

# East Coast Railway Waltair Division



## STATION WORKING RULES OF JAGADALPUR (JDB)

## East Coast Railway / Waltair Division

## Station Working Rules of JAGADALPUR

## *Index of Correction Slips*

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**East Coast Railway / Waltair Division**



**Station Working Rules of  
JAGADALPUR (JDB)**

**Index of Page No.s**

| <b>Sl No</b> | <b>Description</b>    | <b>Page No.s</b> |
|--------------|-----------------------|------------------|
| 01           | Station Working Rules | <b>1 - 31</b>    |
| 02           | Appendix- A           | <b>32 – 62</b>   |
| 03           | Appendix- B           | <b>63 – 87</b>   |
| 04           | Appendix- C           | <b>88</b>        |
| 05           | Appendix- D           | <b>89 – 92</b>   |
| 06           | Appendix- E           | <b>93</b>        |
| 07           | Appendix- F           | <b>94</b>        |
| 08           | Appendix- G           | <b>Booklet</b>   |

## STATION WORKING RULES OF JAGADALPUR (JDB)

| Rule No. | Content                                                                                                           | Page No |
|----------|-------------------------------------------------------------------------------------------------------------------|---------|
| 1        | Station Working Rule Diagram Description                                                                          |         |
| 2        | Description of Station                                                                                            |         |
| 2.1      | General - Location & Class of Station                                                                             |         |
| 2.2      | Block Stations/Non Block Stations / DK Stations / IBSS / IBH On Either Side And Their Distance /Out Lying Siding  |         |
| 2.3      | Block Section Limits On Either Side Of The Station On Different Directions                                        |         |
| 2.4      | Gradients if any                                                                                                  |         |
| 2.5      | Layout                                                                                                            |         |
| 2.5.1    | Running Lines Direction Of Movement And Holding Capacity In CSL/CAL                                               |         |
| 2.5.2    | Non-Running Lines And Their Holding Capacity                                                                      |         |
| 2.5.3    | Abnormal Features in the Layout                                                                                   |         |
| 2.6      | Level Crossings                                                                                                   |         |
| 3        | System and Means of Working                                                                                       |         |
| 4        | System of Signalling And Interlocking                                                                             |         |
| 4.2      | Custody of Relay Room Key And Procedure for its Handing Over And Taking Over Between SM And S&T Maintenance Staff |         |
| 4.3      | Power Supply                                                                                                      |         |
| 5        | Telecommunication                                                                                                 |         |
| 6        | System of Trains' working                                                                                         |         |
| 6.1      | Duties of Train Working Staff                                                                                     |         |
| 6.1.1    | Train Working Staff in each Shift                                                                                 |         |
| 6.1.2    | Responsibility for Ascertaining Clearance of the Lines And Zones Of Responsibility                                |         |
| 6.1.3    | Assurance Of Staff in the Assurance Register                                                                      |         |
| 6.2      | Conditions For Granting Line Clear                                                                                |         |
| 6.2.1    | Any Special Conditions While Receiving / Despatching of a Train                                                   |         |
| 6.3      | Conditions For Taking 'Off' Approach Signals                                                                      |         |
| 6.3.1    | Responsibility Of SM For Restoration of Signals to 'On'.                                                          |         |
| 6.4      | Simultaneous Reception / Despatch / Precedence Of Trains                                                          |         |
| 6.5      | Complete Arrival Of Trains                                                                                        |         |
| 6.6      | Despatch Of Trains                                                                                                |         |
| 6.7      | Trains Running Through                                                                                            |         |
| 6.8      | Train Working in case of Failures                                                                                 |         |
| 6.9      | Working Of Motor Trolleys/ Material Lorries Etc.                                                                  |         |
| 7        | Blocking Of Lines                                                                                                 |         |
| 8        | Shunting                                                                                                          |         |
| 9        | Abnormal Working                                                                                                  |         |
| 9.1      | Total Interruption Of Communication                                                                               |         |
| 9.2      | Temporary Single Line Working On Double Line                                                                      |         |
| 9.3      | Instructions For Sending A Relief Engine/Train Into An Occupied Block Section                                     |         |
| 10       | Visibility Test Object                                                                                            |         |
| 11       | Essential Equipments at This Station                                                                              |         |
| 12       | Names Of Fog Signalmen nominated to be called in case of Fog                                                      |         |

**EAST COAST RAILWAY / WALT AIR DIVISION****STATION WORKING RULES OF JAGADALPUR [JDB] [BROAD GAUGE**

Date of Issue:-

Date brought in force:-

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

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

**1. STATION WORKING RULE DIAGRAM:**

|                                                                         |
|-------------------------------------------------------------------------|
| (i) The Station Working Rule diagram no: SI/WRD/23181Alt-C              |
| (ii) CSTE/East Coast Railway Signal Interlocking Plan No: SI/23181Alt-C |
| (iii) Date up to which corrected:                                       |

**2. DESCRIPTION OF STATION:**

JAGDALPUR (code: JDB) is a **Standard-II R 'B'** class station with MACLS on the KOTTAVALASA-KIRANDUL single line B.G. Section of E.Co.Rly on 'D' route. It is situated at km 295.784 from KTV and Operated Centrally with VDU.

**2.1 GENERAL LOCATION:**

|                                |                                |
|--------------------------------|--------------------------------|
| a) NAME OF THE STATION:        | <b>JAGDALPUR</b>               |
| b) CLASS OF STATION:           | <b>'B' CLASS</b>               |
| c) SECTION:                    | <b>KOTTAVALASA-KIRANDUL</b>    |
| d) DOUBLE LINE/SINGLE LINE :   | <b>DOUBLE LINE</b>             |
| e) ELECTRIFIED/NONELECTRIFIED: | <b>ELECTRIFIED</b>             |
| f) GAUGE BG/MG/NG:             | <b>BG</b>                      |
| g) RAILWAY:                    | <b>EAST COAST RAILWAY</b>      |
| h) ROUTE:                      | <b>'D' SPECIAL</b>             |
| i) SITUATED AT:                | <b>KM 295.784</b>              |
| j) RECKONED FROM:              | <b>KOTTAVALASA</b>             |
| k) OPERATION:                  | <b>CENTRALLY OPERATED VDU.</b> |

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

| SL NO | ADJACENT BLOCK-SECTION | DISTANCE        | DIRECTION |
|-------|------------------------|-----------------|-----------|
| A     | KUMHASR MARENGA(KMEZ)  | <b>8.885 KM</b> | KRDL END  |
|       | NAKTI SEMRA(NKX)       | <b>6.454 KM</b> | KTV END   |
| B     | PROVISION OF IBS       | NIL             |           |

|   |                             |     |  |
|---|-----------------------------|-----|--|
| C | AUTOMATIC SIGNAL            | NIL |  |
| D | DKSTATION/OUTLAYING SIDINGS | NIL |  |
| E | PASSENGER HALT              | NIL |  |

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

| Between Stations     | The Point from which the Block section commences | The Point at which the 'Block Section' ends |
|----------------------|--------------------------------------------------|---------------------------------------------|
| JDB - NKX Up Line    | From UP advanced starter Signal no. 17 of NKX.   | Up to BSLB of JDB.                          |
| JDB - NKX Down Line  | From DN advanced starter Signal no. 24 of JDB    | Down to BSLB of NKX.                        |
| JDB - KMEZ Up Line   | From Up advanced starter Signal no.21 of JDB     | Point No 31-A of KMEZ                       |
| JDB - KMEZ Down Line | From Down advanced starter Signal no. 26 of KMEZ | Point No 32-A of JDB                        |

### 2.4 GRADIENTS:

#### a) From the centre of the station building towards KMEZ (UP Line):

| Chainage in Meters from CSB |              | Stretch | Gradient            |
|-----------------------------|--------------|---------|---------------------|
| From                        | To           |         |                     |
| 0.000 F/CSB                 | 1175M        | 1175M   | 1 in 600Raising     |
| 1175M                       | 1340M        | 165 M   | 1 in 113.72 falling |
| 1340 M                      | 2086 M       | 746M    | 1 in 140 raising    |
| 2086 M                      | 2280 M       | 194 M   | Level               |
| 2280 M                      | 2400M        | 120 M   | 1 in 150 falling    |
| 2400 M                      | 3120 M       | 720 M   | 1 in 100 falling    |
| 3120 M                      | Into section | ---     | Level               |

#### b) From the centre of the station building towards KMEZ (DN line):

| Chainage in Meters from |        | Stretch | Gradient             |
|-------------------------|--------|---------|----------------------|
| From                    | To     |         |                      |
| 0.000 F/CSB             | 1099 M | 1099 M  | 1 in 600 raising     |
| 1099M                   | 1342M  | 243M    | 1 in 179.372 falling |
| 1342M                   | 2150M  | 808 M   | 1 in 147.177 raising |
| 2150M                   | 2268 M | 118 M   | Level                |
| 2268 M                  | 2562 M | 412M    | 1 in 114.71raising   |
| 2562 M                  | 3186 M | 624 M   | 1 in 108.39 raising  |

|        |              |       |       |
|--------|--------------|-------|-------|
| 3186 M | Into section | ----- | Level |
|--------|--------------|-------|-------|

**c) From the centre of the station building towards NKX (Down line):**

| Chainage in Mtrs from CSB |              | Stretch | Gradient         |
|---------------------------|--------------|---------|------------------|
| From                      | To           |         |                  |
| 0.000 F/CSB               | 675 M        | 675 M   | 1 in 600 Raising |
| 675 M                     | 2019 M       | 13474 M | 1 in 140 Falling |
| 2019 M                    | 2224 M       | 205 M   | 1 in 125 Falling |
| 2224 M                    | 2376 M       | 152 M   | 1 in 150 Falling |
| 2376 M                    | 2681 M       | 305 M   | 1 in 300 Raising |
| 2681 M                    | 2986 M       | 305 M   | 1 in 150 Falling |
| 2986 M                    | Into section | ----    | Level            |

**d) From the centre of the station building towards NKX (Up line):**

| Chainage in Mtrs from CSB |              | Stretch | Gradient            |
|---------------------------|--------------|---------|---------------------|
| From                      | To           |         |                     |
| 0.000 F/CSB               | 675 M        | 675 M   | 1 in 600 Falling    |
| 675 M                     | 1654 M       | 979 M   | 1 in 126.45 Falling |
| 1654 M                    | 2394 M       | 740 M   | 1 in 154 Falling    |
| 2394 M                    | 3260 M       | 866 M   | 1 in 250 Falling    |
| 3260 M                    | Into section | ----    | Level               |

**e) From the centre of the station building towards NKX (Shunting Neck):**

| Chainage in Meters from CSB |          | Stretch  | Gradient         |
|-----------------------------|----------|----------|------------------|
| From                        | To       |          |                  |
| 0.000 F/CSB                 | 675 M    | 675 M    | 1 in 600 Falling |
| 675 M                       | 838.02 M | 163.02 M | 1 in 600 Falling |

**2.5 (A) LAY OUT:**

| Sl no | Running/Non Running line      | Electrified/Non Electrified |
|-------|-------------------------------|-----------------------------|
| 1     | Line no-1 (Common Loop)       | Electrified                 |
| 2     | Line no-2 (DN Main line)      | Electrified                 |
| 3     | Line no-3 (UP Main line)      | Electrified)                |
| 4     | Line no-4 ( Common Loop line) | Electrified                 |
| 5     | Line no-5 ( Common Loop line) | Electrified                 |
| 6     | Line no-6 ( Common Loop line) | Electrified                 |
| 7     | Line no-7 (Goods Siding)      | Electrified                 |
| 8     | Line no-8 (Goods Siding)      | Electrified                 |

**(B) PLATFORMS:**

- (i) One Medium level passenger platform on line no1 is provided with measurement of 349MX17M

- (ii) One High level island passenger platform between line no. 2 & 3 is provided with a measurement of 550M X 10.81M.
- (iii) One island Plat RCC form between 7 & 8 measuring 675 x 25 circulating area with a rail level is provided for Loading & unloading baggage commodity.
- (iv) One rail level platform heavy duty (Goods platform) on Line no.8 is provided with a measurement of 675 M x 25 M with facility of 10 M wide road for goods.

### **2.5.1 RUNNING LINES & HOLDING CAPACITY IN CSL:** **HOLDING CAPACITIES:**

| Line No   | Description                           | CSL                 | Electrified | CSL from To                    |
|-----------|---------------------------------------|---------------------|-------------|--------------------------------|
| Line No 1 | Common Loop                           | 636.80 M            | Electrified | Starter to Starter             |
| Line No 2 | Dn Main line                          | 718.50 M            | Electrified | Starter to S.S.                |
| Line No 3 | Up Main line                          | 977.50 M            | Electrified | Starter to S.S.                |
| Line No 4 | Common Loop<br>Up<br>Common<br>LoopDn | 758.00 M<br>762.05M | Electrified | Starter to BJ<br>Starter to BJ |
| Line No 5 | Common Loop                           | 721.00 M            | Electrified | Starter to Starter             |
| Line No 6 | Common Loop                           | 721.00 M            | Electrified | Starter to Starter             |

#### **2.5.1.1. NON RUNNING LINES & HOLDING CAPACITY IN CSL:**

|                    |           |          |                 |                  |
|--------------------|-----------|----------|-----------------|------------------|
| Line No 7          | Goods Sdg | 769.56 M | Electrified     | From DS to DS    |
| Line No 8          | Goods Sdg | 774.56   | Electrified     | From DS to DS    |
| Shunting Neck      |           | 197.00 M | Non Electrified | From Shunt to DE |
| RE Siding          |           | 142.00 M | Non Electrified | From Shunt to DE |
| Engineering Siding |           | 185.00 M | Non Electrified | From Shunt to SB |

#### **2.5.3 ANY SPECIAL FEATURES IN THE LAYOUT:**

L-7& L-8 are goods siding, cannot be taken or dispatch directly on signals for the placement & Drawn Out of trains is to be follow bellow the system of working till the completion & commission of Phase -II working.

**SYSTEM OF WORKING OF GOODS TRAINS DEALING ON L/7 & L/8 AT  
JAGADALPUR (JDB) STATION TEMPORARILY TILL COMMISSIONING OF  
PHASE-II WORKS**

**No.WTP/28/Goods Shed & Sidings / JDB/22 Dated 18.01.2022**

In order to maintain early placement, release and dispatch of Rakes, a Non-interlocked Point is taken off from L/4 at KMEZ and to enter L/7 & L/8 for single placement and Drawn out. This work will be in force till Ph-II works are commissioned.

- a) Since, Non-interlocked Hand Operated Point is provided on Line/4 interlocked Zone, the Movement of Coaching Trains will be restricted on L/4 till the Points are interlocked.
- b) Full OHE line is provided to admit the Trains with electrical Loco on L/7, L/8. Isolators are also provided at the both ends to Dead the OHE whenever required for goods loading.
- c) The leading hand point at Ch.798.52M (Taken off from L/4) is provided towards KMEZ end to receive and dispatch trains on Goods Lines on L/7 and L/8
- d) 2<sup>nd</sup> Hand Point is provided at Ch.662.66M towards KMEZ end to receive and dispatch trains on L/7, L/8
- e) Shunting shall be done on shunting memo whenever shunt signals are not provided
- f) Placement and Drawn out shall be done from KMEZ only

**Procedure for Placement of Up Rakes coming from NKX end and drawing out Rakes of L/7 and dispatch towards NKX end:-**

- a) SM /JDB shall admit the up empty rakes to any line from l/4 to L\6 directly by taking off Home Signal
- b) After detaching BV, Train shall be pulled ahead by block forwarding towards KMEZ section. And then push back on L/7 for placement after correct setting of Route. Clamping and padlocking of points, for correct setting of route, this should be ensured by shunting supervisor.
- c) After placement of rake the BV shall be attached in rear of the Train as per the operational requirement.
- d) After loading EOT will be done towards KMEZ end, and Loaded rake shall be backed to any line from L/4 to L/6 by Block forward towards KMEZ end. And Loco shall be reversed and dispatched on Signals.
- e) After placement / Drawn out, ensure the Route should set to normal position.

**Procedure for placement of Down Rakes coming from KMEZ end & Drawing out empty rakes from L/8 to dispatch towards KMEZ end.**

- a) SM JDB shall admit the Down Loaded Rakes directly on L/8 by Piloting-IN after ensuring correct setting of Route, Clamping and Padlocking all the relevant Points after Stopping at Home Signal. Setting of Route clamping and Padlocking should be ensured by Shunting Supervisor.
- b) After placement of Rake the Engine should be moved towards shunting neck and backed to any convenient Free Line.
- c) After that, BV shall be detached from rear end and marshalling to be done towards NKK end to keep ready the rake for dispatching towards

BCHL, KRDL. As per operational requirement or BV shall be kept as it is as per the operational requirement.

- d) After unloading, EOT will be done and Loaded rake shall be drawn out and dispatched directly from L/8 towards BCHL, KRDL by setting the Route Clamping and padlocking ensuring the same Piloting-Out or, issuing memo number T/511
- e) After placement / Drawn out ensure the Route setting to Normal Position

## 2.6 LEVEL CROSSINGS:

| S No | LC gate No. Village | Location KM | Class of Gate     | Type of interlocking | Section  |
|------|---------------------|-------------|-------------------|----------------------|----------|
| 1.   | KK-82 Karkapal      | 293/2-3     | 'Spl' Class Engg. | Interlocked          | JDB-NKX  |
| 2.   | KK-83 Jagadalspur   | 294/16-17   | 'Spl' Class Engg. | Interlocked          | JDB-NKX  |
| 3.   | KK-84 Gidam Naka    | 297/18-19   | 'Spl' Class Engg. | Interlocked          | JDB-KMEZ |

## 3.0 SYSTEM AND MEANS OF WORKING:-

|                                       |   |                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System of working in force            | : | Absolute block system.                                                                                                                                                                                                                                                                                                                           |
| Double Line / Single Line             | : | Double Line.                                                                                                                                                                                                                                                                                                                                     |
| Block instruments                     | : | Double Line Lock and block instruments.                                                                                                                                                                                                                                                                                                          |
| Co-operative/non-cooperative          | : | Non co-operative.                                                                                                                                                                                                                                                                                                                                |
| Provision of Block telephone          | : | Block phone Attached to the block instruments.                                                                                                                                                                                                                                                                                                   |
| Custody of keys of Block Instruments. | : | SS/SM is responsible for operation of the Block instruments. The Station Master on duty is the only authorized person to operate the instruments and their keys shall be in the personal custody vide GR 5.08 and 14.12(a). Block instrument is provided with double locking. One key will be with SM and other key will be with S&T maintainer. |

## 4 SYSTEM OF SIGNALLING AND INTERLOCKING

|    |                                    |                                                                                                                                                                                   |
|----|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Standard of Interlocking           | Standard II (R) with Electronic Inter Locking.                                                                                                                                    |
| 2. | Type of Signaling.                 | Multiple aspect colour light signals.(MACLS) is governed by G&SR 3.08(4)(b).                                                                                                      |
| 3. | Mode of the operating the signals. | Central Panel & VDU to electrically control the points & signals.                                                                                                                 |
| 4. | Provision of 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 |

|    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                            | <p>when taken “OFF”. A calling-on signal, will be taken ‘OFF’ for reception of a train when the Home signal above it cannot be taken ‘OFF’ due to failure or any other reason or for admission of train on blocked line. Before taking ‘OFF’ Calling on signal during failure of track circuit the route and clearance of the track over which the train will be admitted must be checked physically by SM on duty.</p> <p>Calling-on signals are provided below Home signal (i.e. in both UP &amp; DN lines) as per GR.3.13 (1) (b), (2) (3) (4) &amp; (6) (b).</p> <p>To take off Calling-on signal the train must come to stop at the foot of the home signal, occupying the track circuit (1AT, 2AT as the case may be) in rear of the Home signal. When a train occupies the track circuit, a RED light strip will appear on the Panel/VDU. The particular route on which the train is intended to be received shall be set by selecting and setting desired route through Panel by SS/SM on duty. After a lapse of 60 seconds, the Calling-on signal clears i.e. white light glows at the concerned Calling-on signal on the Panel.</p> <p><b>NOTE:</b> SS/SM on duty to ensure that no through signals are given while receiving a train on Calling-on. Before taking off Calling-on signal during failure of track section, the route and the clearance of the track over which train would pass including fouling track showing Red shall also be verified by physically SM on duty. (The detailed procedure is given in Appendix-B)</p> |
| 5. | Provision of shunt signals | <p>this station the following Independent Shunt Signal provided to wards KMEZ end is SH-4( A-F),SH-22 from Sick Line with CSL of 35 M, SH-30 from Pit line, SH-28 for RE siding, SH-19 (A-B), and dependent Shunt signal provided SH-9 below the Starter signal of S-9.</p> <p>Similarly towards NKX end SH-3 (A-F), SH-5 (A-E) from Eng Siding length of 340 M , SH-20 from L/8, SH-18 from L/7, and dependent SH-10 is provided on L/3 below the stop signal No 10 similarly SH-14 on below the starter signal No 14 of L/5, SH-16 (A-B) on below the S-18 signal of L/6. For the purpose of shunting in the yard.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|    |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6. | Emergency cross over | Nil.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. | Track circuits       | <p>Track circuits are provided in the yard as 1AT, 1T2,24T,24T1, 24AT, 31AT, 31BT, 33AT, 33BT, 39AT, 39BT, , 45/47T, L1T1, L1T2, L1T3, L2T1, L2T2, L2T3, L3T1, L3T2, L3T3, L3T4, L4T1, L4T2, L4T3, L5T1, L5T2, L5T3, L6T1, L6T2, L6T3, 30AT, 30BT, 32AT, 32BT, 32AT1, 34AT,34BT 34T,35BT 36T, 38T,54T,G5T1,G5T2, G4T1,G4T2, 40AT1, 40AT, 46BT, 42T, 44AT, 44BT, 21AT, 21T, 2AT, 2T1and 2T2, 41/51T, 39T, 40/52T, 48/50T, 36/38T,38T,46AT. Axle counters are provided for section KMEZ-JDB on both UP &amp; DN lines for double line section and JDB-NKX section for single line section for last vehicle verification. Block section indications for the above track circuits/ Axle counters are available on VDU at SM's office. When a signal is cleared the route indication 'Yellow' appears for the particular route set and 'Red' light appears as the train occupies the track circuit</p>                                                                                                                                                                                                                                                                                                                            |
| 8. | Axle counters        | <p>High availability Single Section Digital Axle counters (HASSDAC) are provided for section JDB-KMEZ &amp; JDB-NKX as on UP line for Block proving LVV respectively.</p> <p>For detailed re-setting see Appx "B" para 6.0 HASSDAC with Dual sensor with media converter with E1 connectivity and Quad core cable is provided for block clearance for all lines both sides KMEZ&amp;NKX.</p> <p>In case of failure of High availability Single Section Digital Axle counters (HASSDAC) the procedure as detailed in <b>Appx "B" para No 6</b> is to be followed for resetting the same.</p> <p><b><u>For section: JDB-KMEZ</u></b></p> <p>A pair High availability Single Section Digital Axle counter (HASSDAC) is provided between KMEZ-JDB as DAXT one just beyond DN advanced starter signal No. 26 on 26T Track Circuit portion of KMEZ and another before of point No. 32-A on 2T2 track circuit portion of JDB for last vehicle verification of Dn direction as last vehicle check Device (DRAXT)</p> <p>Similarly Another pair of High availability Single Section Digital Axle counter (HASSDAC) is provided between JDB-KMEZ one just beyond UP advanced starter signal No. 21 of JDB on 21T track circuit and</p> |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>another one just nearer to the point No 31A on 1T2 track circuit portion of KMEZ Track Circuit portion for last vehicle verification Up direction as Last Vehicle Check Device (URAXT).</p> <p><b><u>For section JDB-NKX:</u></b></p> <p>A pair of High availability Single Section Digital Axle counter (HASSDAC) is provided as DAXT on Dn line between JDB-NKX one just beyond advanced starter signal No. 24 on 24T Track Circuit portion of JDB and another one just beyond BSLB board on 2T2 track circuit of NKX for last vehicle verification of Dn Line as last vehicle check Device (DRAXT)</p> <p>Similarly A pair of High availability Single Section Digital Axle counter (HASSDAC) is provided between JDB-NKX section on Up line one just beyond Up Advance starter Signal No 17 on 17 T track circuit of NKX and another one at BSLB board on 1T2 track circuit of JDB for last vehicle check in the Up Line as Last Vehicle Check Device (URAXT).</p> <p>The position of the block section whether 'clear' or 'occupied' is reflected on the axle counter reset box provided in the Station Master's office which shows 'GREEN' when the block section is clear and 'RED' when block section is occupied. Whenever a train enters into the block section "Block section clear" indication 'GREEN' for the particular block section disappears and 'RED' indication appears.</p> <p>After complete arrival of the train the 'RED' indication disappears and 'GREEN' indication appears. If after complete arrival of the train '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 Home Signal cannot be taken off for next train and the concerned instrument shall remain locked in last operated position.</p> <p>A resetting arrangement is provided in the SM office to reset the system to normal</p> |
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|  | <p>position in case of failure of axle counter. The resetting is to be initiated by the SM at the receiving station only after physical verification of complete arrival of train by exchanging private number. The resetting can be accomplished only with the co-operation of SMs at either end of the block section.</p> <p>If a train passes through the station without confirming the last vehicle indicator, the Station Master on duty shall advise the station in advance to stop the train for last vehicle verification and he need not to withhold closing of block section in rear. He shall obtain confirmation under exchange of private number about the complete arrival of the train with its last vehicle from the station in advance and subsequent trains may be dispatched.</p> <p>In case of failure of Axle counter the SM 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 SM on duty shall satisfy himself the complete arrival of the train by verification of the Last Vehicle Indicator vide GR 4.17 (1) that the train had arrived completely. In case a train passes incomplete, action shall be taken as per SR.4.17.02, the "Train out of Block Section" report shall be withheld to the station in rear until complete arrival Certificate is received from the station in advance supported by a private number.</p> <p>Train passing on adjacent line shall be stopped and TMR &amp; Loco pilot shall be issued with caution order to proceed cautiously and stop sort of any obstruction as per SR.4.17.03. On occasions when motor trolley follows a train the points shall not be operated until the following motor trolley is admitted on the same line. In event of motor trolley is delayed in the section the SM on duty shall take action in terms of SR.15.25.03 (b) (vi).</p> <p><b>NOTE:</b></p> <p>Before taking off reception and dispatch signals for UP or DN directions the SM on duty shall ensure that the entire route</p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                 |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
|-----------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-----------------|--------------------|------|-------|------|----|------|--|-------|----|------|-------|-------|----|------|----------|-------|-------|------|-------|-------|-------|------|----|-------|--|------|-------|-------|--|------|--|--|--|
|                 |                           | including overlap and berthing portion is clear of all obstructions by observing the Track indication/Axle counter indication.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| 9.              | Crank Handle              | <p>When any point fails to operate normally by the Route Setting operation through Panel/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. The procedure for use of crank handle for motor operated points shall be followed as per operating manual chapter-2, para-2.18 &amp; 2.19 and Para No. 4.7 of Appendix-B.</p> <table><tr><td>CRANK<br/>HANDEL</td><td>CONTRO<br/>L POINTS</td><td>CRANK<br/>HANDEL</td><td>CONTRO<br/>L POINTS</td></tr><tr><td>CH-1</td><td>31,35</td><td>CH-9</td><td>32</td></tr><tr><td>CH-2</td><td></td><td>CH-10</td><td>46</td></tr><tr><td>CH-3</td><td>45,47</td><td>CH-11</td><td>37</td></tr><tr><td>CH-4</td><td>39,43,49</td><td>CH-12</td><td>41,51</td></tr><tr><td>CH-5</td><td>42,44</td><td>CH-13</td><td>48,50</td></tr><tr><td>CH-6</td><td>40</td><td>CH-14</td><td></td></tr><tr><td>CH-7</td><td>36,38</td><td>CH-15</td><td></td></tr><tr><td>CH-8</td><td></td><td></td><td></td></tr></table> | CRANK<br>HANDEL    | CONTRO<br>L POINTS | CRANK<br>HANDEL | CONTRO<br>L POINTS | CH-1 | 31,35 | CH-9 | 32 | CH-2 |  | CH-10 | 46 | CH-3 | 45,47 | CH-11 | 37 | CH-4 | 39,43,49 | CH-12 | 41,51 | CH-5 | 42,44 | CH-13 | 48,50 | CH-6 | 40 | CH-14 |  | CH-7 | 36,38 | CH-15 |  | CH-8 |  |  |  |
| CRANK<br>HANDEL | CONTRO<br>L POINTS        | CRANK<br>HANDEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CONTRO<br>L POINTS |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| CH-1            | 31,35                     | CH-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 32                 |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| CH-2            |                           | CH-10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 46                 |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| CH-3            | 45,47                     | CH-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 37                 |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| CH-4            | 39,43,49                  | CH-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 41,51              |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| CH-5            | 42,44                     | CH-13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 48,50              |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| CH-6            | 40                        | CH-14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| CH-7            | 36,38                     | CH-15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| CH-8            |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| 10.             | Emergency Point operation | Emergency point operation facility is provided to operate the point from the Panel in case of failure of point controlling track circuit. Each operation of emergency point operation shall be recorded in the station diary and in the register meant for this purpose. (Detailed procedure for operation of emergency point operation is laid down in Para No.5.2 of Appendix-B)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |
| 11.             | Block Instruments         | <p>SGE type Double line Lock Block Instruments are provided for block section JDB-NKX and JDB-KMEZ.</p> <p>Telephone attached to Block instruments and Block Panels connecting the adjoining block stations concerned.</p> <p>‘ON’ aspect of UP/DN Home &amp; UP/DN Adv.str signals towards NKX end and KMEZ end are proved with respective block instruments.</p> <p>Custody of block instrument keys: One key will be with SM on duty and the other with</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                    |                 |                    |      |       |      |    |      |  |       |    |      |       |       |    |      |          |       |       |      |       |       |       |      |    |       |  |      |       |       |  |      |  |  |  |

|     |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                          | S&T maintainer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 12. | <i>Emergency Route Release operation</i> | <p>This panel interlocking is based on the principle of 'DEAD APPROACH LOCKING'. As such, when a route is set and signal is taken off on the route, the route gets locked. Normally the route is released by the passage of the train over the route. When it becomes necessary to alter the route after the signal has been taken off vide SR 3.36.02 (a), the concerned signal must be put back to danger by pressing the Signal cancellation button and the concerned signal button. Then the emergency route release button (white with red dot) positioned in the top of panel is to be pressed by breaking the seal and subsequently the concerned signal button pertaining to the route is to be pressed. A white light will flash (Up or Down) indicating that the timer is working. After 120 seconds, the white light along with the white strip of light will disappear suggesting the route has been released. In case the route illumination (a white strip of lights) does not disappear, it suggests that the route is not released/cancelled. In such case the emergency cancellation of route has to be resorted to. The concerned S&amp;T staff should be advised immediately to get the emergency route release button resealed after rectification of fault if any. Each operation of emergency cancellation of route is recorded in the emergency route release counter by registering the next higher number. All such operations and the new number should be recorded in the TSR, station diary and the register meant for this purpose.</p> |
| 13. | Emergency crank handle release.          | Emergency crank handle release operation facility is provided to operate the point by using the crank handle in case of Route locked condition. Each operation of emergency crank handle operation shall be                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|     |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                | recorded in the TSR, station diary and in the register meant for this purpose.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 14. | Emergency Gate Release:        | If the LC Gate has locked by any of the signal route, for releasing the gate by the Emergency operation the SM has to cancel the signal by signal cancellation control of the relevant signal, Then he has to click the Emergency Gate Release Control in the Gate pop-up menu. This will take 120sec of time to release the gate. After the time lapsed, the Key can be extracted from the RKT at Gate Lodge and concerned counter provided on the panel board will change to next higher digit number, which should be recorded in the TSR, SM Diary and register provided for this purpose. |
| 15. | Operation of Control Panel/VDU | A two position switch is provided on the control panel through which SM on duty can select the mode of operation (i.e. from Panel or VDU). The position of all points, signals and running lines are available in the Panel/VDU. Remainder Block collars are provided for use on push button which shall be placed on the point button and /or route button to prevent operation of the button in case of concerned line is blocked. The VDU is provided with SM's key user name and password which shall always remain with the personal memory of the Station Master on duty.                |
| 16  | Provision Of IB Signal         | No IBS Signal at this station                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**4.1 CUSTODY OF RELAY ROOM KEY/RELAY HUBS/GOOMTIES/GATE GOOMTIES / CABIN HOUSING ETC.AND PROCEDURE FOR ITS HANDING OVER AND TAKING OVER BETWEEN STATION MASTER AND S&T MAINTENANCE STAFF:**

Custody of Relay room key/relay hubs/goomties/Gate goomties/cabin housing and Procedure for its handover and taking over between SM and S&T staff has to follow the Procedure as per JPO issued by COM and CSTE vide No. JPO/02/2012 dated 29.08.2012 And JPO issued by AM/Traffic & AM/Signal vide No. 2021/Sig/21/Safety Performance Dated 10.06.2023.

Relay room/ relay hubs/Goomties/Gate goomties/cabin housing are provided with two independent locks. The key of one lock shall be in the personnel custody of Station Master on duty and the key of other lock shall be in the custody of S&T Maintainer. In the Event of necessity such as for attending failure, or regular maintenance, on being requisitioned by S&T maintainer, SM shall hand over the key to the Maintainer. On completion of the work, maintainer shall lock the relay room/ relay hubs/ Goomties/ Gate

goomties/cabin housing and shall return the key to SM. The particulars of Such transactions shall be entered by the SM in the relay room key register vide OM 2015 Para No.13.16 and in case of relay hubs/Goomties/Gate goomties/cabin housing in the Register meant for this purpose.

#### **4.2POWER SUPPLY:**

The Station works on 230 V Two Phase power Supply, normal power supply is from AT Supply connected to OHE traction distribution.

Stand by 1): Local supply 230V, 50Hz (Chatisghar State Electricity Board Supply)

- i. CSL Power Panel with Rotary Changeover Switch is provided in the SM Office with the Three Power Supplies i.e. 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 the Power Supplies.
- ii. Normally the Rotary Switch will be kept towards AT Position. Whenever the Power Block is to be given, the On Duty SM must ascertain that the other Sources i.e. Local and DG Supply must be available, and DG Set is in working condition.
- iii. During the non- availability of AT Supply, SM on Duty shall keep the Rotary Changeover switch towards the local supply to feed available local supply to the installation.
- iv. In case of AT Supply without any Power Block, on Duty SM has to check whether the circuit Breaker has tripped. (Three Circuit Breakers are provided in the Changeover Switch Board, one for each supply. And their Normal position Up and when Tripped, it goes Down) in case of failure of AT Supply, the Local Supply / Back up power 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 AEE/GEN and CTFO/PSI/TRD/GEN for prompt rectification.
- v. For IPS system that provides to PI, auto changeover has been provided.
- vi. There is a remote monitoring ASM box provided at the Station to monitor the health of IPS.

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

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

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

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

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

## 5. TELECOMMUNICATIONS:

- a) Telephones attached to DLBI Block Instruments connected to adjacent stations on either side of the JDB station.
- b) Magneto Telephone communication is provided between adjacent stations i.e., KMEZ and NKX Stations.
- c) The station is connected to KRPU-KRDL control Circuit.
- d) The station is connected to KRPU-KRDL traction power control circuit.
- e) Telephone communication is provided between Station Master on duty to UP CH locations and to DN CH Locations.
- f) Telephone communication is provided between Station Master on duty to 'C' class
- g) Engg. manned LC gate at km 293/2-3 between JDB-NKX (LC no KK-82);
- h) Spl class Engg. LC gate at km no. 294/16-17 between JDB-NKX (LC No. KK-83);
- i) Spl class Engg. LC gate at km no. 297/18-19 between JDB-KMEZ (LC No. KK-84).
- j) 25w VHF set is provided at the station for emergency communication.
- k) CUG (Combined User Group) telephone is provided at this station.
- l) Railway Auto telephone provided for communication to Divisional Exchange at WAT through Exchange of JDB.

### 5.1 FAILURE OF COMMUNICATION: -

(a) In the event of total failure of communications between the adjacent block stations SR 6.02.03 shall be observed for double line section for working the train.

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

## 6. SYSTEM OF TRAIN WORKING:

### 6.1 DUTIES OF TRAIN WORKING STAFF:

The movement of trains is controlled by section controller on duty whose orders shall be complied with provided they do not contravene any provisions of General Rules, Subsidiary Rules, Station Working Rules, Block working manual and any other safe working instructions issued from time to time.

In the event of suspension of control working the Station Master on duty shall work independently in conjunction with the Station Master of adjoining

Block Stations and shall be responsible to ensure that there is no undue delay to train operation in general.

#### 6.1.1 TRAIN WORKING STAFF IN EACH SHIFT:

|                                       |                 |
|---------------------------------------|-----------------|
| Station Superintendent                | 1 (Supervisory) |
| Station Superintendent/Station Master | 1               |
| TPM/TP                                | 2               |

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

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

The SS/SM on duty is responsible to ascertain the clearance of the nominated line between first facing point and advanced starter signal in each direction. The private number book should be under the custody of SS/SM on duty is authorized to use it.

#### 6.1.3 ASSURANCE OF THE STAFF IN THE ASSURANCE REGISTER:

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

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

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

Fresh assurance shall be obtained in the Assurance Register when:

1. He joins at the station as a new member.
2. There is any change in the Station Working Rules.
3. He resumes duty at the station after an absence of 15 consecutive days or more.

#### 6.2 CONDITIONS FOR GRANTING LINE CLEAR:

##### (i) FOR DOUBLE LINE SECTION JDB-KMEZ:

- a) The conditions laid in GR 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 for double line section KMEZ-JDB.
- b) Before granting 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 signal is not flashing on VDU.
- c) Line shall not be considered clear and line clear shall not be granted to a DN train unless:
  - a. Whole of the last train passed over the section has arrived completely.
  - b. DN Home signal /calling-on signal No. 2(A-E) and/or C-2(A-E) is put back to 'ON' and
- d) line is clear up to BSLB.
  - a. Ensure about the closure of interlocked LC gate no. KK-84.
  - b. Line is clear up to BSLB of JDB.

**(ii) FOR DOUBLE LINE SECTION JDB-NKX:**

- a) The conditions laid in GR 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 for double line section NKX-JDB.
- b) b. Before granting line clear for a train the SS/SM on duty shall personally ensure that the reception signals pertaining to a train are in the 'ON' position and signal is not flashing on VDU as per G&SR 3.49(4).
- c) c. Line shall not be considered clear and line clear shall not be granted to a Up train unless:
  - a. Whole of the last train passed over the section has arrived completely.
  - b. DN Home signal /calling-on signal No. 1(A-E) and/or C-1(A-E) is put back to 'ON' and
- d) line is clear up to BSLB.
  - a. Ensure about the closure of interlocked LC gate no. KK-82 &KK-83.
  - b. Line is clear up to BSLB of JDB.

**6.2.1 CLEARANCE OF ADEQUATE DISTANCE (SIGNAL OVERLAP) TO TAKE OFF HOME SIGNAL:**

| Line Number                     | FOR UP TRAINS                                     |                                                                                  | FOR DOWN TRAINS                                   |                                                                                        |
|---------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------|
|                                 | From                                              | To                                                                               | From                                              | To                                                                                     |
| Line No -<br>Commo<br>n Loop    | UP<br>common<br>loop<br>starter<br>Signal<br>No.7 | UP advanced<br>starter signal<br>No.21 or up to<br>DS No 52.on<br>Over Run Line. | DN<br>common<br>loop<br>starter<br>Signal<br>No.6 | DN advanced starter signal<br>No.24 or up to the end of<br>the sand hump of Line no.1. |
| Line No<br>2Dn<br>Main<br>Line. | ----                                              | ----                                                                             | DN Main<br>line<br>starter<br>Signal<br>No.8      | DN advanced starter signal<br>No.24.                                                   |

|                         |                                   |                                                                      |                              |                                                             |
|-------------------------|-----------------------------------|----------------------------------------------------------------------|------------------------------|-------------------------------------------------------------|
| Line No 3 Up Main Line. | UP Main line starter Signal No.11 | UP advanced starter signal No.21.                                    | ----                         | -----                                                       |
| Line No Common Loop4.   | UP loop line starter Signal No.13 | UP advanced starter signal No.21 or up to DS-38 or Up to ADV.STR 21. | DN loop starter Signal No.12 | DN advanced starter signal No.24 or up to DS 39B .          |
| Line No 5.              | UP loop line starter Signal No.15 | UP advanced starter signal No.21 or up to DS-36B.                    | DN loop starter Signal No.14 | DN advanced starter signal No.24 or up to the end of DS 41. |
| Line No 6.              | UP loop line starter Signal No.17 | UP advanced starter signal No.21 or up to DS-36B.                    | DN loop starter Signal No.16 | DN advanced starter signal No.24 or up to the end of DS 41. |

### **6.2.2 ANY SPECIAL CONDITIONS TO BE OBSERVED WHILE RECEIVING ORDESPACKING A TRAIN:-**

1.While shunting on gradient beyond DN advanced starter signal no. 24, SM shall ensure that an engine to be attached towards the falling side of the gradient (i.e NKX end) vide GR 5.20

due to falling gradient of 1 in 150.

2. To take "OFF" Home signal No.-2 of JDB station, the block overlap required from

S-2 to BSLB which is 300mtrs ensure the clearance of BOL while granting the Line Clear.

#### **6.2.2.1 SETTING OF POINTS AGAINST BLOCKED LINE:**

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

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. In case of all the lines are occupied by passenger train, points should be set for a loop line to negotiate which the speed of incoming train would be reduced which in turn, would minimize the consequences/causalities.

### **Safety Point Alarm:-**

A safety point alarm is provided on the Table of the Duty SM with different indications.

- a) On complete arrival of a train at the station, the SM has to set the points against the occupied line.
- b) In case the SM forgets to alter the points, after the time lag of two minutes, an audible buzzer will be heard from this instrument along with the RED indication of the line on which the train has arrived.
- c) The SM shall then 'ACK' button to mute the buzzer, and immediately set the required points against the line on which the train has arrived.
- d) On setting the points against the occupied line, the RED indication will disappear.
- e) In case the SM fails to set the required points against the occupied line, a fault message will be triggered, SMS will be sent to the concerned Station Mobile and all concerned staff. Action will be taken against.

If all the lines of a station happen to be blocked, when line clear has been granted to a train, **then the Safety Point Alarm will not work**. Then, 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 chances of casualties are minimized. In case of all the lines are occupied by passenger train, points should be set for a loop line to negotiate which the speed of incoming train would be reduced which in turn, would minimize the consequences / casualties vide SR 3.51.06(b). These precautions shall be taken in addition to the observance of other precautions as contained in SR 5.04.01 and SR 5.23.01. Block Collars to be placed on the concerned button of blocked line.

To Block / unblock a particular line, displays 'Block' 'Unblock' option on the menu. Select line block option. After selecting the line block option, that particular line will be blocked and Red color indication will be displayed on the line.

#### 6.2.2.2 RECEPTION OF A TRAIN ON BLOCKED LINE:

Whenever trains are to be admitted on an obstructed line it is necessary that the train is piloted IN on a written authority given by the SM on duty and delivered by a competent Railway servant to the Loco Pilot of the train or by taking off calling-on signal. [Refer GR 5.09 & SRs there to].

#### 6.2.2.3 RECEPTION OF TRAIN ON NON-SIGNALLED LINE:

Not Applicable

#### 6.2.2.4 DESPATCH OF TRAIN FROM NON-SIGNALLED LINE.

Not Applicable

#### 6.2.2.5 DESPATCH OF TRAIN FROM LINE PROVIDED WITH COMMON STARTER SIGNAL:

NIL.

#### 6.2.2.6 ANY SPECIAL CONDITIONS:

**(a) SPECIAL RESTRICTIONS:**

1. While shunting beyond DN advanced starter signal no. 24, SS/SM shall ensure that an engine to be attached towards the falling gradient vide GR 5.20 due to falling gradient of 1 in 150.
2. Shunting in the face of approaching train towards NKX end is prohibited due to falling gradient 1 in 126.45 vide G&SR No 8.09.02.(b)

**(b) SPECIAL INSTRUCTIONS:**

1. To take "OFF" Dn Home signal No.2, the block overlap required from S-2 to facing point which is 300 meters.
2. Starter signal No. 12 & 13 has been shifted 120 Meters from glued joint as marked to facilitate simultaneous movements. Ensure clearance of Signal over Lap (SOL) for reception of Up/Dn trains on L-4 (common Loop) accordingly.

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

- i) Conditions for taking off approach signals are governed by GR 3.40(1) (a), 3.40(2) (a), 3.40(3) (b) for double line sections JDB-KMEZ & NKX-JDB.
- ii) Calling-on signal may be taken off for the admission of train in the event of failure of Home signal in terms of SR 3.69.02(a) or for the admission of a train on obstructed line in terms of GR 5.09 and SRs thereto.
- iii) For adequate distance see para 6.2.1

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

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

**6.4 SIMULTANEOUS RECEPTION/DESPATCH, CROSSING AND PRECEDANCE OF TRAINS:-****6.5**

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

|   |                                                                            |     |                                                                                                                                                                           |
|---|----------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Reception of an Up train on L-1 setting overlap to DS-52 on over run line. | AND | Reception of a Dn train On L-4 up to DS 39B<br>OR<br>Reception of a Dn train On L-5 or L-6 up to DS-41<br>OR<br>Dispatch of another Up train on L-3 or L-4 or L-5 or L-6. |
| 2 | Reception of an UP train on L-4 ( Common Loop) up to DS-38.                | AND | Reception of a Dn train on L-1 or L-2 or L-5 or L-6.<br>OR<br>Dispatch of another Up train from L-1 or L-3 or L-5 or L-6.                                                 |
| 3 | Reception of a Up train on                                                 | AND | Reception of a Dn train on L-1 or L-2                                                                                                                                     |

|   |                                                                    |     |                                                                                                                              |
|---|--------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------|
|   | L-5 or L-6 setting up to DS 36B.                                   |     | or L-4.<br>OR<br>Dispatch of a another Up train from L-1 or L-3 or L-4                                                       |
| 4 | Reception of a DN train on L-1 setting overlap sand hump.          | AND | Reception of an Up train on L-3 or L-4 or L-5 L-6.<br>OR<br>Dispatch of a Dn train from L-2 or L-4 or L-5 or L-6.            |
| 5 | Reception of a DN train on L-4 setting overlap up to DS-39B.       | AND | Reception of a Up train on L-1 or L-5 or L-6.<br>OR<br>Dispatch of a Dn train from L-1 or L-2 or L-5 or L-6.                 |
| 6 | Reception of a DN train on L-5 or L-6 setting overlap up to DS-41. | AND | Reception of a Up train on L-1 up to DS 52 on over run line of L-1.<br>OR<br>Dispatch of a another Dn train from L-1 or L-2. |

#### 6.5 **COMPLETE ARRIVAL OF TRAINS:**

The entire block section between KMEZ-JDB & JDB-NKX on both UP and DN Lines are monitored by High Availability Single Section Digital Axle Counter system and the position of the block section whether 'Occupied' or 'Clear' is indicated on VDU at SM's office. As soon as train enters in to that block section the RED indication appears on VDU. After whole train clears the block section, GREEN indication appears on the VDU. This confirms the complete arrival of train and the SM on duty shall give 'Train out of Block Section' report on seeing the section clear indication GREEN on the VDU.

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

In case of failure of High Availability Single Section Digital Axle Counter the SS/SM on duty shall obtain complete arrival certificate from the guard of the train in the complete arrival Register (T/1410) maintained at the station for stopping train. For through passing train the SM on duty shall satisfy himself the complete arrival of the train by verification of the Last Vehicle Indicator vide SR 4.16.05 that the train arrived complete. In case a train passes incomplete, action shall be taken as per SR.4.17.02, the "Train out of Block Section" report shall be withheld to the station in rear until complete arrival Certificate is received from the station in advance supported by a private number.

Train passing on adjacent line shall be stopped and Guard & Loco pilot shall be issued with caution order to proceed cautiously and stop sort of any obstruction as per SR.4.17.03. On occasions when motor trolley follows a train the points shall not be operated until the following motor trolley is

admitted on the same line. In event of motor trolley is delayed in the section the SM on duty shall take action in terms of SR.15.25.03 (b) (vi).

#### **6.6 DISPATCH OF TRAINS:**

To dispatch a train, the Station master on duty having obtained line clear for that train, shall set the route for the outgoing train correctly and satisfy himself by observing the visual indication on the VDU. He shall suspend all non-isolated shunting and then shall take "OFF" the concerned route starter and advanced starter signal. The 'OFF' aspect of the advanced starter is the authority to proceed into the block section. As soon as the train passes the advanced starter signal, Train entering section indication will appear on the VDU. The SM will then send the train entering given section signal to the station in advance.

[Refer GR 3.38, 3.42, SR 3.36.04(b), 3.42.04 and BWM 2.07.5(a)]

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

#### **a) ISSUE OF CAUTION ORDERS:**

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

#### **6.7 TRAINS RUNNING THROUGH:**

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

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

The Station Master on duty is responsible to see that a train passes complete with its last vehicle indicator. If a train passes without last vehicle indicator or its authorized substitute, action shall be taken as per General and Subsidiary Rule. [Ref GR 3.40, 3.42, 4.17, 4.42, & SR 4.42.02 (b) (i), (ii), (iii), c & (d)]

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

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

**a. TRACK CIRCUITS:**

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

**b. AXLE COUNTER:**

If the axle counter fails between the block sections, resetting procedure will be adopted as per Para 26.0 of SWR (APP-B) if the axle counter indication does not appear 'GREEN' & continues to show 'RED' condition after resetting, the concerned block section shall be suspended & failure intimation to be given to sectional signal Maintainer /JE/SE (signal) for rectification.

**c. BLOCK INSTRUMENTS:**

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

**d. RECEPTION OF A TRAIN ON OBSTRUCTED LINE:**

Whenever trains are to be admitted on an obstructed line it is necessary that the train is piloted IN on a written authority given by the SM on duty and delivered by a competent Railway servant to the Loco Pilot of the train or by taking off calling-on signal. [Refer GR 5.09 & SRs there to]

**e. RECEPTION OF A TRAIN ON NON-SIGNALLED LINE:**

NIL

**f. DEFECTIVE SIGNALS:**

Whenever signals become defective, the procedure laid down in GR & SR shall be followed. A signal in the OFF position is the final indication that the points are correctly set for the route for which it applies and if it is found impossible to take OFF a signal, the setting of points on the route to which it applies shall be inspected by the station master on duty before the signal is declared as defective irrespective of what is indicated by the position of the route. [Refer GR 3.68 to 3.71, 3.80 and SR 3.68.01 (c)].

In case of disconnection of signal and interlocking for repairs and maintenance procedure laid down in GR and relevant SRs shall be followed. In the event of signal showing no lights, station master on duty shall before giving line clear initiate action in accordance with the procedure laid down in GR3.74.

**g. DEFECTIVE INTERLOCKING:**

When interlocking becomes defective the SS/SM on duty shall be responsible for correct setting, clamping, padlocking of points for admission of train as per SR 3.69.03 © & 3.69.01.

**h. DEFECTIVE/DAMAGED POINTS:**

When any point fails to operate normally by route setting operation through VDU, it is inevitable to operate the points with crank handle. The SS/SM on

duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle shall be followed as per operating manual para 20.06.

Station master on duty shall personally ensure the clamping and padlocking of all facing and trailing points. An emergency crank handle register shall be maintained by SM at the station as per para 20.06(d) of the Operating manual. Correct setting, clamping and padlocking of the points devolve on SM on duty.

(Details of use of crank handle as per Appendix-'B'). The cases of the failures of the point should be promptly reported to the concerned signal maintainer/JE/SE (signal) for immediate rectification.

#### **6.9 PROVISIONS FOR WORKING OF TROLRIES/ MOTOR TROLRIES/MATERIAL LORRIES ETC”:**

- a) Motor trolleys shall be worked as per GR 15.25 and SRs there to, BWM 5.11(1) (2), 5.12, 5.13, 5.14(2) (a) and circulars and orders issued from time to time. Material trolleys shall be worked as per GR 15.27 and SRs there to and in accordance with the provisions of Block Working Manual.
- b) Tower wagons shall be worked as per GR 17.08 and SRs there to and BWM 4.39 and other circulars and orders issued from time to time.
- c) Push trolleys shall run under block protection only vide SR 15.25.09(e).
- d) Trolleys, Motor Trolleys, Lorries which are not insulated shall not be allowed to run except on line clear.
- e) Motor Trolleys/Tower Wagon/Material Lorries are not likely to actuate the Axle Counter correctly.
- f) In all other respects the working of a light motor trolley shall conform to the rules laid down for ordinary trolleys while running without block protection and to those laid down for motor trolleys while running under block protection or following another light motor trolley.

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

#### **7. BLOCKING OF THE LINES:**

Whenever a running line is blocked either by loose vehicles or by stabling train or by a train which is to cross or give precedence to another train, the points at either end should immediately be set against the blocked line except during shunting movement. A clear remark in 'RED' ink shall be made immediately in the train signal register and a record shall be made in the Station Master's diary also. Stable load register is also to be maintained. The stable load or loose vehicles are to be secured to prevent rolling down of vehicles. [Refer SR 3.36.3(b), GR 5.23 and SR 5.23.01]

#### **A. SECURING OF VEHICLES: -**

As far as practicable, loose vehicle shall not be allowed to stand on the running line. However under unavoidable circumstances, if it is necessary to detach vehicle from a train or to stable a train and leave them standing

on the running line, the SS on duty shall be responsible to secure the vehicle/stable loads to prevent rolling down of vehicles and arrest obstruction and fouling.

**B. REMINDER FOR BLOCKING LINES :-**

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

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

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

If all the lines at a station happen to be blocked when "Line Clear" has been granted to a train, the points should be set for the line occupied by a stable load or a goods train in that order, so that in case of any mishap the chances of causalities are minimized.

In case all the lines are occupied by passenger carrying trains, points should be set for a loop line to negotiate of which the speed of the incoming train would be reduced, which in turn would minimize the consequences/causalities. While doing so points may be set for a loop occupied by a train, if any, whose engine is facing the direction of approach of the incoming train rather than for a loop occupied by a train whose passenger coach will in case of collision receive the impact.

**A) LOADING AND UNLOADING OF VEHICLES ON RUNNING LINES:**

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

**8.0 SHUNTING:**

**8.1 GENERAL PRECAUTIONS:**

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

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

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

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

The key of the pad locks of such points shall be in the personal custody of the operating official vested with this responsibility till such time move completed. The operating official vested with the responsibility of supervising the Non-Signaled movement of the engine/train/vehicle must return the key along with pad locks to the SS/SM on duty after completion of the said or alternatively when such a move is cancelled.

b) AUTHORITY FOR SHUNTING OPERATIONS:

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

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

c) NON-SIGNALLED MOVEMENTS:

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

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

Shunting in the facing of an approaching train towards NKX end is prohibited due to falling gradient of 1 in 126.45 vide G&SR 8.09.02.(b) (ii) (a).

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

- (i) Hand shunting is prohibited at both ends of the yard vide GR 5.20.
- (ii) Fly shunting is prohibited at both ends of the yard vide SR 5.21.01 I
- (iii) For shunting in both ends of the yard, engine should be leading towards the falling gradient.

**8.4 SHUNTING ON DOUBLE LINE:**

i) **Within station section:** Shunting within station section shall be permitted provided necessary Reception signals are kept at "ON" position vide G&R 8.05(2). But this shall be done only when there is no approaching train since shunting in the facing of an approaching train is prohibited at this station.

ii) **Out side station section:** Governed by GR 8.06.

a) Shunting shall not be permitted in block section in rear unless it is clear and blocked back. [Vide GR 8.06. (2)].

b) Shunting shall not be permitted in block section in advance unless it is clear and is block forward.

c) Shunting may be permitted behind the train provided that when the block section in advance is occupied by a train travelling away from the station and under special instructions taking into consideration the speed, weight and brake power of trains and the gradients on the section and as soon as intimation has been received that the train has arrived at the block station in advance, the line shall be blocked forward if it is still obstructed. [Vide GR 8.06. (3)]

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

**8.5 SHUNTING ON SINGLE LINE:**

**Not Applicable**

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

Not applicable to this station.

**9.0 ABNORMAL CONDITION:-**

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

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

a) Failure/Suspension of Block Instrument or track circuit or Axle Counters line clear shall be obtain on the telephone attached to the block instruments or station phone by exchanging Id number and supported by a PN.

b) Failure/Suspension of Block Instrument or Track Circuit or Axle Counters or Telephone attached to the Block instruments or station fixed telephones , Line clear shall be obtain through Railway Auto phone or CUG pone by exchanging identification number supported by a private number.

c) Failure/Suspension of Block Instrument or Track Circuit or Axle Counters or Telephone attached to the Block instruments or station fixed telephones or Railway auto Phone or BSNL phone Line clear shall be obtain on the control phone by exchanging identification number supported by a private number.

d) Failure/Suspension of Block Instrument or Track circuit or Axle Counters or Telephone attached to the Block Instrument or station fixed phone or Railway auto phone or Control phone, or CUG phone Line clear shall be obtain through VHF set by exchanging identification number supported by a Private Number.

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

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

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

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

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

v). Failure of High Availability Single Section Digital Axle Counters (HASSDAC) Block/BPAC Procedure to be followed vide GR 14.13.& Appex-B para No. 6

**vi). Failure of MTRC: Not applicable.**

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

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

Crank handle operation is interlocked with the signaling and interlocking system at this station. Key of crank handles normally locked inside the RKT instrument at the respective Crank Handles Locations. Crank handle keys can be taken out only when all signals leading over the points are in the Normal position and the route is not locked for whatever reasons. Crank Handle can be released by operating common 'TRANS' push button and concerned Crank handle control push button simultaneously. When this key is taken out, no signal to the concerned point can be taken 'OFF' in the yard. This key can be electrically transmitted at both ends of the yard.

On account of the doubtful operation of any track circuit by a light vehicle including self propelled vehicle such as Motor trolley or light Diesel/electrical engine or tower wagon, indicating the occupancy of the track.

It is necessary that SS/SM on duty satisfies himself that the said vehicle has cleared point zone track circuits by observing the track indications of the track on either side of the cross over by positively checking the entrance and exit track circuits are showing occupancy and clearance in accordance with the train movement.

**ii. PROCEDURE FOR EMERGENCY OPERATION OF POINTS WITH POINT ZONE TRACK CIRCUIT/AXLE COUNTER FAILURE AND EMERGENCY ROUTE RELEASE:**

Emergency point operation facility is provided to operate the point from the VDU in case of failure of point controlling track circuit. A push button (Black with Red dot) for emergency point operation is provided on the VDU. If such operation is necessary, the SM on duty, after ensuring that SM's point Key is 'IN' and no vehicle is standing on the concerned point zone shall operate the emergency point operation button along with relevant point button simultaneously.

Then emergency point button to be released and the point group normal button or point group reverse button is to be operated for operating the point to 'NORMAL or REVERSE. Every emergency point operation shall be recorded in the station diary and in the register meant for this purpose.

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

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

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

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

Whenever there is a failure of points, Track circuits/axle counter or any interlocking gear at station, the failure should be reported by SM on duty to the concerned Signaling Maintenance Staff on duty responsible for attending to the failure and only after receipt of the written memo from the Signaling

Maintainer for rectification of the fault, SM should restore the normal working. The entries in failure register to be done with message to the section controller.

#### **9.1 TOTAL FAILURE OF COMMUNICATION:**

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

#### **9.2 TEMPORARY SINGLE LINE WORKING ON DOUBLE LINE SECTION:**

GR 6.01 and SR 6.02.02 shall be followed.

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

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

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

The signal lights of UP starter signal No.7 and DN starter signal No.6 of Line No.1 during day and night are earmarked to serve as visibility test object during day and night vide GR 3.61.2(b)(iii)

#### **11. ESSENTIAL EQUIPMENT AT THE STATION:**

(Details are given in Appendix-‘E’)

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

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

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

##### **12.1 STATION DETONATOR REGISTER (OPT/124):**

A Register regarding detonator is maintained at the station.

##### **12.2 INSTRUCTIONS:**

a. This register contains the following parts.

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

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

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

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

- b. In charge of the station shall ensure that the information maintained in the register is kept up to date and is accurate in all respects.
- c. Transportation inspectors shall check the registers and also the stock of detonators on hand each time they visit the station and initial with date as an indication having done so.

**1. APPENDICES:**

|            |                                                                                      |
|------------|--------------------------------------------------------------------------------------|
| APPENDIX-A | WORKING OF LEVEL CROSSING GATES                                                      |
| APPENDIX-B | SYSTEM OF SIGNALLING AND INTERLOCKING AND COMMUNICATION ARRANGEMENTS AT THE STATION. |
| APPENDIX-C | ANTI COLLISION DEVICE ( RAKSHA KAVACH)                                               |
| APPENDIX-D | DUTIES OF TRAIN PASSING STAFF AND STAFF IN EACH SHIFT.                               |
| APPENDIX-E | LIST OF ESSENTIAL EQUIPMENT PROVIDED AT THE STATION.                                 |
| APPENDIX-F | RULES FOR WORKING OF DK STATIONS, HALTS, IBH, IBS AND OUTLYING SIDINGS.              |
| APPENDIX-G | RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS.                                 |
| APPENDIX-G | RULES FOR WORKING OF TRAINS UNDER ONE TRAIN ONLY SYSTEM                              |

**APPENDIX 'A'**  
**WORKING INSTRUCTION FOR LEVEL CROSSING GATES**

*Following General Instructions are meant for all types of Manned Level Crossing Gates. Specific Instructions for working of different types of Level Crossing Gates are attached as Annexures.*

**GENERAL INSTRUCTIONS:-**

**1. DUTIES OF GATE MAN:**

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

**Position during Passing of train:-**

**The gate man will stand attentively in front of the gate - lodge , facing the approaching train.**

- 1) The gateman with whistle slung around his neck from a chord.
- 2) He shall stand before the gate Lodge duly holding the Red & Green Hand Signal Flags during day in furled condition in Right and Left Hand respectively, and during night shall hold white light facing the approaching train.

**2. Routine Duties of Gateman:**

- 1 Gateman shall ensure that red banner flag is placed across the track whenever the gate is kept in open condition for passage of road vehicles
- 2 Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise
- 3 Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate
- 4 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
- 5 Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, and vehicle / wagons / train / 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
- 6 Gateman shall also prepare to repeat any signal which Train manager may give to drive on walkie-talkie or in any other way
- 7 If lifting barriers / leaf gates get damaged or becomes out of order, the gateman shall use the spare chain with disc and padlocks for securing the gate against road traffic
- 8 Gateman shall report to the nearest Station Master, Gangmate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible
- 9 Gateman shall wear badge and prescribed uniform while on duty at

- level crossing gate
- 10 Gateman shall ensure that he is having competency certificate in his possession while on duty
  - 11 Gateman shall work the gate as per Gate Working Instructions and remain well conversant with these instructions
  - 12 Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use
  - 13 Gateman shall see that the channel for the flange of the wheel is kept clear
  - 14 Gateman shall keep the road surface well watered and rammed in case of un-metalled roads
  - 15 Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent
  - 16 Gateman on electrified section shall watch that road vehicles / animals passing from gate are within the height loading gauge provided on either side of the level crossing gate
  - 17 Gateman shall prevent trespass passing by persons or cattle to the maximum extent
  - 18 Gateman shall note down the registration number of the vehicle which damage the Gate
  - 19 Locking arrangement of gate should be checked daily
  - 20 Gate Man shall ensure before closing of the gate that no any type of vehicle trapped in between the lines while closing of the Gate.

**3. ACTION IN CASE OF UNUSUAL OCCURANCE ON TRAIN:** In case gateman observes anything unusual with a passing train, he shall take following action

- 1 He shall take prompt action to warn the loco pilot / Train manager of the passing train by showing red flag by day and red light by night
- 2 He shall simultaneously try to draw the attention of the loco pilot / Train manager by whistling continuously, shouting, gesticulating, throwing ballast on the brake van or by any other means
- 3 If LocoPilot / Train manager falls to take notice, gateman shall immediately inform the Station Master, If connected on telephone, to take appropriate action, under exchange of private number
- 4 In case of train parting, gateman shall not show stop hand signal but shall show prescribed signal for train parting as per G&SR 16.08
- 5 He shall endeavor to attract the attention of the loco pilot / Train manager 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
- 6 In case the train does not stop, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of Private Number

**4. ACTION IN CASE OF OBSTRUCTION AT THE LEVEL CROSSING: as per G&SR 16.07**

- 1 He shall try to remove the obstruction, if possible in any manner.
- 2 Make one or Two attempts to inform the condition of the gate situation to the on duty SS/SM.

- 3 If there is no response from the on duty SS/SM, the Gate Man shall take steps to protect the Gate as follows. As per G&SR gate protection rules 16.07 16.07.01 (a) & 6.03.

**On Double Line**

- a) Place Banner Flag / Red Light by Day / Night across the Tracks in both directions.
- b) Pick up Detonators, Hand Signals and proceed for protection of line on which a train is expected to arrive first, Place one Detonator at 600 Meters from the LC Gate, 3 Detonators 10 Meters apart at 1200 Meters from the LC Gate. While returning, pick up the first Detonator kept at 600 Meters, and proceed to another direction, and place detonators in the same manner as above.
- c) In case of the Gate Man observes or hears the Train approaching, he shall place the Detonators on the line at a distance as far away as he can go and make efforts to warn the approaching train Loco Pilot.

**5. ACTION IN CASE OF BOOM DASHING AT THE LEVEL CROSSING:**

- 1 : Night the gate Man shall lit Two hand signal lamps and Take action to exhibit Red Light and protect the lines as described in the above Rules.
- 2 If the Gate is broken by the Road vehicle which is fouling the Track, or if the Lifting barriers / Leaf gates , or any other parts of the Gate foul the Track, or if there is any other obstruction at the gate, the Gate Man shall take immediate action.
- 3 He shall note down the particulars of the Road Vehicle, Vehicle Number, Name of the Driver, Name of the Owner, and relay these details to the nearest Station Master / or JE/ SE/ SSE/ P.Way, including about the obstruction at the Level Crossing Gate, through messenger or any other means available.

**6. ACCIDENTAL ROLLING DOWN OF TRAINS:**

- 1 When the gateman sees that a train is rolling down or immediately after receipt of the information about accidental rolling down of the train the GK shall:
- 2 First close the gate against the road traffic.
- 3 Then immediately inform the on duty SS/SM.
- 4 He shall not open the gate till he ensured that the train has completely cleared the LC gate.

**7. ACTION IN CASE OF EMERGENCY AT THE LEVEL CROSSING:**

- 1 In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
- 2 Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the SS/SM on duty, if connected by telephone, regarding the defects / obstructions at the gate, under exchange of private number.
- 3 If there is no response from the on duty SS/SM after two or three attempts, he shall first protect the gate as above and then make necessary arrangements to inform the SS/SM.

**7.1. ON ELECTRIFIED SECTION :**

- 1 On noticing that, the whole or part of the OHE or feeder or a cable facing down, the Gate Man shall ensure that as far as possible, human beings, animals or vehicles etc. are to be kept faraway from OHE equipment in order to avoid any contact of them with live equipment.
- 2 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 SS/SM on duty and take all necessary measures for the portion of lines as under.

**The gateman shall protect the line as under:-**

- 1 If both lines are obstructed the Gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.
- 2 Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
- 3 Gateman shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night as per gate protection rules as said.
- 4 Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters and place one detonator on the line. Thereafter he shall proceed to a distance 1200 meters from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- 5 Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in Para (4) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- 6 Having returned to the gate, he must then take steps to remove the obstruction and warn the loco pilot of the approaching train.
- 7 In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- 8 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.

**4. OTHER ACTION TO BE TAKEN BY THE GATE MAN**

- i) At night Gateman shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub paras (a) and (b) above.
- ii) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall take immediate action.
- iii) He shall note down the particulars of the road vehicle, vehicle number, name of the vehicle Driver, owner name and his particulars like his name, where he lives, whether he belongs to local or some other place etc., and relay these details to the nearest Station Master or Permanent

Way Inspector regarding the particulars and obstructions at the level crossing gate, through messenger or through means available.

#### **5. ENGINEERING ITEMS:**

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

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**WORKING OF MID SECTION LEVEL CROSSING GATES AT JAGADALPUR STATION****1. GENERAL INFORMATION****1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:**

|     |                                                                                    |                                              |
|-----|------------------------------------------------------------------------------------|----------------------------------------------|
| 1.  | Number and Class of Level Crossing Gate                                            | <b>KK-82</b>                                 |
| 2.  | Engineering or Traffic Gate                                                        | <b>Engg / Spl Class</b>                      |
| 3.  | Under control of Station Master / SSE/PWay                                         | <b>SSE/P.Way/JDB</b>                         |
| 4.  | Location at KM.                                                                    | <b>293/2-3</b>                               |
| 5.  | At Station                                                                         | <b>JDB</b>                                   |
| 6.  | In between stations                                                                | <b>JDB-NKX</b>                               |
| 7.  | BG / MG / NG                                                                       | Broad Gauge                                  |
| 8.  | Single line / Double line / Multiple line                                          | Double Line                                  |
| 9.  | Normal Position                                                                    | <b>Open to Road Traffic</b>                  |
| 10. | Interlocked / Non-Interlocked                                                      | <b>Interlocked</b>                           |
| 11. | Means of Interlocking                                                              | Panel Operation                              |
| 12. | Provision of Gate Signal at KMs.<br>(i) UP Line<br>(ii)DN Line                     | GS-1<br>GS-2                                 |
| 13. | Signaling arrangements                                                             | <b>MACL</b>                                  |
| 14. | Means of Communication - Telephone / Bell                                          | Magneto phone with SM/JDB                    |
| 15. | Width of level crossing gate                                                       | 7.5 Meters                                   |
| 16. | Slide boom barrier provided YES/NO                                                 | No Sliding boom barrier not provided         |
| 17. | Type of road (NH / SH / Others)                                                    | State High Way                               |
| 18. | Name of Road                                                                       | <b>Municipal</b>                             |
| 19. | Metalled / non-metalled                                                            | Non metal Road                               |
| 20. | Approach road                                                                      | CC Blocks                                    |
| 21. | Width of the road                                                                  | 6.5 Meters                                   |
| 22. | Angle of road crossing (in case of Skew gates)                                     | 90 °                                         |
| 23. | Road gradient (if any)<br>(i) North / East side<br>(ii) South / West side          | Flatter than 1 in 30<br>Flatter line 1 in 30 |
| 24. | Road alignment (straight/curve)<br>(i) North / East side<br>(ii) South / West side | Curve<br>Straight                            |
| 25. | Provision of height gauges                                                         | Provided                                     |
| 26. | Type of Barriers                                                                   | Lifting Barriers with Positive Boom locking  |

|     |                                               |                               |
|-----|-----------------------------------------------|-------------------------------|
| 27. | Length of Check rails                         | 9.5 Meters                    |
| 28. | Road surface in between L-Xing gates          | Level                         |
| 29. | Length of Rumble strip / speed breakers       | 4 Meters                      |
| 30. | Road signs                                    | Provided                      |
| 31. | Speed breaker indication board                | Provided                      |
| 32. | TVU                                           | <b>89006</b>                  |
| 33. | Census next due on                            | <b>Feb 2025</b>               |
| 34. | Demarcation for placement of Detonators       | Provided                      |
| 35. | No. of Gatemen working                        | 2                             |
| 36. | Nearest Railway Medical Assistance            | Railway Health Unit JDB       |
| 37. | Nearest Private Medical Assistance available. | <b>JagadapurGovt Hospital</b> |
| 38. | List of equipment available Yes / No          | Yes                           |

(Refer page No 21-23 for common Working instructions for all LC gates)

| <b>1.2 EQUIPMENT:</b> |                                                 |                                                                                                    |
|-----------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Sl No</b>          | <b>Items</b>                                    | <b><u>Quantity / Numbers</u></b>                                                                   |
| 1.                    | LED based flashing Tri Colour Hand Signal Lamp. | 3 (5 on Quadruple / Line or twin single line)                                                      |
| 2.                    | Hand Signal Flag Green                          | 1 No with mounted on stick                                                                         |
| 3.                    | Hand Signal Flag Red                            | 3 (6 Nos. on Quadruple / Line or Twin Single line and 7 in case Hexaple Section mounted on sticks) |
| 4.                    | Banner Flag Red                                 | 3 ( 5 on Quadruple / Line or twin single line )                                                    |
| 5.                    | Posts for exhibiting red banner flag            | 2 ( 4 on Q / Twin single line and 5 on Hexaple section )                                           |
| 6.                    | Spare chains with padlocks                      | 2 with stop marker                                                                                 |
| 7.                    | Detonators                                      | 10 in each case                                                                                    |
| 8.                    | Gate lamps                                      | 2 Nos.                                                                                             |
| 9.                    | Tommy Bar                                       | 1 No.                                                                                              |
| 10.                   | Mortar Pan                                      | 1 No.                                                                                              |
| 11.                   | Spade / Fowrah                                  | 1 No.                                                                                              |
| 12.                   | Rammer                                          | 1 No (In case of asphalted road this may not be provided )                                         |
| 13.                   | Pick Axe                                        | 1 No (In case of asphalted road this may not be provided )                                         |
| 14.                   | Tin case for flags                              | 1 No.                                                                                              |
| 15.                   | Can for oil                                     | 1 No.                                                                                              |
| 16.                   | Water port / Bucket                             | 1 No.                                                                                              |

|     |                                                                                            |       |
|-----|--------------------------------------------------------------------------------------------|-------|
| 17. | Canister for Muster Roll                                                                   | 1 No. |
| 18. | Set of spare spectacles of gateman wearing glasses                                         | 1 No. |
| 19. | Board demarcating protection of level crossing gate diagram in case of obstruction on gate | 1 No. |
| 20. | Basket                                                                                     | 1 No. |
| 21. | Whistle                                                                                    | 1 No. |
| 22. | Wall Clock                                                                                 | 1 No. |
| 23. | Small chain for locking arrangement                                                        | 2 No. |

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

- 1 In addition to the above equipment, following records shall also be kept at the gate lodge.
- 2 Gate Working Instructions in Hindi / English.
- 3 Gate Working Instructions in local vernacular language.
- 4 Gateman Rule Book in local vernacular language
- 5 List for tools and books.
- 6 Duty Roster.
- 7 Certificate for working as gateman.
- 8 Bio-data particulars of Gatemen, including date of passing vision test, initial / refresher course, safety camp etc.
- 9 Accident Register.
- 10 Record of last census of road traffic at level crossing gate.
- 11 Public Complaint Book.
- 12 Inspection Book.
- 13 S & T failure register.

### **1.4 Duties of Gate Man:**

**1.4.1 COMPETENCY:** Gateman working at this gate should have competency certificate applicable to perform duty at this gate issued by the concerned SSE/P.WAY.

**1.4.2 ALERTNESS:-** The Gate Man shall be alert and be prepared to take immediate action, should danger be apprehended, keys of the gate shall be in personal custody.

### **2. MODE OF OPERATION:-**

For operating of this gate the following procedure to be followed as per G&SR 16.03.03 , 16.03.03.(a)

- 1 Gate shall normally be kept in Open to the Road Traffic. Whenever it is required to close the gate, the SS/SM JDB shall inform the Gate Man on duty about the direction and the description of the Train intended to Receive or Dispatch.

- 2 If the actual running time of the train from the either end of the section is less than 10 minutes, the SS/SM JDB shall convey the advice to the Gate Man
- 3 The gate man should ensure that, the Gate is Closed in time so that there is no detention to the Train or excessive detention to the Road Traffic.
- 4 After the gate is closed and locked the Gate, the Gate Man shall extract Key -“Q” is extracted from EKT-1.
- 5 Key-'Q' thus extracted, is inserted in EKT-2 and turned. Key IN contact of EKT-2 along with switch GS-1 or GS-2 or both reversed as per operational requirement will clear UP gate stop signal GS-1 and DN gate stop signal GS-2 respectively.
- 6 In case of emergency, gateman will inform SM/JDB with PN exchange, then key-'Q1' (chained with crank handle) to be extracted from EKT-3 (electro mechanically free) provided at gate lodge (in a locked and sealed red box with glass cover) for manual operation of lifting barriers by crank handling.
- 7 Extraction of key-'Q1' shall put back all the relevant signals to 'ON'.
- 8 Dead approach locking of 60 seconds with back locking is provided on key-“Q”
- 9 Approach warning is provided and effective from;
  - a) Track circuit 24T1 for DN main. b) Track circuit 17T for UP main.
- 10 After passage of train, LC gate KK-82 shall be released automatically after sequential occupation and clearance of GS1T1 & GS1T2 for UP direction and GS2T1 & GS2T2 for DN direction respectively.

### 3. Failure of Telephonic Communication:

#### 1 Duties of Gate Man.

- (i) In the event of failure of telephone, if the gate is required to be opened for passage of road traffic, the gateman shall lookout 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 shall thereafter, open the gate for passing the road traffic keeping a red flag/ red hand signal lamp ready in his hand to stop approaching train if any.
- 2 (ii) Report the fact over telephone or through the loco pilot of a passing train or through a Gang Man to the station master of the adjacent station and the nearest GangMate

#### 3 Duties of SS/SM

- The SS/SM on duty on receipt of the above information shall arrange to issue caution orders to the loco pilots and Train managers of all trains entering into the section.
  - (i) To whistle frequently.
  - (ii) To stop 30mts short of the level crossing and be guided by the hand signal given by the gateman.
- 4 The SS/SM shall intimate the fact to the SS/SM of the other end of the block station the failure of communication of the Gate and advise to

issue of caution order with the similar instructions as mentioned in (b) above.

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

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### ANNEXURE-1

#### **WORKING INSTRUCTIONS FOR "SPL" CLASS INTERLOCKED ENGINEERING LEVEL CROSSING GATE OF LC NO.KK-82 AT KM 293/2-3 BETWEEN JDB-NKX WITH NORMAL POSITION OPENING TO ROAD TRAFFIC.**

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

##### **1. Mode of Operation:**

Gate shall normally kept on open to the road traffic, whenever it is required to close the gate. The gate working operation is as follows.

- a) After the gate is closed & locked, key-'Q' is extracted from EKT-1.
- b) Key-'Q' thus extracted, is inserted in EKT-2 and turned. Key IN contact of EKT-2 along with switch GS-1 or GS-2 or both reversed as per operational requirement will clear UP gate stop signal GS-1 and DN gate stop signal GS-2 respectively.
- c) In case of emergency, gateman will inform SS/SM JDB with PN exchange, then key -'Q1' (chained with crank handle) to be extracted from EKT-3 (electro mechanically free) provided at gate lodge (in a locked and sealed red box with glass cover) for manual operation of lifting barriers by crank handling.
- d) Extraction of key-'Q1' shall put back all the relevant signals to 'ON'.
- e) Dead approach locking of 60 seconds with back locking is provided on key-Q' when in EKT-2.
- f) Approach warning is provided and effective from;
  - ❖ Track circuit 24T1 for DN main.
  - ❖ Track circuit 17T for UP main.
- g) After passage of train, LC gate KK-82 shall be released automatically after sequential occupation and clearance of GS1T1 & GS1T2 for UP direction and GS2T1 & GS2T2 for DN direction respectively.
- i) The SM on duty shall inform the gateman about the number, description, direction and expected time of passage of the train at the gate.
- ii) Immediately after departure of the train, Station Master shall inform the gateman through telephone connected at his end.
- iii) If the telephone is connected to the station at the receiving end, this advice shall be given by the station Master to the gateman as soon as he receives train entering section advice from the dispatching Station.
- iv) It should be the duty of the gateman to ensure that the gate is closed in time, so that there is no detention to the train or excessive detention to road traffic.

**2. Failure of Lifting Barriers:****a) If a gate boom/barrier is damaged, the gateman shall:-**

- i) Close the level crossing against the road traffic with a chain and pad lock immediately or before allowing the movement of train as the case may be.
- ii) Report the fact over telephone or through the loco pilot of a passing train or through a gang man to the SS/SM on duty of the adjacent station and the nearest gang mate.

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

- i) To whistle frequently.
- ii) To stop 30 meters short of the level crossing gate and be guided by the hand signal given by the gateman.
- c) **The SS/SM shall intimate the fact to the Station master at the other end of the block station for issue of caution order with the similar instructions as mentioned in (b) of above.**

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

- d) **The loco pilots shall ensure that the level crossing is not been obstructed, and on being seen hand signal of the gateman, negotiate to pass the level crossing cautiously by observing any short of obstruction.**
- e) Necessary entries shall be made in the caution order register and station diary by the Station masters at either end of the affected section.

**3. Failure of Gate Key with the gate in closed position, when Gate Key cannot be extracted for Opening the gate:**

- i). If the gate key cannot be extracted from the EKT-1, then gate man must immediately inform the SS / SM on duty on telephone, under exchange of private number.
- ii). If Emergency Key is available at the gate lodge, gateman will take it out from the sealed box by breaking the seal and open the gate for road traffic- Emergency Key is provided at this gate.
- iii). The record of the date and time of breaking the sealed cover of emergency key box shall be recorded and signed with reasons.-Not applicable
- iv). Thereafter, the gate must be treated as non-interlocked and produced for reception / Dispatch of trains as prescribed for non-inter locked gates, should be adopted.
- v). SS/SM on duty shall issue caution order to the loco pilot before dispatching a train.
- vi). He shall also advise the SS/SM at the dispatching end, exchange of private number, to similarly issue caution order to the loco pilot before dispatching a train in block section from his end.
- vii). SS/SM on duty shall advice S&T staff responsible for maintaining the key transmitter to repair the same at the earliest.
- viii). Normal working will be resumed only after S&T staff repair the key transmitter and issue re-connection / fit memo for the same.

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

**4. Failure of the Gate Key with the gate in open condition:**

- 1). **If the gate key cannot be extracted from EKT-2, then gateman must immediately inform the SS / SM on duty through telephone, under exchange of private number.**
- ii). Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of train as prescribed for non-interlocked gates should be adopted as per 16.03.03 (c).
- iii). The gateman shall secure the gate against road traffic by means of chains and padlocks and pass trains on hand signals.
- iv). SS/.SM on duty shall issue a caution order to a loco pilot of a departing train.
- v). He shall also advise the SS/SM at the dispatching end, under exchange of private number, to issue a caution order to the loco pilot before dispatching a train in the block section from his end.
- vi). SS / SM on duty shall advise S&T staff responsible for maintaining the key transmitter to repair the same at the earliest.
- vii). Normal working will be resumed only after S&T staff repair the key transmitter and issue re-connection / fit memo for the same.
- viii). After rectification, the Emergency Key shall be replaced in the emergency key box and released by the S&T maintainer.

**5) Defective Gate Signals:**

- i) **The gateman shall treat the gate as defective and must not lower them under following circumstances:**
  - a) If gate Signals can be taken 'OFF' without closing the gate, or
  - b) The Key can be extracted from the operation of Electrical lifting barriers when the gate is in open condition, or
  - c) The Key can be extracted when the gate is in open condition.
- ii) **If the Gate or the Gate Signal or Gate Distant Signal becomes defective in "OFF" position, the gateman will make all efforts to put it at "ON" position even by breaking the glass of signal post, if necessary.**
  - a) The gateman will immediately advise the SS/SM on duty, under exchange of private number, regarding defect of concerned gate signals.
  - b) Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of trains shall be followed as prescribed for non-interlocked gates should be adopted.
  - c) On duty Gate Man shall also show green hand signal flag by day and green light by night to the passing train after closing the gate.
  - d) The On duty SS/SM will issue a caution order to the LP of departing train.
  - e) SS/SM on duty shall also advise the SS/SM at the dispatching end, under exchange of private number, to similarly issue a caution order to the LP before dispatching a train in the block section from his end.
  - f) The on duty SS/SM shall advise S&T staff responsible for maintaining the gate signal to repair the same at the earliest.

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

#### **6. Obstruction at the Gate:**

- i). In case of an obstruction at a level crossing protected by station stop signals, the gateman shall at once close the gates across the road and ensure that the stop signals controlling the passage of trains over the obstructed lines are maintained at 'ON'. However, if he observe or notices any train coming from either side, he shall be prepared to stop the same by the usage of hand signals and detonators.
- ii) In case both lines are obstructed, he shall, first plant a banner flag/red light across the line/track in the direction from which a train is expected to arrive first and then plant the second banner flag/red light across the other line track against in the opposite direction. The banner flag shall be planted clear of the level crossing and at a distance of about 5 meters from the edge of the road/ obstruction.
- iii) He shall thereafter close and lock the gates. Gateman must keep the gates closed against road traffic till the track is cleared of the obstruction.
- iv). The gateman shall, if time permits, inform the same to SS/SM on duty about the obstruction and ascertain the position of trains, after he has taken action as per clauses (i) and (ii) above.
- v). The gateman shall then proceed in haste, exhibiting a red hand signal, towards the direction from which a train is expected first and place one detonator on the track at a distance of 600meters and three detonators 10m apart at distance of 1200meters from the level crossing gate. Having thus protected one line, he shall immediately return the level crossing, picking up the intermediate detonator on the way and then proceed with the same haste for other/ opposite direction and protect the other line also in an identical manner. Having duly protected both the lines, the gateman shall return to the level crossing gate and endeavor to clear the obstruction, mobilizing any assistance locally available. He shall, however, not leave the level crossing, but shall remain in position to warn the Loco Pilot of any approaching train.
- vi). In case only one line is obstructed the aforesaid protection need be done only for the obstructed line only.
- vii). If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gateman and SS/SM will adopt the procedure given as above.

#### **7. Obstruction on the Track near Level Crossing:**

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

\*\*\*\*\*

**Gate working instructions for the Engineering LC Gate Interlocked with Stop Signals:****1. GENERAL INFORMATION**

|     |                                                                                    |                                                          |
|-----|------------------------------------------------------------------------------------|----------------------------------------------------------|
| 1.  | Number and Class of Level Crossing Gate                                            | <b>KK-83</b>                                             |
| 2.  | Engineering or Traffic Gate                                                        | <b>Engg / Spl Class</b>                                  |
| 3.  | Under control of Station Master / SSE/PWay                                         | <b>SSE/P.Way/JDB</b>                                     |
| 4.  | Location at KM.                                                                    | <b>294/33-35</b>                                         |
| 5.  | At Station                                                                         | <b>JDB</b>                                               |
| 6.  | In between stations                                                                | <b>JDB-NKX</b>                                           |
| 7.  | BG / MG / NG                                                                       | Broad Guage                                              |
| 8.  | Single line / Double line / Multiple line                                          | BG                                                       |
| 9.  | Normal Position                                                                    | <b>Open to Road Traffic</b>                              |
| 10. | Interlocked / Non-Interlocked                                                      | <b>Interlocked</b>                                       |
| 11. | Means of Interlocking                                                              | Panel Operation                                          |
| 12. | Provision of Gate Signal at KMs.<br>(i) UP Line<br>(ii)DN Line                     | GS-3<br>S-24 (Gate signal Combined with Advance starter) |
| 13. | Signaling arrangements                                                             | <b>MACL</b>                                              |
| 14. | Means of Communication - Telephone / Bell                                          | Magneto phone with SM/JDB                                |
| 15. | Boom Locking is provided/not                                                       | Boom locking is provided                                 |
| 16. | Width of level crossing gate                                                       | 10.00 Meters                                             |
| 17. | Type of road (NH / SH / Others)                                                    | State High Way                                           |
| 18. | Name of Road                                                                       |                                                          |
| 19. | Metalled / non-metalled                                                            | Highway Road                                             |
| 20. | Approach road                                                                      | CC Blocks                                                |
| 21. | Width of the road                                                                  | 7.5 Meters                                               |
| 22. | Angle of road crossing (in case of Skew gates)                                     | 45 °                                                     |
| 23. | Road gradient (if any)<br>(i) North / East side<br>(ii) South / West side          | Up line 1 in 30<br>Down line 1 in 30                     |
| 24. | Road alignment (straight/curve)<br>(i) North / East side<br>(ii) South / West side | Curve<br>Curve                                           |
| 25. | Provision of height gauges                                                         | Provided                                                 |
| 26. | Type of Barriers                                                                   | Lifting Barriers with Positive Boom locking              |
| 27. | Length of Check rails                                                              | 12.5 Meters                                              |
| 28. | Road surface in between L-Xing gates                                               | Level                                                    |

|     |                                               |                               |
|-----|-----------------------------------------------|-------------------------------|
| 29. | Length of Rumble strip / speed breakers       | 7.5 Meters                    |
| 30. | Road signs                                    | Provided                      |
| 31. | Speed breaker indication board                | Provided                      |
| 32. | TVU                                           | 101986                        |
| 33. | Census next due on                            | Feb 2025                      |
| 34. | Demarcation for placement of Detonators       | Provided                      |
| 35. | No. of Gatemen working                        | 2                             |
| 36. | Nearest Railway Medical Assistance            | JDB                           |
| 37. | Nearest Private Medical Assistance available. | <b>JagadapurGovt Hospital</b> |
| 38. | List of equipment available Yes / No          | Yes                           |

(Refer General Instructions of the above is for common Working instructions for all LC gates)

| <b>1.1EQUIPMENT:</b> |                                                 |                                                                                                    |
|----------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Sl No</b>         | <b>Items</b>                                    | <b>Quantity / Numbers</b>                                                                          |
| 1.                   | LED based flashing Tri Colour Hand Signal Lamp. | 3 (5 on Quadruple / Line or twin single line)                                                      |
| 2.                   | Hand Signal Flag Green                          | 1 No with mounted stick                                                                            |
| 3.                   | Hand Signal Flag Red                            | 3 (6 Nos. on Quadruple / Line or Twin Single line and 7 in case Hexaple Section mounted on sticks) |
| 4.                   | Banner Flag Red                                 | 3 ( 5 on Quadruple / Line or twin single line )                                                    |
| 5.                   | Posts for exhibiting red banner flag            | 2 ( 4 on Q / Twin single line and 5 on Hexaple section )                                           |
| 6.                   | Spare chains with padlocks                      | 2 with stop marker                                                                                 |
| 7.                   | Detonators                                      | 10 in each case                                                                                    |
| 8.                   | Gate lamps                                      | 2 Nos.                                                                                             |
| 9.                   | Tommy Bar                                       | 1 No.                                                                                              |
| 10.                  | Mortar Pan                                      | 1 No.                                                                                              |
| 11.                  | Spade / Fowrah                                  | 1 No.                                                                                              |
| 12.                  | Rammer                                          | 1 No (In case of asphalted road this may not be provided )                                         |
| 13.                  | Pick Axe                                        | 1 No (In case of asphalted road this may not be provided )                                         |
| 14.                  | Tin case for flags                              | 1 No.                                                                                              |
| 15.                  | Can for oil                                     | 1 No.                                                                                              |
| 16.                  | Water port / Bucket                             | 1 No.                                                                                              |
| 17.                  | Canister for Muster Roll                        | 1 No.                                                                                              |
| 18.                  | Set of spare spectacles of gateman wearing      | 1 No.                                                                                              |

|     |                                                                                            |       |
|-----|--------------------------------------------------------------------------------------------|-------|
|     | glasses                                                                                    |       |
| 19. | Board demarcating protection of level crossing gate diagram in case of obstruction on gate | 1 No. |
| 20. | Basket                                                                                     | 1 No. |
| 21. | Whistle                                                                                    | 1 No. |
| 22. | Wall Clock                                                                                 | 1 No. |
| 23. | Small chain for locking arrangement                                                        | 2 No. |

### **1.2 RECORDS TO BE KEPT AT GATE LODGE:**

- 1 In addition to the above equipment, following records shall also be kept at the gate lodge.
- 2 Gate Working Instructions in Hindi / English.
- 3 Gate Working Instructions in local vernacular language.
- 4 Gateman Rule Book in local vernacular language
- 5 List for tools and books.
- 6 Duty Roster.
- 7 Certificate for working as gateman.
- 8 Bio-data particulars of Gatemen, including date of passing vision test, initial / refresher course, safety camp etc.
- 9 Accident Register.
- 10 Record of last census of road traffic at level crossing gate.
- 11 Public Complaint Book.
- 12 Inspection Book.
- 13 S & T failure register.

**1.3 COMPETENCY:** Gateman working at this gate should have competency certificate applicable to perform duty at this gate issued by the concerned supervisor.

**1.4 ALERTNESS:-** The Gate Man shall be alert and be prepared to take immediate action, should danger be apprehended, keys of the gate shall be in personal custody.

### **2. MODE OF OPERATION:-**

For operating of this gate the following procedure to be followed

Gate shall normally be kept open to road traffic, whenever it is required to close the Gate Man on duty shall ensure clearance of road traffic, operate the electrical lifting barrier as per the following procedure,

- 1 For Closing and Opening of the LC gate Barriers, Gate Working Rule (based on the user Manual) to be followed.
- 2 After Gate is Closed and Locked, then Key-M is extracted from the EKT-1
- 3 Key-M thus extracted is inserted in EKT-2 & Transmitted electrically to the SS/SM in conjunction with switch GS (Gate Slot) Reversed to control Signal No.24 by VDU by on Duty SS/ SM.

- 4 For Lowering of Signal G3, Gate Man has to Reverse Switch G3
- 5 For Opening the Gate, GS & GS-3 Switches to be normalized and SM Transmits Control-57, to Gate Lodge. Key-M is extracted from EKT-2, inserted in EKT-1 & Turned.
- 6 Switch GS is provided in Gate Lodge, to put Back concerned Signals to ON, in case of emergency.
- 7 In case of emergency, Gate Man will inform SS/SM, then Key-N (Chained with Crank Handle) to be extracted from EKT-3 (Electro Mechanically Free) Provided at Gate Lodge (in a Locked and Sealed Red Box with Glass Cover) for manual operation of lifting Barriers by Crank Handling.
- 8 Extraction of Key-N shall put Back all the relevant Signals to "ON".
- 9 Approach warning is Provided and is effective from 'Up AT' for Up Direction
- 10 Dead approach locking with the Time delay of 60 Seconds to be provided.
- 11 After passage of Up Train LC gate No.KK-83 shall be released automatically after sequential Occupation and Clearance of 'G3T' and 'G3T1'

## **2.1 Working of Sliding Boom Barrier in case of Failure / Defectiveness of Lifting Barrier (LC No.83) at KM.294/16-17**

- 1 Key-S when extracted from Lock Free EKT-5 makes Road Signals Danger & Activates Road Hooter. Key-S unlocks the Siding Barrier-1
- 2 Sliding Barrier-1 to be rolled across the Road up to Lock Post Key (Chained with Barriers) Locks the Barriers against the Road and releases the Lock Plunger & Key SB-1, Key SB-1 when extracted, locks the Sliding Barrier-1
- 3 Similarly after unlocking the Padlock, Sliding Barrier-2 to be Rolled across the Road up to Lock Post Key (Chained with Barrier) along with the Key SB-1 inserted releases the Lock Plunger and Key SB-2 when extracted lock the Sliding Barrier-2 and Key SB-1
- 4 Finally released key SB-2 is transmitted electrically to SM through EKT-4 in conjunction with Slot 'GS' Reversed for taking Off Concerned Signals.

## **3. Failure of Telephonic Communication:**

### **1 Duties of the SS/SM**

- 1 In the event of failure of telephone, if the gate is required to be close, the on duty SS/SM shall attempt 2 to 3 time for response of Gate man if the Gate man not responded, then he shall inform the Gate man through Gang Man or Gang mate to close the gate if the SS/SM has sufficient time.
- 2 Report the fact over telephone or through the loco pilot & TMR of Incoming train and issue a caution order of a passing train observing the condition of the Gate & gate Man. The same has relay through a memo next block station SS/SM.
- 3 The SS/SM on duty on aware of the communication has failed shall arrange to issue caution orders to the loco pilots and Train managers

of all trains entering into the section.

(i) To whistle frequently.

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

- 4 The Station master shall intimate the fact to the SS/SM of at other end of the block station for issue of caution order with the similar instructions as mentioned in (b) above.

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

- 5 **Duties of Gate Man.**

(i) In the event of failure of telephone, the gateman shall lookout 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 shall 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. He has to take the steps to inform the failure of gate communication to on duty SS/SM of JDB by any means. And take the steps to restore the communication and he will be more cautious be prepared to pass the trains with safe manner by hearing the engine whistle sound.

**ANNEXURE-1**

**WORKING INSTRUCTIONS FOR ENGINEERING "SPL" CLASS INTERLOCKED LEVEL CROSSING GATE INTER LOCKED WITH YARD SIGNAL PROVIDED WITH TELEPHONE WITH NORMAL POSITION IS "OPEN TO ROAD TRAFFIC" FOR LC GATE NO.KK-83 AT KM 294/16-17 BETWEEN JDB-NKX .**

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

**1. Mode of Operation:**

**Gate shall normally be kept open to road traffic, whenever it is required to close Gateman on duty shall ensure clearance of road traffic, operate the Electrical lifting barrier as per the following procedure.**

- (i) After gate is closed and locked, the key 'M' is extracted from **EKT-1**.
- (ii) Key 'M' thus extracted is inserted in **EKT-2** and transmitted electrically to SS/SM in conjunction with switch GS (Gate slot) reversed to control signalno.24 from VDU by on duty SS/ SM.
- iii) For taking "OFF" Gate Signal-3, gateman has to reverse switch **G-3**.
- (iv) For opening the gate, **GS** and **G-3** switches to be normalized and SS/SM transmits control 57 to the gate lodge. Key-M is extracted from **EKT-2** inserted in **EKT-1** and turned.
- (v) Switch GS is provided in gate lodge to put back to normal of the concerned signals in case of emergency.
- (vi) In case of emergency, gateman informs to SS/SM. Then Key 'N' (chained with crank handle) to be extracted from **EKT-3** (Electro mechanically free) provided at gate lodge (In a locked and sealed red box with glass cover) for manual operation of lifting barriers by crank handling.
- (vii) Extraction of key 'N' shall put back all the relevant signals to 'ON'.
- (viii) Approach warning is provided and is effective from 'UP AT' for UP direction.
- (ix) Dead approach locking is provided with time delay of 60 seconds is provided.
- (x) After passage of UP train, LC gate KK-83 shall be released automatically after sequential occupation and clearance of **G3T & G3T1**.
  - a) The SS/SM on duty shall inform the gateman about the train Particulars like , number, description, direction and expected time of passage of the train at the gate.
  - b) Immediately after departure of the train, Station Master shall information the gateman through telephone connected at his end.
  - c) If the telephone is connected to the station at the receiving end, this advice shall be given by the station Master to the gateman as soon as he receives train entering section advice from the dispatching Station.
  - d) It should be the duty of the gateman to ensure that the gate is closed in time, so that there is no detention to the train or excessive detention to road traffic.

**1.1 EMERGENCY RELEASE OF GATE KEY:**

**In the event of gate locked (Red) indication persists on SM's panel even after train movement is completed or when it is required to open the gate**

**due to emergency in gate locked condition on panel the following procedure shall be adopted by both, SS/SM on duty and gate man.**

1. SS/SM on duty shall first cancel the signal by signal cancellation control of the relevant signal.
  2. SS/SM on duty then shall click on the 'Emergency gate release control in the gate popup menu.
  3. The 'Red' locked indication will flash for 120 seconds and after the time has elapsed the 'Red' indication will disappear.
  4. SS/SM on duty then shall transmit 'Gate Control' by clicking Transmit control' (57). The 'Key In' indication (white) starts flashing suggesting the key is transmitted to Gate man.
  5. At gate lodge an indication will appear near RKT suggesting that the key can be released from the RKT for opening of the LC gate.
  6. Seeing the indication gate man on duty shall extract the key from RKT and operate the gate.
  7. On release of key from RKT flashing indication will disappear.
- Any failure regarding transmission / extraction of gate key shall be intimated to the S&T officials for proper rectification. Till such time the failure is rectified the Station Master on duty shall pass the trains by P/IN or by P/OUT as the case may be.

## **1.2 WORKING OF EMERGENCY KEY OF ELECTRICAL LIFTING BARRIER**

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

## **2. Failure of Telephonic Communication:**

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

- i). Station Master on duty shall send written advice to the gateman through the porter with full details of number, description and direction of the train.
- ii). Gateman on receipt of such advice shall close the gate and transmit the key to the Station Master.
- 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 must ensure that the traffic ready for departure in all respects before he advises the gateman for closing the gate.
- v). If the gate is operated from the cabin itself, Station Master shall ensure that the gate is closed against road traffic, before taking 'OFF' reception / departure signals.

i). 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 the shunting across the gate shall be personally responsible to ensure that the gate is closed against road traffic before allowing any movement across the gate.

### **3. Failure of Lifting Barriers:**

- i). When the gate cannot be closed due to failure of lifting barriers, the gateman will immediately inform the SS/SM on duty, under exchange of private number, and ensure the lifting barriers do not foul the track.
- ii). He shall immediately fix red banner flag by day and red light by night on the post at that end first from which the train is approaching and then at the other end.
- iii). Gateman shall secure the gate against road traffic by means of safety chain and padlocks.
- iv). After securing the gate against road traffic, gateman shall work above para 2.1 and 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 shall issue a caution order to the Loco pilot of departing train.
- vi). Station Master will advise maintenance staff responsible for maintenance of lifting barriers to repair the defect at the earliest.
- vii). Normal working will resumed only after maintenance staff repair the barrier and issue reconnection / fit memo for the same.

### **4. Failure of the Gate Key with the gate in closed position when Gate Key cannot be extracted for opening the gate:**

- i). If the gate key cannot be extracted from the winch, the gate leaves or the key transmitter, then gateman must immediately inform to the SS/SM on duty on telephone, under exchange of private number.
- ii). Thereafter, the gate must be treated as non-interlocked and procedure for reception / dispatch of trains as prescribed for non-interlocked gate, should be adopted.
- iii). Station Master on duty shall issue a caution order to the Loco pilot of a departing train.
- iv). 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.
- v). Station Master will advise S&T staff responsible for maintenance of winch / gate leaves / key transmitter to rectify the defect at the earliest.
- vi). Normal working will resumed only after S&T staff repair the winch / gate leaves / key transmitter and issue reconnection / fit memo for the same.

### **5. Failure of the Gate Key, with the gate in open condition:**

- i). If the gate key cannot be extracted from the winch, gate lever or key transmitter then gateman must immediately inform the on duty SS/SM on telephone under exchange of private number.
- ii). Thereafter, the gate must be treated as non-interlocked and procedure for reception / dispatch of trains as prescribed for non-interlocked gates should be adopted.

- iii). Gateman shall secure the gate against road traffic by means of chains and padlocks and pass the trains on hand signals.
- iv). Station Master on duty 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 will advise S&T staff responsibility for maintenance of winch/gate leaves / key transmitter to rectify the defect at the earliest.
- vii). Normal working will resumed only after S&T staff repair the winch / gate leaves / key transmitter and issue reconnection / fit memo for the same.

#### **6 Obstruction at the Gate:**

- i). If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall immediately fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii). immediately after this, the gateman shall advise the Station Master on duty, regarding the defects / obstruction at the gate, under exchange of private number.
- iii). Station Master 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 after two or three attempts, he shall first protect the gate and then inform on phone.
- v). Gateman shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gateman under item no.1.5(5).
- vi). There he shall protect the gate from the other direction also.
- vii). He shall note down the particulars of the road vehicle, name of the Loco pilot, owner and relay these details to the Station Master who shall not start the train unless he has been assured by the gateman that the road vehicle or the lifting barriers are not fouling the track.
- viii). The Station Master shall also inform the Station Master at the dispatching end, under exchange of private number, asking him not to dispatch any train in the block section from his end, until the track has been cleared of all obstructions.
- ix). After the track has been cleared of all obstructions the gateman shall inform the Station Master accordingly, under exchange of private number.
- x). Station Master shall then issue a caution order to Loco pilots of all train to proceed cautiously, and pass the reception / departure signal at 'ON' position on green hand signal of the gateman, of the gate is broken, but is clear of anyObstruction.
- xi). Gateman shall secure the gate against road traffic by means of safety chainsand padlocks and there after exhibit green hand signal, if the gate is not obstructed.

- xii). Station Master shall advise maintenance staff responsible for maintaining the lifting barriers to repair same at the earliest.
- xiii). Normal working will be resumed only after maintenance staff rectify the defective lifting barriers and issue reconnection / fit memo for the same.

**7. Obstruction on the Track near Level Crossing:**

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

\*\*\*\*\*

## Gate Working instructions for the Engineering LC Gate Interlocked with Stop Signals:

### 01. GENERAL INFORMATION .

|     |                                                                                    |                                             |
|-----|------------------------------------------------------------------------------------|---------------------------------------------|
| 1.  | Number and Class of Level Crossing Gate                                            | <b>KK-84</b>                                |
| 2.  | Engineering or Traffic Gate                                                        | <b>Engg / Spl Class</b>                     |
| 3.  | Under control of Station Master / SSE/PWay                                         | <b>SM/JDB, SSE/P.Way/JDB</b>                |
| 4.  | Location at KM.                                                                    | <b>297/18-19</b>                            |
| 5.  | At Station                                                                         | <b>JDB</b>                                  |
| 6.  | In between stations                                                                | <b>JDB-NKX</b>                              |
| 7.  | BG / MG / NG                                                                       | Broad Guage                                 |
| 8.  | Single line / Double line / Multiple line                                          | Double Line                                 |
| 9.  | Normal Position                                                                    | <b>Open to Road Traffic</b>                 |
| 10. | Interlocked / Non-Interlocked                                                      | <b>Interlocked</b>                          |
| 11. | Means of Interlocking                                                              | Panel Operation                             |
| 12. | Provision of Gate Signal at KMs.<br>(i) UP Line<br>(ii)DN Line                     | GS-5<br>GS-4                                |
| 13. | Signaling arrangements                                                             | <b>MACL</b>                                 |
| 14. | Means of Communication - Telephone / Bell                                          | Magneto phone with SM/JDB                   |
| 15. | Provision of slide boom Yes/No                                                     | Yes Slide boom provided                     |
| 16. | Width of level crossing gate                                                       | 9.5 Meters                                  |
| 17. | Type of road (NH / SH / Others)                                                    | State High Way                              |
| 18. | Name of Road                                                                       |                                             |
| 19. | Metalled / non-metalled                                                            | Highway Road                                |
| 20. | Approach road                                                                      | CC Blocks                                   |
| 21. | Width of the road                                                                  | 6.0 Meters                                  |
| 22. | Angle of road crossing (in case of Skew gates)                                     | 45 °                                        |
| 23. | Road gradient (if any)<br>(i) North / East side<br>(ii) South / West side          | Up line 1 in 30<br>Down line 1 in 30        |
| 24. | Road alignment (straight/curve)<br>(i) North / East side<br>(ii) South / West side | Straight<br>Straight                        |
| 25. | Provision of height gauges                                                         | Provided                                    |
| 26. | Type of Barriers                                                                   | Lifting Barriers with Positive Boom locking |
| 27. | Length of Check rails                                                              | 11.5 Meters                                 |
| 28. | Road surface in between L-Xing gates                                               | Level                                       |

|     |                                               |                               |
|-----|-----------------------------------------------|-------------------------------|
| 29. | Length of Rumble strip / speed breakers       | 5 Meters                      |
| 30. | Road signs                                    | Provided                      |
| 31. | Speed breaker indication board                | Provided                      |
| 32. | TVU                                           | <b>99790</b>                  |
| 33. | Census next due on                            | <b>Feb2025</b>                |
| 34. | Demarcation for placement of Detonators       | Provided                      |
| 35. | No. of Gatemen working                        | 2                             |
| 36. | Nearest Railway Medical Assistance            | JDB                           |
| 37. | Nearest Private Medical Assistance available. | <b>JagadapurGovt Hospital</b> |
| 38. | List of equipment available Yes / No          | Yes                           |

(Refer General Instruction of above is for common Working instructions for all LC gates)

| <b>1.1EQUIPMENT:</b> |                                                 |                                                                                                    |
|----------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Sl No</b>         | <b>Items</b>                                    | <b><u>Quantity / Numbers</u></b>                                                                   |
| 1.                   | LED based flashing Tri Colour Hand Signal Lamp. | 3 (5 on Quadruple / Line or twin single line)                                                      |
| 2.                   | Hand Signal Flag Green                          | 1 No with mounted stick                                                                            |
| 3.                   | Hand Signal Flag Red                            | 3 (6 Nos. on Quadruple / Line or Twin Single line and 7 in case Hexaple Section mounted on sticks) |
| 4.                   | Banner Flag Red                                 | 3 ( 5 on Quadruple / Line or twin single line )                                                    |
| 5.                   | Posts for exhibiting red banner flag            | 2 ( 4 on Q / Twin single line and 5 on Hexaple section )                                           |
| 6.                   | Spare chains with padlocks                      | 2 with stop marker                                                                                 |
| 7.                   | Detonators                                      | 10 in each case                                                                                    |
| 8.                   | Gate lamps                                      | 2 Nos.                                                                                             |
| 9.                   | Tommy Bar                                       | 1 No.                                                                                              |
| 10.                  | Mortar Pan                                      | 1 No.                                                                                              |
| 11.                  | Spade / Fowrah                                  | 1 No.                                                                                              |
| 12.                  | Rammer                                          | 1 No (In case of asphalted road this may not be provided )                                         |
| 13.                  | Pick Axe                                        | 1 No (In case of asphalted road this may not be provided )                                         |
| 14.                  | Tin case for flags                              | 1 No.                                                                                              |
| 15.                  | Can for oil                                     | 1 No.                                                                                              |
| 16.                  | Water port / Bucket                             | 1 No.                                                                                              |
| 17.                  | Canister for Muster Roll                        | 1 No.                                                                                              |

|     |                                                                                            |       |
|-----|--------------------------------------------------------------------------------------------|-------|
| 18. | Set of spare spectacles of gateman wearing glasses                                         | 1 No. |
| 19. | Board demarcating protection of level crossing gate diagram in case of obstruction on gate | 1 No. |
| 20. | Basket                                                                                     | 1 No. |
| 21. | Whistle                                                                                    | 1 No. |
| 22. | Wall Clock                                                                                 | 1 No. |
| 23. | Small chain for locking arrangement                                                        | 2 No. |

### **1.2 RECORDS TO BE KEPT AT GATE LODGE:**

- 1 In addition to the above equipment, following records shall also be kept at the gate lodge.
- 2 Gate Working Instructions in Hindi / English.
- 3 Gate Working Instructions in local vernacular language.
- 4 Gateman Rule Book in local vernacular language
- 5 List for tools and books.
- 6 Duty Roster.
- 7 Certificate for working as gateman.
- 8 Bio-data particulars of Gatemen, including date of passing vision test, initial / refresher course, safety camp etc.
- 9 Accident Register.
- 10 Record of last census of road traffic at level crossing gate.
- 11 Public Complaint Book.
- 12 Inspection Book.
- 13 S & T failure register.

**1.3 COMPETENCY:** Gateman working at this gate should have competency certificate applicable to perform duty at this gate issued by the concerned supervisor.

**1.4 ALERTNESS:-** The Gate Man shall be alert and be prepared to take immediate action, should danger be apprehended, keys of the gate shall be in personal custody.

### **2. MODE OF OPERATION:-**

For operating of this gate the following procedure to be followed

- 1 For Closing and Opening of the LC gate Barriers, Gate Working Rule (based on the user Manual) to be followed.
- 2 After Gate is Closed and Locked, then Key-G is extracted from the EKT-1
- 3 Key-G thus extracted is inserted in EKT-2 and turned 'Key In' contact of EKT-2 along with the Switch G-4 or G-5 or both Reversed as per operational requirement. Will clear Down Gate Stop Signal G-4 and Up Gate Stop Signal G-5 respectively.
- 4 For Opening the Gate, the Gate Switches G-4 & G-5 are to be normalized and Key-G from EKT-2 extracted and inserted in EKT-1 & Turned.
- 5 In case of emergency, Gate Man will inform SS/SM on duty, then Key-H

(Chained with Crank Handle) to be extracted from EKT-3 (Electro Mechanically Free) Provided at Gate Lodge (in a Locked and Sealed Red Box with Glass Cover) for manual operation of lifting Barriers by Crank Handling. PN Number between Gate Man and SS/SM on duty of JDB to be exchanged for this.

- 6 Extraction of Key-H shall put Back all the relevant Signals to ON
- 7 Approach warning is Provided which will be effective from 'DN AT' for DownDirection, and 21T for Up Direction.
- 8 Dead approach locking of 60 Seconds with back locking is provided on key "G" when in EKT-2.
- 9 After passage of Dn& Up Train LC gate No.KK-84 shall be released automatically after sequential Occupation and Clearance of 'G4T1' and 'G4T2' & G5T1 and G5T2 respectively.

## **2.1 Working of Sliding Boom Barrier in case of Failure / Defectiveness of Lifting Barrier**

### **(LC No.84) at KM.297/18-19**

Key-R when extracted from Lock Free EKT-5 makes Road Signals Danger & Activates Road Hooter. Key-R unlocks the Sliding Barrier-1

Sliding Barrier-1 to be rolled across the Road up to Lock Post Key (Chained with Barriers) Locks the Barriers against the Road and releases the Lock Plunger & Key SB-1, Key SB-1, Key SB-1 when extracted, locks the Sliding Barrier-1

Similarly after unlocking the Padlock, Sliding Barrier-2 to be Rolled across the Road up to Lock Post Key (Chained with Barrier) along with the Key SB-1 inserted releases the Lock Plunger and Key SB-2 when extracted lock the Sliding Barrier-2 and Key SB-1

Normally released key SB-2 is transmitted electrically to SS/SM through EKT-4 in conjunction with Slot 'GS' Reversed for taking Off Concerned Signals.

## **3. Failure of Telephonic Communication:**

### **1 Duties of the SS/SM**

In the event of failure of telephone, if the gate is required to be close, the on duty SS/SM shall attempt 2 to 3 time for response of Gate man if the Gate man not responded, then he shall inform the Gate man through on duty TPM or Gang Man or Gang mate to close the gate if the SS/SM has sufficient time.

- 2 If on Duty SS/SM has not having sufficient time Report the fact over telephone or through the loco pilot & TMR of Incoming train and issue a caution order for passing gate Signals observing the condition of the Gate & gate Man. The same has relay through a memo next block station SS/SM.

- 3 The SS/SM on duty on aware of the communication has failed shall arrange to issue caution orders to the loco pilots and Train managers of all trains entering into the section.

(i) To whistle frequently.

(ii) To stop 30mts short of the level crossing and be guided by the

hand signal given by the gateman

- 4 The Station master shall intimate the fact to the SS/SM of at other end of the block station for issue of caution order with the similar instructions as mentioned in (b) above.

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

- 5 **Duties of Gate Man.**

(i) In the event of failure of telephone, the gateman shall lookout 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 shall 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. He has to take the steps to inform the failure of gate communication to on duty SS/SM of JDB by any means. And take the steps to restore the communication and he will be more cautious be prepared to pass the trains with safe manner by hearing the engine whistle sound.

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### **Annexure-1**

**WORKING INSTRUCTIONS FOR ENGINEERING "SPL" CLASS INTERLOCKED LEVEL CROSSING GATE INTER LOCKED WITH YARD SIGNAL PROVIDED WITH TELEPHONE WITH NORMAL POSITION IS "OPEN TO ROAD TRAFFIC" FOR LC GATE NO.KK-84 AT KM 297/18-19 BETWEEN JDB-KMEZ**

#### **1. Failure of Lifting Barriers:**

- 1 When the gate cannot be closed due to failure of lifting barriers, the gateman shall immediately inform the SS/SM on duty under exchange of private number, and ensure that lifting barriers do not foul the track.
- 2 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

- 3 Gateman shall secure the gate against road traffic by means of safety chains and padlocks
- 4 After securing the gate against road traffic, gateman shall work out to close the gate as per above para 2.1
- 5 SS/SM on duty shall issue caution order to the driver of a departing train briefing the condition of the gate.
- 6 He shall also advise the SS/SM at the dispatching end, under exchange of private number; to similarly issue a caution order to the driver before dispatching a train in the block section.
- 7 SS/SM shall advise maintenance staff responsible for maintaining the lifting barrier gates to rectify the same at the earliest
- 8 Normal working will be resumed only after maintenance staff repair the lifting barrier gates and issue reconnection/fit memo for the same

**2. Failure of Gate Key with the gate in closed position, when Gate Key cannot be extracted for opening the gate:**

- 1 If the gate key cannot be extracted from the winch, gate signal lever or key transmitter then gateman must immediately inform the SS/SM on duty on telephone, under exchange of private number
- 2 If Emergency Key is available at the gate lodge, Gateman will take it out from the sealed box by breaking the seal and open the gate for road traffic.
- 3 The record of the date and time of breaking the sealed cover of Emergency Key Box shall be recorded and signed with reasons
- 4 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
- 5 Station Master on duty shall issue caution order to the driver of a departing train
- 6 He shall also advise the SS/SM at the dispatching end, under exchange of private number, to similarly issue a caution order to the driver before dispatching a train in the block section from his end.
- 7 SS/SM on duty shall advise S&T staff responsible for maintaining the key transmitter to repair the same at the earliest
- 8 Normal working will be resumed only after S&T staff repairs the key transmitter issue reconnection/fit memo for the same
- 9 After rectification, the Emergency Key shall be replaced in the Emergency Key Box and resealed by the S&T maintainer

**3. Failure of the Gate Key with the gate in open condition:**

- 1 If the gate key cannot be extracted from the winch, gate signal lever or key transmitter then gateman must immediately inform the SS/SM man on duty on telephone, under exchange of private number
- 2 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.

- 3 The gateman shall secure the gate against road traffic by means of chains and padlocks and pass trains on hand signals
- 4 Station Master on duty shall issue a caution order to the driver of a departing train
- 5 He shall also advise the Station Master at the dispatching end, under exchange of private number, to similarly issue a caution order to the driver before dispatching a train in the block section from his end
- 6 Station Master shall advise S&T staff responsible for maintaining the key transmitter to repair the same at the earliest
- 7 Normal working will be resumed only after S&T staff repairs the key transmitter and issue reconnection/fit memo for the same
- 8 After rectification, the Emergency Key shall be replaced in the Emergency Key Box and resealed by the S&T maintainer

#### **4. Defective Gate Signals:**

- 1 The gateman shall treat the gate signal as defective and must not lower them under following circumstances
- 2 If gate signals can be taken 'OFF' without closing the gate, or
- 3 The key can be extracted from the operating winch when the gate is in open condition, or
- 4 The key can be extracted from the leaf gates when the gate is in open condition
- 5 If the Gate or the Gate Signal or Warner/Distant Signal becomes defective in 'OFF' position, the gateman will make all efforts to put it at 'ON' position even by cutting signals wires, if necessary
- 6 The gateman will immediately advise the Station Master on duty, under exchange of private number, regarding defective gate signals
- 7 Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch as prescribed for non-interlocked gates should be adopted
- 8 He shall show green hand signal flag by day and green light by night to the passing train after closing the gate
- 9 Station Master on duty will issue a caution order to the driver of a departing train
- 10 He shall also advise the Station Master at the dispatching end, under exchange of private number, to similarly issue a caution order to the driver before dispatching a train in the block section from his end
- 11 Station Master shall advise S&T staff responsible for maintaining the gate signal to repair the same at the earliest
- 12 Normal working will be resumed only after S&T rectify the defective gate signal and issue reconnection / fit memo for the same.

#### **5. Obstruction at the Gate:**

- 1 If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers/ leaf gates or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall immediately put back gate signals to 'ON' position
- 2 He shall fix red banner flag by day and red lamp by night on posts provided at both ends of the gate for this purpose

- 3 Immediately after this, the gateman shall advise the Station Master/Switchman/Cabin man on duty regarding the defects/obstructions at the gate, under exchange of private number
- 4 If there is no response from the Station Master/Switchman/Cabin man after two or three attempts, he shall first protect the gate and then inform on phone
- 5 Gateman shall then rush with detonators, fuse and red flag by day and red hand signallamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gateman
- 6 Thereafter, he shall protect the gate from the other direction also
- 7 He shall note down the particulars of the road vehicle, name of the driver, owner and relay these details to the Station Master who shall not start the train unless he has been assured by the gatemen that the road vehicle or the lifting barriers/leaf gates are not fouling the track
- 8 The Station Master shall also inform the Station Master at the dispatching end, under exchange of private number, asking him not to dispatch any train in the block section from his end, until the track has been cleared of all obstruction
- 9 After the track has been cleared of all obstructions the gateman shall inform the Station Master accordingly, under exchange of private number
- 10 Station Master shall then issue a caution order to drivers of all train to proceed cautiously, and pass the gate signal at 'ON' position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction
- 11 Gateman shall secure the gate against road traffic by means of safety chains and padlocks and there after exhibit green hand signal, if the gate is not obstructed
- 12 Station Master shall advise maintenance staff responsible for maintaining the lifting barriers/leaf gates to repair the same at the earliest
- 13 Normal working will be resumed only after maintenance staff rectify the defective lifting barriers/leaf gates and issue reconnection/fit memo for the same

**6 Obstruction On The Track Near Level Crossing Gate:**

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gateman and station master will adopt the procedure given under item no. 5 above, if the obstruction fouls the level crossing gate, gateman must keep the gates closed against road traffic till the track is cleared of the obstruction.

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**APPENDIX-'B'****APPENDIX “B” TO STATION WORKING RULES OF JAGDALPUR STATION**

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

**1. BRIEF DESCRIPTION OF THE SIGNALLING AND INTERLOCKING**

INSTALLATIONS: JAGDALPUR is a Class 'B' station provided with Standard-II (R) Interlocking. The station is provided Electronic Interlocking between points, signals, track circuits and other signaling gears as per WRD No 23181 Alt “C”. The station is equipped with Multiple Aspect Colour Light Signaling. All points and signals are power operated through a central Visual Display unit (VDU) installed in the SM's Office.

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

The Operator Console cum Visual Display Unit (VDU) is provided for operation of Signals, points, Crank handles and controls etc. A mimic yard diagram based on SI plan No. S1/23181 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.

**3. SYSTEM OVERVIEW**

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

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

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

**3.1. DUAL VDUS - MODE OF SELECTION:**

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

The operator VDU is having controls to operate the field gears through the Mimic diagram. A Mimic diagram displayed on the operator VDU is an exact replica of yard that suits SI plan No 23181 Alt “C”.

**4. CONTROL(S) & INDICATION(S):****4.1 . ICONS AND INDICATIONS PROVIDED ON THE VDU:**

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

| Sl. No | ICONS                                   | INDICATIONS                                                                                                                 | FUNCTIONS                                                                                           | REMARKS                                                                                                                          |
|--------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 1      | PC Control                              | Yellow light when key is "ENABLE                                                                                            | Ensures operation of VDU by authorized person.                                                      | Protected password.                                                                                                              |
| 2      | --                                      | Emergency Route release - UP & DN.                                                                                          | Flashing indication appears when emergency route release counter operation is initiated.            | For each operation concerned counter shall register one count higher.                                                            |
| 3      | Emergency point operation key.          | Yellow light when key is IN. Yellow light indication appears showing request for Emergency point operation is acknowledged. | Ensures emergency point operation by authorized person authenticated by providing password.         | For each operation concerned counter shall register one count higher.                                                            |
| 4      | Point failure acknowledgement button.   | Red                                                                                                                         | Flashing indication appears when any point fails. SM has to left click on the icon to acknowledge.  | Buzzer will sound. On acknowledgment, buzzer stops. After verification at site inform S&T staff immediately if failure persists. |
| 5      | Signal failure Ack. Button.             | Red                                                                                                                         | Flashing indication appears when any signal fails. SM has to left click on the icon to acknowledge. | Buzzer will sound. On acknowledgement, buzzer stops. Inform S&T staff immediately.                                               |
| 6      | CH-1, CH-2, CH-3, CH-4, -----, buttons. | Yellow lamp indicates 'Key' IN' Red lamp indicates 'CH                                                                      | In normal condition yellow lamp will be lit. Whenever the crank handle is                           | --                                                                                                                               |

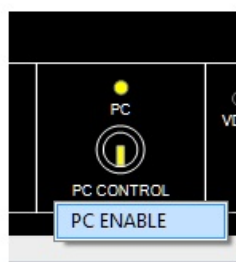
|    |                                                 |                                    |                                                                                                                                                                                                   |                                                                                    |
|----|-------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|    |                                                 | LOCKED'.                           | locked in route or otherwise red indication will glow.                                                                                                                                            |                                                                                    |
| 7  | 'DN Train entering into section' muting button. | Yellow-Acknowledged.               | On getting alarm/buzzer SM shall left click on the button icon to acknowledge it.                                                                                                                 | --                                                                                 |
| 8  | 'UP train entering section muting button.       | Yellow-Acknowledged.               | On getting alarm/buzzer SM shall left click on the button icon to acknowledge it.                                                                                                                 | --                                                                                 |
| 9  | UP block release button.                        | Yellow prepared for block release. | On getting alarm/buzzer SM shall left click on the button icon to acknowledge it.                                                                                                                 | After complete arrival of train this will be activated.                            |
| 10 | DN block release button.                        | Yellow prepared for block release. | On getting alarm/buzzer SM shall left click on the button icon to acknowledge it.                                                                                                                 | After complete arrival of train this will be activated.                            |
| 11 | Line block button.                              | Red when blocked.                  | SM/SS shall point the cursor on the icons provided on the berthing track and right click. One drop menu will appear indicating line blocked and unblocked, SM/SS has to select the required menu. | When line block is selected the concerned button on the particular line turns red. |

#### 4.2 SM KEY:

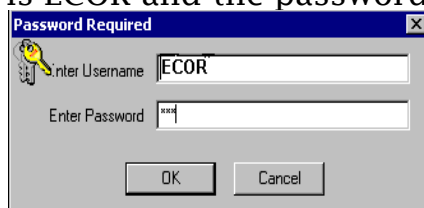
SM key is physically provided in VDU change over panel, outside the VDU on SM's table. This key when inserted in the lock [provided on VDU changer over panel] and turned right the VDU becomes operative. The key when inserted in the lock and either turned to left or extracted out from the lock renders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

#### **PC Control:**

If any one of VDU has shut down for maintenance or in case of failure, after resumed to normal working or rectification, for getting the operations from the VDU, first enable the PC which is virtual SM's Key. To enable the PC, right click on the PC icon which enables the PC by providing the pass word in the box appears for this purpose.



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



#### 4.3. ELECTRONIC INTERLOCKING (E.I) SYSTEM INDICATIONS:

##### a) Vital Interlocking Computer Status:

In EI, two Vital Interlocking Computer cards are available normally. The status of each of the VIC is provided on VDU as following.

##### VIC-A Indications



VIC-A is Active



VIC-A is Stand By



VIC-A is Not Available

##### VIC -B Indications



VIC-B is Active

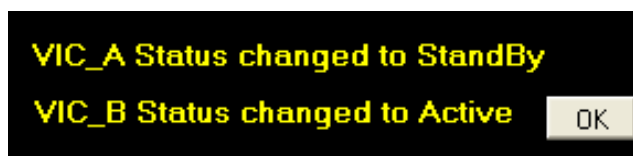


VIC-B is Stand by



VIC-B is Not Available

If there is any change in VIC's status, its current status will be displayed along with OK button and a buzzer is turned on to alert the operator. The Buzzer stops and the indication message disappear when the OK button is pressed by the Operator.



**Action by SM:** If at least one VIC is available in Active State, then EI shall continue to function. On observing the fault, SM shall acknowledge the fault and immediately inform Signal Maintainer for further action.

### b) Link Status Indication:

The EI VDU receives the data from EI Equipment through two OFC channels. The Link Status Indication of the same is provided on the VDU.

When Channel - A or Channel - B link is healthy, corresponding green indication will be glowing steadily. When Channel A or Channel B link is faulty, corresponding red indication will be shown steady.



Channel -A Link Status is Healthy



Channel - A Link Status is Faulty



Channel - B Link Status is Healthy



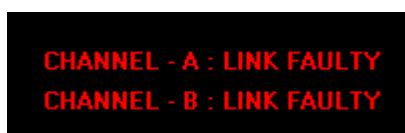
Channel - B Link Status is Faulty

### Buzzer and Acknowledgment:

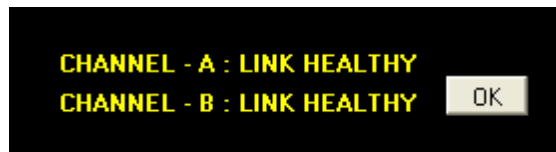
When Channel A link or Channel B Link fails, a Buzzer is turned on automatically to alert the operator. To acknowledge the fault, right click on this control, a pop- up menu is displayed and then click on the Ack menu option. The Buzzer stops when the fault is acknowledged by the Operator.



When any of the channels link fails, an indication is shown in red color.



When any of the links is recovered, the indication is shown in yellow color along with one OK button. The indication message disappears if OK button is pressed.



**Action by SM:** If at least one of the Communication Channels is Healthy, EI VDU shall continue to functions as usual emanating all indications. On observing any communication channel faulty indication, SM shall acknowledge the fault and immediately inform the Signal Maintainer.

#### c) EI Equipment Critical Fault:

If EI is shut down due to any critical fault, a message is displayed in red color along with OK button and a buzzer is turned on to alert the operator. The Buzzer stops and the indication message disappear when the Operator presses the OK button.



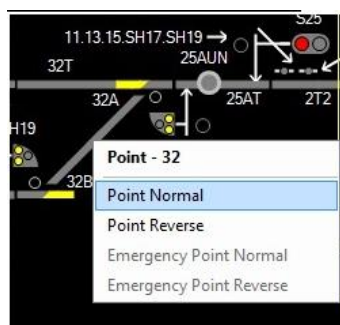
**Action by SM:** SM shall acknowledge the fault, inform the Signal Maintainer.

#### 4.4. VDU ACTIVE INDICATIONS:

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

#### 4.5. OPERATION AND INDICATION OF POINT:

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



**4.5.1. REVERSE TO NORMAL OPERATION:**

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

**4.5.2. NORMAL TO REVERSE OPERATION:**

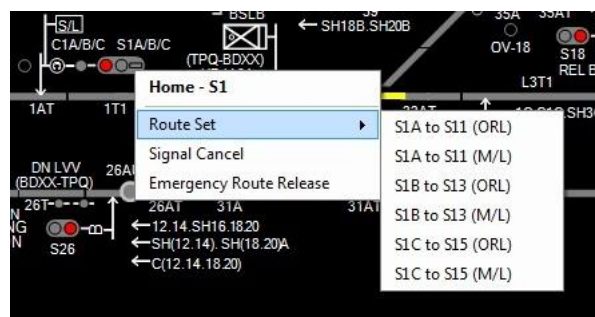
Click on the **POINT REVERSE** in the menu appearing at the point in the operator VDU, a Reverse flashing indication will appear, the indication will be steady after the point is set to reverse.

**4.5.3. POINT INDICATIONS:**

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

**4.6. SIGNAL OPERATION:**

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



**4.6.1. SETTING A ROUTE:**

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

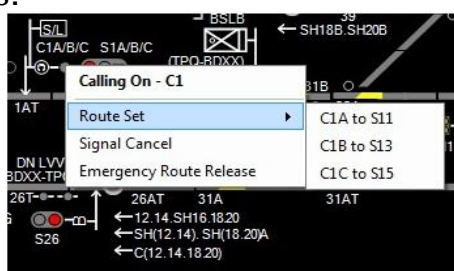
**4.6.2. SHUNT SIGNAL OPERATION:**

To set a route of a shunt signal, the same procedure as main signal has to be followed as explained above. To set the signal route for shunt signals SM on duty shall put the pointing device on the Shunt signal icon and right click on the same. After clicking on the Signal, a pop-up menu will appear as above for route set, signal cancellation and route cancellation operations. Track the mouse on the 'Route set' sub menu which displays all the possible routes of the signal, then click the left button of mouse on the required route on route set sub menu. After doing so, desired route will be initiated and the Shunt signal will be taken "OFF".

**4.6.3. CALLING ON SIGNAL OPERATION:**

Calling on signal route set operation follows the same procedure as mentioned for the main signal. For calling on Signal, route is set after a train occupies the approach track circuit in immediate rear of the stop signal. The calling on Signal below Home Signal is cleared after a lapse of 60 Seconds and Calling on Signal below starter is cleared after a lapse of 120 Seconds provided other conditions are fulfilled.

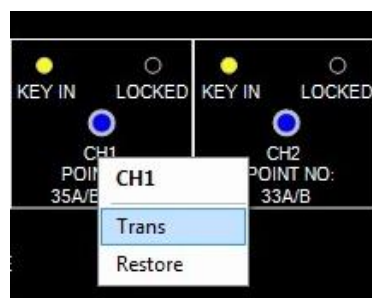
To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal or Starter Signal, occupying the track circuit (1AT, 2AT & Berthing track in rear of Starter Signal as the case may be) in rear of the signal. When a train occupies the track circuit a RED light strip will appear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



Then the SM must drag the pointer and click over the route set' sub menu which displays all possible routes then click over the particular Calling on route amongst the various options displayed in the sub menu by the left button of the mouse as a result of which the calling-on signal will blink for 60 seconds in case of Calling on Signal below Home Signal and for null Seconds in case of Calling on Signal below Starter Signal. For all home signals the time delay is 60 seconds and for Starter Signals the time delay is "0" Seconds, the Calling on signal clears i.e. a white light glows at the concerned calling-on signal on the VDU. This action will be recorded in a respective counter of the counter box provided on SM's table. Every such operation shall be recorded by the SS/SM on duty along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train by Signal cancellation only.

#### **4.7. CRANK HANDLE CONTROL OPERATION:**

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



For Transmitting the Crank Handle KEY to the field personnel, right click on the Crank Handle and select the Trans in the menu appeared. After transmission, the KEY IN indication will start flashing; now the KEY can be extracted from the EKT. After extracting the key from the EKT, the key IN indication will disappear. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Crank Handle operation along with the latest counter number in a register.

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

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

#### **4.8. OVERLAP TIME RELEASE:**

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

## **5. EMERGENCY OPERATIONS:**

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

### **5.1. CANCELLING A ROUTE/ EMERGENCY ROUTE RELEASE:**

To cancel a signal route when the route is set and the signal is taken-off, click on the signal. After clicking by the right button on the mouse a pop-up menu will appear as shown in Para 4.6 above. Click on the Signal cancel option (Main/ Calling on) of the concerned signal, the signal will immediately go to "ON" aspect, after doing so click on the Emergency Route release menu a pop up menu will be displayed for conformation. By clicking on 'Yes' the route locked indication will start flashing for 120 sec & the Emergency Route Release Indication (UP/DN as the case may be) will flash for the entire time interval.

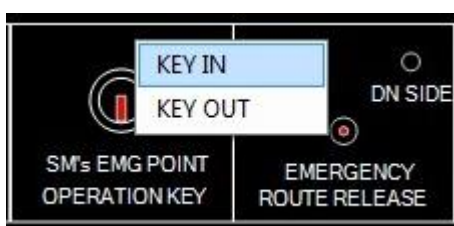
After the completion of 120 sec, the locked route will be released. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Route cancellation along with the latest counter number in a register.

### **5.2. EMERGENCY POINT OPERATION:**

When the point zone track circuits failed without any point lock condition through respective signal route(s), a point can be operated by the Emergency Point operation.

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

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



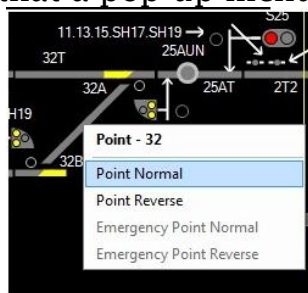
Click on the KEY IN in the menu appeared and shall provide User name and password for the same as follows.



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

#### **5.2.1. EMERGENCY NORMAL OPERATION:**

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



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

#### **5.2.2. EMERGENCY REVERSE OPERATION:**

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

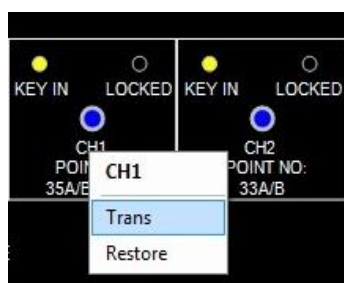
After the completion of the Emergency point operation, the Key to be 'KEY OUT'. Same procedure as mentioned for KEY IN shall be followed for KEY OUT.

TO 'KEY OUT' the Emergency Point Operation key right click on the SM's Emergency point operation key a pop-up menu will be appears as shown in the Para No.5.2 above. Click on the KEY OUT in the menu appeared and shall provide User name and password. The user name of this station is 'ECOR' and password of this station is JDB.

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

### 5.3. EMERGENCY CRANK HANDLE RELEASE OPERATION:

When a crank handle is locked due to route set earlier is not released or otherwise. To Transmit or Release control of the Crank Handle, SM on duty shall cancel the relevant signal first and then right click on the crank handle control. button icon provided like the following on the VDU. On clicking, the pop-up menu gives details of the possible commands on the Crank Handle.



For Transmitting the Crank Handle KEY to the field personnel SM on duty has to click on '**Trans**' menu. After transmission the 'KEY LOCKED' (Red) indication will start to flash for 120 seconds & KEY IN' remains steady. After this the 'KEY LOCKED' Indication will vanish & KEY IN' indication will start to flash. After extracting the key from the RKT, the 'KEY IN' indication will disappear. When the Manual point operation is over, after putting the crank handle key in the RKT, flashing 'KEY IN' indication will appear on the VDU, now the SM on duty shall Release the control for the Steady indication by clicking '**Restore**' menu.

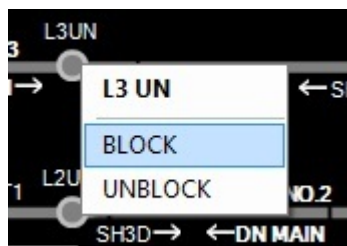
This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Emergency Crank Handle Operation along with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

### 5.4. LINE BLOCK AND UNBLOCK (REMINDER COLLAR):

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

#### 5.4.1. LINE BLOCK:

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



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

#### 5.4.2. LINE UN BLOCK:

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

### 6. HIGH AVAILABILITY SINGLE SECTION DIGITAL AXLE COUNTER (HASSDAC)

Entire block section JDB-NKX & JDB KMEZ is provided these two LVCD are named as SSDAC-1 and SSDAC-2 The status of both System is provided as indications besides of the operating VDUs.

| SRL No. | Indication                                                           | Automatic Action taken by Equipment | Action by SM                                                                                                                                       |
|---------|----------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Only SSDAC-1 fails after arrival of the train                        | System reset automatically.         | Nil                                                                                                                                                |
| 2       | Only SSDAC-2 fails after arrival of the train                        | System reset automatically.         | Nil                                                                                                                                                |
| 3       | Both SSDAC-1 & 2 Falls after arrival of the train (or)for any reason | No automatic action                 | SM to reset by taking permission From adjacent station and reset the system as procedure laid down and make an entry in the axle counter register. |
| 4       | Both SSDAC-1 & 2 Falls after arrival of the train (or)for any reason | No automatic action                 | Enter in Signal Failure Register Issue failure memo to signal technician. Procedure to be adopted is same as laid down                             |
| 5       | Either SSDAC-1 or SSDAC-2 fails                                      | -----                               | Report to signal staff without entering into signal failure register.                                                                              |

|  |                               |  |  |
|--|-------------------------------|--|--|
|  | continuously<br>for long time |  |  |
|--|-------------------------------|--|--|

HASSDAC with Dual sensor with media converter with E1 connectivity and Quad core cable is provided for block clearance for all lines both sides KMEZ&NKX.

In case of failure of Axle counter the procedure as detailed bellow is followed for resetting the same.

High Availability Single Section Digital Axle Counters (HASSDAC) are provided as a Last Vehicle Checking Device (LVCD) for Both UP and DN block section between JDB-NKX and JDB-KMEZ.

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

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

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

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

#### **6.1. RESETTING OPERATION FOR LVCD** High Availability Single Section Digital Axle Counters (HASSDAC):

After complete arrival of train, if the High Availability Single Section Digital Axle Counters (HASSDAC) of the section does not show clear indication or Block section clear indication (Green) does not appear in the panel, the receiving station SM shall apprise the sending station SM through telephone for resetting giving the details of last train that has arrived complete at his station and the block section is clear.

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

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

- a) On being advised by SM of JAGDALPUR Station, SM of NKX/KMEZ should perform the following step by step procedure from (b) to (i) for resetting the Digital Axle Counter.
- b) SM of JAGDALPUR Station and NKX/KMEZ Station shall then Insert SM's reset key, and turn right.
- c) Press simultaneously both the Push button and Reset Key which are provided on the Reset Box for at least 5 Seconds continuously at JAGDALPUR and NKX/KMEZ Station.
- d) Release SM's Reset Key and Push button.
- e) Turn left the SM's Reset Key and removes it.
- f) The system goes to preparatory reset state and preparatory reset miniature indication (Green) glows on the Reset box. The counter reading incremented after a gap of 5 seconds approximately.
- g) The counter reading should be recorded in the concerned register by SM on duty.
- h) One train is to be piloted out in the section to make the system normal.
- i) The SM on duty shall record it in the Train Signal Register indicating the resetting operations in detail L.e. train number, time, Private Number exchanged with SM of sending station and giving reasons for the resetting operation.
- j) If the axle counter works properly, then Block Section cleared indication "Green" will appear on the Reset box and the concerned Block working will be normalized after arrival of train which is piloted out.
- k) If the LVCD section indication does not appear 'Green' and continues to show "RED" indication, the concerned Block instrument shall be suspended and failure intimation is to be given to sectional signal Maintainer/JE/SE (Signal) for early rectification.

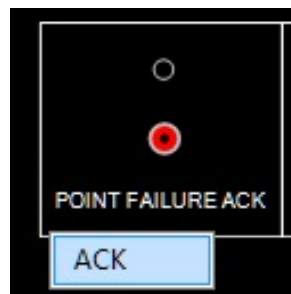
## **7. SIGNAL LAMP FAILURE INDICATION AND BUZZER ACKNOWLEDGMENT:**

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



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

Whenever there is a failure of point due to non-setting, point failure indication flashing light appears near the point button icon along with point failure Buzzer. The buzzer stops when the point failure acknowledgement button icon is pressed, but the flashing light above the ACK button shall continue to glow. The flashing light at the concerned point zone shows the defective point. After the failure is rectified, the flashing light above the 'POINT FAILURE ACK' button will disappear.



### **9. COUNTERS:**

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

1. Emergency Route Release Counter.
2. Emergency Point Operation Counter.
3. Emergency Crank Handle Release Counter.
4. Up Calling on Counter.
5. DN Calling on Counter.

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

### **10. TRACK CIRCUITS:**

Track circuits are provided in the yard as UP AT, DN AT, GST1, G5T2, G4T1, G4T2, 31AT, 31BT, 33AT, 33BT, 35AT, 35BT, 37AT, 37BT, 31AT1, 41/51T, 43/49T, L1T1,L1T2,L1T3, L2T1, L2T2, L2T3, L3T1,L3T2,L3T3,L3T4, L4T1,L4T2,L4T3, L5T1, L5T2,L5T3, L6T1, L6T2,L6T3, 40/52T, 40AT, 42T,

44AT, 44BT, 54T, 46AT, 46BT, 48/50T, 36/38T, 38T, 34AT, 34BT, 32AT, 32BT, 32AT1, DN AT.

Approach track circuits 1AT & 2AT of 5 Rail length for Calling on Signal are provided in rear of the UP and DN Home signals respectively. In addition there are short length track circuits 1T1 & 1T2 in advance of UP Home Signal and 2T1 & 2T2 in advance of DN Home Signal are also provided. Similarly there are 5 Rail length track circuits 217 beyond UP Advanced Starter Signal for replacement of Last Stop Signal and 24T beyond the DN Advanced Starter Signal No.24. From the last trailing point/fouling mark in either side of yard to

Advanced Starter Signals are also track Circuited Le 24AT and 21AT in DN and UP directions respectively. 24T1 is provided beyond 24T track circuit up to LC gate to protect the LC gate no.KK-83. Indications for the above track circuits are available on VDU. Yellow Strip on VDU indicates Route is set and track is clear and Red strip indicates Track is in occupied condition.

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

### **11. RELEASE/CANCELLATION OF ROUTE:**

Normally when a train is received on or dispatch from any route, the route illumination will disappear automatically after passage of the train suggesting that the route is released. When the route is not released automatically after passage of train over it or when on SM on duty intends to cancel the route set by him shall follow the procedure for cancellation of route described in Para No.5.1 of Appendix-B above.

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

### **12. REPLACEMENT OF SIGNALS TO "ON":**

Signals are replaced to 'ON' automatically by the passage of a train beyond the signal. It will not be possible to re-clear the signal again unless the due process for clearing the signal is repeated again. For replacement of any signal to 'ON' position manually, the SM on duty shall follow the Para No.5.1 of Appendix-B.

### **13. PILOTING OF TRAINS IN TO STATION YARD:**

Whenever Home signal becomes defective, trains can be admitted by taking off Calling-on signal. Whenever both Home signal and Calling-on signal failed,

all trains will be piloted in vide SR. [Refer SR 3.69.03(a) & (c)]. The SM on duty shall nominate a clear line and shall advise the TPM on duty at station to set the nominated route with the help of crank handle if the points cannot be set from the VDU. Then the TPM shall set the facing and trailing points and clamp and padlock the same under the supervision of SM on duty.

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

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

**NOTE:**

- a) The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of the facing points, if any and ensure clearance on the nominated route vide SR [Ref. SR 3.69.03(c)].
- b) The keys of padlock of the clamps put ON to the points on the route for piloting In or piloting OUT shall be in the personally custody of the SM on duty or any other authorized operating officials till such time the train / engine / vehicle has utilized the route or alternatively such movement is cancelled.

**14. PILOTING OF TRAINS - OUT OF STATION YARD:**

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

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

**15. SHUNTING:**

Caution aspect of starter signals are used for shunting up to advanced starter signal on both UP & DN lines of both directions. For back shunting, SH-3 & SH-4 are provided for shunting back to the station yard in desired direction. For taking off shunt signals, please refer para no. 4.6.2 of Appendix-B. Apart from this, the following shunt signals are provided in this yard. 1.

**NKX end:**

- a) Dependent shunt signals SH-12 on L-4, SH-14 on L-5, SH-16 on L-6 are provided for shunting in engineering siding and up to DN advanced starter signal no.S-24.
- b) Dependent shunt signal SH-10 on L-3 is provided for shunting up to DN advanced starter signal no. 5-24.

- c) Independent shunt signals SH-18 on L-7 & SH-20 on L-8 are provided for shunting in engineering siding.
- d) Independent shunt signal SH-5 is provided on engineering siding for shunting from L-4 to L-8.
- e) Shunt back signal SH-3 is provided for shunting on L-1 to L-6.
- f) Shunt back signal SH-5 is provided for shunting on L-4 to L-8.

## **2. KMEZ end:**

- a) Dependent shunt signal SH-7 is provided on L-1 for shunting in sick line, construction siding, pit line and up to UP advanced starter signal no. S-21.
- b) Dependent shunt signal SH-9 is provided on L-2 for shunting up to UP advanced starter signal no. S-21.
- c) Independent shunt signal SH-19 is provided is provided on shunting neck for shunting in construction siding and RE siding. d) Independent shunt signal SH-28 is provided on RE siding for shunting in shunting neck.
- d) Independent shunt signal SH-26 is provided on construction siding for shunting in shunting neck and in L-1.
- e) Independent shunt signal SH-22 is provided on sick line for shunting in L-1.
- f) Independent shunt signal SH-30 is provided on pit line for shunting in L-1.
- g) Shunt back signal SH-4 is provided for shunting on L-1 to L-6.

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

In the Station yard, a route on the running line comprises 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 SS/SM on duty personally through VDU indications and/or physical verification of track before any movement of trains are permitted on the concerned route subject to the other conditions such as locking of the point's etc.

## **17. OBSERVATION OF TRACK CIRCUIT AFTER STABLING OF TRAINS ON RUNNING LINES:**

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

## **18. MAINTENANCE OF S & T INSTALLATION AND ADHERENCE TO MAINTENANCE SCHEDULES:**

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

indicated in the Signal Engineering Manual as also as per the current and extant instructions/circulars on the subject.

**19. RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:**

After receipt of the failure information, the sectional Maintainer shall attend to the failure after giving a 'Disconnection Memo'. After rectification of the fault, the Sectional Maintainer shall give 'Reconnection Memo' detailing the rectification. Thereafter the Station Master on duty shall personally check this defective apparatus. After satisfying himself that the gear is in good and proper working order, he shall resume the normal working of the said defective apparatus in terms of SR.3.68.04 (C) and (D).

**20. PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:**

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

**21. EMERGENCIES:**

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

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

- 1) Whenever a Signal or a Point becomes defective any movements over the Points on the running lines should be made after clamping and padlocking both the facing and trailing Points by Station Master on duty personally for all trains at the Station.
- 2) In case of failure of Signal or a Point and in case the Point cannot be operated from the VDU, the Crank Handle which is interlocked with the system has to be extracted and the following procedure has to be observed.
- 3) One common Crank Handle key is provided for certain group of Motor operated Points. This is mechanically riveted to the Key of RKT. This Key along with Crank Handle can be released from the RKT by pressing the RKT Push Button provided near the RKT. In case of failure of Point Machine, the SM on duty will take out the Crank Handle key from RKT, set the Point manually by inserting Crank Handle key in the point machine.

- 4) When the Crank Handle key is removed from RKT for operation of the defective Motor Operated Points, the responsibility for its safe custody rests with the ASM/SM on duty till it is replaced back in RKT.
- 5) The failure of Motor Operated Points should be promptly reported to the concerned Signal Inspector/ESM for immediate rectification.
- 6) Whenever a Crank Handle key is required to be used by a Signal Official for maintenance/attending to failure, the Signal Official will give a disconnection memo to the Station Master on duty and after making necessary entries in the Crank Handle register, the Station Master on duty will obtain acknowledgement of the Signal Official in the Crank Handle Register and then handover to him the Crank Handle key for the Points concerned. All the Points will be treated as defective till the Crank Handle key is returned back to Station Master on duty.
- 7) Before parting with the Crank Handle either for attending failure or for Maintenance work by Signal Maintenance Officials, the Station Master on duty will ensure that the reception and departure Signals are put back to on position. The Points of all the lines should be treated as Non-interlocked and the Station Master on duty is responsible for introduction of Non-interlocked working and the trains will piloted IN and OUT duly clamping and Padlocking the Points, both in facing and trailing directions over which the train is to pass, as per GR 3.69 and 3.70 with relevant SR's. The Station Master on duty will be personally responsible for setting and locking of Points, for reception and dispatch of all trains.
- 8) The Crank Handle Register is to be maintained in the following pro-forma by the Station Master on duty wherein the particulars of usage of the Emergency Crank Handle must be recorded:
  - a) Date:
  - b) Point Number which failed or required to be tested:
  - c) Time failure:
  - d) Disconnection memo number received from S&T Staff:
  - e) Signature of SM/Signal Official to whom the Emergency Crank Handle is handed over:
  - f) Time Emergency Crank Handle is sent out:
  - g) Individual Point numbers and Line number nominated for admission of dispatch for which Points are set, Clamped and Padlocked:
  - h) Train number to be admitted or dispatched:
  - i) Signature of the Station Master on duty to ensure correct setting, Clamping and Padlocking of the Points:
  - j) Date and Time fault rectified.
  - k) Time of Emergency Crank Handle received back by SM on duty:
  - l) Signature and Designation of the Signal Official who rectified the fault:

## **23. INTERLOCKING OF SIGNALS WITH BLOCK INSTRUMENTS:**

### **23.1. INTERLOCKING WITH HOME SIGNALS:**

All the UP and DOWN HOME Signals are Electrically interlocked with the respective DLBI so that the handle of the DLBI Instrument cannot be turned from TRAIN ON LINE position to LINE CLOSED position of UP or DOWN

direction as the case may be unless the respective Home Signals is put back to NORMAL position and the respective Block Section monitored by HASSDAC is clear of trains.

### **23.2. INTERLOCKING WITH ADVANCED STARTER SIGNALS:**

The UP Advanced Starter Signals No.21 is electrically interlocked with respective DLBI of section JDB-KMEZ so that this Signal cannot be taken OFF until the handle of the concerned Block Instrument is in 'LINE CLEAR' position.

The DN advanced starter signal No.24 is interlocked with DLBI of section JDB-NKX so that this Signal cannot be taken OFF until the Handle of the concerned Block Instrument is in 'LINE CLEAR' position.

### **23.3. SUSPENSION OF LAST STOP SIGNALS:**

When the Double line block instrument for section JDB-KMEZ and JDB-NKX as the case may be is suspended with its handle in any position for whatever reason the concerned Last Stop Signals controlled by the DLBI must be treated as suspended and trains shall be Piloted Out.

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

- 1) High Availability Single Section Digital Axle Counters are provided on Up and Down Block Sections between JDB-NKX and JDB-KMEZ.
- 2) The occupation and clearance of the axle counter section are indicated on the VDU by 'RED' and 'GREEN' light.
- 3) If any Block proving Axle Counter [LVCD] section fails, the Last Stop Signal at the rear station cannot be taken 'OFF' and Block instrument at Advance Station cannot be turned to 'Line Closed' position after arrival of a train and in such case, resetting of HASSDAC for Last Vehicle Checking is to be resorted to in either Section. No train could not be allowed on signal to leave a station in any particular direction unless:

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

## **25. POWER SUPPLY ARRANGEMENT FOR SIGNALLING INSTALLATIONS:**

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

- i. Normal supply from UP AT/ DN AT connected to OHE traction distribution [230V 50HZ).
- ii. Stand by supply (a) 1 standby power supply: Chhattisgarh State Electricity Board Supply.

Normal power supply [Single-phase 230V-50 HZ] to the signaling and interlocking installation at the station is drawn from the traction power sources through ATS. Whenever traction power supply fails the SM on duty shall operate the changeover switch provided in the SM's office connecting the power supply from the healthy sources to the installation in case the knob is not in Auto mode. The SM on duty however maintain the record of power failures either of the traction supply or local supply and he must promptly report the failure of any one or both the power sources immediately

through the section controller and to the concerned Elect. Staff and S&T maintenance staff.

- i. An Auto change over switch is provided in the SM's office with the three power supplies viz., UP AT, DN AT and local for the changing the switch automatically to the available supply. The availability of the supply is indicated by luminous indicator above the circuit breaker for each supply.
- ii. Normally the switch is kept in Auto Mode. If the Switch kept towards UP AT/DN AT position, whenever power block is to be given on the line the on duty SM on duty must ascertain that power is available on the other AT and change over the switch to the desired position.

**NOTE:** If power block is to be given on the UP line DN AT must be available and vice versa.

- iii. In case of failure of one of the AT supply without any power block the on duty SM has to check whether the circuit breaker has tripped [Three circuit breakers are provided in the changeover switch board, one for each supply and their normal position is down and when tripped it goes UP].  
In case of failure of both AT supplies without any power block the local supply shall be utilized by operating the changeover switch. If the circuit breaker is tripping even after resetting, no attempt shall be made to hold it by any means and a message shall be given to concerned SSE [Elect.] and SSE/PSI [OHE] for prompt rectification.
- iv. Whenever there is failure of power supply in one AT the SM on duty shall take prompt action to inform to all concerned for rectification. The on duty SM himself during each shift shall check & test the availability of power supply on both ATS and make an entry in the station diary duly initiating for rectification of failure if any.
- v. For IPS system that provides supply to EI, a manual changeover switch is provided at SM's Office with the two power supply viz., selected supply from CLS panel and DG supply for changing the switch to required supply position manually.
- vi. Normally manual changeover switch is kept in selected supply from CLS panel position, if in case any emergency changeover switch is changed to DG supply position.
- vii. There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

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

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

IPS system is connected with battery as a backup power source for safe working during transition of power and in case no 230 AC supply is available due to any reason.

In the event of failures of all the sources of 230V 50HZ AC supply, the signaling system shall be fed by backup battery bank connected to IPS for a limited power of 8 to 10 hours. The health of the battery bank is monitored through one IPS Monitoring Panel provided in the SM's room which shall display the voltage of 110 V DC battery bank provided as backup source of power supply. Depending up on the health of the battery bank and the system the following indications/alarm will appear on the remote monitoring panel. The indications/alarm, their implications and action to be taken by SM on duty is tabulated below:

| Sl.No | Instruc<br>tion     | Health of<br>Battery | Visual<br>Indicatio<br>n | Audio<br>Indicatio<br>n | Action to be SM on duty.                                                                                             |
|-------|---------------------|----------------------|--------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------|
| A     | -                   | 50% DOD              | Red                      | Alarm                   | Alarm shall be acknowledged by SM on duty.                                                                           |
| B     | -                   | 60% DOD              | Red                      | Alarm                   | Alarm shall be acknowledged by SM on duty.                                                                           |
| C     | System shutdo<br>wn | 70% DOD              | Red                      | Alarm                   | Signal feed cut off and all DC-DC converters to work. Audio alarm will continue till power supply is restored.       |
| D     | Call S&T staff.     | Equipment fault.     | Red                      | Alarm                   | Failure of any module will give the alarm in ASM panel. Alarm shall be acknowledged by SM on duty for audio cut off. |

On duty SM in each shift shall check and record the readings, indications, etc. in the station dairy duly initiating rectification of failures of IPS System, if any. In the event of failure of Remote monitoring ASM console due to any reason when both traction power and local power failed the SM on duty shall inform concerned Electrical staff immediately. In case call S&T staff or 'system shut down' indication appear on the remote monitoring panel of IPS and/ or mal functioning of the remote monitoring panel SM on duty shall inform the same to concerned S&T staff immediately.

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

**Working of Automatic Fire Alarm Detection System:**

- 1) In case of any alarm-Zone number on the LCD display can be seen
- 2) Note down the zone No. and panel display name, by referring display chart.

- 3) Then open the key pad and press the "OFF" button and enter the code 1111(1 digit four times)
- 4) Automatically it will get reset.
- 5) Once you find the zone number rush to that particular area where the detector gives alarm.
- 6) The movement the detection detects any smoke particles, the RED LED will blink along with the alarm.
- 7) 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.
- 8) To alert the people in case of emergency Press "\*" sign of the fire (which is present inside the key pad together for few seconds. This will enable you to hear the panel alarm.
- 9) To reset the panel Press "OFF" button and enter the code 1111 (1 digit four times).
- 10) If the power is on this will enable us to see the red indicator on the panel.
- 11) 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.

**AUTO DIALLING**

If you hear any alarm from the Panel, this system will dial the telephone/mobile number you fed. The pre recorded messages will be heard on the phone, if you want to make two way communications, press "6" on your mobile. You can have this communication for 50 seconds. If you want to talk more, press again "6" before 50 seconds for another 50 seconds. Or you can acknowledge the receipt of call by pressing "2" on SSE/Signal mobile, in case number "2" is not pressed the system will dial again the same telephone number as per the programmed dial attempts and still if acknowledgment not come from 1<sup>st</sup> number then panel will dial 2<sup>nd</sup> number till the time acknowledgment comes it will keep on dialing.

**APPENDIX 'C'**

**ANTI COLLISION DEVICE [RAKSHA KAVACH]:**

-NIL-

**APPENDIX 'D'****DUTIES TO BE PERFORMED BY THE STAFF AT JAGADALPUR STATION:****1) STATION SUPERINTENDENT IN CHARGE ( SUPERVISOR):**

- 1) He is the over all In-charge of the station, always wear proper uniform while on duty. He is also responsible for the efficient discharge of duties devolving upon all the Staff employed at the station as per the roster issued by the DPO/WAT.
- 2) He shall get himself well conversant with the detailed working of Station and panel, points and signals etc.
- 3) He shall pay special attention towards passenger amenities & coaching train's punctuality and yard feasibility. He shall endeavor for minimizing detention to coaching trains by judicious planning of train staff.
- 4) He shall pay attention to smooth functioning of coaching train to eliminate detentions.
- 5) He shall attend to all compliance by traveling/trading public.
- 6) He shall frequently visit the platform, Panel Room, etc. in order to maintain an effective supervision over the said staff and their working.
- 7) He shall see that station premises are kept neat and clean.
- 8) He shall see that all equipments, 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.
- 9) He shall see that all signals, points and the whole machinery at the station are in proper working order. He shall report all the defects to the concerned officials.
- 10) 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.
- 11) He shall ensure compliances of all Operating and Safety records maintained at the station. He is responsible for overall supervision of the station.
- 12) He is responsible for booking all Group "C" and Group 'D' staff for PME and Refresher Course / Safety camp in their due time. His Special attention is drawn out to chapter II of General and Subsidiary Rules and GR 5.01 to 5.08 with relevant Subsidiary Rules, Chapter - XXII of Operating Manual.
- 13) He shall see no staff shall be allowed to operate the Block Instrument, Signals & Points unless he has passed the special examination and hold a valid certificate of competency applicable to his duties at his station.

- 14) All rules prescribed in G&SR Block working Manual and other relevant directives issued from time to time by competent authorities are followed rigidly by all concern and that any irregularities noticed are reported promptly to the authorities concerned.
- 15) All station earnings, periodical returns and statements etc., are sent in time by staff responsible for them.
- 16) All transportation records are checked and complied with BWM 2.09(e) daily. He also ensure proper utilization of wagons placed in parcel siding, registration of indents and supply of wagons as per allotment is done.
- 17) He is also responsible for working beyond his duty period when called upon to do so in the exigencies of services.
- 18) He shall be responsible for maintaining Accident Register and Accident Charts and keeping these up to date.
- 19) He shall investigate all public complaints and send the extracts of the complaint with explanation of the staff and his own remarks to Divisional Office in time. In case of complaints concerning the other department, intimation may be given to the subordinate In-Charge of that department immediately so that action may be taken to avoid recurrence
- 20) He shall ensure that fire fighting equipments at the station such as fire extinguisher, fire buckets etc. are in good fettle and ready for use.
- 21) The Station In-charge should regularly test and record in the charge book, the working of Points, Signals and Track circuit to ensure that:

He must ensure that the essential Safety equipments at his station are the same complete and in good condition. If there is any deficiency it should be made good with no delay.

He shall conduct night and surprise inspections to check the alertness of staff and working of signals, points and visibility of the signals.

The Station in charge at a station shall inspect his station daily with a view to ensure efficient working of.

- a) All public facilities including waiting room, fans, lights, lifts, toilets,
- b) All equipments being in efficient working order. Deficiencies must be promptly rectified, or recorded in Petty Repairs Book.
- c) Safe and efficient working of trains.
- d) SS/SM's office, yards, goods shed and level crossing gates under his charge.
- e) Reservation Enquiry, Public Address system, Public Information Display System, booking offices, Ticket Checking, catering and vending stalls etc.

f) Drinking water availability.

## **2) STATION SUPERINTENDENT /STATION MASTER:**

He is responsible for trains passing during his shift as per OM 2015 Para No.2.02 b) and 2.02 c).

- i) He shall come on duty after taking complete rest and shall not perform his duty under the influence of drugs or intoxicants.
- ii) When on duty or when called upon to do so, in case of emergency, he shall be responsible for obtaining and granting line clear to trains as per SWR & GR.
- iii) He shall handle the control panel himself when on duty and shall not permit any unauthorized person to manipulate panel.
- iv) He shall keep the SM's control panel in his personal custody whenever, he is required to leave his office even for a short duration.
- v) While coming on duty, he shall ensure that all points and signals are in good working order and all the registers, records, pertaining to train passage are completed in all respect before taking over the charge.
- vi) He shall personally ensure that conditions for taking 'off' the reception signals are fulfilled and the clearance of line is verified as per SWR before actually pressing the relevant button for taking off the signals.
- vii) He shall ensure from indications available in the panel that the signals are burning brightly and are giving correct indications.
- viii) He shall ensure that proper indications of points, signals, track circuits crank handle, level crossing gate etc., are displayed at their proper places.
- ix) He shall ensure that all Shunting operations are carried out as per extant orders and GR 5.19 and SRs thereof.
- x) He shall inform the Technician/JE/SE (Sig) in writing or through a written message, any failure of track/signals/points/keys or panels etc. and shall invariably enter these failures in Signals Failure Register.

## **3) TRAFFIC POINTSMAN/TOKEN PORTERS:**

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

- i) He shall obey all lawful orders of the ASM/SM/SS on duty or official in- charge supervising the shunting during the course of shunting operations including coupling or uncoupling of vehicles, wagons, fixing rubber washers, closing wagon doors, displaying hand signals etc.
- ii) He shall exhibit danger signal to the official supervising the shunting if vehicles are fouled during the shunting operation.
- iii) He shall pilot the trains in case of abnormal working and when ordered by the SS on duty.
- iv) He shall be in proper neat and clean uniform while on duty.

- v) He shall come on duty after taking complete rest and shall not perform duty under the influence of liquor, drugs, or intoxicants.
- vi) Neither shall he absent himself from duty nor shall he exchange his duty without prior permission of his superiors.
- vii) He shall not leave his duty unless properly relieved or authorized by his superiors.
- viii) He shall set the points properly in non-interlocked yard and man them for all shunting movements and shall not interfere with the points while the vehicles are standing and or passing over them.
- ix) He shall be responsible to see that fouling marks are kept clear after completion of shunting.
- x) He shall always commence his duty equipped with hand signal lamps during night and flags during day.
- xi) He shall verify the correct setting of route before delivering required papers to the Loco Pilot either through taking 'OFF' the relevant shunt signal or by personal observation.
- xii) In case of track failure he shall assist the SM to ascertain the clearance of line.
- xiii) He shall be responsible for lighting up of the indicators in the evening and putting out in the morning time fixed by DRM office and ensure that these are burning brightly at night.

**APPENDIX 'E'****ESSENTIAL EQUIPMENT:**

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

| <b>Sl. No</b> | <b>Description</b>                                    | <b>Station</b> |
|---------------|-------------------------------------------------------|----------------|
| 1             | Detonators                                            | 20             |
| 2             | Battery operated LED based flashing Hand Signal lamps | 3(1 spare)     |
| 3             | Hand Signal Flags                                     | 3(1 spare)sets |
| 4             | Safety chains with Pad locks                          | 10             |
| 5             | Clamps with Padlocks                                  | 15             |
| 6             | Fire Extinguishers DCPT                               | 2              |
| 7             | Fire & Sand buckets                                   | 5              |
| 8             | First Aid Box                                         | 1              |
| 9             | Stretcher                                             | 1              |
| 10            | Iron Skids                                            | 12             |
| 11            | Line Block Collars ( 2 Engg Block+ 2 Power Block )    | 4              |
| 12            | Motor trolley ON Line collars                         | 2              |
| 13            | Block Suspension Boards                               | 2              |

**APPENDIX 'F'**

**To**

**STATION WORKING RULES OF JAGADALPUR (JDB)**

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

NIL