

# **EAST COAST RAILWAY**

## **STATION WORKING RULES OF**

### **BARGARH ROAD (BRGA) STATION**

### **SAMBALPUR DIVISION**



## EAST COAST RAILWAY

**SAMBALPUR DIVISION**

## INDEX OF CORRECTION SLIPS

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Sl. No: -SWR/BRGA/24

**EAST COAST RAILWAY**  
**SAMBALPUR DIVISION**

**STATION WORKING RULES OF BARGARH ROAD STATION (CODE: BRGA)**

BG/MG/NG: Broad Gauge

Date of issue: 08.01.26

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

**1. STATION WORKING RULE: -**

1.1 **STATION WORKING RULE DIAGRAM NO.** SI/WRD – 22215, ALT-A

1.2 **SIGNAL INTERLOCKING PLAN NO.:** - S.I –.22215, ALT-A

The Station Working Rule diagram and approved Signal Interlocking Plan shows the complete lay out of the yard, siding, normal position of points, the Signaling and Interlocking arrangements, Gradients and Level Crossings within the station limits. This must be referred to for giving details of the points number and signals when reporting accidents.

**2. DESCRIPTION OF STATION: -**

BARGARH ROAD is a six line station situated in Sambalpur Jn.-Titlagarh Jn. section at KM.605.377 from HWH. It is Standard–III(R) interlocked Special Class station with Electronic Interlocking (EI) and Absolute Block System of Working. LVCD axle counters at either end are provided at the station for last vehicle check.

**2.1 GENERAL (LOCATION):-**

- |    |                             |   |                                 |
|----|-----------------------------|---|---------------------------------|
| a) | Name of the station         | : | BARGARH ROAD (BRGA).            |
| b) | Class of station            | : | ‘SPL.’ class                    |
| c) | Section                     | : | Sambalpur Jn.-Titlagarh Jn      |
| d) | Double line/Single line     | : | Double Line section             |
| e) | Electrified/Non-Electrified | : | Electrified                     |
| f) | Gauge BG/NG/MG              | : | BG                              |
| g) | Railway                     | : | East Coast Railway              |
| h) | Route                       | : | ‘D’                             |
| i) | Situated at                 | : | Km.605.377 from HWH via JSG Jn. |
| j) | Reckoned from               | : | Howrah                          |
| k) | E.I./P.I.                   | : | E.I.                            |

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

- i) Titlagarh Jn. end : BARPALI (Code: BRPL) inter distance 19.098 K.M.
- ii) Sambalpur Jn.end : DEOBAHAL (Code: DOBH) inter distance 11.967 K.M.
- iii) Passenger Halt : Nil
- iv) Flag station : Nil
- v) Outlying siding : Nil
- vi) D.K. station : Nil
- vii) IBH : NIL
- viii) IBS : The section between BRGA-BRPL has been split into two Block Sections by providing Intermediate Block Signal (IBS) at Km.613.917 and Km.613.649 on DN and UP line respectively. There are no DK stations in both sides of the station.

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

| Between stations     | The point from which 'Block section' commences. | The point at which 'Block section' ends. |
|----------------------|-------------------------------------------------|------------------------------------------|
| BRGA-BRPL (DN Line)  | DN Advanced starter signal No.28 of BRPL.       | 400m beyond DN IB Signal No.30.          |
| BRGA-BRPL (DN Line)  | DN IB Signal No. 30.                            | Outermost facing point No. 52A of BRGA.  |
| BRGA-BRPL (UP Line)  | UP Advanced starter signal No.47 of BRGA        | 400m beyond UP IB Signal No. 49.         |
| BRGA-BRPL (UP Line)  | UP IB Signal No. 49 (BRGA).                     | BSLB on UP line of BRPL Station.         |
| BRGA- DOBH (DN Line) | DN Advanced starter signal No.48 of BRGA        | Outermost facing point No. 32A of DOBH.  |
| BRGA- DOBH (UP Line) | UP Advanced starter signal No.27 of DOBH        | Outermost facing point No. 53A of BRGA.  |

### 2.3.1 STATION SECTION:

The portion in between DN Advanced starter signal No 48 and facing point No. 52A on DN Line and further, the portion from facing point No. 53A on UP line of BRGA Station to UP Advanced starter signal No. 47 is the station section of BRGA station.

### 2.3.2 STATION LIMIT:

The portion between DN Inner Distant signal at BRPL end and DN Advanced starter signal No-48 at SBP end and Further, the portion between UP Inner Distant signal at DOBH end to UP Advanced starter signal No. 47 at TIG end is station limit of the Station.

## 2.4: GRADIENTS, IF ANY: -

### (a) FROM THE CSB TOWARDS BARPALI (DN LINE)

| Chainage in meter |         | Inter distance in meter | Gradient (Falling/Raising/Level) |
|-------------------|---------|-------------------------|----------------------------------|
| FROM              | TO      |                         |                                  |
| 0                 | 363.00  | 363.00                  | 1 in 1000 F                      |
| 363.000           | 1009.00 | 646.00                  | 1 in 400 F                       |

|         |               |         |               |
|---------|---------------|---------|---------------|
| 1009.00 | 1069.00       | 60.00   | 1 in 164.40 F |
| 1069.00 | 1223.00       | 154.00  | 1 in 300 F    |
| 1223.00 | 2257.70       | 1043.70 | LEVEL         |
| 2257.70 | 2683.00       | 425.30  | 1 in 400 F    |
| 2683.00 | 3583.00       | 900.00  | 1 in 152 F    |
| 3583.00 | Block section | ---     | 1 in 130.4 F  |

(b) **FROM THE CSB TOWARDS BARPALI (UP LINE):-**

| Chainage in meter |               | Inter distance<br>in meter | Gradient<br>(Falling/Raising/Level) |
|-------------------|---------------|----------------------------|-------------------------------------|
| FROM              | TO            |                            |                                     |
| 0                 | 363.00        | 363.00                     | 1 in 1000 F                         |
| 363.000           | 1009.00       | 646.00                     | 1 in 400 F                          |
| 1009.00           | 1069.00       | 60.00                      | 1 in 164.40 F                       |
| 1069.00           | 1223.00       | 154.00                     | 1 in 300 F                          |
| 1223.00           | 2229.00       | 1006.10                    | LEVEL                               |
| 2223.10           | 2643.00       | 420.90                     | 1 in 460 F                          |
| 2643.00           | 2773.00       | 130.00                     | 1 in 175 F                          |
| 2773.00           | 3643.0        | 870.00                     | 1 in 150 F                          |
| 3643.00           | block section | ---                        | 1 in 155 F                          |

(b) **FROM THE CSB TOWARDS DEOBAHAL (DN LINE)**

| Chainage in meter |               | Inter distance<br>in meter | Gradient<br>(Falling/Raising/Level) |
|-------------------|---------------|----------------------------|-------------------------------------|
| FROM              | TO            |                            |                                     |
| 0                 | 1770.00       | 1770.00                    | 1 in 1000 R                         |
| 1770.00           | 2158.30       | 388.30                     | 1 in 504.2 R                        |
| 2158.30           | 2250.00       | 91.70                      | LEVEL                               |
| 2250.00           | 2577.00       | 327.00                     | 1 in 185 F                          |
| 2577.00           | 2737.00       | 160.00                     | 1 in 155 F                          |
| 2737.00           | 3217.00       | 480.00                     | 1 in 200 F                          |
| 3217.00           | 3426.90       | 209.90                     | 1 in 600 F                          |
| 3426.90           | 3517.00       | 91.10                      | LEVEL                               |
| 3417.00           | Block section | ---                        | 1 in 400 F                          |

(c) **FROM THE CSB TOWARDS DEOBAHAL (UP LINE)**

| Chainage in meter |               | Inter distance<br>in meter | Gradient<br>(Falling/Raising/Level) |
|-------------------|---------------|----------------------------|-------------------------------------|
| FROM              | TO            |                            |                                     |
| 0                 | 1770.00       | 1770.00                    | 1 in 1000 R                         |
| 1770.00           | 2158.30       | 388.00                     | 1 in 504.2 R                        |
| 2158.30           | 2257.00       | 99.00                      | LEVEL                               |
| 2257.00           | 2497.00       | 240.00                     | 1 in 200 F                          |
| 2497.00           | 2737.00       | 240.00                     | 1 in 150 F                          |
| 2737.00           | 3217.00       | 480.00                     | 1 in 200 F                          |
| 3217.00           | 3426.90       | 209.90                     | 1 in 600 F                          |
| 3426.90           | 3503.30       | 76.40                      | LEVEL                               |
| 3503.30           | Block section | ---                        | 1 in 640 F                          |

(d) **FROM THE CSB TOWARDS DEOBAHAL(FOR SIDING LINE):**

| Chainage in meter |                | Inter distance<br>in meter | Gradient<br>(Falling/Raising/Level) |
|-------------------|----------------|----------------------------|-------------------------------------|
| FROM              | TO             |                            |                                     |
| 0                 | 894.360        | 894.360                    | 1 in 1000 R                         |
| 894.360           | Siding section | ---                        | 1 in 400 R                          |

(e) **IB (FROM TIG END):**

| Distance in KM from HWH |         | Inter distance<br>in meter | Gradient<br>(Falling/Raising/Level) |
|-------------------------|---------|----------------------------|-------------------------------------|
| FROM                    | TO      |                            |                                     |
| 611.280                 | 612.240 | 0.96                       | 1 in 220F                           |
| 612.240                 | 612.491 | 0.251                      | 1 in 250F                           |
| 612.491                 | 614.425 | 1.934                      | LEVEL                               |
| 614.425                 | 615.600 | 1.175                      | 1 in 240R                           |
| 615.600                 | 616.220 | 0.62                       | 1 in 150R                           |
| 616.220                 | 616.980 | 0.76                       | 1 in 300R                           |
| 616.980                 | 617.275 | 0.295                      | LEVEL                               |

(f) **IB (FROM SBP END):**

| Distance in KM from HWH |         | Inter distance<br>in meter | Gradient<br>(Falling/Raising/Level) |
|-------------------------|---------|----------------------------|-------------------------------------|
| FROM                    | TO      |                            |                                     |
| 617.275                 | 616.980 | 0.295                      | 1 in 250F                           |
| 616.980                 | 616.220 | 0.76                       | LEVEL                               |
| 616.220                 | 615.560 | 0.66                       | 1 in 300R                           |
| 615.560                 | 614.440 | 1.12                       | 1 in 240R                           |
| 614.440                 | 614.150 | 0.29                       | LEVEL                               |
| 614.150                 | 613.400 | 0.75                       | 1 in 5000R                          |
| 613.400                 | 612.461 | 0.939                      | LEVEL                               |
| 612.461                 | 611.280 | 1.181                      | 1 in 200R                           |

**2.5 LAY OUT: -**

- i) No. of running lines : 06 ( Six )
- ii) No. of sidings : 7 (Seven)
- (a) Shunting neck.
  - (b) Tower Wagon Siding
  - (c) Engine holding line.
  - (d) T. M. siding.
  - (e) Shunting neck
  - (f) Sick siding
  - (g) Shunting neck
- iii) No. of Passenger platform : 03 (Three),
- i) One High level Platform of dimension 600M X 6.0M beside Line No.-1.
  - ii) One Island High level platform of dimension 600M X 11.07M/6.0m beside Line No.3 & 4
- iv) No. of goods platform : (i) One Rail level Goods platform of dimension 650M X 25m beside Line No.6.
- (ii) One 3M wide platform for TM siding.

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

| DESCRIPTION                      | CSL                            | ELECTRIFIED/<br>NON-<br>ELECTRIFIED | ISOLATION PROVIDED |                 |
|----------------------------------|--------------------------------|-------------------------------------|--------------------|-----------------|
|                                  |                                |                                     | TOWARDS<br>BRPL    | TOWARDS<br>DOBH |
| Line No.1<br>(Common Loop)       | 770.0 mtrs.<br>(STR. to STR)   | Electrified                         | DS-66              | DS-75           |
| Line No.2<br>(DN Main)           | 785.0mtrs.<br>(STR. to SH)     | Electrified                         | ---                | ---             |
| Line No.3<br>(UP Main)           | 840.0mtrs.<br>(STR. to SH)     | Electrified                         | ---                | ---             |
| Line No.4<br>(Common Loop)       | 806.0.0mtrs.<br>(STR. to STR)  | Electrified                         | DS-68              | DS-67           |
| Line No.5<br>(Common Loop)       | 833.0mtrs.<br>(STR. to STR)    | Electrified                         | ORL                | ORL             |
| Line No.5<br>(UP Longer Loop)    | 1457.0mtrs.<br>(STR. to SH.38) | Electrified                         | ORL                | ORL             |
| Line No.6<br>(Common Goods Loop) | 724.0mtrs.<br>(STR. to STR)    | Electrified                         | DS                 | DS              |

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

- A) Trains arriving from BARPALI end are DN trains.
- B) Trains arriving from DEOBAHAL end are UP trains.

#### (III) WORKING OF LONG HAUL LOOP:

- (1) Long haul loop shall not be used as twin loop during normal train operation.
- (2) No run through over long haul loop is permitted.
- (3) Stabling of long haul train on the long haul loop is not permitted without a live locomotive attached.
- (4) Speed is restricted to 15kmph over long haul loop.

### 2.5.2 NON-RUNNING LINES AND THEIR CAPACITY IN CSL:

| Sl. No | Description         | CSL                | Takes off from           | Exit       | Electrified/<br>Non-<br>Electrified | Operation            |
|--------|---------------------|--------------------|--------------------------|------------|-------------------------------------|----------------------|
| 1.     | Shunting neck       | 129.0 M<br>(SH-SB) | Line No.4<br>at TIG end  | One<br>way | Electrified                         | Controlled from VDU  |
| 2.     | Tower wagon siding  | 77.0 M<br>(SH-SB)  | Line No.1<br>at TIG end  | One<br>way | Electrified                         | Controlled from VDU  |
| 3.     | Engine Holding Line | 93.0 M<br>(SH-SB)  | Line No. 1<br>at SBP end | One<br>way | Electrified                         | Controlled from VDU  |
| 4.     | T. M. siding        | 293.0 M<br>(SH-SB) | Line No. 1<br>at SBP end | One<br>way | Electrified                         | Controlled from VDU. |
| 5.     | Shunting neck       | 93.0 M<br>(SH-SB)  | Line No.4<br>at SBP end  | One<br>way | Electrified                         | Controlled from VDU. |
| 6.     | Sick siding         | 143.0M<br>(SH-SB)  | Line No.1<br>at SBP end  | One<br>way | Electrified                         | Controlled from VDU  |
| 7.     | Shunting neck       | 93.0M<br>(SH-SB)   | Line No.5<br>at SBP end  | One<br>way | Electrified                         | Controlled from VDU. |

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

CSL of line No.3,4& 5 are more than 800m to avoid premature release of overlap, overlap release will initiate only when rear portion point zone track section is clear and when.

- (I) 27AXT is occupied for UP trains on L/3.  
 (II) 25AXT is occupied for UP train on L/4 & 32AXT is occupied for DN train for L/4.  
 (III) 23AXT is occupied for L/5 UP trains & 34AXT is occupied for L/5 for DN trains.

**2.6 LEVEL CROSSINGS:****(i) LEVEL CROSSING – (STATION SECTION):**

| Sl. No | Location          | K.M.& No.                                 | Normal Position      | Class | Type        | Operation                             | Communication                      |
|--------|-------------------|-------------------------------------------|----------------------|-------|-------------|---------------------------------------|------------------------------------|
| 1.     | Between BRGA-BRPL | 605/25-27(UP)<br>605/26-28(DN)<br>(JT-47) | Open to Road Traffic | ‘A’   | Interlocked | Electrically operated lifting barrier | Push Button telephone with SM/BRGA |
| 2.     | Between BRGA-BRPL | 606/3-5(UP)<br>606/4-6(DN)<br>(JT-48)     | Open to Road Traffic | ‘B2’  | Interlocked | Electrically operated lifting barrier | Magneto telephone with SM/BRGA     |

**(ii) LEVEL CROSSINGS: (IN BLOCK SECTION)-**

| Sl. No | Location            | K.M.& No.                                 | Normal Position        | Class | Type             | Operation                             | Communication                       |
|--------|---------------------|-------------------------------------------|------------------------|-------|------------------|---------------------------------------|-------------------------------------|
| 1.     | Between DOBH-BRGA   | 595/5-7(UP)<br>595/6-8(DN)<br>(JT-41)     | Closed to road traffic | ‘B2’  | Non-Inter locked | Winch operated lifting barrier        | Voice logger telephone with SM/DOBH |
| 2.     | Between DOBH-BRGA   | 596/25-27(UP)<br>596/28-26(DN)<br>(JT-42) | Closed to road traffic | ‘B2’  | Non-Inter locked | Winch operated lifting barrier        | Voice logger telephone with SM/DOBH |
| 3.     | Between DOBH-BRGA   | 599/3-5(UP)<br>599/4-6(DN)<br>(JT-43)     | Open to road traffic   | ‘B1’  | Non-Inter locked | Winch operated lifting barrier        | Voice logger telephone with SM/DOBH |
| 4.     | Between DOBH-BRGA   | 599/29-31(UP)<br>599/30-32(DN)<br>(JT-44) | Closed to road traffic | ‘C’   | Non-Inter locked | Winch operated lifting barrier        | Voice logger telephone with SM/DOBH |
| 5.     | Between DOBH-BRGA   | 601/3-5(UP)<br>601/4-6(DN)<br>(JT-45)     | Open to road traffic   | ‘B2’  | Non-Inter locked | Winch operated lifting barrier        | Voice logger telephone with SM/DOBH |
| 6.     | Between BRGA - BRPL | 608/3-5(UP)<br>608/4-6(DN)<br>(JT-49)     | Open to road traffic   | ‘B2’  | Interlocked      | Electrically operated lifting barrier | Voice logger Telephone with SM/BRGA |
| 7.     | Between BRGA - BRPL | 608/27-29(UP)<br>608/28-30(DN)<br>(JT-50) | Closed to road traffic | ‘C’   | Non-Inter locked | Winch operated lifting barrier        | Voice logger telephone with SM/BRGA |

|     |                     |                                           |                        |      |                  |                                     |                                     |
|-----|---------------------|-------------------------------------------|------------------------|------|------------------|-------------------------------------|-------------------------------------|
| 8.  | Between BRGA - BRPL | 609/31-33(UP)<br>609/32-34(DN)<br>(JT-51) | Closed to road traffic | ‘C’  | Non-Inter locked | Winch operated lifting barrier      | Voice logger telephone with SM/BRGA |
| 9.  | Between BRGA - BRPL | 616/29-31(UP)<br>616/30-32(DN)<br>(JT-54) | Open to road traffic   | ‘B2’ | Non-Inter locked | Winch operated lifting barrier      | Voice logger telephone with SM/BRGA |
| 10. | Between BRGA - BRPL | 619/31-33(UP)<br>619/32-34(DN)<br>(JT-56) | Closed to road traffic | ‘C’  | Non-Inter locked | Winch operated lifting barrier      | Voice logger telephone with SM/BRPL |
| 11. | Between BRGA - BRPL | 620/33-35(UP)<br>620/34-36(DN)<br>(JT-57) | Closed to road traffic | ‘C’  | Non-Inter locked | Winch operated lifting barrier      | Voice logger telephone with SM/BRPL |
| 12. | Between BRGA - BRPL | 622/13-15(UP)<br>622/14-16(DN)<br>(JT-59) | Open to road traffic   | ‘B2’ | Inter locked     | Electrical operated lifting barrier | Voice logger telephone with SM/BRPL |

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

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

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

- i) **System of working** Absolute Block system.
- ii) **Type of block instrument** DLBI for BRGA-DOBH section & for BRGA-BRPL section
- iii) **Instrument-** Non-cooperative type
- iv) **Block Telephone-** Provided with respective block instruments of BRGA-DOBH & BRGA-BRPL sections.
- v) **Staff responsible for their operations** S.M. on duty.
- vi) **Custodian of keys** S.M. on duty.

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

#### 4.1.1 **STANDARD OF INTERLOCKING AND TYPE OF SIGNALLING: –**

The station is provided with Standard III(R) interlocking with Multiple Aspect Colour Light Signaling and Dual LVCD Axle Counters. All the points are operated from VDU by on duty Station Master. The Home signals and Advanced Starter signals are interlocked with respective block instruments. GR 3.08(4) (b) governs the aspect and indications of the signals respectively. The station has no end cabins.

**Minimum equipment of signal** – Distant, Inner Distant, Home, Starter and Advanced starter signal are provided in either direction. UP Distant signal of LC gate No. JT-49 is combined with UP Advance Starter Signal & DN Distant signal of BRGA is combined with UP Gate Stop Signal of JT-49, Starter Signals are released by Adv. Starter Signals.

#### 4.1.2 **STATION MASTER'S OPERATING CONSOLE: -**

The Station is provided with central Electronic Interlocking (EI) system. All signals and points are electrically operated from the VDU provided at SM's Office. A stand by VDU is also provided to switch over the system in case of failure of working VDU. Calling-on

signals are provided below Home signals (i.e. in both DN & UP directions). Central VDU is provided in the Station Master's office to electrically control all signals, points & Gates etc.,

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

#### 4.1.3 MSDAC[Multiple Section Digital Axle Counter](Dual Detection): -

##### **WORKING OF TRAINS AT STATION PROVIDED WITH DUAL MSDAC (Multi Section Digital Axle Counter) EQUIPMENT:**

##### **1. GENERAL:**

Entire yard of BRGA station from UP Home Signal to Down Home Signal including calling on tracks is provided with Dual MSDAC system in place of conventional DC track circuits to detect the presence of train. When any Track section is occupied that particular Track section will show '**RED**' indication on the operating VDU. However, MSDAC system will not detect any vehicle which is placed abruptly in between the MSDAC detection points. Dual or redundant MSDAC system has two independent parallel systems viz. system-A & system-B working simultaneously to detect occupation/clearance of the Track Sections. In case of failure of any one of the system i.e., System 'A'/System 'B' the other system shall take care of the concerned Track section. This is to facilitate dealing of trains with signals during the failure of any one of the systems. Facility for MSDAC reset operation, in case of failure of both the systems is provided via Rest Box at the SM's office.

##### **2. DESCRIPTION OF THE INDICATIONS/FEATURES ON THE MSDAC INDICATION-CUM-RESET BOX PANEL:-**

##### **A) FEATURES:**

1. SM's key for authorizing reset operations.
2. Reset push button for resetting MSDAC Track sections.
3. Counter for recording reset operations.
4. Buzzer during the reset operation.

##### **B) INDICATIONS PROVIDED IN REST BOXES OF EACH TRACK SECTIONS AT SM'S ROOM:**

| <b>MSDAC RESET BOX</b>               |                  |
|--------------------------------------|------------------|
| POWER ON                             | MINIATURE YELLOW |
| PREPARATORY RESET                    | MINIATURE GREEN  |
| LINE VERIFICATION for Track section. | MINIATURE YELLOW |
| a)SECTION CLEAR                      | GREEN            |
| b)SECTION OCCUPIED                   | RED              |

##### **3. COMMUNICATION:** Magneto phone provided between SM Room and LV Boxes.

##### **4. CUSTODY OF KEYS:**

SM's keys of MSDAC indication-cum-reset box panels, line Verification keys and LV Box keys for all Track sections are provided. These keys shall be kept in a separate Glass fronted case and shall be under personal custody of the S.M on duty.

##### **5. RESET BUTTON:**

Reset buttons are provided in the Reset Boxes for main & redundant Track sections. So that whenever the any Track section shows 'Red' indication, the SM on duty can reset the same to normal after ensuring that the Track Section is free of obstructions.

**6. COUNTERS FOR RECORDING RESET OPERATIONS:**

Each and every operation of the Manual reset is counted on a veeder counter provided in the reset box and shall be recorded in a separate register for indicating the movement before and after operation of the reset as per the following format.

| Sl. No.: | Date | Time | Track Section | Track section failed after the arrival/departure | Counter reading before | Counter reading after | Train No. dealt after | Reason | Signature of points man for Line | Signature of SM on |
|----------|------|------|---------------|--------------------------------------------------|------------------------|-----------------------|-----------------------|--------|----------------------------------|--------------------|
|          |      |      | 4             | 5                                                | 6                      | 7                     | 8                     |        | 10                               | 1                  |

**7. RESETING PROCEDURE OF MSDAC:**

MSDAC is provided with two types of resetting features corresponding to failures of systems viz. 1. Auto Reset. 2. Manual Reset.

**1. AUTO RESET:**

The Dual detection system-A and system-B of MSDAC has internal software of Auto reset function. The Auto Reset feature is provided for systems of all the Track sections.

- i) The system-A and system-B common track status provided on the VDU. So during failure of any one system of MSDAC, the track section remains clear in the Operating VDU however RED indication will appear on the concerned Reset box.
- ii) The failed system will get reset through Auto Reset from the working system and failed systems enter into preparatory reset mode. Preparatory reset indication will appear in the concerned Reset box automatically within 2 minutes.
- iii) During preparatory reset mode of the system, SM on duty shall deal the train with signals. After dealing one train on preparatory reset mode, the failed system will get restored to section clear and indication status on the concerned Reset Box changes to Green.
- iv) During the failure of any one of the MSDAC system, if preparatory indication not appeared within 2 minutes (or) if Reset accepted (preparatory indication appeared) and track not cleared after the dealing the one train movement over the track, SM on duty shall inform Tech/JE/SSE/Signal concerned regarding the failure of MSDAC system for early rectification

**2. MANUAL RESET:**

In case, failure of both systems of MSDAC track section the corresponding track section will show Red in VDU as well as in reset box. SM on duty shall initiate Manual Reset.

**(a) Co-operative type for Point Zones/Loop lines/Sidings:**

- i) SM on duty shall depute a Points man on duty for physical verification of failed track section. Handover the LV box key and line verification key to the Points man on duty advising to ensure the failed track section is free from any obstructions after the necessary entries like Date, Time, reason and signature shall be made in the key register provided for this purpose.

- ii) Pointsman after duly ensuring the track section is free from all obstructions on field shall open the Box, then insert line verification key and press to extend the co-operation from failed track section for LV indication on the reset box.
- iii) On observing LV indication on reset box of concerned track section, SM on duty shall insert & turn the relevant SM's Key in one of the systems of reset panel and press Reset push Button of concerned track section.  
Then buzzer sounds for few seconds till the clear indication appears on the concerned Reset box SM shall release the SM's key and Reset Push Button. The counter provided for recording resetting operation will register next higher number. Then SM shall instruct the Points man to release the LV key and lock the LV Box.
- iv) SM on duty shall record the details like Date, time, counter No. Train No. reason & signature etc in the Reset & key registers provided SMs key, LV Box key and LV keys shall be secured back in the SMs key Box.
- v) After resetting of track section, SM on duty shall deal the train with normal working.
- vi) If any of the MSDAC systems continues to show occupied RED indication in the Reset Box even after manual resetting. SM on duty shall inform Tech/JE/SSE/Signal concerned regarding the failure of MSDAC system for early rectification.

**(b) Main Lines/Run through lines:**

- i) SM on duty shall depute a Points man on duty for physical verification of failed track section. Handover the LV box key and line verification key to the Points man duty advising to ensure the failed track section is free from any of obstructions after the necessary entries like Date, Time, reason and signature shall be made in the key register provided for this purpose.
- ii) The Points man after duly ensuring the track section is free from all obstructions on field shall open the Box, then insert line verification key and press to extend the co-operation from failed track section for LV indication on the reset box.
- iii) On observing LV indication on reset box of concerned track section, SM on duty shall insert & turn the relevant SM's Key in one of the systems of reset panel and press Reset push Button of concerned track section.
- iv) 'PREPARATORY RESET' indication will appear on the indication-cum-Reset Box which indicates that the resetting operation is completed. However the track section in operating VDU shows RED.
- v) During preparatory reset mode of the systems, SM on duty shall deal the train with Calling on signals /piloting. After dealing one train on preparatory reset mode, the failed systems will get restored to section clear and indication status on the concerned Reset Box which changes to Green. Also the track section on operating VDU shows clear, further train can be dealt on signals.
- vi) SM on duty shall record the details like Date, time, counter No., Train No., reason etc. in the Reset & key registers provided for this purpose and SMs key shall be secured back in the SMs key box.

**Note:** Before Manual Resetting of the track section of MSDAC system. SM on duty shall ensure the failed track section and free from all obstructions and verified on field physically.

**4.1.4 TRACK SECTIONS:**

2AXT,2XT1,47XT,2XT2,47AXT,2XT3,52BXT,52AXT,56AXT,56BXT,58AXT,58BXT,62AXT,62BXT,23AXT,60XT,64AXT,64BXT,21AXT,25AXT,26AXT,27AXT,31AXT,L1AXT,L2AXT,L3AXT,L4AXT,L5AXT,L6AXT,26AXT,32AXT,34AXT,36AXT,79XT,77AXT,77BXT,28AXT,71BXT,73XT,71AXT,61AXT,61BXT,63XT,69AXT,69BXT,38AXT,65AXT,61BXT,57AXT,57BXT,55BXT,55AXT,53AXT,48AXT,48XT,53BXT,1XT2,1XT1,1AXT.

**AXLE COUNTER:**

Block Sections between BRGA-DOBH and BRGA-BRPL are monitored by Dual Digital Axle Counter System. Dual Digital Axle Counters along with associated accessories are provided at either end of the block Section.

**(i) BRGA-BRPL DN LVV:**

A pair of Dual Digital Axle Counter is provided, one beyond DN Advanced starter signal No.28 of BRPL and another 400m beyond DN IB Stop Signal No.30 for counting the axles “IN” and axles “OUT” to indicate whether the Block section is clear of trains as well as to verify the last vehicle of the incoming train.

**(ii) BRGA-BRPL DN LVV:**

A pair of Dual Digital Axle Counter is provided, one beyond DN IB Stop Signal No.30 and another 180M beyond the DN Home Signal of BRGA for counting the axles “IN” and axles “OUT” to indicate whether the Block section is clear of trains as well as to verify the last vehicle of the incoming train.

**(iii) BRGA-BRPL UP LVV:**

A pair of Dual Digital Axle Counter is provided, one beyond the UP Advanced starter signal No.47 of BRGA and another beyond 400m of UP IB Stop Signal No.49 for Counting the axles “IN” and axles “OUT” to indicate whether the Section is clear of trains as well as to verify the last vehicle and complete arrival of the incoming train.

**(iv) BRGA-BRPL UP LVV:**

A pair of Digital Axle Counter is provided, one beyond the UP IB Stop Signal No.49 and another 180M beyond the UP Home Signal of BRPL Station for Counting the axles “IN” and axles “OUT” to indicate whether the Block Section is clear of trains as well as to verify the last vehicle and complete arrival of the incoming train.

**(v) DOBH-BRGA DN LVV:**

A pair of Dual Digital Axle Counter is provided, one beyond DN Advanced starter signal No.48 and another 180M beyond the DN Home Signal of DOBH Station for counting the axles “IN” and axles “OUT” to indicate whether the Block section is clear of trains as well as to verify the last vehicle of the incoming train.

**(vi) BRGA-DOBH UP LVV:**

A pair of Digital Axle Counter is provided, UP Advanced starter signal No.27 of DOBH and another 180M beyond the UP Home Signal of BRGA Station for Counting the axles “IN” and axles “OUT” to indicate whether the Block Section is clear of trains as well as to verify the last vehicle and complete arrival of the incoming train.

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

After complete arrival of the train the 'RED' indication will disappear and 'GREEN' indication will appear. If after the complete arrival of the train the 'RED' indication does not change to 'GREEN' it should be assumed as Block Instrument failure for the particular Section and necessary action as per GR 14.13 is to be followed. The axle counters are interlocked with the

Respective block instruments for that section. If axle counter fails, Advanced Starter Signal/IB Signal shall not come to 'OFF' and the concerned instrument shall remain locked in last operated position.

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

**NOTE:** Before taking off reception and dispatch signals for DN and UP directions, the SM on duty should ensure that the entire route including overlap and berthing portion is clear of all obstructions by observing the Axle counter indication. The indication of Axle counter will exhibit Red Light when track is occupied and yellow light when track is clear. There will be no track indication when any route is not set.

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

The positions of all points are shown in station Working Rule Diagram and also on VDU. All points are operated through VDU by Station Master on duty. 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 handle keys are transmitted electrically to the crank handle locations for operating the points by crank handles. EKT has also been provided at Traffic LC gates for key transmission.

#### **4.1.7 IBS:**

The section between BRGA-BRPL has been split into two Block Sections by providing Intermediate Block Signal (IBS) at Km. 613.917 and Km. 613.469 on DN and UP line respectively.

#### **4.1.8 POINTS AND TRAP INDICATOR:       NIL**

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

#### **4.1.10 CALLING ON SIGNALS:-**

Miniature colour light Calling-on signal is provided below the Home signals in terms of GR.3.13 (6) (b). A Calling-on signal shows no light in the 'ON' position and Yellow light when taken "OFF". A calling-on signal, will be taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF' due to failure or any other reason or for admission of train on a blocked line. Before taking 'OFF' Calling on signal during failure

of track section the route and clearance of the track over which the train will be admitted must be checked physically by SM on duty.

After a lapse of 60 seconds, the Calling-on signal below Home signal will appear. In case of calling ON signal below starter signal SM on duty should ascertain that the train has stopped at the foot of Starter Signal, then only SM will take OFF calling ON signal below starter signal, without delay the Calling ON will clear i.e., a White light glows at the concerned calling-on signal on the VDU. Every such operation has to be recorded by the on duty SM along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train or by Signal cancellation.

**NOTE:**

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

**4.1.11 SHUNT SIGNALS:-**

Shunt signals at top point viz., SH4 at BRPL end and SH5 at DOBH end have been provided for back shunt movement SH-10A/B/C from shunting neck, SH-8 from Tower Wagon siding, SH-24A/B/C from sick Siding, SH-15A/B/C from shunting neck, SH-13 from T.M. siding, SH-11(A-G) from Engine Holding Line, SH-9(A-G) from M/S ACC BRGA and SH-7 from Shunting neck also provided.

**Emergency Route Release:-** When a train is dealt with shunt signal after completion of the movement, if the concerned route is not released due to failure of MSDAC track section the following procedure will be followed/adopted.

- i) **When provided below stop signal (Dependent shunt signal):-** When the above condition arises, after resetting the concerned MSDAC, cancel the main signal (above the concerned shunt signal) and apply emergency route release for the main signal. If the route is not released, the concerned shunt signal will be taken off again and emergency route release will be applied & then the route will be released.
- ii) **In case of independent shunt signal:** The concerned MSDAC shall be reset and then normal emergency route release procedure shall be adopted.

**4.1.12 ANTI COLLOISION DEVICE: - NIL**

**4.1.13 EMERGENCY CROSSOVER:- NIL**

**4.1.14 LC GATE OPERATION:-** Given in Appendix ‘A’

**4.1.15 CRANK HANDLE:**

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

| <b>CRANK HANDLE</b> |       | <b><u>CONTROL POINTS</u></b> |
|---------------------|-------|------------------------------|
| CH-1                | ----- | 57A/B. 65A/B                 |
| CH-2                | ----- | 55A/B, 61A/B, 59             |
| CH-3                | ----- | 58A/B, 77A/B                 |
| CH-4                | ----- | 63A/B. 73A/B. 75             |
| CH-5                | ----- | 64A/B. 71A/B.                |
| CH-6                | ----- | 56A/B. 69A/B                 |
| CH-7                | ----- | 67                           |
| CH-8                | ----- | 60A/B, 79A/B.                |
| CH-9                | ----- | 52A/B. 62A/B.                |
| CH-10               | ----- | 53A/B.                       |
| CH-11               | ----- | 66                           |
| CH-12               | ----- | 81                           |
| CH-13               | ----- | 68                           |

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 not taken 'OFF' and the route is not locked for whatever reasons.

Crank Handle key can be released by SM by tracking the mouse pointer on to the concerned crank handle button icon. This will enable two options to be displayed on the menu i.e. Crank handle Transmit control and Crank Handle Release control. To release the crank handle key, SM should click the Crank handle 'TRANSMIT' control option. After transmission the KEY IN indication will start flashing, now the key can be extracted from the EKT. After extracting the key from the EKT, the KEY IN indication will disappear. When the keys are taken out no signal can be taken "OFF" over the particular route on the points nominated by that Crank Handle. This key can be electrically transmitted to both ends locations of the yard for manual operation of the defective points. SM on duty shall personally ensure the clamping and padlocking of all facing and trailing points. An emergency Crank handle register shall be maintained by the SM on duty at the station as per Para 2.19 of the Operating Manual. Correct setting, clamping and padlocking of the points devolve on the SM on duty. The cases of failure of motor point should be promptly reported to the concerned signal maintainer/SSE (Signal) for immediate rectification.

**4.1.16 EMERGENCY CRANK HANDLE OPERATION DURING FAILURE OF BOTH VDUs:-**In case of failure of both VDUs on duty SM shall turn the VDU selection switch towards "NO VDU" and turn the emergency, crank handle Key provided on the SM table to "KEY IN" position. This operation will release all crank handle of this station. After restoration of VDUs SM on duty shall turn the emergency crank handle key towards "KEY OUT" position and turn VDU selection switch either of the VDU and restore the crank handles through VDU as per standard procedure.

**a) EMERGENCY CRANK HANDLE RELEASE DURING FAILURE OF BOTH THE VDUs (ACTIVE & STAND BY) :**

When both the VDUs (Active & Stand by) provided for operation of signals & points in EI station cease to work at the same time due to power failure or what so ever the reason, the SM on duty shall put the VDU key to middle position and turn the key (ECH) to right provided in the key box fixed on the SM table. By resorting to this, timer is initiated and all the crank handles are released at a time after 120 seconds. The SM on duty can set the

required point/points through crank handles manually by extracting the key/keys from EKTs provided in the location boxes. In case complete EI System fails there is a provision that keys from all crank handle locations can be extracted for crank handling & setting of points for train operations.

**b) EMERGENCY CRANK HANDLE RELEASE DURING FAILURE OF BOTH EI(ACTIVE & STAND BY) SYSTEMS**

When both the EI systems fails to operate due any technical reason, all the crank handles are released at a time with time delay of 120 second & incase of power failure it will released immediately and the SM on duty can set the required point/ points through crank handles manually by extracting the key/keys from EKTs provided in the location boxes. The signaling staff i.e., JE/SSE/Sig. or ESM shall be intimated immediately regarding the failure for rectification of the same.

**4.1.16 EMERGENCY ROUTE RELEASE COUNTER:**

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

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

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

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

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

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

Whenever relay room is to be opened either for scheduled maintenance or during failures or for 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 recorded in Signal failure register. If disconnection is required, Disconnection Memo has to be given by S&T staff to SM on duty. Failure Memo should be acknowledged and entry in relay room key register to be made by S& T staff before obtaining Station Master's key. Relay Room key for Schedule maintenance shall be taken once in a calendar Month during monthly inspection by Sectional Supervisor. Relay room can be opened by following above procedure for special maintenance activities like cable insulation testing, block/ disconnection memos, selection/ locking table testing, maintenance work inside relay room by Electrical and Engineering staff, during failures, data logger resetting and inspection by Divisional and Headquarter officials.

Track section adjustments & voltage monitoring during monsoon and whenever required during rains. Works required by S& T Construction & open line staff for preparatory works and during commissioning. In each such case, the Construction Staff Shall follow the detailed guidelines issued regarding working on signaling gears under the charge of open line.

In case of emergencies such as fire, flood, earthquake etc., Open Line Section Engineer (Signal) / Signal Maintainer & SS/SM shall jointly decide the need for opening the Relay Room. Section Engineer Signal HQ at Divisional Control Office and Section controller shall be advised respectively. In case of communication failure during such emergencies,

Open Line Signal Maintainers/ Supervisors and SS/SM on duty shall jointly decide the need for opening the Relay Room and communicate later on to respective controls. In case key is lost /misplaced, it shall be reported to S&T control as well as section control for either lock. In normal course the spare key with respective custodians shall be used. In emergency situation, lock may be broken under advice to Section Control as well as S&T control. New lock shall be procured and provided.

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

### 4.3 POWER SUPPLY: -

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

- (i) Normal: - UP AT/DN AT connected to OHE Traction distribution (230V, 50 Hz)
- (ii) Stand by: - Stand by Supply from OSEB – Single Phase (230V, 50Hz).
- (iii) Normal Power Supply (Single Phase 230V, 50Hz) to the Signaling & Interlocking installation at the station is drawn from the traction power sources. Whenever traction power supply fails SS/SM on duty shall operate the rotary change over switch provided in the CLS power panel at SM's office connecting the power supply from the State Electricity Power Supply.

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

- a) A change over switch is provided in the SM's office with the three power supplies viz. UP AT, DN AT and local power supply for changing the switch to the required supply position. The availability of supply is indicated by luminous indicator above the circuit breaker for each supply.
- b) Normally the switch will be kept towards AUTO position. Whenever the power block is to be given on the line, on duty SS/SM must ascertain the power is available on the other AT and change over the switch to desired position e.g. if power block is to be given on the UP line, DN AT must be available and vice versa.
- c) In case of failure of one of the AT supply without any power block, on duty SS/SM has to check whether the circuit breaker has tripped. (Three circuit breakers are provided in the changeover switch board, one for each supply and their normal position is UP and when tripped, it goes DN). In case of failure of both AT supplies without any power block, the local supplies shall be utilized by operating the changeover switch. If the circuit breaker is tripping, even after resetting, no attempts shall be made to hold it by any other means and a message shall be given to the AEE/GEN and CTFO/PSI/TRD/GEN for prompt rectification.
- d) Whenever there is a failure of power supply in one AT, the on duty SS/SM shall take prompt action to inform to all concerned for the rectification. The SM himself, during his daily checks, shall test the availability of power supply on both AT's and make an entry in station diary daily duly initiating action for rectification of failure, if any
- e) For IPS system that provides to EI, auto-change-over has been provided.
- f) There is a remote monitoring SM box provided at the station to monitor the health of IPS.

#### **REMOTE MONITORING SM BOX:**

Remote monitoring SM Box gives alarm to the SM for the following fault conditions:-

- (a) 50% depth of discharge (DOD) (105.9v) of battery. In this condition audio/visual alarm comes, which can be acknowledged with audio cut-off.
- (b) 60% DOD (105.1v), which warns for emergency. The alarm for this condition is same as for condition 1.
- (c) 70% DOD(104.3v), which signals system, shut-down. In this condition signal feed is cut-off and all DC-DC converters continue working. Audio alarm continues till power supply is restored.
- (d) Any of the module fails, which calls for 'call S&T'.
- (e) Whenever there is a failure of Local power supply the SM shall take prompt action to inform to all concerned for the rectification. The SM himself, during his daily checks,

shall test the availability of Local power supply and make an entry in the Station Diary duly initiating action for rectification of failure, if any.

**NOTE:** - For further Detail of Appendix–‘B’ should be referred

## **5.0 TELECOMMUNICATION FACILITIES: -**

- (i) Telephone attached with DLBI of BRGA-BRPL & BRGA-DOBH Block Sections.
- (ii) Station to Station fixed telephone (Hot line) is provided
- (iii) Station is provided with Auto telephone connected with Railway Exchange.
- (iv) BSNL telephone is provided.
- (v) The station is connected to BALANGIR - JHARSUGUDA control circuit by a control telephone.
- (vi) Station to station 25 Watt VHF communication is provided.
- (vii) Telephone is provided with between Station and both end crank handle locations.
- (viii) Telephone is provided between station and L.C. Gate No. JT-47 at K.M. 605/25-27(UP), 605/26-28(DN), JT-48 at K.M. 606/3-5(UP) K.M. 606/4-6(DN), JT-50 at KM.608/27-29(UP) 608/28-30(DN), JT-51 at KM. 609/31-33(UP) 609/32-34(DN) and JT-54 at KM. 616/29-31(UP) 616/30-32(DN).
- (ix) Telephone is provided with voice logger between station & UP IBS at K.M 613.649.
- (x) Telephone is provided with voice logger between SM & TPC.
- (xi) Telephone is also provided in LV Boxes for MSDAC resetting.

### **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, TMRs or any other staff.

## **5.1 FAILURE OF COMMUNICATION: -**

The on duty SM shall use the above electrical communication instruments stated in Para-5.0 from item No. (i) to (vi) strictly in order of preference for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication between the adjacent block stations the SM on duty shall work vide SR 6.02.06. In the event of total failure of communications SR 6.02.03 shall be observed for working the train between section BRGA-BRPL & BRGA-DOBH. During failure of signal, inter-locking, points, block instrument telephone etc. the S&T staff should be informed for rectification.

## **6.0 SYSTEM OF TRAIN WORKING: -**

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

## **6.1 DUTIES OF TRAIN WORKING STAFF: -**

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

**6.1.1 TRAIN WORKING STAFF IN EACH SHIFT:-**

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

| Sl. No. | Designation                       | Roster     | No. of staff in each shift | Hrs. of Duty |
|---------|-----------------------------------|------------|----------------------------|--------------|
| 1.      | Station Superintendent(In-charge) | Excluded   | ---                        | ---          |
| 2       | SS/SM                             | Continuous | 01                         | 08 hrs.      |
| 3.      | PM-A/ PM-B                        | Continuous | 02                         | 08 hrs.      |
| 4.      | GK/ Sr. GK- (JT-47)               | Continuous | 01                         | 08 hrs.      |
| 5.      | GK/ Sr. GK- (JT-48)               | E.I        | 01                         | 12 hrs.      |

The above staff shall work as per the rosters issued by Sr.DPO/SBP from time to time and these rosters shall be displayed in the SS's office and in gate lodge for traffic gateman.

**6.1.2 RESPONSIBILITY OF ASCERTAINING CLEARANCE OF THE LINES AND ZONES OF RESPONSIBILITY: -**

The SM on duty is responsible to ascertain the clearance of the nominated line (GR.14.10).

**6.1.3 ASSURANCE OF STAFF IN ASSURANCE REGISTER: -**

All staff before taking DN independent charge of their duties at this station shall make a written declaration in the assurance register that they have read and thoroughly understood the system in force and must sign in such declaration vide SR 5.01.02.

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

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

The declaration shall be renewed in the following cases: -

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

**6.2 CONDITIONS FOR GRANTING LINE CLEAR: -**

- a. The conditions laid in GR 8.01(1)(a),(b), 8.01(2)(b),(ii) 8.03(1) (a),(b)(c)(ii) shall be complied with the SM on duty before line is considered clear and line clear is granted.
- b. Before granting a line clear for a train the SM on duty shall personally ensure that the reception signals pertaining to a train are in the 'ON' position and burning properly 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 in case reception signal is not working.

**[A]For double line Section-(BRGA-BRPL)**

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

- i) The whole of the last preceding train has arrived complete inside the outermost facing points of BSLB.
- ii) All necessary signals have been put back to 'ON' behind the said train.
- iii) The line is clear up to the facing point No.52A on DN line of BRGA Station.

**[B]For double line Section-(BRGA-DOBH)**

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

- i) The whole of the last preceding train has arrived complete. inside the outermost facing points of BSLB.
- ii) All necessary signals have been put back to 'ON' behind the said train.
- iii) The line is clear up to the facing point No.53A on UP Line of BRGA Station.

**[C] Outlying SIDING: - NIL.**

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

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

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

**Safety Point Alarm Unit (SPA):**

A safety Point Alarm is provided on the VDU table with different indications:

1. On complete arrival of a train at the station, the SM has to set the Points immediately against the occupied line.
2. In case the SM forgets to alter the points, after a time lag of 02 minutes, an audible buzzer will be heard from this instrument along with the 'RED' indication of the line on which the train has arrived.
3. The SM shall then press 'ACK' button to mute the buzzer, and immediately set the required points against the line on which the train has arrived.
4. On setting the points against the occupied line, the RED indication will disappear.
5. In case SM fails to set the required points against the occupied line a fault message will be triggered SMS will be sent to concerned station mobile and all concerned staff to take necessary action.

If all the lines of a station happen to be blocked, when line clear has been granted to a train, the points should be set for the line occupied by a stabled load or a goods train in that order so that, in case of mishap, the chance of casualties are minimized [Refer SR.3.51.06 (b)]. In case of all the lines are occupied by Coaching train, points should be

set for a loop line to negotiate with the speed of incoming train would be reduced which in turn, would minimize the consequences/causalities.

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

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

(The SM on duty shall comply with the instructions laid down in GR 5.09 and SRs thereto.)

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

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

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

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

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; the facing and trailing points are clamped and padlocked.

The Loco pilot is authorized to pass the approach stop signals at 'ON' through a written authority T/510 [Refer GR 5.10].

**6.2.1.4 DISPATCH OF TRAINS FROM NON-SIGNALLED LINE:**

In case of dispatch of a train on non-signalled line the SM's shall follow GR 5.11 and SR thereto.

**6.2.1.5 DISPATCH OF TRAINS FROM LINE PROVIDED WITH COMMON STARTER SIGNAL:N/A**

**6.2.1.6 (A)SPECIAL RESTRICTIONS:**

- (i) While shunting on gradients towards UP Signal No.47 an engine is to be attached towards the falling of the gradient GR.5.20(b) to be strictly followed.
- (ii) No run through over long haul loop is permitted.
- (iii) Stabling of long haul train on long haul loop is not permitted without live engine is attached to it.
- (iv) Speed is restricted to 15 kmph for long haul train on long haul loop.
- (v) Long haul loop shall not be used as twin loop.

**(B)SPECIAL INSTRUCTION:**

- (i) At the time of berthing of a train on line No.5 the road vehicles are diverted to the LHS at CH.891.

**6.3 CONDITIONS FOR TAKING ‘OFF’ APPROACH SIGNAL: -**

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

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

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

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

| Sl. No. | Line No.                       | UP TRAIN                 |                                                                | DN TRAIN                  |                                                           |
|---------|--------------------------------|--------------------------|----------------------------------------------------------------|---------------------------|-----------------------------------------------------------|
|         |                                | FROM                     | TO                                                             | FROM                      | TO                                                        |
| 1       | Line No. 1 (Common Loop)       | UP starter signal No.31. | Up to the end of Over run line.                                | DN Starter Signal No. 26  | Up to the DS No,75 or up to Advanced starter signal No.48 |
| 2       | Line No. 2 (DN Main)           | ---                      | ---                                                            | DN Starter Signal No. 28  | Up to Advanced starter signal No.48                       |
| 3       | Line No. 3 (UP Main)           | UP starter signal No.27. | Advanced starter Signal No.47                                  | ---                       | ---                                                       |
| 4       | Line No. 4 (Common Loop)       | UP starter signal No.25. | Up to the end of overrun line or Advanced starter Signal No.47 | DN Starter Signal No. 32  | Up to the end of Overrun line                             |
| 5.      | Line No. 5 (Common Loop)       | UP starter signal No.23. | Up to the end of overrun line.                                 | DN Starter Signal No. 34. | Up to the end of Overrun line                             |
| 6.      | Line No. 5 (UP Longer Loop)    | UP starter signal No.23. | Up to the end of overrun line.                                 | ---                       | ---                                                       |
| 7.      | Line No. 6 (Common Goods Loop) | UP starter signal No.21. | Up to the end of overrun line.                                 | DN Starter Signal No. 36. | Up to the end of Overrun line                             |

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

In case any of the track section on the concerned route shows occupied by RED indication even though the other conditions are satisfied, the operation through VDU by the SM on duty will not permit the concerned signal to be taken off. However, reception

of train will be possible in such cases with the “Calling-On” signal fixed below Home signal at either end provided any one of the Axle counter track section in advance of Home signal does not show ‘RED’ indication.

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

## **B. TAKING OFF CALLING ON SIGNAL**

To take “OFF” Calling-on signal the train must come to a stop at the foot of the Home signal/Starter signal, occupying the track section in rear of the signal. When a train occupies the track section a RED light strip will appear on the VDU. The particular route on which train is intended to be received shall be set by tracking the pointer in VDU on to the signal below which the calling on signal is provided. Various options in terms of the total routes over which the signal will lead to will appear on the menu. Then the SM must drag the pointer and click over the particular Calling on route amongst the various options displayed in the menu by the left button of the mouse as a result of which the Calling-on signal will blink for 60 seconds in case of calling ON signal below Home signal.

After a lapse of 60 seconds, the Calling-on signal below Home signal will clear. In case of calling ON signal below starter signal SM on duty should ascertain that the train has stopped at the foot of starter signal then only SM will take OFF calling ON signal below starter signal, without delay the Calling ON will clear i.e., a White light glows at the concerned calling-on signal on the VDU. Every such operation has to be recorded by the on duty SM along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train or by emergency cancellation.

### **NOTE:**

- i) SM on duty to ensure that no through signals are given while receiving a train on Calling-on signal.
- ii) Before admitting a train on Calling on signal ,SM must satisfy himself that the route on which train to be received is free from all obstructions by physical verification if the track circuit is occupied.

## **6.3.1 RESPONSIBILITY OF STATION MASTER FOR RESTORATION OF SIGNALS TO ‘ON’:**

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

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

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

|      |                                                        |                                                                                                    |
|------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| (i)  | While receiving a UP train on Line No.1 setting to ORL | Reception of DN train on L-4/L-5/L-6<br>OR<br>Dispatch of UP train from Line No.L3,L-4, L-5 & L-6. |
| (ii) | While receiving an UP train on Line No.3               | Reception/ Dispatch of DN train on/from L-1/L-2<br>OR                                              |

|        |                                                         |                                                                                                          |
|--------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| (iii)  | While receiving an UP train on Line No.4 setting to ORL | Reception/Dispatch of DN train from Line No. L1/L2 or Dispatch of UP train from Line No. L3.             |
| (iv)   | While receiving an UP train on Line No.5 setting to ORL | Reception/Dispatch of DN train from Line No. L1/L2 or Dispatch of UP train from Line No. L3/L4.          |
| (v)    | While receiving a UP train on Line No.6 setting to ORL  | Reception/Dispatch of DN train from Line No. L1/L2 or Dispatch of UP train from Line No. L3/L4.          |
| (vi)   | While receiving a DN train on Line No.1 set to ORL      | Reception/Dispatch of an UP train on Line No.L3/L4/L5/L6 or Dispatch of DN train from Line No. L2/4/5/6. |
| (vii)  | While receiving a DN train on Line No.2                 | Reception/Dispatch of a UP train on Line No. L3/L4/L5/L6.                                                |
| (viii) | While receiving a DN train on Line No.4                 | Dispatch of DN train from Line No. L1/L2.                                                                |
| (ix)   | While receiving a DN train on Line No.5                 | Dispatch of DN train from Line No. L1/L2/L4                                                              |
| (x)    | While receiving a DN train on Line No.6                 | Dispatch of DN train from Line No. L1/L2/L4                                                              |

### 6.5 COMPLETE ARRIVAL OF TRAIN: -

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

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

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

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

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

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

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

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

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

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

**6.6 DISPATCHING OF TRAINS: -**

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

To dispatch a train, the Station master on duty having obtained line clear for that train, shall set the route for the outgoing train correctly and satisfy himself by observing the visual indication on the VDU. He shall suspend all non-isolated shunting and ensure that the Level crossing gates are closed for dispatching trains to section and then shall take "OFF" the concerned route starter and advanced starter signal. The 'OFF' aspect of the concerned starter and advanced starter is the authority to proceed into the block section.

The Station Master on duty shall watch the safe passage of the train with its last vehicle indicator. After the train passes the advanced starter complete, he shall send the train entering block section signal to the station in advance. If a train worked without TMR or Brake Van the instruction laid down in Subsidiary Rule shall be followed. The Gatekeeper of interlocked level crossing gate at BRPL end shall be advised before dispatch of a train. If a train worked without TMR or Brake Van the instruction laid down in Subsidiary Rules 4.23.02 and 4.25.02 shall be followed.

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

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

**6.7 TRAINS RUNNING THROUGH: -**

The provision of GR 3.4, 4.17, 4.42 with relevant SRs GR 3.42 and SR 3.42.02

- (a) (iv) and other relevant provision of BWM shall be observed.
- b) The sequence for taking 'OFF' signals for run through trains is governed by SR 3.42.02 (a) (iv)
- c) In every case in which trains are permitted to run through on a non isolated line, all shunting shall be stopped and no vehicle unattached to an engine or not properly secured in accordance with rule 5.23 may be kept standing on a connected line which is not isolated from through line vide SR 4.11 (2).
- d) The SM on duty is responsible to see that a train passes complete with its last vehicle indicator. If a train passes without last vehicle indicator or its authorized substitute, action shall be taken as per General and Subsidiary Rule. [Ref. GR 3.42, 4.17, 4.42 and SR 4.42.02 (b) (i),(ii).
- e) The SM is responsible to observe/watch the condition of the vehicles on a train and shall wave green hand signal horizontally as per Subsidiary Rule 4.42.02. (b) until anything wrong is noticed on train. For this purpose the SM on duty shall stand in such a position that a clear view of the passing train is seen by him and that his hand signals can clearly be seen by the

Loco Pilot and TMR of the train. He shall depute his points man with hand signal to the other side of the passing train who shall exhibit hand danger signal to draw the attention of the TMR/ Loco Pilot of the train in case of observing any unsafe condition/abnormalities of the train. He shall also report to the SM on duty for taking further suitable action in terms of SR 4.42.02(d).

#### **6.8 WORKING IN CASE OF FAILURE :-**

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

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

Whenever there is a failure of points, signals, track section or any other interlocking gear at the station that includes level crossing gate (s), if any etc. the SM on duty shall follow the procedure detailed in GR 3.68, 3.72, 3.74 and SR thereto. In case of defective approach signals, the trains will be piloted in vide SR 3.69.02, 3.69.03 & 3.69.05. In case of defective departure signals, trains will be piloted out vide GR 3.70 & SR 3.70.01. & 3.70.02.

##### **6.8.2 MSDAC:**

In case of failure of MSDAC, the zone verification button provided at site to be pressed by authorized operating staff after physically verifying the clearance of axle counter zone before resetting done by SM. Resetting to be done from reset box provided with counter.

##### **6.8.3 AXLE COUNTER**

If the axle counter fails between the block sections, resetting procedure will be adopted as mentioned in Appendix-B. if the axle counter indication does not appear 'Green & continues to show 'RED' condition after resetting, the concerned block instrument shall be suspended & failure intimation to be given to sectional signal Maintainer /JE/SSE (signal ) for rectification.

##### **6.8.4 DEFECTIVE SIGNALS:**

When signals become defective, the procedure laid down in GR & SR shall be followed. A signal in the OFF position is the final indication that the points are correctly set for the route for which it applies and if it is found impossible to take OFF a signal, the setting of points on the route to which it applies shall be inspected by the Station Master on duty before the signal is declared as defective irrespective of what is indicated by the position of the route, [Refer GR 3.68 to 3.46, 3.52 to 3.56, 3.71, 3.80 and SR 3.68.01 (c)]. In case of disconnection of signal and interlocking for repairs and maintenance, procedure laid down in GR and relevant SRs shall be followed. In the event of signal showing no lights, Station Master on duty shall before giving line clear, initiate action in accordance with the procedure prescribed in GR and the relevant SRs. [Refer GR 3.51, 3.69, 3.50 (4), 3.68 to 3.77]

##### **6.8.5 BLOCK INSTRUMENT**

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

DN advanced Starter is electrically interlocked with respective block instruments so that the same cannot be taken off unless the concerned block instrument is in line clear position (TGT). When the block instrument is suspended the concerned Advanced Starter

must also be treated as suspended. UP ADV-STR is electrically interlocked with IB Axle counter, when IB Axle counter fails, ADV-STR cannot be taken off. During the failure of Block Instrument of the section BRGA–DOBH and BRGA-BRPL trains will be worked on T/369-3b.

#### 6.8.6 **DEFFECTIVE INTERLOCKING**

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

#### 6.8.7 **DEFFECTIVE/DAMAGED POINTS**

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

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

#### 6.8.8 **RECEPTION OF A TRAIN ON BLOCKED LINE:**

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

Before handing over the authority the SM on duty shall ensure the correct setting clamping and padlocking of both facing and trailing end of the concerned route vide SR 3.69.03. A stop hand signal shall be exhibited by the SM on duty at a distance of not less 45mts. from the point of obstruction to indicate to the Loco Pilot as to where the train shall be brought to a stand.

#### 6.8.9 **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 irrespective of the position of the switches point laid down in GR with relevant SRs shall be followed. [Refer GR 3.68, 3.70 & SR 3.77.01(b)]. Initiate action in accordance with the procedure prescribed in GR and relevant Subsidiary Rules there to. [Refer GR 3.50(4) and 3.68, 3.77]

#### 6.8.10. **ISSUE OF CAUTION ORDER:-**

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

## 6.9 PROVISIONS FOR WORKING OF TROLLEYS/MOTOR TROLLEYS/MATERIAL LORRIES:

- (a) Motor Trolleys are run in accordance with Subsidiary Rules 15.25.03 to 15.25.09.
- (b) Material Lorries will work in accordance with Subsidiary Rules 15.27.05 to 15.27.08
- (c) Rail Trolleys will work in accordance with Subsidiary Rules 15.27.10.

The following precautions must be taken during working of motor trolleys as per Para 838 of IRPWM.:

- i) A motor trolley shall be run only under block protection or following a train/motor trolley in accordance with special instructions. (SR 15.25.03)
  - ii) When a motor trolley that is worked under block protection or following a train/motor trolley, breaks down (i.e. it cannot be propelled even by hand) in the block section, the official-in-charge should remove it clear off the track and send a written advice to the nearest Station Master/Block Hut-in-charge returning the 'Authority to proceed'/ Motor Trolley permit/ line clear ticket/ token/ tablet or advise the nearest Station Master/Control through the emergency telephone with exchange of Private Number about the same. He should not place again the motor trolley on the line without the written permission of either Station Master/ Block Hut-in-charge at the end of the block section concerned.
  - iii) Following a Train/Motor Trolley - Motor trolley may follow a fully vacuum/air brake train or a light engine or another motor trolley in the same block section during daylight hours and in clear weather under special instructions issued by the Railway Administration.
- RUNNING OF MOTOR TROLLEY IN IB LOCATION:

- i) Motor trolleys/Tower wagon/Material lorries are not likely to actuate the Axle counter correctly. When they are to run over the section split by Axle counters, the whole section to be treated as one and next train to be started after the last train has arrived complete.
- ii) In all other respects the working of a light motor trolley shall conform to the rules laid down for motor trolleys while running other block portion or following another light motor trolley or motor trolley.

## 7. BLOCKING OF LINES: -

Whenever a running line is blocked either by loose vehicles or by stabling train or by a train which is to cross or give precedence to another train, the points at either end should immediately be set against the blocked line except during shunting movement. 'Line Block' is to be activated on VDU by SM on duty following procedures as laid down in para no. 6.2.2. A clear remark in 'RED' ink shall be made immediately in the train signal register and a record shall be made in the Station Master's diary also. Stable load register is also to be maintained. The stable load or loose vehicles are to be secured to prevent rolling down of vehicles. [Refer SR 3.36.3(b), GR 5.23, SR5.04.01 (a) and SR 5.23.01(a)]

### 7.1 LINE BLOCK FEATURE IN VDU -

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

**7.2 SECURING OF VEHICLES:-**

No loads shall be stabled in non-isolated lines without a live locomotive is attached. As far as practicable, loose vehicles shall not be allowed to stand on the running line. However, under unavoidable circumstances, if it is necessary to detach vehicles from a train or to stable a train and leave them standing on running line, SM on duty shall be responsible to secure vehicles/stable loads in accordance with GR 5.23 and SR 5.23.01 to prevent rolling down of vehicles and arrest obstruction & fouling of line.

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

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

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

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

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

At stations where loading and unloading of goods is permitted whether full rake or part thereof, the station master shall ensure that no goods are left fouling any line before and after clearance of the rake from the line. The railway servant supervising loading and unloading shall also ensure that consignment does not foul any line vide SR 5.19.001: (a). If the stations are on gradients, the rake should be properly secured as detailed in SR 5.23.01.

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

**8.0 SHUNTING: -**

**8.1 GENERAL PRECAUTIONS: -** 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 movement shall be supervised by TMR/SS/SM, point man on duty vide SR 5.13.03 as the case may be.

In the event of any non-signaled movement, the SM on duty shall ensure physical verification of the clearance of the crossover points.

- (i) The staff supervising shunting shall ensure correct setting of both facing and trailing Points, clamping and pad locking of points, if necessary.
- (ii) No shunting shall be allowed at BRPL end unless sufficient No. of brakes are put on and all Precaution are taken to prevent vehicles getting out of control and a live locomotive is attached towards the falling gradient.

- (iii) Shunting shall be supervised by person as specified in 5.13 & 5.14 of G&SR.
- (iv) During shunting, it shall be ensured that visibility is clear and weather is fair.
- (v) During attachment & detachment of locomotive, wagon of the train shall be properly checked.

**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:**

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

**8.4 SHUNTING ON DOUBLE LINE:**

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

**8.5 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 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. However, for conducting shunting on signal, issuance of T/806 may be dispensed with.

**8.5.1 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 DN 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) **THE RULES TO BE OBSERVED IN THE EVENT OF ABNORMAL CONDITION: -**
- [I] **DURING PARTIAL INTERRUPTION/FAILURE OF ELECTRICAL COMMUNICATION INSTRUMENT: -**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.(Refer BWM Chapter-III & 6.16 and SR 6.02.06)
- [II] **THE AUTHORITY TO PROCEED IN THE OCCUPIED BLOCK SECTION IN CASE OF OBSTRUCTION OF LINE OR ACCIDENT: -**  
 In case, it is necessary to allow a train into an obstructed block section due to engine failure, obstruction or accident, a block ticket shall be issued in terms of SR 6.02.05 Absolute Block System on the affected block section shall be suspended and concurrence of the SM at other end shall be obtained and recorded in caution order register and train signal register SM's diary.  
 On the block ticket (T/A 602) it shall be mentioned in detail the place of obstruction i.e. Engine at Km., B/Van Km., whether the train is to return or to wait at the place of obstruction for the arrival of another following train(s) or to proceed to next station and to obey the site officer instructions.  
 A caution order shall be issued restricting the speed to 15 KMPH in day light hours when the visibility is clear and 10 KMPH at night or whenever clear view of 800 Mtrs. is not clear.  
 On arrival at the station the block ticket shall be collected with necessary endorsement from Loco pilot/TMR and cancelled and pasted to its record foil shall be sent to the issuing station for cancellation.  
 In case of accident/engineering block assurance from SSE/P.WAY concerned shall be obtained that the line is safe for movement of trains before resumption of normal working. When the obstruction is removed and assurance in writing is obtained from SSE/P.WAY concerned or TMR/Loco Pilot the SM on duty may resume normal working after exchanging proper messages supported by Private Number.
- [III] **TRAINS DELAYED IN BLOCK SECTION: -**  
 If a train carrying passenger does not arrive within 10 minutes or if a goods train does not arrive within 20 minutes after allowing for its normal running time from the station in rear, the SM at the station in advance shall immediately advise the station in rear and the control of this fact. SM shall stop the movement of trains on the adjacent line and issue caution order about the fact. There after SMs at either end of the Block section shall send one Railway servant into block section to collect the whereabouts of train, condition of train and nature of assistance, if any, required. SM on duty shall collect the full particulars from railway servant so deputed and intimate the same to SM at other of block section and to the section control simultaneously for taking action according to circumstances of the case. [Refer GR 6.04 & SRs thereto].
- [IV] **FAILURE/PASSING OF INTERMEDIATE BLOCK STOP SIGNAL AT ON: -**  
 Detailed is given in Appendix-'F'.
- [V] **FAILURE OF LV AXLE COUNTER: -**  
 Detail operation is given in Appendix 'B' of SWR.
- [VI] **FAILURE OF MTRC:-N/A**

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

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

(c) **CERTIFICATION OF CLEARANCE OF TRACK BEFORE CALLING-ON SIGNAL IS INITIATED.**

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

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

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

**9.1 TOTAL FAILURE OF COMMUNICATION:**

(A) **TOTAL FAILURE OF COMMUNICATION (SINGLE LINE):** -Not Applicable

(B) **TOTAL FAILURE OF COMMUNICATION (DOUBLELINE):**

In the event of total failure of communications between BRGA-BRPL and BRGA-DOBH 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 section 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 set.

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 TMR 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 in form T/C -602 train which shall include-
  - a) Authority to proceed without 'Line Clear'.
  - b) Authority to pass the Last Stop Signal at its "ON" position.
  - c) A caution order restricting the speed to 25KMPH by day when view ahead is clear and 10KMPH by night or when view ahead is not clear.
- (iii) No train shall be allowed to enter the Block Section until there is a clear interval of 30minutes between the train about to leave and the train, which has immediately proceeded.
- (iv) Fixed signals except the last stop signal may be taken "OFF" for the dispatch of the train and for the reception of the train at the next block station, reception signals may be taken off only after the train has been brought to a stand outside it.
- (v) On arrival at the next block station the Loco Pilot shall hand over the authority to proceed without line clear to the SM on duty who will preserve the same for further inspection.

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

## 9.2 **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 BRGA-BRPL and BRGA-DOBH. 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 IBS 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.
  - (vii) IBS shall be temporarily suspended.
- (d) SM on duty at the other end of the block section will acknowledge the message and confirm the same by a Private Number.
- (e) After obtaining line clear for the train from the advance station the Loco Pilot must be given as-.
  - (i) Authority for Temporary Single Line (TSL) working on double line (T-D/602) indicating there in
 

Caution order

    - The line on which single line working is introduced.
    - The kilometer of obstruction.
    - Any other speed restriction, if any existing.
    - Endorsement to inform all Gang man and Gatekeeper about the single line working (for the first train only).
    - The speed of the first train to be restricted to 25 KMPH subject to other speed restriction.
    - Authority to pass Signal in "ON" position
  - (ii) The approach stop signals at the station in advance may be taken "OFF". In case a train proceeding on wrong line, the train shall be piloted out and at the receiving station, the train shall be piloted 'IN', on the authority of T/510.

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

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

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

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

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 Loco Pilot of the previous train by the official –in-charge at the site and kept in the personal custody & shall be kept until the arrival of the next train and such assurance is given over the telephone installed at the site quoting the serial number of the Block Ticket so collected.
- e) SM will suspend the Absolute Block System of Working and both SMs concerned should arrange for running of trains on the authority of Block Ticket.
- f) SM at the dispatching end will hand over to the 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/TMR of the train and cancelled.

### 10. **VISIBILITY TEST OBJECT: -**

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

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

This is mentioned in the Appendix ‘E’ of the SWR. Essential equipment 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: -**

The station has been provided with double Distant signals which give adequate pre warning to the loco Pilot. Hence, placing of detonators in case of fog shall be dispensed with vide SR 3.61.01. However, Fog Signal Register shall be maintained as per GR 3.61

and Subsidiary Rules thereto. In charge of the station shall ensure that the information maintained in the register is kept Up to date and is accurate in all respects. 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.

**STATION DETONATOR REGISTER (OPT/124)**

A Register regarding detonator is maintained at the station.

**INSTRUCTIONS:**

(a) This register contains the following parts.

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

Part – II: Particulars of receipt and stock of detonating (fog) signals at the station to be filled in whenever detonators are used or received.

Part – III: Periods of fogs, fog signalmen on duty and details of detonators used.

Part – IV: Particulars of issue and testing of fog signals at the station.

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

(c) Transportation inspectors shall check the registers and also the stock of detonators on hand each time they visit the station and initial with date as an indication having done so.

**CERTIFICATE:-**

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

**LIST OF APPENDICES**

|              |    |                                                                                      |
|--------------|----|--------------------------------------------------------------------------------------|
| APPENDIX 'A' | -- | WORKING OF L.C. GATES.                                                               |
| APPENDIX 'B' | -- | SYSTEM OF SIGNALLING AND INTERLOCKING AND COMMUNICATION ARRANGEMENTS AT THE STATION. |
| APPENDIX 'C' | -- | ANTI COLLOSION DEVICE (RAKSHA KAVACH).                                               |
| APPENDIX 'D' | -- | DUTIES OF TRAIN PASSING STAFF AND STAFF IN EACH SHIFT.                               |
| APPENDIX 'E' | -- | ESSENTIAL EQUIPMENTS OF STATION.                                                     |
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| APPENDIX 'G' | -- | WORKING OF TRAINS IN ELECTRIFIED SECTIONS.                                           |

**APPENDIX – ‘A’**

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

**1.0 GATE WORKING INSTRUCTIONS OF “A” CLASS TRAFFIC INTERLOCKED LEVEL CROSSING GATE NO. JT-47 AT KM.605/25-27(UP), 605/26-28 (DN)IN BARGARH ROAD YARD AT BRPL END.**

**1.1. GENERAL DESCRIPTION:-**

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

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

|     |                                                                 |                                                        |
|-----|-----------------------------------------------------------------|--------------------------------------------------------|
| 1.  | Number of Level Crossing Gate:                                  | JT-47                                                  |
| 2.  | Engineering or Traffic Gate:                                    | Traffic                                                |
| 3.  | Under control of Station Master/SSE(P.WAY)                      | SM/BRGA                                                |
| 4.  | Location at KM:                                                 | 605/25-27(UP), 605/26-28 (DN)                          |
| 5.  | At Station:                                                     | BARGARH ROAD.                                          |
| 6.  | In between stations:                                            | BRGA-BRPL                                              |
| 7.  | BG/MG/NG:                                                       | BG                                                     |
| 8.  | Single line / Double line / Multiple line:                      | Double Line                                            |
| 9.  | Normal Position:                                                | Open to Road Traffic.                                  |
| 10. | Interlocked / Non-Interlocked:                                  | Inter locked.                                          |
| 11. | Means of Interlocking                                           | STN Stop signals.                                      |
| 12. | Provision of Gate signal at Kms.                                | NIL                                                    |
| 13. | Signaling arrangements:                                         | Interlocked with station signals                       |
| 14. | Means of communications /Telephone with or without Voice logger | Push button Telephone connection with SM/BRGA          |
| 15. | Width of level crossing gate:                                   | 7.5 M.                                                 |
| 16. | Type of road (NH/SH/Others):                                    | Others                                                 |
| 17. | Name of Road:                                                   | Kumbari Road                                           |
| 18. | Metalled / non-metalled:                                        | Metaled.                                               |
| 19. | Approach road:                                                  | Metaled                                                |
| 20. | Width of the road:                                              | 7.5 M                                                  |
| 21. | Angle of road crossing (in case of the skew gates):             | NIL                                                    |
| 22. | Road gradient (if any)                                          | North/East side: Level<br>South/West side: Level       |
| 23. | Road alignment (straight/curve)                                 | North/East side: Straight<br>South/West side: Straight |
| 24. | Provision of height gauges:                                     | Provided                                               |
| 25. | Type of Barriers:                                               | Electrical Lifting Barrier along with sliding boom.    |
| 26. | Length of Check rails:                                          | 10 M                                                   |
| 27. | Road surface in between LC gates:                               | C.C Blocks                                             |
| 28. | Length of Rumble strip / speed breakers:                        | 7.5 M                                                  |
| 29. | Road signs:                                                     | Provided                                               |

|     |                                                        |                     |
|-----|--------------------------------------------------------|---------------------|
| 30. | Speed breaker indication board:                        | Provided            |
| 31. | TVU:                                                   | 41720 as on 12/2024 |
| 32. | Census next due on:                                    | 12/2027             |
| 33. | Demarcation for placement of Detonators:               | Provided            |
| 34. | No. of Gatekeeper s working:                           | 03 (08 Hours Shift) |
| 35. | Nearest Railway Medical Assistance                     | SBP.                |
| 36. | Nearest Private Medical Assistance available (if any): | BRGA                |
| 37. | List of equipment available Yes / No:                  | Yes                 |

### 1.2 EQUIPMENTS AT THE L.C.GATE-

| Sl. No. | Description                                                           | Requirement                                 | To be used as                                                                                |
|---------|-----------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------|
| 1.      | LED based Tri colour hand signal lamps                                | Two                                         | One for use and another for spare.                                                           |
| 2.      | Green Hand Signal Flag                                                | One flag mounted on sticks                  | To hold in furled condition while passing train.                                             |
| 3.      | Red Hand Signal Flag                                                  | Two flags mounted on sticks.                | One to hold in furled condition and another for spare.                                       |
| 4.      | Red Banner Flag mounted with sticks.                                  | Double line – 2                             | In case of obstruction, one flag each is to be displayed on either side of line.             |
| 5.      | Spare chains with padlocks.                                           | 2 chains with 2 padlocks.                   | For securing gate against road traffic in case of gate boom cannot be closed.                |
| 6.      | Stop Boards.                                                          | 2 retro reflective stop boards with stands. | To display towards road traffic when gate is secured by gate chains due to failure of booms. |
| 7.      | Padlock                                                               | One                                         | To lock the door of the gate lodge in case of necessity.                                     |
| 8.      | Detonators.                                                           | Ten (10) in a tin case.                     | For use in case of obstruction of track.                                                     |
| 9.      | Tommy Bar                                                             | One                                         | For leveling the soil surface or to clean the channels of rails.                             |
| 10.     | Bucket                                                                | One                                         | To keep water.                                                                               |
| 11.     | Whistle                                                               | One                                         | For alerting road users on approach of train and LP/ TMR to call their attention.            |
| 12.     | Wall Clock                                                            | One                                         | To note down the timings in PN/Log book.                                                     |
| 13.     | A small size chain for use in case of failure of gate boom/leaf lock. | Two                                         | For securing boom in closed condition in case of failure of boom lock.                       |

**1.3 RECORDS TO BE KEPT AT GATE LODGE:**

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

- i) Gate working Instructions in Hindi / English.
- ii) Gate working instructions in local vernacular language.
- iii) Gatekeeper Rule Book in local vernacular language.
- iv) List for tools and books.
- v) Duty Roster.
- vi) Certificate for working as Gateman
- vii) Bio-data particulars of Gateman, including date of passing vision test, Initial/refresher course.
- viii) Accident Register.
- ix) Record of last census of road traffic at level crossing gate.
- x) Public Complaint Book.
- xi) Inspection Book.

**1.4 DUTIES OF GATEKEEPER :****1. ALERTNESS:**

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

**2. POSITION OF GATEKEEPER DURING PASSAGE OF TRAINS:**

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

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

**3. ROUTINE DUTIES OF GATEKEEPER :**

- i) Gatekeeper shall ensure that red banner flag by day and red light by night is placed across the track in case of emergency and obstruction on the track.
- ii) Gatekeeper shall ensure that all gate light and hand signal lights are lighted and kept burning continuously from sunset to sunrise.
- iii) Gatekeeper shall perform his duties strictly according to the duty roster and shall not leave the gate unless his reliever arrives and takes over charge from him. However, if it is necessary to leave the gate in an emergency, he must close and lock the gate against road traffic, before leaving the gate.
- iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- v) Gatekeeper shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle/wagons /trains/battery/box on fire, shifted load, falling material like brake blocks, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.
- vi) Gatekeeper shall also be prepared to repeat any signal which BRPL may give to Loco Pilot.
- vii) If lifting barriers get damaged or becomes out of order, the Gatekeeper shall use the spare chain with disc and padlocks for securing the gate against road traffic.

- viii) Gatekeeper shall report to the nearest Station Master, Gang mate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- ix) Gatekeeper shall wear badge and prescribed uniform while on duty at level crossing gate.
- x) Gatekeeper shall ensure that he is having competency certificate in his possession while on duty.
- xi) Gatekeeper shall work the gate as per gate working instructions and remain well conversant with these instructions.
- xii) Gatekeeper shall ensure that equipments supplied at the gate is in good order and ready for immediate use.
- xiii) Gatekeeper shall see that the channel for the flange of the wheel is kept clear.
- xiv) Gatekeeper must keep the road surface well-watered and rammed in case of non-metalled roads.
- xv) Gatekeeper must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- xvi) Gatekeeper shall prevent tress passing by persons or cattle to the maximum extent.
- xvii) Gatekeeper on electrified section shall watch that road vehicles/animals passing from gate are within the height loading gauge provided on either side of the Level crossing gate.
- xviii) Before opening the gate, he shall ensure that the train has passed complete over the level crossing by observing the last vehicle indicator of the train.
- xix) In the event of gate signal becoming defective the gatekeeper shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.

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

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

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

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

- i) In case of an obstruction at the level crossing gate, Gate Keeper shall maintain the gate signals, if any, in the 'ON' position by normalizing slot switch/signal knob.
- ii) Thereafter, if he is unable to remove the obstruction, Gate Keeper shall immediately inform the Station Master on duty, by telephone, regarding the defects/obstructions at the gate, under exchange of private number.

- iii) If there is no response from the Station Master after two or three attempts he shall first protect the gate and then inform on phone.

**THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER: -**

**(A) ON ELECTRIFIED SECTION:-**

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

**(B) PROTECTION ON DOUBLE LINE:-**

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

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

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

**1.5 ENGINEERING ITEMS:****(i) Visibility:-**

| Direction | Side  | Visibility Distance |
|-----------|-------|---------------------|
| UP        | Right | 1000 m.             |
|           | Left  | 1000 m.             |
| DN        | Right | 1000 m.             |
|           | Left  | 1000 m.             |

- (ii) Speed Breaker: - Speed Breakers of approved design are provided on either side of the Level crossing gate.
- (iii) Periodical Census of traffic has been taken and the latest TVU is 41720 as on 12/2024.

**1.6 SPECIAL INSTRUCTIONS****1. MODE OF OPERATION:**

This is an interlocked L.C. Gate situated at the BRPL end of the yard in between UP Starter & UP ADV Starter of BARGARH ROAD station. Telephone communication is provided between the L. C. gate lodge and SM office of BARGARH ROAD Station. The level crossing gate is of lifting barrier type and motor operated by means of motor from panel provided at the gate lodge. The normal position of the gate is open to road traffic. The key 'P' of the LC normally remains locked in the Panel when the gate is in open condition.

When it is necessary to close the gate, for taking off signals, the SM on duty shall inform the gatekeeper to close and lock the gate. The gatekeeper on duty shall close the barriers of the LC gate by operating the RED push button provided on the panel. Gatekeeper will keep the red push button till gate is closed & locked against road traffic and the red indication appears on the panel. Then key 'P' is to be extracted from EKT-1 and inserted in EKT-2. This Key 'P' will be transmitted electrically to SM VDU in conjunction with switch GS reversed to control concerned UP & DN signals, Switch 'GS' is provided in the panel to put back the concerned signal to 'ON' in case of emergency.

After passage of the Train, the SM on duty shall inform the gatekeeper and press LC gate controlling button No.82 and group button (trans) and the gatekeeper extracts the control key 'P' from the EKT-2 and insert in EKT-1. Keeping the switch GS in normal position the gatekeeper will get a gate free indication on panel and subsequently the gate can be opened by pressing the GREEN push button till gate is fully opened. The LC gate shall be so worked as to cause least possible inconvenience to the vehicular traffic consistence with safety as per subsidiary rule 16.03.01 (a).

During Non-Interlocking working the Traffic Gatekeeper shall be informed and the Train shall be passed in terms of SR 3.69.02, 3.69.03 and 3.70.01 after ensuring correct closing and locking of L.C Gate. During this period the L.C Gate shall be opened only when necessary and safe to do so.

Incase, of failure in extracting key-'P' from EKT, one emergency key 'Q' mechanically free & electrically proved is provided in a red sealed glass box and the barriers are to be opened by manual operation of lifting barriers by crank handling. Concerned signals will be put back to "ON" position when emergency key 'Q' is extracted from EKT-3. The date and time of breaking the sealed cover of Emergency Key Box shall be recorded and signed with reasons by the gateman. During Down reception, and UP dispatch once L.C. gate is closed and key 'P' is transmitted

electrically to SM, Gate control-82 can be released after passage of train through sequential occupation and clearance of concerned Axle counter track section.

#### **WORKING OF SLIDING BOOM BARRIER :-**

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 gatekeeper shall release electro-mechanically free Key 'S3' from " EKT- 5 " provided in the gate lodge. Extraction of Key "S3" from the EKT will put back the road signals to danger and the hooter will sound simultaneously.
- c. The gatekeeper shall insert the Key "S3" 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 "SB-1" (Sliding Barrier-1) attached to the lock post. Key SB -1 when released locks the far end sliding boom.
- d. The near end sliding boom is normally in padlocked condition and the Key SB-1 is in the custody of gateman. The gatekeeper 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 "SB-1" concurrently.  
This will also release key "SB-2" (Sliding Barrier-2) attached to the near end lock post. Key SB-2 when extracted locks the far end sliding boom and Key "SB-1". This key "SB-2" is to be transmitted to SM by inserting it in "EKT- 4" provided in the gate lodge in conjunction with the GS (Gate Slot) switch provided in the gate lodge to enable the SM on duty to take off concerned signals.
- e. In case of any damage to sliding boom when it is in closed condition to road traffic, leading to infringement or obstruction on track, the gatekeeper shall normalize the switch GS to put back the concerned signals to danger.
- f. After passage of train, SM on duty shall transmit the gate Key. The gatekeeper shall extract SB-2 Key from EKT- 4, normalize the switch GS, unlock the sliding boom and operate the gears in reverse sequence of operation to normalize the sliding boom.

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

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

### **OPERATION OF ELECTRIC LIFTING BARRIER DURING 110/24 V DC POWER FAILURE:-**

(Hand Generator Mode-During Power Failure)

In case of power failure (110/24 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.

1. 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.
2. 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 110/24 V DC POWER SUPPLY AS WELL AS HAND GENERATOR FAILS:-** (During Power Failure and failure of hand generator)

In case of failure of 110/24 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 EKT 'H', 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 nos) - 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 nos) 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 27 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 the event of failure of reception and dispatch signals or during Non-Interlocking working the Traffic Gatekeeper shall be informed and the train shall be passed in terms of SR 3.69.02, 3.69.03 and 3.70.01 after ensuring correct closing and locking of L.C Gate.

During this period the L.C Gate shall be opened only when necessary and safe to do so. The LC gate shall be so worked as to cause least possible inconvenience to the vehicular traffic in consistence with safety as per subsidiary rule 16.03.01 (a).

## 2. **INTIMATION TO GATEMAN-**

- i) Before taking off reception/departure signals, Station Master/BARGARH ROAD shall inform the gateman, the number, description, and direction of the train.
- ii) The gatekeeper shall close the gate and transfer the key to the Station Master/BARGARH ROAD
- 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 Station Master/BARGARH ROAD must ensure that the train is ready for departure in all respects before he advises the gatekeeper 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 or to perform 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.

## 1.7 **FAILURE OF TELEPHONIC COMMUNICATION**

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

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

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

### 1.8 **FAILURE OF LIFTING BARRIERS:**

- i) When the gate cannot be closed due to failure of lifting barriers of the gate, the gatekeeper will immediately inform the Station Master on duty, He shall then resort to operate the sliding boom for closing of the gate. If both of them fails, then he shall follow the following procedure, under exchange of private number, and ensure that lifting barriers of the 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) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks.
- iv) After securing the gate against road traffic, Gatekeeper shall show green hand signal flag by day and green light at night to the Loco Pilot of the approaching train.
- v) Station Master/BRGA on duty shall issue caution order to the Loco Pilot of departing train.
- vi) He shall also advise the Station Master at the other end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vii) Station Master/BRGA shall advise maintenance staff responsible for maintenance of lifting barriers to rectify the defect at the earliest.
- viii) Normal working will be resumed only after maintenance staff rectify the lifting barrier and issue reconnection/ fit memo for the same.

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

### 1.9 **FAILURE OF GATE WHEN THE GATE IS CLOSED POSITION AND CANNOT BE OPENING THE GATE FROM THE GATE PANEL: -**

- (i) If the gate cannot be opened then gatekeeper must immediately inform the Station Master on duty on telephone, under exchange private number.
- (ii) For emergency opening of the gate, he will extract key-'Q' from EKT kept in the red sealed glass box which is mechanically free & electrically proved. Concerned signals will be put back to "ON" position when emergency key is extracted. The date and time of breaking the sealed cover of emergency key box shall be recorded and signed with reason by the gatekeeper.
- (iii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- (iv) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- (v) He shall also advise the Station Master at the other end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vi) Station Master shall advise S & T staff responsible for maintenance of transmitter to rectify the defect at the earliest.
- (vii) Normal working will be resumed only after S & T staff repairs the pedestal/gate operating panel/key transmitter and issue reconnection/ fit memo for the same.

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

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

**1.11. OBSTRUCTION AT THE GATE:-**

- i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gatekeeper shall immediately fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gatekeeper shall advise the Station Master/BRGA on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) Station Master/BRGA on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- iv) If there is no response from the Station Master/BRGA after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gatekeeper shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gatekeeper under item No.1.4. (5).
- vi) Thereafter he shall protect the gate from the other direction also.
- vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and reply these details to the Station Master/BRGA who shall not start the trains unless he has been assured by the gatekeeper that the road vehicle or the lifting barriers are not fouling the track.
- viii) The Station Master/BRGA shall also inform the Station Master/BRPL at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the gatekeeper shall inform the Station Master/BRGA accordingly, under exchange of private number.

- x) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
- xi) Station Master/BRGA shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- xii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

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

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gatekeeper, the gatekeeper and Station Master/BRGA will adopt the procedure given under item No. 1.11 above. If the obstruction fouls the level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstruction.

**1.13 ACCIDENTAL ROLLING DOWN OF TRAIN:-**

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

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

**CERTIFICATE: -**

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

**2.0 GATE WORKING INSTRUCTIONS OF “B2” CLASS TRAFFIC INTERLOCKED LEVEL CROSSING GATE AT KM.606/3-5(UP), 606/4-6(DN)(LC NO. JT-48) IN BARGARH ROAD YARD AT BRPL END.**

**2.1. GENERAL DESCRIPTION:-**

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

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

|     |                                                                 |   |                                   |
|-----|-----------------------------------------------------------------|---|-----------------------------------|
| 1.  | Number of level crossing gate                                   | : | JT-48                             |
| 2.  | Engineering or Traffic Gate                                     | : | Traffic                           |
| 3.  | Under control of Station Master or SSE(P.WAY)                   | : | SM/BRGA                           |
| 4.  | Location at KM                                                  | : | 606/3-5(UP), 606/4-6(DN)          |
| 5.  | At station                                                      | : | BARGARH ROAD                      |
| 6.  | In between station                                              | : | BRGA-BRPL                         |
| 7.  | BG/MG/NG                                                        | : | BG                                |
| 8.  | Single line/Doubling Line/Multiple Line                         | : | Double line                       |
| 9.  | Normal position                                                 | : | Open to road traffic              |
| 10. | Interlocked/Non-interlocked                                     | : | Interlocked                       |
| 11. | Means of interlocking                                           | : | STN Stop signals                  |
| 12. | Provision of gate Signal at Kms                                 | : | NIL                               |
| 13. | Signaling arrangement                                           | : | MACLS                             |
| 14. | Means of communications /Telephone with or without Voice logger | : | Telephone connection with SM/BRGA |
| 15. | Width of Level Crossing Gate                                    | : | 5.5 MTRS                          |
| 16. | Type of Road (NH/SH/Others)                                     | : | Others                            |
| 17. | Name of Road                                                    | : | Village Road                      |
| 18. | Metaled/Non Metaled                                             | : | Metaled                           |
| 19. | Approach Road                                                   | : | Metaled                           |
| 20. | Width of the Road                                               | : | 5.5 MTRS.                         |
| 21. | Angle of Road Crossing (in case of the SKEW gates)              | : | NIL                               |
| 22. | Road Gradient (if any)                                          | : | (a) North/East side – 1 in 35     |
|     |                                                                 | : | (b) South/West side –1 in 35      |
| 23. | Road alignment (straight/curve)                                 | : | (a) North/East side – Straight    |
|     |                                                                 | : | (b) South/West side - Straight    |
| 24. | Provision of height gauge                                       | : | Provided                          |
| 25. | Type of Barrier                                                 | : | Electrical Lifting barrier        |
| 26. | Length of check Rail                                            | : | 9.5 MTRS.                         |
| 27. | Road surface in between LC gates.                               | : | CC Blocks                         |
| 28. | Length of Rumble strip/speed breakers.                          | : | 5.5 MTRS                          |
| 29. | Road Signs                                                      | : | Provided                          |
| 30. | Speed breakers indication board                                 | : | Provided.                         |
| 31. | TVU                                                             | : | 21347 on 02/2022                  |
| 32. | Census next due on                                              | : | 02/2025                           |
| 33. | Demarcation for placement of detonators.                        | : | Provided.                         |
| 34. | No. of Gatekeepers working                                      | : | 02 (12 Hours shift)               |
| 35. | Nearest Railway Medical Assistance                              | : | SBP                               |
| 36. | Nearest Private Medical Assistance available (if any)           | : | BRGA                              |
| 37. | List of equipment available Yes / No                            | : | YES                               |

**2.2 EQUIPMENTS AT THE L.C.GATE-**

| Sl. No. | Description                                                           | Requirement                                 | To be used as                                                                                |
|---------|-----------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------|
| 1.      | LED based Tri colour hand signal lamps                                | Two                                         | One for use and another for spare.                                                           |
| 2.      | Green Hand Signal Flag                                                | One flag mounted on sticks                  | To hold in furled condition while passing train.                                             |
| 3.      | Red Hand Signal Flag                                                  | Two flags mounted on sticks.                | One to hold in furled condition and another for spare.                                       |
| 4.      | Red Banner Flag mounted with sticks.                                  | Double line – 2                             | In case of obstruction, one flag each is to be displayed on either side of line.             |
| 5.      | Spare chains with padlocks.                                           | 2 chains with 2 padlocks.                   | For securing gate against road traffic in case of gate boom cannot be closed.                |
| 6.      | Stop Boards.                                                          | 2 retro reflective stop boards with stands. | To display towards road traffic when gate is secured by gate chains due to failure of booms. |
| 7.      | Padlock                                                               | One                                         | To lock the door of the gate lodge in case of necessity.                                     |
| 8.      | Detonators.                                                           | Ten (10) in a tin case.                     | For use in case of obstruction of track.                                                     |
| 9.      | Tommy Bar                                                             | One                                         | For leveling the soil surface or to clean the channels of rails.                             |
| 10.     | Bucket                                                                | One                                         | To keep water.                                                                               |
| 11.     | Whistle                                                               | One                                         | For alerting road users on approach of train and LP/ TMR to call their attention.            |
| 12.     | Wall Clock                                                            | One                                         | To note down the timings in PN/Log book.                                                     |
| 13.     | A small size chain for use in case of failure of gate boom/leaf lock. | Two                                         | For securing boom in closed condition in case of failure of boom lock.                       |

**2.3 RECORDS TO BE KEPT AT GATE LODGE:**

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

- i) Gate working Instructions in Hindi / English.
- ii) Gate working instructions in local vernacular language.
- iii) Gatekeeper Rule Book in local vernacular language.
- iv) List for tools and books.
- v) Duty Roster.
- vi) Certificate for working as Gateman

- vii) Bio-data particulars of Gateman, including date of passing vision test, Initial/refresher course.
- viii) Accident Register.
- ix) Record of last census of road traffic at level crossing gate.
- x) Public Complaint Book.
- xi) Inspection Book.

## **2.4 DUTIES OF GATEKEEPER :**

### **1. ALERTNESS:**

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

### **2. POSITION OF GATEKEEPER DURING PASSAGE OF TRAINS:**

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

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

### **3. ROUTINE DUTIES OF GATEKEEPER :**

- i) Gatekeeper shall ensure that red banner flag by day and red light by night is placed across the track in case of emergency and obstruction on the track.
- ii) Gatekeeper shall ensure that all gate light and hand signal lights are lighted and kept burning continuously from sunset to sunrise.
- iii) Gatekeeper shall perform his duties strictly according to the duty roster and shall not leave the gate unless his reliever arrives and takes over charge from him. However, if it is necessary to leave the gate in an emergency, he must close and lock the gate against road traffic, before leaving the gate.
- iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- v) Gatekeeper shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle/wagons /trains/battery/box on fire, shifted load, falling material like brake blocks, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.
- vi) Gatekeeper shall also be prepared to repeat any signal which BRPL may give to Loco Pilot.
- vii) If lifting barriers get damaged or becomes out of order, the Gatekeeper shall use the spare chain with disc and padlocks for securing the gate against road traffic.
- viii) Gatekeeper shall report to the nearest Station Master, Gang mate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- ix) Gatekeeper shall wear badge and prescribed uniform while on duty at level crossing gate.
- x) Gatekeeper shall ensure that he is having competency certificate in his possession while on duty.
- xi) Gatekeeper shall work the gate as per gate working instructions and remain well conversant with these instructions.

- xii) Gatekeeper shall ensure that equipments supplied at the gate is in good order and ready for immediate use.
- xiii) Gatekeeper shall see that the channel for the flange of the wheel is kept clear.
- xiv) Gatekeeper must keep the road surface well-watered and rammed in case of non-metalled roads.
- xv) Gatekeeper must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- xvi) Gatekeeper shall prevent tress passing by persons or cattle to the maximum extent.
- xvii) Gatekeeper on electrified section shall watch that road vehicles/animals passing from gate are within the height loading gauge provided on either side of the Level crossing gate.
- xviii) Before opening the gate, he shall ensure that the train has passed complete over the level crossing by observing the last vehicle indicator of the train.
- xix) In the event of gate signal becoming defective the gatekeeper shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.

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

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

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

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

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

#### **THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER:**

##### **(A) ON ELECTRIFIED SECTION:-**

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

- ii) As soon as it is noticed that, Pantograph of an electric rolling stock getting damaged and/or entanglement of the same with the OHE, he shall make every possible effort to stop the train and immediately inform SM on duty.
- iii) Any damage to the track or structures of the OHE comes to the notice of on duty GK, he shall immediately inform SM on duty and take all necessary measure for protection of the line as under,

**(B) PROTECTION ON DOUBLE LINE:-**

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

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

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

**2.5 ENGINEERING ITEMS:**

- (i) **Visibility:-**

| Direction | Side  | Visibility Distance |
|-----------|-------|---------------------|
| UP        | Right | 1000m.              |
|           | Left  | 1000m.              |
| DN        | Right | 1000m.              |
|           | Left  | 1000m.              |

- 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 21347 on 02/2022.

## 2.6 SPECIAL INSTRUCTIONS

### 1. MODE OF OPERATION:

This is an interlocked L.C. Gate situated at the BRPL end of the yard in between point No 52A & DN HOME of BARGARH ROAD station. Telephone communication is provided between the L C. gate lodge and SM office of BARGARH ROAD Station. The level crossing gate is of lifting barrier type and motor operated by means of motor from panel provided at the gate lodge. The normal position of the gate is open to road traffic. The key 'P' of the LC normally remains locked in the Panel when the gate is in open condition.

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

After passage of the Train, the SM on duty shall inform the gatekeeper and press LC gate controlling button No.80 and group button (trans) and the gatekeeper extracts the control key 'G' from the EKT-2 and insert in EKT-1. Keeping the switch GS in normal position the gatekeeper will get a gate free indication on panel and subsequently the gate can be opened by pressing the GREEN push button till gate is fully opened. The LC gate shall be so worked as to cause least possible inconvenience to the vehicular traffic consistence with safety as per subsidiary rule 16.03.01 (a).

During Non-Interlocking working the Traffic Gatekeeper shall be informed and the Train shall be passed in terms of SR 3.69.02, 3.69.03 and 3.70.01 after ensuring correct closing and locking of L.C Gate. During this period the L.C Gate shall be opened only when necessary and safe to do so.

In case of failure in extracting key-'G' from EKT, one emergency key 'H' mechanically free & electrically proved is provided in a red sealed glass box and the barriers are to be opened by manual operation of lifting barriers by crank handling. Concerned signals will be put back to "ON" position when emergency key 'H' is extracted from EKT-3. The date and time of breaking the sealed cover of Emergency Key Box shall be recorded and signed with reasons by the gateman. During DN reception and dispatch, once L.C. Gate is closed and key 'G' is transmitted electrically to SM Gate control No.80 can be released after passage of train through sequential occupation and clearance of concerned track section.

### 2. WORKING OF SLIDING BOOM BARRIER :-

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 gatekeeper shall release electro-mechanically free Key 'S2' from " EKT- 5 " provided in the gate lodge. Extraction of Key "S2" from the EKT will put back the road signals to danger and the hooter will sound simultaneously.
- c. The gatekeeper shall insert the Key "S2" 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 "SB-1" (Sliding Barrier-1) attached to the lock post. Key SB -1 when released locks the far end sliding boom.
- d. The near end sliding boom is normally in padlocked condition and the Key SB-1 is in the custody of gateman. The gatekeeper 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 "SB-1" concurrently. This will also release key "SB-2" (Sliding Barrier-2) attached to the near end lock post. Key SB-2 when extracted locks the far end sliding boom and Key "SB-1". This key "SB-2" is to be transmitted to SM by inserting it in "EKT- 4" provided in the gate lodge in conjunction with the GS (Gate Slot) switch provided in the gate lodge to enable the SM on duty to take off concerned signals.
- e. In case of any damage to sliding boom when it is in closed condition to road traffic, leading to infringement or obstruction on track, the gatekeeper shall normalize the switch GS to put back the concerned signals to danger.
- f. After passage of train, SM on duty shall transmit the gate Key. The gatekeeper shall extract SB-2 Key from EKT- 4, normalize the switch GS, unlock the sliding boom and operate the gears in reverse sequence of operation to normalize the sliding boom.

In the event of failure of reception and dispatch signals or during Non-Interlocking working the Traffic Gatekeeper shall be informed and the Train shall be passed in terms of SR 3.69.02, 3.69.03 and 3.70.01 after ensuring correct closing and locking of L.C Gate. During this period the L.C Gate shall be opened only when necessary and safe to do so. The LC gate shall be so worked as to cause least possible inconvenience to the vehicular traffic consistence with safety as per subsidiary rule 16.03.01 (a).

**OPERATION OF ELECTRIC LIFTING BARRIER DURING 110/24 V DC POWER FAILURE:-**

(Hand Generator Mode-During Power Failure)

In case of power failure (110/24 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.

1. Put the Mode selector switch on the panel to MANUAL position.
2. 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.

3. 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 110/24 V DC POWER SUPPLY ASWELL AS HAND GENERATOR FAILS:-**

(During Power Failure and failure of hand generator)

In case of failure of 110/24 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 EKT 'H', 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 nos) - 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 nos) 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 27 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 the event of failure of reception and dispatch signals or during Non-Interlocking working the Traffic Gatekeeper shall be informed and the train shall be passed in terms of SR 3.69.02, 3.69.03 and 3.70.01 after ensuring correct closing and locking of L.C

Gate. During this period the L.C Gate shall be opened only when necessary and safe to do so. The LC gate shall be so worked as to cause least possible inconvenience to the vehicular traffic in consistence with safety as per subsidiary rule 16.03.01 (a).

3. **INTIMATION TO GATKEEPER: -**

- i) Before taking off reception/ departure signal Station Master/BRGA shall inform the gatekeeper, the number, description, and direction of the train.
- ii) The gatekeeper shall close the gate and transfer the key to the Station Master/BRGA
- 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 Station Master/BRGA must ensure that the train is ready for departure in all respects before he advises the gatekeeper 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.

2.7 **FAILURE OF TELEPHONIC COMMUNICATION**

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

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

2.8 **FAILURE OF LIFTING BARRIERS:**

- (i) When the gate cannot be closed due to failure of lifting barriers of the gate, the gatekeeper will immediately inform the Station Master on duty, He shall then resort to operate the sliding boom for closing of the gate. If both of them fails, then he shall follow the following procedure, under exchange of private number, and ensure that lifting barriers of the 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) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks.
- (iv) After securing the gate against road traffic, Gatekeeper shall show green hand signal flag by day and green light at night to the Loco Pilot of the approaching train.
- (v) Station Master/BRGA on duty shall issue caution order to the Loco Pilot of departing train.
- (vi) He shall also advise the Station Master at the other end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vii) Station Master/BRGA shall advise maintenance staff responsible for maintenance of lifting barriers to rectify the defect at the earliest.
- (viii) Normal working will be resumed only after maintenance staff rectify the lifting barrier and issue reconnection/ fit memo for the same.

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

## **2.9 FAILURE OF GATE WHEN THE GATE IN CLOSED POSITION AND CANNOT BE OPENING THE GATE FROM THE GATE PANEL: -**

- (i) If the gate cannot be opened then gatekeeper must immediately inform the Station Master on duty on telephone, under exchange private number.
- (ii) Switch GS (Gate Slot) should be in normal position. If the gate cannot be opened from the Gate panel, emergency direct crank handle operation has to be done. The gatekeeper on duty shall obtain permission from SM on duty under exchange of private number for breaking the seal for emergency operation. For this operation, a Red sealed glass box is provided at the gate lodge. A crank handle welded with EKT-H is provided in the sealed box. After breaking the seal, the EKT-H has to be taken out from the box which is mechanically free. Unlock the Barrier 'A' and Barrier 'B' by crank handle. Then the crank handle is to be inserted into the hole provided in the mechanism box rear door. For opening the barrier, rotate the crank handle anti clock wise direction. As soon as the crank handle is inserted electrical operation is automatically cut off and remains cut off till crank handle is removed from the hole. In addition to above facilities, individual operation of barriers is also provided. For individual barrier operation, barrier "A" and "B" can be operated from pedestal individually.
- (iii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- (iv) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- (v) He shall also advise the Station Master at the other end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vi) Station Master shall advise S & T staff responsible for maintenance of transmitter to rectify the defect at the earliest.
- (vii) Normal working will be resumed only after S & T staff repairs the pedestal/gate operating panel/key transmitter and issue reconnection/ fit memo for the same.

## **2.10 FAILURE OF GATE WHEN THE GATE IN OPEN CONDITION:**

- i) If the gate cannot be closed from Gate panel then gatekeeper must immediately inform the Station Master on duty on telephone, under exchange of private number.
- ii) The gatekeeper on duty shall obtain permission from SM on duty under exchange of private number for breaking the seal for emergency operation. For this operation, a Red

sealed glass box is provided at the gate lodge. A crank handle welded with EKT-H is provided in the sealed box. After breaking the seal, the EKT-H has to be taken out from the box which is mechanically free. Then the crank handle is to be inserted into the hole provided in the mechanism box rear door. For closing the barrier, rotate the crank handle clock wise direction. As soon as the crank handle is inserted electrical operation is automatically cut off and remains cut off till crank handle is removed from the hole. In addition to above facilities, individual operation of barriers are also provided. For individual barrier operation, barrier “A” and “B” can be operated from pedestal individually.

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

## **2.11 OBSTRUCTION AT THE GATE:-**

- i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gatekeeper shall immediately normalize GS switch to put back concerned signals and then fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gatekeeper shall advise the Station Master/BRGA on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) Station Master/BRGA on duty shall be advised to put the reception/departure signals back to ‘ON’ position, if taken ‘OFF’ for a train.
- iv) If there is no response from the Station Master/BRGA after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gate Keeper 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 Gate Keeper 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/BRGA who shall not start the trains unless he has been assured by the Gate Keeper that the road vehicle or the lifting barriers are not fouling the track.
- viii) The Station Master/BRGA shall also inform the station Master/BRPL at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the Gate Keeper shall inform the Station Master/BRGA accordingly, under exchange of private number.
- x) Gate Keeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
- xi) Station Master/BRGA shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.

- xii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.
- xiii) Station Master/BRGA 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 Gate Keeper, if the gate is broken, but is clear of any obstruction.

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

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gatekeeper and Station Master will adopt the procedure given under item No.2.11 above. If the obstruction fouls the Level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstruction.

**2.13 ACCIDENTAL ROLLING DOWN OF TRAIN:-**

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

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

**CERTIFICATE: -**

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

### 3.0 WORKING INSTRUCTIONS FOR 'B2' CLASS ENGG. NON-INTERLOCKED LEVEL CROSSING GATE No. JT-49 AT KM 608/3-5(UP) & 608/4-6(DN) IN BETWEEN BRGA-BRPL

#### 3.1 GENERAL INSTRUCTIONS-

##### 3.1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

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

|     |                                                                 |   |                                                                  |
|-----|-----------------------------------------------------------------|---|------------------------------------------------------------------|
| 1.  | Number of level crossing gate                                   | : | JT-49                                                            |
| 2.  | Engineering or Traffic Gate                                     | : | Engineering                                                      |
| 3.  | Under control of Station Master or SSE(P.WAY)                   | : | SSE(P.WAY)                                                       |
| 4.  | Location at KM                                                  | : | 608/3-5(UP), 608/4-6(DN)                                         |
| 5.  | At station                                                      | : | ----                                                             |
| 6.  | In between station                                              | : | BRGA-BRPL                                                        |
| 7.  | BG/MG/NG                                                        | : | BG                                                               |
| 8.  | Single line/Doubling Line/Multiple Line                         | : | Double line                                                      |
| 9.  | Normal position                                                 | : | Open to road traffic                                             |
| 10. | Interlocked/Non-interlocked                                     | : | Interlocked                                                      |
| 11. | Means of interlocking                                           | : | NIL                                                              |
| 12. | Provision of gate Signal at Kms.                                | : | (a) UP Gate Signal: 608.480<br>(b) DN Gate Signal: 608.120       |
| 13. | Signaling arrangement                                           | : | NIL                                                              |
| 14. | Means of communications /Telephone with or without Voice logger | : | Voice logger telephone from gate goomty with SM office/BRGA      |
| 15. | Width of Level Crossing Gate                                    | : | 7.5 MTRS                                                         |
| 16. | Type of Road (NH/SH/Others)                                     | : | Others                                                           |
| 17. | Name of Road                                                    | : | Durgapali Road                                                   |
| 18. | Metaled/Non Metaled                                             | : | Metaled                                                          |
| 19. | Approach Road                                                   | : | Metaled                                                          |
| 20. | Width of the Road                                               | : | 5.5 MTRS.                                                        |
| 21. | Angle of Road Crossing (in case of the SKEW gates)              | : | ---                                                              |
| 22. | Road Gradient (if any)                                          | : | (a) North/East side - Nil<br>(b) South/West side - Nil           |
| 23. | Road alignment (straight/curve)                                 | : | (a) North/East side - Straight<br>(b) South/West side - Straight |
| 24. | Provision of height gauge                                       | : | Provided                                                         |
| 25. | Type of Barrier                                                 | : | Electrically Operated Lifting barrier                            |
| 26. | Length of check Rail                                            | : | 9.5 MTRS.                                                        |
| 27. | Road surface in between LC gates.                               | : | CC Blocks                                                        |
| 28. | Length of Rumble strip/speed breakers.                          | : | 7.5 MTRS                                                         |
| 29. | Road Signs                                                      | : | Provided                                                         |
| 30. | Speed breakers indication board                                 | : | Provided.                                                        |
| 31. | TVU                                                             | : | 20356 on 12/2024                                                 |
| 32. | Census next due on                                              | : | 12/2027                                                          |
| 33. | Demarcation for placement of detonators.                        | : | Available                                                        |
| 34. | No. of Gatekeepers working                                      | : | 02 (12 Hours shift)                                              |
| 35. | Nearest Railway Medical Assistance                              | : | SAMBALPUR                                                        |
| 36. | Nearest Private Medical Assistance available (if any)           | : | BARGARH ROAD                                                     |
| 37. | List of equipment available Yes / No.                           | : | YES                                                              |

**3.2 EQUIPMENT:**

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

**3.3 RECORDS TO BE KEPT AT GATE LODGE:**

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

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

**3.4 DUTIES OF GATEKEEPER:****1. ALERTNESS:**

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

**2. POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:**

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

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

**3. ROUTINE DUTIES OF GATE KEEPER:**

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

- xvii) Gatekeeper on electrified section shall watch that road vehicles/animals passing from gate are within the height loading gauge provided on either side of the Level crossing gate.
- xviii) Before opening the gate, he shall ensure that the train has passed complete over the level crossing by observing the last vehicle indicator of the train.
- xix) In the event of gate signal becoming defective the gatekeeper shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.

#### 4. ACTION IN CASE OF UNUSUAL OCCURRENCE OF TRAIN:

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

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

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

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

#### **THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER: -**

##### **(A) ON ELECTRIFIED SECTION:**

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

**(B) PROTECTION ON DOUBLE LINE:-**

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

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

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

**3.5 ENGINEERING ITEMS:-****(i) Visibility:-**

| Direction | Side  | Visibility Distance |
|-----------|-------|---------------------|
| UP        | Right | 700 m.              |
|           | Left  | 1000 m.             |
| DN        | Right | 1000 m.             |
|           | Left  | 700 m               |

- ii) Speed Breaker: - Speed Breakers of approved design are provided on either side of this Level Crossing gate.
- iii) Periodical Census of traffic has been taken and the latest TVU is 20356 on 12/2024.

**3.6 MODE OF OPERATION:-****1. NORMAL WORKING OF THE LEVEL CROSSING GATE (INTERLOCKED):**

This is a “B2” Class Engineering interlocked L.C. Gate situated in between BARGARH ROAD and BARPALI at Km 608/3-5(UP) & 608/4-6(DN). This Gate is interlocked with both UP Gate stop Signal and DN Gate stop signal .Telephone communication with voice logger is provided between the L.C. Gate Lodge with SM on duty of BRGA station. This gate is operated electrically. The gate shall normally be kept open to road traffic. Whenever, it is required to close the gate, Station Master on duty BRGA shall inform the Gatekeeper about the direction and description of the train at the gate. Gatekeeper on duty shall ensure clearance of road traffic, close and lock the gate. After the gate is closed & locked against Road traffic, then key-‘A’ is extracted from EKT-1Key-‘A’ thus extracted from EKT-1is inserted in EKT-2 and signal switches ‘GS1’ & ‘GS2’ are to be reversed to take ‘OFF’ UP & DN gate stop signal respectively. For opening of the gate, passage of the train switch GS1/GS2 is put back to normal. Dead approach locking of 60 seconds is to be provided. After passage of UP train L.C. No. JT-49 shall be released automatically after sequential occupation and clearance of track circuit nos. GS1T1& GS1T2. After passage of DN train L.C. No. JT-49 shall be released automatically after sequential occupation and clearance of track circuit nos. GS2T1 & GS2T2.In case of emergency, Gatekeeper will inform SM/BRGA with private number exchange. Then Key-‘B’ is extracted from EKT-3 provided at the gate lodge. Also, Approach Buzzer for Gatekeeper & Approach hooter for road users of LC gate to be provided.

Approach warning has been provided in 37T on UP Line at DOBH end and 28T on DN Line at TIG end which will be effective from ‘DN AT’ track circuit for DN direction and ‘UP AT’ track circuit for UP direction. Whenever a DN train is approaching and actuates the DN AT track circuit an audio alarm will start at the Gate lodge. Gatekeeper on duty shall acknowledge the same by pressing a push button provided in the Gate lodge. He shall then close and lock the gate if not closed. Dead approach locking with time delay of 60 seconds is provided.

**Description of switches, pushbuttons and indications**

1. ‘ON/OFF’ knob in black color
2. ‘Power indicator’ in Yellow color
3. ‘Barrier-A’ close indicator in Yellow color
4. ‘Barrier-B’ close indicator in Yellow color
5. ‘Close’ in Green color
6. ‘Open’ in yellow color
7. ‘Barrier-A’ locked in green color.
8. ‘Barrier-B’ locked in green color
9. ‘GSRR’ Knob in black color.

**Operation with push button (Electrical Operation):-****With barrier toggle switch “ON” position:-**

1. Operate the Switch S1” to ‘ON’ position in the panel at Gate lodge for power supply.
2. Keep the push button ‘GREEN’ pressed till the L.C. Gate closed and locked indication appears in the panel.
3. After gate is closed and locked, the switch GS3 or GS4 reversed will release UP Gate Stop Signal No.GS3 or DN Gate Stop Signal No.GS4 respectively.

4. Switch “GS3 or GS4” is provided in the L.C. Gate panel to put back the signal to danger in case of emergency.

#### **FOR OPENING:-**

1. For opening of the gate after passage of train , switches GS3 (UP) or GS4 (DN) is to be normalized.
2. Press the “OPEN” push button (Yellow) continuously till the barriers reach in the vertical position.

#### **ROUTE CANCELLATION PROCEDURE:-**

1. In case of emergency, switch “GS3/GS4” is provided in the LC Gate panel is to be put back the concerned signal to danger. Or In case, route will not be released after passing of the train at the gate and GS3/GS4 is to be normalized.
2. Then press the “Emergency Gate release push button, a timer will initiate and flashing indication appears in indication panel.
3. After 60 seconds, it becomes steady then route will be released.

#### **EMERGENCY GATE OPERATION: -**

1. In case of emergency, Gatekeeper will inform SM/BRGA with exchange of private number then emergency crank handle welded with EKT key ‘B’ is kept in the sealed red box for emergency operation.
2. GS1 (UP) / GS2 (DN) switch to be normalized provided on the control panel.
3. Break the seal of emergency sealed red box. Extract the emergency crank handle welded with key ‘B’.
4. Unlock the lock of Barrier-A and Barrier-B by a lock Handle at the lock post of concerned Barrier.
5. Insert the barrier crank handle into the hole provided in the mechanism box in rear door which is connected to the shaft of the gear drive unit of the pedestal.
6. Rotate crank handle clockwise for closing and rotate crank handle anticlockwise for opening the gate.
7. Extraction of key ‘B’ shall put back all the relevant signals at ‘ON’ position.

#### **FOR CLOSING:-**

1. Ensure power ON indication in the panel.
2. Keep the push button “CLOSE” pressed till the L.C. Gate closed and locked indication appears in the panel.
3. Then extract the key “A” from EKT-1 and then insert in EKT-2 and turned right along with switch GS1 or GS2 reversed for taking off UP Gate Stop signal and DN gate stop signal respectively.

#### **In case of gate is not locked at site by electrically in that case following procedure is done for signaling movement:-**

1. Emergency crank handle welded with key ‘B’ is kept in the sealed red box for emergency operation.
2. GS1 (UP)/ GS2 (DN) switch to be normalized provided on the control panel
3. Break the seal of emergency sealed red box. Extract the emergency crank handle welded with key ‘B’.
4. Lock the Barrier A and barrier B by lock handle manually

5. Insert the emergency key in emergency seal box
6. Press the emergency button till lock indication appear in the panel.
7. After appearing of lock indication, the gate key will automatically transmit to SM for signaling movement.

#### **WORKING OF SLIDING BOOM BARRIER:-**

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 gatekeeper shall release electro-mechanically free Key 'S' from "EKT-5" (sliding boom EKT-5) 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 gatekeeper 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 gatekeeper 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 by inserted it in SB EKT-4 provided in the gate lodge in conjunction with the GS1/GS2 (gate slot) switch provided in the gate lodge to enable them to take off concerned UP & DN signals.
- E) In case of any damage to sliding boom when it is in closed condition to road traffic, leading to infringement or obstruction on track, the gatekeeper shall normalize the switch GS1/GS2 to put back the concerned signals to danger.
- F) After passage of train, The gatekeeper shall take permission from SM/BRGA and extract SB-2 key from SB EKT-4, normalize the switch GS1/GS2, unlock the sliding boom and operate the gears in reverse sequence of operation to normalize the sliding boom.

#### **OPERATION OF ELECTRIC LIFTING BARRIER DURING 110/24 V DC POWER FAILURE:-**

(Hand Generator Mode-During Power Failure)

In case of power failure (110/24 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.

1. Put the Mode selector switch on the panel to MANUAL position.
2. 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.
3. 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.

**Power Supply arrangement:**

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

CLS power panel with rotary change over switch is provided in the gate lodge with the three power supplies via UP AT, DN AT & local power supply for changing the switch to the required supply position. Luminous indicators are provided above the circuit breaker for each supply to indicate the availability of supplies.

- i) Normally the rotary switch will be kept towards UP AT or DN AT position. Whenever the power block is to be given, the on the duty gatekeeper must ascertain that other two sources i.e. one AT & local supply must be available. If both UP & DN power block are given, then the gatekeeper must be ensured that the local supply is available.
- ii) During the non-availability of ATs supply, gatekeeper shall keep the rotary change over switch towards the local supply to feed available local supply to the installation.
- iii) In case of failure of AT supply without any power block, the gatekeeper has to check whether the circuit breaker has tripped. (Three circuit breakers are provided in the changeover switch. In case of failure of ATs supply, the local supply shall be utilized by operating the switch. If the circuit breaker is tripping, even after resetting, no attempts shall be made to hold it by any other means and a message shall be given to the on duty SM. The on duty SM will give message to AEE/GEN and CTFO/PSI/TRD/GEN for prompt rectification
- iv) For IPS system that provides to gate PI, auto-change over has been provided.
- iv) There is a remote monitoring ASM box provided at the station to monitor the health of IPS

**Remote monitoring ASM Box:**

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

- a) 50% DOD(Depth of Discharge) (105.9v) of battery. In this condition Audio/visual alarm comes which can be acknowledged with audio cut off.
- b) 60% DOD(Depth of Discharge) (105.1v), which warns for emergency. The alarm for this condition is same as for condition 1.
- c) 70% DOD(Depth of Discharge)(104.3v). Which signal system, shutdown. In this condition signal feed cut off and all DC-DC converters continue working. Audio alarm will continue till power supply restored.
- d) Any of the Module fails, which calls for "Call S&T".

Whenever there is a failure of ATs supply, the gatekeeper will inform to the on duty SM and SM and SM shall take prompt action to inform to all concerned for the early rectification. The gatekeeper himself, shall check the availability of ATs supply.

**2. INTIMATION TO GATEKEEPER: -**

Immediately after departure of the train, SM shall advise the gatekeeper through telephone, the number, description, direction and expected time of the passage of the train at the gate.

- If the actually running time of the train from either end of the section is less than 10 minutes, SM will convey this advice to the gatekeeper before obtaining /granting line clear.
- It should be the duty of the gatekeeper to ensure that the gate is closed in time, so that there is no detention to the train or excessive detention to road traffic.
- The gatekeeper shall close the gate as per following procedure:-
- The Electrical lifting barriers have two modes of operation such as
  - [1] Normal operation, Push button type.
  - [2] Manual operation with direct Crank Handle in case of Emergency.

An operating panel is provided at the gate lodge for controlling the gate by electrical power in which controlling switches and indications are provided.

**3.7 FAILURE OF TELEPHONIC COMMUNICATION**

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

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

**3.8 FAILURE OF LIFTING BARRIERS:**

- i) When the gate cannot be closed due to failure of lifting barriers of the gate, the gatekeeper will immediately inform the Station Master on duty, He shall then resort to operate the sliding boom for closing of the gate. If both of them fails, then he shall follow the following procedure, under exchange of private number, and ensure that lifting barriers of the 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) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks.

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

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

### **3.9 FAILURE OF GATE KEY WITH THE GATE IN CLOSED POSITION, WHEN GATE KEY CANNOT BE EXTRACTED FOR OPENING THE GATE:-**

- (i) If the gate cannot be opened then gatekeeper must immediately inform the Station Master on duty on telephone, under exchange private number.
- (ii) GS1, GS2 and GSRR should be in normal position. If the gate key cannot be extracted from the EKT-2, emergency direct crank handle operation has to be done. The gatekeeper on duty shall obtain permission from SM on duty under exchange of private number for breaking the seal for emergency operation. For this operation, a Red sealed glass box is provided at the gate lodge. A crank handle welded with KEY-'B' in EKT-3 is provided in the sealed box. After breaking the seal, the KEY-'B' from EKT-3 has to be taken out from the box which is mechanically free. Unlock the Barrier 'A' and Barrier 'B' by lock handle. Then the crank handle is to be inserted into the hole provided in the mechanism box rear door. For opening the barrier, rotate the crank handle anti clock wise direction. As soon as the crank handle is inserted electrical operation is automatically cut off and remains cut off till crank handle is removed from the hole. In addition to above facilities, individual operation of barriers are also provided. For individual barrier operation, barrier "A" and "B" can be operated from pedestal individually.
- (iii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- (iv) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- (v) He shall also advise the Station Master at the other end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vi) Station Master shall advise S & T staff responsible for maintenance of transmitter to rectify the defect at the earliest.
- (vii) Normal working will be resumed only after S & T staff repairs the pedestal/gate operating panel/key transmitter and issue reconnection/ fit memo for the same.

### **3.10 FAILURE OF GATE KEY WITH THE GATE IN OPEN CONDITION:**

- i) If the gate cannot be closed from Gate panel then gatekeeper must immediately inform the Station Master on duty on telephone, under exchange of private number.
- ii) The gatekeeper on duty shall obtain permission from SM on duty under exchange of private number for breaking the seal for emergency operation. For this operation, a Red sealed glass box is provided at the gate lodge. A crank handle welded with KEY-'B' in

EKT-3 is provided in the sealed box. After breaking the seal, the KEY-‘B’ from EKT-3 has to be taken out from the box which is mechanically free. Then the crank handle is to be inserted into the hole provided in the mechanism box rear door. For closing the barrier, rotate the crank handle clock wise direction.

As soon as the crank handle is inserted electrical operation is automatically cut off and remains cut off till crank handle is removed from the hole. In addition to above facilities, individual operation of barriers are also provided. For individual barrier operation, barrier “A” and “B” can be operated from pedestal individually.

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

### **3.11 OBSTRUCTION AT THE GATE:-**

- i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gatekeeper shall immediately normalize GS switch to put back concerned signals and then fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gatekeeper shall advise the Station Master/BRGA on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) Station Master/BRGA on duty shall be advised to put the reception/departure signals back to ‘ON’ position, if taken ‘OFF’ for a train.
- iv) If there is no response from the Station Master/BRGA after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gate Keeper 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 Gate Keeper under item No.3.4. (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/BRGA who shall not start the trains unless he has been assured by the Gate Keeper that the road vehicle or the lifting barriers are not fouling the track.
- viii) The Station Master/BRGA shall also inform the station Master/BRPL at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the Gate Keeper shall inform the Station Master/BRGA accordingly, under exchange of private number.
- x) Gate Keeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
- xi) Station Master/BRGA shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- xii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

- xiii) Station Master/BRGA 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 Gate Keeper, if the gate is broken, but is clear of any obstruction.

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

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gatekeeper and Station Master will adopt the procedure given under item No.3.11 above. If the obstruction fouls the Level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstruction.

**3.13 ACCIDENTAL ROLLING DOWN OF TRAIN:**

When the gate keeper seen that a train is rolling down or immediately after receipt of the information about accidental rolling down of the train the Gatekeeper shall:

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

**CERTIFICATE: -**

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

#### 4.0 GATE WORKING INSTRUCTIONS FOR 'C' CLASS ENGG. NON-INTERLOCKED LEVEL CROSSING GATE No. JT-50 AT KM 608/27-29(UP) & 608/28-30(DN) IN BETWEEN BRGA-BRPL.

##### 4.1 GENERAL INSTRUCTIONS-

##### 4.1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

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

|     |                                                                 |   |                                                                  |
|-----|-----------------------------------------------------------------|---|------------------------------------------------------------------|
| 1.  | Number of level crossing gate                                   | : | JT-50                                                            |
| 2.  | Engineering or Traffic Gate                                     | : | Engineering 'C' class.                                           |
| 3.  | Under control of Station Master or SSE(P.WAY)                   | : | SSE(P.WAY)                                                       |
| 4.  | Location at KM                                                  | : | 608/27-29(UP), 608/28-30 (DN)                                    |
| 5.  | At station                                                      | : | ----                                                             |
| 6.  | In between station                                              | : | BRGA-BRPL                                                        |
| 7.  | BG/MG/NG                                                        | : | BG                                                               |
| 8.  | Single line/Doubling Line/Multiple Line                         | : | Double line                                                      |
| 9.  | Normal position                                                 | : | Close to road traffic                                            |
| 10. | Interlocked/Non-interlocked                                     | : | Non-Interlocked                                                  |
| 11. | Means of interlocking                                           | : | Nil                                                              |
| 12. | Provision of gate Signal at Kms                                 | : | Nil                                                              |
| 13. | Signaling arrangement                                           | : | Nil                                                              |
| 14. | Means of communications /Telephone with or without Voice logger | : | Voice logger telephone from gate with SM office/BRGA             |
| 15. | Width of Level Crossing Gate                                    | : | 7.5 MTRS                                                         |
| 16. | Type of Road (NH/SH/Others)                                     | : | Others                                                           |
| 17. | Name of Road                                                    | : | Village Road                                                     |
| 18. | Metaled/Non Metaled                                             | : | Metaled                                                          |
| 19. | Approach Road                                                   | : | Metaled                                                          |
| 20. | Width of the Road                                               | : | 5.50 MTRS.                                                       |
| 21. | Angle of Road Crossing (in case of the SKEW gates)              | : | ----                                                             |
| 22. | Road Gradient (if any)                                          | : | (a) North/East side – Level<br>(b) South/West side –Level        |
| 23. | Road alignment (straight/curve)                                 | : | (a) North/East side – Straight<br>(b) South/West side - Straight |
| 24. | Provision of height gauge                                       | : | Provided                                                         |
| 25. | Type of Barrier                                                 | : | Winch Operated Lifting barrier                                   |
| 26. | Length of check Rail                                            | : | 9.5 MTRS.                                                        |
| 27. | Road surface in between LC gates.                               | : | CC BLOCK                                                         |
| 28. | Length of Rumble strip/speed breakers.                          | : | 5.5 MTRS                                                         |
| 29. | Road Signs                                                      | : | Provided                                                         |
| 30. | Speed breakers indication board                                 | : | Provided.                                                        |
| 31. | TVU                                                             | : | 609 on 12/2024                                                   |
| 32. | Census next due on                                              | : | 12/2027                                                          |
| 33. | Demarcation for placement of detonators.                        | : | Available                                                        |
| 34. | No. of Gatekeepers working                                      | : | 02 (12 Hours shift)                                              |
| 35. | Nearest Railway Medical Assistance                              | : | SBP                                                              |
| 36. | Nearest Private Medical Assistance available (if any)           | : | BRGA                                                             |
| 37. | List of equipment available Yes / No.                           | : | YES                                                              |

**4.2 EQUIPMENT:**

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

**4.3 RECORDS TO BE KEPT AT GATE LODGE:**

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

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

**4.4 DUTIES OF GATEKEEPER:-****1. ALERTNESS:**

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

**2. POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:**

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

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

**3. ROUTINE DUTIES OF GATE KEEPER:**

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

- xv) Gatekeeper must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- xvi) Gatekeeper shall prevent tress passing by persons or cattle to the maximum extent.
- xvii) Gatekeeper on electrified section shall watch that road vehicles/animals passing from gate are within the height loading gauge provided on either side of the Level crossing gate.
- xviii) Before opening the gate, he shall ensure that the train has passed complete over the level crossing by observing the last vehicle indicator of the train.

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

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

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

#### **5. ACTION IN AN EMERGENCY AT THE LC GATE:**

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

#### **THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER: -**

##### **(A) ON ELECTRIFIED SECTION:**

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

**(B) PROTECTION ON DOUBLE LINE:-**

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

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

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

**4.5 ENGINEERING ITEMS:****i) Visibility:-**

| Direction | Side  | Visibility Distance |
|-----------|-------|---------------------|
| UP        | Right | 1000m.              |
|           | Left  | 1000m.              |
| DN        | Right | 1000m.              |
|           | Left  | 1000m.              |

- 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 609 on 12/2024.

**4.6 SPECIAL INSTRUCTIONS-****1. MODE OF OPERATION:-**

This is a Manned & Non-interlocked Engineering L.C. Gate situated at Km 608/27-29(UP) & 608/28-30(DN) in between BRGA-BRPL Stations. This gate is provided with winch operated coupled lifting barriers and the gate is closed/opened by the gatekeeper manually by winch operation. Telephone communication is provided between the L.C. gate lodge with SM office of BRGA station. The level crossing gate is normally kept closed and locked against road traffic. The Station Master/BRGA shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gatekeeper supported by exchange of private number. When the gatekeeper desires to open the gate for passage of road traffic he should ensure that no PN has been exchanged with the Station Master/BRGA for the passage of train or the whole of the train with last vehicle indicator has passed over the level crossing gate for which the gatekeeper has exchanged private number with the SM/BRGA. Before opening the gate for road traffic, he shall display banner flag/danger signal at either side of the track at a distance of 5 meters away from the gate.

**2. EXCHANGE OF PRIVATE NUMBERS:**

- (i) The normal position of level crossing gate being "Closed to Road Traffic" it should always be in closed condition against road traffic, except when, it is opened for passage of road traffic over the level crossing, subject to conditions prescribed below.
- (ii) The Station Master /BRGA before permitting each train to enter into the block section, shall ask Gatekeeper on the telephone by giving a Private Number whether, gate is closed against road traffic for the passage of train. The Gatekeeper only after ensuring that the gate is actually closed and locked against road traffic shall give a Private Number to the Station Master / BRGA in assurance of gate being closed and locked against road traffic.
- (iii) The Station Master / BRGA shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gatekeeper supported by exchange of private number.
- (iv) When the gatekeeper desires to open the gate for passage of road traffic he should ensure that:
  - (a) He has not exchanged any private number with the SM / BRGA as per (ii) above.
  - (b) If he has exchanged private number with the Station Master / BRGA , the whole of the train with last vehicle indicator has passed over the level crossing gate and Station Master / BRGA has not exchanged private number with him for any other movement immediately in rear of the train.  
Before opening the gate for road traffic, he shall display banner flag/danger signal at either side of the track at a distance of 5 meters away from the gate. Then he shall open the gate for passing the road traffic, keeping a red flag / red hand signal lamp ready in his hand to stop approaching train if any.
- (v) In case the Gatekeeper is not responding on the telephone or in case the telephone becomes defective or private number is not received from the Gateman, the Station Master/ BRGA shall adhere to the procedure prescribed in SR 16.03.04.
- (vi) In the event of failure of telephone, if the gate is required to be opened for the passage of road traffic, the gatekeeper shall look out in both directions before opening the gate to ensure that no train is approaching from either end. He shall then plant a banner flag during day and a hand signal lamp with the red light during night, 5 meters away from the gate on the track on either side. He will thereafter, open the gate for passing the road

traffic keeping a red flag / red hand signal lamp ready in his hand to stop approaching train if any.

#### **4.7 FAILURE OF TELEPHONIC COMMUNICATION:**

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

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

#### **4.8 FAILURE OF LIFTING BARRIERS:-**

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

#### **4.9 OBSTRUCTION AT THE GATE:**

- i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate,

- the gatekeeper shall immediately fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gatekeeper shall advise the Station Master/BRGA on duty, regarding the defects/obstruction at the gate, under exchange of private number.
  - iii) Station Master/BRGA on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
  - iv) If there is no response from the Station Master/BRGA after two or three attempts, he shall first protect the gate and then inform on phone.
  - v) Gatekeeper shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gatekeeper under item No.4.4. (5).
  - vi) Thereafter he shall protect the gate from the other direction also.
  - vii) Gatekeeper shall note down the particulars of the road vehicle, name of the Driver, owner and reply these details to the Station Master/BRGA who shall not start the trains unless he has been assured by the gatekeeper that the road vehicle or the lifting barriers are not fouling the track.
  - viii) The Station Master/BRGA shall also inform the Station Master/BRPL at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
  - ix) After the track has been cleared of all obstructions the gatekeeper shall inform the Station Master/BRGA accordingly, under exchange of private number.
  - x) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
  - xi) Station Master/BRGA shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
  - xii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

#### **4.10 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:**

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gatekeeper, the gatekeeper and Station Master/BRGA will adopt the procedure given under item No. 4.9 above. If the obstruction fouls the level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstruction.

#### **4.11 ACCIDENTAL ROLLING DOWN OF TRAIN:**

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

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

#### **CERTIFICATE: -**

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

## 5.0 GATE WORKING INSTRUCTIONS FOR 'C' CLASS ENGG. NON-INTERLOCKED LEVEL CROSSING GATE NO. JT-51 AT KM 609/31-33(UP) & 609/32-34(DN) IN BETWEEN BRGA-BRPL.

### 5.1 GENERAL INSTRUCTIONS-

#### 5.1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

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

|     |                                                                 |   |                                                                  |
|-----|-----------------------------------------------------------------|---|------------------------------------------------------------------|
| 1.  | Number of level crossing gate                                   | : | JT-51                                                            |
| 2.  | Engineering or Traffic Gate                                     | : | Engineering                                                      |
| 3.  | Under control of Station Master or SSE(P.WAY)                   | : | SSE(P.WAY)                                                       |
| 4.  | Location at KM                                                  | : | 609/31-33(UP), 609/32-34 DN)                                     |
| 5.  | At station                                                      | : | ----                                                             |
| 6.  | In between station                                              | : | BGRA-BRPL                                                        |
| 7.  | BG/MG/NG                                                        | : | BG                                                               |
| 8.  | Single line/Doubling Line/Multiple Line                         | : | Double line                                                      |
| 9.  | Normal position                                                 | : | Close to road traffic                                            |
| 10. | Interlocked/Non-interlocked                                     | : | Non-Interlocked                                                  |
| 11. | Means of interlocking                                           | : | Nil                                                              |
| 12. | Provision of gate Signal at Kms                                 | : | Nil                                                              |
| 13. | Signaling arrangement                                           | : | Nil                                                              |
| 14. | Means of communications /Telephone with or without Voice logger | : | Voice logger telephone from gate goomty with SM office/BRGA      |
| 15. | Width of Level Crossing Gate                                    | : | 7.5 MTRS                                                         |
| 16. | Type of Road (NH/SH/Others)                                     | : | Others                                                           |
| 17. | Name of Road                                                    | : | Khutpali Road                                                    |
| 18. | Metaled/Non Metaled                                             | : | Metaled                                                          |
| 19. | Approach Road                                                   | : | Metaled                                                          |
| 20. | Width of the Road                                               | : | 5.5 MTRS.                                                        |
| 21. | Angle of Road Crossing (in case of the SKEW gates)              | : | ----                                                             |
| 22. | Road Gradient (if any)                                          | : | (a) North/East side – Level<br>(b) South/West side –Level        |
| 23. | Road alignment (straight/curve)                                 | : | (a) North/East side – Straight<br>(b) South/West side - Straight |
| 24. | Provision of height gauge                                       | : | Provided                                                         |
| 25. | Type of Barrier                                                 | : | Winch Operated Lifting barrier                                   |
| 26. | Length of check Rail                                            | : | 9.5 MTRS.                                                        |
| 27. | Road surface in between LC gates.                               | : | CC BLOCK                                                         |
| 28. | Length of Rumble strip/speed breakers.                          | : | 5.5 MTRS                                                         |
| 29. | Road Signs                                                      | : | Provided                                                         |
| 30. | Speed breakers indication board                                 | : | Provided.                                                        |
| 31. | TVU                                                             | : | 6337 on 12/2024                                                  |
| 32. | Census next due on                                              | : | 12/2027                                                          |
| 33. | Demarcation for placement of detonators.                        | : | Provided.                                                        |
| 34. | No. of Gatekeepers working                                      | : | 02 (12 Hours shift)                                              |
| 35. | Nearest Railway Medical Assistance                              | : | SBP                                                              |
| 36. | Nearest Private Medical Assistance available (if any)           | : | BRGA                                                             |
| 37. | List of equipment available Yes / No.                           | : | YES                                                              |

**5.2 EQUIPMENT:**

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

**5.3 RECORDS TO BE KEPT AT GATE LODGE:**

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

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

**5.4 DUTIES OF GATEKEEPER:****1. ALERTNESS:**

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

**2. POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:**

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

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

**3. ROUTINE DUTIES OF GATE KEEPER:**

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

xviii) Before opening the gate, he shall ensure that the train has passed complete over the level crossing by observing the last vehicle indicator of the train.

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

- i) In case Gate Keeper observes anything unusual with a passing train, he shall take following action:
- ii) He shall take prompt action to warn the Loco Pilot/BRPL of the passing train by showing red flag by day and red light by night.
- iii) He shall simultaneously try to draw the attention of the Loco Pilot/BRPL by whistling continuously, shouting, gesticulating, and throwing ballast on the brake van or by any other means.
- iv) If Loco Pilot/BRPL fails to take notice, Gate Keeper shall immediately inform the station Master/BRGA to take appropriate action, under exchange of private number.
- v) In case of train parting, Gate Keeper shall not show stop hand signal but shall show prescribed signal for train parting.
- vi) He shall endeavor to attract the attention of the Loco Pilot/BRPLS 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.
- vii) In case the train does not stop, Gate Keeper shall immediately inform the Station Master/BRGA to take appropriate action, under exchange of private number.

#### **5. ACTION IN AN EMERGENCY AT THE LC GATE:**

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

#### **THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER: -** **(A) ON ELECTRIFIED SECTION:**

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

#### **(B) PROTECTION ON DOUBLE LINE:-**

- i) If both lines are obstructed the Gatekeeper shall plant a red banner flag by day and a red light by night at 5 meters away from the line on which train is expected to arrives first.
- ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line at 5 meters away from the site of obstruction.
- iii) Gatekeeper shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night.

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

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

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

**5.5 ENGINEERING ITEMS:**

**i) Visibility:-**

| Direction | Side  | Visibility Distance |
|-----------|-------|---------------------|
| UP        | Right | 300 m.              |
|           | Left  | 300 m.              |
| DN        | Right | 1000m.              |
|           | Left  | 1000 m              |

- ii) Speed Breaker: - Speed Breakers of approved design are provided on either side of the Level Crossing gate.
- iii) Periodical Census of traffic has been taken and the recent TVU is 6337 on 12/2024.

**5.6 SPECIAL INSTRUCTIONS-**

**1. MODE OF OPERATION:-**

This is a Manned & Non-interlocked Engineering L.C. Gate situated at Km 609/31-33(UP) & 609/32-34(DN) in between BRGA-BRPL Stations. This gate is provided with winch operated coupled lifting barriers and the gate is closed/opened by the gatekeeper manually by winch operation. Telephone communication is provided between the L.C. gate lodge with SM office of BRGA station. The level crossing gate is normally kept closed and locked against road traffic. The Station Master/BRGA shall not permit any train to enter the block section, unless he is assured of the closure and locking of the

gate by the gatekeeper supported by exchange of private number. When the gatekeeper desires to open the gate for passage of road traffic he should ensure that no PN has been exchanged with the Station Master/BRGA for the passage of train or the whole of the train with last vehicle indicator has passed over the level crossing gate for which the gatekeeper has exchanged private number with the SM/BRGA. Before opening the gate for road traffic, he shall display banner flag/danger signal at either side of the track at a distance of 5 meters away from the gate.

## **2. EXCHANGE OF PRIVATE NUMBERS:**

- (i) The normal position of level crossing gate being "Closed to Road Traffic" it should always be in closed condition against road traffic, except when, it is opened for passage of road traffic over the level crossing, subject to conditions prescribed below.
- (ii) The Station Master /BRGA before permitting each train to enter into the block section, shall ask Gatekeeper on the telephone by giving a Private Number whether, gate is closed against road traffic for the passage of train. The Gatekeeper only after ensuring that the gate is actually closed and locked against road traffic shall give a Private Number to the Station Master / BRGA in assurance of gate being closed and locked against road traffic.
- (iii) The Station Master / BRGA shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gatekeeper supported by exchange of private number.
- (iv) When the gatekeeper desires to open the gate for passage of road traffic he should ensure that:
  - (a) He has not exchanged any private number with the SM / BRGA as per (ii) above.
  - (b) If he has exchanged private number with the Station Master / BRGA , the whole of the train with last vehicle indicator has passed over the level crossing gate and Station Master / BRGA has not exchanged private number with him for any other movement immediately in rear of the train.  
Before opening the gate for road traffic, he shall display banner flag/danger signal at either side of the track at a distance of 5 meters away from the gate. Then he shall open the gate for passing the road traffic, keeping a red flag / red hand signal lamp ready in his hand to stop approaching train if any.
- (v) In case the Gatekeeper is not responding on the telephone or in case the telephone becomes defective or private number is not received from the Gateman, the Station Master/ BRGA shall adhere to the procedure prescribed in SR 16.03.04.
- (vi) In the event of failure of telephone, if the gate is required to be opened for the passage of road traffic, the gatekeeper shall look out in both directions before opening the gate to ensure that no train is approaching from either end. He shall then plant a banner flag during day and a hand signal lamp with the red light during night, 5 meters away from the gate on the track on either side. He will thereafter, open the gate for passing the road traffic keeping a red flag / red hand signal lamp ready in his hand to stop approaching train if any.

## **5.7 FAILURE OF TELEPHONIC COMMUNICATION:**

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

- i) Station Master/BRGA shall issue caution order to the Loco Pilot of the departing train.
- ii) In the caution order, it shall advice the Loco Pilot to whistle continuously and approach the gate cautiously.

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

### **5.8 FAILURE OF LIFTING BARRIERS:-**

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

### **5.9 OBSTRUCTION AT THE GATE:**

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

- v) Gatekeeper shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gatekeeper under item No.5.4. (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/BRGA who shall not start the trains unless he has been assured by the gatekeeper that the road vehicle or the lifting barriers are not fouling the track.
- viii) The Station Master/BRGA shall also inform the Station Master/BRPL at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the gatekeeper shall inform the Station Master/BRGA accordingly, under exchange of private number.
- x) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
- xi) Station Master/BRGA shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- xii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

#### **5.10 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:**

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gatekeeper, the gatekeeper and Station Master/BRGA will adopt the procedure given under item No. 5.9 above. If the obstruction fouls the level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstruction.

#### **5.11 ACCIDENTAL ROLLING DOWN OF TRAIN:-**

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

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

#### **CERTIFICATE: -**

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

## 6.0 GATE WORKING INSTRUCTIONS FOR 'B2' CLASS ENGG. NON-INTERLOCKED LEVEL CROSSING GATE NO. JT-54 AT KM 616/29-31(UP) & 616/30-32(DN) IN BETWEEN BRGA-BRPL.

### 6.1 GENERAL INSTRUCTIONS-

#### 6.1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

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

|     |                                                                 |   |                                                                |
|-----|-----------------------------------------------------------------|---|----------------------------------------------------------------|
| 1.  | Number of level crossing gate                                   | : | JT-54                                                          |
| 2.  | Engineering or Traffic Gate                                     | : | Engineering                                                    |
| 3.  | Under control of Station Master or SSE(P.WAY)                   | : | SSE(P.WAY)                                                     |
| 4.  | Location at KM                                                  | : | 616/29-31(UP) & 616/30-32(DN)                                  |
| 5.  | At station                                                      | : | ----                                                           |
| 6.  | In between station                                              | : | BRGA-BRPL                                                      |
| 7.  | BG/MG/NG                                                        | : | BG                                                             |
| 8.  | Single line/Doubling Line/Multiple Line                         | : | Double line                                                    |
| 9.  | Normal position                                                 | : | Open to road traffic                                           |
| 10. | Interlocked/Non-interlocked                                     | : | Non Interlocked                                                |
| 11. | Means of interlocking                                           | : | Nil                                                            |
| 12. | Provision of gate Signal at Kms                                 | : | Nil                                                            |
| 13. | Signaling arrangement                                           | : | Nil                                                            |
| 14. | Means of communications /Telephone with or without Voice logger | : | Voice logger telephone from gate goomty with SM Office /BRGA.  |
| 15. | Width of Level Crossing Gate                                    | : | 5.5 M                                                          |
| 16. | Type of Road (NH/SH/Others)                                     | : | Other road                                                     |
| 17. | Name of Road                                                    | : | Bagbadi road                                                   |
| 18. | Metaled/Non Metaled                                             | : | Metaled                                                        |
| 19. | Approach Road                                                   | : | Metaled                                                        |
| 20. | Width of the Road                                               | : | 5.5 M                                                          |
| 21. | Angle of Road Crossing (in case of the SKEW gates)              | : | ---                                                            |
| 22. | Road Gradient (if any)                                          | : | (a) North/East side:- 1 in 40<br>(b) South/West side:- 1 in 40 |
| 23. | Road alignment (straight/curve)                                 | : | (a) North/East side- Straight<br>(b) South/West side-Straight  |
| 24. | Provision of height gauge                                       | : | Provided                                                       |
| 25. | Type of Barrier                                                 | : | Winch Operated Lifting barrier                                 |
| 26. | Length of check Rail                                            | : | 7.5 M                                                          |
| 27. | Road surface in between LC gates.                               | : | C.C Block                                                      |
| 28. | Length of Rumble strip/speed breakers.                          | : | 5.5 M                                                          |
| 29. | Road Signs                                                      | : | Provided                                                       |
| 30. | Speed breakers indication board                                 | : | Provided                                                       |
| 31. | TVU                                                             | : | 10821 on 12/2024                                               |
| 32. | Census next due on                                              | : | 12/2027                                                        |
| 33. | Demarcation for placement of detonators.                        | : | Available                                                      |
| 34. | No. of Gatekeepers working                                      | : | 02(12 Hours Shift)                                             |
| 35. | Nearest Railway Medical Assistance                              | : | SBP                                                            |
| 36. | Nearest Private Medical Assistance available (if any)           | : | BRPL                                                           |
| 37. | List of equipment available Yes / No.                           | : | Yes                                                            |

**6.2 EQUIPMENT:**

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

**6.3 RECORDS TO BE KEPT AT GATE LODGE:**

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

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

**6.4 DUTIES OF GATEKEEPER:****1. ALERTNESS:**

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

**2. POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:**

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

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

**3. ROUTINE DUTIES OF GATEKEEPER:**

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

xviii) Before opening the gate, he shall ensure that the train has passed complete over the level crossing by observing the last vehicle indicator of the train.

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

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

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

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

#### **THE GATE KEEPER SHALL PROTECT THE LINE AS UNDER: -**

##### **(A) ON ELECTRIFIED SECTION:**

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

##### **(B) PROTECTION ON DOUBLE LINE:-**

- i) If both lines are obstructed the Gatekeeper shall plant a red banner flag by day and a red light by night at 5 meters away from the line on which train is expected to arrives first.
- ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line at 5 meters away from the site of obstruction.
- iii) Gatekeeper shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night.

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

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

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

**6.5 ENGINEERING ITEMS:**

**i) Visibility:-**

| Direction | Side  | Visibility Distance |
|-----------|-------|---------------------|
| UP        | Right | 1000m.              |
|           | Left  | 1000m.              |
| DN        | Right | 1000m.              |
|           | Left  | 1000m.              |

- 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 10821 on 12/2024.

**6.6 SPECIAL INSTRUCTIONS-**

**1. MODE OF OPERATION:-**

This is a Manned & Non-interlocked Engineering L.C. Gate situated at Km 616/29-31(UP) & 616/30-32(DN) in between BRGA-BRPL Stations. This gate is provided with winch operated coupled lifting barriers and the gate is closed/opened by the gatekeeper manually by winch operation. Telephone communication is provided between the L.C. gate lodge with SM office of BRGA station. The level crossing gate is normally kept open and locked against road traffic. The Station Master/BRGA shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gatekeeper supported by exchange of private number. When the gatekeeper desires to open the gate for passage of road traffic he should ensure that no PN has been

exchanged with the Station Master/BRGA for the passage of train or the whole of the train with last vehicle indicator has passed over the level crossing gate for which the gatekeeper has exchanged private number with the SM/BRGA. Before opening the gate for road traffic, he shall display banner flag/danger signal at either side of the track at a distance of 5 meters away from the gate.

## 2. **EXCHANGE OF PRIVATE NUMBERS:-**

### (a) **When Gate is connected with the station at the dispatching end:**

- i) Station Master / BRGA at the dispatching end shall advise the gatekeeper the number, description, direction and expected time of the passage of the train at the gate, under exchange of private number.
- ii) Such advice shall be given before taking 'OFF' departure signal or giving an authority to proceed to the Loco pilot.
- iii) The gatekeeper on receipt of the advice shall close the gate well in time and confirm the same, under exchange of private number.
- iv) Station Master / BRGA will take off the departure signals after getting the private number of the Gatekeeper.
- v) The gatekeeper shall be authorized to open the L.C.Gate after complete passage of train from the gate by observing tail board/ tail lamp. The gatekeeper before opening the gate shall ensure that SM has not advised him to keep the gate closed for any other train from the same direction or from other direction. He shall display a banner flag across the track while the gate is in open condition.

### (b) **When Gate is connected with the station at the receiving end:**

- i) Station Master /BRPL at the dispatching end shall advise the Station Master / BRGA at the other end the number, description, direction and expected time of passage of the train at the gate, under exchange of private number.
- ii) Such advice shall be given before obtaining line clear.
- iii) Station Master / BRGA at the receiving end shall in turn convey the same advice to the Gatekeeper, under exchange of private number.
- iv) Gatekeeper shall close the gate and thereafter give his private number to the Station Master / BRGA.
- v) Only then shall the Station Master / BRGA at the receiving end grant line clear to the Station Master /BRPL at the dispatching end.
- vi) The gatekeeper shall be authorized to open the L.C.Gate after complete passage of train from the gate by observing tail board/ tail lamp. The gatekeeper before opening the gate shall ensure that SM has not advised him to keep the gate closed for any other train from the same direction or from other direction. He shall display a banner flag across the track while the gate is in open condition.

## 6.7 **FAILURE OF TELEPHONIC COMMUNICATION:**

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

- i) Station Master/BRGA shall issue caution order to the Loco Pilot of the departing train.
- ii) In the caution order, it shall advise the Loco Pilot to whistle continuously and approach the gate cautiously.
- iii) The Loco Pilot shall be instructed to pass the gate cautiously, on being hand signalled by the gatekeeper. If hand signal is not seen, the Loco Pilot should be prepared to stop short of the gate and depute his Assistant Loco Pilot to see the condition of the gate. If gate is closed, ALP will give all right signal and if gate is not closed, the ALP must

close the gate and then give all right signal. In the absence of the ALP, the LP may take the assistance of TMR.

- iv) In case of an approaching train, the SM shall advise the SM at the dispatching end, under exchange of private number that the telephone at the gate has failed.
- v) The SM at the dispatching end shall then issue a caution order to the LP before dispatching a train in the block section from his end.
- vi) The SM shall advise the GK through gang man/patrol man or the LP of the first train that the telephone has become defective.
- vii) He should also advise S&T staff responsible for maintenance of the telephone to rectify the same at the earliest.
- viii) Normal working will be resumed only after S&T staff rectify the telephone and issue reconnection/fit memo for the same.

#### **6.8 FAILURE OF LIFTING BARRIERS:-**

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

#### **6.9 OBSTRUCTION AT THE GATE:-**

- i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gatekeeper shall immediately fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gatekeeper shall advise the Station Master/BRGA on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) Station Master/BRGA on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- iv) If there is no response from the Station Master/BRGA after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gatekeeper shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gatekeeper under item No.6.4. (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/BRGA who shall not start the trains unless he

has been assured by the gatekeeper that the road vehicle or the lifting barriers are not fouling the track.

- viii) The Station Master/BRGA shall also inform the Station Master/BRPL at the dispatching end, under exchange of private number, asking him not to dispatch any train into the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the gatekeeper shall inform the Station Master/BRGA accordingly, under exchange of private number.
- x) Gatekeeper shall secure the gate against road traffic by means of safety chains and padlocks and thereafter exhibit green hand signal, if the gate is not obstructed.
- xi) Station Master/BRGA shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- xii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

#### **6.10 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:**

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gatekeeper, the gatekeeper and Station Master/BRGA will adopt the procedure given under item No. 6.9 above. If the obstruction fouls the level Crossing Gate, gatekeeper must keep the gates closed against road traffic till the track is cleared of the obstruction.

#### **6.11 ACCIDENTAL ROLLING DOWN OF TRAIN:**

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

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

#### **CERTIFICATE: -**

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

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

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

**2.0 DESCRIPTION OF OPERATOR CONSOLE CUM VISUAL DISPLAY UNIT:**

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

**2.1 SYSTEM OVERVIEW:**

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

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

**2.3. ICONS AND INDICATIONS PROVIDED ON THE VDU**

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

| Sl. No | ICONS                              | INDICATIONS                                                                     | FUNCTIONS                                                                                                                        | REMARKS                                                                                                      |
|--------|------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 1.     | SM's Key                           | Yellow light when key is 'IN'                                                   | Ensures operation of VDU by authorized person                                                                                    | Protected by pass word                                                                                       |
| 2..    | ----                               | Emergency Route release - DN & UP                                               | Flashing indication appears when Emergency route release operation is initiated.                                                 |                                                                                                              |
| 3.     | Emergency Gate release             | Flashing indication appears when Emergency gate release operation is initiated. |                                                                                                                                  |                                                                                                              |
| 4.     | Emergency Point operation key      | Yellow light when key is 'IN'                                                   | Ensures emergency point operation by authorized person                                                                           | For each operation concerned counter shall register one count higher.                                        |
| 5.     | ---                                | System indication On/Off                                                        | Indicates System 'A' or 'B' is in working mode                                                                                   |                                                                                                              |
| 6.     | Point failure Ack. icon            | Red                                                                             | Flashing indication appears when any point fails. SM has to left click on the icon to acknowledge.                               | Buzzer will sound. On acknowledgement buzzer stops. After verification at site inform S&T staff Immediately. |
| 7.     | Signal failure Ack. icon           | Red                                                                             | Flashing indication appears when any signal fails. SM has to left click on the icon to acknowledge.                              | Buzzer will sound. On acknowledgement buzzer stops. Inform S&T staff Immediately.                            |
| 8.     | CH-1 to CH13                       | Yellow lamp indicates 'KEY IN'. Red lamp indicates 'CH LOCKED'                  | In normal condition yellow lamp will be lit. Whenever the crank handle is locked in route or otherwise red indication will glow. | --                                                                                                           |
| 9.     | 'UP Train Entering Section' muting | Yellow - acknowledged                                                           | SM shall left click on the button icon to acknowledge it.                                                                        |                                                                                                              |
| 10.    | 'DN Train Entering Section' muting | Yellow - acknowledged                                                           | SM shall left click on the button icon to acknowledge it.                                                                        |                                                                                                              |
| 11.    | DN Block release                   | Yellow –Prepared for Block release.                                             | On getting indication SM shall left click on the button icon which shall release Block Handle.                                   | After complete arrival of train this will be activated                                                       |
| 12.    | UP Block release                   | Yellow –Prepared for Block release.                                             |                                                                                                                                  |                                                                                                              |
| 13     | Line Block                         | Red when blocked                                                                | SM shall select the required counter on the                                                                                      | When line block is selected the concerned                                                                    |

|  |  |  |                                                                                                                                                                                                                                            |                                                          |
|--|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
|  |  |  | menu and can read the latest counter reading. SM shall point the curser on the icons provided on the berthing track and right click. One drop menu will appear indicating line blocked and un-blocked, SM has to select the required menu. | berthing portion of track will appear as thick Red line. |
|--|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|

### 3.0. OPERATIONAL PROCEDURE THROUGH VDU AND INDICATIONS:

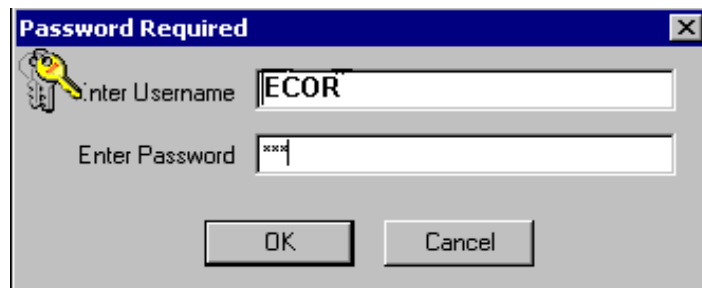
In addition to the mimic yard diagram various other indications will be available on the VDU. The implications of different indications provided and the operational procedure for different functions shall be strictly followed as per the following description.

#### 3.1 **ELECTRONIC INTERLOCKING (E.I) SYSTEM INDICATIONS:**

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

#### 3.2 **OPERATION PROCEDURE OF SM’s KEY :**

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



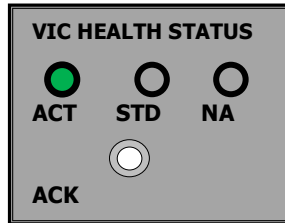
Enter the USER NAME and PASSWORD and click the OK button.

Now the Operating VDU is ready for use & the entire yard can be controlled from the VDU.

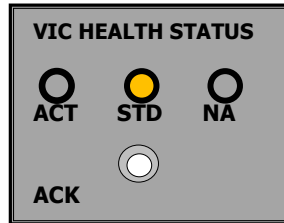
Similarly Station Master to select the KEY OUT to prevent the unauthorized operation.

### 3.2.1 VIC (Vital Interlocking Computer) Status Indications:

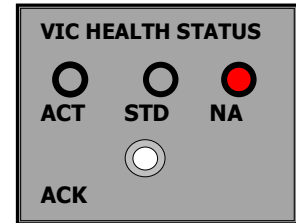
VIC-A Active, Stand By and Not Available indications will be displayed in VDU as shown below:



VIC-A is Active

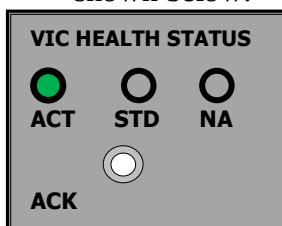


VIC-A is Stand-by

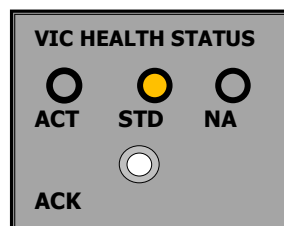


VIC-A is Not Available

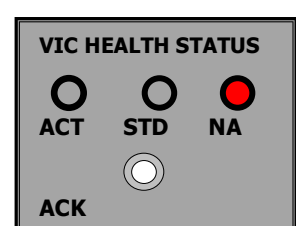
VIC-B Active, Stand By and Not Available indications will be displayed in VDU as shown below:



VIC-B is Active



VIC-B is Stand-by



VIC-B is Not Available

If there is any change in VIC's status, its changed status will be displayed in VDU as shown below to alert the Station Master. When the Station Master acknowledges the fault message, the corresponding fault message will be cleared in VDU. For acknowledging the fault message the operator needs to Right click on the corresponding fault message and shall select the "ACK" option from the pop-DN menu.

**VIC A STATUS CHANGED TO ACTIVE**

**VIC A STATUS CHANGED TO STAND BY**

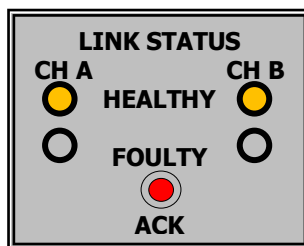
**VIC A STATUS NOT AVAILABLE**

If at least one VIC is available in Active State EI will continue to function normally. On observing the fault message, SM shall acknowledge the fault message and immediately inform to EI Maintainer.

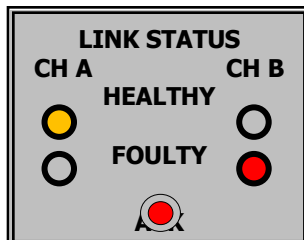
### 3.2.2 Link Status Indications:

These indications are provided to display the status of communication between VDU and CIU (Central Interlocking Unit).

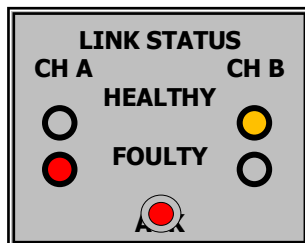
When both Channels A & B communication links with CIU are Healthy, then the corresponding indications will be displayed as shown below:



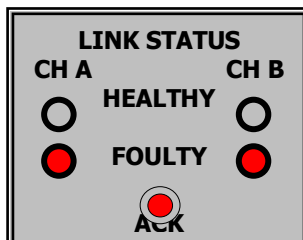
When Channel–A Link Status is Healthy and Channel–B is Faulty then the corresponding indications will be displayed as shown below:



When Channel–A Link Status is Faulty and Channel–B is Healthy then the corresponding indication will be displayed as shown below:



When both Channels A & B are Faulty, then the corresponding indications will be displayed as shown below:



When Channel-A link or Channel-B Link fails, corresponding fault Buzzer is turned on to alert the operator. To acknowledge the failure, Station Master shall Right click on the above control and shall select the “ACK” option in the pop up menu. Then the Buzzer stops.

When both Channel-A and Channel-B Links fail, all the VDU indications become blank since no indication data is received by the VDUs from the CIU. And CIU will restart for every 60 minutes until link is recovered. The Station Master shall report the failure to ESM for troubleshooting.

### 3.2.3 OC SHUTDOWN STATUS(VCOR RELAY DROP)

When VCOR Relay Drops in any OC, corresponding fault message will be shown in VDU and also a buzzer starts automatically to alert the Station Master. SM shall acknowledge the fault message and inform the EI Maintainer regarding the failure.

**VCOR RELAY DROPPED AT OC NO- 4**

### 3.2.4 CIU SHUT-DOWN

If CIU is shutdown due to any critical fault, corresponding fault message will be shown in VDU and a buzzer starts automatically to alert the Station Master. SM shall acknowledge the fault message and inform the EI Maintainer regarding the failure.

During the both system's failure, all indications on the VDU become blank. Then the station master should immediately inform to the EI Maintainer.

### 3.3 OPERATION PROCEDURE OF PC Enable :

On duty SM/ASM needs to track the pointer to the "PC CONTROL" icon and click right button of the mouse, a pop DN menu appear as shown below and then select the "PC ENABLE" option with left click. Now SM/ASM can operate all controls from the active VDU.



After selecting PC Enable, it will ask for Login Authentication as shown below.

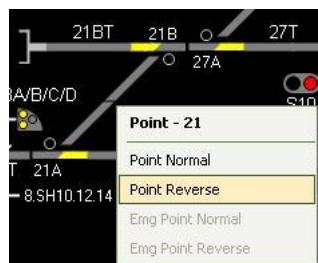
 A screenshot of a 'Login Form' dialog box. It has a title bar with the text 'Login Form'. Inside, there are two input fields: 'User Name' with the value 'ECOR' and a dropdown arrow, and 'Password' which is empty. Below the fields are two buttons: 'Ok' and 'Cancel'.

Select the User Name and Enter Password and click the OK button.

Now the Operating VDU is ready for use & the entire yard can be controlled from the VDU.

### 3.4 OPERATION AND INDICATION OF POINT:

To operate any Point the SM needs to track the mouse pointer to concerned point's Normal /Reverse indications on the VDU, Right click on it, then it will show a Menu as shown below.



#### 3.4.1 REVERSE TO NORMAL OPERATION:

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

#### 3.4.2 NORMAL TO REVERSE OPERATION:

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

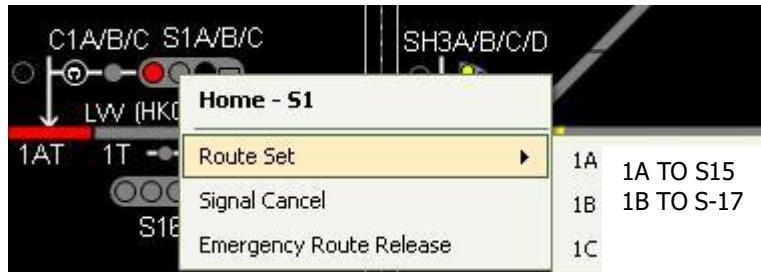
#### 3.4.3 POINT INDICATIONS

For every point, a steady strip of yellow light will appear in the point zone to indicate the point Normal / Reverse condition. It will flash if the point is operating from Normal to Reverse or vice versa. And it will flash continuously if the point's detection not available.

For every point, an indication is provided, it will show Red indication if the Point is in Locked condition otherwise it will be blank.

#### 3.4.4 PROCEDURE FOR SETTING OF ROUTES AND TAKING OFF SIGNALS:

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



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

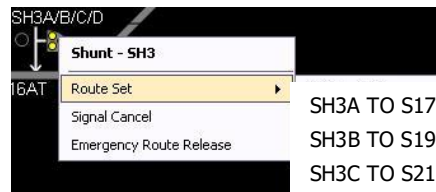
#### 3.4.5 SETTING A ROUTE AND ITS INDICATIONS:

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

#### 3.4.6 SHUNT SIGNAL OPERATION:

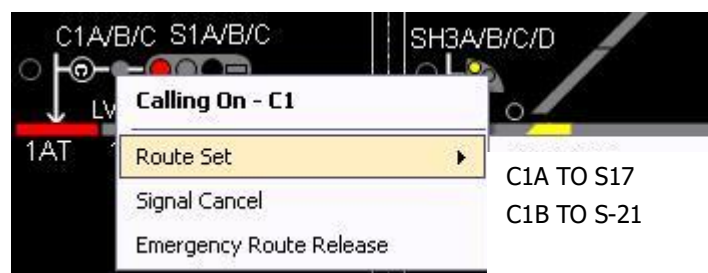
The same procedure as main signal has to be followed as explained above. To set the signal route for shunt signals SM on duty shall put the pointing device on the Shunt signal icon and right click on the same. A drop down menu will appear indicating different actions that can be selected. After selecting,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

shall left click on it. Desired route will be initiated and the Shunt signal can be taken off.



### 3.4.7 CALLING ON SIGNAL OPERATION:

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

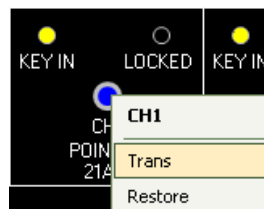


After a lapse of 60 seconds, the Calling-on signal below Home signal will clear. In case of calling ON signal below starter signal SM on duty should ascertain that the train has stopped, at the foot of starter signal then only SM will take OFF calling ON signal below starter signal, without delay the Calling ON will clear i.e., a White light glows at the concerned calling-on signal on the VDU. Every such operation has to be recorded by the on duty SM along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train or by emergency cancellation.

### 3.5 CRANK HANDLE CONTROL OPERATION:

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

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



To Transmit the Crank Handle KEY to the field personnel, SM on duty has to click transmit control menu. After transmission the 'KEY IN', indication will start flashing, now the KEY can be extracted from the RKT at site. After extracting the key from the

RKT, the 'KEY IN' indication will disappear. When the Manual point operation is over, after putting CH key in the RKT, 'KEY IN' flashing indication will appear on the VDU, Now the SM on duty has to Release the control for the steady indication by clicking release control menu.

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

### 3.6 LEVEL CROSSING GATE OPERATION:

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

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



Normally no indication will be available on the VDU indicating that the gate control key is out and gate is open. When it is required to close the gate SM on duty shall intimate the gatekeeper to close the gate. On instructed by the SM on duty the gatekeeper shall close and lock the gate and after reversing the concerned slot lever, he shall transmit the gate control key to station by inserting and transmitting the key in the RKT. A flashing yellow indication will appear on the VDU seeing which SM on duty shall receive the control by clicking on the L.C. Gate control button icon and select 'Restore'. The flashing indication shall become steady.

When the key is required to be transmitted to the Gate man, SM on duty has to transmit the control by clicking, after transmission the CLOSED indication will start flashing, now the KEY can be extracted from the RKT. When the gate has been closed, locked & slot lever is in reverse position, after putting the key in the RKT, A CLOSED flashing indication will appear on the VDU. Now the SM has to release the control for the steady indication.

The locked indication will appear when the LC Gate has locked by initiation of any of the possible signal routes.

### 3.7 OVERLAP TIME RELEASE (YELLOW LIGHT):

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

### 4.0 EMERGENCY OPERATIONS:

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

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

To cancel a signal route when the route is set and the signal is taken-off, click on the signal. After clicking by the right button on the mouse, a pop-DN menu will appear as shown in Para 3.4 above. Click on the “Signal Cancel” menu of the concerned signal, the signal will immediately go to ‘ON’ aspect. After doing so, click on the “Emergency Route release” menu the route locked indication will starts flashing for 120 sec & the Emergency Route Release Indication (DN / UP as the case may be) will flash for the entire time interval. After the completion of 120 sec, the locked route will be released. This action will be recorded in a counter. The counter will increase to next higher number for each and every such operation and also, this number should be recorded by the SM on duty who shall record the details of the Route cancellation along with the latest counter no. in a register and SM’s diary.



However, When a train is dealt with shunt signal after completion of the movement, if the concerned route is not released due to failure of MSDAC track section the following procedure will be followed/adopted.

**i.)When provided below stop signal (Dependent shunt signal):-** When the above condition arises, after resetting the concerned MSDAC, cancel the main signal (above the concerned shunt signal) and apply emergency route release for the main signal. If the route is not released, the concerned shunt signal will be taken off again and emergency route release will be applied & then the route will be released.

**ii.)In case of independent shunt signal:** The concerned MSDAC shall be reset and then normal emergency route release procedure shall be adopted.

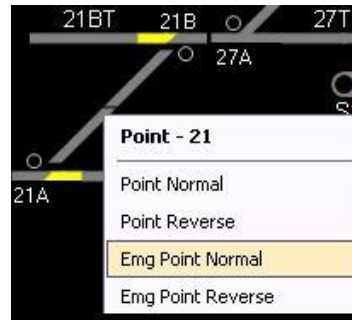
#### 4.2 EMERGENCY OPERATION OF POINTS:

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

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

##### 4.2.1 EMERGENCYNORMAL OPERATION

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



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

#### 4.2.2 EMERGENCY REVERSE OPERATION OF POINTS:

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

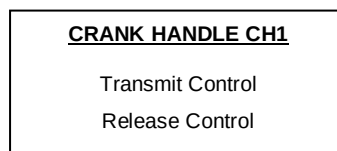
After the completion of the Emergency point operation, the Key to be 'KEY OUT' by clicking 'KEY OUT' menu. The user name and password is to be given for 'KEY OUT' also.

#### 4.3 EMERGENCY CRANK HANDLE RELEASE OPERATION:

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



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



For Transmitting the Crank Handle KEY to the field personnel SM on duty has to click transmit control menu. After transmission the 'KEY LOCKED' (Red) indication will start to flash for 120 seconds & 'KEY IN' remains steady. After a lapse of 120 seconds the 'KEY LOCKED' indication will vanish & 'KEY IN' indication will start to FLASH. After extracting the key from the RKT, the 'KEY IN' indication will

disappear. When the Manual point operation is over, after putting the emergency crank handle key in the RKT, flashing ‘KEY IN’ indication will appear on the VDU, Now the SM on duty shall Release the control for the Steady indication by clicking ‘RELEASE CONTROL’ menu.

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

#### 4.3.1 EMERGENCY CRANK HANDLE OPERATION DURING FAILURE OF BOTH VDUs.

In case of failure of both VDUs on duty SM shall turn the VDU selection switch towards “NO VDU” and turn the emergency, crank handle Key provided on the SM table to “KEY IN” position. This operation will release all crank handle of this station. After restoration of VDUs SM on duty shall turn the emergency crank handle key towards “KEY OUT” position and turn VDU selection switch either of the VDU and restore the crank handles through VDU as per standard procedure.

##### a) EMERGENCY CRANK HANDLE RELEASE DURING FAILURE OF BOTH THE VDUs (ACTIVE & STAND BY) :

When both the VDUs (Active & Stand by) provided for operation of signals & points in EI station cease to work at the same time due to power failure or what so ever the reason, the SM on duty shall put the VDU key to middle position and turn the key (ECH) to right provided in the key box fixed on the SM table. By resorting to this, timer is initiated and all the crank handles are released at a time after 120 seconds. The SM on duty can set the required point/points through crank handles manually by extracting the key/keys from EKTs provided in the location boxes. In case complete EI System fails there is a provision that keys from all crank handle locations can be extracted for crank handling & setting of points for train operations.

| S No | CRANK HANDLE | CONTROL POINTS   |
|------|--------------|------------------|
| 1.   | CH1          | 57A/B. 65A/B     |
| 2.   | CH2          | 55A/B. 61A/B. 59 |
| 3.   | CH3          | 58A/B. 77A/B     |
| 4.   | CH4          | 63A/B. 73A/B. 75 |
| 5.   | CH5          | 64A/B. 71A/B     |
| 6.   | CH6          | 56A/B. 69A/B     |
| 7.   | CH7          | 67               |
| 8.   | CH8          | 60A/B. 79A/B     |
| 9.   | CH9          | 52A/B. 62A/B     |
| 10.  | CH10         | 53A/B            |
| 11.  | CH11         | 66               |
| 12.  | CH12         | 81               |
| 13.  | CH13         | 68               |

##### b) EMERGENCY CRANK HANDLE RELEASE DURING FAILURE OF BOTH EI(ACTIVE & STAND BY) SYSTEMS

When both the EI systems fails to operate due any technical reason, all the crank handles are released at a time with time delay of 120 second & incase of power failure it will released immediately and the SM on duty can set the required point/ points

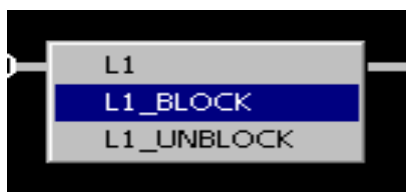
through crank handles manually by extracting the key/keys from EKTs provided in the location boxes. The signaling staff i.e., JE/SSE/Sig. or ESM shall be intimated immediately regarding the failure for rectification of the same

#### 4.4 LINE BLOCK AND UNBLOCK:

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

##### 4.4.1 LINE BLOCK:

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



##### 4.4.2 LINE UNBLOCK:

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

#### 5.0 PROCEDURE FOR RESETTING OPERATION OF LVCD (DIGITAL) AXLE COUNTER IN SECTION BRGA-DOBH.

5.1 Digital Axle Counters are provided on both DN & UP line of BRGA-DOBH block section. The occupation and clearance of the axle counter section are indicated on VDU by RED & GREEN light respectively. When after arrival of a train the LVCD Axle counter does not show clear indication and the 'Section Occupied' indication continues to glow SM on duty shall initiate resetting procedure for the LVCD Axle Counter monitoring the Block section. Before initiating Resetting procedure SM on duty shall ensure that the train which has left arrived completely at receiving station and block section is clear [free] of trains. If the track indication of that particular block section is showing 'Red' then the following actions are to be performed by the SM on duty. The receiving station shall inform the sending station as to whether the last train that entered into the section has arrived or not. And, if arrived fully shall so intimate authenticated by exchanging Private number with the sending station before resorting to resetting operation.

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

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

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

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

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

If the axle counters functioning properly now, then Block Section cleared indication 'GREEN' will appear on the reset box & VDU 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.

## **6.0 MAIN SIGNAL LAMP FAILURE INDICATION AND BUZZER ACKNOWLEDGMENT:**

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

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

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

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

## **6.2 SHOWING OF COUNTERS:**

A separate physical veeder counter box is provided on SM table.

## **7.0 MSDAC [Multiple Section Digital Axle Counter](Dual Detection) : - WORKING OF TRAINS AT STATION PROVIDED WITH DUAL MSDAC (Multi Section Digital Axle Counter) EQUIPMENT:**

### **1. GENERAL:**

Entire yard of Bargarh Road (BRGA) station from UP Home Signal to Down Home Signal including calling on tracks is provided with Dual MSDAC system in place of conventional DC track circuits to detect the presence of train. When any Track section is occupied that particular Track section will show 'RED' indication on the operating VDU. However, MSDAC system will not detect any vehicle which is placed abruptly in between the MSDAC detection points. Dual or redundant MSDAC system has two

independent parallel systems viz. system-A & system-B working simultaneously to detect occupation/clearance of the Track Sections. In case of failure of any one of the system i.e., System 'A'/System 'B' the other system shall take care of the concerned Track section. This is to facilitate dealing of trains with signals during the failure of any one of the systems. Facility for MSDAC reset operation, In case of failure of both the systems is provided on operating VDU at the SM's office.

## 2. DESCRIPTION OF THE INDICATIONS/FEATURES ON THE MSDAC INDICATION-CUM-RESET BOX PANEL:-

### A) FEATURES:

1. SM's key for authorizing reset operations.
2. Reset push button for resetting MSDAC Track sections.
3. Counter for recording Rest operations.
4. Buzzer during the reset operation.

### B) INDICATIONS PROVIDED IN REST BOXES OF EACH TRACK SECTIONS AT SM'S ROOM:

| MSDAC RESET BOX                         |                  |
|-----------------------------------------|------------------|
| POWER ON                                | MINIATURE YELLOW |
| PREPARATORY RESET                       | MINIATURE GREEN  |
| LINE VERIFICATION<br>for Track section. | MINIATURE YELLOW |
| SECTION CLEAR                           | GREEN            |
| SECTION OCCUPIED                        | RED              |

### 3. COMMUNICATION: Magneto phone provided between SM Room and LV Boxes.

### 4. CUSTODY OF KEYS:

SM's keys of MSDAC indication-cum-reset box panels, line Verification keys and LV Box keys for all Track sections are provided. These keys shall be kept in a separate Glass fronted case and shall be under personal custody of the S.M on duty.

### 5. RESET BUTTON:

Reset buttons are provided in the Reset Boxes for main & redundant Track sections. So that whenever the any Track section shows 'Red' indication, the SM on duty can reset the same to normal after ensuring that the Track Section is free of obstructions.

### 6. COUNTERS FOR RECORDING RESET OPERATIONS:

Each and every operation of the Manual reset is counted on a veeder counter provided in the reset box and shall be recorded in a separate register for indicating the movement before and after operation of the reset as per the following format.

| Sl. No.: | Date | Time | Track Section No. | Track section failed after the arrival/departure of Train No. | Counter reading before resetting | Counter reading after resetting | Train No. dealt after reset-ting | Reason | Signature of points man for Line Verification | Signature of SM on Duty |
|----------|------|------|-------------------|---------------------------------------------------------------|----------------------------------|---------------------------------|----------------------------------|--------|-----------------------------------------------|-------------------------|
| 1        | 2    | 3    | 4                 | 5                                                             | 6                                | 7                               | 8                                | 9      | 10                                            | 11                      |

**7. RESETTING PROCEDURE OF MSDAC:**

MSDAC is provided with two types of rest features corresponding to failures of systems viz.

1. Auto Reset. 2. Manual Reset.

**1. AUTO RESET:**

The Dual detection system-A and system-B of MSDAC has internal software of Auto reset function. The Auto Reset feature is provided for systems of all the Track sections.

- i) The system-A and system-B common track status provided on the VDU. So during failure of any one system of MSDAC, the track section remains clear in the Operating VDU and RED indication will appear on the concerned Rest box.
- ii) The failed system will reset through Auto Reset from the working system and failed systems enter into preparatory reset mode. Preparatory reset indication will appear in the concerned Reset box automatically within 2 minutes.
- iii) During preparatory reset mode of the system, SM on duty shall deal the train with signals. After dealing one train on preparatory reset mode, the failed system will get restored to section clear and indication status on the concerned Reset Box changes to Green.
- iv) During the failure of any one of the MSDAC system, if preparatory indication not appeared within 2 minutes (or) if Reset accepted (preparatory indication appeared) and track not cleared after the dealing the one train movement over the track, SM on duty shall inform Tech/JE/SSE/Signal concerned regarding the failure of MSDAC system for early rectification

**2. MANUAL RESET:**

In case, failure of both systems of MSDAC track section the corresponding track section will show Red in VDU as well as in reset box. SM on duty shall initiate Manual Reset.

**(a) Co-operative type for Point Zones/Loop lines/Sidings:**

- i) SM on duty shall depute a Points man on duty for physical verification of failed track section. Handover the LV box key and line verification key to the points man on duty advising to ensure the failed track section is free from any of obstructions after the necessary entries like Date, Time, reason and signature shall be made in the key register provided for this purpose.
- ii) Points man after duly ensuring the track section is free from all obstructions on field shall open the Box, then insert line verification key and press to extend the co-operation from failed track section for LV indication on the reset box.
- iii) On observing LV indication on reset box of concerned track section, SM on duty shall insert & turn the relevant SM's Key in one of the systems of reset panel and press Reset push Button of concerned track section. Then buzzer will sound for few seconds till the clear indication appears on the concerned Reset box SM shall release the SM's key and Rest Push Button. The counter provided for recording resetting operation will register next higher number. Then SM shall instruct the Points man to release the LV key and lock the LV Box.

- iv) SM on duty shall record the details like Date, time, counter No. Train No. reason & signature etc in the Reset & key registers are provided for SMs key, LV Box key and LV keys shall be secured back in the SMs key Box.
- v) After resetting of track section, SM on duty shall deal the train with normal working.
- vi) If any of the MSDAC systems continues to show occupied RED indication in the Reset Box even after manual resetting. SM on duty shall inform Tech/JE/SSE/Signal concerned regarding the failure of MSDAC system for early rectification.

**(b) Main Lines/Run through lines:**

- i) SM on duty shall depute a Points man on duty for physical verification of failed track section. Handover the LV box key and line verification key to the TP duty advising to ensure the failed track section is free from any of obstructions after the necessary entries like Date, Time, reason and signature shall be made in the key register provided for this purpose.
- ii) Points man after duly ensuring the track section is free from all obstructions on field shall open the Box, then insert line verification key and press to extend the co-operation from failed track section for LV indication on the reset box.
- iii) On observing LV indication on reset box of concerned track section, SM on duty shall insert & turn the relevant SM's Key in one of the systems of reset panel and press Reset push Button of concerned track section.
- iv) 'PREPARATORY RESET' indication will appear on the indication-cum-Reset Box which indicates that the resetting operation is completed. However the track section in operating panel shows RED.
- v) During preparatory reset mode of the systems, SM on duty shall deal the train with Calling on signals /piloting. After dealing one train on preparatory reset mode, the failed systems will get restored to section clear and indication status on the concerned Reset Box changes to Green. Also the track section on operating VDU shows clear, further train can be dealt on signals.
- vi) SM on duty shall record the details like Date, time, counter No., Train No., reason etc. in the Reset & key registers are provided for this purpose and SMs key shall be secured back in the SMs key box.

**Note:** Before Manual Resetting of the track section of MSDAC system. SM on duty shall ensure the failed track section and free from all obstructions and verified on field physically.

**TRACK SECTION:**

2AXT,2XT1,47XT,2XT2,47AXT,2XT3,52BXT,52AXT,56AXT,56BXT,58AXT,58BXT,62AXT,62BXT,23AXT,60XT,64AXT,64BXT,21AXT,25AXT,26AXT,27AXT,31AXT,L1AXT,L2AXT,L3AXT,L4AXT,L5AXT,L6AXT,26AXT,32AXT,34AXT,36AXT,79XT,77AXT,77BXT,28AXT,71BXT,73XT,71AXT,61AXT,61BXT,63XT,69AXT,69BXT,38AXT,65AXT,61BXT,57AXT,57BXT,55BXT,55AXT,53AXT,48AXT,48XT,53BXT,1XT2,1XT1,1AXT.

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

Miniature colour light Calling-on signal is provided below the Home signals in terms of GR.3.13 (6)(b). A Calling-on signal shows no light in the 'ON' position. A Calling-on signal is taken 'OFF' for reception of a train when the Home signal above

it cannot be taken 'OFF' for admission of train on blocked line or due to failure of main signal due to any other reason.

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

After a lapse of 60 seconds, the Calling-on signal below Home signal will clear. In case of calling ON signal below starter signal SM on duty should ascertain that the train has stopped, then only SM will take OFF calling ON signal below starter signal, without delay the Calling ON will clear i.e., a White light glows at the concerned calling-on signal on the VDU. Every such operation has to be recorded by the on duty SM along with the reasons to do so.

**NOTE:**

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

**9.1 RELEASE/CANCELLATION OF ROUTE:**

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

**NOTE:**

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

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

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

**9.3 INTERLOCKING OF SIGNALS:**

UP IB is interlocked with Block Instruments of section BRGA-BRPL and UP IB is interlocked with Block instrument of section BRGA-DOBH in line clear position.

The block instrument cannot made normal unless the respective home signal is put back to 'ON' and the respective block section monitored by Axle counter is clear of trains. Signals once taken 'OFF' can be put back to danger in case of emergency by following para No. 3.4 of Appendix-'B' even when the SMs key is withdrawn from VDU.

**9.4 PILOTING OF TRAINS IN TO STATION YARD.**

Whenever Home signal becomes defective, trains can be admitted by taking off Calling-on signal. Whenever both Home signal and Calling-on signal failed, all trains will be piloted in vide SR. [Refer SR 3.69.06].

**9.5 PILOTING OF TRAINS - OUT OF STATION YARD:**

When the starter signal has become defective, and O/G route does not appear on VDU the Station Master on duty shall advise the on duty TPM to set all points correctly for the outgoing trains. Then he shall clamp and padlock the same under the supervision of SM on duty. Then the SM on duty shall hand over the pilot memo T/369(3b) to the on duty TPM. The TPM on duty shall hand over the authority to the Loco pilot of the train and display proceed hand signal at the foot of the starter vide SR. [Refer SR 3.70.03].

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

**9.6 SHUNTING:**

Shunt signals at top point viz., SH5 at DOBH end and SH4 at BRPL end have been provided for back shunt movement.

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

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

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

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

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

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

When a train is stabled on a running line for a duration exceeding ten hours, the use of the said running line for passing the trains 'IN' 'THROUGH' or 'OUT' at the station shall be done with a lot of care and diligence. Station Master on duty shall meticulously observe the proper functioning of the relevant track section (occupancy/clearance) while admitting a train. Such observance should continue for a minimum of four to five trains thereafter.

If the Station Master on duty is not satisfied with the proper functioning of the track section on which the train was earlier stabled, the signals leading on the line shall be

suspended and the S & T maintainer/SSE(Signal) to be informed for rectification of the failure.

**13. LOCKING OF RELAY ROOM:** Refer para no.-4.2 of main SWR.

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

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

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

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

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

**16. INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:**

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

**17. RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING**

After receipt of the failure information, the sectional Maintainer shall attend to the failure after giving a 'Disconnection Memo'. After rectification of the fault, the Sectional Maintainer shall give 'Reconnection Memo' detailing the rectification. Thereafter the Station Master on duty shall personally check this defective apparatus. After satisfying himself that the gear is in good and proper working order, he shall resume the normal working of the said defective apparatus in terms of SR.3.68.04 (c) and (d) and RB letter No. 2021/SIG/21/safety performance, dtd:10.06.2023 & amendment issued vide letter No: 2023/TT-IV/9/2, dtd:16.06.2023.

**18. PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:**

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

**19. EMERGENCIES:**

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

pass trains over the affected interlocking equipment's according to extant instructions as contained in GR and SR.3.77.

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

- 20.1** Whenever a Signal or a Point become defective any movements over the Points on the running lines should be made after clamping and padlocking both the facing and trailing Points by Station Master on duty personally for all trains at the Station.
- 20.2** In case of failure of Signal or a Point and in case the Point cannot be operated from the VDU, the emergency Crank Handle which is interlocked with the system has to be extracted and the following procedure has to be observed.
- 20.3** One common emergency Crank Handle is provided for all the Motor operated Points of a group. This is mechanically riveted to the Key of RKT. This Key along with Crank Handle can be released from the RKT by following procedure vide 3.5 of appendix-B. The Station Master on duty in case of Point Motor failure will take out the Crank Handle set the Point manually by inserting Crank Handle on the Motor.
- 20.4** When the Crank Handle is removed from RKT for operation of the defective Motor Operated Points, the responsibility for its safe custody rests with the SM on duty till it is replaced back in RKT and sealed by Signal Maintainer.
- 20.5** The case of failure of Motor Operated Points should be promptly reported to the concerned SSE(Signal)/ESM for immediate rectification.
- 20.6** Whenever an emergency Crank Handle is required to be used by a Signal Official for maintenance of work attending to failure, the Signal Official will give a disconnection memo to the Station Master on duty and after making necessary entries in the emergency Crank Handle register, the Station Master on duty will obtain acknowledgement of the Signal Official in the emergency Crank Handle Register and then handover to him the emergency Crank Handle for the Points concerned. All the Points will be treated as defective till the Emergency Crank Handle is returned back to Station Master on duty.
- 20.7** Before parting with the Emergency Crank Handle either for attending failure or for Maintenance work by Signal Maintenance Officials, the Station Master on duty will ensure that the reception and departure Signals are put back to on position. The Points of all the lines should be treated as Non-interlocked and the Station Master on duty is responsible for introduction of Non-interlocked working and the trains will piloted IN and OUT duly clamping and Padlocking the Points, both in facing and trailing directions over which the train is to pass, as per GR 3.69 and 3.70 with relevant SR's. The Station Master on duty will be personally responsible for setting and locking of Points, for reception and dispatch of all trains.
- 21.0** The Emergency Crank Handle Register is to be maintained by the Station Master on duty wherein the particulars of usage of the Emergency Crank Handle must be recorded as per operating manual and other circulars issued.

## 22.1 INTERLOCKING OF SIGNALS WITH BLOCK INSTRUMENTS:

This Station is equipped with the following types of Block Instruments to control movements of trains from and to adjacent Block Sections.

| S.No | Section   | Type of Block Instrument          |
|------|-----------|-----------------------------------|
| 1.   | BRGA-BRPL | Double line SGE Block Instrument. |
| 2.   | BRGA-DOBH | Double line SGE Block Instrument. |

### a) LAST STOP SIGNAL CONTROL:

1. The BRGA-BRPL & BRGA-DOBH double lines are controlled by SGE Block Instrument provided at SM's room.
2. The DN Advanced starter and UP IB signal are interlocked with the respective Block Instrument of BRGA-DOBH & BRGA-BRPL respectively in such a way that the DN Advanced starter signal or UP IB signal cannot be taken off unless the Line Clear is obtained from the block station in advance and the handle of the SGE Block instrument is turned to "Line clear" position.
3. The concerned advanced starter signal or IB 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.

### b) BLOCK RELEASE:

1. 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 BRGA Station yard.
2. All the power signaling installations in BRGA Station yard are centrally controlled from the EI BUILDING and it is explicit in this arrangement that the complete arrival of a train into the yard from the block section cannot be ensured by the operating personnel in the centrally located EI Building hence, to ensure complete arrival of the incoming train, Axle Counters are provided between BRGA-BRPL & BRGA-DOBH sections.
3. 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 BRGA Station yard.
4. 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 dispatch "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 TMR of the train. Then SM shall resort to resetting procedure of the axle counter of concerned block section.

## 22.2 INTERLOCKING WITH SIGNALS:

All the DN and UP HOME Signals are electrically interlocked with the respective block instruments, so that before the handle of the Block Instrument can be turned from train coming from position to LINE CLOSED position of DN or UP direction as the case may be must be in their NORMAL position.

22.3 The UP advanced starter signal is controlled and interlocked with UP IB Axle Counter section between BRGA-BRPL & DN Advanced starter signal is interlocked with Block Instrument of section BRGA-DOBH so that this Signal cannot be taken OFF until the Handle of the concerned Block Instrument is in 'LINE CLEAR' position.

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

When the block instrument for section BRGA-DOBH is suspended with its handle in any position for whatever reason the concerned Last Stop Signal controlled by the Block Instrument must be treated as suspended and a train towards DOBH shall be Piloted Out when the block instrument of section BRGA-BRPL is suspended with its handle in any position for whatever reason, UP IB Signal controlled by BRGA Shall be suspended and whole section BRGA-BRPL shall be treated as one block section.

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

23.1 Digital Axle Counters are provided on both DN and UP line Block Sections between BRGA-DOBH and BRGA-BRPL section.

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

23.3 If any Block proving Axle Counter [LVCD] section fails, the Last Stop Signal at the rear station cannot be taken 'OFF' and Block instrument at advance Station cannot be turned to 'Line Closed' position after arrival of a train and in such case, resetting of last Vehicle Checking Device is to be resorted to either Section.

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

**24.0 TELECOMMUNICATIONS:**

- i) Telephone attached with DLBI of BRGA-BRPL & BRGA-DOBH Block Sections.
- ii) Station to Station fixed telephone (Hot line) is provided
- iii) Station is provided with Auto telephone connected with Railway Exchange.
- iv) BSNL telephone is provided.
- v) The station is connected to Balangir - Jharsuguda control circuit by a control telephone.
- vi) Station to station 25 Watt VHF communication is provided.
- vii) Telephone is provided between Station and both end crank handle locations.
- viii) Telephone is provided between station and L.C.. Gate No. JT-47 at K.M. 605/25-27(UP), 605/26-28(DN), JT-48 at K.M. 606/3-5(UP) K.M. 606/4-6(DN), JT-50 at KM.608/27-29(UP) 608/28-30(DN), JT-51 at KM. 609/31-33(UP) 609/32-34(DN) and JT-54 at KM. 616/29-31(UP) 616/30-32(DN).
- ix) Telephone is provided with voice logger between station & UP IBS at K.M 613.649
- x) Telephone is provided with voice logger between SM & TPC.
- xi) Telephone is also provided in LV Boxes for MSDAC resetting.

**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, TMRs or any other staff.

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

- 1) In the event of failure/suspension of block instrument, Track section & Axle Counter 'Line Clear' shall be obtained over telephone attached to the block instrument or station to station telephone by exchanging identification number and supported by private number as per SR 6.02.06 (a) and Chapter-III Part-I of Block Working Manual.
- 2) In the event of failure/suspension of block instrument and block telephone attached to the block instrument, or the Station to station fix telephone 'Line Clear' shall be obtained on Railway auto phone or BSNL phone, by exchanging identification number supported by private number vide SR 6.02.06 (1)(b) and Chapter-III Part-I of Block Working Manual.
- 3) In the event of failure/suspension of block instrument, block telephone and station to station fixed telephone or Railway auto phone or BSNL phone, Line Clear shall be obtained over the control phone exchanging identification number and supported by 'Private Number' vide SR 6.02.06(1) (c) and Chapter-III Part-I of Block Working Manual.
- 4) In the event of failure / suspension of block instrument or block telephone attached to the block instrument, or station to station fixed telephone or Railway auto telephone or BSNL phone or control telephone line clear shall be obtained on the VHF sets exchanging ID number supported by PN provided that the instructions contained in SR 14.01.02 are followed vide SR 6.02.06 (1) (d) Chapter-III Part-I of Block Working Manual.
- 5) In the event of total failure of all communications trains shall be worked vide SR 6.02.03 and SR 6.02.04.

**26.0 A) POWER SUPPLY ARRANGEMENT FOR THE SIGNALLING INSTALLATION**

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

- i) Normally supply from AT connected to OHE Traction distribution [230 V 50 Hz].
- ii) Stand by supply from Odisha State Electricity Board (OSEB) [Single phase 230V-50Hz].
- iii) Normal power supply [Single phase 230V-50Hz] to the Signaling & Interlocking installation at the station is drawn from the traction power sources. Whenever traction power supply fails SS/SM on duty shall operate the rotary change over switch provided in the CLS power panel at SM's office connecting the power supply from the healthy sources to the installation.

The SS/SM on duty however maintain the record of AT power supply/ local supply and he must promptly report the failure of AT supply immediately through the section controller and to the concerned Electrical Staff and S&T maintenance staff.

- a) A change over switch is provided in the SM's office with the three power supplies viz UPAT or DNAT supply, local power supply for changing the switch to the required supply position. The availability of the supply is indicated by luminous indicator above the circuit breaker for each supply.
- b) Normally the switch will be kept towards Auto position. Whenever the power block is to be given on the line, on duty SS/SM must ascertain the power is available on the local supply or other AT supply and change over the switch to desired position.

- c) In case of failure of AT supply without any power block, on duty SS/SM has to check whether the circuit breaker has tripped. (Three circuit breakers are provided in the changeover switch board, one for each supply and their normal position is UP and when tripped, it goes DN). In case of failure of AT supply without any power block, the local supplies shall be utilized by operating the changeover switch. If the circuit breaker is tripping, even after resetting, no attempts shall be made to hold it by any other means and a message shall be given to the AEE/GEN and CTFO/PSI/TRD/GEN for prompt rectification.
- d) Whenever there is failure of AT supply, the on duty SS/SM shall take prompt action to inform to all concerned for the rectification, The on duty SS/SM himself, during his daily checks, shall test the availability of AT power supply and make entry in station dairy duly initiating action for rectification of failure, if any.

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

- i) Power supply to the signaling installation is fed through IPS installed in the S&T power supply room. The IPS is normally fed through AT traction power. Standby power supply are through local supply. One change over switch is provided in the SM's room for selection of output of AT traction power supply or local power supply. The available traction/local supply is fed to the IPS through auto-change over switch provided in IPS.
- ii) The IPS system is connected with Battery as a back-up power source for safe working during transition of power and in case no 230v AC supply is available due to any reason.
- iii) In the event of failure of all the sources of 230V, 50 Hz AC supply, the signaling system shall be fed by power generated by back-up battery Bank connected to IPS for a limited power of 08 to 10 hours. The health of battery bank is monitored through one IPS monitoring Panel provided in the SM's room which shall be display the voltage 110V DC

[Battery bank provided as back-up source of power supply]. Depending upon the health of the Battery Bank and the system, the following indication/alarm will appear on the Remote Monitoring Panel, their implications and action to be taken by SS/SM on duty is tabulated below.

| SN | Instruction     | Healthy of Battery Bank /Equipment | Visual Indication | Audio Indication | Action to be taken by SS/SM on duty                                                                                      |
|----|-----------------|------------------------------------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------|
| A  | -               | 50% DOD (105.9v)                   | Red               | Alarm            | Alarm shall be acknowledged by SS/ SM on duty.                                                                           |
| B  |                 | 60% DOD (105.1v)                   | Red               | Alarm            | ----Do----                                                                                                               |
| C  | System Shutdown | 70% DOD(104.3v)                    | Red               | Alarm            | Signal feed cut off and all DC-DC converters to work. Audio alarm will continue till power supply is restored.           |
| D  | Call S&T Staff. | Equipment fault                    | Red               | Alarm            | Failure of any module will give the alarm in SM's panel. Alarm shall be acknowledged by SS/SM on duty for audio cut-off. |

On duty SS/SM in each shift shall check and record the readings, indications, etc in the station dairy duly initiating rectification of failures of IPS system, if any. In the event of failure of remote monitoring ASM console due to any reason when traction power, local power the SS/SM on duty shall inform concerned Electrical staff immediately.

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

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

#### **27.0 WORKING OF AUTOMATIC FIRE DETECTION AND ALARM SYSTEM:**

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

**APPENDIX - 'C'**

**ANTI COLLISION DEVICE (RAKSHA KAVACH)**

**NIL**

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

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

He is responsible for maintaining the Assurance Register up-to-date. He shall conduct surprise night inspection and safety meetings/fire drills etc. as per instructions issued from time to time. He shall see that all the 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 DN to date.

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

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

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

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

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

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

He shall see that the law and order in the station area 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 1976 (Revised-2012) and GR 5.01 to 5.08 with relevant SRs. He shall follow the instruction laid down in SR 3.68.01© & (d) and SR 14.07.01 and BWM 2.09 (e). He shall conduct surprise night inspection, safety meetings and fire drills. He shall maintain good public relation as well as look after passenger's amenities and be helpful to travelling public.

#### 1.1 **ASSURANCE REGISTER:**

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

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

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

The declaration shall be renewed in the following cases: -

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

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

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

#### 3.0 **ACCIDENTS:**

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

#### 4.0 **TESTING OF POINTS AND SIGNALS:**

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

**5.0 SS/STATION MASTER:**

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

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

He is responsible for working beyond this period when called upon to do so in the exigencies of services. He will follow SR 3.68.01© & (d), SR 14.07.01. Their special attention is drawn to Chapter II of G & SR 1976 (Revised-2012) and GR 5.01 to 5.08 with relevant SRs. As an Assistant to the SS, he shall follow the instructions given to him by the Station Superintendent.

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

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

**7.0 TRAFFIC POINTSMAN:**

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

- (i) Delivery of authority to proceed and caution order etc. to the Loco Pilot of train.
- (ii) Correct setting and locking and crank handling of points for reception/dispatch and shunting operation under the supervision of Station Master.
- (iii) To couple and uncouple vehicles under the supervision of Station Master/Guard when shunting operation is in progress.
- (iv) Piloting and hand signaling of trains when necessary.
- (v) Knowledge of hand signals, detonators and their use.
- (vi) Protection of line in emergency and fog signalling.
- (vii) Exchange of signals with the Loco Pilot and TMR of passing trains as directed by the Station Master.
- (viii) Loading/unloading of parcels, luggage and packages to and from the train and watching the packages and other materials by properly stacking in the station premises.
- (ix) Dusting of station office, filling the fire buckets with sand/water and getting train interact arrival register (T/1410) signed by the TMR 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) To supervise shunting as per SR 5.13.03.
- (xiii) They must be thoroughly conversant with the GR 3.38, 3.46, 3.77(I), 5.09, 3.52 to 3.60, 3.62, 5.13, 5.15, 5.16, 5.21, 5.23 & SRs there to and their special attention is drawn to chapter No.II of G & SR (Amendment) 2000 also
- (xiv) When necessary, they will work in the Goomties for observing and reporting the complete/incomplete arrival/departure of trains as per the order of the SM on duty in case of failure of Axle Counter/Track Circuit.

**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'****LIST OF ESSENTIAL EQUIPMENT PROVIDED AT THE STATION:**

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

| Sl. No | Description                         | Quantity       |
|--------|-------------------------------------|----------------|
| (i)    | Detonators                          | 10 in tin case |
| (ii)   | LED based Tri colour flashing torch | 04 Nos         |
| (iii)  | Hand signal flags                   | 04 Sets        |
| (iv)   | Safety chains with pad locks        | 12 Nos         |
| (v)    | Wooden Wedges                       | 16 Nos         |
| (vi)   | Skid                                | 04 Nos         |
| (vii)  | Fire buckets (with sand and water)  | 06 Nos         |
| (viii) | Clamps with padlocks                | 14 Nos         |
| (ix)   | “Block suspension” Boards           | 02 Nos         |
| (x)    | “Motor Trolley on Line” Boards      | 02 Nos         |
| (xi)   | First aid Box                       | 01 Nos         |
| (xii)  | Stretcher                           | 01 Nos         |
| (xiii) | Fire extinguisher                   | 02 Nos         |
| (xiv)  | Blanket                             | 01 Nos         |

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

**1.0 MID-SECTION OUTLAYING SIDING:**

There is no mid-section siding on either end of station.

**2.0 INTREMEDATE BLOCK STOP SIGNALS ON BRGA-BRPL SECTION:**

**2.1 DESCRIPTION:**

Intermediate Block Posts ('SPL' Class Station) at Km. 613.917 on DN line and at Km. 613.649 on UP line of BRGA-BRPL Section are provided bifurcating DN and UP lines by means of Intermediate Block Signaling with Electronic axle counters and trains are worked under Absolute Block system in accordance with General Rule No. 1.02 (7), (31) & (32), 3.11, 3.42, 3.75, 8.01(1) (a), 8.01(2) (a).

**2.2 SIGNAL DIAGRAM:**

The Station Working Rule diagram No. SI/WRD-22215 based on CSTE/E.Co.R. and Signal Interlocking Plan No. SI/22215 shows the layout of Intermediate Block Signals, Distant Signal with all signaling features and gradients etc.

**2.3 TELEPHONE COMMUNICATION:**

Telephones fitted to Intermediate Block(BRGA-BRPL) Home Signal Posts with socket provided for communications to the SM in rear i.e. SM/BRPL in case of DN line and SM/BRGA in case of UP line. The telephone on the Intermediate Block Stop Signal post is provided with two press buttons. The right hand side button is to be pressed by the Loco Pilot for calling the attention of the SM of the Station in rear and left hand side button is to be pressed for speaking and released for hearing.

**2.4 THE FOLLOWING SIGNALS ARE PROVIDED ON DN AND UP LINES:**

- (i) IB Home
- (ii) IB Inner Distant
- (iii) IB Distant

Legend Boards with legend "Backing is not permitted beyond this point" are provided 400m beyond DN and UP Intermediate Block Stop Signals on BRGA-BRPL Section.

**2.5 DETAILS OF BLOCK SECTIONS ON BRGA-BRPL SECTION:**

The DN and UP Block sections between BRGA-BRPL are split into two portions, each constituting of separate block section by provision of Intermediate Block Signaling which are controlled and operated by block station in rear i.e. BRPL in case of DN line and BRGA in case of UP line on BRGA-BRPL section vide GR 1.02 (31) and (32).

**2.6 INTERLOCKING OF SIGNALS:**

- i) The Intermediate Block Stop Signals are interlocked with Lock and Block instruments Concerned in such a way that the same cannot be taken 'OFF' unless "Line Clear" has been received from block station concerned in advance of the Intermediate Block Stop Signal concerned with the needle of the Lock and Block Instrument indicating "Line Clear" position.
- ii) The UP Advanced Starter of BRGA is Interlocked with Axle counter in such a way that the same cannot be taken 'OFF' unless the block section in advance of the signal

controlled by axle counters is clear and the UP IBS section on SM VDU shows “clear” indication.

- iii) Track circuits are provided beyond Intermediate Block Stop Signals and Advanced Starter Signals in order to restore these signals to their normal positions automatically when a train passes over them and the IB signals cannot assume “OFF” aspect until and unless “Line Clear” is received for a subsequent train.

## 2.7 **CLOSURE OF INTERMEDIATE BLOCK SIGNAL POST AND FAILURE OF IB TRACK CIRCUIT:**

In the event of suspension of Lock and Block Instrument or Failure/Suspension of Intermediate Block Home/ or failure of Axle counter mechanism, the concerned section shall be suspended, the Intermediate Block Post concerned shall be deemed to be closed and section between the stations on either side of the Intermediate Block Post concerned shall be treated as one block section. Refer to General Rule No. 3.70 and 3.75. The authority to pass the Advanced Starter and Intermediate Block Stop Signal concerned at ‘ON’ shall be issued by the SM.

## 2.8 **IB INDICATIONS ON VDU:**

The following luminous indications are displayed on the SMs VDU:

- i) UP train running away: “UP train running away” indication appears only in all cases of a train passing UP Intermediate Block Stop Signal at ‘ON’ position.
- ii) UP IB section Resetting Permission received from BRGA & BRPL: “Permission received from BRGA & BRPL” appear when acknowledgement button is pressed after permission is received from the SM /BRGA & BRPL.
- iii) UP LV section Preparatory RESET indication: This indication appears after the resetting of UP LV section between BRGA-BRPL. This indication goes after one train is piloted and the Axle counting section is cleared.
- iv) UP LV section Power ON indication: This indication appears momentarily during the reset process to indicate that the reset operation is in progress.
- v) DN Advanced Starter track circuit occupied/failed in RED: DN Advanced Starter track circuit when occupied/failed “RED” indication will appear and when the track circuit is clear/working no indication will be there.
- vi) Permission granted to BRPL: “Permission granted to BRPL” indication appears when permission granted to BRPL button is pressed for resetting DN LV section axle counting system on DN line.
- vii) Block Handle free: “Block Handle Free” indication appears when a UP train arrives completely within the station section. The “Block Handle” then becomes free and the instrument can be normalized.

### **NOTE:**

Normal aspect of Intermediate Block, DN Distant Signal is YELLOW. The Distant signal is provided with “P” Marker and its higher aspects are controlled by DN Intermediate Block Stop Signal. When the DN Intermediate Block Stop Signal is GREEN, DN Intermediate Block Distant Signal will be “GREEN”.

**2.8.1 PROCEDURE TO BE FOLLOWED FOR RESETTING THE AXLE COUNTING SYSTEM ON UP LINE BETWEEN BRPL AND UP IBS SIGNAL IN CASE OF ITS FAILURE:**

**SECTION BRGA-BRPL :**

|   | <b>DESPATCHING STATION [BRGA]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |   | <b>RECEIVING STATION [BRPL]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | In case of failure of axle counter between sending station and IB signal then SM on duty of sending station shall call the attention of SM of receiving station through Telephone for granting Permission to re-set IB Axle counter as well as Train Passed signal with Danger [train run away condition] giving details of last train left the station into the section.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1 | SM on duty at receiving station shall after verifying that the said dispatched train arrived fully and exchange private number with SM on duty of sending station and gives permission to re-set by clicking on the 'Reset Permission Button' icon provided on the VDU. Then a yellow indication will appear near the icon.<br>For each such operation the permission granting counter shall increase by one digit.<br>SM on duty shall make an entry of changed permission granting counter number in counter register |
| 2 | On getting permission to reset from receiving station, a flashing green indication will appear on Permission Received icon which shall be acknowledged by SM on duty by acknowledging 'Permission Ack. Button' icon and then flashing green indication will become steady.<br>On duty SM at sending station shall then make IB Reset 'key IN' on the VDU and then click 'PRESS' on the 'Reset Push Button' icon. Approximately after 5 seconds click the 'RELEASE' on the reset button icon and then make the reset 'key OUT'.<br>Now SM on duty has to manually reset the near end axle counter. He shall insert the reset key, turn right and press on the reset box simultaneously with reset button.<br>On doing the above process for resetting preparatory reset indication will appear on both VDU and reset box. First train has to be piloted out. On passing of the first train IB Axle counter will get reset. After this preparatory reset and Permission Received indication will go blank.<br>For each such operation, the IB. reset counter provided shall increase by one count. SM on duty shall make an entry of | 2 | After completion of reset procedure Permission granting indication will go blank at the receiving station.                                                                                                                                                                                                                                                                                                                                                                                                              |

|    |                                                                                                                                                                                                                                                                                                                                                               |   |                                                                                                                                                                                                                                          |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | changed Reset counter number in re-setting register.                                                                                                                                                                                                                                                                                                          |   |                                                                                                                                                                                                                                          |
| 3. | In case of train passed IB signal at danger, train run away indication will appear on the VDU along with buzzer. SM on duty shall then acknowledge the same. He shall call the attention of SM of receiving station through telephone for granting Permission to reset the runaway indication giving details of last train left the station into the section. | 3 | SM on duty of receiving station, after verifying the complete arrival of last train shall give a private number to the sending station that the section is clear. He shall then grant permission to reset the train run away indication. |
| 4. | SM of the sending station shall acknowledge the permission granted and reset on VDU. The trains run way indication will go blank and the system is normalized.<br>In such case there is no need of piloting out of the first train.                                                                                                                           |   |                                                                                                                                                                                                                                          |

#### 2.8.2 NORMALIZATION OF LVV AXLE COUNTER AND RESTORATION OF BLOCK WORKING BY RESETTNG FEATURE:

|   | RECEIVING STATION [BRGA]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   | DISPATCHING STATION[BRPL]                                                                                                                                                               |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | In case of failure of axle counter between IB signal and receiving station, SM on duty of receiving station, after verifying that the last train has arrived fully shall call the attention of the SM of sending station through telephone giving details of last train left the station into the section has arrived complete and exchange private number with SM on duty of sending station and ask for granting permission for resetting of the LVV.                                                                                                                                                                | 1 | SM on duty at sending station shall give permission to reset by clicking on the 'Reset Permission Button' icon provided on the VDU. Then a yellow indication will appear near the icon. |
| 2 | On getting permission to reset from sending station, a flashing green indication will appear on Permission Received icon which shall be acknowledged by SM on duty by acknowledging 'Permission Ack. Button' icon and then flashing green indication will become steady.<br>On duty SM at receiving station shall then make LVV Reset 'key IN' on the VDU and then click 'PRESS' on the 'Reset Push Button' icon. approximately after 5 seconds click the 'RELEASE' on the reset button icon and then make the reset 'key OUT'. On doing the above resetting process, preparatory reset indication will appear on VDU. | 2 | For each such operation, the LVV reset counter provided shall increase by one count. SM on duty shall make an entry of changed Reset counter number in re-setting register.             |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>Now SM on duty has to manually reset the near end axle counter. He shall insert the reset key, turn right and press on the reset box simultaneously with reset button. On doing the above resetting process, preparatory reset indication will appear on reset box. T/369(3b) shall be issued to loco pilot of the first train to pass IBS at ON. On passing of the first train LVV Axle counter will get reset. For each such operation, the LVV reset counter provided shall increase by one count. SM on duty shall make an entry of changed Reset counter number in re-setting register.</p> |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

**RESETTING OF AXLE COUNTERS DURING SIMULTANEOUS FAILURE OF IB AXLE COUNTER & LVV AXLE COUNTER.**

In case of failure of both the Axle counters i.e. IB Axle counter & LVV Axle counter, the LVV shall be reset first and then the procedure for resetting of IB Axle counter shall be followed as per the procedure mentioned above. The first train has to be pilot out.

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

- i) Whenever a train passes the Intermediate Block Stop Signal at ‘ON’ without being so authorized by the station Master of rear station over telephone, the Station Master of the rear station on receipt of the audible/visual indication must inform the Station Master of the Advance Station about the entry of the train passing the Intermediate Block stop at ‘ON’.
- ii) The Loco Pilot of the train on his arrival at the advance station must report the incident of his passing the Intermediate Block signal at ‘ON’ and also record in writing the reason for his doing so.
- iii) On receipt of written declaration from the Loco Pilot that the IBS telephone is defective, the Station Master of the advance station will inform the Station Master of the rear station about the matter and also the S&T staff for necessary rectification of the IBS telephone.
- iv) On receipt of the written declaration from the Loco Pilot of runaway train that the IBS telephone is defective and after advising the S&T staff for necessary rectification the resetting should be done to normalize the system as per proper procedure on account of train passing the IBS at ON and the Block instrument also should be normalized in the same way since the runaway train has fully arrived at the advance station. The SM of the advance station before giving permission to the station in rear for resetting the axle counting system should ensure that the train has arrived intact by verifying the last vehicle indicator affixed in rear of the last vehicle of the train or by getting the complete arrival register signed by the TMR.
- v) In case of failure of the Loco Pilot of the “Runaway train” to report the failure of the telephone, the incident should be treated as breach of Block rule in terms of Rule No 6.16 (a) (iv) and suitable action taken. In such case Intermediate Block signaling and

Lock and Block instrument must not be resumed by Block Signal Inspector without permission of ASTE/DSTE.

- vi) While complying with the instruction contained in GR 3.75(3), when the Loco Pilot has to pass the IBS signal at "ON" after waiting for 5 minutes at the signal, he shall proceed cautiously preparing to stop short of any obstruction at a speed not exceeding 15 KMPH when view ahead is clear and 8 KMPH when view ahead is not clear due to curve, obstruction, rain, fog or any other cause until he reaches the foot of the First signal of the Block section in advance obeying any gate stop signal in between the IBS signal and the First stop signal of the Block station in advance as per rules and even if the signal is "OFF" the Loco Pilot shall continue to look out for any possible obstruction and stop short of the same and will act upon its indication only after he has reached it. Before starting, the Loco Pilot shall sound one long whistle, which may be repeated as necessary and shall then start his train on receipt of TMR's signal. Thereafter he shall exchange signals with the TMR.
- vii) UP train run away indication or DN Train run away indication as the case may be will appear on the SM's panel.
- viii) UP train run away Buzzer or DN Train run away Buzzer as the case may be will Ring which can be silenced by pressing UP/DN train run away muting push button on the SM's panel.
- ix) Procedure for Resetting as in 2.8.4, 2.8.5 to be followed for DN trains and UP trains respectively.

#### 2.8.4 **RESETTING OF DN LV/UP LV SECTION DIGITAL AXLE COUNTER WHEN FAILED (FOR SECTION BRPL-BRGA):**

After complete arrival of train, with Last vehicle axle counter of the section does not clear or Axle counter section free indication (G) does not appear in the VDU, The receiving station SM shall apprise the sending station SM through telephone for resetting 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. And, if arrived fully shall so intimate authenticated by exchanging Private number with the sending station.

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

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

- A. On being advised by SM/BRPL, SM/BRGA inserts the Reset Box key and presses the "UP LV Permission granted to BRPL button" on his Reset Box. The Veeder Counter on the Reset Box at BRPL registers the next higher number and UP LV "Permission received from BRPL" flashing indication appears on the SM's Reset Box at BRGA. The SM/BRPL shall then press the acknowledgement button on his Reset Box as soon as he receives "Permission Receipt" for BRPL indication. The flashing indication becomes steady. In Case of UP LV resetting Permission will be given by SM/BRGA to SM/BRPL and SM/BRPL will follow the procedure as given in "C" to "J".
- B. On being advised by SM/BRPL, SM/BRGA inserts the Reset Box key and presses the "DN LV Permission granted to DOBH button" on his Reset Box. The Veeder Counter

on the Reset Box at BRGA registers the next higher number and UP LV “Permission received from BRGA” flashing indication appears on the SM’s Reset Box at BRPL. The SM/BRGA shall then press the acknowledgement button on his Reset Box as soon as he receives “Permission Receipt” for BRPL indication. The flashing indication becomes steady. In Case of DN LV resetting Permission will be given by SM/BRGA to SM/DOBH and SM/BRPL will follow the procedure as given in “C” to “J”.

- C. SM/LSX shall then Insert SM’s LV reset key, and turn right
- D. Press LV reset button provided on the Reset Box.
- E. Release SM’s LV reset key and reset button.
- F. Turn left the SM’s LV reset key and remove it.
- G. The system obtains preparatory reset state and preparatory reset indication (Green) glows on the Reset Box. The counter reading increases by one count after a gap of 5 seconds approximately.
- H. The counter reading should be recorded.
- I. One train is to be piloted in the section to make the system normal.  
The SM on duty shall record in it Train in the Register the resetting operation giving details of train number, time, Private Number exchanged with SM of sending station giving reasons for the resetting operation.
- J. If the axle counters functioning properly now, then Block Section cleared indication ‘G’ will appear on the VDU and the concerned Block working will be normalized.
- K. If the LV axle counter section indication does not appear ‘Green’ and continues to show ‘RED’ indication, the concerned Block section shall be suspended and failure intimation to be given to Sectional Signal Maintainer/JE (S)/SSE (Signal) for early rectification.  
Separate register shall be maintained in the Station to record every operation of resetting and the number in the veeder counter in addition this should be recorded in TSR. While taking over/handing over duties, the SM shall record in the TSR the number displayed in the veeder counter and shall acknowledge the same

### 3.0 **DESPATCH OF TRAINS IN CASE OF FAILURE OF INTERMEDIATE BLOCK STOP SIGNAL:**

- [a] When a driver finds an intermediate Block Stop signal at ‘ON’ Position he shall stop his train in rear of the signal and advise the TMR of the fact by sounding long continuous whistle and shall then contact the Station Master of the Block Station in rear over the signal post telephone provided for the purpose vide SR.3.75.01[i].
- [b] If the SM of BRGA station, on being contacted over Telephone by the driver, finds that the signal is defective, he shall, after obtaining “Line Clear” for the train from the station in advance, authorize the driver on the telephone to pass intermediate Block Signal at “ON” and enter the block section ahead. He shall give Driver the Private Number and identification Number under which he has received “Line Clear” for the train from the station in advance.  
The driver shall then sound one short, one long and one short whistle and, on receipt of TMR’s signal shall proceed ahead duly exchanging signals with him. The station Master on being contacted by the Driver on signal post telephone if he is unable to obtain “Line Clear” for the train due to total interruption of communications, shall call for the TMR through the Driver and on being contacted by TMR, he shall advise the TMR of the circumstances and give a Private Number for the train to proceed up to the next block station. The TMR shall prepare a memo in duplicate authorizing the Driver to proceed

with the Private Number received from the Station Master. In such case the speed of the train shall be restricted as prescribed in GR 3.75(3).

- [c] In such case the Driver shall pass the IB signal at “ON” and proceed cautiously and be prepared to stop short of any obstruction, at a speed not exceeding 15 Kilometers an hour if he has a good view of the line ahead otherwise, at a speed not exceeding 8 kilometers an hour and report the failure to the Station Master at the block station ahead.

While complying with the instructions contained in GR 3.75(3), when the Driver has to pass IB signal at “ON” after waiting for 5 minute at the signal, he shall proceed cautiously preparing to stop short of any obstruction at a speed not exceeding 15KMPH when view ahead is clear and 8 KMPH when view ahead is not clear due to curve, obstruction, rain, fog or any other cause until he reaches the foot of the next stop signal and even the signal is “OFF” the Driver shall continue to look out for possible obstruction short of the same and will act upon its indication only after he has reached it. Before starting, the Driver shall sound one long whistle which may be repeated as necessary and shall then start his train on receipt of TMR’s signal. Thereafter he shall exchange signals with the TMR.

On reaching the block station ahead the Driver shall report the failure of the signal to the Station Master. If the telephone is provided at the intermediate Block Stop signal Post is out of order the Driver will pass the IB signal as per GR 3.75(3) & SR 3.75.02, and on reaching the block station ahead, the Driver shall report the failure of the signal to the SM, Following train shall not be allowed to leave DJX & BRGA unless the complete arrival of the receiving train is certified by the SM on duty at BRPL under exchange of Private Numbers.

The station Master of the block station working the intermediate block stop signal on becoming aware that such a signal is defective shall, before dispatching the train, treat the entire section up to the block station immediately ahead of the intermediate block post as one block section and issue a written authority to the driver to pass the defective intermediate Block Stop Signal at “ON” without stopping at the signal in accordance with the procedure prescribed by special instruction.

A written authority as mentioned in GR 3.75(4) shall be in Form T/369[3b] in which the Private Number and identification Number obtained from the station in advance in support of the “Line Clear” shall be recorded. Display of “Proceed hand signal at the foot of defective Intermediate Block Stop Signal may be dispensed with.

- [d] However, if the SM on the Block station immediately in rear of an intermediate Block Signal is aware that DN intermediate Block Signal is defective shall before Dispatching a train verify that all trains which had left his Block Station had arrived complete and intact at BRPL station by exchanging Private Number with SM/BRPL and shall follow the resetting procedure mentioned in the para G(iv). Thereafter driver shall be handed over the authority of T-369[3b] to pass IBS Signal at “ON” position where in, the Private Number and identification number obtained for line clear shall also be written. After each such resetting process, next higher number is registered on the veeder Counter and the SM should record this, giving the details of the occasion with timings in the Veeder Counter register kept in the station.

**J] SPECIAL INSTRUCTION IN CASE OF A TRAIN PASSING IBS AT ‘ON’ POSITION:**

- I] In case train run away indication appears the SM of receiving Station shall not turn the block instrument handle to line clear position and SM at sending station shall not take any action to dispatch the third train unless the second train which passed the IB signal at ‘ON’ position has actually arrived complete and is verified by the receiving station.

- II] Every case of a train passing IB signal at 'ON' position without strictly following the provision of GR 3.75 should be treated as a breach of block rule by the driver and action to be taken accordingly.
- III] When train run away indication appears at the dispatching Station without any train in the section, then SMs should resort to train run away resetting procedure. If the same could not be reset the IBS system should be treated as failed and Signal Maintainer should be advised. All the subsequent trains shall be Piloted OUT after taking line clear and treating entire section as one Block section as per GR 3.75(4).
- IV] Whenever a train after having obtained line clear passes IBS at "ON" position the train run away indication appears at the dispatching station and also at receiving station. Under such circumstances no further train shall be allowed in the section till the said train arrives completely at the receiving station and its complete arrival report has been received at the receiving station supported by Private Number treating the entire block section as single section.
- V] If any train passes IB Signal at 'ON' position when there is a train in the Section between IBS and the receiving station, the train run away indication will appear at both receiving and dispatching station. Under such circumstances the SM in the receiving station shall not turn the Block instrument to Line Clear position and SM at sending station shall not dispatch the (3<sup>rd</sup>) train, unless the 2<sup>nd</sup> train which passes the IBS at 'ON' position has actually arrived and its complete arrival is verified by the receiving station.
- VI] Resetting procedure is to be followed as detailed in para G(iv) after verifying that the last vehicle of the runaway train has arrived intact and ensured by exchange of private number with the SM of the receiving station.
- VII] Whenever a train run away indication appears when there is a train in the section, no further train should be allowed in the section till resetting is done.
- VIII] Before any resetting operation is done, the Dispatching station should advise the receiving station giving details of the last train that has entered the section and should ensure by exchange of private number that the last train has arrived complete at the receiving station.

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

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

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

**K] ACTION TO BE TAKEN WHEN A TRAIN PASSES INTERMEDIATE BLOCK STOP SIGNAL AT 'ON'****a) By SM of receiving Station.**

I] Shall not turn the Block Instrument commutator to "Line Closed" Position Unless the complete arrival of the train which passed IBS at "ON" position is ensured, without any exception even for such a train which leaves the rear station after obtaining line clear and passes IBS at "ON" position, since there is a chance of leaving a vehicle or vehicles in the Axle Counter area where the function of Axle Counter also fail.

II] In case the bottom needle of the SGE type block instrument is in its 'Line closed' position, action should be taken to turn the block instrument commutator to 'TOL' Position vide BWM 5.16(2)(iv) and must not turn to "Line closed" and then to "Line clear" position unless the train which had passed the "Intermediate Block Stop Signal" at 'ON' position arrives complete and its complete arrival is verified.

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

I] After the complete arrival of the last train, according to the information received vide sub-para (a) above, the SM of the receiving station shall communicate the same to the SM of the sending station supported by a Private Number which shall be acknowledged by the later by issuing Private Number. Thereafter the SM of the dispatching station and the SM of the receiving station

shall resort to Resetting procedure. This simultaneous operation will cause the 'counter' to increase by one count at both the stations and SM shall record the next higher number in the register mentioned for the purpose and details of it.

II] After completion of resetting procedure and normalization of IBS the SM of the Block Station in rear shall then take steps or authorize Station master of the receiving station supported by a Private Number to normalize the block instrument.

III] In the event of failure of IBS signal in the "OFF" position or fails to go to "ON" position immediately after passage of train, the station master controlling the signal shall take steps to put back the IBS signal to "ON" position and treat IBS signal failed and train shall be dispatched treating entire section between his station and station in advance as one Block section.

**L] RUNNING OF MOTOR TROLLEYS ON IBS ZONE:**

i) While allowing motor trolley/4 wheeler tower wagon/material trolley etc., entire section between BRGA-BRPL & BRGA-DOBH shall be treated as one block section and shall be issued T-369 [3B] for passing IBS at "ON" position.

ii) After the complete arrival of the said Motor Trolley/4 wheeler tower wagon/material trolley etc., at the station ahead, Station Master of adjacent station shall exchange Private Number in token of complete arrival and then shall resume normal working by resetting the Axle Counter as stated in the SWR.

iii) Motor Trolleys shall not be allowed on following line clear.

NOTE:- Backing of train on the portion of line after passing the intermediate Block Stop signal normally shall not be allowed, However, if it becomes inevitable to back, such backing may be done with great caution as mentioned in SR 3.75.04.

**M] SIGNAL POST TELEPHONE:**

A telephone socket (RE Type portable telephone kept with drivers) with a RED Press button at the bottom is provided at the foot of each IB signal and is meant for driver to contact the SS/SM in rear by pressing the RED button. The driver of the train encountering the IB signal

at 'ON' position shall contact the station in rear to find out the occupancy or otherwise of the block section ahead.

**N] NORMAL POWER SUPPLY TO IBS GOOMTIES:**

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

- (i) Normally AC supply from AT connected to OHE Traction distribution [230 V 50 Hz].
- (ii) Normal power supply 110V DC to the Signaling & interlocking installation at the IBS is drawn from IPS.
- (iii) AC supply from Odisha State Electricity Board (OSEB)[Single phase 230 V 50 Hz] to charge the IPS battery i.e. signaling & interlocking system for IBS.
- (iv) Alternate solar power supply system is provided to the IBS for charging the battery.
- (v) The minimum backup time of IPS battery is ten hours during failure of AC Power.

**4.0 PASSENGER HALT STATION:**

NIL

**5.0 DK STATION:**

NIL.

**APPENDIX- 'G'****RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS**  
**BARGARH ROAD STATION****1. GENERAL & SUBSIDIARY RULES:**

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

**2. GENERAL SAFETY PRECAUTIONS:**

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

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

- a) A sectioning diagram No. RVNL/WAT/SWR/BRGA/22/14 indicating schematically the lines, which have been equipped with, for electric traction is exhibited. The diagram also indicates different electrical sections (Elementary Sections) the Controlling Switches or interrupters), insulated overlaps and section insulators where the overhead equipment is electrically separated. The limits of an electrical section (Sub-Sector or Elementary section) are indicated by the relevant section. A copy of this diagram is also enclosed with these special working rules and will form part of the same.
- b) For all-purpose connected with Train movements and Power Blocks, this diagram is the only authorized document to be referred to the normal position of various switches is indicating on the diagram.

**4. UNWIRED TRACKS:**

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

**5. OPERATING OF SWITCHES:**

- a) All switching operations shall be carried out in accordance with the instructions of the Traction Power Controller except in respect of switching operations for local blocks, which may be carried out by authorized traction staff, after they have been granted local blocks by

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DEE(TRD)/SBP

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DOM(G)/SBP

the Station Master in accordance with S.R. 17.04.09 and ACTM para No. 20600,20601 of Vol.II. Part.I.

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

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

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

**Note:** While operating switch, station master must use insulated gloves.  
The list of isolators with location number of BRGA are given below.

| <b><u>SI.No.</u></b> | <b><u>Isolator No.</u></b> | <b><u>Loc. No.</u></b> | <b><u>SI.No.</u></b> | <b><u>Isolator No.</u></b> | <b><u>Loc. No.</u></b> |
|----------------------|----------------------------|------------------------|----------------------|----------------------------|------------------------|
| 1.                   | SM-114                     | 604/14                 | 10.                  | SS-196                     | BRGA/1006              |
| 2.                   | SM-114(N/O)                | 604/2A                 | 11.                  | SS-196A                    | TMS/01                 |
| 3.                   | SM-115                     | 604/21                 | 12.                  | SS-ACC-01(N/O)             | ACC/2A                 |
| 4.                   | SM-113                     | 605/23                 | 13.                  | SS-ACC-02                  | ACC/5A                 |
| 5.                   | SS-194                     | 604/25A                | 14.                  | SS-ACC-03                  | ACC/6                  |
| 6.                   | SS-193A(N/O)               | 605/33                 | 15.                  | SS-ACC-04                  | ACC/8A                 |
| 7.                   | SS-195A                    | BRGA/1087              | 16.                  | SS-ACC-05                  | ACC/8                  |
| 8.                   | SS-195                     | BRGA/1023              | 17.                  | SS-193                     | BRGA/1001A             |
| 9.                   | SS-191                     | 604/31                 |                      |                            |                        |

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

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

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

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

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

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

P.S.TRIPATHY  
DEE(TRD)/SBP

LINGARAJ GARTIA  
DOM(G)/SBP

9. POWER BLOCK:

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

10. PROTECTION AT THE TIME OF POWER BLOCK:

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

11. SECTION INSULATORS:

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

12. BREAKDOWN OF TRACTION OVERHEAD EQUIPMENT:

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

13. REGISTER OF MESSAGES:

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

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

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

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

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

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

15. ELECTRIC LOCOMOTIVES:

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

16. ESM:

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

17. CRANES:

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

18. WORK ON ROOF OF ROLLING STOCK:

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

19. BLOCK INSTRUMENT OR ANY OTHER ELECTRICAL SIGNALLING EQUIPMENT:

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

break of the OHE, the Station Master must immediately check-up whether all Block and signalling equipment are working normal before permitting any train movement.

20. TELECOMMUNICATION CIRCUITS:

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

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

21. ELECTRIC SHOCK:

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

22. FIRE:

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

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

24. AMENDMENTS OR SUPPLEMENTARY CORRECTION SLIPS:

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

25. CONTINUOUS WATCH BY INSPECTING STAFF:

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

NOTE:

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

**TRACTION DISTRIBUTION**

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

**DO(S) AND DON'T(S)**

**A. FOR ALL STAFF**

**a) DO(s)**

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

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

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

**B. FOR RUNNING STAFF:**

**a) DO(s)**

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

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

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

**C) FOR OPERATING STAFF**

**a) DO(S)**

1. Ensure all staff is conversant with safety precautions.
2. Ensure that no electric loco is stabling with its panto-raised position in the power block section.
3. Report defects in traction wires of any electric locomotive or electric Multiple Unit Promptly to the traction Power controller.
4. Points and signals of the concerned line which give access to the sections under power Block is to be blocked by blocking the concerned line in VDU and placing red button collars on concerned buttons operating points and/or signals.
5. Observe procedures given in station working rules of 25 KV AC Electric Traction while operating isolator switches.
6. Ensure safe custody of isolator switch keys.
7. Ensure the section is protected by traction staff from all directions by banner flag during power block.
8. Suspend working of block and signals if single of unusual working are noticed. Always checkup block instruments at signalling equipment when any breakdown in traction wires occurs.
9. Instruct S & T staff to see that while he goes up the signal post he does not carry any long rod or articles likely to be brought within the danger zone of 2 Mtrs. (Approximately 7 feet) of the traction wires.

**c) DON'T(s)**

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

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

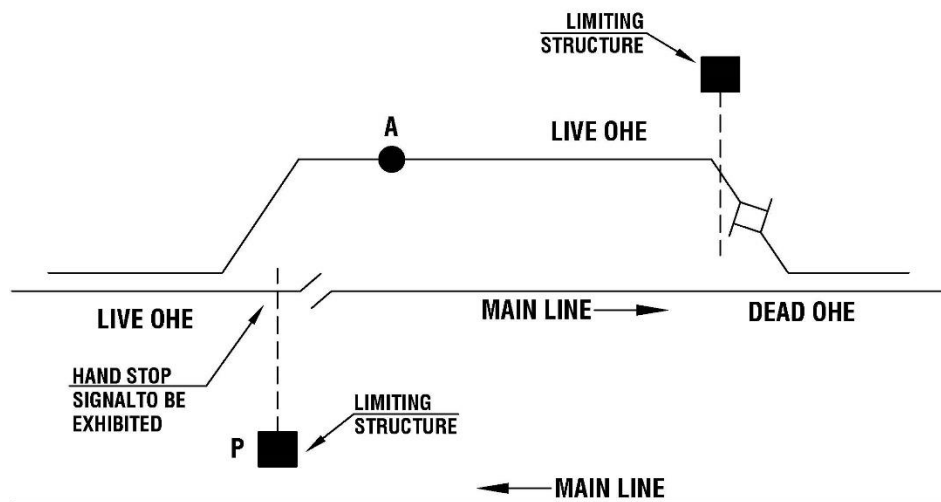
### **PROTECTION OF DEAD SECTION**

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

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

### **SHUNTING MOVEMENT TOWARDS DEAD SECTION**

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



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

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

**HANDLING OF ISOLATOR SWITCHES – BARGARH ROAD STATION**

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

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

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

## INSTRUCTIONS FOR ISOLATOR SWITCH OPERATION

### OPERATION OF SWITCHES:

- i) All switching operations shall be carried out in accordance with the instructions of the Traction Power Controller (TPC) except in respect of switching operations for local blocks which may be carried out by authorized traction staff after they have been granted local blocks by the Station master on duty in accordance with GR 17.04 and ACTM VOL II Part I Para 20600 and 20601.
- ii) In times of emergency, authorized and trained station staff may open isolator switches under specified instructions of the Traction Power controller (TPC).
- iii) Every station masters, points man shall be fully aware of the location of isolator switches provided for the control of Power supply to the overhead equipment at or near his station and shall be conversant with the correct method of opening and closing the same in an emergency (ACTM VOL II Part I Para 20624).

### POSITION OF SWITCH HANDLES:

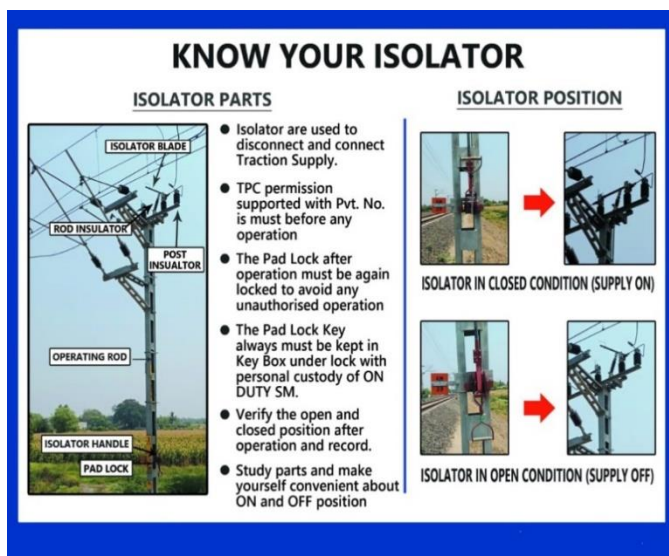
1. When an Isolator is in CLOSED position, the operating handle of the Isolator is at the TOP.
2. When an Isolator is in OPEN position, the operating handle of the isolator is at the BOTTOM.

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

### PROCEDURES AND PRECAUTIONS FOR OPERATING ISOLATORS:

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

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



EAST COAST RAILWAYSTATION WORKING RULES FOR 25 KV AC ELECTRIC TRACTION FOR  
BARGARH ROAD STATION

- These rules shall be read along with the main working rules and appendices.
- These rules apply only to Electric Trains or Electric Engines considered as such & indicate the protection required to prevent them from entering a SECTOR, SUB-SECTOR OR ELEMENTARY SECTION over which a Power block exist.

| Sl. No.     | Description of electrified section under P/B | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                                                                                                                                                                   |                       | Sequence of Switching Operation for granting power block.                                                                                                                                                 | Sequence of Switching Operation for restoring OHE power. |
|-------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
|             |                                              | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Transverse Protection |                                                                                                                                                                                                           |                                                          |
| A. Sector : |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                                                                                                                                                           |                                                          |
| 1.          | DJX/TSS to BRGA/SP.                          | <div>i) Movement of Electric Trains/ Locos shall not be permitted into DJX-BRPL-BRGA on UP &amp; DN Line.</div> <div>ii) Line clear shall not be granted to/obtained from BRPL for Electric Trains/ Locos on UP &amp; DN Line.</div> <div>iii) Ensure that no Electric Trains/ Locos is standing, with its panto raised condition on all line at BRGA Yard.</div> <div>iv) UP &amp; DN Reception and dispatch signals at BRGA shall be kept at 'ON'</div>                                                      | NIL                   | <div>i) Ensure BX-181 at DJX/TSS is in open position.</div> <div>ii) Ensure BM-188 &amp; 189 at BRGA/SP is in open position.</div> <div>Open CB-124 at DJX/TSS.</div> <div>Close CB-124 at DJX/TSS.</div> |                                                          |
| 2.          | Sector between GBQ/TSS to BRGA/SP.           | <div>i) Movement of Electric Trains /Locos shall not be permitted into HKG to BRPL on UP &amp; DN Line.</div> <div>ii) Line clear shall not be granted to/obtained from BRPL, for Electric Trains/Locos.</div> <div>iii) Line clear shall not be granted to/obtained from DOBH for Electric Trains/Locos.</div> <div>iv) Ensure that no Electric Trains/ Locos is standing with its panto raised condition on all line at BRGA Yard.</div> <div>v) Reception and dispatch signals shall be kept at 'ON'.</div> | NIL                   | <div>i) Ensure BX-197 at GBQ/TSS is in open position.</div> <div>ii) Ensure BM-188 &amp; 189 at BRGA/SP is in open position.</div> <div>Open CB-129 at GBQ/TSS.</div> <div>Close CB-129 at GBQ/TSS.</div> |                                                          |

| SI. No. | Description of electrified section under P/B                                                                                                                                 | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                      | Sequence of Switching Operation for granting power block.                                                             | Sequence of Switching Operation for restoring OHE power.              |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
|         |                                                                                                                                                                              | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Transverse Protection                                                                                                |                                                                                                                       |                                                                       |
|         | <b><u>B. Sub-Sector :</u></b>                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                      |                                                                                                                       |                                                                       |
| 1.      | DN Sub-sector Between BRPL/SSP to BRGA/SP on DN Line. Section between DJX-BRPL-BRGA on DN line.                                                                              | i) Movement of Electrical Trains/Locos shall not be permitted into DJX-BRPL-BRGA on DN line.<br>ii) Line clear shall not be granted to BRPL obtained from BRGA for DN Electric Trains/Locos.<br>iii) Concerned Reception & dispatch signals shall be kept at 'ON'.                                                                                                                                                                                                                                                                                                    | NIL                                                                                                                  | Ensure BM-188 at BRGA/SP is in open position.<br>i) Open BM-184 & BM-186 at BRPL/SSP.<br>ii) Open BM-187 at BRGA/SP.  | i) Close BM-187 at BRGA/SP.<br>ii) Close BM-184 & BM-186 at BRPL/SSP. |
| 2.      | DN Sub-sector between ATS/SSP to BRGA/ SP on DN Line. Section between BRPL-BRGA-DOBH-ATS on DN line including R-1 & R-2, TM siding, sick siding, cement siding of BRGA Yard. | i) Movement of Electrical Trains/ Locos shall not be permitted into BRPL-BRGA-DOBH-ATS on DN line.<br>ii) Line clear shall not be obtained from DOBH for Electric Trains/ Locos on DN line<br>iii) Line clear shall not be granted to BRPL for Electric Trains/ Locos on DN line.<br>iv) Ensure that no Electric Trains /Locos is standing with its panto raised condition on R-1 & R-2 at BRGA Yard.<br>v) Shunting of electrical trains/locos shall be prohibited L-3 to L-2 at both ends.<br>vi) Concerned Reception, dispatch shunt signals shall be kept at 'ON' | Crossover point no. 52 A/B, 62A/B at BRPL end and 65A/B and 57A/B at DOBH end shall be kept in normal position only. | Ensure BM-188 at BRGA/SP is in open position.<br>i) Open BM-192 and BM-193 at ATS/SSP.<br>ii) Open BM-190 at BRGA/SP. | i) Close BM-190 at BRGA/SP.<br>ii) Open BM-192 and BM-193 at ATS/SSP. |

| Sl. No. | Description of electrified section under P/B                                                                                                | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                      | Sequence of Switching Operation for granting power block.                                                                                  | Sequence of Switching Operation for restoring OHE power.                                     |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|         |                                                                                                                                             | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Transverse Protection                                                                                                |                                                                                                                                            |                                                                                              |
| 3.      | UP Sub-sector between ATS /SSP to BRGA /SP on UP Line Section between ATS-DOBH-BRGA -BRPL on UP line including R-4, R-5 & R-6 of BRGA Yard. | i) Movement of Electrical Trains /Locos shall not be permitted into ATS-DOBH-BRGA-BRPL on UP line<br>ii) Line clear shall not be obtained from BRPL for Electric Trains /Locos on UP line.<br>iii) Line clear shall not be granted to DOBH for Electric Trains/Locos on UP line<br>iv) Ensure that no Electric Trains /Locos is standing with its panto raised condition on R-3, R-4, R-5,R-6 at BRGA Yard.<br>v) Shunting of electrical trains/ locos shall be prohibited L-3 to L-2 at both ends.<br>vi) Concerned Reception, dispatch and shunt signals shall be kept at 'ON' | Crossover point no. 52 A/B, 62A/B at BRPL end and 65A/B and 57A/B at DOBH end shall be kept in normal position only. | Ensure BM-189 at BRGA/SP is in open position.<br>i) Open BM-191 & BM-193 at ATS/SSP.<br>ii) Open BM-190 at BRGA/SP.                        | i) Close BM-190 at BRGA/SP.<br>ii) Close BM-191 & BM-193 at ATS/SSP.                         |
| 4.      | UP Sub-sector between BRGA /SP to BRPL /SSP on UP Line. Section between BRGA-BRPL-DJX on UP line.                                           | i) Movement of Electrical Trains /Locos shall not be permitted into BRGA-BRPL-DJX on UP line.<br>ii) Line clear shall not be granted from BRPL for UP Electric Trains/Locos.<br>iii) Concerned Reception & dispatch signals shall be kept at 'ON'.                                                                                                                                                                                                                                                                                                                               | NIL                                                                                                                  | Ensure BM-189 at BRGA/SP is in open position.<br>i) Open BM-187 at BRGA/SP<br>ii) Open BM-185 at BRPL/SSP.<br>iii) Open BM-186 at BRPL/SSP | i) Close BM-186 at BRPL/SSP<br>ii) Close BM-185 at BRPL/SSP.<br>ii) Close BM-187 at BRGA/SP. |

| SI. No.                       | Description of electrified section under P/B                                                                                              | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                         | Sequence of Switching Operation for granting power block.                                                                                                                                           | Sequence of Switching Operation for restoring OHE power.                                                                                                                                              |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               |                                                                                                                                           | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Transverse Protection                                                                   |                                                                                                                                                                                                     |                                                                                                                                                                                                       |
| <b>C. ELEMENTARY SECTION.</b> |                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                         |                                                                                                                                                                                                     |                                                                                                                                                                                                       |
| 1.                            | E/S No. 19105 on UP line between section DOBH-BRGA. Location from SM-115 of BRGA at Loc. No. 604/21 to SM-117 of DOBH at Loc. No. 593/33. | i) Movement of Electric Trains /Locos shall not be permitted on UP line between section DOBH-BRGA<br>ii) Line clear shall not be granted to DOBH for Electric trains/locos. on UP Line.<br>iii) DN Electric train/locos can be admitted on all lines from BRPL yard.<br>iv) Shunting of Electric Trains/ Locos shall be prohibited from L-2 to L-3 at DOBH end through crossover point no. 57A/B.<br>v) Concern up Reception, dispatched & shunt signals shall be kept at 'ON'.                                                                                                                                                                                                                        | Crossover point no. 57A/B and 53A/B at DOBH end shall be kept in normal only. Position. | i) Close SS-193A (N/O) of BRGA at loc. 605/33.<br>ii) Open SS-193 of BRGA at loc. BRGA /1001A.<br>iii) Open SM-117 of DOBH at loc. 593/33<br>iv) Open SM-115 of BRGA at loc. 604/21.                | i) Close SM-115 of BRGA at loc. 604/21<br>ii) Close SM-117 of DOBH at loc. 593/33<br>iii) Close SS-193 of BRGA at loc. BRGA /1001A<br>iv) Open SS-193A(N/O) of BRGA at loc. 605/33.                   |
| 2.                            | E/s No. 19107 UP Main line (L-3) at BRGA. Location from SM-113 of BRGA at Loc. No.605/23 to SM-115 of BRGA at Loc. No.604/21.             | i) Movement of Electric Trains/ Locos shall not be permitted to Main line (L-3) at BRGA.<br>ii) No Electric train/ locos shall be admitted into/dispatched from UP Main line (L-3)<br>iii) No UP Electric train/ locos shall be admitted into common loop line (L-4).<br>iv) UP Electric train/locos can be dispatched from L-4, L-5 & L-6 to BRPL.<br>v) DN Electric train/ locos can be admitted into L-4, L-5 & L-6<br>vi) No Electric train/ locos can be dispatched to DOBH from L-4, L-5 & L-6.<br>vii) Ensure that no electric train/loco is standing with its panto raised condition on Main line (L-3).<br>viii) Reception and dispatch signals for UP Main line (L-3) shall be kept at 'ON'. | Crossover point no. 65A/B 69A/B at DOBH end shall be kept in normal Position.           | i) Close SS-193A (N/O) at of BRGA at Loc. No. 605/33.<br>ii) Open SS-191 of BRGA at Loc. No. 604/31.<br>iii) Open SM-113 of BRGA at Loc. No. 605/23.<br>iv) Open SM-115 of BRGA at Loc. No. 604/21. | i) Close SM-115 of BRGA at Loc. No. 604/21.<br>ii) Close SM-113 of BRGA at Loc. No. 605/23.<br>iii) Close SS-191 of BRGA at Loc. No. 604/31.<br>iv) Open SS-193A (N/O) at of BRGA at Loc. No. 605/33. |

| SI. No. | Description of electrified section under P/B                                                                     | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                               | Sequence of Switching Operation for granting power block.                                                                 | Sequence of Switching Operation for restoring OHE power.                    |
|---------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
|         |                                                                                                                  | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Transverse Protection                                                                                                         |                                                                                                                           |                                                                             |
| 3.      | E/S No. 19109 on UP line between section BRGA/SP to SM-113 of BRGA at Loc. No. 605/23                            | i) Movement of Electrical Trains/Locos shall not be permitted into BRGA-BRPL on UP line.<br>ii) Line clear shall not be obtained from BRPL for Electric Trains/Locos on UP Line.<br>iii) Shunting of Electrical Trains/Locos is prohibited L-2 to L-3 and L-4 to L-3 at BRPL end<br>iv) Concerned UP dispatch signals & shunt signals shall be kept at 'ON'                                                                                                                                                                                                                                                                                                                                               | Crossover 52AB, 62A/B & 56A/B BRPL end shall be kept at normal position only.                                                 | Ensure BM-189 at BRGA/SP is in Open position.<br>i) Open SM-113 of BRGA at Loc. No. 605/23<br>ii) Open BM-190 at BRGA/SP. | i) Close SM-113 of BRGA at Loc. No. 605/23.<br>ii) Close BM-190 at BRGA/SP. |
| 4.      | E/S No. 18503 on UP Line between section BRGA - BRPL. Location from BRGA/SP to SM-109 of BRPL at Loc. No.623/49. | i) Movement of Electric Trains/Locos shall not be permitted on UP line between section BRGA-BRPL<br>ii) Line clear shall not be obtained from BRPL for UP Electric train/Loco.<br>iii) Concerned UP Dispatch signals kept at 'ON'.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NIL                                                                                                                           | Ensure BM-189 at BRGA/SP is in Open position.<br>i) Open SM-109 of BRPL at Loc. No. 623/49<br>ii) Open BM-187 at BRGA/SP  | i) Close BM-187 at BRGA/SP.<br>ii) Close SM-109 of BRPL at Loc. No. 623/49  |
| 5.      | E/S No X-191 common loop line (L-4) at BRGA.                                                                     | i) Movement of Electric Trains/Locos shall not be permitted into Common loop Line no-4<br>ii) No Electric Trains/Locos can be admitted into/dispatched from Common Loop line (L-4).<br>iii) DN Electric Trains/Locos cannot be admitted into/dispatched from Common Loop line (L-5)<br>iv) UP Electric Trains/Locos can be admitted into L-5 from DOBH via crossover point No.53A/B.<br>v) Shunting of Electric Trains/Locos prohibited between L-3 to L-4 and L-5 to L-4 of BRGA.<br>vi) Ensure that no Electric Trains/Locos is standing with its panto raised condition on Common Loop line (L-4).<br>vii) Reception & dispatch signals for Common Loop line (L-4) at both ends shall be kept at 'ON'. | Crossover point No. 56A/B and 58/AB at BRPL end and Point No. 69A/B & 77/AB at DOBH end shall be kept at normal position only | Ensure SS/193A(N/O) of Loc. No. 605/33 at BRGA is in open position<br>Open SS-191 of BRGA is at Loc. No. 604/31.          | Close SS-191 of BRGA is at Loc. No. 604/31.                                 |

| SI. No. | Description of electrified section under P/B                                   | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                                                                                                             |                                                                                                                     | Sequence of Switching Operation for granting power block.                                                                 | Sequence of Switching Operation for restoring OHE power.                                                       |
|---------|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|         |                                                                                | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                  | Transverse Protection                                                                                               |                                                                                                                           |                                                                                                                |
| 6.      | E/S No. X-193 common loop line (L-5) at BRGA (R-6 gets automatically blocked.) | i) Movement of Electric Trains/ Locos shall not be permitted into Common Loop Line (L-5).<br>ii) Shunting of Electric Locos shall be prohibited from R-5 to R-4.<br>iii) Ensure that no Electric Train/Locos is standing with its panto raised condition on R-5.<br>iv) Concerned Reception & Dispatch and Shunt signals shall be kept at 'ON'.                                                                                                          | Crossover point No. 58A/B at BRPL end and Point No. 77A/B, 53A/B at DOBH end shall be kept at normal position only. | Ensure SS/193A (N/O) of Loc. No. 605/33 at BRGA is in Open position<br>Open SM-193 of BRGA at Loc.No. BRGA/1001A.         | Close SM-193 of BRGA at Loc..No. BRGA/ 1001A.                                                                  |
| 7.      | E/S No.X-195 on common Goods Loop Line (L-6) at BRGA                           | i) Movement of Electric Trains/ Locos shall not be permitted into common Goods Loop Line (L-6) at BRGA<br>ii) Shunting of Electric Locos shall be prohibited on common Goods Loop Line between L-5 to L-6 at both ends<br>iii) Ensure that no electric Trains /Locos is standing with its panto raised condition on common Goods Loop Line (L-6).<br>iv) Concerned reception, dispatch and shunt signal for Goods Loop Line (L-6) shall be kept at 'ON'. | Crossover point No. 60A/B at BRPL end & 79A/B at DOBH end shall be kept at normal only.                             | i) First Open SS-195 of BRGA at Loc. No. BRGA/1023<br>ii) Then Open SS-195A of BRGA at loc. No. BRGA/1087                 | i) First Close SS-195A of BRGA at loc. No. BRGA/1087.<br>ii) Then Close SS-195 of BRGA at Loc. No. BRGA/ 1023. |
| 8.      | E/S No. 18404 on DN main between SM-110 of BRPL at Loc. No. 623/28 to BRGA/SP  | i) Movement of Electric Trains /Locos shall not be permitted on DN line between section BRPL-BRGA<br>ii) Line clear shall not be granted to BRPL for Electric trains /locos. on DN Line.<br>iii) Concerned DN Reception signals shall be kept at 'ON'                                                                                                                                                                                                    | NIL                                                                                                                 | Ensure BM-188 at BRGA/SP is in open position.<br>i) Open SM-110 of BRPL at Loc. No. 623/28<br>ii) Open BM-187 at BRGA/SP. | i) Close BM-187 at BRGA/SP.<br>ii) Close SM-110 of BRPL at Loc. No. 623/ 28                                    |

| SI. No. | Description of electrified section under P/B                                                                | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                        | Sequence of Switching Operation for granting power block.                                                                                                                                                                                                                                                                           | Sequence of Switching Operation for restoring OHE power.                                                                                                                                                                                                                           |
|---------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                                                                                             | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Transverse Protection                                                                                                                  |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                    |
| 9.      | E/S No. 19208 on DN main between BRGA/SP to SM-114 of BRGA at Loc. No.604/14                                | i) Movement of Electric Trains/Locos shall not be permitted on DN line between section BRPL-BRGA-DOBH.<br>ii) Line clear shall not be granted to BRPL for Electric trains/locos on DN Line.<br>iii) Line Clear shall not be obtained from DOBH for Electric Trains/Locos DN line.<br>iv) Shunting of Electric Trains/Locos shall be prohibited to L-2 to L-3, L-2 to L-1 and L-2 to ACC Siding.<br>v) Ensure that no Electric Trains/Locos is standing with its panto raised condition on L-2 at BRGA.<br>vi) Reception & dispatch of Electric Trains/Locos shall be permitted on common loop line L-1 from ACC siding and vice versa.<br>vii) Concern Reception, dispatch & shunt signals shall be kept at 'ON'. | Crossover point No. 61A/B, 65A/B, 71A/B& 57A/B at DOBH end and 52A/B, 62A/B, 64A/B at BRPL end shall be kept at normal only. Position. | Ensure BM-188 at BRGA/SP is in open position.<br>i) Open SM-114 of BRGA at Loc. No. 604/14.<br>ii) Open BM-190 at BRGA/SP<br>iii) Open CB of BRGA/SSP at Loc. ACC/01.<br>iv) Close SM/114A (N/O) of BRGA at loc. No. 604/2A.<br>v) Close SS/ACC/01 (N/O) of BRGA at loc. No. ACC/2A<br>vi) Open SS/194 of BRGA at Loc. No. 604/25A. | i) Close SS/194 of BRGA at Loc. No. 604/25A.<br>ii) Open SS/ACC/01(N/o) of BRGA at loc. No. ACC/2A.<br>iii) Open SM/114A (N/o) of BRGA at loc. No. 604/2A.<br>iv) Close CB of BRGA/SSP at Loc. ACC/01.<br>v) Close BM-190 at BRGA/SP<br>vi) Close SM-114 of BRGA at Loc. No.604/14 |
| 10.     | E/S No. 19206 on DN main between SM-114 of BRGA at Location No. 604/14 to SM-118 of DOBH at Loc. No.593/30. | i) Movement of Electric Trains/Locos shall not be permitted on DN line between section BRGA-DOBH<br>ii) Line clear shall not be obtained from DOBH for Electric trains/locos. on DN Line.<br>iii) Shunting of Electric Trains/Locos shall be prohibited beyond Loc. No. 604/14.<br>iv) Concern dispatch & shunt signals shall be kept at 'ON'.                                                                                                                                                                                                                                                                                                                                                                    | NIL                                                                                                                                    | Ensure SM/114A (N/O) of BRGA at loc. No. 604/2A is in open position.<br>i) Open SM-118 of DOBH at Loc. No. 593/30.<br>ii) Open SM-114 of BRGA at Loc. No. 604/14.                                                                                                                                                                   | i) Close SM-114 of BRGA at Loc. No. 604/14.<br>ii) Close SM-118 of DOBH at Loc. No. 593/30.                                                                                                                                                                                        |

| Sl. No. | Description of electrified section under P/B                                                       | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                  | Sequence of Switching Operation for granting power block.                                                        | Sequence of Switching Operation for restoring OHE power. |
|---------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
|         |                                                                                                    | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Transverse Protection                                                                                            |                                                                                                                  |                                                          |
| 11.     | E/S No. X-194 on common loop line (E/S. No. X-196 & X-196A (TM siding) gets automatically blocked) | i) Movement of Electric Trains/Locos shall not be permitted into common Loop line (L-1) at BRGA.<br>ii) No Electric Trains/Locos can be admitted/dispatched into/from common Loop line to/from L-1 at both the directions.<br>iii) No Electric Trains/Locos can be admitted/dispatched from all lines from BRGA to ACC siding and vice versa.<br>iv) Ensure that no Electric Trains/Locos is standing with its panto raised condition on common Loop line (L-1), Sick siding & TM siding.<br>v) Reception, dispatch & shunt signals for common Loop line (L-1) and shunt signal at both ends shall be kept at ON. | Crossover Point No. 71A/B, 61A/B & 55A/B at DOBH end and 64A/B at BRPL end shall be kept at normal position only | Ensure SS-ACC-01(N/O) of BRGA at Loc. No ACC/2A is in open position.<br>Open SS-194 of BRGA at Loc. No.604/25A   | Close SS-194 of BRGA at Loc. No.604/25A.                 |
| 12.     | E/S No. X-196 on sick siding                                                                       | i) Movement of Electric Trains/Locos shall not be permitted into sick siding at BRGA.<br>ii) Ensure that no Electric Trains/Locos is standing with its panto raised condition on sick siding.<br>iii) Shunting of Electric Trains/locos shall be prohibited on sick siding.<br>iv) Concerned signal for sick siding shall be kept at ON.                                                                                                                                                                                                                                                                          | Crossover point No 73A/B at DOBH end shall be kept at normal position only.                                      | Ensure SS-ACC-01(N/O) of BRGA at Loc. No ACC/2A is in open position.<br>Open SS-196 of BRGA at Loc. No BRGA/1006 | Close SS-196 of BRGA at Loc. No BRGA/1006.               |
| 13.     | E/S No. X-196A on TM siding at loc. no. TMS/01 at BRGA.                                            | i) Movement of Electric Trains/Locos shall not be permitted into TM siding at BRGA<br>ii) Ensure that no Electric Trains/Locos is standing with its panto raised condition on TM siding<br>iii) Shunting of Electric Trains/Locos shall be prohibited on TM siding.<br>iv) Concerned signal for TM siding shall be kept at ON                                                                                                                                                                                                                                                                                     | Crossover point No. 63A/B at DOBH end shall be kept at normal position only                                      | Open SS-196A of BRGA at Loc. No TMS/01.                                                                          | Close SS-196A of BRGA at Loc. No TMS/01.                 |

| SI. No. | Description of electrified section under P/B                | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                    |                                                                 | Sequence of Switching Operation for granting power block.                                                              | Sequence of Switching Operation for restoring OHE power. |
|---------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
|         |                                                             | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                         | Transverse Protection                                           |                                                                                                                        |                                                          |
| 14.     | E/S No: X-ACC-02 on Line No.1 at ACC siding at Loc. ACC/5A. | i) No Electric Trains/Locos can be admitted/ dispatched into/from 1st Loop (line No.1) at ACC siding.<br>ii) Shunting of Electric Trains/Locos shall be prohibited on 1st loop (line No.1)<br>iii) Ensure that no Electric Trains/Locos is standing with its panto raised condition on Line No-1 of ACC siding.<br>iv) Concerned signal shall be kept at 'ON'   | Crossover point connecting to Line No. 1 shall not be operated. | Ensure SM/114A of BRGA at Loc. No. 604/2A is in open position.<br><br>Open SS-ACC-02 of ACC siding at Loc. No. ACC/5A. | Close SS-ACC-02 of ACC siding at Loc. No. ACC/5A.        |
| 15.     | E/S No: X-ACC-03 on Line No.2 at ACC siding at Loc. ACC/6   | i) No Electric Trains/Locos can be admitted/dispatched into/from Main line (line No.2) at ACC siding.<br>ii) Shunting of Electric Trains/Locos shall be prohibited on Main line (line No.2)<br>iii) Ensure that no Electric Trains/Locos is standing with its panto raised condition on Line No-2 of ACC siding.<br>iv) Concerned signal shall be kept at 'ON'. | Crossover point connecting to Line No. 2 shall not be operated. | Open SS-ACC-03 at ACC siding at Loc. No. ACC/6.                                                                        | Close SS-ACC-03 at ACC siding at Loc. No. ACC/6.         |
| 16.     | E/S No: X-ACC-04 on Line No.3 at ACC siding at Loc. ACC/8A  | i) No Electric Trains/Locos can be admitted/dispatched into/from 2nd Loop (line No.3) at ACC siding.<br>ii) Shunting of Electric Trains/Locos shall be prohibited on 2nd Loop (line No.3)<br>iii) Ensure that no Electric Trains/Locos is standing with its panto raised condition on Line No-3 of ACC siding<br>iv) Concerned signal shall be kept at 'ON'     | Crossover point connecting to Line No. 3 shall not be operated. | Open SS-ACC-04 at ACC siding at Loc. No. ACC/8A.                                                                       | Close SS-ACC-04 at ACC siding at Loc. No. ACC/8A         |

| Sl. No. | Description of electrified section under P/B              | Steps and Precautions to be taken during power block in respect of electric loco hauling trains or running light or standing                                                                                                                                                                                                                                |                                                                | Sequence of Switching Operation for granting power block. | Sequence of Switching Operation for restoring OHE power. |
|---------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------|
|         |                                                           | Longitudinal Protection                                                                                                                                                                                                                                                                                                                                     | Transverse Protection                                          |                                                           |                                                          |
| 17.     | E/S No: X-ACC-05 on Line No.4 at ACC siding at Loc. ACC/8 | i) No Electric Trains/Locos can be admitted/dispatched into/from 3rd Loop (line No.4) at ACC siding<br>ii) Shunting of Electric Trains/Locos shall be prohibited on 3rd Loop (line No.4)<br>iii) Ensure that no Electric Trains/Locos is standing with its panto raised condition on Line No-4 of ACC siding.<br>iv) Concerned signal shall be kept at 'ON' | Crossover point connecting to Line No.4 shall not be operated. | Open SS-ACC-05 at ACC siding at Loc. No. ACC/8.           | Close SS-ACC-05 at ACC siding at Loc. No. ACC/8.         |

**NOTE:**

- i) For any unusual movement of Electric Locos, the Station Master on duty must refer to the working rule diagram from 25 KV AC traction of his station and ensured that there is no chance of energizing the section where power block has been granted.
- ii) Points leading to unwired tracks shall not be used for the movement of Electric Loco with pantograph raised.
- iii) Refer drawing No. RVNL/WAT/SWR/BRGA/22/14

### **WORKING OF BARGARH CEMENT WORKS LIMITED EXCHANGE YARD SIDING**

The Exchange Yard of Bargarh Cement Factory Private siding takes off from the over-run line of line No.-1 at ATS end of the yard and it is isolated from the over-run line by means of a cross-over. The crossover point No. 29 is motor operated from the panel. Normal setting of the cement siding is to dead end of ORL in the Exchange yard.

A train can be worked in to the Exchange yard from any line of the yard and can be received on any line from the Exchange yard as per convenience.

### **EXCHANGE YARD OF THE BCW FACTORY SIDING: -**

The exchange yard consists of 4 lines. The points in the exchange yard are all hand operated points, Both facing and trailing points of the line should be correctly set, clamped and padlocked for any movement over them. CAL of all the four lines are as follows :

| Line No.   | Nomenclature                | CAL       | Reckoned (From-To) | Electrified/ Not Electrified |
|------------|-----------------------------|-----------|--------------------|------------------------------|
| Line No-01 | Reception-cum-Dispatch line | 907.700 M | (FM-FM)            | Electrified                  |
| Line No-02 | Reception-cum-Dispatch line | 739.102 M | (FM-FM).           | Electrified                  |
| Line No-03 | Engine Escape line          | 659.965 M | (FM-FM)            | Electrified                  |
| Line No-04 | Reception-cum-Dispatch line | 756.796 M | (FM-FM).           | Electrified                  |

The Exchange yard is used as an interchange point for empties and loads between the E.Co.Rly, and the ACC Bargarh Cement Factory. Placement of Inward loads/empties and drawn out of outward loads/empties between the exchange yard and station will be done by the E.Co.Rly, Engines. Drawn out of inward loads and empties and placement of outward loads and empties between the exchange yard and the ACC Cement Factory siding will be done by the Cement Factory Engines.

### **Electrification :**

Electrification of the Exchange yard from take-off point of Line No.1 of BRGA yard up to 45m from outermost trailing point towards the factory siding with provision of stop board was commissioned on 01.09.2020 as per Station Working Rule diagram No. **RVNL/WAT/SWR/BRGA/22/14**. Now, trains meant for Exchange yard of ACC/ BRGA coming with electric engine can be worked to and from the siding with same engine. Electric Engines should not go beyond the aforesaid Stop Board. This should be strictly adhered to. The detailed procedure for availing block with repercussion and protection rule to be followed there to is given in Appendix 'G'. Approved copy of Appendix 'G' is enclosed here with for reference during day to day working.

The exchange yard will be worked on '**One engine only system**' so that only one engine will work in the exchange yard at one time and no other engine will be allowed into the exchange yard till the return of the first engine or unless the first engine has failed and unable to move from the siding or has been brought to a stop by a memo served by the Station Master on duty/BRGA to the loco Pilot and acknowledged by the loco Pilot.

**WORKING OF THE EXCHANGE YARD:**

For a train to be placed in the exchange yard, the Station Master on duty will advise the representative of the ACC Cement Factory at the Station about the train that is ready and ask him to hand over the badge authorizing to enter into the exchange yard. The Representative of the firm after ensuring that their engine is not working in the exchange yard will hand over the authority badge to the Station Master on duty.

The possession of the authority badge by the Station Master on duty/BRGA is an assurance that, the Cement Factory engine is not working in the exchange yard and it will not work in the exchange yard so long this authority badge is in the possession of the Station Master on duty.

SM-on-duty shall prepare a shunting authority with detailed shunting particulars and hand it over to the Loco Pilot with signature of the loco Pilot and TMR of the train/Shunting Jamadar / Points man as the case may be.

Then the Station Master will set the concerned points of the route from operating panel leading towards exchange yard and take off concerned shunt signal for dispatch of the train in to the Exchange yard.

The train will be stopped near the stop board at the entrance point of the exchange yard and after setting, clamping and padlocking both the facing and trailing points of the nominated line of the exchange yard, the TMR will signal the Loco Pilot to proceed cautiously into the exchange yard. As soon as the engine clears the crossover connecting the Exchange Yard of Cement siding and the station yard, the crossover shall be set to normal position

The TMR, after completion of work in the siding and satisfying that the points for departure of the train are correctly set, facing and trailing points clamped and padlocked will signal the Loco Pilot to proceed towards the station. The train will be stopped near the shunt signal and wait till it is taken OFF and signalled by the TMR.

The TMR on duty shall inform the Station Master on duty for reception of the train into the station yard. The Station Master on duty, if he is in a position to receive the train into station yard, will select a clear line and admit the train/light engine by taking OFF the shunt signal.

The TMR, after ensuring that all points are correctly set and locked, will signal the Loco Pilot to enter the station yard. After complete arrival of the train into the station yard, the shunting authority will be withdrawn by the Station Master on duty and the authority to enter into the Exchange yard will be handed over to the Representative of the Cement Factory.

The electric engines should in no case, go beyond the Stop Board provided at a distance of 45m beyond the exchange yard towards the Cement Factory siding

- i) The stop boards must be illuminated at night.
- ii) Speed is restricted to 15 Kmph in the exchange yard.
- iii) Trains from Bargarh Road station to exchange yard of ACC siding & vice versa will go in pushing or pulling method as per direction of the traffic.
- iv) Trains working in the siding must be fully air/vacuum braked both in the outward and return trip.
- v) The TMR working the siding is responsible to supervise the shunting in the exchange yard and ensure securing of vehicles placed in the siding as per SR. 5.23.01.
- vi) The Bargarh Cement Factory is responsible for securing and protection of the train/wagons and their contents placed in the exchange yard during the period the train/wagons remain in the exchange yard.
- vii) The ACC / Bargarh is also responsible to take sufficient precautions during shunting with their locomotive and avoid roll down of wagons/Train.
- viii) No siding staff will be allowed to operate on main line and passenger running lines. They have to work only in the exchange yard.

The following badge is provided: A metallic authority badge to enter into the exchange yard with square shape and legend is provided which will normally be kept under the custody of the representative of the acc authorities.

When this badge is handed over to the Station Master on duty/BRGA it will be the authority for the Station Master on duty to allow an Engine/Train into the exchange yard.

**Obverse**

Authority to enter into the exchange yard Bargarh Road.

**Shape**

Square shape

On receipt of the badge from the representative of ACC, SM on duty/BRGA will keep the same under his personal custody. He will thereafter prepare a shunting authority with detailed shunting particulars and hand it over to the Loco Pilot with signature of the loco Pilot and TMR of the train/Shunting Jamadar/Points man as the case may be.

A register will be maintained by the Station Master on duty at Bargarh Road in which the TMR of the train after the shunting is completed in the exchange yard will certify that all vehicles/train in the exchange yard are properly secured and the points are set to their normal position.