATION:**

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

- i) Station Master on duty/ SBP shall send written advice to the gateman through the porter with full details of number, description and direction of the train.
- ii) Gateman on receipt of such advice shall close the gate and transmit the key to the SM RRI Cabin/SBP, 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/ SBP will issue written authority to the train Loco Pilot to pass the signal at 'ON' position.
- iv) In addition Station Master/ SBP shall also issue a caution order advising the Loco Pilot to whistle continuously and approach the gate cautiously.
- v) The train driver shall be instructed to pass the gate cautiously, on before signaled by the gateman. If hand signal is not seen, driver should be prepared stop short of the gate and ensure that gate is closed following GR.3.73.
- vi) In case of an approaching DN train, the Station Master RRI Cabin / SBP shall advise the Station Master/HKG, under exchange of private number, that the telephone at the gate has failed.
- vii) The station Master/ HKG shall then issue a caution order to the Loco Pilot before dispatching a DN 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.

4. **FAILURE OF LIFTING BARRIERS OF GATES:**

- i) When the gate cannot be closed due to failure of lifting barriers or sliding boom, the gateman will immediately inform, the SM RRI Cabin/SBP, 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) Gateman shall secure the gate against road traffic by means of safety chains and padlocks.
- iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light by night to the driver of the approaching train.
- v) Station Master on duty/ SBP shall issue a caution order to the Loco Pilot of a departing train.
- vi) Station Master on duty/ SBP shall also advise the station Master/ HKG at the despatching end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a DN train into the block section from his end.
- vii) Station Master/ SBP will advise maintenance staff responsible for maintenance of lifting barriers to repair the defect at the earliest.
- viii) Normal working will resumed only after maintenance staff repair the barrier and issue reconnection/fit memo for the same.

Note:

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

5. FAILURE OF THE GATE KEY WITH THE GATE IN CLOSED POSITION WHEN GATE KEY CANNOT BE EXTRACTED FOR OPENING THE GATE.

- i) If the gate key cannot be extracted from the key transmitter, then gateman must immediately inform the SM/SBP on duty on telephone, under exchange of private number.
- ii) Thereafter, the gate must be treated as non – interlocked and procedure for reception/ despatch of trains as prescribed for non – interlocked gates should be adopted. All UP trains shall be piloted out and DN trains shall be piloted in.
- iii) Station Master/SBP on duty shall issue a caution order to the Loco Pilot of every UP train
- iv) He shall also advise the station Master/ HKG at the despatching end, under exchange of private number, to similarly issue a caution order to the driver before dispatching a DN train into the block section from his end.
- v) Station Master/ SBP will advise S&T staff responsible for maintenance of gate/key transmitter to rectify the defect at the earliest.
- vi) Normal working will resumed only after S&T staff repairs the gate /key transmitter and issue reconnection/fit memo for the same.

6. FAILURE OF THE GATE KEY, WITH THE GATE IN OPEN CONDITION:

- i) If the gate key cannot be extracted from the key transmitter then gateman must immediately inform the SM/SBP on telephone, under exchange of private number.
- ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/despatch of trains as prescribed for non-interlocked gates should be adopted.
- iii) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass the trains on hand signals.
- iv) Station Master on duty/ SBP shall issue caution order to the Loco Pilot of a departing train.
- v) He shall also advise the station Master/HKG at the despatching end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a DN train into the block section from his end.
- vi) Station Master/ SBP will advise S&T staff responsible for maintenance of gate/key transmitter to rectify the defect at the earliest.

- vii) Normal working will resumed only after S&T staff repairs the gate/key transmitter and issue reconnection/fit memo for the same.

7. 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 gateman shall immediately normalize the switch GS (Gate slot) to put back the concerned UP/DN signals to “ON” 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 gateman shall advise SM/SBP on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) SM/SBP 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 SM RRI Cabin/SBP after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gateman 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 gateman 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 SM/SBP, who shall not start the train unless he has been assured by the gateman that the road vehicle or the lifting barriers are not fouling the track.
- viii) The Station Master/ SBP shall also inform the station Master/HKG at the despatching end, under exchange of private number, asking him not to despatch 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 gateman shall inform the SM/SBP accordingly, under exchange of private number.
- x) Station Master/ SBP and HKG 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 gateman, if the gate is broken, but is clear of any obstruction.
- xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and they’re after exhibit green hand signal, if the gate is not obstructed.
- xii) Station Master/ SBP shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

8. OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment, which is visible to the gateman, the gateman, SM/SBP will adopt the procedure given under item No. 7 above. If the obstruction fouls the level Crossing Gate, gateman must keep the gates closed against road traffic till the track is cleared of the obstructions.

2.0 **GATE WORKING INSTRUCTIONS OF “SPL” CLASS, INTERLOCKED, ENGG LEVEL CROSSING GATE AT KM 566/1 (NO.JT-26) BETWEEN SBP-HKG STATIONS.**

2.1 **GENERAL DESCRIPTION:-**

2.1.1 **DESCRIPTION OF THE LEVEL CROSSING GATE:**

| | | | |
|-----|--|---|--|
| 1. | Number of level crossing gate | : | JT-26 |
| 2. | Engineering or Traffic Gate | : | Engineering |
| 3. | Under control of Station Master or Permanent Way Inspector | : | SE (P-way) |
| 4. | Location at KM | : | 566/1 |
| 5. | At station | : | --- |
| 6. | In between station | : | SBP-HKG |
| 7. | BG/MG/NG | : | BG |
| 8. | Single line/Doubling Line/Multiple Line | : | Single line |
| 9. | Normal position | : | Open to road traffic |
| 10. | Interlocked/Non-interlocked | : | Interlocked |
| 11. | Means of interlocking | : | Gate Signals |
| 12. | Provision of gate Signals at Km | : | 566/3-4 & 565/13-14 |
| 13. | Signalling arrangement | : | MACLS |
| 14. | Means of communications Telephone/Bell etc. | : | Telephone connection with SM RRI Cabin/SBP |
| 15. | Width of Level Crossing Gate | : | 10 MTRS |
| 16. | Type of Road | : | ODR |
| 17. | Name of Road | : | Durgapalli Road |
| 18. | Metaled/Non Metaled | : | METALED |
| 19. | Approach Road | : | METALED |
| 20. | Width of the Road | : | 7.5 MTRS. |
| 21. | Angle of Road Crossing (incase of the SKEW gates) | : | 90 degree |
| 22. | Road Gradient (if any) | : | (a) North/East side – Level (b) South/West side – Level |
| 23. | Road alignment (straight/curve) | : | (a) Noth/East side - Straight (b) South/Westside – Straight |
| 24. | Provision of height gauge | : | Not required |
| 25. | Type of Barrier | : | Winch Operated Lifting Barrier |
| 26. | Length of check Rail | : | 12.00 M |
| 27. | Road surface in between level crossing gates. | : | Leveled with hexagonal concrete blocks |
| 28. | Length of Rumble strip/speed breakers. | : | 12.00 M |
| 29. | Road Signs | : | Provided |
| 30. | Speed breakers indication board | : | Provided |
| 31. | TVU | : | 140654 on 07/2013 |
| 32. | Census next due on | : | 07/2016 |
| 33. | Demarcation for placement of detonators. | : | Provided |
| 34. | No. of gateman working | : | 3 (Three) |
| 35. | Nearest Railway Medical Assistance | : | Sambalpur |
| 36. | Nearest Private Medical Assistance available (if any) | : | Sambalpur |
| 37. | List of equipment available Yes / No. | : | Yes |

2.2 **THIS GATE IS PROVIDED WITH EQUIPMENTS VIDE SR16.02.01 AND REGISTERS VIDE SR 16.02.03.**

EQUIPMENTS:-

| SINo | ITEMS | QUANTITY |
|-------------|--|-------------------------|
| 1. | Tri colour Torch | : 03 |
| 2. | Hand Signal Flag Green | : 01 (Mounted on stick) |
| 3. | Hand Signal Flag Red | : 03 |
| 4. | Banner Flag Red | : 03 |
| 5. | Posts for exhibiting red banner flag | : 02 |
| 6. | Spare chains with padlocks | : 02 (with stop mark) |
| 7. | Detonators | : 10 in tin case |
| 8. | Gate lamps | : 02 |
| 9. | Tommy bar | : 01 |
| 10. | Motor pan | : 01 |
| 11. | Spade/Fhowrah | : 01 |
| 12. | Rammer | : 01 |
| 13. | Pick axe | : 01 |
| 14. | Tin case for flag | : 01 |
| 15. | Cane for oil | : 01 |
| 16. | Water pot/Bucket | : 01 |
| 17. | Canister for Muster Roll | : 01 |
| 18. | Set of spare spectacles of gateman wearing glasses | : 01 |
| 19. | Board demarcating protection of level crossing Gate diagram in case of obstruction on gate | : 01 |
| 20. | Basket | : 01 |
| 21. | Whistle | : 01 |
| 22. | Wall clock | : 01 |
| 23. | Small size chain with padlocks to be used in case failure of gate boom lock. | 02 |

2.3 THE GATEMAN SHALL BE PROVIDED WITH FOLLOWING REGISTERS: -

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

2.4 DUTIES OF GATEMAN:

1. **ALERTNESS:** The Gateman 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 GATE KEEPER DURING PASSAGE OF TRAINS:**

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

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

3. **ROUTINE DUTIES OF GATEMAN:**

- i) Gateman shall ensure that red banner flag by day and red light by night is placed across the track whenever the Gate is kept in open condition during emergencies or obstruction on track.
- ii) Gateman shall ensure that all Gate lamps and hand signal lamps are lighted and kept burning continuously from sunset to sunrise.
- iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the Gate unless 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 gates against road traffic, before leaving the Gate.
- iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle/wagons /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) If lifting barriers get damaged or becomes out of order, the Gateman shall use the spare chain with disc and padlocks for securing the Gate against road traffic.
- vii) Gateman shall report the SM RRI Cabin/SBP or PWI/SBP any defect in his Gate or apparatus pertaining to it, as soon as possible.
- viii) Gateman shall wear badge and prescribed uniform while on duty at level crossing Gate.
- ix) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- x) Gateman shall work the Gate as per Gate working instructions and remain well conversant with these instructions.
- xi) Gateman shall ensure that equipment supplied at the Gate is in good order and ready for immediate use.
- xii) Gateman shall see that the channel for the flange of the wheel is kept clear.
- xiii) Gateman must keep the road surface well-watered and rammed in case of un-metalled roads.
- xiv) Gateman must be vigilant to see that inconvenience to road users due to closure of Gates should be to the minimum possible extent.
- xv) Gateman shall prevent tress passing by persons or cattle to the maximum extent.

4. **ACTION IN CASE OF UNUSUAL OCCURRENCE OF TRAIN.**

In case Gateman observes any thing unusual with a passing train, he shall take following action:

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

5 ACTION IN EMERGENCY AT THE LEVEL CROSSING:

- i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if at, in the 'ON' position.
- ii) Therefore, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master RRI Cabin/SBP on duty, regarding the defects/obstructions at the gate, under exchange of private number.
- iii) If there is no response from the Station Master/SBP after or three attempts he shall first protect the gate and then inform on phone.
The gateman shall protect the line as under: -

a) ON SINGLE LINE SECTION:

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

b) OTHER ACTIONS TO BE TAKEN BY GATEMAN:

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

2.5 SPECIAL INSTRUCTIONS:**1 MODE OF OPERATION:-**

This is a Manned, Engineering interlocked L.C. Gate situated in between Sambalpur and Hirakud stations at Km 566/1. This gate is interlocked with Gate stop signals. Telephone communication is provided between the L C. gate lodge with SM on duty of SBP Station. The level crossing gate is of lifting barrier type operated by means of winch provided at the gate lodge. The normal position of the gate is open to road traffic. A four-lever ground frame is provided at the gate lodge. The key of the LC remains in the winch, when the gate is opened condition. When it is necessary to close the gate, for taking OFF the signals, the SM RRI Cabin/SBP on duty shall inform the gate man to close and lock the gate. The gate man on duty shall then close the barriers of the LC gate by operating winch. Then key 'G' is to be extracted from the winch, which will be inserted in the lever of GF-1. When GF-1 is reversed it locks the booms of the gate and releases GF-2 & 3. and Key 'G1'. Key 'G1' then shall be extracted from GF-1 and inserted into the RKT provided at the gate lodge. Then after, the gateman will reverse the GF-2 or GF-3 for taking OFF concerned UP or DN Gate stop signals. GF-2 or GF-3 can be used to put back the concerned Gate Stop signal in case of emergency.

After passage of the Train the gateman shall extract the control key 'G1' from the RKT instrument after normalizing GF-2 or GF-3. The gate man will insert the Key 'G1' into GF-1 and normalize the same to unlock the gate boom and release Key 'G'. Thereafter he will open the gate by inserting the Key 'G' into the winch for normal passage of road traffic. 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).

Once the LC gate is closed should not be opened by the gateman till such time the train for which the gate was closed has passed the LC gate completely. In case of emergency the LC gate may be opened for road traffic with the specific permission of the SM RRI Cabin/SBP under exchange of PN if there is no train in the section.

2. INTIMATION TO GATEMAN:

- (i) Immediately after departure of the train, Station Master RRI cabin/SBP shall advise the gateman through telephone connected at his end, the number, description, direction and expected time of passage of the train at the gate.
- (ii) This advice shall be given by the Station Master RRI cabin/SBP to the gateman, as soon as he receives train entering section advice from the HKG station.
- (iii) If the actual running time of the train from either end of the section is less than 10 minutes, Station Master RRI Cabin/SBP will convey this advice to the gateman before obtaining/granting line clear.

- (iv) It should be the duty of the gateman to ensure that the gate is closed in time, so that there is no detention to the train of excessive detention to road traffic.

3. **FAILURE OF TELEPHONIC COMMUNICATION:**

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

- (i) If the telephone fails at the gate connected with the station at the dispatching end, Station Master RRI cabin/SBP shall issue a caution order to the Loco Pilot of the departing train.
- (ii) Station Master shall advise the Loco Pilot to whistle continuously and proceed cautiously while approaching the gate.
- (iii) In case the gate signal is 'ON' he should stop of the gate signal and follow the procedure laid down under GR 3.73.
- (iv) In case of an approaching train, the Station Master/SBP shall advise the Station Master/HKG at the dispatching end, under exchange of private number that the telephone at the gate has failed.
- (v) The Station Master/HKG at the dispatching end shall then issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vi) Station Master/SBP will also advise the gateman through Gangman/Patrolman/ Loco Pilot of the first train that the telephone has become defective.
- (vii) Station Master/SBP 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 rectifies the telephone and issue reconnection/fit memo for the same.

4. **FAILURE OF LIFTING BARRIERS OF GATE:**

- i) When the gate cannot be closed due to failure of lifting barriers, the gateman shall immediately inform the Station Master/SBP on duty under exchange of private number, and ensure that 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 that end first from which the train is approaching and then at the other end.
- iii) Gateman shall secure the gate against road traffic by means of safety chains and padlocks.
- iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light to the driver of the approaching train.
- v) Station Master/SBP on duty shall issue caution order to the Loco Pilot of a departing train.
- vi) He shall also advise the Station Master/HKG 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.
- vii) Station Master/SBP shall advise maintenance staff responsible for maintaining the lifting barrier to rectify the same at the earliest.
- viii) Normal working will be resumed only after maintenance staff repairs the lifting barrier and issue reconnection/fit memo for the same.

5. **FAILURE OF THE GATE KEY WITH THE GATE IN CLOSED POSITION WHEN GATE KEY CANNOT BE EXTRACTED FOR OPENING THE GATE.**

- (i) If the gate key cannot be extracted from the winch, gate signal lever or key transmitter then gateman must immediately inform the Station Master RRI Cabin/SBP on duty on telephone, under exchange of private number.

- (ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of trains as prescribed for non-interlocked gates should be adopted.
- (iii) Station Master /SBP on duty shall issue caution order to the Loco Pilot of a departing train.
- (iv) He shall also advise the Station Master/HKG 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 his end.
- (v) Station Master/SBP shall advise S&T staff responsible for maintaining the key transmitter to repair the same at the earliest.
- (vi) Normal working will be resumed only after S&T staff repairs the key transmitter and issue reconnection/fit memo for the same.

6. FAILURE OF THE GATE KEY, WITH THE GATE IN OPEN CONDITION:

- (i) If the gate key cannot be extracted from the winch, gate signal lever or key transmitter then gateman must immediately inform the Station Master RRI cabin/SBP on duty on telephone, under exchange of private number.
- (ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of trains as prescribed for non-interlocked gates should be adopted.
- (iii) The gateman shall secure the gate against road traffic by means of chains and padlocks and pass trains on hand signals.
- (iv) Station Master/SBP on duty shall issue a caution order to the driver of a departing train.
- (v) He shall also advise the Station Master/HKG at the dispatching end, under exchange of private number, to similarly issue a caution order to the driver before dispatching a train into the block section from his end.
- (vi) Station Master RRI cabin/SBP shall advise S&T staff responsible for maintaining the key transmitter to repair the same at the earliest.
- (vii) Normal working will be resumed only after S&T staff repairs the key transmitter and issue reconnection/fit memo for the same.

7. DEFECTIVE GATE SIGNAL:

- (i) The gateman shall treat the gate signal as defective and must not take off them under following circumstances:
 - (a) If gate signals can be taken 'OFF' without closing the gate, or
 - (b) The key can be extracted from the operating winch when the gate is in open condition.
- (ii) If the Gate or the Gate Signal or Distant Signal becomes defective in 'OFF' position, the gateman will make all efforts to put it at 'ON' position.
- (iii) The gateman will immediately advise the Station Master RRI cabin/SBP on duty, under exchange of private number, regarding defective gate signals.
- (iv) Thereafter, the gate must be treated as non – interlocked and procedure for reception/dispatch as prescribed for non-interlocked gates should be adopted.
- (v) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.
- (vi) Station Master/SBP on duty will issue a caution order to the Loco Pilot of departing train.
- (vii) He shall also advise the Station Master/HKG at the dispatching end, under exchanged private number, to similarly issue a caution order to the Loco Pilot before despatching train into the block section from his end.
- (viii) Station Master/SBP shall advise S&T staff responsible for maintaining the gate signal to repair the same at the earliest.
- (ix) Normal working will be resumed only after S&T staff rectifies the defective gate signal and issue reconnection/fit memo for the same.

8. OBSTRUCTION AT THE GATE:-

- i) If the gate is broken by a road vehicle, which is fouling the track, or if lifting barrier of gate or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall immediately put back gate signals to 'ON' position.
- ii) He shall fix red banner flag by day and red lamp by night on posts provided at both ends of the gate.
- iii) Immediately after this, the gateman shall advise the station Master/SBP on duty regarding the defects /obstructions at the gate, under exchange of private number.
- iv) If there is no response from the Station Master /SBP after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gateman 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 gateman 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/SBP who shall not start the trains unless he has been assured by the gateman that the road vehicle or the lifting barriers are not fouling the track.
- viii) The Station Master RRI cabin/SBP shall also inform the Station Master/HKG at the despatching end, under exchange of private number, asking him not to despatch any train into the block section from his end, until the track has been clear of all obstructions.
- ix) After the track has been cleared of all obstructions the gateman shall inform the Station Master/SBP accordingly, under exchange of private number.
- x) Station Master RRI cabin/SBP 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 gateman, if the gate is broken, but is clear of any obstruction.
- xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
- xii) Station Master RRI cabin/SBP shall advise maintenance staff responsible for maintaining the lifting barrier of gate to repair the same at the earliest.
- xiii) Normally working will be resumed only after maintenance staff rectifies the defective lifting barriers and issue reconnection/fit memo for the same.

9. OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment, which is visible to the gateman, the gateman and Station Master RRI cabin/ SBP will adopt the procedure given under item No.8 above. If the obstruction fouls the level Crossing Gate, gateman must keep the gates closed against road traffic till the track is cleared of the obstruction.

APPENDIX-“B”

STATION WORKING RULES OF SAMBALPUR STATION. DETAILS OF SIGNALING AND INTERLOCKING FOR WORKING THEM NORMALLY AND IN EMERGENCY ETC. INCLUDING THE POWER SUPPLY ARRANGEMENTS.

- 1.1 The power signaling and interlocking installations are as per the signaling plan together with control tables, route section plans and wiring diagrams.

Based on the above signaling plan, the Station Working Rules Diagram attached to the Station Working Rule shows the following.

The complete layout of the Station including the non-interlocked lines and sidings within the station limits. In addition to signaling features, the diagram indicates gradients, holding capacity of all individual lines, the position and number of lines, over run lines, special restrictions, track circuits, ground frames, cabins, goomties, aspect control of signals etc.

- 1.2 In this installation, where the points are power operated, the point remains in the last operated position. If the position of the points is required to be changed, it can be changed individually by operating the concerned point button [WN] in conjunction with Point Group Button [WWN] to required position.
- 1.3 Charts given in the Appendix-“B” showing the operation of entrance and exit buttons for various routes governed by stop signals, calling on signals and shunt signals, slots, the designation of various signals etc.
- 1.4 The Station is of Standard II-R interlocked and equipped with Multi Aspect Colour Light Signals and power operated points with track circuit control over points and berthing tracks etc., centrally controlled from Route Relay Cabin through Siemens Type Route Relay installation based on the principles of entrance and exit to confirm to signaling and interlocking plan.
- 1.5 Route Relay Cabin is controlling the movement of trains from/to JHARSUGUDA, TALCHER & TITLAGARH ends.

2.0 **SIEMENS DOMINO PANELS – OPERATING AND INDICATING FOR OPERATION OF THE POWER SIGNALING:-**

Two panels viz. operating (control) panel and Indication panel are installed in the RRI Cabin SAMBALPUR.

2.1 **OPERATING (CONTROL) PANEL:-**

The operating (control) panel is a small console, provided with various operating push buttons for signals, points, individual route section release, emergency operations and other miscellaneous buttons on a small layout to accord with the geographical position at site. Special illuminated indicator indicating power failures is provided on this panel. All the controlling push buttons are provided with indications and designation, number showing the corresponding number of the signal or route or points or any other field units as per the signaling and interlocking plan. The Station Master while operating the controlling buttons, switches, counters etc., on the operating panel for controlling the traffic movements or any other operation connected with power signaling installations in the yard should at the same time monitor the conditions of the traffic movements, condition of lines, position of the Block Instruments and condition of all other units on the indication panels.

2.2 INDICATION PANEL:-

The indication panel shows in a domino form interlocked portion of SAMBALPUR Station yard with the geographical co-relation to the tracks, points, signals and various other controls as existing at site. This panel through various illuminating indications provided for the field functions, indicates the condition of a particular field gear at a given time in a miniature form so that the entire traffic operation in the yard as well as the position of power signaling and interlocking installations may be constantly monitored by the Station Master. Each track-circuited line on the indication panel is represented by a separate and distinct colour on the face of the panel and is illuminated indicating the conditions of route setting, route release, track clearance and occupancy of the track etc.

- a) A white indication is provided on the panel to indicate closing of the level crossing gate.
- b) The level crossing key is electrically interlocked with the panel. The key extracted from the winch after closing the level crossing when inserted in the RKT for “key in contact” releases the concerned signals.
- c) The track circuits are indicated on the panel with “WHITE” for clear and “RED” for occupation.
- d) Point indicators are provided for “Reverse” and “Normal” position of the points.
- e) A point failure indication is also provided with flashing light.
- f) In case of failure of Motor operated points, the procedure detailed in rule No. 20.06 of Operating Manual should be followed for setting of the points by Crank Handle.

2.3 POSITIONING OF CONTROLLING BUTTONS ON THE OPERATING PANEL :-

The field function controlling buttons of points, signals, routes, slots etc., are located close to the position where the field function are represented on the operation panel. The common buttons such as emergency cancellation button, common point buttons and various counters (meant for counting emergency operations), signal power supply control buttons, signal and point intensity control buttons, are all housed on the top of the panel. In order to avoid the difficulty of the operator in reaching two buttons “for any operation”, some common buttons are multiplied on the operation panel at convenient places.

2.4 CRANK HANDLE RELEASE PUSH BUTTON:-

To release any Crank Handle, concerned Crank Handle control button and Crank Handle Group releasing button [CHNB] to be pressed simultaneously. Then the steady White light near the Crank Handle button starts flashing till such time the control released is accepted by the field agency. At site Red indication appears, then the key is to be extracted from RKT. When crank handle key is extracted from the RKT white light near the crank handle button disappears. After completion of the work the field agency inserts the crank handle key into the RKT at the location box, then a flashing white light appears on the panel indicating the key is inserted in the RKT. The SM on duty shall press the concerned crank handle button and Crank handle Group Receive button [CHRB] to receive the crank handle key. Besides this a red light is also placed near the crank handle button, which glows when the crank handle is locked.

2.5 LAMP MUTING PUSH BUTTON:-

Whenever any signal lamp is fused, a flashing indication appears on the panel in the concerned signal aspect with a buzzer. To stop the buzzer this button (XYN) is to be operated.

2.6 SIGNALS AND THEIR INDICATIONS:-

- a) Manually operated multiple aspect colour light signals are provided at this RRI installation. The indications of various aspects of signals provided in this yard are as follows: -
 - i) **Red:-**
Red indicates “Danger” aspect and signifies stop dead till the signal is taken ‘OFF’.

ii) **Single Yellow:**

Single Yellow indicates “Caution” aspect and signifies proceed cautiously preparing to stop dead at the next stop signal.

iii) **Double Yellow:**

Double Yellow indicates “Attention” aspect and signifies proceed prepared to pass the next signal at a restricted speed.

iv) **Green:**

Green indicates “Clear” aspect and signifies “Proceed”.

b) **Route Indicators:**

It takes the form of a row of a lunar white lights above the signals at junction points at various degrees from the vertical to the left or right as the case may be to indicate whether the turn out at the junction point is set to the right or to the left side of the Driver. In case of more than one such arm of route indicator on the same side, the top most reads to the first loop and the others for subsequent loops in regular order of sequence.

3.0 [a] LIST OF COUNTERS WITH THEIR CODE AND FUNCTION:-

Any emergency operations such as full route release, sub-route release, emergency overlap release, emergency point operation etc., are registered in respective counters which are fixed on the top of the panel adjacent to the concerned emergency operation button. The following counters are provided.

| Sl. No. | Description | Code | Remarks |
|---------|---------------------------------------|-------|--|
| 1. | Emergency full-route release counter. | EUUYN | Three-button cancellation of any route, which is set, is registered in this counter. |
| 2. | Emergency sub route release counter. | EUYN | Individual sub route release in case of failure is registered in this counter |
| 3. | Emergency overlap release counter. | OYN | Emergency release of any over lap in case of failure is registered in this counter. |
| 4. | Emergency point operation counter. | EWN | Emergency operation of points under track circuit failure operation is registered in this counter. |
| 5. | Calling on signal counter. | COGGN | Whenever a calling on signal is cleared the operation is registered in this counter. |
| 6. | Emergency Gate release counter | -- | Emergency Gate release in case of failure registered in this counter. |

3 [b] LIST OF OPERATING BUTTONS WITH THEIR CODE AND COLOUR:-

The operating buttons are distinctly coloured for easy identification. The following is the list of the important buttons with their designations in codes and colours: -

| Sl. No. | Description | Code | Colour | Remarks |
|---------|----------------------|---------|--------|-------------------------------------|
| 1. | Main signal button. | S.1 GN | Red | S.1 indicates signal number. |
| 2. | Shunt signal button. | SH.9 GN | Yellow | SH.9 Indicates shunt signal number. |

| | | | | |
|-----|--|-------------------|----------------------|--|
| 3. | Route button. | L1 UN | Grey | L1 indicates the line number |
| 4. | Buttons for panel illumination control. | Ind. Lamps 1,2,3. | White | Three such buttons are provided for controlling the intensity of illumination of the panel. |
| 5. | Points button without emergency route section release facility. | 69 WN | Blue | 69 indicates the point number. |
| 6. | Points button with emergency route section release facility. | 67A WN | Blue with White dot. | 67A indicates the point number. |
| 7. | Emergency full route release button (group). | EUUYN | Grey | Used for emergency full route release |
| 8. | Emergency route section release button (individual) | EUYN | Blue with white dot | Used for emergency sub route release |
| 9. | Common push button for points. | WWN | Blue | Duplicated for easy access |
| 10. | Point emergency push button. | EWN | Blue | Used for emergency operation of points |
| 11. | Button for silencing buzzer for signals when RED filament fails. | GXYN | White | To silence buzzer informing Signal Blanking |
| 12. | Button for silencing buzzer for points failure. | WXYN | White | To silence buzzer informing failure of point |
| 13. | Emergency group button for putting back a signal to 'ON' position. | EGGN | Red | Used for signal cancellation. |
| 14. | Calling on signal group button. | COGGN | Grey | For taking off a Calling on signal. This button is pressed along with the concerned signal button. |
| 15. | Group slot button. | GSBN | Green | Used in conjunction with LC gate control for transmission of gate keys |
| 16. | Group slot cancellation button. | GSRBN | Green | Used in conjunction with LC gate control for reception of gate keys |
| 17. | Emergency overlap release button. | OYN | Grey | Used for emergency overlap release. |
| 18. | Crank handle group button (individual). | CH 4 | Blue | CH 4 indicates crank handle group No.4. |
| 19. | Group crank handle release button. | CHNB | Blue | Duplicated for easy reach. These buttons are pressed along with the individual crank handle group button for releasing the crank handle. |
| 20 | Group crank handle receiving button | CHRB | Blue | Duplicated for easy reach. These buttons are pressed along with the individual crank handle group button for receiving the crank handle. |

| | | | | |
|-----|---|-------|---------------------------|---|
| 21 | Level crossing control button | LX-90 | Chocolate | No.90 indicates the control No. This button is to be pressed along with GSBN/GSRBN. |
| 22 | Power failure alarm suppression button. (M1, M2 & M3) | | White | Button to be pressed to mute alarm bell due to power failure. |
| 23. | DN Block Release button section (SBP-SBPY) | | Chocolate with white dot. | Button to be pressed for release of block handle for DN Trains. |
| 24 | UP Block Handle Release button section (SBP-SLRA) | | Chocolate with white dot. | Button to be pressed for release of block handle for UP Trains. |
| 25 | DN Block Handle Release button section (SBP-HKG) | | Chocolate with white dot. | Button to be pressed for release of block handle for DN Trains. |
| 25. | Emergency Gate Release button | | Chocolate with red dot. | For emergency Gate release. |

The sequences of button operations to be made for different operations on the panel are as under: -

| Sl. No | Operation | Button used | Sequence of operation |
|--------|---|----------------------|--|
| 1 | To clear a Calling on Signal | GN, UN, EGGN & COGGN | First initiate the stop signal route by pressing GN & UN simultaneously, then press GN and EGGN to throw back the stop signal to "ON" [whether it is cleared or not] and then press GN & COGGN simultaneously, release COGGN keeping GN pressed and then press UN. |
| 2 | To clear a MAIN SIGNAL | GN & UN | Press both buttons simultaneously. |
| 3 | To clear SHUNT SIGNAL | SHGN & UN | Press both buttons simultaneously. |
| 4. | To throw cleared signal to danger whether a Stop Signal or a Calling on Signal or a Shunt Signal. | GN & EGGN | Press the concerned signal button and EGGN simultaneously. |
| 5 | To cancel a route already set after replacing the cleared signal "ON" [whether it is a Stop Signal or Calling on Signal or a Shunt Signal]. | GN, EUUYN & UN | Press the GN & EUUYN simultaneously, release EUUYN keeping GN pressed and press UN. This is known as three-button cancellation. |

NOTE:-

When the signal is approach locked or dead approach locked on pressing GN & UN, a flashing dot indication below the concerned signal appears. Wait till it becomes steady and then press GN & EUUYN, release EUUYN keeping GN pressed and press UN.

| | | | |
|---|--|-----------|--|
| 6 | To release individual route section under emergency. | WN & EUYN | The key under the custody of SSE/SE/JE/Sig/RRI to be inserted and turned to "ON" position. Then WN and EUYN buttons are to be pressed simultaneously for emergency sub-route release. |
| 7 | Individual operation of points when track circuits are clear. | WN & WWN | Press the point's button concerned and common points button together. |
| 8 | Individual operation of points, when point zone track circuit fails. | WN & EWN | Insert & Turn the EWN key and press both WN and EWN buttons simultaneously. This operation by panel Station Master is registered in the EWN Counter. |
| 9 | To release a locked overlap in case of failure. | UN & OYN | The key under custody of the SSE/SE/JE/Sig/RRI is to be inserted and turned to "ON" position. Then "UN" and "OYN" buttons to be pressed simultaneously for emergency over-lap release. |

4.0 SPECIAL AND IMPORTANT NOTES:-

- a) It is essential that only two push buttons concerned are pressed positively with deliberation and the buttons should be kept pressed for three to eight seconds. [as necessary]
- b) In order to avoid failure of any operation, when the two buttons concerned are pressed, it is essential that no other button to be pressed.
- c) Whenever bi-directional movements are permitted over a berthing track, two buttons viz., one route button for movements in Down direction and one for UP direction are provided.
- d) The locking on the points giving flank protection cannot be released by cancellation of the individual route section within which these points are located but by release of the individual route section which had commanded such flank protection/isolation.

In the power signaling installations, generally the complete route of a stop signal comprises of the route between the concerned signal and signal ahead and also the adequate distance [signal over lap]. The complete route of shunt signal or a calling on signal comprises of the route between the subject signal and signal ahead.

Normally the portion of the track between two consecutive stop signals or between two consecutive shunt signals or between a shunt signal and the stop signal ahead termed as full-route is made up of several individual route sections, each route section controlling the various field elements like track circuits, points, level crossing gates, flank protection etc., not only in its immediate jurisdiction but also within its ambit of control. The signal over lap locking/setting is released in an emergency operation through the berthing track control.

Normally each route section is designated after the most pre-eminent number of the points that fall within the immediate jurisdiction of the individual route section, so the numbers of the point button and individual route section are the same. Therefore the common point button coloured blue with a white dot on the top [along with the concerned group push button] should be operated

either for individual operation of the points in the route section or for the release of individual route section in case of failures etc., under special emergency provisions.

In some cases, however, where there are more than one set of points or cross overs in a particular individual route section, the route section is designated generally after the number of the pre-eminent set of points or cross overs in that part of the route section zone.

In all such cases the individual operation of the points and the release of the individual route section occur with the operation of the common button [which is coloured blue with white dots]. The operation of all other individual points or cross-overs in that route section zone is dependent on the individual operation of the concerned point button [which are coloured blue without any white dot] together with the group button provided such an operation is only possible when the controlling route section is not engaged. This is applicable in the following cases: -

POINT BUTTONS WITHOUT WHITE

DOT.

55,69,73,77,87,91,66,76,83
section/sections being free

POINT BUTTONS WITH WHITE DOT.

53,53Z,51,51Z,57,57Z,59,59Z,61,61Z,63,63Z,67,67Z,71,
,75,79,89,81,85,97,93,78,78Z,82,82Z,74,80,70,72,60,62,
,64,56,56Z,58,54,52,52Z & 92 for operation of individual
point and releasing of individual route setting.

In addition to the provision of the buttons on the operating panel for initiating a route setting and taking off a signal certain other illuminated white or coloured light indications and Buttons as below are provided on the operation and indication panels to enable the panel Station Master to constantly watch the condition or state of various fields gears and to control the traffic movements in a direct and expeditious manner.

5.0 INDICATIONS: -

These indications exhibited on the operation panel to indicate the condition or state of controls at any given line of field gears, ground frames, goomties, siding controls and shunting free indicator controls. These controls released by the Panel Station Master for controlling:-

- I) Rotary Key Transmission unit for siding operations.
- II) Crank Handle Transmission control for emergency motor point crank handle control keys are clubbed into one group and the following are the indications exhibited on the operation panel.
 - a) A white steady light appears on the control Panel i.e., Crank Handle not released.
 - b) Whenever a control is released from the RRI cabin to the field agencies, a flashing white light will appear till such time the said control release is accepted by the concerned field agencies and as the control is accepted at the field site, a flashing Red light appears.
 - c) A steady Red light and a White flashing appears when the fieldwork is completed and controls returned by the field agencies.
 - d) After the Panel Station Master withdraws his control or releases by operating the appropriate buttons, a White steady light appears again.

6.0 ELECTRIC POWER SUPPLY INDICATIONS:-

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

- i) Normal supply from OSEB supply, three phase 440V- 50HZ.
- ii) Stand by supply – two Diesel Generator power supply – three phase, 440V-50HZ.

The availability of the normal power supply is indicated by a stencil indicator “M1” on the Operating panel. M2 is spare; M3 is for DG set supply.

The Indications in the Indication panel provided in the SM Room is lit through Inverter power supply. In the event of failure of local power supply, a power supply failure buzzer/indication appears on the SM panel. The Station Master on duty shall acknowledge by pressing the acknowledgement button provided on the panel. The buzzer will mute however, the indication will glow till the local power supply comes. The power supply backup through inverter can stand upto 01 hr. So, the SM on duty has to advise his staff to start the Diesel Generator provided in the Diesel Generator Room in the RRI compound within 01 hour of local power supply failure. Then the Diesel Generator will extend power supply to panel and indication "M3" will glow on the panel. When the normal power supply is restored, the same will be switched over automatically. Whenever power is switched over to normal supply a buzzer appears. This should be acknowledged by the SM on duty by pressing the Acknowledgement button and then he will stop the Diesel Generator. All the above events will be logged in the datalogger.

7.0 **INTENSITY OF PANEL LIGHT INDICATORS:-**

These indicators provided at Operating Panel along side the panel illumination intensity control button 1, 2, & 3, show the accordance of the illumination brightness of the panel lights with the controlling buttons Nos.1, 2, & 3. Only one button can be operated at a time.

8.0 **TRACK INDICATORS:-**

Each track circuit is given a separate and distinguishable colour on the face of the indication panel and entire length of the track circuited portion of the track provided with rectilinear transparent filters and illuminated from behind to indicate the conditions of track circuited lines at any given movement [whether route set or occupied].

When a route is set by pressing the entrance and exit buttons for signaled route, for the purpose of giving indications to the Panel Station Master about the occupancy of any or all of the track circuited section/sections, the route is split into four portions and the details of the four portions are as follows: -

- I) Approach track either in rear of the first stop signal or any other stop signal in the station yard.
- II) Entry portion of a route from the subject signal up to the fouling mark of the berthing track.
- III) The berthing track and
- IV) The over lap [where provided].

In the first part of the route, whenever a vehicle or train occupies the approach track in rear of the first stop signal at the station, the concerned approach track indications show a RED flashing light with an audible buzzer ringing and this will continue till the Panel Station Master takes off the Home Signal. The approach track of a stop signal [other than the first stop signal] is normally lit WHITE when a route is set for a train movement leading to the above stop signal and this white strip of indication of the track [throughout the route section and berthing tracks en-route] change to RED one after the other progressively in the direction of the train movement as the train passes and finally the RED light extinguishes when the vehicle or train clears these various portions of the track circuits on the route.

In the second part of the route whenever a train is occupying the track circuited section i.e., at the entrance end the track circuit indication shows RED light [changing from WHITE to RED] and as soon as a train or vehicle has cleared this portion of the route section/track circuited portion of the line, the RED light extinguishes on this portion of the track. This sequence of operation of track indications signifies the sectional route release for facilitating subsequent traffic movements.

In the third part of the route, whenever a train is on the berthing track, it continues to show the RED light [changing from White to Red] till berthing track is cleared of this train or vehicle.

In the fourth part of the route the over lap will continue to show WHITE light for period of 120 seconds after the berthing track is occupied by the train and when these lights extinguish, it shows the release of the over lap control [because by the time a train would have either come to a stop at the stop signal protecting the over lap or has passed past it]. The over lap WHITE light indication originally showing WHITE light at the time of route setting will change to RED if the over lap portion of the track circuit is occupied by the train.

In all the four parts of complete route the failure or occupation of any track circuit is indicated by a RED light.

9.0 POINT ENGAGED INDICATION:-

At the apex of points, a small circular dot indicator is provided on the panel on the track portion itself. This indicator lights up whenever the point is locked in a particular position indicating that it is engaged. [Constituting either a part of the route section or an over lap set].

10.0 POINT INDICATION:-

At each point the Normal and Reverse indications of point positions are shown by a small strip of light on the straight for the normal setting and on the cross over portion i.e., diagonally for the Reverse setting.

11.0 APPROACH TRAIN INDICATION:-

At the approach of all three UP & DN directions of SAMBALPUR Station yard, approach track indications are provided which shall show RED lights as soon as the train occupies the track in rear of the Home Signals from respective directions.

12.0 APPROACH LOCKING INDICATIONS:- NIL

13.0 BLOCK RELEASE INDICATIONS (Train Arrival Indication) :

There are three indication (Chocolate with White dot) provided on the operating panel. DN train arrived indication HKG-SBP and SBPY-SBP.

Whenever a DN train clears Block section HKG-SBP or SBPY-SBP and arrives at SBP, a “yellow” indication appears on the panel. The SM on duty has to press the button before normalising the block handle.

Whenever an UP train clears Block section SBP-SLRA and arrives at SBP, a “yellow” indication appears on the panel. The SM on duty has to press the button before normalising the block instrument.

14.0 BUTTON STUCK UP INDICATION :

When any of the Signal Buttons/Point Buttons or Route Buttons (GNCR, WNCR, UNCR) remains in the pressed position for more than 15 seconds, the Panel becomes inoperative and White light appears on the Panel with an audible indication (Buzzer).

If Signal Button (GN) remains in pressed position, a White light appears near GNCR or if a point Button (WN) remains in pressed position, a White light appears near WNCR. The visible audible indication will continue till such time the fault is rectified.

15.0 AUDIBLE INDICATIONS ON OPERATING PANEL: -

15.1 **SIGNAL FAILURE BUZZER: -**

Whenever a signal becomes blank due to fusing of RED LED lamp the signal failure buzzer/sounds and continues till the buzzer muting button viz., GXYN on the panel is pressed for acknowledging the failure. A stencil “red” indication also appears and continues till the lamp is replaced.

15.2 **POINT FAILURE BUZZER :-**

In case of failure of a point, this buzzer/sounds and continues till the buzzer muting button viz., WXYN is pressed for acknowledging the failure. A stencil “red” indication also appears and continues till the defect is rectified.

15.3 **GROUP BUTTON BUZZER: -**

When one or more of the operating button/buttons remains/remain in the pressed down position for more than 15 seconds, this buzzer continues to buzz until the fault is rectified and all the buttons are put at normal position, the panel remains inoperative. So, it should be ensured by Station Master that no operating button is pressed for more than 15 seconds.

15.4 **POINT CHAIN GROUP BELL:- NIL**

16.0 **SIGNAL SYMBOLS AND THEIR INDICATION ON INDICATION PANEL: -**

Main Signals are symbolically represented by a small rectangular box with a stem [in black painted over the indicating panel] along the track lines corresponding to their position at site with provision of exhibiting two aspect viz., a steady Red light when the signals at the site shows ON aspect and a steady Green light when the signal at the site displays OFF aspect.

Route indicators on the stop signals are indicated in a box at the top of the stop signal symbolically and provision for indicating a WHITE light in a slit whenever any route indicator of the signal concerned at the site lit.

In case of a shunt signal below a stop signal, the aspect of the same is shown in a hexagonal box [coloured black] with an aperture. When the shunt signal is taken “OFF”, it displays a WHITE light on a diagonal slit and no light when the signal is at “ON” position.

In case of a Calling on signal, it displays a WHITE DOT light on the stem with a circular box [coloured black] and no light when the signal is at “ON” position.

In case of independent shunt signal it is shown as small rectangular block [coloured black] with one horizontal and one diagonal slit. Horizontal slit is lit when signal is at ON and diagonal slit is lit when signal is at OFF.

17.0 **SPECIAL INSTRUCTIONS REGARDING SIGNAL LAMPS:**

LED lit lamps are provided for all main & auxiliary Signals. When the Signal lamp fails, the concerned signal will flash in the panel.

The Station Master on duty shall inform the incidence of fusing of the Signal lamp to S&T maintenance staff [ESM/JE/SE (Signal)] to attend the above. Reporting the Signal lamp failure should be promptly done by the Station Master on duty, so that signal lamp is replaced/ defect is rectified by S&T staff in time which would otherwise result in detention of trains.

17.1.1 The Station Master on duty must also ensure that all the Signal lights are burning properly. This fact must be recorded in the diary under a separate entry and confirm to the Section controller on duty as per the instructions contained in Division Safety Circular No.82/82, Dated.03.05.1982.

17.1.2 INDICATIONS IN CASE OF FAILURE OF SIGNAL ASPECT:-

In case of any off aspect lamp fuses at the site, the Green indication flashes on the corresponding signal aspect indicating on the indication panel. If the Red lamp fuses the RED indication on the corresponding signal symbol flashes.

Magnetic button collars are provided and the same should be used on the operating panel on the concerned lines/points when the same are engaged/blocked as visual reminders in accordance with SR 5.04.01.

17.1.3 FAILURE OF POWER SUPPLY INDICATIONS:-

The failure of power supply to the Route Relay Installations is indicated by audio and visual indicators on the operating panel.

18.0 CHART SHOWING THE OPERATION OF THE ENTRANCE AND EXIT BUTTONS FOR CLEARING STOP SIGNAL :

The push buttons chart for initiating Stop Signals and Calling on Signals.

| Sl. No. | Signal Route | From Signal | To Destination | BUTTONS OPERATED | | REMARKS |
|---------|------------------|-------------|----------------|------------------|---------|----------------|
| | | | | SIGNAL | ROUTE | |
| 1. | 1A set to ORL | S-1 | S-17 | S1 GN | L1U1 UN | |
| 2. | 1A set to M/L | S-1 | S-17 | S1 GN | L1U2 UN | |
| 3. | 1B | S-1 | S-27 | S1 GN | L2U UN | |
| 4. | 1C set to D/S 64 | S-1 | S-19 | S1 GN | L3U1 UN | |
| 5. | 1C set to M/L | S-1 | S-19 | S1 GN | L3U2 UN | |
| 6. | 1D | S-1 | S-5 | S1 GN | 5 UN | Released by S5 |
| 7. | 1E | S-1 | SB of Bay line | S1 GN | BL UN | |
| 8. | 2A set to ORL | S-2 | S-18 | S2 GN | L1D1 UN | |
| 9. | 2A set to M/L | S-2 | S-18 | S2 GN | L1D2 UN | |
| 10. | 2B set to ORL | S-2 | S-30 | S2 GN | L2D1 UN | |
| 11. | 2B set to M/L | S-2 | S-30 | S2 GN | L2D2 UN | |
| 12. | 2C | S-2 | S-4 | S2 GN | 56 UN | Released by S4 |
| 13. | 3A set to ORL | S-3 | S-17 | S3 GN | L1U1 UN | |
| 14. | 3A set to M/L | S-3 | S-17 | S3 GN | L1U2 UN | |
| 15. | 3B | S-3 | S-27 | S3 GN | L2U UN | |
| 16. | 3C set to D/S 64 | S-3 | S-19 | S3 GN | L3U1 UN | |
| 17. | 3C set to M/L | S-3 | S-19 | S3 GN | L3U2 UN | |
| 18. | 3D | S-3 | S-5 | S3 GN | 5 UN | Released by S5 |
| 19. | 3E | S-3 | SB of Bay Line | S3 GN | BL UN | |

| | | | | | | |
|-----|-------------------|------|------|--------|---------|------------------|
| 20. | 4A set to SBPY | S-4 | S-20 | S4 GN | L3D1 UN | |
| 21. | 4A set to SLRA | S-4 | S-20 | S4 GN | L3D2 UN | |
| 22. | 4B | S-4 | S-22 | S4 GN | L4D UN | |
| 23. | 4C set to S. Neck | S-4 | S-24 | S4 GN | L5D1 UN | |
| 24. | 4C set to M/L | S-4 | S-24 | S4 GN | L5D2 UN | |
| 25. | 4D set to ORL | S-4 | S-26 | S4 GN | L6D1 UN | |
| 26. | 4D set to M/L | S-4 | S-26 | S4 GN | L6D2 UN | |
| 27. | 5A set to D/S 62 | S-5 | S-21 | S5 GN | L4U1 UN | |
| 28. | 5A set to M/L | S-5 | S-21 | S5 GN | L4U2 UN | |
| 29. | 5B set to D/S 62 | S-5 | S-23 | S5 GN | L5U1 UN | |
| 30. | 5B set to M/L | S-5 | S-23 | S5 GN | L5U2 UN | |
| 31. | 5C set to D/S 62 | S-5 | S-25 | S5 GN | L6U1 UN | |
| 32. | 5C set to M/L | S-5 | S-25 | S5 GN | L6U2 UN | |
| 33. | S-17 | S-17 | S-37 | S17 GN | 37A UN | Released by S-37 |
| 34. | S-18A | S-18 | S-44 | S18 GN | 44A UN | Released by S-44 |
| 35. | S-18B | S-18 | S-42 | S18 GN | 42A UN | Released by S-42 |
| 36. | S-19 | S-19 | S-37 | S19 GN | 37A UN | Released by S-37 |
| 37. | S-20A | S-20 | S-44 | S20 GN | 44A UN | Released by S-44 |
| 38. | S-20B | S-20 | S-42 | S20 GN | 42A UN | Released by S-42 |
| 39. | S-21 | S-21 | S-37 | S21 GN | 37A UN | Released by S-37 |
| 40. | S-22A | S-22 | S-44 | S22 GN | 44A UN | Released by S-44 |
| 41. | S-22B | S-22 | S-42 | S22 GN | 42A UN | Released by S-42 |
| 42. | S-23 | S-23 | S-37 | S23 GN | 37A UN | Released by S-37 |
| 43. | S-24A | S-24 | S-44 | S24 GN | 44A UN | Released by S-44 |
| 44. | S-24B | S-24 | S-42 | S24 GN | 42A UN | Released by S-42 |
| 45. | S-25 | S-25 | S-37 | S25 GN | 37A UN | Released by S-37 |
| 46. | S-26A | S-26 | S-44 | S26 GN | 44A UN | Released by S-44 |
| 47. | S-26B | S-26 | S-42 | S26 GN | 42A UN | Released by S-42 |
| 48. | S27 | S-27 | S-37 | S27 GN | 37A UN | Released by S-37 |
| 49. | S-28A | S-28 | S-44 | S28 GN | 44A UN | Released by S-44 |
| 50. | S-28B | S-28 | S-42 | S28 GN | 42A UN | Released by S-42 |
| 51. | S-29 | S-29 | S-37 | S29 GN | 37A UN | Released by S-37 |
| 52. | S-30A | S-30 | S-44 | S30 GN | 44A UN | Released by S-44 |
| 53. | S-30B | S-30 | S-42 | S30 GN | 42A UN | Released by S-42 |
| 54. | S-31 | S-31 | S-37 | S31 GN | 37A UN | Released by S-37 |
| 55. | S-34A | S-34 | S-44 | S34 GN | 44A UN | Released by S-44 |
| 56. | S-34B | S-34 | S-42 | S34 GN | 42A UN | Released by S-42 |
| 57. | S-36A | S-36 | S-44 | S36 GN | 44A UN | Released by S-44 |
| 58. | S-36B | S-36 | S-42 | S36 GN | 42A UN | Released by S-42 |

| | | | | | | |
|-----|------|------|------------------------|--------|-------|---|
| 59. | S-37 | S-37 | UP Home signal of HKG | S37 GN | 37 UN | Controlled by TLBI of SBP-HKG section and axle counter |
| 60. | S-42 | S-42 | DN Home signal of SLRA | S42 GN | 42 UN | Controlled by DLBI of SBP-SLRA section and axle counter |
| 61. | S-44 | S-44 | UP Home signal of SBPY | S44 GN | 44 UN | Controlled by TLBI of SBP-SBPY section and axle counter |

19.0 CHART SHOWING THE OPERATION OF THE ENTRANCE AND EXIT BUTTONS FOR CLEARING OF CALLING – ON – SIGNALS :

| Sl. No. | Signal Route | From Signal | To Destination | BUTTONS OPERATED | | REMARKS |
|---------|--------------|-------------|----------------|------------------|----------|--|
| | | | | SIGNAL | ROUTE | |
| 1 | C-1A | S-1 | S-17 | S-1 & COGGN | L1U1 UN | Clearance after 120 seconds on occupation of 1AT |
| 2 | C-1B | S-1 | S-27 | S-1 & COGGN | L2U UN | Clearance after 120 seconds on occupation of 1AT |
| 3 | C-1C | S-1 | S-19 | S-1 & COGGN | L3U1 UN | Clearance after 120 seconds on occupation of 1AT |
| 4 | C-1D | S-1 | S-5 | S-1 & COGGN | 5 UN | Clearance after 120 seconds on occupation of 1AT |
| 5 | C-1E | S-1 | SB of Bay Line | S-1 & COGGN | BL UN | Clearance after 120 seconds on occupation of 1AT |
| 6 | C-2A | S-2 | S-18 | S-2 & COGGN | L1D1 UN | Clearance after 120 seconds on occupation of 2AT |
| 7 | C-2B | S-2 | S-30 | S-2 & COGGN | L2D1 UN | Clearance after 120 seconds on occupation of 2AT |
| 8 | C-2C | S-2 | S-4 | S-2 & COGGN | 56UN | Clearance after 120 seconds on occupation of 2AT |
| 9 | C-3A | S-3 | S-17 | S-3 & COGGN | L1 U1 UN | Clearance after 120 seconds on occupation of 3AT |
| 10 | C-3B | S-3 | S-27 | S-3 & COGGN | L2U UN | Clearance after 120 seconds on occupation of 3AT |
| 11 | C-3C | S-3 | S-19 | S-3 & COGGN | L3U1 UN | Clearance after 120 seconds on occupation of 3AT |

| | | | | | | |
|----|-------|------|----------------|--------------|---------|---|
| 12 | C-3D | S-3 | S-5 | S-3 & COGGN | 5 UN | Clearance after 120 seconds on occupation of 3AT |
| 13 | C-3E | S-3 | SB of Bay Line | S-3 & COGGN | BL UN | Clearance after 120 seconds on occupation of 3AT |
| 14 | C-4A | S-4 | S-20 | S-4 & COGGN | L3D1 UN | Clearance after 120 seconds on occupation of 56BT |
| 15 | C-4B | S-4 | S-22 | S-4 & COGGN | L4D UN | Clearance after 120 seconds on occupation of 56BT |
| 16 | C-4C | S-4 | S-24 | S-4 & COGGN | L5D1 UN | Clearance after 120 seconds on occupation of 56BT |
| 17 | C-4D | S-4 | S-26 | S-4 & COGGN | L6D1 UN | Clearance after 120 seconds on occupation of 56BT |
| 18 | C-5A | S-5 | S-21 | S-5 & COGGN | L4U1 UN | Clearance after 120 seconds on occupation of 59BT |
| 19 | C-5B | S-5 | S-23 | S-5 & COGGN | L5U1 UN | Clearance after 120 seconds on occupation of 59BT |
| 20 | C-5C | S-5 | S-25 | S-5 & COGGN | L6U1 UN | Clearance after 120 seconds on occupation of 59BT |
| 21 | C-17 | S-17 | S-37 | S-17 & COGGN | 37A UN | Clearance after 120 seconds on occupation of L1T1 |
| 22 | C-18A | S-18 | S-44 | S-18 & COGGN | 44A UN | Clearance after 120 seconds on occupation of L1T3 |
| 23 | C-18B | S-18 | S-42 | S-18 & COGGN | 42A UN | Clearance after 120 seconds on occupation of L1T3 |
| 24 | C-19 | S-19 | S-37 | S-19 & COGGN | 37A UN | Clearance after 120 seconds on occupation of L3T1 |
| 25 | C-20A | S-20 | S-44 | S-20 & COGGN | 44A UN | Clearance after 120 seconds on occupation of L3T3 |
| 26 | C-20B | S-20 | S-42 | S-20 & COGGN | 42A UN | Clearance after 120 seconds on occupation of L3T3 |
| 27 | C21 | S-21 | S-37 | S-21 & COGGN | 37A UN | Clearance after 120 seconds on occupation of L4T1 |
| 28 | C-22A | S-22 | S-44 | S-22 & COGGN | 44A UN | Clearance after 120 seconds on occupation of L4T3 |

| | | | | | | |
|----|-------|------|------|--------------|--------|---|
| 29 | C-22B | S-22 | S-42 | S-22 & COGGN | 42A UN | Clearance after 120 seconds on occupation of L4T3 |
| 30 | C-23 | S-23 | S-37 | S-23 & COGGN | 37A UN | Clearance after 120 seconds on occupation of L5T1 |
| 31 | C-24A | S-24 | S-44 | S-24 & COGGN | 44A UN | Clearance after 120 seconds on occupation of L5T3 |
| 32 | C-24B | S-24 | S-42 | S-24 & COGGN | 42A UN | Clearance after 120 seconds on occupation of L5T3 |
| 33 | C-25 | S-25 | S-37 | S-25 & COGGN | 37A UN | Clearance after 120 seconds on occupation of L6T1 |
| 34 | C-26A | S-26 | S-44 | S-26 & COGGN | 44A UN | Clearance after 120 seconds on occupation of L6T3 |
| 35 | C-26B | S-26 | S-42 | S-26 & COGGN | 42A UN | Clearance after 120 seconds on occupation of L6T3 |
| 36 | C-27 | S-27 | S-37 | S-27 & COGGN | 37A UN | Clearance after 120 seconds on occupation of L2T1 |
| 37 | C-28A | S-28 | S-44 | S-28 & COGGN | 44A UN | Clearance after 120 seconds on occupation of BAYT |
| 38 | C-26B | S-28 | S-42 | S-28 & COGGN | 42A UN | Clearance after 120 seconds on occupation of BAYT |
| 39 | C-29 | S-29 | S-37 | S-29 & COGGN | 37A UN | Clearance after 120 seconds on occupation of L7T1 |
| 40 | C-30A | S-30 | S-44 | S-30 & COGGN | 44A UN | Clearance after 120 seconds on occupation of L2T3 |
| 41 | C-30B | S-30 | S-42 | S-30 & COGGN | 42A UN | Clearance after 120 seconds on occupation of L2T3 |
| 42 | C-31 | S-31 | S-37 | S-31 & COGGN | 37A UN | Clearance after 120 seconds after initiated |
| 43 | C-34A | S-34 | S-44 | S-34 & COGGN | 44A UN | Clearance after 120 seconds on occupation of L7T2 |
| 44 | C-34B | S-34 | S-42 | S-34 & COGGN | 42A UN | Clearance after 120 seconds on occupation of L7T2 |
| 45 | C-36A | S-36 | S-44 | S-36 & COGGN | 44A UN | Clearance after 120 seconds after initiated |
| 46 | C-36B | S-36 | S-42 | S-36 & COGGN | 42A UN | Clearance after 120 seconds after initiated |

20.0 CHART SHOWING THE OPERATION OF THE ENTRANCE AND EXIT BUTTONS FOR CLEARING SHUNT SIGNAL:

| Sl. No. | Signal Route | From Signal | To Destination | BUTTONS OPERATED | | REMARKS |
|---------|--------------|-------------|----------------|------------------|----------|---------|
| | | | | SIGNAL | ROUTE | |
| 1 | SH-4 (A) | SH-4 | S-20 | SH-4 GN | L3 D1 UN | |
| 2 | SH-4 (B) | SH-4 | SH-22 | SH-4 GN | L4 D UN | |
| 3 | SH-4(C) | SH-4 | SH-24 | SH-4 GN | L5 D1 UN | |
| 4 | SH-4 (D) | SH-4 | SH-26 | SH-4 GN | L6 D1 UN | |
| 5 | SH-4 (E) | SH-4 | SH-34 | SH-4 GN | ELD UN | |
| 6 | SH-4 (F) | SH-4 | SH-36 | SH-4 GN | ART UN | |
| 7 | SH-5 (A) | SH-5 | SH-13 | SH-5 GN | 67 UN | |
| 8 | SH-5 (B) | SH-5 | S-19 | SH-5 GN | L3U1 UN | |
| 9 | SH-5(C) | SH-5 | S-21. | SH-5 GN | L4U1 UN | |
| 10 | SH-5 (D) | SH-5 | S-23 | SH-5 GN | L5U1 UN | |
| 11 | SH-5 (E) | SH-5 | S-25 | SH-5 GN | L6U1 UN | |
| 12 | SH-5 (F) | SH-5 | S-29 | SH-5 GN | ELU UN | |
| 13 | SH-5 (G) | SH-5 | S-31 | SH-5 GN | AS UN | |
| 14 | SH-5 (H) | SH-5 | SB of WL | SH-5 GN | WL2 UN | |
| 15 | SH-6 | SH-6 | SH-48 | SH-6 GN | 48A UN | |
| 16 | SH-7 (A) | SH-7 | SH-13 | SH-7 GN | 67UN | |
| 17 | SH-7 (B) | SH-7 | SH-19 | SH-7 GN | L3U1 UN | |
| 18 | SH-7(C) | SH-7 | S-5 | SH-7 GN | 5 UN | |
| 19 | SH-8 (A) | SH-8 | S-34 | SH-8 GN | ELD UN | |
| 20 | SH-8 (B) | SH-8 | S-36 | SH-8 GN | ART UN | |
| 21 | SH-9 | SH-9 | S-5 | SH-9 GN | 5 UN | |
| 22 | SH-10 (A) | SH-10 | S-34 | SH-10 GN | ELD UN | |
| 23 | SH-10 (B) | SH-10 | S-34 | SH-10 GN | ART UN | |
| 24 | SH-11 (A) | SH-11 | S-5 | SH-11 GN | 5 UN | |
| 25 | SH-11 (B) | SH-11 | SH-15 | SH-11 GN | 57 UN | |
| 26 | SH-12 (A) | SH-12 | S-34 | SH-12 GN | ELD UN | |
| 27 | SH-12 (B) | SH-12 | S-36 | SH-12 GN | ART UN | |
| 28 | SH-13 (A) | SH-13 | SB of E.L | SH-13 GN | EL UN | |
| 29 | SH-13 (B) | SH-13 | SB of B.L | SH-13 GN | BL UN | |
| 30 | SH-13(C) | SH-13 | S-17 | SH-13 GN | L1U1 UN | |
| 31 | SH-13 (D) | SH-13 | S-27 | SH-13 GN | L2U UN | |
| 32 | SH-14 (A) | SH-14 | S-34 | SH-14 GN | ELD UN | |
| 33 | SH-14 (B) | SH-14 | S-36 | SH-14 GN | ART UN | |
| 34 | SH-15 (A) | SH-15 | S-23 | SH-15 GN | L5U1 UN | |
| 35 | SH-15 (B) | SH-15 | S-25 | SH-15 GN | L6U1 UN | |
| 36 | SH-15(C) | SH-15 | S-29 | SH-15 GN | ELU UN | |
| 37 | SH-15 (D) | SH-15 | S-31 | SH-15 GN | AS UN | |
| 38 | SH-15 (E) | SH-15 | SB of WL | SH-15 GN | WL2 UN | |
| 39 | SH-16A | SH-16 | SH-48 | SH-16 GN | 48A UN | |
| 40 | SH-16 (B) | SH-16 | SH-46 | SH-16 GN | 46A UN | |
| 41 | SH-17 | SH-17 | SH-39 | SH-17 GN | 48A UN | |
| 42 | SH-18A | SH-18 | S-44 | SH-18 GN | 44A UN | |
| 43 | SH-18B | SH-18 | S-42 | SH-18 GN | 42A UN | |
| 44 | SH-18(C) | SH-18 | SB. Of SN | SH-18GN | SHN UN | |
| 45 | SH-19A | SH-19 | SH-39 | SH-19 GN | 48A UN | |
| 46 | SH-19B | SH-19 | SH-35 | SH-19 GN | 46A UN | |
| 47 | SH-20A | SH-20 | S-44 | SH-20 GN | 44A UN | |

| | | | | | | |
|----|-----------|-------|------------|----------|---------|--|
| 48 | SH-20B | SH-20 | S-42 | SH-20 GN | 42A UN | |
| 49 | SH-20C | SH-20 | SB of S.N | SH-20 GN | SHN UN | |
| 50 | SH-21 (A) | SH-21 | SH-39 | SH-21 GN | 48A UN | |
| 51 | SH-21 (B) | SH-21 | SH-35 | SH-21 GN | 46A UN | |
| 52 | SH-22 (A) | SH-22 | SH-44 | SH-22 GN | 44A UN | |
| 53 | SH-22 (B) | SH-22 | SH-42 | SH-22 GN | 42A UN | |
| 54 | SH-22(C) | SH-22 | SB of SN | SH-22 GN | SHN UN | |
| 55 | SH-23 (A) | SH-23 | SH-39 | SH-23 GN | 48A UN | |
| 56 | SH-23 (B) | SH-23 | SH-35 | SH-23 GN | 46A UN | |
| 57 | SH-24 (A) | SH-24 | SH-44 | SH-24 GN | 44A UN | |
| 58 | SH-24 (B) | SH-24 | S-42 | SH-24 GN | 42A UN | |
| 59 | SH-24(C) | SH-24 | SH-40 | SH-24 GN | 57 UN | |
| 60 | SH-25 (A) | SH-25 | SH-39 | SH-25 GN | 48A UN | |
| 61 | SH-25 (B) | SH-25 | SH-35 | SH-25 GN | 46A UN | |
| 62 | SH-26 (A) | SH-26 | S-44 | SH-26 GN | 44A UN | |
| 63 | SH-26 (B) | SH-26 | S-42 | SH-26 GN | 42A UN | |
| 64 | SH-26(C) | SH-26 | SH-40 | SH-26 GN | 57 UN | |
| 65 | SH-27 | SH-27 | SH-39 | SH-27 GN | 48A UN | |
| 66 | SH-28 (A) | SH-28 | S-44 | SH-28 GN | 44A UN | |
| 67 | SH-28 (B) | SH-28 | S-42 | SH-28 GN | 42A UN | |
| 68 | SH-28(C) | SH-28 | SB of SN | SH-28 GN | SHN UN | |
| 69 | SH-29 (A) | SH-29 | SH-39 | SH-29 GN | 48A UN | |
| 70 | SH-29 (B) | SH-29 | SH-35 | SH-29 GN | 46A UN | |
| 71 | SH-29(C) | SH-29 | SB of IOC1 | SH-29 GN | IOC1 UN | |
| 72 | SH-29 (D) | SH-29 | SB of IOC2 | SH-29 GN | IOC2 UN | |
| 73 | SH-29 (E) | SH-29 | SB of IOC3 | SH-29 GN | IOC3 UN | |
| 74 | SH-29 (F) | SH-29 | SB of ENS | SH-29 GN | ENS UN | |
| 75 | SH-30 (A) | SH-30 | S-44 | SH-30 GN | 44A UN | |
| 76 | SH-30 (B) | SH-30 | S-42 | SH-30 GN | 42A UN | |
| 77 | SH-30(C) | SH-30 | SB of SN | SH-30 GN | SHN UN | |
| 78 | SH-31(A) | SH-31 | SH-39 | SH-31 GN | 48A UN | |
| 79 | SH-31(B) | SH-31 | SH-35 | SH-31 GN | 46A UN | |
| 80 | SH-31(C) | SH-31 | SB of IOC1 | SH-31 GN | IOC1 UN | |
| 81 | SH-31(D) | SH-31 | SB of IOC2 | SH-31 GN | IOC2 UN | |
| 82 | SH-31(E) | SH-31 | SB of IOC3 | SH-31 GN | IOC3 UN | |
| 83 | SH-31(F) | SH-31 | SB of ENS | SH-31 GN | ENS UN | |
| 84 | SH-32(A) | SH-32 | S-44 | SH-32 GN | 44A UN | |
| 85 | SH-32(B) | SH-32 | S-42 | SH-32 GN | 42A UN | |
| 86 | SH-32(C) | SH-32 | SB of SN | SH-32 GN | SHN UN | |
| 87 | SH-33 | SH-33 | SH-35 | SH-33GN | 46A UN | |
| 88 | SH-34(A) | SH-34 | S-44 | SH-34 GN | 44A UN | |
| 89 | SH-34(B) | SH-34 | S-42 | SH-34 GN | 42A UN | |
| 90 | SH-34(C) | SH-34 | SH-40 | SH-34 GN | 57 UN | |
| 91 | SH-35 | SH-35 | SH-41 | SH-35 GN | 16A UN | |
| 92 | SH-36(A) | SH-36 | S-44 | SH-36 GN | 44A UN | |
| 93 | SH-36(B) | SH-36 | S-42 | SH-36 GN | 42A UN | |
| 94 | SH-36(C) | SH-36 | SH-40 | SH-36 GN | 57 UN | |
| 95 | SH-38(A) | SH-38 | S-44 | SH-38 GN | 44A UN | |
| 96 | SH-38(B) | SH-38 | S-42 | SH-38 GN | 42A UN | |
| 97 | SH-38(C) | SH-38 | SH-40 | SH-38 GN | 57 UN | |
| 98 | SH-39(A) | SH-39 | S 37 | SH-39 GN | 37A UN | |

| | | | | | | |
|-----|----------|-------|------------------|----------|---------|--|
| 99 | SH-39(B) | SH-39 | SH-41 | SH-39 GN | 16A UN | |
| 100 | SH-40 | SH-40 | SB of SN | SH-40 GN | SHN UN | |
| 101 | SH-41 | SH-41 | SB of HIW SDG | SH-41 GN | HIW UN | |
| 102 | SH-46(A) | SH-46 | S-4 | SH-46 GN | 56 UN | |
| 103 | SH-46(B) | SH-46 | SB of WSHL | SH-46 GN | WSHL UN | |
| 104 | SH-48(A) | SH-48 | S-18 | SH-48 GN | L1D1 UN | |
| 105 | SH-48(B) | SH-48 | S-30 | SH-48 GN | L2D1 UN | |
| 106 | SH-48(C) | SH-48 | S-4 | SH-48 GN | 56 UN | |
| 107 | SH-50 | SH-50 | SH-16 | SH-50 GN | 16A UN | |

21.0 THE PUSH BUTTON CHART FOR CRANK HANDLES, SIDINGS AND LEVEL CROSSING GATE: -

| Sl. NO | Description of control | Buttons to be operated |
|--------|---|------------------------|
| 1. | Releasing control for opening level crossing gate at KM 563.300 | 90+Group Trans GSBN |
| 2. | Withdrawing control after closing level crossing gate at KM 563.300 | 90+Group Release GSRBN |
| 3. | Permission to release CH-1 key | CH-1+ CHNB |
| 4. | Withdrawal of control of CH-1 Key | CH-1 + CHRB |
| 5. | Permission to release CH-2 key | CH-2 + CHNB |
| 6. | Withdrawal of control of CH-2 Key | CH-2 + CHRB |
| 7. | Permission to release CH-3 key | CH-3 + CHNB |
| 8. | Withdrawal of control of CH-3 Key | CH-3 + CHRB |
| 9. | Permission to release CH-4 key | CH-4 + CHNB |
| 10. | Withdrawal of control of CH-4 Key | CH-4 + CHRB |
| 11. | Permission to release CH-5 key | CH-5 + CHNB |
| 12. | Withdrawal of control of CH-5 Key | CH-5 + CHRB |
| 13. | Permission to release CH-6 key | CH-6 + CHNB |
| 14. | Withdrawal of control of CH-6 Key | CH-6 + CHRB |
| 15. | Permission to release CH-7 key | CH-7 + CHNB |
| 16. | Withdrawal of control of CH-7 Key | CH-7 + CHRB |
| 17. | Permission to release CH-8 key | CH-8 + CHNB |
| 18. | Withdrawal of control of CH-8 Key | CH-8 + CHRB |
| 19. | Permission to release CH-9 key | CH-9 + CHNB |
| 20. | Withdrawal of control of CH-9 key | CH 9 + CHRB |
| 21. | Permission to release CH-10 key | CH10 + CHNB |
| 22. | Withdrawal of control of CH-10 key | CH10 +CHRB |
| 23. | Permission to release ART siding key | 95+Group Trans GSBN |
| 24. | Withdrawal of control of ART siding key | 95+Group Release GSRBN |
| 25. | Permission to release ARME siding key | 86+Group Trans GSBN |
| 26. | Withdrawal of control of ARME siding key | 86+Group Release GSRBN |
| 27. | Permission to release Saloon siding key | 97+Group Trans GSBN |
| 28. | Withdrawal of control of Saloon siding key | 97+Group Release GSRBN |
| 29. | Permission to release Engine Escape Line key | 88+Group Trans GSBN |
| 30. | Withdrawal of control of Engine Escape Line key | 88+Group Release GSRBN |

22.0 OPERATION OF SIGNALS :-

All signals are directly operated from the Route Relay Interlocking cabin as shown in the Station Working Rules diagram.

23.0 STATION MASTER KEY FOR OPERATING PANEL :-

This key when inserted in the lock [provided on the Operating Panel] and turned to right the panel becomes operative. The key when inserted in the lock and either turned to left or extracted out from the lock renders the panel inoperative except for putting back the signals to “ON” position in case of emergencies. When the SM's Key is inserted and turned to right a white indication glows by the side of SM's Key.

24.0 DISTANT SIGNALS AND THEIR ASPECTS: -

The Distant signals work automatically, the aspects of these signals being controlled by the aspect of the respective Home Signals.

The aspect of Distant signal in single distant territory is revised vide amendment to GR-3.07 and CPTM/ECOR's letter No.ECOR/Optg/SC/55/X/SWR, dtd.05.02.2014. The indications are given as under.

| Receiving On | Existing | | Revised | |
|---|-------------------|-----------------|-------------------|-----------------|
| To stop at Home signal | Aspect of Distant | Aspect of Home | Aspect of Distant | Aspect of Home |
| | Y | R | Y | R |
| i) To stop at loop line starter, ii) Through via loop. | YY | Y with lunar | YY | Y with lunar |
| To stop at main line starter | G | Y without lunar | YY | Y without lunar |
| Through via main line | G | G | G | G |

25.0 EMERGENCY OPERATIONS AND THE COUNTERS :-

Operation of the following buttons is recorded on the respective counters provided on the operating panel.

- I) Emergency Point Button [EWN].
- II) Emergency Full Route Release Button [EUUYN].
- III) Emergency Route Section Release Button [EUYN].
- IV) “Calling on” Signal Group Button [COGGN].
- V) Emergency Overlap Release Button [OYN].

The Panel Station Master on duty should keep a proper record of all such operations. A Register with separate portions for each button should be maintained. Each time a button is operated the readings on the respective counter should be recorded in the register mentioning clearly therein the circumstances under which the emergency operation had to be resorted to. At the time of handing over charge the relieved Panel Station Master should record and sign the last readings on the counters in the register and the Panel Station Master who takes over charge must verify, by physically check, the correctness of the readings recorded and counter sign the entry.

In case of failure of track circuit, the points can be set by operation of the emergency point button [EWN] and the point button [WN] concerned (after unlocking the EWN control lock) provided the point concerned was not engaged earlier or not locked. This electrical lock (Ignition type) is provided on the operating panel close to EWN button. This key should be kept in the personal custody of the Panel Station Master and no emergency operations should be carried out without his permission. The Panel Station Master on duty is responsible for all emergency operations explained above. The Panel Station Master is responsible for correct operation of the emergency buttons by breaking the seal and record the operations in the register.

The Panel Station Master should not permit any unauthorized person to operate the control panel.

For every operation the Signal button at the entrance point and the Route button at the exit point have to be simultaneously positively pressed down for initiating the route setting, locking and taking off the signal.

Similarly for any individual point operation, the Points button (WN) and the Group point button (WWN) has to be pressed simultaneously.

The Panel Station Master on duty must ascertain as visual verification that the indication appearing on the indicating panel is in conformity with the operation of the buttons on the operating panel. The Panel Station Master must also ensure that not more than two buttons are operated simultaneously at any given time.

26.0 **APPROACH LOCKING OF A ROUTE** :-

Once a signal (either a stop signal or a shunt signal) is taken off, the route including signal overlap in case of main signal gets back locked and the set route cannot be altered or interfered with unless the signal concerned is put back to "ON" position and the route is cancelled by emergency three button operation. After the initiation of such emergency three-button operation, the complete route gets cancelled provided there is no train on the approach track. If there is a train/vehicle on the approach track, the route gets approach locked and can be released only after the count down of 120 Seconds by the timer. [The approach locking distance being variable according to the aspect of the signal in rear and other important safety considerations such as maximum permissible sectional speed on the approaching line etc.]

27.0 **EMERGENCY RELEASE OF INDIVIDUAL-ROUTE SECTION AND OVERLAPS** :-

A complete route of signal comprises of one or more Route Sections (as also the overlap in case of a stop signal) and whenever any route section or overlap is not released by either passage of the train or by emergency cancellation of the entire route as already mentioned above, the emergency cancellation of the Route Section with the co-ordination of the SSE (Sig)/SE(Sig)/RRI on duty can be done and such cancellation is individually countered on the counter fitted on the panel.

28.0 **TAKING OFF CALLING ON SIGNALS** :-

(i)The "Calling on" signals have been provided below the following stop signals at SLRA & SBPY end: -

| Sl.No. | Button No. | Signal No. |
|--------|------------|---|
| 1. | C 1 | On DN Home Signal at SBPY end. |
| 2. | C 3 | On Up Main Home Signal at SLRA end |
| 3. | C 5 | On Routing home signal line. |
| 4. | C 18A/B | On DN starter signal on line No.1 |
| 5. | C 30A/B | On DN Starter signal on line No.2 |
| 6. | C 20A/B | On DN starter signal on line No.3 |
| 7. | C 22A/B | On DN Starter signal on line no.4 |
| 8. | C 24A/B | On DN Starter signal on line No.5 |
| 9. | C 26A/B | On DN starter signal on line no 6 |
| 10. | C 34A/B | On DN starter signal on line No7 |
| 11. | C 36A/B | On DN starter signal on ART SDG |
| 12 | C 28A/B | On DN starter signal on passenger Bay line. |

(ii) The “Calling on” signals have been provided below the following stop signals at HKG end.

| Sl.No. | Button No. | Signal No. |
|--------|------------|-----------------------------------|
| 1. | C 2 | On DN Main Home Signal |
| 2. | C 4 | On DN Routing Home signal |
| 3. | C 17 | On UP Starter signal of line No.1 |
| 4. | C 27 | On UP Starter signal of line No.2 |
| 5. | C 19 | On UP Starter signal of line No.3 |
| 6. | C 21 | On UP Starter signal of line No.4 |
| 7. | C 23 | On UP Starter signal of line No.5 |
| 8. | C 25 | On UP Starter signal of line No.6 |
| 9. | C 29 | On UP Starter signal of line No.7 |
| 10. | C 31 | On UP Starter signal of ARME SDG |

During the failure of the stop signal either due to failure of any track circuits on the route including the overlap or for any other causes the “Calling on” signals may be taken off after the train has come to a stand at the stop signal, provided all the other conditions for taking off the stop signal have been fulfilled and the approach track immediately in rear of the said stop signal is occupied by the train. After initiating the “Calling on” signal, the “Calling on” signal indication shows a White flashing light for 120 seconds and after which it shows a steady White light. It is only when such a steady White light appears the “Calling on” signal displays “OFF aspect”. Every such operation is registered on a counter provided on the operating panel.

29.0 FAILURE OF CALLING - ON TRACK AND SPECIAL MEASURES FOR TAKING OFF A “CALLING ON” SIGNAL :-

In case of failure of the Calling ON track, instead of taking off the “Calling on” signal, the trains shall be piloted treating Calling-on signal as failure and S&T official shall be informed for rectification.

During the failure of track circuit, before taking off “Calling on” signal, the clearance of the track on the entire route between stop signal to signal must be certified by the field Station Master to the Panel Station Master.

In all cases of Reception/Despatch of a train by taking off the “Calling on” signal, necessary particulars including the train No. “Calling on” signal No. and the Number Registered on the corresponding veeder counter should be recorded in a Register maintained for the purpose.

30.0 TAKING OFF THE SHUNT SIGNALS :-

For taking off a shunt signal, the corresponding route button (UN) and the shunt signal button (SH-GN) should be pressed simultaneously and released.

31.0 CLEARING OF STOP SIGNAL: -

Whenever it is necessary to clear a stop signal, it is necessary to press the signal button and the exit Route button where after this route setting is initiated, the route is lined up and locking executed on all the route sections and the overlap thus holding the route ultimately proving the way and circuits for the signal clearance.

32.0 ORDINARY AND SPECIAL ALTERNATIVE OVERLAP OF STOP SIGNALS :-

Some of the stop signals have been provided with more than one overlap [which is designated after the next stop signal ahead].

The details of these over laps are as follows:-

| Sl. No. | Signal No. | Route No. | Move to | Over Lap. | Point |
|---------|------------|-----------|----------------|-----------|---|
| 1. | S-1 | 1A | S-17 | OV1-17 | 60N |
| | | | | OV2-17 | 60R, 56N, 52N |
| 2. | S-1 | 1B | S-27 | OV-27 | 60N, 56N, 52N |
| 3. | S-1 | 1C | S-19 | OV1-19 | 64N |
| | | | | OV2-19 | 64R, 62N, 56R, 58R, 60N, 52N |
| 4. | S-1 | 1D | S-5 | OV1-21 | 74N, 66N, 62N, [80N or (70R or 72R)] |
| | | | | OV2-21 | 74N, 66N, 62R, 56R, 58R, 64N, 60N, 52N, [80N or (70R or 72R)] |
| | | | | OV1-23 | 74R, 66N, 62N, [80N or (70R or 72R)] |
| | | | | OV2-23 | 74R, 66N, 62R, 56R, 58R, 64N, 60N, 52N, [80N or (70R or 72R)] |
| | | | | OV1-25 | 68N, 66R, 62N, [80N or (70R or 72R)] |
| | | | | OV2-25 | 68N, 66R, 62R, 56R, 64N, 58R, 60N, 52N, [80N or (70R or 72R)] |
| 5. | S-1 | 1E | SB of BAY LINE | | NO OVERLAP |
| 6. | S-2 | 2A | S-18 | OV1-18 | 83R, 81N, 79R, 69R, 67N, 85N, 87N |
| | | | | OV2-18 | 83R, 81N, 79R, 69R, 51N, 67R, 85N, 87N |
| 7. | S-2 | 2B | S-30 | OV1-30 | 79N, 67N, 69R, 83N, 85N, 87N |
| | | | | OV2-30 | 79N, 67N, 69N, 51N, 83N, 85N, 87N |
| 8. | S-2 | 2C | S-4 | OV1-20 | 65N, 67N, 61N, 59N, 51R, 69R |
| | | | | OV2-20 | 65R, 63N, 61N, 51N, 57N, 73N |
| | | | | OV-22 | 65N, 63N, 61N, 73R, 57N |
| | | | | OV1-24 | 71N, 63N, 55N, 57N |
| | | | | OV2-24 | 71N, 63R, 61N, 55N, 73N, 65N |
| | | | | OV1-26 | 71N, 75N, 77N, 91N, 93N |
| | | | | OV2-26 | 71R, 75N, 63R, 61N, 55N, 73N, 65N, 77N, 91N, 93N |
| 9. | S-3 | 3A | S-17 | OV1-17 | 60N |
| | | | | OV2-17 | 60R, 56N, 52N |
| 10. | S-3 | 3B | S-27 | OV-27 | 60N, 56N, 52N |
| 11. | S-3 | 3C | S-19 | OV1-19 | 64N |
| | | | | OV2-19 | 64R, 62N, 56R, 58R, 60N, 52N |
| 12 | S-3 | 3D | S-5 | OV1-21 | 74N, 66N, 62N, [80N or (70R or 72R)] |
| | | | | OV2-21 | 74N, 66N, 62R, 56R, 58R, 64N, 60N, 52N, [80N or (70R or 72R)] |
| | | | | OV1-23 | 74R, 66N, 62N, [80N or (70R or 72R)] |
| | | | | OV2-23 | 74R, 66N, 62R, 56R, 58R, 64N, 60N, 52N, [80N or (70R or 72R)] |
| | | | | OV1-25 | 68N, 66R, 62N, [80N or (70R or 72R)] |
| | | | | OV2-25 | 68N, 66R, 62R, 56R, 64N, 58R, 60N, 52N, [80N or (70R or 72R)] |

| | | | | | |
|----|-----|----|----------------------|--|------------|
| 13 | S-3 | 3E | SB of BAY LINE | | NO OVERLAP |
|----|-----|----|----------------------|--|------------|

NOTE:

Whenever any route is initiated by pressing the entrance and exit buttons, Overlap (OV) will set automatically along with the route. OV1, OV2 or OV 3 can be set either setting the route of the signal ahead or according to the line of the points as the case may be.

Alternative overlaps have been provided for some signals affording to flexibility in the yard operations. When a route is initiated, the overlap (designated as OV) is automatically set over the route on which the train traverses. But when an alternate overlap has to be set, first the route ahead has to be set by operation of entrance and exit buttons, then initiate the routes of the rear signal – after this operation the signal ahead may not be put back to "ON" and the route cancelled if required.

For these overlaps, it is not necessary to initiate the signal route for the advance section. The overlap will be set according to the lines of the points at the time of the initiation of the route and therefore the Station Master has to be mindful of keeping of the points in the overlap in the desired position before initiating the route.

33.0 TIME RELEASE OF OVERLAP :-

Any overlap, which is set for signaled route will be released after the train comes and stops at the berthing track. To ensure that the train has come and stopped on berthing track, a time release of 120 seconds is provided for the release of overlap. Accordingly, counting of time space as soon as the train comes on the berthing track just in rear of the signal and after a lapse of 120 seconds the overlap is released automatically permitting other routes to be set on the portion of the overlap.

In case of failure of release of the overlap at the end 120 seconds due to any reason, emergency overlap release is effected by pressing the concerned route button and overlap release button (OYN). The overlap is released immediately and the operation is recorded in the emergency overlap counter.

34.0 PUTTING BACK THE SIGNAL TO "ON" POSITION :-

In exigencies, when a stop signal or a "Calling on" signal or a shunt signal has to be put back to "ON" before passage of the train, the signal button (GN) concerned and the emergency signal cancellation button (EGGN) should be pressed simultaneously.

35.0 LOCKING OF POINTS NORMAL AND SPECIAL CASES :-

Normally the electric machine operated points can be set and locked provided the point zone track circuit is free and the subject point is not locked either by a route section or an overlap on flank protection arrangement.

The locking on the point is normally released immediately after the clearance of the route section or the overlap and the flank protection locking is released after the clearance of the controlling route section.

36.0 INDIVIDUAL OPERATION OF POINTS WHEN THE TRACK CIRCUITS IN THE POINT ZONE HAVE NOT FAILED: -

Whenever an individual point/crossover is to be set the point button (WN) concerned and the Point group button (WWN) should be simultaneously pressed and released. Such an operation

will change the point/crossover from normal to reverse or from reverse to normal provided the track circuit/circuits in the point zone are not occupied.

Whenever any point cannot be operated to house either in normal or reverse position, a flashing indication appears on the point concerned on the indication panel. The point can be set to its original position by the operation of the point button (WN) concerned and the group point button (WWN).

37.0 INDIVIDUAL OPERATION OF POINTS IN CASE OF FAILURE OF TRACK CIRCUITS/POINT ZONE TRACK CIRCUITS:-

In the event of failure of the track circuits controlling the points, the Panel Station Master should first ensure personally or through SS /Station Master Line clear in RRI Cabin that the track circuit concerned is not occupied by a train/vehicle and then for emergency operation of points the Panel Station Master should unlock the EWN lock on the operating panel by operating the EWN key (provided for the purpose), press the point button (WN) along with the emergency point button (EWN) and release the buttons. Each time point is thus operated, the same will be recorded on the "EWN" counter.

38.0 FAILURE OF THE POINTS DUE TO ANY OTHER CAUSES: -

If any point fails before a route is lined up, the Panel Station Master should first try to set and reset the same point by individual operation to ascertain if the said point can be set in a particular position. If the said points cannot be set in any position, the Panel Station Master should not use the route concerned for normal signaled movement until the defect is rectified by Signal staff and certificate to this effect is obtained from SSE/SE/JE (Sig)/RRI on duty. However, Crank handle operation may be done.

39.0 PADLOCKING AND CRANKING OF POINTS WITH CRANK HANDLE AND ITS CONTROLLING KEYS AND SPECIAL PRECAUTIONS :-

For the use of Crank handle for motor operated points the instructions laid down in rule No. 20.06 of Operating Manual should be followed.

When the points are set by means of Crank handle, the panel Station Master on duty at RRI cabin shall ensure through SS /Station Master in RRI Cabin (L/C duty) that the entire route is correctly set, all the facing and trailing points are clamped and padlocked. All the points on the route must be clamped and padlocked for any no signaled movement.

The keys of the padlocks of all the clamped and locked points should be kept in the personal custody of the Station Master before the pilot memo is handed over to the Loco Pilot.

When once the route is so set manually by the Station Master and all the points on the route are clamped and padlocked, the same shall not be interfered in any way until the movement over the points concerned is completed or, any movement is cancelled, and such cancellation is authenticated by exchange of Private Number.

If any point has failed after setting of the route in Normal/Reverse position or both. a White indication strip starts flashing depending upon the position at which the point had failed. In such case the route concerned shall be cancelled and shall not be used until signal staff rectifies the defect.

40.0 RELEASING OF A SUB-ROUTE SECTION: -

If any route section over a point zone is not released after passage of a train due to failure of track circuit or otherwise, the route section can be released by means of Emergency operation by SSE (Sig)/SE (Sig) and the Station Master-II on duty at RRI cabin.

41.0 FAILURE OF TRACK CIRCUITS AND SIGNALS:-

In the event of failure of track circuits over point zone, setting of the points will be done by panel SM through Emergency operation after the SS/SM on duty (L/C duty) at RRI cabin ensures that the points zone is clear of obstructions and gives assurance to panel operator supported by exchange of Private number to that effect. In case of failure of track circuits, calling-on signals where provided may be taken off. If there is no Calling-on-signal or if the same is out of order, the train concerned should be piloted to pass the signal concerned up to next stop signal ahead after ensuring the clearance of the route and setting, clamping and padlocking the points on the route concerned.

42.0 SIGNAL ASPECT:-

The aspect control chart of the signals in Sambalpur Station Yard is in accordance with the aspect control chart as indicated in the signal Interlocking Plan.

The failure of a Signal lamp of an aspect of a signal at site renders the signal to its next restrictive aspect. During failure of signal lamp the physical aspects of the signal at site and indications on indication panels are given below:-

| Srl No. | Aspect displayed before failure of signal lamp | | Particulars of failure of lamp | Aspect displayed after failure of signal lamp | |
|---------|--|---------------------------------------|--------------------------------|--|---------------------------------------|
| | By signal at site | By signal symbol on indication panel. | | By signal at site | By signal symbol on indication panel. |
| 1. | Red | Red | Red LED fused | No Light at ON position | Flashing red indication |
| 2. | Yellow | Green | Yellow LED fused | Red | Flashing green indication. |
| 3. | Double yellow | Green | One yellow LED fused | Yellow | Flashing green indication. |
| 4. | Double yellow | Green | Both yellow LED fused | Red for Stop Signal and no light for permissive signals | Flashing green indication |
| 5. | Green | Green | Green LED fused | Double yellow in 4 aspect signals and yellow in 3 aspect signals | Flashing green indication |

SPECIAL NOTE:-

- 1] Conventional lamps have been replaced by LED lamps.
- 2] A small flashing white light is lit near the main signal symbol, if the signal is put to danger and route cancellation is initiated when it is approach locked. This light remains flashing for 120 seconds after which it becomes steady. Then the panel Station Master should operate three-button emergency route cancellation.
- 3] When a Calling on Signal below a stop signal is taken off, a White dot is lit below the stop signal.
- 4] White oblique strip is lit above Green indication signal symbol whenever signal is taken "off" with route indicator for a diversion.

43. **SIGNAL REPLACEMENT AND CANCELLATION OF A ROUTE ALREADY SET:-**
Once a signal is taken off, it should not be put back to “ON” position unless absolutely required. For this, the signal button concerned and the emergency signal group button EGGN should be pressed simultaneously. This operation will make the signal to assume danger aspect while the route is still held and the three-button emergency route cancellation process must be carried out for canceling the route already set. Refer to the following para.

44. **CANCELLATION OF A ROUTE:**

If, after setting of the whole route and taking off the signal concerned, the route is to be altered, the signal concerned must first be put back to “ON”. If there is a train on the approach track or the signal is provided with dead approach locking the subject route gets released only after countdown of 120 seconds after the signal is put back to “ON”. Then route can be cancelled by three-button operation.

The countdown of 120 seconds time interval is indicated by flashing white light on the approach lock indicator provided at the foot of the corresponding signal symbol on the indication panel. After the interval 120 seconds a steady white light appears and the flashing light extinguishes.

The panel Station Master should press the signal button GN and the emergency Route Cancel button EUUYN, keeping the signal button still pressed on, he should press the relevant route button. This operation will release the whole route and this will be indicated by extinguishing of the concern route lights on the panel. However, if the approach track of the signal is not free, the cancellation cannot be done immediately. In both cases, this cancellation operation is counted electrically on the digital counter. The transaction along with the time and reasons and the number registered on the counter should be recorded in a register specially kept for the purpose.

45. **RERPLACEMENT OF ‘CALLING-ON SIGNAL TO ‘ON’ POSITION**

After taking off a Calling-on-Signal, if the same is to be put back to “ON” position, the signal button concerned (GN) and the emergency signal group button (EGGN) should be pressed simultaneously; In this case, also the route that was originally set and locked by the process of clearance of the signal is to be cancelled in accordance with instructions contained in the route cancellation Para mentioned above.

45.1 **ROUTE INDICATORS:-**

The signal Nos. S1, S3, S5, S18, S30, S20, S22, S24, S26, S34, S36 & S28 on JSG end and S2, S4 on TIG end are provided with junction type route indicators. Directional type route indicators are provided in the form of 5 lunar white lights above the respective signals at varying degrees from the vertical to the left or to the right side of the Driver. In case of more than one such route indicators on the same side the top most corresponds to the first loop and other for subsequent loops in the regular order of sequence.

46. **FORMATS FOR VARIOUS EMERGENCY OPERATIONS:-**

FORMAT [a] FOR EMERGENCY SUB-SECTION ROUTE RELEASE:-

| Date & Time | Route Section | Counter Numbers | | Remarks | Signature | |
|-------------|---------------|-----------------|---------------|---------|-------------------|---------------------------------|
| | | Before Release | After Release | | On duty Dy.SS RRI | On duty SSE [Sig]/ SE [Sig]/RRI |
| | | | | | | |

FORMAT [b] FOR EMERGENCY OVERLAP RELEASE:-

| Date & Time | Overlap route button No. | Counter Numbers | | Remarks | Signature | | |
|-------------|--------------------------|-----------------|----------------|---------|-------------------|----------------------------|-----|
| | | Before Release. | After Release. | | On duty Dy.SS RRI | On duty [Sig]/SE [Sig]/RRI | SSE |
| | | | | | | | |

FORMAT [c] FOR EMERGENCY POINT OPERATION:-

| Date & Srl.No. | Time of operation | Counter Numbers | | Track circuit No. failed | Signature On duty Dy.SS RRI | Remarks |
|----------------|-------------------|-------------------|-----------------|--------------------------|-----------------------------|---------|
| | | Before Operation. | After Operation | | | |
| | | | | | | |

FORMAT [d] FOR EMERGENCY FULL ROUTE CANCELLATION :-

| Date & Srl.No | Time of operation | Counter Numbers | | Route cancelled | Reason for cancellation | Signature On duty Dy.SS/ RRI | Remarks |
|---------------|-------------------|------------------|-----------------|-----------------|-------------------------|------------------------------|---------|
| | | Before Operation | After Operation | | | | |
| | | | | | | | |

NOTE: - All “emergency operation buttons” on the Station Master’s control panel of RRI Cabin shall be kept sealed in normal condition by S&T staff. Whenever any emergency operation is initiated, SS/SM on duty shall break open the seal of the concerned button to make the button operative. Immediately after completion of emergency operation SS/SM on duty shall inform S&T staff for sealing of the concerned button.

47. **EMERGENCY CRANK HANDLE INTERLOCKING: -**

Except mechanically operated points which are dually controlled by the Route Relay Cabin all points in the Station Yard are operated through electrical point machine provided at site. These are remotely controlled and operated from Route Relay Cabin normally.

Whenever there is a failure of a power-operated point, cranking is being done at site. For this purpose, it is necessary to open insert aperture with the help of the concerned and associated control key unless this aperture is opened by the operation of the controlling key, the emergency crank handle cannot be inserted in the motor and operated to set the points. This control key will remain held on the point motor while it is being operated by the emergency crank handle. After the point is set and the crank handle is removed, the control key can be extracted and in that process the crank handle-inserting aperture gets closed and locked automatically.

The crank handle-interlocking key is inserted in the crank handle-interlocking box housed in the location/Goomty and turned clockwise then it gets locked. This key cannot be extracted from the box unless the control for releasing the key is transmitted from the Route Relay Cabin. When the release control is transmitted from the Route Relay Cabin, a white indication appears just below the key. After obtaining the above indication, the RED button below the key must be pressed and the key must be turned anti-clockwise and extracted simultaneously. Two controlling keys are provided in each box with individual indication and button below the respective key.

Interlocking has been provided between signals and emergency crank handle control keys in such a way that once the crank handle key of the concerned Point/Points is extracted, it is not possible to set the route and clear the signal/ signals leading over that point/points till such time the key is restored back to its box.

For the purpose of facilitation, flexibility and quick reach of the emergency crank handle and crank handle; keys have been provided in different groups at UP and DN end areas in the yard.

| CRANK HANDLE | CRANK POINTS |
|---------------------|----------------------|
| CH-1 | 52,56,60 |
| CH-2 | 54,58,62,64 |
| CH-3 | 66,74 |
| CH-4 | 68,70,72,76,78,80,82 |
| CH-5 | 51,67,69 |
| CH-6 | 53,59,61,65 |
| CH-7 | 55,57,63,73 |
| CH-8 | 71,75,77,89,91,93 |
| CH-9 | 79,81,83,85,87, |
| CH-10 | 92 |

One crank handle is kept in a pad locked box kept at each of the above places and the keys of this padlock after locking the crank handle shall remain in the personal custody of the Station SS/Master at the point zone.

The crank Handle along with the concerned controlling key can be handled only by the concerned SS/SM on platform duty or SS/SM of RRI in field/ point zone or the S&T maintenance staff as per the instruction of the Panel Station Master. It is the personal responsibility of the SS/SM on platform duty or SS/SM of RRI in field to ensure that as soon as the required manual operation of the point/points in his zone are over, the crank handle key is restored to the concerned EKT in CH location Box and transmitted to the Route Relay Cabin expeditiously.

It will be seen from the above table that, in all there are ten groups covering all the power-operated points in. Sambalpur Station yard Control keys have special arrangements of configuration for each group and the point machines of the corresponding group have a matching configuration at the key hole permitting the entry of the key meant only for the particular set of points in that group. The detailed procedure of the emergency crank handle operation of points at different zone are given below:-

48. **POINT ON EAST AND WEST ZONES:-**

- 1) The concerned SS/SM on platform duty or SS/SM of RRI in field/point zone shall exchange Private Number with the Panel SS/Station Master from the respective zones (east and west) giving his identification. The Private Number shall be recorded in the Crank Handle Register. The Station Master in field should then advise the panel Station Master to release the concerned crank handle-controlling key. The Panel Station Master should release the control by pressing the concerned crank handle group button CH and CHNB. The release of the control is indicated by flashing WHITE indication on the panel near the crank handle group button.

At site on the concerned crank handle-interlocking box, the WHITE indication appears below the key. The SM should then press the RED button below that key and extract the key from the box. The extraction of the key is indicated on the Route Relay Panel by flashing RED indication. The point/points is/are then operated with the help of the emergency crank handle taken out by the field SM from the pad locked box in the Goomty/Location after opening the aperture in the point machine with the help of the controlling key by the field SM at site and set to the desired position, clamped and pad locked as desired by the Panel Station Master and the keys of the pad lock shall be in the personal custody of the field SM after which the field SM shall restore the controlling key to its original place in the crank handle interlocking box (after locking the crank handle in its box) and turned clockwise.

Restoration of the controlling key back in its place is indicated by turning of the flashing RED indication into steady RED with flashing WHITE indication. The panel operator should then withdraw the released control by pressing the crank handle group button CH and the CHRB. The steady RED indication disappears and steady WHITE indication appears indicating the normal condition. The WHITE indication appears indicating the normal condition. The WHITE indication on the crank handle-interlocking box at site also disappears.

When the control has been withdrawn, the field SM should advise the Panel Station Master communicating a Private Number assuring him that the desired point/points has been operated to the required position as advised by Panel Station Master, set correctly, clamped and padlocked in their proper position and the control is returned. The Private Number given by the field SM shall be recorded in the Crank Handle Register.

The Panel Station Master on duty after ensuring the correct setting of defective points shall verify from the visual indication available on the panel that all the points on the route are set to the desired position and shall take off the concerned signal for movement of train over the said point/points.

If the correct setting of the defective points in the desired position is not indicated on the panel, the train shall be piloted IN/OUT in terms of Subsidiary Rules No. 3.69.01, 3.69.02, 3.69.03, 3.70.01 and 3.70.02.

The route once set and locked for receiving or despatch a train shall not be interfered with unless the said movement is completed or cancelled and expressly so directed by the Panel Station Master.

Whenever the crank handle is required to be used by a Signal Official for maintenance work or for attending failure, the signal official must give Disconnection memo (SI-4) to the Panel SS/Station Master on duty. After making necessary entries in the Crank Handle Register, the Panel Station Master shall obtain the acknowledgement of the signal official in the Crank Handle Register and then release the concerned crank handle-controlling key to the Signal Official.

The concerned point/points shall be treated as defective till the emergency crank handle controlling key is restored to its normal place and control is withdrawn by the Panel Station Master.

Before parting/releasing control with the emergency crank handle for maintenance work by signal official, the Panel Station Master shall ensure that the reception/departure signals for effected line/lines are at "ON" position. The points of the effected line should be treated as non-interlocked and the Panel Station Master should instruct the concerned field SM for setting clamping and padlocking the facing and trailing points over which the train is to passed and

such assurance is taken by the Panel Station Master from the field SM supported by Private

Number before piloting IN/OUT of trains over the affected points as per GR 3.69.,3.70, 5.09 and SRs thereto.

An emergency Crank Handle Register is to be maintained in the Route Relay Cabin with the following proforma by on duty Panel Station Master of Route Relay Cabin wherein the particulars of usages of the emergency crank handle must be recorded.

- I) Date.
- II) Point No. Which failed or required to be tested.
- III) Time of failure.
- IV) Disconnection Memo No. Received from S&T staff.
- V) Points controlling key No. Released from Route Relay Cabin.
- VI) Private Number or signature of the official to whom the controlling key is released.
- VII) Time when release was given.
- VIII) Private Number/signature assuring correct setting, clamping and padlocking of the concerned points.
- IX) Date and time fault rectified.
- X) Time when controlling key release withdrawn by Panel Station Master.
- XI) Signature and designation of official who rectified the fault.
- xii) Remarks

When points become defective the Panel Station Master must comply with GR 3.51, 3.77, 5.10 and SRs thereto and he must notify all concerned promptly for speedy restoration.

When interlocking fails, all the affected points on a route, both facing and trailing points must be clamped and padlocked before allowing any movements over the affected points.

For use of Crank Handle for motor operated point refer to rule No.20.06 of Operating Manual also.

49. **INTERLOCKING BETWEEN SIGNALS AND BLOCK INSTRUMENTS:**

This Route Relay Interlocking Cabin is equipped with the following types of Block Instruments to control movements of trains from and to adjacent Block Sections.

| | Section | Type of Block Instrument |
|----|----------------|---|
| 1. | SBP-SLRA | Double line SGE Block Instrument. |
| 2. | SBP-SBPY | Daido Type Single line Token-less Block Instrument. |
| 3. | SBP-HKG | Daido Type Single line Token-less Block Instrument. |

INTERLOCKING BETWEEN SIGNAL AND BLOCK INSTRUMENTS:-

1) **LAST STOP SIGNAL CONTROL:-**

- a) The block working of the section SBP-SBPY & SBP-HKG are controlled with the provision of Token-less Block Instrument (Diado type) and SBP-SLRA double line is controlled by SGE Block Instrument provided at RRI cabin.
- b) The Advanced starter signals are interlocked with the respective Block Instrument in such a way that the any Advanced starter signal can not be taken off unless the Line Clear is obtained from the block station in advance and the handle of the Token-less Block Instrument is turned to "TGT" position.

- c) The concerned Advanced starter signal aspect will be changed its “OFF” aspect to “ON” aspect as soon as the leading pair of the train wheels occupies the concerned Advanced starter signal replacement track circuit provided ahead of the respective signal.

2) BLOCK RELEASE:-

- [a] The Block Instruments are restored to normal (Line Closed condition) only after the complete arrival of the train past the block overlap ahead of the respective Home signal on either side of the SBP Station yard.
- [b] All the power signaling installations in SBP Station yard are centrally controlled from the Route Relay Cabin and it is explicit in this arrangement that the complete arrival of a train into the yard from the block section can not be ensured by the operating personnel in the centrally located Route Relay Cabin hence, to ensure complete arrival of the incoming train, Axle Counters are provided between SBP-SLRA, SBP-SBPY and SBP-HKG sections.
Thus the Axle Counters provided at the end of the Block Overlap ahead of the respective Home signal to ensure complete arrival of the incoming trains at SBP Station yard.
- [c] In the event of failure of Axle Counter, block working of the section concerned is to be suspended, Line clear Station Master shall not normalize the commutator of the concerned Block Instrument to “Line Closed” position and shall not despatch “Train out of block section” report to the station in rear until he is satisfied by seeing the Last Vehicle Indicator on the last vehicle of the incoming train (after arrival) of which Axle Counters failed or obtaining the complete arrival certificate from the Guard of the train. Then SM shall resort to resetting procedure of the axle counter of concerned block section.

[d] AXLE COUNTER RESETTING PROCEDURE (BETWEEN SBP-SLRA & SBP-HKG).

After complete arrival of train, if the axle counter of the section does not clear or Axle counter section free indication (GREEN) does not appear in the axle counter panel, The receiving station SM shall call the attention of the station in rear through telephone for resetting and shall establish communication with the said station if resetting of axle counter is considered necessary giving details of last train that has arrived complete at his station and the block section is clear.

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

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:-

- i) Insert SM's LV reset key, turn to right and keep pressed.
- ii) Press LV reset button provided on the panel.
- iii) Release SM's LV reset key and reset button.
- iv) Turn left the SM's LV reset key and remove it.
- v) The system obtains preparatory reset state and preparatory reset indication (miniature Green) glows on the panel.
- vi) The counter reading increases by one count after a gap of 5 seconds approximately.
- vii) The counter reading should be recorded.

viii) First train is to be piloted out into the section to make the system normal.

The SS/SM shall record in his Train Signal Register, Station Diary and register meant for it the details of resetting operation giving details of train number, time, Private Number exchanged with SS/SM in rear and 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 normalised.

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

- (e) **AXLE COUNTER RESETTING PROCEDURE (BETWEEN SBP-SBPY) :** When after arrival of a train section clear indication (GREEN) does not appear and/or section occupied indication (RED) continues to glow it may be assumed that the axle counter system has failed. The resetting facility for section SBP-SBPY has been provided at SBPY station. The station master on duty shall verify that:-
- a) The last preceding train has arrived complete at its destination.
 - b) Block section is clear of any train/ vehicles.

Before resetting the Axle counter despatching station should verify clearance of block section by exchanging private number with station in advance. During such failures the station master on duty shall obtain the resetting key after breaking the seal and unlocking the reset key in presence of in charge station master after due verification of complete arrival of trains. Resetting has to be done by inserting the reset key in the reset box. Pressing and turning it clockwise till the resetting indication (YELLOW) appears on the reset box. Each resetting operation shall be recorded in a register by the Station Master on duty. After resetting is over "RED" indication will be extinguished and "GREEN" Indication will appear on the panel as well as on the reset box and the reset key shall be extracted from the reset box will be kept under lock and sealing shall be done by S&T department.

When after resetting, "GREEN" indication does not appear on the panel or reset box, the Station Master on duty shall inform S&T staff regarding the failure. The block working in the concerned section shall be suspended and GR 14.13 shall be followed.

APPENDIX - 'C'

ANTI COLLISION DEVICE (RAKSHA KAVACH)

NIL

APPENDIX – D**APPENDIX – ‘D’ TO THE STATION WORKING RULES OF SBP STATION.****1. STATION MANAGER –I (SUPERVISORY) :**

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

He is responsible for maintaining the Assurance Register up-to-date. He shall conduct surprise night inspections 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, RRI Cabin, 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 – XXII 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 fluidity. 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 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) 2000 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.

2. 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 SMR is responsible to see that all the staff are conversant with the Station Working Rules and their signatures are obtained in the Assurance register after he is satisfied that they have thoroughly understood the working rules of the station. In case of Group 'D' staff, their signature/thumb impression must be obtained after explaining fully about their duties and responsibilities.

The Station Manager 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' & the other for Group 'D' staff. A duplicate copy of the Assurance Register must be maintained and kept in personal custody of the Station Manager.

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.

3. 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 Manager under lock and key. He shall maintain a register for this purpose.

4. ACCIDENTS:

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

5. TESTING OF POINTS AND SIGNALS:

The Station Manager 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 etc. and record the result in the Station Master's diary.

6. STATION SUPERINTENDENT/Dy.SS/SM : (PLATFORM DUTY AT CENTER)

He shall perform duties detailed below and remain responsible for the efficient working of Station during his duty.

- (i) Maintenance of Caution Order and preparation of Caution Order for all trains during tenure of his duty hours.
- (ii) Right time departure of all trains. He shall deal with all passenger amenities and complaints by travelling public.

- (iii) Prompt attendance of all coaching trains to ensure loading and unloading is completed in time and to avoid complaints of any kind from the travelling public.
- (iv) Eliminating detention to the coaching trains & goods trains at station & outside signals.
- (v) He shall see that shunting is supervised by an authorised person and is carried out as per rules.
- (vi) Ensure proper co-ordination with all departments for quick movement of trains within the yard and expeditious reception/despatch there of to and from the yard and platform.
- (vii) Ensure prompt attention to vehicles marked sick and reduce detention to such damaged/defective vehicles in shunting operation.
- (viii) Ensure improvement of turn-round of wagons/vehicles and ensure that placement and drawing out of rakes from washing line, IOC siding and other sidings are promptly done.
- (ix) Maintain close liaison with the control office in all matters relating to train operation, balancing of Crew and Guard, yard clearance and coaching stock and fueling point.
- (x) He is responsible for over-all supervision in the station.
- (xi) He shall ensure loading of crew & Guard line boxes, issuance of updated caution order to crew lobby and on duty guards.
- (xii) He shall see the functioning of the catering units and brought to the notice of higher authority in case of any irregularity.
- (xiii) Ensure proper provision and function of other passenger amenities like drinking water, water cooler, lights, fans, waiting Rooms/halls, retiring rooms, enquiry, reservation counters etc.
- (xiv) He shall ensure setting of facing and trailing points of the nominated route at the farthest end for dispatch and facing and trailing points nearest to platform for reception of a train during failure of signals in coordination with SS/SM line clear duty of RRI cabin.
- (xv) He shall assist the SS/SMs at RRI cabin for admission/despatch of trains during failure of signals and piloting in and piloting out of trains.
- (xvi) He shall be responsible for securing of the stabled load on a line and protection of Blocked line vide GR 5.23 and SR's thereto. The stabled load register shall be maintained by him.
- (xvii) He shall ensure alertness of all staff working at the station and maintain discipline law and order, cleanness in co-ordination with other departments.
- (xviii) Shunting movements will be supervised in case of emergency.
- (xix) In the absence of Station Manager-1, his duties will devolve on him.

7. **(A) SS / SM : (IN RRI CABIN FOR PANEL OPERATION).**

He is responsible for operation of panel Board for reception/despatch of trains, shunting operations and for any emergency operations on the panel. He shall ensure the complete arrival of the train through Axle counter or physical verification, in case failure of Axle counter. He shall be responsible for Axle counter resetting operation also. He shall nominate the line and take off signal for admission of train in consultation with the SS/SM on L/C duty. He shall be responsible for correct use of Crank Handles and transmitting Crank Handle, siding Key and reception/dispatch of trains from/to non signaled line and sidings. He shall be responsible for protection of Blocked line vide GR 5.23 and SR's thereto and put reminder collar on concerned route button, point button etc, vide SR 3.36.03 (b). He shall keep a close watch on every movement in the yard and take off signals for shunting operation in co-ordination with Shunting Jamadar on duty and the yard staff.

The SS/DY.SS/Station Master on duty shall check from panel indications the clearance and occupation of lines/yard position at the time of taking over charge. This will not, however, relieve his responsibility to ensure by physical check that the nominated line is clear of all obstructions before admission of any train on it. The duties of SS/SM on Line clear duty of RRI cabin, who is for the time being on field supervision for setting, clamping and padlocking of points during failure of points & signals, shall devolve on panel duty SM.

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(c) & (d), SR 14.07.01. His special attention is drawn to Chapter II of GR & SR 2000 and GR 5.01 to 5.08 with relevant SRs. As an Assistant to the SMR, he shall follow the instructions given to him.

(B) SS/ SM : (IN RRI CABIN ON L/C DUTY):

He is responsible for operation of Block Instruments. He shall ensure closing of interlocked Level Crossing Gates and Midsection Level Crossing Gates, when required for taking 'OFF' signals for granting/obtaining "Line Clear" and ensure the complete arrival of the train before closing the block section. He shall exchange alright signals with the Driver and Guard. He is responsible for correct setting, clamping and padlocking of concerning points enroute, in facing and trailing direction and ensure the route on which the train to pass is free from all obstructions during failure of signals and points. During piloting in and piloting out of trains, he shall take the assistance of SS/SM on Platform duty at center. He shall check the clearance of point zone track circuits and clearance of line during emergency operation of points. He shall plan with the SM of RRI panel about the crossing of train and shall give in and out report to the Section Controller. He shall maintain Train Signal Register properly. He shall be responsible for crank handling of points, maintenance of Crank Handle Register and Failure Register. He shall make necessary entries in TSR in red ink if any running line is blocked by stabled load.

The Station Superintendent/DY.SS/Station Master on duty shall record in the diary the condition of all the running lines, sidings, the caution orders in force, Emergency counter numbers and other counter Nos, safety circulars, last PN used etc at the time of handing over charge. These entries must be counter signed by SS/DY.SS/Station Master coming on duty while taking over charge.

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(c) & (d), SR 14.07.01. His special attention is drawn to Chapter II of GR & SR 2000 and GR 5.01 to 5.08 with relevant SRs.

8, **SHUNTING JAMADAR:-**

He shall work according to the orders given by the Station Superintendent/Dy. Station Superintendent/Station Master on duty. He will supervise shunting operation of trains in the yard for placement & drawing out of rakes/trains vide GR 5.13 and SRs thereto. He is responsible for correct shunting operation, marshalling of wagons, coupling and uncoupling of wagons, setting of hand points and showing hand signals. He is responsible for securing loose vehicles on the siding and running line. The TPMs performing yard shunting shall work under the direction of Shunting Jamadar on duty. He must ensure that there is minimum or no detention to other traffic while shunting operation. He should maintain a close coordination with DySS/SM of operating panel for signals during shunting operation. He must be thoroughly conversant with the GR 3.38, 3.39, 3.46, 3.77, 5.09, 3.52 to 3.60, 3.62, 5.13, 5.14, 5.15, 5.16, 5.17, 5.21, 5.23 & SRs there to and clear his doubts regarding safe working rules from SS/SM. His special attention is drawn to chapter No.II of GR (Amendments) & SR 2000.

9. **TRAFFIC POINTS MAN :**

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/ Shunting Jamadar when shunting operation is in progress.
- (iv) Piloting and hand signaling of trains when necessary.
- (v) Knowledge of hand signals, detonators and their use.
- (vi) Protection of line in emergency and fog signaling.
- (vii) Exchange of signals with the Loco Pilot and Guard of passing trains as directed by the Station Master.
- (viii) He is responsible for securing loose vehicles on the siding and running line.
- (ix) Cleaning, Oiling and lighting of lamps.
- (ix) Dusting of station office, filling up the fire buckets with sand/water and getting train interact arrival register (T/1410) signed by the Guard as and when required.
- (x) Serving messages and any other duties entrusted to them by the SMR/SM from time to time.
- (xi) Uses of emergency crank handle for setting of points.
- (xii) 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 Dy. Station Superintendent on duty in case of failure of Axle Counter/Track Circuit.
- (xiii) To supervise shunting as per SR 5.13.03.
- (xiv) He 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.

10. **TRAFFIC GATE KEEPER:**

In addition to the duties mentioned in Gate working instructions of concerned L.C.Gate in Appendix-A, the on duty Gateman shall follow the rules in Chapter-II of GR.

GENERAL

- i. All staff should be in uniform while on duty and follow the rosters issued by DPO/SBP from time to time.
- ii. 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 equipment, which shall be readily available in good working order with necessary relief stock.

| | | | |
|-----|------------------------------|---|-----------------------------|
| 1. | Detonators | - | 30 Nos. |
| 2. | Tri Colour Lamp/Torch | - | 6 Nos. |
| 3. | Hand Signal Flag | - | 6 Sets. |
| 4. | Wedges | - | 12 Nos. |
| 5. | Safety Chains with Pad Locks | - | 08 Nos. |
| 6. | Clamps with Pad Locks | - | 16 Nos. |
| 7. | Fire and Sand Buckets | - | 05 Nos. |
| 8. | D.C.P.T. Fire extinguisher | - | 02 Nos. |
| 9. | First Aid Box | - | 02 Nos. (1 with Outdoor SS) |
| 10. | Stretcher | - | 01 No. |
| 11. | Blanket | - | 01 No. |
| 11. | Reminder Collar | - | 12 Nos. |
| 13. | Motor Trolley on line Board | - | 03 Nos. |

APPENDIX - 'F'**RULES FOR WORKING OF DK STATIONS , HALTS,IBH, IBS,AND OUTLYING SIDING****HALT-**

There is one flag station in between SBP –SLRA/SBPY block section viz. Sambalpur Road (Code-SBPD) situated at KM 561.080 from HWH via JSG and 1.820 KM from SBP. Coaching trains have scheduled stoppages and commercial transactions are done at this flag station.

APPENDIX - 'G'**RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTION**

NIL.