

STATION WORKING RULES OF BRAHMAPUR STATION (BROAD GAUGE)

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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.

1.0 STATION WORKING RULE DIAGRAM:

The Station Working Rule diagram no. SI/WRD/21062 ALT-A based on CSTE/East Coast Railway's Signal Interlocking Plan No. SI/21062 ALT-A shows the complete layout of the Yard, Siding, Normal position of points, the Signaling and Interlocking arrangements, Gradients and Level Crossings within the station limits. This must be referred to for giving details of the Point numbers and signals when reporting accidents.

2.0 DESCRIPTION OF STATION

2.1. GENERAL LOCATION

BRAMHAPUR (Code: BAM) is a 'B' class five lined station on the Howrah – Visakhapatnam Main line Double line electrified (BG) section of East Coast Railway. It is situated at Km.602.10 from Howrah. The station is provided with standard III Interlocking and equipped with Central Panel/VDU and Multiple Aspect Colour Light signals. The station is worked under Absolute Block System of GR & SRs.

[Refer GR. 1.02(7), 31, 32, 3.11, 3.42, 3.75, 8.01, 8.01(1) a, b, 2(b), 8.03(1), a, b, c (ii), 8.05(2) (3) & 8.06, 8.14, 8.15, 8.16, 14.01 to 14.13 and Chapter-V of Block Working Manual]

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

2.2.1. BLOCK STATIONS,IBH,IBS ON EITHER SIDE AND THEIR DISTANCES:

Bramhapur station is situated between Jagannathpur (Code:JNP) in the North side at a distance of 10.9Km. and Golanthara (Code: GTA) in the South side at a distance of 8.4Km. The section between BAM and GTA has been split into two Block sections by providing Intermediate Block Signals at Km.606.750 and 607.650 on Up and Dn lines respectively which are controlled by Axle counters.

2.2.2. OUTLYING SIDING/DK STATION:

NIL.

2.2.3. 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 |
|------------------------|--|---|
| AT HWH END | | |
| BAM - JNP Up Direction | Up Advanced starter signal no 11 of JNP station | BSLB of UP Line of BAM. |

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| | | |
|------------------------|---|---|
| BAM - JNP Dn Direction | Down Advanced starter signal no 28 of BAM station | The outer most facing point 18A of JNP. |
| AT VSKP END | | |
| BAM - GTA Up Direction | a. | Up Advanced starter signal no 25 of BAM station |
| | b. | IBH signal No.27 of BAM |
| BAM - GTA Dn Direction | a. | Down Advanced starter signal No.12 of GTA |
| | b. | IBH signal No.16 of GTA |
| | | 400m beyond the UP IBH Signal No.27 at Km. 606.750 |
| | | BSLB of GTA |
| | | 400m beyond the DN IBH signal No.16 of GTA at Km. 607.650 |
| | | The outermost facing point no 32A of BAM |

STATION SECTION:

| Station Section | The Point from which the 'Station Section' Commences | The Point at which the 'Station Section' ends |
|-----------------|---|---|
| Up Line | BSLB of UP Line of BAM | Up Advanced starter no.25 of BRAHMAPUR |
| Dn Line | Outer facing point No.32A on Down line at VSKP end of BRAHMAPUR | Down Advanced starter no.28 of BRAMHAPUR |

STATION LIMIT:-

- (i) **UP LINE**
UP Distant signal to UP Advanced starter signal No.25
- (ii) **Down LINE**
Down Distant to Down Advanced starter signal No.28

2.4. GRADIENTS:**a) TOWARDS HWH END: (UP AND DOWN LINES)**

| From | To | Gradient |
|--------------|--------------|--------------|
| CSB | CH 330.50 M | LEVEL |
| CH 330.50 M | CH 955.81 M | 1 in 400 'R' |
| CH 955.81 M | CH 1091.55 M | 1 in 220 'R' |
| CH 1091.55 M | CH 3010 M | 'LEVEL' |

b) TOWARDS VSKP END: (UP AND DOWN LINES)

| From | To | Gradient |
|------|-------------|----------|
| CSB | CH:3000.0 M | LEVEL |

2.5. LAYOUT:

The station is having five running lines in the Main yard (namely DN Loop Line(L-1), DN Main Line(L-2), UP Main Line(L-3), Common Loop Line(L-4) and Common Loop Line(L-5) and five non running lines i.e. three shunting necks, Hot axle siding & Central ware Housing corporation siding.

a) HOT AXLE SIDING:

The Hot axle siding at HWH end of the yard is taking off from DN Loop (Line No.1). The entrance point and corresponding derailing switch are coupled and operated by an arc lever at site. The entrance point is fitted with hand plunger lock. The hand plunger locks are unlocked by Hot axle siding key A1 released by pressing the button No. 47 provided on

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panel/VDU at SM's office. Reception signals i.e. 2A. C2A. in DN direction, shunt signal No.SH3E and Starter Signal no 16 are electrically interlocked in such a way that these signals cannot be taken 'OFF' if the Hot axle siding key is taken 'OUT' from the RKT provided at Hot axle siding location at site.

b) **SHUNTING NECKS:**

- i. A Shunting Neck at HWH end of the yard with one side entry is taking off from Line No.5 (Common Loop) with entrance point and corresponding derailing switch point No. 33, which are motor operated from panel/VDU at SM's office. Entrance into shunting neck is being controlled by Shunt Signals No. SH20B & SH22 & Exit from the Shunting Neck is being controlled by Shunt Signal No. SH7A/B, operated from panel/VDU at Panel Room.
- ii. Another Shunting Neck at HWH end of the yard with one side entry is taking off from Line No.4 (Common Loop) with entrance point and corresponding derailing switch point No.37, which are motor operated from panel/VDU at SM's office. Entrance into shunting neck is being controlled by Shunt Signals No. SH18 & SH20A & Exit from the Shunting Neck is being controlled by Shunt Signal No. SH5A/B, operated from panel/VDU at Panel Room.
- iii. Another also a Shunting Neck at VSKP end of the yard with one side entry is taking off from Line No.5 (Common Loop) with entrance point corresponding derailing switch point No.40, which is motor operated from panel/VDU at SM's office. Entrance into shunting neck is being controlled by Shunt Signals No. SH15 & SH17 & Exit from the Shunting Neck is being controlled by Shunt Signal No. SH6A/B operated from panel/VDU at Panel Room.

c) **CENTRAL WARE HOUSING CORPORATION:**

- i. The Central Ware Housing Corporation siding at HWH end of the yard with one side entry is taking off from Line No.5 at CH 890.50M F/CSB of point no 35A (Common Loop) , which are motor operated from panel/VDU at SM's office. Entrance into Central Ware Housing Corporation is being controlled by Shunt Signal No. SH7A & Exit from the Central Ware Housing Corporation is being controlled by Shunt Signal No. SH22, operated from panel/VDU at Panel Room. There is one Legend Board provided before entrance of the siding till piloted.

d) **PLATFORMS:**

- 1) Line No. 1 (Down Loop) : H.L.PASSENGER PLATFORM.
- 2) Line No. 3 & 4 (Up main & Common Loop) : H.L.PASSENGER PLATFORM.
- 3) Line No. 5 (Common Loop) : GOODS PLATFORM

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

a) **DIRECTION OF TRAFFIC:**

The trains coming from JAGANNATHPUR end are Up trains and the trains coming from GOLANTHARA end are Down trains.

b) **HOLDING CAPACITIES:**

| | | | | | |
|-----------|-------------|--------|--------|----------------|--------------------------|
| Line No.1 | DN Loop | 762.25 | Metres | (Electrified). | From SB to starter. |
| Line No.2 | DN. Main | 775.55 | Metres | (Electrified). | From SB to starter. |
| Line No.3 | UP Main | 958.05 | Metres | (Electrified). | From starter to SB |
| Line No.4 | Common Loop | 787.25 | Metres | (Electrified). | From starter to Starter. |
| Line No.5 | Common Loop | 725.38 | Metres | (Electrified). | From starter to Starter. |

2.5.2. **NON RUNNING LINES AND THEIR CAPACITIES IN CSL:**

| | | | | | |
|----|-------------------------------|-------|--------|---------------|---------------|
| 1. | Hot axle Siding | 45.25 | Metres | (Electrified) | From BJ to DE |
| 2. | Shunting Neck 1 (HWH end) | 367 | Metres | (Electrified) | From SH to SB |

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|----|--|-----|--------|---------------|---------------|
| 3. | Shunting Neck 2 (HWH end) | 312 | Metres | (Electrified) | From SH to SB |
| 4. | Shunting Neck 3 (VSKP end) | 641 | Metres | (Electrified) | From SH to SB |
| 5. | Central Ware Housing Corporation Siding | --- | --- | --- | --- |

2.5.3.a) **ANY SPECIAL FEATURE IN THE LAYOUT:**

Nil.

b) **SPECIAL RESTRICTIONS:**

- i) Shunting in the face of an approaching train is prohibited.
- ii) Hand shunting/fly shunting is prohibited at both ends of the yard.
- iii) The overrun line must not be used for stabling of vehicle or harboring an engine with or without vehicle.
- iv) DN Trains running through over common loop L-4 and Goods Loop L-5 in Down direction at this Station is strictly prohibited .In case, it is unavoidable to pass through the train admitted over common loop, it should be brought to a stop at the concerned Starter Signals before the same is taken "OFF".

c) **SPECIAL INSTRUCTIONS:**

- i) Entire station yard except 33/35 AXT provided with track circuits. In case of failure of track circuit/Axle counter the clearance of the concerned line should be ensured physically before a train is piloted.
- ii) Whenever any non signal movement has taken place over a point operated by motor whether facing or trailing direction, the SM on duty shall operate the points to normal and reverse setting for the purpose of setting the point. After clamping & padlocking of the points and the indication is correctly available, further movement may be permitted over the points.
- iii) Movement of non-insulated push trolley is prohibited between JNP-BAM and BAM-GTA sections vide SR 15.25.04 (c).
- iv) In case of failure of Digital Axle Counters provided for monitoring Block Section at both ends, the resetting should only be initiated for normalising the Block Instrument after ensuring complete arrival of the train by physical verification of Last Vehicle by SM on duty.
- v) The signal no. 25 UP advanced starter of BAM will function as Up Advanced starter of BAM as well as UP Gate Distant of L.C.Gate no. 313 at Km. 604/17-19 (UP), 604/20-18 (DN). The green aspect of signal no. 25 is controlled by green aspect of up gate home 2GF of L.C.Gate No. 313 at Km. 604/17-19 (UP), 604/20-18 (DN).
- vi) The Up gate Home 2GF of L.C.Gate No. 314 at Km. 605/22-20 (DN), 605/19-21 (UP) will function as Up gate home as well as Up IB Distant of BAM and the arrangement is such that the signal will not display a restrictive aspect than the 'STOP' aspect unless the concerned L.C.Gate No. 314 at Km. 605/22-20 (DN), 605/19-21 (UP) is closed and locked against road traffic and gate home signal is taken off in Up direction.
- vii) The signal no. 28 DN advanced starter of BAM will function as DN Advanced starter of BAM as well as DN Gate Distant of L.C.Gate No. 309 at Km. 599/7-9 (UP), 599/10-08 (DN). The green aspect of signal no. 28 is controlled by green aspect of 4GF DN Gate Home of L.C.Gate No. 309 at Km. 599/7-9 (UP), 599/10-08 (DN) and the arrangement is such that the signal will not display a less restrictive aspect than the 'STOP' aspect till line clear has been obtained from the station ahead.
- viii) Up loop starter (S 17) in station yard and DN Gate Home signal at Km. 605/19-21 (UP), 605/22-20 (DN) are placed at right hand side of the track due to infringement with respect to SOD and poor visibility due to curvature respectively.
- ix) Speed over turn outs on directional loop lines i.e. line no. 1 & 4 are 30 Kmph as per CRS Sanction No. 694 dtd. 24.09.09.
- x) UP IB Signal will function as UP IB Signal of BAM as well as UP Gate Distant Signal of L.C.Gate at Km. 608/13-15 (UP) and the green aspect is controlled by UP Gate Home Signal No. 3 G.F. and the arrangement is such that the signal will not display a less restrictive aspect than the 'STOP' unless line clear from GTA in UP direction is obtained and green aspect will not display unless the L.C.Gate at Km. 608/13-15 (UP) is closed and locked against road traffic and UP Gate Home Signal No. 3 G.F. is taken OFF.

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2.6. LEVEL CROSSINGS:

- A. There is a mid-section 'Spl' class manned interlocked level crossing gate (L.C.No. 304) situated at Km. 594/17-19 (Up), 594/20-18 (Dn) between JNP and BAM. Telephone communication is provided between the Gate lodge and the SM's office of JNP.
- B. There is an 'SPL' class mid-section manned interlocked level crossing gate (L.C.No. 306) situated at Km. 596/30-28 (Dn), 596/27-29 (Up) between JAGANNATHPUR and BRAHMAPUR stations and is equipped with gate signals. Telephone communication is provided between the Gate Lodge and the SM's office of JNP station.
- C. There is a 'Spl' class mid-section manned interlocked level crossing gate (L.C. No. 309) situated at Km. 599/7-9 (UP) & 599/10-8 (DN) between BAM-JNP. Telephone communication is provided between the Gate lodge and the SM's office of BAM.
- D. There is a 'Spl' class manned interlocked level crossing gate (L.C.No. 311) situated at Km. 600/41-601/1 (Up) & 601/2-600/42 (Dn) at HWH end of the Station yard. Telephonic communication is provided between gate lodge & SM's office of BAM.
- E. There is a 'Spl' class manned interlocked level crossing gate (L.C.No. 312) situated at Km. 602/19-21 (Up) & 602/22-20 (Dn) at VSKP end of the Station yard. Telephonic communication is provided between gate lodge & SM's office of BAM.
- F. There is a 'Spl' class mid-section manned interlocked level crossing gate (L.C.No. 313) situated at Km. 604/17-19 (Up) & 604/20-18 (Dn) between BAM-GTA. Telephonic communication is provided between gate lodge & SM's office of BAM.
- G. There is a 'B2' class mid-section manned interlocked level crossing gate (L.C.No. 314) situated at Km. 605/19-21 (Up) & 605/22-20 (Dn) between BAM-GTA. Telephonic communication is provided between gate lodge & SM's office of BAM.
- H. There is a 'C' class mid-section manned non-interlocked level crossing gate (L.C.No. 316) situated at Km. 607/23-25 (Up), 607/26-24 (Dn) between BAM-GTA. Telephone communication is provided between the gate lodge and the SM/GTA.
- I. There is a 'A' class mid-section manned interlocked level crossing gate (L.C.No. 317) situated at Km. 608/13-15 (Up) & 608/16-14 (Dn) between BAM-GTA. Telephonic communication is provided between gate lodge & SM's office of GTA.
- J. There is a 'C' class mid-section manned non-interlocked level crossing gate (L.C.No. 319) situated at Km. 610/17-19 (Up), 610/20-18 (Dn) between BAM-GTA. Telephone communication is provided between the gate lodge and the SM/GTA.
- K. There is a 'B1' class mid-section manned interlocked level crossing gate (L.C.No. 320) situated at Km. 611/24-22 (Dn) & Km 611/21-23 (Up) between BAM-GTA. Telephonic communication is provided between the gate lodge & SM/GTA.

3.0 SYSTEM AND MEANS OF WORKING:

Trains are worked under Absolute Block System by means of SGE type Double Line Lock and Block Instrument for JNP-BAM & BAM-GTA sections. The Block Instruments shall be operated by Station Master on duty and keys of the Block Instruments shall remain under personal custody of SM on duty. The authority for the Loco Pilot to proceed is taking 'OFF' of the last stop signal. The Block Instruments are of non co-operative type. Telephone is attached with the Block Instruments for granting/obtaining line clear. Telephone is provided at UP IBS post to establish communication by the Loco Pilot with SM on duty in case of necessity. [Refer Chapter XIV of GR & SRs, Chapter –VI of Block Working Manual and GR 14.08(a)].

4.0 SYSTEM OF SIGNALLING AND INTERLOCKING:

- 4.1 This Station is provided with Standard-III interlocking with Multiple Aspect Colour Light Signaling having maximum equipment of signals. The aspects and indications of the MACLS are governed by GR.3.08 (4) (b).

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The Station is provided with central panel (EI) interlocking and having no end cabins. All signals and points are electrically operated from the central panel/VDU provided at SM's Office. Calling-on signals are provided below Home signals (i.e. in both Up & Down directions) as per GR.3.13 (1) (b), (2) (3) (4) & (6) (b). Central panel with miniature push buttons or VDU are provided in the Station Master's office to electrically control all signals, points, siding key, Gate key, etc. The control panel is provided with SM's key which shall always remain in the personal custody of the Station Master on duty in terms of SR 3.36.03(a).

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. Reminder Block collars are provided for use on push button which will be placed on the point button and /or route button to prevent operation of the button in case concerned line is blocked.

(The details of stand by operation from VDU is given under Appendix-'B-1')

CRANK HANDLE

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 and the procedure for use of crank handle for motor operated points shall be followed as per operating manual para-20.06.

| <u>CRANK HANDLE</u> | <u>CONTROL POINTS</u> |
|----------------------------|------------------------------|
| CH-1 | 32 |
| CH-2 | 34,45 |
| CH-3 | 37,39,42 |
| CH-4 | 40,44 |
| CH-5 | 41,46 |
| CH-6 | 33,35 |
| CH-7 | 31 |

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

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

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

TAKING OFF CALLING-ON SIGNAL:

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

admission of train on blocked line. Before taking off Calling-on signal during failure of track circuit the route and clearance of the track over which the train will be admitted must be checked physically by SM on duty.

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit in rear of the home signal. When a train occupies the track circuit a RED light strip will appear on the panel. The particular route on which train is intended to be received shall be set by operating the point push button and group button individually or by signal and route button pressing or by crank handling in the event of failure of operation of points through panel/VDU. After the route is set, the Calling-on signal switch 'C1A/B/C' – 'C2A/B/C/D' (Red with White dot) (as the case may be), shall be pressed simultaneously along with the concerned route button for 2-3 seconds and released. After a lapse of 120 seconds, the Calling-on signal clears i.e., a Yellow light glows at the concerned calling-on signal on the panel. Every such operation has to be recorded by the on duty SM along with the reasons to do so.

NOTE:

SM on duty to ensure that no through signals are given while receiving on Calling-on signal.

IBS SIGNALS:

IBS signals no 27 of BAM at Km 606.750 and no 16 of GTA at Km 607.650 on UP and DN lines respectively have been provided.

SHUNT SIGNALS:

Shunt signals SH3A/B/C/D/E,, SH5A/B, SH7A/B, SH18,SH-20,SH22,are provided at HWH end of the yard and SH4A/B/C, SH 6A/B, SH-15 & SH-17 are provided at VSKP end respectively for shunting purpose.

EMERGENCY CROSS OVER:

One emergency cross over is provided at either end of the yard.

L.C. GATE OPERATION:

Details described in Appendix-'A'.

EMERGENCY POINT OPERATION (BLACK WITH RED DOT):

Emergency point operation facility is provided to operate the point from the panel in case of failure of point controlling track circuit/Axle counter. A push button (Black with Red dot) for emergency point operation is provided on the top of the panel. If such operation is necessary, the SM on duty, after ensuring that SM's emergency point key is 'IN' and no vehicle is standing on the concerned point zone shall press the emergency point operation button along with relevant point button simultaneously. Then keeping point button pressed, emergency point button to be released and the point group normal button or point group reverse button is to be pressed for operating the point to 'NORMAL' or 'REVERSE'. All such operations will be registered in the emergency point operation counter. Every emergency point operation shall be recorded in the station diary and in the register meant for this purpose.

EMERGENCY ROUTE RELEASE COUNTER:

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

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

The 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 simultaneously pressing the signal cancellation button and the concerned signal button. After this first the emergency route release button (white with red dot) positioned in the top of panel to be pressed and subsequently the concerned signal button is to be pressed releasing the emergency route release button. A flashing White light will be lit indicating that the timer is working. After

120 seconds, the White light along with the white strip of light will disappear suggesting that the route has been released. In case the route illumination (white strip lights) does not disappear, it suggests that the route is not released/cancelled. In such case the concerned S&T staff should be advised immediately to get the emergency route release button sealed after rectification of fault if any.

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

TRACK CIRCUITS:

All the running lines except 33/35 AXT are track circuited. In addition short length track circuits in advance of Advanced starter Signals and Home signals in both the directions are also provided. For Calling-on signals (91M Rail length) track circuits are also provided in rear of the Home signals in both directions. From last trailing point/fouling mark in either side of Yard to Advanced Starter Signals is also track circuited (i.e. 25AT and 28AT in Up and Down directions respectively). Normally the panel is blank except point and Block section indication Indications for the above track circuits/Axle counters are available on panel/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.

AXLE COUNTERS:

- i) Electronic Analog Axle Counters are provided for 33/35 AXT in the yard for counting Axles 'IN' and counting axles 'OUT' which indicate whether the concerned berthing track monitored by analog axle counters is clear or occupied.
In case of failure of analog Axle Counter the re-setting of axle counter must be done as per the procedure given in Appendix-"B" under para 14.0 of this SWR. In the event of failure of Axle Counter/ Track circuit the clearance of loop line will be ensured by physical check by the SM on duty and train shall be admitted as per GR.3.69 and SR there to.
- ii) Digital Axle counter is provided in the following sections:
 - a. DN LV/BLOCK SECTION BAM-JNP: A pair of Digital axle counter is provided on Down line between DN Advanced Starter of BAM to 180 m beyond Home signal of JNP.
 - b. UP LV/BLOCK SECTION JNP-BAM: A pair of Digital axle counter is provided on UP line between UP Advanced Starter of JNP to BSLB of BAM..
 - c. DN LV/BLOCK SECTION GTA-BAM: A pair of Digital axle counter is provided on Down line between 400m beyond the DN IBS signal No.16 of GTA to beyond 180 m of DN home signal of BAM.
 - d. UP LV/BLOCK SECTION BAM-GTA: A pair of Digital axle counter is provided on Up line between 400m beyond the UP IBS signal No.27 of BAM to beyond 180 m of UP Home of GTA.
- iii) Analog Axle counter is provided in the following sections:
 - a. Down IB Section GTA – BAM: A pair of Analog Axle Counter is provided on Down line to monitor the Down IB Section from Advance Starter Signal of GTA to 400 mtr. beyond the DN IBS signal no. 16 of GTA.
 - b. Up IB Section BAM – GTA : A pair of Analog Axle Counter is provided on Up line to monitor the UP IB Section from Advance Starter Signal of BAM to 400 mtr. beyond the UP IBS signal no. 27 of BAM.

INTERMEDIATE BLOCK STOP SIGNALS:

The section between BAM and GTA has been split into two Block sections by providing an Intermediate Block Signals at Km.606.750 and 607.650 on Up and Dn lines respectively which are controlled by Axle counters. The section from advance starter to IB signal is called IB section and the section from IB signal to BSLB/Facing point of the next station is called Block/LV section.

The Advanced starter can be taken OFF, when the IB section is clear. The IB signal can be taken OFF only when the LV section is clear and also LINE CLEAR has been taken by the station in advance. As soon as the UP train passes UP IBS signal no. 27 of BAM, UP train entering section buzzer starts ringing. This buzzer will continue to ring till the SM of GTA

station turns the commutator of lock and block instrument from "LINE CLEAR" to "TRAIN ON LINE" or presses DN train entering section muting switch.

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

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

A resetting arrangement for resumption of the system in case of failure of axle counter has been provided in the SM office of the adjacent Block Station Golanthara. After being assured by both the SM's that the last vehicle has arrived complete at the receiving station by exchanging Private Number, the system of IB signalling to be resetted using Reset Push Button.

(Details of resetting procedure for IB/LV section given in APPENDIX-'F' under para 2.8 and 2.9 of this SWR).

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

The relay room should be kept locked with two separate locks. The arrangement should be such that one key is kept with on duty SM and other key with Maintainer. Whenever required, the SM shall hand over the key to Maintainer with proper acknowledgement in basement/relay room register. The maintainer on receipt of key from SM may use the same and key in his custody to open the basement/relay room by inserting key one after another separately into earmarked locks. After completion of the work, the basement/relay room is to be locked using both the keys separately and designated key to be handed over to the SM. The details of the transactions are to be properly recorded in basement/relay room register maintained at the station and duly signed by the SM and Maintainer respectively.

4.2.1 **POWER SUPPLY :**

1. A changeover switch is provided in the Station Master's Office with the three power supplies viz., Up AT, Down AT and Local, for changing the switch to the required supply position. A luminous indicator above the circuit breaker for each supply indicates the availability of the supply.
2. Normally the switch will be kept towards Up AT or Dn AT position. Whenever power block is to be given on the line, the on duty SM must ascertain that power is available on the other AT E.g.: If power block is to be given on the Up line, Down AT must be available and vice-versa.
3. 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, the Local supply shall be utilized by operating the switch.
If the circuit breaker is tripping even after resetting, no attempt shall be made to hold it by any other means and a message shall be given to the AEE and CTFO/PSI for prompt rectification.
4. Whenever there is a failure of power supply in one AT the SM. shall take prompt action to inform to all concerned for the rectification. The SM himself, during his daily checks, shall test the availability of power supply on both ATs and make an entry in the Station Diary duly initiating action for rectification of failure, if any.

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5. IPS (Integrated Power Supply) arrangement has been provided at the station to take care of the signaling system as well as to avoid blanking of signals in case of power failure.

In case of AT/GRIDCO Power failure the IPS takes care of the signaling system approximate for 6 to 8hrs.

One Indication panel for monitoring of IPS voltage has been provided in SM Room. The Indication panel shall display the voltage of IPS as well as health of the IPS provided to operate signaling gears. Audio Visual alarm has been provided in the panel to guide on duty SM to take action in case of low voltage or no voltage or any defect in IPS is shown in the SM panel. Details indications and alarm have been described below:

SM INDICATION PANEL FOR IPS:

- Call S&T - Red indication
- Signal system shut down - Red indication
- Emergency start DG - Red indication
- Start DG - Red indication
- Stop DG - Green indication

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

When ever alarm appears on the SM 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.

5.0 TELECOMMUNICATIONS:

- i) The Station is connected to Khurda Road Control by a telephone on the BSDP - PSA Control Circuit.
- ii) Telephone attached to SGE type Lock and Block Instruments for sections GTA - BAM and BAM-JNP.
- iii) Railway Auto Telephone is provided in the SM's office.
- iv) Telephone communication is provided between Station Master on duty to UP IBH post and Hot axle siding location.
- v) Telephone communication is provided between Station Master on duty to Up CH locations and to Dn CH Locations.
- vi) Telephone attached to L.C.Gate at Km. 599/7-9 (Up) & 599/10-8 (Dn), 600/41-601/1(Up) & 601/2-600/42 (Dn), 602/19-21 (Up) & 602/22-20 (Dn), 604/17-19(Up) & 604/20-18 (Dn) & 605/19-21 (Up) & 605/22-20 (Dn),
- vii) The Station is connected to KUR - PSA traction power control circuit.
- viii) VHF set is provided at this station.
- ix) BSNL phone is provided at the station.

NOTE

- i). For obtaining line clear VHF should be used as a last alternative and not as a sole means of communication.
- ii). VHF & Walkie Talkie sets should not be used for un-necessary discussion with Loco Pilot/ Guards and any other staff.

6.0 SYSTEM OF TRAIN WORKING:

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

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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. **DUTIES OF TRAIN WORKING STAFF IN EACH SHIFT:**

The following is the complement of operating staff provided at the station in each shift for train passing duty.

| | | |
|--------------------|---------|------------------------------|
| SS (In-Charge) | 1 (One) | Supervisory |
| SS | 1 (One) | In each day shift |
| SM/ASM | 1 (One) | In each shift |
| Traffic points man | 2 (Two) | 1 in each shift at each gate |
| Traffic Gateman | 1 (One) | In each shift. |

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 SS (In-Charge)'s office and in Gate lodge for traffic gateman (Details of duties are given in APPENDIX-'D').

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

The SM on duty is responsible to ascertain the clearance of the nominated line between BSLB/first facing point and Advanced starter signal in each direction.

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 (In-Charge) is satisfied that the concerned staff is competent for the post. No Railway servant unless duly examined and certified shall be allowed to work the points and signals. The SS (In-Charge) 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 fully about their duties and responsibility.

The SS (In-Charge) 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 of the SS (In-Charge).

The declarations are to be renewed in the following cases:

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

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

Sufficient private number books and identification number sheets in sealed covers shall always be kept in stock by SS (In-Charge) under lock and key by maintaining one register for this purpose.

6.2 **CONDITIONS FOR GRANTING LINE CLEAR:**

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

- (i) The whole of the last preceding train has arrived completely inside the outermost facing points in Down Direction and the Block Section Limit Board in UP Direction,
- (ii) All necessary signals have been put back to 'ON' behind the said train.
- (iii) The line is clear upto BSLB on Up Line for Up Trains and up to the outermost facing point No.32A beyond Down Home signal on Down Line for Down trains.
- (iv) All signal lights pertaining to the train are burning properly.

[Ref: GR 8.01(1) (a) (b), 8.01(2) (b) and 8.03(1(a) (b) & c (ii) & SR3.68.05]

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NOTE:

- (1) If the light of the reception signal is found not burning, line clear shall not be granted for train till such time it is ensured that the concerned Loco Pilot is notified of the fact in writing as per the GR 3.49(4) by the Station Master of the station to which such line clear is to be granted vide GR 3.49(4).
- (2) Before granting line clear to an UP train the SM on duty shall inform the gateman at Km. 599/7-9 to close the gate against road traffic.
- (3) Before granting line clear to a DN train the SM on duty shall inform the gatemen at Km. 605/22-20 & 604/20-18 to close the gate against road traffic.

RECEPTION OF TRAINS:

Before admitting a train on any line, it must be ensured that the correct route set indication for the respective line shows 'Yellow' indication in the Control panel/VDU. To receive a train for which line clear is given, the Station Master on duty shall nominate a clear line in consultation with the Section Controller on duty. He shall personally satisfy himself that the nominated line is clear and free from all obstructions by seeing the panel indication or by physical verification of the nominated route in case of failure of track circuit.

He shall suspend all non-isolated shunting and thereafter set the points of the nominated route by means of push button switch provided on the control panel/VDU. He shall then verify from the visual indication available in the panel that points are set to the desired route. The interlocked L.C.Gate is to be closed and the key is to be transmitted to panel/VDU through RKT.

Unless the panel/VDU indication for the concerned line is 'Clear' even with other conditions satisfied, the operation of panel control button by the Station Master on duty will not permit the concerned Home signal to be taken "OFF". However, reception of trains will be possible in such case with "Calling-on signal" provided below Home signal unless the first track circuit in advance of home signal does not show Red indication.

The Station Master on duty shall then operate the concerned push button on control panel for taking "OFF" the reception signal. He shall then verify on the panel that the correct reception signal is taken "OFF".

6.2.1. **ANY SPECIAL CONDITIONS TO BE OBSERVED WHILE RECEIVING OR DESPATCHING A TRAIN:**

6.2.2 **SETTING OF POINTS AGAINST BLOCK LINE:**

When a running line is blocked by stabled load wagon, vehicle or by a train which is to cross or give precedence to another train or immediately after the arrival of a train, the points in rear on double line sections and at either end in single line sections shall be set against the blocked line except when shunting or any other movement is required to be done on that line. [Refer SR 3.51.06(a)].

If all the lines at a station happen to be blocked, when line clear has been granted to a train, the point should be set for the line occupied by a stabled load or a Goods train. [Refer SR. 3.51.06 (b)].

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

6.2.3. **RECEPTION OF A TRAIN ON BLOCKED LINE:**

Whenever trains are to be admitted on an blocked line, calling on signal may be taken off. If calling on signals failed then the SM on duty shall authorize on duty TPM with form T/509, indicating reasons for such admission the line number and nature of obstruction on that line. Before handing over the authority the SM on duty shall ensure the correct setting, clamping, and padlocking of both the facing and trailing end of the concerned route vide SR 3.69.03. A

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

6.2.4 RECEPTION OF TRAIN ON NON-SIGNALLED LINE:

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

- a. The train is brought to a stand at the first stop signal.
- b. The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand.
- c. All points over which the train has to pass are correctly set, both the facing and trailing points are clamped and padlocked.
- d. The Loco Pilot is authorized to pass the approach stop signals at 'ON' through a written authority i.e T/369 (3b). [Refer GR 5.10].

6.2.5 DESPATCH OF TRAIN FROM NON-SIGNALLED LINE:

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

6.2.6 DESPATCH OF TRAIN FROM LINE PROVIDED WITH COMMON STARTER SIGNAL:

NIL.

- 6.2.7 a. For receiving Up & Down trains on common loop, the clearance of the overrun line should be ensured.
- b. All running lines are track circuited. In case of failure of track circuits, the clearance of the nominated line has to be ensured physically before piloting 'IN' a train.

6.3 CONDITIONS FOR TAKING "OFF" APPROACH SIGNALS:

The SM on duty shall nominate a clear line not only up to the starter but also for an adequate distance beyond it for reception of trains. [Refer GR 3.36, 3.38, 3.40, 3.47, 4.17 and SR 3.36. 01, 3.36.02, 3.36.04, 3.40.01, 3.40.02, 4.17.02, and Block Working Manual].

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

If a signal once taken 'OFF' for reception/dispatch of a train, has to be, in an emergency put back to 'ON' In case of reception signal, the route over which the train would pass shall not be altered until after the train has come to stand unless the route has to be altered to avert an accident. In case of departure signal, before changing the points or allowing any other movements the "Authority to Proceed" if any, handed over to the Loco Pilot must be withdrawn

and the Loco Pilot of the train concerned shall be advised of the change in writing and his acknowledgement will be obtained in a memo. [Refer SR 3.36.02 (a) & (b)]

6.4 SIMULTANEOUS RECEPTION/DESPATCH AND PRECEDENCE OF TRAINS:

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

| | | |
|----|---|---|
| 1. | While Receiving of an DN train on line No.1 (DN Loop) setting to over run line. | Receiving/Dispatching of a UP train on/from line No. 3 or 4 or 5 OR dispatching an DN train from the line No.2 or 4 or 5. |
| 2. | While Receiving of a DN train on line No.2 (DN Main) | Receiving/Dispatching of a UP train on/from line No.3 or 4 or 5. |
| 3. | While Receiving of a UP train on line No.3 (UP Main) | Receiving/Dispatching of an DN train on/from line No.1 or 2 |
| 4. | While Receiving of an UP train on line No.4 (Common loop),keeping DS No.40 in normal position | Receiving/Dispatching of a DN train on/from line No.1 or 2 and Dispatch of UP Train from Line-3. |
| 5. | While Receiving of a UP train on line No.5 (Common Loop)with point no 46 normal | Receiving/Dispatching of a DN train on/from line No.1 or 2. OR dispatching an UP train from Line No.3 and 4 |

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|----|---|---|
| 6. | Receiving of an DN train on Line no.4 or 5 (Common loop) set to over run line | Dispatching a DN train from Line no.1 or 2. |
|----|---|---|

ADEQUATE DISTANCE(SIGNAL OVERLAP):

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

FOR DN TRAINS:

| Line Number | From | To |
|-------------------|-----------------------------------|---|
| 1. DN Loop | DN Loop Starter signal No. 16 | Upto the end of the Over-Run Line OR upto the edge of the LC Gate at Km. 600/41-601/1(UP) & 601/2-600/42(DN). (Keeping the gate in open condition) |
| 2. DN Main | DN Main Line starter signal No.26 | up to the edge of the LC Gate at Km. 600/41-601/1(UP) & 601/2-600/42(DN). (Keeping the gate in open condition) |
| 4. Common Loop | Common Loop starter Signal No.18. | Up to the DS point No. 37, keeping 37 point in normal position or upto the edge of the LC Gate at Km. 600/41-601/1(UP) & 601/2-600/42 (DN) (Keeping the gate in open condition) & point no 39 & 31 in reversed position. |
| 5. Common Loop | Common Loop starter Signal No.20. | Up to. the DS point No.37 keeping point no 37 in normal & point no 41 in reversed position or up to the edge of the LC Gate at Km. 600/41-601/1(UP) & 601/2-600/42 (DN) (Keeping the gate in open condition) & point no 35 in normal position or upto the edge of the LC Gate at Km. 600/41-601/1 (UP) & 601/2-600/42 (DN) (Keeping the gate in open condition) & point no 41,39 & 31 in reversed position. |

FOR UP TRAINS:

| | | |
|-------------------|---------------------------------------|---|
| 3. UP Main | UP main line starter signal No.23 | Up to the edge of the LC Gate at Km. 602/19-21 (UP) & 602/22-20 (DN). (Keeping the gate in open condition) |
| 4. Common Loop | Common Loop UP Starter Signal No.17 | Up to the edge of the LC Gate at Km. 602/19-21 (UP) & 602/22-20 (DN). (Keeping the gate in open condition) & point no 46,44 and 42 in normal position or Upto the edge of the LC Gate at Km. 602/19-21 (UP) & 602/22-20 (DN). (Keeping the gate in open condition) & point no 46 in normal and 42 in reversed position |
| 5 Common Loop | Common loop line starter signal No.15 | Up to the edge of the LC Gate at Km. 602/19-21 (UP) & 602/22-20 (DN). (Keeping the gate in open condition) & point no 46 and 44 in normal position or Upto the edge of the LC Gate at Km.602/19-21(UP) & 602/22-20 (DN). (Keeping the gate in open condition) & point no 46,44 and 42 in normal position or Upto the edge of the LC Gate at Km. 602/19-21 (UP) & 602/22-20 (DN). (Keeping the gate in open condition) & point no 46 and 42 in reversed position |

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6.5 COMPLETE ARRIVAL OF TRAINS:

The entire block section between BAM-GTA and BAM-JNP on both Up and Down Lines are monitored by axle counter system and the position of the block section whether occupied or clear is indicated in panel board at SM's office. As soon as train enters in to that block section. The RED indication appears on control panel. After whole train clears the block section GREEN indication appears on the control panel. 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 control panel.

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 & he need not to withhold closing of block section in rear. He shall obtain confirmation under exchange of private number about the complete arrival of the train with its last vehicle from the station in advance and subsequent trains may be dispatched.

In case of failure of Axle counter the SM on duty shall obtain complete arrival certificate from the guard of the train in the complete arrival register (T/1410) maintained at the station for stopping train. [Refer SR 4.17.01 e(i)]. For through passing train the SM on duty shall satisfy himself the complete arrival of the train by verification of the last vehicle indicator. [Refer SR 4.16.05] that the train arrived complete.

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

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 and Loco Pilot shall be issued with caution Order to proceed cautiously and stop short of any obstruction as per SR. [Refer 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 the event of motor trolley is delayed in the section the SM on duty shall take action in terms of SR. [Refer SR 15.25.03.b)(vi)]

6.6 DESPATCH OF TRAINS:

To despatch 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 panel /VDU. He shall suspend all non-isolated shunting and the Station Master will ensure that the Level crossing Gate is closed against road traffic and then shall take "OFF" the concerned route starter and Advanced starter signal. The 'OFF' aspect of the route starter and Advanced starter is the authority to proceed into the block section. As soon as the train passes UP IB signal Train entering section indication will appear on the panel. The SM will then send the train entering block 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)]

DESPATCH OF TRAINS ON UP LINE BETWEEN BAM-GTA:

The Up Advanced starter signal No 25 of BAM shall be taken 'OFF' only when the 'axle counter clear' indication between UP Advanced starter and the UP IBH signal No.27 is available on the panel. A train may be allowed to proceed up to the IBH signal No.27 even when line clear has not been received from GTA. The IBH signal No. 27 shall be taken off only when 'Line Clear' has been received on the Block Instrument.

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Signal No. 27 will function as UP IB Signal as well as Distant Signal of L.C.Gate at Km. 608/13-15. Unless the gate at Km. 608/13-15 is closed, locked and signal is taken off, "Green" aspect of signal No. 27 will not come.

The Station Master on duty shall watch the safe passage of the train with its last vehicle indicator. After the train passes the UP IBH signal complete UP train entering section buzzer starts ringing, then he shall send the train entering block section signal to the station in advance. If a train is worked without Guard or Brake Van the instruction laid down in Subsidiary Rule shall be followed. . The interlocked level crossing gate shall remain closed against road traffic for dispatch of trains. [Refer SR. 3.42.05, 4.23.02 & 4.25.02].

Note: Before dispatching of an UP train, the SM on duty shall ensure the closure of the L.C.Gate at Km. 607/23-25 (UP), 607/26-24 (DN) and 610/17-19 (UP) & 610/20-18 (DN) between BAM-GTA from SM/GTA supported by Private Numbers separately.

6.7 **TRAINS RUNNING THROUGH:**

The procedure detailed in Para 6.5, 6.6 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 any thing 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. [Refer GR 3.42, 4.17, 4.42 & 4.42.2]. The SM on duty shall also depute his pointsman with hand signals to the other side of the passing train to observe the passing train. He shall show green hand signal horizontally on the other side until anything wrong is noticed on the train. He shall show danger hand signal if he notices anything unsafe for the safe passage of the train. He shall report the same to the SM on duty for taking further suitable action in terms of SR 4.42.02(d).

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 GR4.17 & SR 4.17.02]

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:**

In case of failure of axle counter in the station yard, the clearance of the concerned line should be ensured physically before a train is piloted.

If the axle counter fails between the block sections, resetting procedure will be adopted as illustrated in 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 partial/total failure of block instrument the concerned block instrument shall be suspended till its rectification and trains shall work as per GR. [Refer SR 6.02.03 & 6.02.06).

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

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D. RECEPTION OF A TRAIN ON BLOCKED LINE:

Whenever trains are to be admitted on an blocked line, calling on signal may be taken off. If calling on signals failed then the SM on duty shall authorize on duty TPM with form T/509, indicating reasons for such admission the line number and nature of obstruction on that line. Before handing over the authority the SM on duty shall ensure the correct setting, clamping, and padlocking of both the facing and trailing end of the concerned route vide SR 3.69.03. A stop hand signal shall be exhibited by SM on duty at a distance of not less than 45M from the point of obstruction to indicate the loco pilot as to where the train shall be brought to stand.

E. RECEPTION OF A TRAIN ON NON-SIGNALLED LINE:

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

- a. The train is brought to a stand at the first stop signal.
- b. The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand.
- c. All points over which the train has to pass are correctly set & both, the facing and trailing points are clamped and padlocked.
- d. The Loco Pilot is authorized to pass the approach stop signals at 'ON' through a written authority i.e. T/369 (3b). [Refer GR 5.10].

F. DEFECTIVE SIGNALS:

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

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

G. INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:

However, before declaring a signal is defective, the setting of the point on the route to which it applies shall be inspected by the Station Master irrespective of the position of the switches. Points laid down in GR with relevant SRs shall be followed. [Refer GR 3.68, 3.70 & SR 3.77.01(b)].

Initiate action in accordance with the procedure prescribed in GR and relevant Subsidiary Rules there to. [Refer GR 3.49(4) and 3.68, 3.77].

H. DEFECTIVE INTERLOCKING:

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

I. DEFECTIVE/DAMAGED POINTS:

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 and the procedure for use of crank handle for motor operated points shall be followed as per operating manual para-20.06.

CRANK HANDLE

| | |
|------|-------|
| CH-1 | ----- |
| CH-2 | ----- |
| CH-3 | ----- |
| CH-4 | ----- |

CONTROL POINTS

| |
|-------------|
| 32. |
| 34. 35. |
| 37. 39. 42. |
| 40. 44. |

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|------|-------|---------|
| CH-5 | ----- | 41. 46. |
| CH-6 | ----- | 33. 35. |
| CH-7 | ----- | 31. |

These crank handles are interlocked with the signaling and interlocking system at this station and normally locked inside the RKT instrument at the respective Crank Handles Locations. Crank handle keys can be taken out only when all signals are in Normal Position and the route is not locked for whatever reasons. Crank Handle can be released by pressing common 'TRANS' push button and concerned Crank Handle control push button simultaneously. When the keys are taken out no signal can be taken "OFF" over the particular route on the points nominated by that Crank Handle. This key can be electrically transmitted at both locations of the yard for manual operation of the defective points.

SM on duty shall personally ensure the clamping and padlocking of all facing and trailing points. An emergency Crank handle register shall be maintained by the SM on duty at the station as per Para 20.06(d) of the Operating Manual. Correct setting clamping and padlocking of the points devolve on the SM on duty. (Details of use of Crank Handle as per Appendix-'B').

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

J. PILOTING OF TRAINS INTO STATION YARD:

Whenever Home signal becomes defective, trains can be admitted by taking off Calling-on signal. When both Home and Calling-on signal failed, then the trains will be piloted 'IN' in terms of SR 3.69.3(a) & (c).

The SM on duty shall nominate a clear line and shall set the nominated route correctly from the panel or shall advise the TPM on duty at station to set the nominate route with the help of crank handle during failure of points. The TPM shall set the facing and trailing points and clamp and padlock the same under the supervision of SM on duty at station in both the cases.

Then the SM on duty shall then hand over the written authority (T/369(3b) to the TPM for "Piloting IN" the train. While going towards Home signal, the TPM shall check that the points have been correctly set, clamped and padlocked. After the train has been brought to a dead stop at the foot of 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 defective home signal.

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 defective signal. In case of goods trains, trains may be admitted as per SR 3.69.02(a)(iii).

NOTE:

- (1) The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of both end points for admission of a train.
- (2) The keys of padlock used for clamps on the points shall be kept in the personal custody of SM on duty till such movement is either completed or alternatively cancelled.
- (3) The SM on duty shall ensure the closure of the interlocked gate supported by a Private Number from the Gateman on duty.

K. PILOTING OF TRAINS - OUT OF STATION YARD:

When starter signal has become defective, the SM on duty shall set the points correctly from the panel or advise the TPM to set the concerned points correctly for the outgoing train with the help of crank handle. The TPM on duty shall clamp and padlock both the facing and trailing end points under supervision of SM on duty in both the cases. He shall also advise the gateman to close the level crossing gate /gates on the route for dispatch of a train. The SM on duty shall then authorize the TPM on duty to hand over the Pilot Memo T/369(3b) along with other authorities if any to the Loco Pilot of the train. Thereafter, he shall display proceed hand signal at the foot of the starter signal vide subsidiary Rule 3.70.01.

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In case Advanced starter signal becomes defective, such signal shall be passed on the written authority on the form T/369(3b). Proceed hand signal shall not be displayed vide subsidiary rule 3.70.02 .The TPM shall hand over the pilot memo in form T/369(3 b) to the Loco Pilot after the train stopped along with paper line clear ticket..

Note:

- (1) The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of both end points for dispatch of a train.
- (2) The keys of padlock used for clamps on the points shall be kept in the personal custody of SM on duty till such movement is either completed or alternatively cancelled.
- (3) The SM on duty shall ensure the closure of the interlocked gate supported by a Private Number from the Gateman on duty.

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

Motor trolleys are to run in accordance with rules laid down in SRs. Material Lorries will work in accordance with SR., Rules laid down in BWM. [Refer SR 15.25.03 to 15.25.07 and Para 5.28, 5.39 & 6.12 of BWM]

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

- i) Motor Trolleys/Tower Wagon/material Lorries are not likely to actuate the Axle Counter correctly.
- ii) In all other respects the Working of a light motor trolley shall conform to the rules laid down for ordinary trolleys while running without block protection and to those laid down for motor trolleys while running under block protection or following another light motor trolley.

7.0 BLOCKING OF 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 SM on duty shall be responsible to secure the vehicle/stable loads to prevent rolling down of vehicles and arrest obstruction and fouling.

NOTE

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

B. USE OF REMINDER BLOCK COLLARS :

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

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

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

D. **LOADING AND UNLOADING OF VEHICLES ON RUNNING LINES:**

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

NOTE

Special care should be taken to secure special type vehicles fitted with roller bearing while standing in siding or in running lines, Vide SR 5.23.01 (b) as they are liable to roll down easily.

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, 5.17, 5.19, 5.20 to 5.23, and 8.09, to 8.15].

The Guard/SM/Traffic pointsman on duty is authorised to supervise shunting operation. Normally back shunt signals, caution aspect of starter signals and shunt signal provided below starter signals shall be used for shunting operations. The official supervising shunting shall ensure the correct setting, clamping and padlocking of points incase of non-signaling movements.

The SM on duty and the official supervising shunting shall co-operate 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/outgoing train is free from obstructions. The over-run line may be used as shunting neck.

NOTE

For any non-signalled movement physical verification of the clearance of the cross over points shall be ensured by the Guard/SM/Traffic Pointsman on duty for supervising shunting operation.

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

- i) Shunting in the face of an approaching train is prohibited.

8.3 **PROHIBITION OF SHUNTING (SPECIAL FEATURE IF ANY):**

Hand/Fly shunting is prohibited at both ends of the yard. Shunting in the face of an approaching train is prohibited.

8.4.A **SHUNTING OUTSIDE THE STATION SECTION:**

- a) When line clear has been given, no shunting shall be permitted in the Block section in rear.
- b) Shunting or obstruction for any other purpose shall not be permitted in the Block section in rear unless it is clear and is blocked back.
- c) Shunting or obstruction for any other purpose shall not be permitted in the Block section in advance unless it is clear and is blocked forward vide. GR 8.06.(3)

8.4.B SHUNTING WITHIN STATION SECTION:

If necessary signals are kept at 'ON' shunting may be carried on within the station section but this shall be done only when there is no approaching train since shunting in face of an approaching train is prohibited at this station.

8.5 SHUNTING IN THE SIDING:

While shunting in the Shunting neck or Hot Axle siding, it should be authorised by issuing T/806 clearly mentioning the limits up to which shunting is permitted as also the lines occupied in shunting. The relevant provision of GR 5.14 and SRs thereto shall be meticulously followed for shunting operation in Shunting neck or Hot Axle siding.

a) HOT AXLE SIDING:

The Hot axle siding at HWH end of the yard is taking off from DN Loop (Line No.1). The entrance point and corresponding derailing switch are coupled and operated by an arc lever at site. The entrance point is fitted with hand plunger lock. The hand plunger locks is unlocked by Hot axle siding key 'A1' released by pressing the button No.47 provided on panel/VDU at SM's office. Reception signals 2A. C2A. in DN direction, shunt signal Nos.SH3E and starter signal no 16 are electrically interlocked in such a way that these signals cannot be taken 'OFF' if the Hot axle siding key is taken 'OUT' from the RKT provided at Hot axle siding location at site.

b) SHUNTING NECKS:

(i) A Shunting Neck at HWH end of the yard with one side entry is taking off from Line No.5 (Common Loop) with entrance point and corresponding derailing switch point No.33, which are motor operated from panel/VDU at SM's office. Entrance into shunting neck is being controlled by Shunt Signals No. SH20B & SH22 & Exit from the Shunting Neck is being controlled by Shunt Signal No. SH7A/B, operated from panel/VDU at Panel Room.

(ii) Another Shunting Neck at HWH end of the yard with one side entry is taking off from Line No.4 (Common Loop) with entrance point and corresponding derailing switch point No.37, which are motor operated from panel/VDU at SM's office. Entrance into shunting neck is being controlled by Shunt Signals No. SH18 & SH20A & Exit from the Shunting Neck is being controlled by Shunt Signal No. SH5A/B, operated from panel/VDU at Panel Room.

(iii) Another also a Shunting Neck at VSKP end of the yard with one side entry is taking off from Line No.5 (Common Loop) with entrance point corresponding derailing switch point No.40, which is motor operated from panel/VDU at SM's office. Entrance into shunting neck is being controlled by Shunt Signals No. SH15 & SH17 & Exit from the Shunting Neck is being controlled by Shunt Signal No. SH6A/B operated from panel/VDU at Panel Room.

c) CENTRAL WARE HOUSING CORPORATION:

The Central Ware Housing Corporation siding at HWH end of the yard with one side entry is taking off from Line No.5 at CH 890.50M F/CSB of point no 35A (Common Loop) , which are motor operated from panel/VDU at SM's office. Entrance into Central Ware Housing Corporation is being controlled by Shunt Signal No. SH7A & Exit from the Central Ware Housing Corporation is being controlled by Shunt Signal No. SH22, operated from panel/VDU at Panel Room. There is one Legend Board provided before entrance of the siding till piloted.

9.0 ABNORMAL CONDITION:**i) PARTIAL FAILURE:**

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

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- a. Failure/Suspension of Block Instrument or Track Circuit or Axle counters-
Line Clear shall be obtained on the Telephone attached to the Block Instrument exchanged ID number and supported by Private Number.
- b. Failure/Suspension of Block Instrument or Track Circuit or Axle Counters or telephone attached to the Block Instruments-
'Line clear' shall be obtained on Railway auto phone or BSNL phone 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 Railway auto phone or BSNL phone.
'Line Clear' shall be obtained on 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 Instruments or Railway auto phone or BSNL phone or control phone.
'Line Clear' shall be obtained on the VHF sets 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 trains on an obstructed line in case of obstruction or accident on the authority of block ticket (T/A-602) when communications are available shall be followed in accordance with the provision which is summarized as follows. [Refer SR 6.02.05].

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

- a. The previous block ticket is collected & cancelled, or
 - b. Necessary endorsement is given on the previous block ticket with the advise to wait at the site for a next train to follow, or
 - c. The previous train has met with an accident or has been disabled, or
 - d. The block ticket has been collected from the Loco Pilot of the previous train by the official in-charge at the site & kept in the personal custody & shall be kept until the arrival of the next train & such assurance is given over the telephone installed at the site quoting the serial number of the Block Ticket so collected.
- i) SM will suspend the absolute block system of working and both SM's concerned should arrange for running of trains on the authority of Block Ticket.
 - ii) SM at the dispatching end will hand over to the Loco Pilot, the BLOCK TICKET as the authority which shall include.
 - iii) Caution order: Existing speed restriction shall be indicated in the Caution Order portion. The speed restriction to 15Kmph during clear visibility and 10Kmph when visibility is obstructed shall be clearly indicated.
 - iv) An authority to pass the stop signals at 'ON' position.
 - v) Before resumption of normal working a message between the SM's of the concerned station shall be exchanged with private number. [Refer SR 6.02.05(d) (VI)].
 - vi) The block ticket so issued must be collected by SM of either end with a certificate about the complete arrival of the train with its time and the section is clear of all obstructions from the Loco Pilot/Guard of the train and cancels it.

iii) **TRAINS DELAYED IN BLOCK SECTIONS:**

If a train carrying passenger does not arrive within 10 minutes OR if a goods train does not arrive within 20 minutes after allowing for its normal running time from the station in rear, the SM at the station in advance shall immediately advise the station in rear and the control this fact. There after SMs at either end of the Block section shall immediately stop all trains proceeding in to the block section on adjacent line in either direction and warn the Loco

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Pilots and Guards of such trains by issue of suitable Caution Orders. [Refer GR 6.04 & SRs thereto]

- iv) Failure of Axle Counter Block/BPAC – Procedure to be followed as detailed.
- v) Procedure for emergency operation of points by Crank Handle.-
The detailed Procedure for emergency operation of points by Crank Handle of motor operated points is given in Para No.6.8. (Main body).
- vi) Procedure for emergency operation of points with point zone axle counter/Track circuits failure and emergency route release.[GR 3.39 and GR 3.77]
- vii) Certification of clearance of track before Calling –On Signal operation in initiated-
Before taking off Calling –On signal during failure of track circuit/axle counter, the route and the clearance of the track over which train would pass to be verified by SM on duty.
- viii) 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 Signalling 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 communications between BAM-JNP and BAM-GTA i.e. when line clear can not be obtained by any one of the following means stated in order of preference viz.

- [A]. Block Instruments, Track Circuits or Axle counters.
 - [B]. Telephone attached to the Block Instruments.
 - [C]. Station to station fixed telephones wherever available.
 - [D]. Fixed telephones such as Railway auto phones & BSNL phones.
 - [E]. Control telephone.
 - [F]. VHF sets.
- i]. Each train before being allowed into the Block Section should be stopped and the Guard and Loco Pilot of the train apprised of the situation.
 - ii]. The SM shall give an authority(T/C602) for working of trains during total interruption of communication on Double line section to the Loco Pilot of each train which shall include.-
 - a) An authority to proceed without 'Line Clear'.
 - b) An authority to pass the Last Stop Signal at "ON" position,
 - c) A caution order restricting the speed to 25KMPH by day when view ahead is clear and 10KMPH when view ahead is not clear.
 - iii]. No train shall be allowed to enter the Block Section until there is a clear interval of 30minutes between the train about to leave and the train, which has immediately proceeded.
 - iv]. Fixed signals except the last stop signal may be taken "OFF" for the dispatch of the train and for the reception of the train at the next block station, reception signals may be taken off only after the train has been brought to a stand out side it.
 - v]. On arrival at the next block station the Loco Pilot shall hand over the authority to proceed with out line clear to the SM on duty who will preserve the same for further inspection.
Before resuming normal working when any means of communication is established. SM of either end must satisfy that there is no train in the block section. [Refer SR 6.02.03].

9.2 **TEMPORARY SINGLE LINE WORKING BETWEEN JNP-BAM OR BAM-GTA:**

During temporary single line working on one clear line when one line is obstructed either between GTA-BAM and JNP-BAM, trains shall be worked as per the procedure as detailed below. [Refer SR 6.02.01]. The entire block section between BAM - GTA shall be treated as one block section and the Intermediate Block Post shall be deemed to be closed.

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- i]. Before introducing single line working the SM on duty must satisfy that the line on which single line will be introduced is clear and free from all obstructions.
- ii]. The Lock and Block instrument will be suspended.
- iii]. The SM proposing single line working must issue a message with the cause of introduction of single line working, Line on which the single line will be introduced, Source of information about the clearance of the line on which single line will be introduced, Place of obstruction, restriction of speed, If any, assurance about keeping the last stop signal at 'ON' position if the train runs on right lines and in case of wrong line all signals are to be kept at 'ON' position, the number and the timings of last train which arrived or left the Block station issuing the message .
- iv]. The SM of the other end block section will acknowledge the message and confirm the same by a Private Number.
- v]. After obtaining line clear for the train from the Advance station, the SM shall give following documents.
 - An authority for Temporary Single Line working on double line (T/D 602) indicating there in.
 - a. The line on which single line is introduced.
 - b. The kilo-meterages of obstruction.
 - c. Any other speed restriction existing, in the section.
 - d. Endorsement to inform all Gang man and Gateman about the single line working (for the first train only).
- vi]. The speed of the first train to be restricted to 25 KMPH subject to other speed restriction.
- vii]. An authority to pass the last stop signal at its 'ON' position. The approach stop signals at the station in advance may be taken "OFF". In case a train proceeding on wrong line, the train shall be piloted out and at the receiving station, the train shall be piloted 'IN', on the authority of T/369(3b).
 - Ensuring that the obstructed line is clear of all obstructions. SM will resume normal working after exchanging message with the SM of the other concerned end supported by private number in consultation with the SCR on duty.
 - A goods train or an engine may be allowed on wrong line by blocking back the section without introducing single line working. [Refer SR. 6.02.05(g) (i)].
 - Whenever total interruption of all communication occurs during single line working on double line, the procedure detailed in GR should be followed. [Refer SR 6.02.01]

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

Rules and regulations for working trains on an obstructed line in case of obstruction or accident on the authority of block ticket (T/A-602) when communications are available shall be followed in accordance with the provisions which are summarized as follows. [Refer SR 6.02.05].

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

- i]. The previous block ticket is collected & cancelled, or
- ii]. Necessary endorsement is given on the previous block ticket with the advice to wait at the site for a next train to follow ,or
- iii]. The previous train has met with an accident or has been disabled, or
- iv]. The block ticket has been collected from the Loco Pilot of the previous train by the official in-charge at the site & kept in the personal custody & shall be kept until the arrival of the next train & such assurance is given over the telephone installed at the site quoting the serial number of the Block Ticket so collected.
 - a. SM will suspend the absolute block system of working and both SM's concerned should arrange for running of trains on the authority of Block Ticket.
 - b. SM at the dispatching end will hand over to the Loco Pilot the BLOCK TICKET as the authority which shall include.

- c. **Caution Order:** Existing speed restriction shall be indicated in the Caution Order portion. The speed restriction to 15 Kmph during clear visibility and 10 Kmph when visibility is obstructed shall be clearly indicated.
- d. An authority to pass the stop signals at 'ON' position.
- e. Before resumption of normal working a message between the SM's of the concerned station shall be exchanged with private number. [Refer SR 6.02.05(d) (VI)].
The block ticket so issued must be collected by SM of either end with a certificate about the complete arrival of the train with its time and the section is clear of all obstructions from the Loco Pilot/Guard of the train and cancels it.

10.0 **VISIBILITY TEST OBJECT:**

The signal lights of common loop starter signal No.15 & 20 during day and night are the visibility test object vide GR 3.61.2(b) (iii)

11.0 **ESSENTIAL EQUIPMENT AT THE STATION:**

(Details are given in Appendix-'E')

12.0 **FOG SIGNAL MEN NOMINATED TO BE CALLED IN CASE OF FOG:**

FOG SIGNALLING:

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

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

STATION DETONATOR REGISTER (OPT/124):

A Register regarding detonator is maintained at the station.

INSTRUCTIONS:

- a. This register contains the following parts.
 - Part. - I: Particulars of fog 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 upto date and is accurate in all respects.
- c. Transportation inspectors shall check the registers and also the stock of detonators on hand each time they visit the station and initial with date as an indication having done so.

APPENDICES

- APPENDIX-A : WORKING OF LEVEL CROSSING GATES
- APPENDIX-B : SYSTEM OF SIGNALLING AND INTERLOCKING AND COMMUNICATION ARRANGEMENTS AT THE STATION.
- APPENDIX-B1 : STAND BY OPERATION OF SIGNALS, POINTS, L.C.GATES, CRANK HANDLES, SIDING POINTS BY VDU (P.C)
- APPENDIX-C : ANTI COLLISION DEVICE (RAKSHA KAVACH)
- APPENDIX-D : DUTIES OF TRAIN PASSING STAFF AND STAFF IN EACH SHIFT
- APPENDIX-E : LIST OF ESSENTIAL EQUIPMENTS PROVIDED AT THE STATION
- APPENDIX-F : RULES OF WORKING OF DK STATION, HALTS, IBH, IBS AND OUTLYING SIDINGS
- APPENDIX-G : RULES FOR WOKING OF TRAINS IN ELECTRIFIED SECTIONS

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1.0. WORKING OF 'SPL' CLASS MANNED INTERLOCKED LEVEL CROSSING GATE NO. 309 SITUATED AT KM. 599/7-9 (UP) & 599/10-8 (DN) BETWEEN BAM-JNP.

1.1. BRIEF DESCRIPTION:

| | | | |
|-----|---|---|--|
| 1. | No. of Level Crossing Gate | : | 309 |
| 2. | Engineering or Traffic gate | : | Engineering |
| 3. | Under control of Station Master or Permanent Way Inspector. | : | SSE/P.Way/BAM |
| 4. | Location at Km. | : | Km. 599/7-9 (UP) & 599/10-8 (DN) |
| 5. | At station | : | - |
| 6. | In between station | : | JNP-BAM |
| 7. | BG/MG/NG | : | BG |
| 8. | Single line/double line/multiple line | : | Double line |
| 9. | Normal position | : | Open to Road Traffic |
| 10. | Interlocked/ Non-Interlocked | : | Interlocked |
| 11. | Means of Interlocking | : | Independent Gate Signals |
| 12. | Provision of gate signals | : | UP/DN Gate Home Signals |
| 13. | Signaling arrangement | : | UP Gate Home, UP Distant, DN Gate Home and DN Advanced Starter cum DN Gate Distant |
| 14. | Means of communication. | : | Telephone with SM/BAM |
| 15. | Width of the level crossing gate | : | 9.50 mtr |
| 16. | Type of road | : | Others |
| 17. | Name of road | : | Ankuli Road |
| 18. | Metalled /Non-Metalled | : | Metalled |
| 19. | Approach road | : | Metalled |
| 20. | Width of the road | : | 5.0 mtr |
| 21. | Angle of road crossing (in case of the SKEW gates) | : | - |
| 22. | Road gradients (if any) North /East side | : | Level |
| | South/West side | : | Level |
| 23. | Road alignment (Straight/Curve) North/East side | : | Straight |
| | South/West side | : | Curve |
| 24. | Provision of height gauges | : | Yes |
| 25. | Type of barriers | : | Lifting |
| 26. | Length of check rails | : | 11.0 mtr |
| 27. | Road surface in between level crossing gates. | : | C.C Block |
| 28. | Length of rumble strip/ speed breakers. | : | 5.00 mtr |
| 29. | Road signs | : | Available |
| 30. | Speed breakers indication board | : | Available |
| 31. | TVU | : | 28512, October - 2012 |
| 32. | Census next due on | : | October - 2015 |
| 33. | Demarcation for placement of detonators. | : | Available |
| 34. | No. of gateman working | : | 3 |
| 35. | Nearest Railway Medical Assistance | : | Brahmapur Rly. Medical |
| 36. | Nearest Private Medical Assistance available (if any) | : | M.K.C.G Medical College/BAM |
| 37. | List of equipment available (Yes/No) | : | Yes |

(Correction Slip No. _____ Dated _____)

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Sr.DEN(S)/KUR

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1.2. EQUIPEMENT TO BE AVAILABLE AT THE GATE:

| | | |
|-----|--|---------------------|
| 1. | Battery operated LED based flashing lamp | 3 |
| 2. | Hand Signal Flag Green | 1 mounted on stick |
| 3. | Hand Signal Flag Red | 3 mounted on sticks |
| 4. | Banner Flag Red | 3 |
| 5. | Posts for exhibiting red banner flag | 2 |
| 6. | Spare Chains with Padlocks | 2 with stop mark |
| 7. | Detonators | 10 in tin case |
| 8. | Gate lamps | 2 |
| 9. | Tommy Bar | 1 |
| 10. | Mortar Pan | 1 |
| 11. | Spade/ Fowrah | 1 |
| 12. | Rammer | 1 |
| 13. | Pick Axe | 1 |
| 14. | Tin Case for Flags | 1 |
| 15. | Cane for oil | 1 |
| 16. | Water pot/Bucket | 1 |
| 17. | Canister for Muster roll | 1 |
| 18. | Set of spare spectacles of gateman wearing glasses | 1 |
| 19. | Board demarcating protection of level crossing gate diagram in case of obstruction on gate | 1 |
| 20. | Basket | 1 |
| 21. | Whistle | 1 |
| 22. | Wall clock | 1 |
| 23. | Small size chain with padlock | 2 |

1.3. RECORDS TO BE KEPT AT GATE LODGE

In addition to the above equipment, following records shall also be kept at the Gate Loge.

- i) Gate Working Instructions in Hindi/English.
- ii) Gate Working, Instructions in local vernacular language.
- iii) Gateman Rule Book in local vernacular language.
- iv) List for tools and books.
- v) Duty Roster.
- vi) Certificate for working as gateman.
- vii) Bio-data particulars of Gatemen, including date of passing vision test, initial/refresher course, safety camp, etc.
- viii) Accident Register.
- ix) Record of last census of road traffic at Level Crossing gate.
- x) Public Complaint Book.
- xi) Inspection Book.
- xii) S&T Register.

1.4. MODE OF OPERATION:**NORMAL WORKING OF THE LEVEL CROSSING GATE (INTERLOCKED) & INTIMATION TO THE GATE MAN**

This gate is interlocked with independent gate home signals in UP and DN directions. The normal position of the gate is open. A four-lever ground frame is provided at the gate lodge. The key of the L.C.Gate remains in the winch when the gate is in open condition. When it is

necessary to close the gate for taking off signals the Station Master on duty shall advise the Gateman through telephone, the number, description, direction and expected time of

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passage of the train at the gate. On receipt of the telephonic advice about approach of any train the gate man shall ensure that the level crossing gate is clear of road traffic and is free from obstruction. If the actual running time of the trains from either end of the section is less than 10 minutes, Station Master will intimate to gateman before obtaining/granting line clear. It is the duty of the gateman to ensure that the gate is closed in time so that there is no detention to road traffic.

The Gateman on duty shall then close the barriers of the L.C.Gate by operating winch. The key 'Y' is to be extracted from the winch, which will be inserted in the lever of GF-2 and releases GF-2. When GF-2 reversed locks the booms of the gates and releases UP and DN Gate Home signals lever GF-3 & GF-4 respectively. After passage of the train this signal levers to be normalized and key 'Y' to be extracted after normalising Boom lock lever No. 2. This key will be inserted in the winch and winch will be operated to open the gate.

To avoid the detention to the road traffic at the Level crossing gate, the gate signals should not be taken off too early in advance and LC gate should not be kept closed for more than 10 minutes at a stretch. The Level crossing gate shall be so worked as to cause least possible inconvenience to vehicular traffic on consistent with safety according to SR 16.03.01(a).

APPROACH WARNING:

Approach warning device is installed in such a way that whenever a DN train from BAM side Occupies track circuit 28T (Adv. Str Track) & Similarly Up train from JNP side occupies the track circuit 11T (Adv. Str Track) then a audio visual alarm is initiated at this gate, which gives warning to gateman that train has already entered in block section, he is required to close the gate & muting of audio alarm is done by acknowledging & pressing the push button.

1.5. DUTIES OF GATEMAN:

(1) **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.

(2) **POSITION DURING PASSAGE OF TRAINS:**

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

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

(3) **ROUTINE DUTIES OF GATEMAN:**

- (i) Gateman shall place red banner flag across the track during emergency and obstruction on the track.
- (ii) Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
- (iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.
- (iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- (v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle / wagons / 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.

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- (vi) Gateman shall also be prepared to repeat any signal which guard may give to Loco Pilot on walkie – talkie or in any other way.
- (vii) 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.
- (viii) Gateman shall report to the nearest SM, Gangmate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- (ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.
- (x) At the gate whose signal have become defective, the gateman shall close and lock and lifting barriers / leaf gates on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the Loco Pilot to report the defect at the next station.
- (xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
- (xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- (xiii) Gateman shall work the gate as per Gate Working Instructions and remain well conversant with these instructions.
- (xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
- (xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- (xvi) Gateman shall keep the road surface well watered and rammed in case of unmetalled roads.
- (xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- (xviii) 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.
- (xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.

(4) **ACTION IN CASE OF UNUSUAL OCCURRENCE ON TRAIN :**

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

(5) **ACTION IN AN EMERGENCY AT THE LEVEL CROSSING:**

- (i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
- (ii) Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connecting by telephone, regarding the defects/obstructions at the gate, under exchange of private number.

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

The gateman shall protect the line as under:-

- (i) If both lines are obstructed the gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.
- (ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
- (iii) Gateman shall then proceed to protect the gate along with detonators, battery operated LED based flashing lamp and red flag by day and red hand signal lamp by night.
- (iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- (v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- (vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
- (vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- (viii) Thereafter, he shall light up the battery operated LED based flashing lamp to warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.
- (a) **Other action to be taken by Gateman:**
- (i) At night gateman shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub paras (a) and (b) above.
- (ii) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers / 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 take immediate action.
- (iii) He shall note down the particulars of the road vehicle, vehicle number, name of the Driver, owner and relay these details to the nearest Station Master or Permanent Way Inspector regarding the particulars and obstructions at the level crossing gate, through messenger or other means available.

1.6. FAILURE OF TELEPHONIC COMMUNICATION:

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

- (i) If the telephone fails at the gate connected with the Station at the dispatching end, station master shall then issue a caution order to the Loco Pilot of the departing train.
- (ii) Station master shall advise the Loco Pilot to whistle continuously and proceed cautiously while approaching the gate.
- (iii) In case the gate signal is ON he should stop short of gate signal and follow the procedure laid under GR 3.73.
- (iv) In case of an approaching train, the Station Master shall advise the Station Master at the dispatching end, under exchange of private number that the telephone at the gate has failed.

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- (v) The Station Master at the dispatching end shall then issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vi) Station master will also advise the gateman through gang man/patrolman/Loco Pilot of the first train that the telephone has become defective.
- (vii) Station master should also advise S & T staff responsible for maintenance of the telephone to rectify the defect at the earliest.
- (viii) Normal working will be resumed only after S & T staff rectify the telephone and issue reconnection/ fit memo for the same.

1.7. FAILURE OF LIFTING BARRIERS OR LEAF GATES:

- (i) When the gate cannot be closed due to failure of lifting barriers, the gateman will immediately inform the Station Master 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 chains and padlocks.
- (iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light to the Loco Pilot of the approaching train.
- (v) Station Master on duty shall issue caution order to the Loco Pilot of departing trains.
- (vi) 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.
- (vii) Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- (viii) Normal working will resumed only after maintenance staff repair the lifting barrier/ leaf gates and issue reconnection/ fit memo for the same.

1.8 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 winch, the gate leaves or the key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange 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.
- (iii) The record of the date and time of breaking the sealed cover of emergency key box shall be recorded and signed with reasons.
- (iv) 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.
- (v) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- (vi) 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.
- (vii) Station Master shall advise S & T staff responsible for maintenance of winch/gate leaves/key transmitter to rectify the defect at the earliest.
- (viii) Normal working will be resumed only after S & T staff repairs the winch/gate leaves/key transmitter and issue reconnection/ fit memo for the same.
- (ix) After rectification, the emergency key shall be replaced in the emergency key box and re-sealed by the S & T maintainer.

1.9 FAILURE OF GATE KEY WITH THE GATE IN OPEN CONDITION:

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- i) If the gate key cannot be extracted from the winch, gate lever or key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange of private number.
- ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- iii) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass 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 shall advise S & T staff responsible 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 issues reconnection/ fit memo for the same.
- viii) After rectification, the emergency key shall be replaced in the emergency key box and re-sealed by the S & T maintainer.

1.10 DEFECTIVE GATE SIGNALS:

- (i) The gateman shall treat the gate signal 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 operating winch when the gate is in open condition,
- (ii) If the Gate or the Gate Signal or Distant Signal becomes defective in "OFF" position, the gateman will make all efforts to put it at "ON" position even by cutting signal wires, if necessary.
- (iii) The gateman will immediately advise the Station Master on duty, under exchange of private number, regarding defective gate signals.
- (iv) 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.
- (v) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.
- (vi) Station Master on duty will issue caution order to the Loco Pilot of a departing train.
- (vii) He shall also advise the Station Master at the dispatching end, under exchange of private number; to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (viii) Station Master shall advise S & T staff responsible for maintaining the gate signal to repair the same at the earliest
- (ix) Normal working will be resumed after S & T staff rectifies the defective gate signal and issue reconnection/ fit memo for the same.

1.11 OBSTRUCTION AT THE GATE:

- (i) If the gate is broken by a road vehicle which is fouling the track or if lifting barriers/ 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.
- (ii) 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.
- (iii) Immediately after this, the gateman shall advise the Station Master on duty, regarding the defects / obstructions at the gate, under exchange of private number.
- (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.

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- (v) Gateman shall then rush with detonators, battery operated LED based flashing lamp, and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect gate as per Para 1.5 (5) above.
- (vi) Thereafter he shall protect the gate from the other direction also.
- (vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and 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/ leaf gates 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 obstruction.
- (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 Pilot of all trains to proceed cautiously, and pass the reception/departure signal at "ON" position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- (xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and 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/leaf gate to repair the same at the earliest.
- (xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers/ leaf gates and issue reconnection/ fit memo for the same.

1.12 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

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

2.0. WORKING OF 'SPECIAL' CLASS MANNED INTERLOCKED LEVEL CROSSING GATE NO. 311 SITUATED AT KM. 600/41-610/1 (UP) & 601/2-600/42 (DN) TOWARDS BAM STATION.

2.1. BRIEF DESCRIPTION:

| | | | |
|-----|---|---|--|
| 1. | No. of Level Crossing Gate | : | 311 |
| 2. | Engineering or Traffic gate | : | Traffic gate |
| 3. | Under control of Station Master or Permanent Way Inspector. | : | SM/BAM |
| 4. | Location at Km. | : | Km. 600/41/-601/1 (UP) & 601/2-600/42 (DN) |
| 5. | At station | : | BAM |
| 6. | In between station | : | BAM - JNP |
| 7. | BG/MG/NG | : | BG |
| 8. | Single line/double line/multiple line | : | Double line |
| 9. | Normal position | : | Open to Road Traffic |
| 10. | Interlocked/ Non-Interlocked | : | Interlocked |
| 11. | Means of Interlocking | : | EKT |
| 12. | Provision of gate signals | : | -- |
| 13. | Signaling arrangement | : | Station Stop Signal |
| 14. | Means of communication. | : | Telephone with SM/BAM |
| 15. | Width of the level crossing gate | : | 9.0 mtr |
| 16. | Type of road | : | Others |
| 17. | Name of road | : | Kommapalli - Lanjipalli |
| 18. | Metalled /Non-Metalled | : | Metalled |
| 19. | Approach road | : | WBM |
| 20. | Width of the road | : | 6.30 mtr |
| 21. | Angle of road crossing (in case of the SKEW gates) | : | - |
| 22. | Road gradients (if any) North /East side | : | 1 : 50 |
| | South/West side | : | 1 : 80 |
| 23. | Road alignment (Straight/Curve) North/East side | : | Straight |
| | South/West side | : | Straight |
| 24. | Provision of height gauges | : | Yes |
| 25. | Type of barriers | : | Lifting |
| 26. | Length of check rails | : | 11.0 mtr |
| 27. | Road surface in between level crossing gates. | : | C.C blocks |
| 28. | Length of rumble strip/ speed breakers. | : | 7.0 mtr |
| 29. | Road signs | : | Available |
| 30. | Speed breakers indication board | : | Available |
| 31. | TVU | : | 79640, October – 2012 |
| 32. | Census next due on | : | October - 2015 |
| 33. | Demarcation for placement of detonators. | : | Available |
| 34. | No. of gateman working | : | 3 |
| 35. | Nearest Railway Medical Assistance | : | Brahmapur Rly Medical |
| 36. | Nearest Private Medical Assistance available (if any) | : | Kommapalli |
| 37. | List of equipment available (Yes/No) | : | Yes |

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2.2. EQUIPEMENT TO BE AVAILABLE AT THE GATE:

| | | |
|-----|--|---------------------|
| 1. | Battery operated LED based flashing lamp | 3 |
| 2. | Hand Signal Flag Green | 1 mounted on stick |
| 3. | Hand Signal Flag Red | 3 mounted on sticks |
| 4. | Banner Flag Red | 3 |
| 5. | Posts for exhibiting red banner flag | 2 |
| 6. | Spare Chains with Padlocks | 2 with stop mark |
| 7. | Detonators | 10 in tin case |
| 8. | Gate lamps | 2 |
| 9. | Tommy Bar | 1 |
| 10. | Mortar Pan | 1 |
| 11. | Spade/ Fowrah | 1 |
| 12. | Pick Axe | 1 |
| 13. | Tin Case for Flags | 1 |
| 14. | Cane for oil | 1 |
| 15. | Water pot/Bucket | 1 |
| 16. | Canister for Muster roll | 1 |
| 17. | Set of spare spectacles of gateman wearing glasses | 1 |
| 18. | Board demarcating protection of level crossing gate diagram in case of obstruction on gate | 1 |
| 19. | Basket | 1 |
| 20. | Whistle | 1 |
| 21. | Wall clock | 1 |
| 22. | Small size chain with padlock | 2 |

2.3. RECORDS TO BE KEPT AT GATE LODGE

In addition to the above equipment, following records shall also be kept at the Gate Loge.

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

**2.4. MODE OF OPERATION:
INTERLOCKING AND NORMAL WORKING:**

This gate is interlocked with all UP reception signals and DN dispatch signals. The interlocking is achieved by means of Electrical Key Transmission system. The normal position of the gate is open. A four-lever frame is provided at the gate lodge. The key of the L.C.Gate remains in the winch when the gate is in open condition. When it is necessary to close the gate for taking off signals or for shunting operations the Station Master on duty shall take following steps.

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INTIMATION TO GATEMAN

- (i) Before taking off reception/departure/shunt signals, station master shall inform the gateman, the number, description and direction of the train.
- (ii) The gateman shall close the gate and transfer the key to the station master. (the detail procedure is described below)
- (iii) The reception/departure/shunt signals will 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 train is ready for departure in all respects before he advises the gateman for closing the gate.
- (v) When a train has to be piloted to and from the station yard or any shunting movement is to be done, the staff deputed to pilot the trains 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.

The Gateman on duty shall then close the barriers of the L.C.Gate by operating winch. The key 'K' is to be extracted from the winch, which will be inserted in the GF2. GF2 when reversed locks the booms of the gates and releases Key 'K1' and GF -1. This key 'K1' will be inserted in the EKT and turned and GF1 will be reversed for taking "OFF" UP Home/Calling-on Signals (1A/B/C and C-1/A/B/C), DN Starter Signal No. S16, S26, S/SH-18, S/SH-20, and Shunt Signals SH3 (A-E), SH5A/B, SH7A/B, SH22. Station Master on duty will press level crossing control button No. 49 (Chocolate) and group button (release), L.C.Gate closed indication will appear in the panel and concerned signals automatically get released.

After the passage of train or completion of shunting the Station Master on duty shall inform the Gateman and press L.C.Gate controlling button No. 49 and common group button (Trans) and keep it pressed till such time the Gateman extracts the gate control key 'K1' from the EKT instrument. After getting Key-K1 this key is inserted GF2. This will unlock GF2 when normalized key K is released. After getting the Key 'K' the Gateman will unlock the winch and open the L.C.Gate.

Emergency gate release operation facility is provided in the panel when the route gets locked due to some failure. For emergency release of gate, the SM on duty shall press signal cancellation button and then emergency gate release button and gate button No. 49. A red flashing (Gate lock) indication will appear and after a lapse of 120sec gate lock indication will disappear and a white light will glow over the emergency gate release button indicating that the operation is matured. The SM on duty shall then operate push button no 49 for gate and group Trans button to release the key from EKT in gate Lodge. All such operation will be registered in the emergency gate operation counter. All such emergency operation shall be recorded in the station diary and in the register meant for it.

GF1 is provided at the gate lodge to put back the concerned signal to danger in case of emergency by pulling the GF1 to normal position.

The level crossing gate shall be so worked as to cause the least possible inconvenience to vehicular traffic consistent with safety according to SR 16.03.01(a). To avoid the detention to the road traffic at the Level crossing gate, the gate signals should not be taken off too early in advance and L.C. Gate should not be kept closed for more than 10 minutes at a stretch according to SR 16.03.01(b).

2.5. DUTIES OF GATEMAN:

- (1) **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.

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(2) POSITION DURING PASSAGE OF TRAINS:

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

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

(3) ROUTINE DUTIES OF GATEMAN:

- (i) Gateman shall place red banner flag across the track during emergency and obstruction on the track.
- (ii) Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
- (iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.
- (iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- (v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle / wagons / 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.
- (vi) Gateman shall also be prepared to repeat any signal which guard may give to Loco Pilot on walkie – talkie or in any other way.
- (vii) 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.
- (viii) Gateman shall report to the nearest SM, Gangmate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- (ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.
- (x) At the gate whose signal have become defective, the gateman shall close and lock and lifting barriers on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the Loco Pilot to report the defect at the next station.
- (xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
- (xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- (xiii) Gateman shall work the gate as per Gate Working Instructions and remain well conversant with these instructions.
- (xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
- (xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- (xvi) Gateman shall keep the road surface well watered and rammed in case of unmetalled roads.
- (xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- (xviii) 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.
- (xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.

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(4) ACTION IN CASE OF UNUSUAL OCCURRENCE ON TRAIN :

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

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

(5) ACTION IN AN EMERGENCY AT THE LEVEL CROSSING:

- (i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
- (ii) Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connecting by telephone, regarding the defects/obstructions at the gate, under exchange of private number.
- (iii) If there is no response from the Station Master after two or three attempts, he shall first protect the gate and then inform on phone.
 - (a) The gateman shall protect the line as under:-
 - (i) If both lines are obstructed the gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.
 - (ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
 - (iii) Gateman shall then proceed to protect the gate along with detonators, battery operated LED based flashing lamps and red flag by day and red hand signal lamp by night.
 - (iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
 - (v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
 - (vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
 - (vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.

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(viii) Thereafter, he shall light up the battery operated LED based flashing lamp to warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(b) **Other action to be taken by Gateman:**

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

2.6. FAILURE OF TELEPHONIC COMMUNICATION:

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

- (i) Station Master on duty shall send written advice to the gateman through the Traffic Pointsman with full details of number, description and direction of the train.
- (ii) Gate man on receipt of such advice shall close the gate and transmit the key to the station master, which will enable him to take 'OFF' reception/departure/shunt signals.
- (iii) When sufficient time is not available because of greater frequency of train service, station master will issue written authority to the train Loco Pilot to pass the signal at 'ON' position.
- (iv) In addition Station master shall also issue a caution order advising the Loco Pilot to whistle continuously and approach the gate cautiously.
- (v) The train Loco Pilot shall be instructed to pass the gate cautiously, on being hand signal by the gateman. If hand signal is not seen, Loco Pilot should be prepared to stop sort of the gate and ensure that gate is closed following GR 3.73(2)(b).
- (vi) In case of an approaching train, the Station Master shall advise the Station Master at the dispatching end, under exchange of private number that the telephone at the gate has failed.
- (vii) The Station Master at the dispatching end shall then issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (viii) Station master should also advise S & T staff responsible for maintenance of the telephone to rectify the defect at the earliest.
- (ix) Normal working will be resumed only after S & T staff rectify the telephone and issue reconnection/ fit memo for the same.

2.7. FAILURE OF LIFTING BARRIERS:

- (i) When the gate cannot be closed due to failure of lifting barriers the gateman will immediately inform the Station Master on duty, under exchange of private number, and ensure the lifting barriers or leaf gates do not foul the track.
- (ii) He shall immediately fix red banner flag by day and red light by night on the post at that end first from which the train is approaching and then at the other end.
- (iii) Gateman shall secure the gate against road traffic by means of safety chains and padlocks.
- (iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light to the Loco Pilot of the approaching train.
- (v) Station Master on duty shall issue caution order to the Loco Pilot of departing trains.
- (vi) 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.

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- (vii) Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- (viii) Normal working will resumed only after maintenance staff repair the lifting barrier/ leaf gates and issue reconnection/ fit memo for the same.

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

2.8 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 winch, the gate lever or the key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange 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.
- iii) The record of the date and time of breaking the sealed cover of Emergency Key Box shall be recorded and signaled with reasons.
- iv) 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.
- v) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- vi) 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.
- vii) Station Master shall advise S & T staff responsible for maintenance of winch/gate lever/key transmitter to rectify the defect at the earliest.
- viii) Normal working will be resumed only after S & T staff repairs the winch/gate lever/key transmitter and issue reconnection/ fit memo for the same.
- ix) After rectification, the Emergency Key shall be replaced by S&T maintainer.

2.9 FAILURE OF 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 Station Master on duty on telephone, under exchange of private number.
- (ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- (iii) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass 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 shall advise S & T staff responsible for maintenance of winch/gate lever/key transmitter to rectify the defect at the earliest.
- (vii) Normal working will resumed only after S & T staff repair the winch/gate lever/key transmitter and issues reconnection/ fit memo for the same.
- (viii) After rectification, the Emergency Key shall be replaced in the Emergency Key Box and resealed by the S & T maintainer.

2.10 OBSTRUCTION AT THE GATE:

- i) 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 fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.

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- ii) Immediately after this, the gateman shall advise the Station Master on duty, regarding the defects / obstructions 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, battery operated LED based flashing lamp, and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect gate as per 2.5 (5) above.
- vi) Thereafter he shall protect the gate from the other direction also.
- vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and 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/ leaf gates 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 obstruction.
- 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 Pilot of all trains to proceed cautiously, and pass the reception/departure signal at "ON" position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and 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/leaf gate to repair the same at the earliest.
- xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers/ leaf gates and issue reconnection/ fit memo for the same.

2.11 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.2.10 above. If the obstruction fouls the Level Crossing Gate, gate man must keep the gates closed against road traffic till the track is cleared of the obstruction.

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3.0. WORKING OF 'SPECIAL' CLASS MANNED INTERLOCKED LEVEL CROSSING GATE NO. 312 SITUATED AT KM. 602/19-21 (UP) & 602/22-20 (DN) TOWARDS BAM STATION.

3.1. BRIEF DESCRIPTION:

| | | | |
|-----|---|---|-------------------------------------|
| 1. | No. of Level Crossing Gate | : | 312 |
| 2. | Engineering or Traffic gate | : | Traffic gate |
| 3. | Under control of Station Master or Permanent Way Inspector. | : | SM/BAM |
| 4. | Location at Km. | : | Km. 602/19-21 (UP) & 602/22-20 (DN) |
| 5. | At station | : | BAM |
| 6. | In between station | : | BAM-GTA |
| 7. | BG/MG/NG | : | BG |
| 8. | Single line/double line/multiple line | : | Double line |
| 9. | Normal position | : | Open to Road Traffic |
| 10. | Interlocked/ Non-Interlocked | : | Interlocked |
| 11. | Means of Interlocking | : | EKT |
| 12. | Provision of gate signals | : | ---- |
| 13. | Signaling arrangement | : | Station Stop Signals |
| 14. | Means of communication. | : | Telephone with SM/BAM |
| 15. | Width of the level crossing gate | : | 9.0 mtr |
| 16. | Type of road | : | Others |
| 17. | Name of road | : | Gosamera Gao –Goods shed Road |
| 18. | Metalled /Non-Metalled | : | Metalled |
| 19. | Approach road | : | C.C Block |
| 20. | Width of the road | : | 8.0 mtr |
| 21. | Angle of road crossing (in case of the SKEW gates) | : | - |
| 22. | Road gradients (if any) North /East side | : | 1 : 40 |
| | South/West side | : | 1 : 40 |
| 23. | Road alignment (Straight/Curve) North/East side | : | Straight |
| | South/West side | : | Straight |
| 24. | Provision of height gauges | : | Yes |
| 25. | Type of barriers | : | Lifting |
| 26. | Length of check rails | : | 11.0 mtr |
| 27. | Road surface in between level crossing gates. | : | C.C. Blocks |
| 28. | Length of rumble strip/ speed breakers. | : | 7.70 mtr |
| 29. | Road signs | : | Available |
| 30. | Speed breakers indication board | : | Available |
| 31. | TVU | : | 124080, October – 2012 |
| 32. | Census next due on | : | October - 2015 |
| 33. | Demarcation for placement of detonators. | : | Available |
| 34. | No. of gateman working | : | 3 |
| 35. | Nearest Railway Medical Assistance | : | Brahmapur Rly Medical |
| 36. | Nearest Private Medical Assistance available (if any) | : | Gosomum Gao |
| 37. | List of equipment available (Yes/No) | : | Yes |

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3.2. EQUIPEMENT TO BE AVAILABLE AT THE GATE:

| | | |
|-----|--|---------------------|
| 1. | Battery operated LED based flashing lamp | 3 |
| 2. | Hand Signal Flag Green | 1 mounted on stick |
| 3. | Hand Signal Flag Red | 3 mounted on sticks |
| 4. | Banner Flag Red | 3 |
| 5. | Posts for exhibiting red banner flag | 2 |
| 6. | Spare Chains with Padlocks | 2 with stop mark |
| 7. | Detonators | 10 in tin case |
| 8. | Gate lamps | 2 |
| 9. | Tommy Bar | 1 |
| 10. | Mortar Pan | 1 |
| 11. | Spade/ Fowrah | 1 |
| 12. | Pick Axe | 1 |
| 13. | Tin Case for Flags | 1 |
| 14. | Cane for oil | 1 |
| 15. | Water pot/Bucket | 1 |
| 16. | Canister for Muster roll | 1 |
| 17. | Set of spare spectacles of gateman wearing glasses | 1 |
| 18. | Board demarcating protection of level crossing gate diagram in case of obstruction on gate | 1 |
| 19. | Basket | 1 |
| 20. | Whistle | 1 |
| 21. | Wall clock | 1 |
| 22. | Small size chain with padlock | 2 |

3.3. RECORDS TO BE KEPT AT GATE LODGE

In addition to the above equipment, following records shall also be kept at the Gate Loge.

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

**3.4. MODE OF OPERATION:
INTERLOCKING AND NORMAL WORKING:**

This gate is interlocked with all UP dispatch signals and DN reception signals. The interlocking is achieved by means of Electrical Key Transmission system. The normal position of the gate is open. A Five-lever frame is provided at the gate lodge. The key of the L.C.Gate remains in the winch when the gate is in open condition. When it is necessary to close the gate for taking off signals or for shunting operations the Station Master on duty shall take following steps.

INTIMATION TO GATEMAN

- a) Before taking off reception/departure/shunt signals, station master shall inform the gateman, the number, description and direction of the train.

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- b) The gateman shall close the gate and transfer the key to the station master. (the detail procedure is described below)
- c) The reception/departure/shunt signals will be taken "OFF".
- d) In order to ensure that road traffic is not held up for a long time, the station master must ensure that the train is ready for departure in all respects before he advises the gateman for closing the gate.
- e) 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 trains 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.

The Gateman on duty shall then close the barriers of the L.C.Gate by operating winch. The key 'M' is to be extracted from the winch, which will be inserted in the lever no -2. Lever no -2 when reversed, locks the booms of the gates and releases Key 'N' and lever no -1. This key 'N' will be inserted in the EKT and turned and lever No.1 will be reversed for taking "OFF" DN Home/Calling-on Signals (2A/B/C/D and C-2/A/B/C/D), UP Starter Signal No. S23,S-SH/17,S-SH/15 and shunt signal no-SH6A/B and SH4A/B/C. Station Master on duty will press level crossing control button No.48 (Chocolate) and group button (release), L.C.Gate closed indication will appear in the panel and concerned signals automatically get released.

After the passage of train or completion of shunting the Station Master on duty shall inform the Gateman and press L.C.Gate controlling button No.48 and common group button (Trans) and keep it pressed till such time the Gateman extracts the gate control key 'N' from the EKT instrument. After getting Key-N this key is inserted lever no-2.This will unlock lever no-2.Lever no-2 when normalized key M is released. After getting the Key 'M' the Gateman will unlock the winch and open the L.C.Gate.

Emergency gate release operation facility is provided in the panel when the route gets locked due to some failure. For emergency release of gate, the SM on duty shall press signal cancellation button and then emergency gate release button and gate button No.48. A red flashing (Gate lock) indication will appear and after a lapse of 120sec gate lock indication will disappear and a white light will glow over the emergency gate release button indicating that the operation is matured. The SM on duty shall then operate push button no 48 for gate and group Trans button to release the key from EKT in gate Lodge. All such operation will be registered in the emergency gate operation counter. All such emergency operation shall be recorded in the station diary and in the register meant for it.

Lever No 1 is provided at the gate lodge to put back the concerned signal to danger in case of emergency by pulling the lever No 1 to normal position.

The level crossing gate shall be so worked as to cause the least possible inconvenience to vehicular traffic consistent with safety according to SR 16.03.01(a).To avoid the detention to the road traffic at the Level crossing gate, the gate signals should not be taken off too early in advance and LC gate should not be kept closed for more than 10minutes at a stretch according to SR 16.03.01(b).

3.5. DUTIES OF GATEMAN:

- (1) **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.

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(2) POSITION DURING PASSAGE OF TRAINS:

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

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

(3) ROUTINE DUTIES OF GATEMAN:

- (i) Gateman shall place red banner flag across the track during emergency and obstruction on the track.
- (ii) Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
- (iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.
- (iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- (v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle / wagons / 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.
- (vi) Gateman shall also be prepared to repeat any signal which guard may give to Loco Pilot on walkie – talkie or in any other way.
- (vii) 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.
- (viii) Gateman shall report to the nearest SM, Gangmate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- (ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.
- (x) At the gate whose signal have become defective, the gateman shall close and lock and lifting barriers / leaf gates on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the Loco Pilot to report the defect at the next station.
- (xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
- (xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- (xiii) Gateman shall work the gate as per Gate Working Instructions and remain well conversant with these instructions.
- (xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
- (xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- (xvi) Gateman shall keep the road surface well watered and rammed in case of unmetalled roads.
- (xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- (xviii) 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.
- (xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.

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(4) ACTION IN CASE OF UNUSUAL OCCURRENCE ON TRAIN :

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

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

(5) ACTION IN AN EMERGENCY AT THE LEVEL CROSSING:

- (i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
 - (ii) Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connecting by telephone, regarding the defects/obstructions at the gate, under exchange of private number.
 - (iii) If there is no response from the Station Master after two or three attempts, he shall first protect the gate and then inform on phone.
- (a) The gateman shall protect the line as under:-
- (i) If both lines are obstructed the gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.
 - (ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
 - (iii) Gateman shall then proceed to protect the gate along with detonators, battery operated LED based flashing lamps and red flag by day and red hand signal lamp by night.
 - (iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
 - (v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
 - (vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
 - (vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.

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(viii) Thereafter, he shall light up the battery operated LED based flashing lamp to warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(b) **Other action to be taken by Gateman:**

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

3.6. FAILURE OF TELEPHONIC COMMUNICATION:

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

- i) Station Master on duty shall send written advice to the gateman through the Traffic Pointsman with full details of number, description and direction of the train.
- ii) Gate man on receipt of such advice shall close the gate and transmit the key to the station master, which will enable him to take 'OFF' reception/departure/shunt signals.
- iii) When sufficient time is not available because of greater frequency of train service, station master will issue written authority to the train Loco Pilot to pass the signal at 'ON' position.
- iv) In addition Station master shall also issue a caution order advising the Loco Pilot to whistle continuously and approach the gate cautiously.
- v) The train Loco Pilot shall be instructed to pass the gate cautiously, on being hand signal by the gateman. If hand signal is not seen, Loco Pilot should be prepared to stop sort of the gate and ensure that gate is closed following GR 3.73(2)(b).
- vi) In case of an approaching train, the Station Master shall advise the Station Master at the dispatching end, under exchange of private number that the telephone at the gate has failed.
- vii) The Station Master at the dispatching end shall then issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- viii) Station master should also advise S & T staff responsible for maintenance of the telephone to rectify the defect at the earliest.
- ix) Normal working will be resumed only after S & T staff rectify the telephone and issue reconnection/ fit memo for the same.

3.7. FAILURE OF LIFTING BARRIERS OR LEAF GATES:

- (i) When the gate cannot be closed due to failure of lifting barriers or leaf gates, the gateman will immediately inform the Station Master on duty, under exchange of private number, and ensure the lifting barriers or leaf gates do not foul the track.
- (ii) He shall immediately fix red banner flag by day and red light by night on the post at that end first from which the train is approaching and then at the other end.
- (iii) Gateman shall secure the gate against road traffic by means of safety chains and padlocks.
- (iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light to the Loco Pilot of the approaching train.
- (v) Station Master on duty shall issue caution order to the Loco Pilot of departing trains.
- (vi) 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.

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- (vii) Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- (viii) Normal working will resumed only after maintenance staff repair the lifting barrier/ leaf gates and issue reconnection/ fit memo for the same.

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

3.8 FAILURE OF GATE KEY WITH THE GATE IN CLOSED POSITION, WHEN GATE KEY CANNOT BE EXTRACTED FOR OPENING THE GATE:

- a) If the gate key cannot be extracted from the winch, the gate lever or the key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange private number.
- b) 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.
- c) The record of the date and time of breaking the sealed cover of Emergency Key Box shall be recorded and signaled with reasons.
- d) 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.
- e) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- f) 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.
- g) Station Master shall advise S & T staff responsible for maintenance of winch/gate lever/key transmitter to rectify the defect at the earliest.
- h) Normal working will be resumed only after S & T staff repairs the winch/gate lever/key transmitter and issue reconnection/ fit memo for the same.
- i) After rectification, the Emergency Key shall be replaced by S&T maintainer.

3.9 FAILURE OF 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 Station Master on duty on telephone, under exchange of private number.
- ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- iii) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass 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 shall advise S & T staff responsible for maintenance of winch/gate lever/key transmitter to rectify the defect at the earliest.
- vii) Normal working will resumed only after S & T staff repair the winch/gate lever/key transmitter and issues reconnection/ fit memo for the same.
- viii) After rectification, the Emergency Key shall be replaced in the Emergency Key Box and resealed by the S & T maintainer.

3.10 OBSTRUCTION AT THE GATE:

- (i) 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

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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 / obstructions 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, battery operated LED based flashing lamp, and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect gate as per para 3.5 (5) above.
- (vi) Thereafter he shall protect the gate from the other direction also.
- (vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and 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/ leaf gates 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 obstruction.
- (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 Pilot of all trains to proceed cautiously, and pass the reception/departure signal at "ON" position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- (xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and 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/leaf gate to repair the same at the earliest.
- (xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers/ leaf gates and issue reconnection/ fit memo for the same.

3.11 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.3.10 above. If the obstruction fouls the Level Crossing Gate, gate man must keep the gates closed against road traffic till the track is cleared of the obstruction.

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4.0. WORKING OF 'C' CLASS MANNED INTERLOCKED LEVEL CROSSING GATE NO. 313 SITUATED AT KM. 604/17-19 (UP) & 604/20-18 (DN) BETWEEN BAM AND GTA.

4.1. BRIEF DESCRIPTION:

| | | | |
|-----|---|---|---|
| 1. | No. of Level Crossing Gate | : | 313 |
| 2. | Engineering or Traffic gate | : | Engineering |
| 3. | Under control of Station Master or Permanent Way Inspector. | : | SSE/P.Way/BAM |
| 4. | Location at Km. | : | Km. 604/17-19 (UP) & 604/20-18 (DN) |
| 5. | At station | : | - |
| 6. | In between station | : | BAM-GTA |
| 7. | BG/MG/NG | : | BG |
| 8. | Single line/double line/multiple line | : | Double line |
| 9. | Normal position | : | Open to Road Traffic |
| 10. | Interlocked/ Non-Interlocked | : | Interlocked |
| 11. | Means of Interlocking | : | Independent Gate Signals |
| 12. | Provision of gate signals | : | UP/DN Gate Home |
| 13. | Signaling arrangement | : | UP Gate Home, UP Advanced Starter cum UP Gate Distant, DN Gate Home |
| 14. | Means of communication. | : | Telephone with SM/BAM |
| 15. | Width of the level crossing gate | : | 9.30 mtr |
| 16. | Type of road | : | City Road |
| 17. | Name of road | : | BAM-NH-5 |
| 18. | Metalled /Non-Metalled | : | Metalled |
| 19. | Approach road | : | C.C Block |
| 20. | Width of the road | : | 8.0 mtr |
| 21. | Angle of road crossing (in case of the SKEW gates) | : | - |
| 22. | Road gradients (if any) North /East side | : | Level |
| | South/West side | : | Level |
| 23. | Road alignment (Straight/Curve) North/East side | : | Curve |
| | South/West side | : | Curve |
| 24. | Provision of height gauges | : | Yes |
| 25. | Type of barriers | : | Lifting |
| 26. | Length of check rails | : | 12.80 mtr |
| 27. | Road surface in between level crossing gates. | : | C.C blocks |
| 28. | Length of rumble strip/ speed breakers. | : | 9.90 mtr |
| 29. | Road signs | : | Available |
| 30. | Speed breakers indication board | : | Available |
| 31. | TVU | : | 5456, October - 2012 |
| 32. | Census next due on | : | October - 2015 |
| 33. | Demarcation for placement of detonators. | : | Available |
| 34. | No. of gateman working | : | 3 |
| 35. | Nearest Railway Medical Assistance | : | Brahmapur Rly Station. |
| 36. | Nearest Private Medical Assistance available (if any) | : | Gosoninua Gao |
| 37. | List of equipment available (Yes/No) | : | Yes |

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4.2. EQUIPEMENT TO BE AVAILABLE AT THE GATE:

| | | |
|-----|--|---------------------|
| 1. | Battery operated LED based flashing lamp | 3 |
| 2. | Hand Signal Flag Green | 1 mounted on stick |
| 3. | Hand Signal Flag Red | 3 mounted on sticks |
| 4. | Banner Flag Red | 3 |
| 5. | Posts for exhibiting red banner flag | 2 |
| 6. | Spare Chains with Padlocks | 2 with stop mark |
| 7. | Detonators | 10 in tin case |
| 8. | Gate lamps | 2 |
| 9. | Tommy Bar | 1 |
| 10. | Mortar Pan | 1 |
| 11. | Spade/ Fowrah | 1 |
| 12. | Rammer | 1 |
| 13. | Pick Axe | 1 |
| 14. | Tin Case for Flags | 1 |
| 15. | Cane for oil | 1 |
| 16. | Water pot/Bucket | 1 |
| 17. | Canister for Muster roll | 1 |
| 18. | Set of spare spectacles of gateman wearing glasses | 1 |
| 19. | Board demarcating protection of level crossing gate diagram in case of obstruction on gate | 1 |
| 20. | Basket | 1 |
| 21. | Whistle | 1 |
| 22. | Wall clock | 1 |
| 23. | Small size chain with padlock | 2 |

4.3. RECORDS TO BE KEPT AT GATE LODGE

In addition to the above equipment, following records shall also be kept at the Gate Loge.

- i) Gate Working Instructions in Hindi/English.
- ii) Gate Working, Instructions in local vernacular language.
- iii) Gateman Rule Book in local vernacular language.
- iv) List for tools and books.
- v) Duty Roster.
- vi) Certificate for working as gateman.
- vii) Bio-data particulars of Gatemen, including date of passing vision test, initial/refresher course, safety camp, etc.
- viii) Accident Register.
- ix) Record of last census of road traffic at Level Crossing gate.
- x) Public Complaint Book.
- xi) Inspection Book.
- xii) S&T Register.

4.4. MODE OF OPERATION:**NORMAL WORKING OF THE LEVEL CROSSING GATE (INTERLOCKED) & INTIMATION TO THE GATE MAN**

This gate is interlocked with independent gate home signals in UP and DN directions. The normal position of the gate is open. A four-lever ground frame is provided at the gate lodge. The key of the L.C.Gate remains in the winch when the gate is in open condition. When it is

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necessary to close the gate for taking off signals the Station Master on duty shall advise the Gateman through telephone, the number, description, direction and expected time of passage of the train at the gate. On receipt of the telephonic advice about approach of any train the gate man shall ensure that the level crossing gate is clear of road traffic and is free from obstruction. If the actual running time of the trains from either end of the section is less than 10 minutes, station master will intimate to gateman before obtaining/granting line clear. It is the duty of the gateman to ensure that the gate is closed in time so that there is no detention to road traffic.

The Gateman on duty shall then close the barriers of the L.C.Gate by operating winch. The key 'Z' is to be extracted from the winch, which will be inserted in the lever of GF3 and releases GF3. When GF3 reversed locks the booms of the gates and releases UP and Down Gate Home signals lever 2GF & 4GF respectively. After passage of the train this signal levers to be normalized and key 'Z' to be extracted after normalizing Boom lock lever no-2. This key will be inserted in the winch and winch will be operated to open the gate.

To avoid the detention to the road traffic at the Level crossing gate, the gate signals should not be taken off too early in advance and LC gate should not be kept closed for more than 10 minutes at a stretch. The Level crossing gate shall be so worked as to cause least possible inconvenience to vehicular traffic on consistent with safety according to SR 16.03.01(a).

APPROACH WARNING:

Approach warning device is installed in such a way that whenever a DN train from GTA side Occupies IBH track circuit No.16T1 & Up train from BAM side occupies the track circuit 25T(Adv. Str Track) then a audio visual alarm is initiated at this gate, which gives warning to gateman that train has already entered in block section, he is required to close the gate & muting of audio alarm is done by acknowledging & pressing the push button.

4.5. DUTIES OF GATEMAN:

- (1) **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.
- (2) **POSITION DURING PASSAGE OF TRAINS:**
During passage of trains, gateman will stand in the manner indicated below:
 - (i) Gateman will stand attentively in front of the gate lodge facing the approaching train.
 - (ii) In day time, gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.
 - (iii) In night time, gateman shall hold lighted hand signal lamp with white light facing the track.
 - (iv) He shall keep the whistle slung around his neck from a cord.
- (3) **ROUTINE DUTIES OF GATEMAN:**
 - (i) Gateman shall place red banner flag across the track during emergency and obstruction on the track.
 - (ii) Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
 - (iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.

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- (iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- (v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle / wagons / 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.
- (vi) Gateman shall also be prepared to repeat any signal which guard may give to Loco Pilot on walkie – talkie or in any other way.
- (vii) 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.
- (viii) Gateman shall report to the nearest SM, Gangmate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- (ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.
- (x) At the gate whose signal have become defective, the gateman shall close and lock and lifting barriers / leaf gates on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the Loco Pilot to report the defect at the next station.
- (xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
- (xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- (xiii) Gateman shall work the gate as per Gate Working Instructions and remain well conversant with these instructions.
- (xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
- (xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- (xvi) Gateman shall keep the road surface well watered and rammed in case of unmetalled roads.
- (xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
- (xviii) 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.
- (xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.

(4) **ACTION IN CASE OF UNUSUAL OCCURRENCE ON TRAIN :**

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

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

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(5) ACTION IN AN EMERGENCY AT THE LEVEL CROSSING:

- (i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
- (ii) Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connecting by telephone, regarding the defects/obstructions at the gate, under exchange of private number.
- (iii) If there is no response from the Station Master after two or three attempts, he shall first protect the gate and then inform on phone.
The gateman shall protect the line as under:-
- (i) If both lines are obstructed the gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.
- (ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
- (iii) Gateman shall then proceed to protect the gate along with detonators, battery operated LED based flashing lamps and red flag by day and red hand signal lamp by night.
- (iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- (v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- (vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
- (vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- (viii) Thereafter, he shall light up the battery operated LED based flashing lamp to warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(a) Other action to be taken by Gateman:

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

4.6. FAILURE OF TELEPHONIC COMMUNICATION:

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

- (i) If the telephone fails at the gate connected with the Station at the dispatching end, station master shall then issue a caution order to the Loco Pilot of the departing train.

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- (ii) Station master shall advise the Loco Pilot to whistle continuously and proceed cautiously while approaching the gate.
- (iii) In case the gate signal is ON he should stop short of gate signal and follow the procedure laid under GR 3.73.
- (iv) In case of an approaching train, the Station Master shall advise the Station Master at the dispatching end, under exchange of private number that the telephone at the gate has failed.
- (v) The Station Master at the dispatching end shall then issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (vi) Station master will also advise the gateman through gang man/patrolman/Loco Pilot of the first train that the telephone has become defective.
- (vii) Station master should also advise S & T staff responsible for maintenance of the telephone to rectify the defect at the earliest.
- (viii) Normal working will be resumed only after S & T staff rectify the telephone and issue reconnection/ fit memo for the same.

4.7. FAILURE OF LIFTING BARRIERS OR LEAF GATES:

- (i) When the gate cannot be closed due to failure of lifting barriers, the gateman will immediately inform the Station Master 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 chains and padlocks.
- (iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light to the Loco Pilot of the approaching train.
- (v) Station Master on duty shall issue caution order to the Loco Pilot of departing trains.
- (vi) 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.
- (vii) Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- (viii) Normal working will resumed only after maintenance staff repair the lifting barrier/ leaf gates and issue reconnection/ fit memo for the same.

4.8 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 winch, the gate leaves or the key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange 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.
- iii) The record of the date and time of breaking the sealed cover of emergency key box shall be recorded and signed with reasons.
- iv) 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.
- v) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- vi) 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.
- vii) Station Master shall advise S & T staff responsible for maintenance of winch/gate leaves/key transmitter to rectify the defect at the earliest.

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- viii) Normal working will be resumed only after S & T staff repairs the winch/gate leaves/key transmitter and issue reconnection/ fit memo for the same.
- ix) After rectification, the emergency key shall be replaced in the emergency key box and re-sealed by the S & T maintainer.

4.9 FAILURE OF 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 Station Master on duty on telephone, under exchange of private number.
- ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates should be adopted.
- iii) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass 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 shall advise S & T staff responsible 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 issues reconnection/ fit memo for the same.
- viii) After rectification, the emergency key shall be replaced in the emergency key box and re-sealed by the S & T maintainer.

4.10 DEFECTIVE GATE SIGNALS:

- (i) The gateman shall treat the gate signal 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 operating winch when the gate is in open condition
- (ii) If the Gate or the Gate Signal or Distant Signal becomes defective in "OFF" position, the gateman will make all efforts to put it at "ON" position even by cutting signal wires, if necessary.
- (iii) The gateman will immediately advise the Station Master on duty, under exchange of private number, regarding defective gate signals.
- (iv) 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.
- (v) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.
- (vi) Station Master on duty will issue caution order to the Loco Pilot of a departing train.
- (vii) He shall also advise the Station Master at the dispatching end, under exchange of private number; to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (viii) Station Master shall advise S & T staff responsible for maintaining the gate signal to repair the same at the earliest
- (ix) Normal working will be resumed after S & T staff rectifies the defective gate signal and issue reconnection/ fit memo for the same.

4.11 OBSTRUCTION AT THE GATE:

- (i) 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.
- (ii) 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.
- (iii) Immediately after this, the gateman shall advise the Station Master on duty, regarding the defects / obstructions at the gate, under exchange of private number.
- (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, battery operated LED based flashing lamp, and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect gate as per Para 4.5 (5) above.
- (vi) Thereafter he shall protect the gate from the other direction also.
- (vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and 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/ leaf gates 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 obstruction.
- (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 Pilot of all trains to proceed cautiously, and pass the reception/departure signal at "ON" position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- (xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and 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/leaf gate to repair the same at the earliest.
- (xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers/ leaf gates and issue reconnection/ fit memo for the same.

4.12 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gateman and Station Master will adopt the procedure given under item No.4.11 above. If the obstruction fouls the Level Crossing Gate, gate man must keep the gates closed against road traffic till the track is cleared of the obstruction.

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5.0. WORKING OF 'B2' CLASS MANNED INTERLOCKED LEVEL CROSSING GATE NO. 314 SITUATED AT KM. 605/19-21 (UP) & 605/22-20 (DN) BETWEEN BAM-GTA.

5.1. BRIEF DESCRIPTION:

| | | |
|-----|---|---|
| 1. | No. of Level Crossing Gate | 314 |
| 2. | Engineering or Traffic gate | Engineering |
| 3. | Under control of Station Master or Permanent Way Inspector. | SSE/P.Way/BAM |
| 4. | Location at Km. | Km. 605/19-21 (UP) & 605/22-20 (DN) |
| 5. | At station | - |
| 6. | In between station | BAM-GTA |
| 7. | BG/MG/NG | BG |
| 8. | Single line/double line/multiple line | Double line |
| 9. | Normal position | Open to Road Traffic |
| 10. | Interlocked/ Non-Interlocked | Interlocked |
| 11. | Means of Interlocking | Independent Gate Signals |
| 12. | Provision of gate signals | UP/DN Gate Home signals |
| 13. | Signaling arrangement | UP Gate & DN Gate Home Signals, DN Gate Distant |
| 14. | Means of communication. | Telephone with SM/BAM |
| 15. | Width of the level crossing gate | 7.5 mtr |
| 16. | Type of road | Others |
| 17. | Name of road | Haldipada Village Road |
| 18. | Metalled /Non-Metalled | Metalled |
| 19. | Approach road | C.C Block |
| 20. | Width of the road | 5.5 mtr |
| 21. | Angle of road crossing (in case of the SKEW gates) | - |
| 22. | Road gradients (if any) North /East side | 1:15 |
| | South/West side | 1:50 |
| 23. | Road alignment (straight/Curve) North/East side | Straight |
| | South/West side | Curve |
| 24. | Provision of height gauges | Yes |
| 25. | Type of barriers | Lifting |
| 26. | Length of check rails | 9.50 mtr |
| 27. | Road surface in between level crossing gates. | C.C blocks |
| 28. | Length of rumble strip/ speed breakers. | - |
| 29. | Road signs | Available |
| 30. | Speed breakers indication board | Available |
| 31. | TVU | 25608 on October - 2012 |
| 32. | Census next due on | October - 2015 |
| 33. | Demarcation for placement of detonators. | Available |
| 34. | No. of gateman working | 3 |
| 35. | Nearest Railway Medical Assistance | Brahmapur Rly Medical |
| 36. | Nearest Private Medical Assistance available (if any) | Gosoninue Gao |
| 37. | List of equipment available (Yes/No) | Yes |

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5.2. EQUIPEMENT TO BE AVAILABLE AT THE GATE:

| | | |
|-----|--|---------------------|
| 1. | Hand Signal Lamp Tri Colour | 3 |
| 2. | Hand Signal Flag Green | 1 mounted on stick |
| 3. | Hand Signal Flag Red | 3 mounted on sticks |
| 4. | Banner Flag Red | 3 |
| 5. | Posts for exhibiting red banner flag | 2 |
| 6. | Spare Chains with Padlocks | 2 with stop mark |
| 7. | Detonators | 10 in tin case |
| 8. | Gate lamps | 2 |
| 9. | Tommy Bar | 1 |
| 10. | Mortar Pan | 1 |
| 11. | Spade/ Fowrah | 1 |
| 12. | Rammer | 1 |
| 13. | Pick Axe | 1 |
| 14. | Tin Case for Flags | 1 |
| 15. | Cane for oil | 1 |
| 16. | Water pot/Bucket | 1 |
| 17. | Canister for Muster roll | 1 |
| 18. | Set of spare spectacles of gateman wearing glasses | 1 |
| 19. | Board demarcating protection of level crossing gate diagram in case of obstruction on gate | 1 |
| 20. | Basket | 1 |
| 21. | Whistle | 1 |
| 22. | Wall clock | 1 |
| 23. | Small size chain with padlock | 2 |

5.3. RECORDS TO BE KEPT AT GATE LODGE

In addition to the above equipment, following records shall also be kept at the Gate Loge.

- i) Gate Working Instructions in Hindi/English.
- ii) Gate Working, Instructions in local vernacular language.
- iii) Gateman Rule Book in local vernacular language.
- iv) List for tools and books.
- v) Duty Roster.
- vi) Certificate for working as gateman.
- vii) Bio-data particulars of Gatemen, including date of passing vision test, initial/refresher course, safety camp, etc.
- viii) Accident Register.
- ix) Record of last census of road traffic at Level Crossing gate.
- x) Public Complaint Book.
- xi) Inspection Book.
- xii) S&T Register.

**5.4. MODE OF OPERATION:
NORMAL WORKING OF THE LEVEL CROSSING GATE (INTERLOCKED) & INTIMATION TO THE GATE MAN**

This gate is interlocked with independent gate home signals in UP and DN directions. The normal position of the gate is open. A four-lever ground frame is provided at the gate lodge. The key of the L.C.Gate remains in the winch when the gate is in open condition. When it is necessary to close the gate for taking off signals the Station Master on duty shall advise the

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Gateman through telephone, the number, description, direction and expected time of passage of the train at the gate. On receipt of the telephonic advice about approach of any train the gate man shall ensure that the level crossing gate is clear of road traffic and is free from obstruction. If the actual running time of the trains from either end of the section is less than 10 minutes, station master will intimate to gateman before obtaining/granting line clear. It is the duty of the gateman to ensure that the gate is closed in time so that there is no detention to road traffic.

The Gateman on duty shall then close the barriers of the L.C.Gate by operating winch. The key 'X' is to be extracted from the winch, which will be inserted in the lever of GF-3 and releases GF-3. When GF-3 reversed locks the booms of the gates and releases UP and Down Gate Home signals lever 2GF & 4GF respectively. After passage of the train the signal levers to be normalized and key 'X' to be extracted after normalizing Boom lock lever no-3. This key will be inserted in the winch and winch will be operated to open the gate.

To avoid the detention to the road traffic at the Level crossing gate, the gate signals should not be taken off too early in advance and LC gate should not be kept closed for more than 10 minutes at a stretch. The Level crossing gate shall be so worked as to cause least possible inconvenience to vehicular traffic on consistent with safety according to SR 16.03.01(a).

5.5. DUTIES OF GATEMAN:

- (1) **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.
- (2) **POSITION DURING PASSAGE OF TRAINS:**
During passage of trains, gateman will stand in the manner indicated below:
 - (i) Gateman will stand attentively in front of the gate lodge facing the approaching train.
 - (ii) In day time, gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.
 - (iii) In night time, gateman shall hold lighted hand signal lamp with white light facing the track.
 - (iv) He shall keep the whistle slung around his neck from a cord.
- (3) **ROUTINE DUTIES OF GATEMAN:**
 - (i) Gateman shall place red banner flag across the track during emergency and obstruction on the track.
 - (ii) Gateman shall ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
 - (iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.
 - (iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
 - (v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle / wagons / 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.
 - (vi) Gateman shall also be prepared to repeat any signal which guard may give to Loco Pilot on walkie – talkie or in any other way.

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- (vii) 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.
 - (viii) Gateman shall report to the nearest SM, Gangmate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
 - (ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the 'ON' position even by disconnecting the signal or the wire if necessary.
 - (x) At the gate whose signal have become defective, the gateman shall close and lock and lifting barriers / leaf gates on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the Loco Pilot to report the defect at the next station.
 - (xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
 - (xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
 - (xiii) Gateman shall work the gate as per Gate Working Instructions and remain well conversant with these instructions.
 - (xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
 - (xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
 - (xvi) Gateman shall keep the road surface well watered and rammed in case of unmetalled roads.
 - (xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of gates should be to the minimum possible extent.
 - (xviii) 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.
 - (xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.
- (4) **ACTION IN CASE OF UNUSUAL OCCURRENCE ON TRAIN :**
In case gateman observes anything unusual with a passing train, he shall take following action.
- (i) He shall take prompt action to warn the Loco Pilot / guard of the passing train by showing red flag by day and red light by night.
 - (ii) He shall simultaneously try to draw the attention of the Loco Pilot / guard by whistling continuously, shouting, gesticulating, throwing ballast on the brake van or by any other means.
 - (iii) If Loco Pilot/guard fails to take notice, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of private number.
 - (iv) In case of train parting, gateman shall not show stop hand signal but shall show prescribed signal for train parting.
 - (v) He shall endeavor to attract the attention of the Loco Pilot/guard by whistling continuously, shouting, gesticulating and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible.
 - (vi) In case the train does not stop, gateman shall immediately inform the Station Master, if connected on telephone, to take appropriate action, under exchange of private number.
- (5) **ACTION IN AN EMERGENCY AT THE LEVEL CROSSING:**
- (i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
 - (ii) Thereafter, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connecting by telephone, regarding the defects/obstructions at the gate, under exchange of private number.

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

The gateman shall protect the line as under:-

- (a)
- (i) If both lines are obstructed the gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected to arrive first.
- (ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
- (iii) Gateman shall then proceed to protect the gate along with detonators, battery operated LED based flashing lamps and red flag by day and red hand signal lamp by night.
- (iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- (v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- (vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
- (vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- (viii) Thereafter, he shall light up the battery operated LED based flashing lamp to warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.
- (b) **Other action to be taken by Gateman:**
- (i) At night gateman shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub paras (a) and (b) above.
- (ii) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers / 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 take immediate action.
- (iii) He shall note down the particulars of the road vehicle, vehicle number, name of the Driver, owner and relay these details to the nearest Station Master or Permanent Way Inspector regarding the particulars and obstructions at the level crossing gate, through messenger or other means available.

5.6. FAILURE OF TELEPHONIC COMMUNICATION:

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

- (i) If the telephone fails at the gate connected with the Station at the dispatching end, station master shall then issue a caution order to the Loco Pilot of the departing train.
- (ii) Station master shall advise the Loco Pilot to whistle continuously and proceed cautiously while approaching the gate.
- (iii) In case the gate signal is ON he should stop short of gate signal and follow the procedure laid under GR 3.73.

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

5.7. FAILURE OF LIFTING BARRIERS OR LEAF GATES:

- (i) When the gate cannot be closed due to failure of lifting barriers, the gateman will immediately inform the Station Master 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 chains and padlocks.
- (iv) After securing the gate against road traffic, gateman shall show green hand signal flag by day and green light to the Loco Pilot of the approaching train.
- (v) Station Master on duty shall issue caution order to the Loco Pilot of departing trains.
- (vi) 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.
- (vii) Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- (viii) Normal working will resumed only after maintenance staff repair the lifting barrier/ leaf gates and issue reconnection/ fit memo for the same.

5.8 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 winch, the gate leaves or the key transmitter then gateman must immediately inform the Station Master on duty on telephone, under exchange 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.
- iii) The record of the date and time of breaking the sealed cover of emergency key box shall be recorded and signed with reasons.
- iv) 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.
- v) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- vi) 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.
- vii) Station Master shall advise S & T staff responsible for maintenance of winch/gate leaves/key transmitter to rectify the defect at the earliest.
- viii) Normal working will be resumed only after S & T staff repairs the winch/gate leaves/key transmitter and issue reconnection/ fit memo for the same.

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- ix) After rectification, the emergency key shall be replaced in the emergency key box and re-sealed by the S & T maintainer.

5.9 FAILURE OF 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 Station Master on duty on telephone, under exchange of private number.
- ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of trains as prescribed for non-interlocked gates should be adopted.
- iii) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass 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 shall advise S & T staff responsible 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 issues reconnection/ fit memo for the same.
- viii) After rectification, the emergency key shall be replaced in the emergency key box and re-sealed by the S & T maintainer.

5.10 DEFECTIVE GATE SIGNALS:

- (i) The gateman shall treat the gate signal 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 operating winch when the gate is in open condition.
- (ii) If the Gate or the Gate Signal or Distant Signal becomes defective in "OFF" position, the gateman will make all efforts to put it at "ON" position even by cutting signal wires, if necessary.
- (iii) The gateman will immediately advise the Station Master on duty, under exchange of private number, regarding defective gate signals.
- (iv) 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.
- (v) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.
- (vi) Station Master on duty will issue caution order to the Loco Pilot of a departing train.
- (vii) He shall also advise the Station Master at the dispatching end, under exchange of private number; to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- (viii) Station Master shall advise S & T staff responsible for maintaining the gate signal to repair the same at the earliest
- (ix) Normal working will be resumed after S & T staff rectifies the defective gate signal and issue reconnection/ fit memo for the same.

5.11 OBSTRUCTION AT THE GATE:

- (i) 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.

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- (ii) 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.
- (iii) Immediately after this, the gateman shall advise the Station Master on duty, regarding the defects / obstructions at the gate, under exchange of private number.
- (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, battery operated LED based flashing lamp, and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect gate as per Para 5.5(5) above.
- (vi) Thereafter he shall protect the gate from the other direction also.
- (vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and 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/ leaf gates 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 obstruction.
- (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 Pilot of all trains to proceed cautiously, and pass the reception/departure signal at "ON" position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- (xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and 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/leaf gate to repair the same at the earliest.
- (xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers/ leaf gates and issue reconnection/ fit memo for the same.

5.12 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gateman and Station Master will adopt the procedure given under item No. 5.11 above. If the obstruction fouls the Level Crossing Gate, gate man 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 BRAHMAPUR STATION****DETAILS OF SIGNALLING AND INTERLOCKING INSTALLATION AND COMMUNICATION ARRANGEMENTS AT THE STATION**

This is a 'B' class station Standard – III Electronic Interlocking with Route setting type panel. The points and Signals etc. are power operated from composite miniature central panel or VDU installed in the Station Master's Office. The Station is equipped with Multiple Aspect Colour Light Signaling.

1.1 DESCRIPTION OF PANEL:

The yard layout is depicted on the panel and the panel is fixed parallel to the track so that when the Station Master faces the panel, the yard drawing of the panel corresponds to the actual layout. A Visual Display Unit (Computer) is provided in the SM's office as a stand by option. (The description and function of Visual Display Unit is given in APPENDIX-"B-1")

1.2 POINT PUSH BUTTON:

Points are normally operated automatically along with route setting operation. However, required points can be operated individually also. For this point push buttons, BLACK in colour are fitted over the point layout on the panel board. The individual operation of the electric point machine is controlled by these point push buttons in conjunction with the point group button (black with red dot) (Normal) or (Reverse) as per requirement, fitted on the top of panel board.

1.2.1 When a point is set and locked in NORMAL position, a 'Yellow' strip light indication on straight line appears suggesting that the point is in NORMAL position.

1.2.2 When a point is set and locked in REVERSE position, a 'Yellow' strip light indication in reverse appears suggesting that the point is in REVERSE position.

1.2.3 When the points of any route have been correctly set and relevant signal is taken 'OFF', 'RED' indication appears near the points indicating that the concerned points are locked either in NORMAL or REVERSE.

1.2.4 When the points are neither set nor locked either in NORMAL or in REVERSE correctly, the normal and reverse indication will not be there but the indication will start flashing till such time the point is housed and locked properly in one of the positions. In such case points are to be set both ways by crank handle and clamped and padlocked. This indication will flash during point operation also.

1.2.5 All points over running lines are operated by electric point machines.

1.2.6 The cause for non setting of the point in the desired position shall be checked up by the Station Master on duty according to GR and SR.3.68.01(C). If there is a defect other than an obstruction, this point shall be considered defective and action shall be taken for clamping and padlocking of these points in the desired position by the Station Master on duty himself for all trains according to SR.3.69.03(C). In such case both ends of the point shall be clamped and padlocked.

1.2.7 DESCRIPTION OF POINT PUSH BUTTON**a) HWH END POINTS:**

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| Sl. No. | Button No. | Colour | Description |
|---------|------------|-----------|---|
| 1. | 31A/B WN | BLACK | Crossover point between Up and Down main lines. |
| 2. | 33 WN | BLACK | DS point in Shunting Neck no 2 |
| 3. | 35A/B WN | BLACK | Crossover point between Line No.05 (common loop) and Central Ware Hosing Corp |
| 4. | 37 WN | BLACK | DS point in shunting Neck no 1 |
| 5. | 39A/B WN | BLACK | Crossover point between Common Loop and Up Main Lines. |
| 6. | 41A/B WN | BLACK | Crossover point between common loop (line No.4) and Common Loop (line No.5). |
| 7. | 45A/B WN | BLACK | Crossover point between Down Loop and Down Main Lines. |
| 8. | CONTROL 47 | BLACK | Control on Hot Axle siding. |
| 9. | CONTROL 49 | CHOCOLATE | Control on LC Gate at Km. 600/41-601/1 (Up) & 601/2-600/42 (Dn). |

b) **VSKP END POINTS**

| SL. No. | Button No. | Colour | Description |
|---------|------------|-----------|---|
| 1. | 32 A/B WN | BLACK | Crossover point between Up and Down Main Lines |
| 2. | 34 A/B WN | BLACK | Crossover points between Down main and Down loop Lines. |
| 3. | 40 WN | BLACK | DS point in shunting neck |
| 4. | 42 A/B WN | BLACK | Crossover point between Up Main and Common Loop (Line No. 4) Lines. |
| 5. | 44 WN | BLACK | DS point connecting shunting Neck to Line 4 |
| 6. | 46 A/B WN | BLACK | Crossover point between Common Loop (Line No. 4) and Common Loop (Line No.5) Lines. |
| 7. | CONTROL 48 | CHOCOLATE | Control on L.C.Gate at Km. 602/19-21 (Up) & 602/22-20 (Dn) |

1.2.8 **DESCRIPTION OF POINT GROUP BUTTON:**

There are two point group buttons (Black with red dot) at the top of panel one for Normal and one for Reverse operation of points. The button is operated in conjunction with point button to operate the concerned point to the required setting.

1.3 **SIGNAL PUSH BUTTON:**

These are RED coloured push button on the panel near the stop signals on the panel. These are operated in conjunction with Route button (white coloured) to take 'OFF' the signals.

DESCRIPTION OF SIGNAL BUTTONS:

| SL. No. | Button No. | Colour | Description |
|---------|------------|--------------------|---|
| 1. | C1 A/B/C | RED with WHITE Dot | Up Calling-on signal for Up Main and Common Loop. |
| 2. | 1 A/B/C | RED | Up Home signal for Up Main, Common Loop Lines. |

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| 3. | 2 A/B/C/D | RED | Down Home Signals for Down Main, Down Loop, Common Loop lines |
| 4. | C2 A/B/C/D | RED with White dot. | Down Calling-on signal for Down Main, Down Loop, Common Loop lines. |
| 5. | SH3 (A-E) | YELLOW | Shunt signal for Up Main, Common Loop lines, Down main & Down loop |
| 6. | SH4 A/B/C | YELLOW | Shunt signal for Up Main, Common Loop lines. |
| 7. | SH 5 A/B | YELLOW | Shunt signal for Common Loop(L/4 & L/5) |
| 8. | SH 6 A/B | YELLOW | Shunt signal for Common Loop(L/4 & L/5) |
| 9. | SH 7 A/B | YELLOW | Shunt signal for Common Loop (L/5) and CWC siding. |
| 10. | 15 | RED | Common Loop Line no 5 starter signal. |
| 11. | SH 15 | YELLOW | Shunt signal on Line no 5 for shunting neck. |
| 12. | 16 | RED | DN Loop Line starter signal. |
| 13. | 17 | RED | Common Loop Line no 4 starter signal. |
| 14. | SH 17 | YELLOW | Shunt signal on Line no 4 for shunting neck. |
| 15. | 18 | RED | Common Loop Line no 4 starter signal. |
| 16. | SH 18 | YELLOW | Shunt signal for on Line no 4 for shunting neck no -1. |
| 17. | 20 | RED | Common Loop Line no 5 starter signal. |
| 18. | SH 20 A/B | YELLOW | Shunt signal below starter signal no.20 for shunting neck no -1 and 2. |
| 19. | SH 22 | YELLOW | Shunt signal on Central ware housing Coop line for shunting on shunting neck no 1 and 2. |
| 20. | 23 | RED | Up Main Line Starter. |
| 21. | 25 | RED | Up Advanced starter. |
| 22. | 26 | RED | Down main starter. |
| 23. | 27 | RED | UP IBH signal |
| 24. | 28 | RED | Down Advanced starter |

SIGNAL INDICATIONS:

The aspects of the signals as obtained at any time are shown on the panel on the signal indication along side of the track. The 'ON' aspect indications of stop signals are RED and 'OFF' aspect indications are GREEN on panel. The 'ON' Aspect of distant signal is yellow and 'OFF' Aspect is Green on the panel.

1.4 ROUTE BUTTONS:

1.4.1 Route buttons are provided separately on each running line on the panel for initiation of route. Common route buttons are also provided for taking off starters. An individual route button is provided for taking "OFF" Advanced Starter for clearing the signal. It is necessary to operate the signal button and the concerned route button simultaneously for taking "OFF" concerned signal.

1.4.2 DESCRIPTION OF ROUTE BUTTONS:

| Sl. No | Button No. | Colour | Description |
|--------|------------|----------------------|---|
| 1. | L1-UN | WHITE | Route button for Down Home for Down loop Line set to Main Line |
| 2. | L1-UN1 | WHITE WITH BLACK DOT | Route button for Down Home set to overrun line/Down Calling -on C2A and Shunt Signal 3E for Down loop line. |

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| 3. | L2-UN | WHITE | Route button for Down Home/Down Calling-on/shunt signal No.3D for Down main line. |
| 4. | L3-UN | WHITE | Route button for Up Home / Up Calling-On/Shunt Signal No 3C/ Shunt Signal No 4A for Up main Line. |
| 5. | L4-UN | WHITE | Route button for Up Home / Down Home for Common Loop Line set to Main Line for common loop line line no 4. |
| 6. | L4-UN1 | WHITE WITH BLACK DOT | Route button for Up Home/Down Home set to overrun line /UP Calling-on/DN Calling-on/Shunt 3B/Shunt 4B/Shunt 5B/Shunt 6A for Common loop line no 4. |
| 7. | L5-UN | WHITE | Route button for Up Home/Down Home set to Main Line for Common loop Line no 5. |
| 8. | L5-UN1 | WHITE WITH BLACK DOT | Route button for UP/DN Home set to overrun line of Line 5/UP Calling-on/DN Calling-on/Shunt 3A/Shunt 4C/ Shunt 5A/Shunt 6B/ Shunt 7B for Common loop Line no 5. |
| 9. | L5-UN2 | WHITE WITH BLACK DOT | Route button for DN Home set to overrun line of Line 5 for Common loop Line no 5. |
| 10. | 25AT- UN | WHITE | Common route button for Up main Line no 3 starter signal No.23 and Up common loop Line no 4 starter signal No.17 ,Up common loop Line no 5 starter signal No.15. |
| 11. | 28AT-UN | WHITE | Common route button for Down main Line no 2 starter signal No.26 and Down loop Line no 1 starter signal No.16. |
| 12. | SN-UN | WHITE | Route button for Movement into Shunting Neck |
| 13. | SN1-UN | WHITE | Route button for Movement into Shunting Neck No-1 |
| 14. | SN2-UN | WHITE | Route button for Movement into Shunting Neck No-2 |
| 15. | WH-UN | WHITE | Route button for Movement into Central Ware housing corpn. |
| 16. | 25 UN | WHITE | Route button for Up advanced starter signal No.25. |
| 17. | 28 UN | WHITE | Route button for Down advanced starter signal No.28. |
| 18. | 27 UN | WHITE | Route button for UP IBH signal No.27 |

CRANK HANDLE PUSH BUTTON

| Sl. No. | Button No. | Colour | Description |
|---------|------------|--------|--|
| 1. | CH-1 | BLUE | To be pressed to extract Crank Handle Key for operation of Point No. 32 along with "TRANS" Push Button |
| 2. | CH-2 | BLUE | To be pressed to extract Crank Handle Key for operation of Point No. 34 & 45 along with "TRANS" Push Button. |
| 3. | CH-3 | BLUE | To be pressed to extract crank handle key for operation of point No. 37, 39 & 42 along with "TRANS" push button. |

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| 4. | CH-4 | BLUE | To be pressed to extract crank handle key for operation of point No.40 & 44 along with "TRANS" push button. |
| 5. | CH-5 | BLUE | To be pressed to extract crank handle key for operation of point No. 41 & 46 along with "TRANS" push button |
| 6. | CH-6 | BLUE | To be pressed to extract crank handle key for operation of point No.33 & 35 along with "TRANS" push button. |
| 7. | CH-7 | BLUE | To be pressed to extract crank handle key for operation of point No. 31 along with "TRANS" push button |

MISCELLANEOUS PUSH BUTTONS

| SI No | Button No. | Colour | Description |
|-------|---|-----------------------|--|
| 1. | SM'S EMERGENCY POINT OPERATION KEY | | This Key is to be inserted and operated in the event of Emergency Point operation. |
| 2. | SM'S PANEL KEY. | | To lock the control panel to prevent unauthorized operation. |
| 3. | PANEL/PC SWITCH | | To give control of operation from Panel to PC and vice versa |
| 4. | ACK FOR SYSTEM FAILURE | GREEN WITH RED DOT. | To be pressed to silence system failure buzzer |
| 5. | GROUP TRANS BUTTON | WHITE WITH BLACK DOT. | To be pressed to initiate Slot of Crank Handle Or L.C. Gate operation along with concerned Slot / Crank Handle / L.C. Gate Button. |
| 6. | GROUP RELEASE PUSH BUTTON | WHITE WITH BLACK DOT. | To be pressed to withdraw / Normalise the control of slot / Crank Handle/ L.C Gate operation along with concerned Slot/ Crank Handle/L.C Gate push Button. |
| 7. | POINT GROUP NORMAL PUSH BUTTON | BLACK WITH RED DOT. | To be pressed to initiate "NORMAL" setting of point along with concerned point push button. |
| 8. | POINT GROUP REVERSE PUSH BUTTON | BLACK WITH RED DOT. | To be pressed to initiate "REVERSE" setting of point along with concerned point push button. |
| 9. | EMERGENCY ROUTE RELEASE PUSH BUTTON | WHITE WITH RED DOT. | To be pressed for emergency Route Release. |
| 10. | SIGNAL CANCELLATION PUSH BUTTON | RED | To be pressed for canceling a signal which is already taken "OFF" or to release a Route after passage of train. |
| 11. | SIGNAL LAMP FAILURE ACKNOWLEDGEMENT PUSH BUTTON | RED WITH WHITE DOT | To be pressed for acknowledging signal lamp failure Buzzer. |
| 12. | POINT FAILURE ACKNOWLEDGEMENT PUSH BUTTON | RED WITH WHITE DOT | To be pressed for acknowledging point failure Buzzer. |

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| 13. | EMERGENCY POINT PERATION | BLACK WITH RED DOT | To be pressed to operate the point when concerned point zone axle counter or track failed. |
| 14. | EMERGENCY POINT PERATION | | Key to be inserted on the panel for emergency operation of points |
| 15. | BUTTON HELD ACKNOWLEDGEMENT PUSH BUTTON | WHITE WITH RED DOT | To be pressed for silencing button Held Buzzer in case of any push button remains pressed after the button is released. |
| 16. | EMERGENCY GATE RELEASE BUTTON FOR L.C. GATE AT KM 600/41-601/1(Up) & 601/2-600/42(Dn) | CHOCOLATE WITH RED DOT | To be pressed for emergency Gate Release at KM 600/41-601/1(Up) & 601/2-600/42(Dn) |
| 17. | L.C. GATE CONTROL 49 PUSH BUTTON | CHOCOLATE | To be pressed for extending Control to open L.C. Gate at 600/41-601/1(Up) & 601/2-600/42(Dn) |
| 18. | EMERGENCY GATE RELEASE BUTTON FOR L.C. GATE AT KM 602/19-21(Up) & 602/22-20(Dn) | CHOCOLATE WITH RED DOT | To be pressed for emergency Gate Release at KM 602/19-21(Up) & 602/22-20(Dn) |
| 19. | L.C. GATE CONTROL 48 PUSH BUTTON | CHOCOLATE | To be pressed for extending Control to open L.C. Gate at 602/19-21(Up) & 602/22-20(Dn) |
| 20. | SIDING CONTROL POINT NO.47 PUSH BUTTON. | BLACK | To be pressed along with TRANS button for extracting key from RKT to operate the Hot Axle siding point. |
| 21. | RESET PUSH BUTTON FOR DN LV AT JNP END | RED | To be pressed for initiating reset for axle counter for Down LV section JNP - BAM. |
| 22. | RESET PUSH BUTTON FOR UP LV AT JNP END | RED | To be pressed for initiating reset for axle counter for Up LV section BAM- JNP. |
| 23. | RESET KEY FOR DN LV AT JNP END | | Reset key to be inserted on the panel for resetting the Axle counter for section BAM - JNP. |
| 24. | RESET KEY FOR UP LV AT JNP END | | Reset key to be inserted on the panel for resetting the Axle counter for section JNP - BAM |
| 25. | RESET PUSH BUTTON FOR UP IB AT GTA END | RED | To be pressed for initiating reset for axle counter for UP IB section BAM - GTA. |
| 26. | PERMISSION GRANTING PUSH BUTTON FOR DN IB AT GTA END | YELLOW | To be pressed for granting permission for resetting axle counter for Down IB section GTA - BAM. |

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| 27. | RESET KEY FOR UP IB AT GTA END | | Reset key to be inserted on the panel for resetting the Axle counter for section BAM - GTA |
| 28. | UP IB ACK BUTTON | GREEN | To be pressed for Acknowledging the permission received from GTA for resetting UP IB BAM – GTA section. |
| 29. | DN TRAIN RUN AWAY MUTING PUSH BUTTON | RED WITH WHITE DOT | To be pressed for muting the DN train run away buzzer DN IB GTA – BAM section. |
| 30. | UP TRAIN ENTERING SECTION MUTING PUSH BUTTON | RED WITH WHITE DOT | To be pressed for muting the UP train ENTERING SECTION buzzer DN IB BAM – GTA section. |
| 31. | UP TRAIN RUN AWAY MUTING PUSH BUTTON | RED WITH WHITE DOT | To be pressed for muting the UP train run away buzzer UP IB BAM - GTA section. |
| 32. | DN LV RESET PUSH BUTTON | RED | Reset button to be pressed for resetting DN LV GTA – BAM section |
| 33. | DN LV ACK BUTTON | GREEN | To be pressed for Acknowledging the permission received from GTA for resetting DN LV GTA – BAM section. |
| 34. | RESET KEY FOR DN LV AT GTA END | | Reset key to be inserted on the panel for resetting the Axle counter for DN LV GTA – BAM section. |
| 35. | PERMISSION GRANTING PUSH BUTTON FOR UP LV section GTA END | YELLOW | To be pressed for granting permission for resetting axle counter for DN LV BAM – GTA section. |
| 36. | UP BLOCK RELEASE PUSH BUTTON | CHOCOLATE WITH WHITE | To be pressed for normalizing the Block Instrument for section JNP – BAM. |
| 37. | DN BLOCK RELEASE PUSH BUTTON | CHOCOLATE WITH WHITE | To be pressed for normalizing the Block Instrument for section GTA – BAM. |
| 38. | SM's A/C RESET KEY | | Common Key to be turned for resetting the axle counters for loop line. |
| 39. | 33/35 AXT AZVBN | BLUE | 33/35 AXT Axle counter Reset button |

1.5 **MICROLOK INDICATION:**

A Microlok Indication is provided on the top of the panel for indicating which system of Microlok is working. This SSI unit consists of two Microlok systems called system 'A' and system 'B'. These two systems status (ON/OFF) will be indicated separately on the panel. If the Microlok unit is ON, 'GREEN' indication will appear and if OFF 'RED' indication appears. If any one of the "ON" line system fails automatically "OFF" line system will change to 'ON' line with a gap of 120 seconds. A system failure buzzer is provided on the panel board. To stop the Microlok unit buzzer, SM on duty has to press the system failure acknowledgement button provided on the top of the panel and intimate the same to ESM/JE/SE in charge for rectification of failure.

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Whenever the system changes from A to B or B to A, SM on duty has to release all crank handles, LC Gate and siding controls.

POINT FAILURE INDICATION (RED) /POINT FAILURE BUZZER/POINT FAILURE MUTING BUTTON (RED WITH WHITE DOT):

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

1.6 FAILURE OF TRIPLE POLE SIGNAL LAMP AND MUTING BUTTON:

Triple pole double filament signal lamps have been used at this station. In case main filament fuses auxiliary filament will automatically lit up with same intensity. However failure of main filament will be indicated by the appearance of 'RED' light on panel along with audible buzzer, which can be stopped by pressing the acknowledgement button. But the RED light will glow until the lamp is replaced. For rectification of failure SM on duty should inform the ESM/JE/SE about the group which has failed. For the purpose of giving main filament failure indication the following groups are formed on either side.

- i. Up Distant.
- ii. Up Home & Down Advanced starter.
- iii. Down starters.
- iv. Up Starters.
- v. Down Home & Up Advanced starter.
- vi. UP IBS.
- vii. DN Distant

1.7 EMERGENCY ROUTE RELEASE COUNTER:

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

1.8 EMERGENCY ROUTE RELEASE INDICATION (WHITE) AND EMERGENCY ROUTE RELEASE BUTTON (WHITE WITH RED DOT):

The panel interlocking is based on the principle of 'DEAD APPROACH LOCKING'. As such when a route is set and signal is taken 'OFF' 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 simultaneously pressing the signal cancellation button and the concerned signal button. After this first the emergency route release button (white with red dot) positioned in the top of panel to be pressed and subsequently the concerned signal button is to be pressed releasing the emergency route release button. A flashing white light above the emergency route release button will lit indicating that the timer has started. 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 (White strip lights) does not disappear, it suggests that the route is not released/cancelled. In such case the concerned S&T staff should be advised immediately to get the emergency route release button sealed 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 station diary and in the train signal register.

1.9 EMERGENCY POINT OPERATION (BLACK WITH RED DOT):

Emergency point operation facility is provided to operate the point from the panel in case of

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failure of point controlling track circuit/Axle Counter. If such operation is necessary, the SM on duty, after ensuring that no vehicle is standing on the concerned point track circuit/Axle Counter shall insert the emergency point operation key and press the emergency point operation button along with relevant point button simultaneously. Then retaining point button pressed emergency point button to be released and the point group normal button or point group reverse button is to be pressed for operating the point to 'NORMAL' or 'REVERSE'. All such operations will be registered in the emergency point operation counter. Each operation of emergency point operation shall be recorded in the station diary and in the register meant for this purpose.

1.10 **EMERGENCY GATE RELEASE OPERATION(CHOCOLATE WITH RED DOT):**

Emergency gate release operation facility is provided in the panel when the route gets locked due to some failure. For emergency release of LC gate at Km. 602/19-21(UP), Km. 602/22-20(DN), the SM on duty shall press signal cancellation button and then emergency gate release button No. 48 and gate button No. 48. For emergency release of LC gate at Km. 600/41-601/1(UP), Km. 601/2-600/42(DN), the SM on duty shall press signal cancellation button and then emergency gate release button no 49 and gate button No. 49 A red flashing (Gate lock) indication will appear and after a lapse of 120sec Gate lock indication will disappear and a white light will glow over the emergency gate release button indicating that the operation is matured. The SM on duty shall then operate push button for gate and group Trans button to release the key from RKT in gate Lodge. All such operation will be registered in the emergency gate operation counter. All such emergency operation shall be recorded in the station diary and in the register meant for it.

1.11 **BUTTON HELD ACKNOWLEDGEMENT (WHITE WITH RED DOT):**

All push button are self-restoring type. A button held acknowledgement push button along with a white light is positioned at the top of the panel. When any point, route or signal button gets stuck in pressed condition, a buzzer will sound along with flashing white light indication. The Station master shall stop the buzzer by pressing the button held acknowledgement button (White with Red dot). The buzzer will stop but the flashing white light of point, route or signal will continue to glow until the pressed button is normalised. SM on duty shall try to find out the pressed button for normalisation or otherwise inform the maintenance staff to rectify.

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

Separate indications (White Light) for each overlap is provided near the starter signal to indicate the free or locked condition of overlap. This indication light will glow when overlap is locked by any Home Signal route and there will be no light when overlap is free.

The locked indication starts flashing when the approaching train clears the rear end point zone track and occupies the berthing track. After a time release of 120 seconds the white flashing light will disappear indicating concerned overlap is free.

1.13 **TRACK CIRCUITS:**

All the running lines except 33/35 AXT are track circuited. The section 33/35 AXT is monitored by Axle counters.

In addition short length track circuits in advance of Advanced starter Signals and Home signals in both the directions are also provided. For Calling-on signals (91M Rail length) track circuits are also provided in rear of the Home signals in both directions. From last trailing point/fouling mark in either side of Yard to Advanced Starter Signals is also track circuited (i.e. 25AT and 28AT in Up and Down directions respectively). Normally the panel is blank except point and Block section Indications for the above track circuits/Axle counters are available on panel/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.

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1.14 **AXLE COUNTER:**

- i) Electronic Analog Axle Counters are provided for section 33/35 AXT in the yard for counting Axles 'IN' and counting axles 'OUT' which indicate whether the concerned berthing track monitored by analog axle counters is clear or occupied.

In case of failure of analog Axle Counter the re-setting of axle counter must be done as per the procedure given in Appendix-"B" under para 14.0 of this SWR. In the event of failure of Axle Counter/ Track circuit the clearance of loop line will be ensured by physical check by the SM on duty and train shall be admitted as per GR.3.69 and SR there to.

UP IB SECTION BAM-GTA: A pair of Analog axle counter is provided on Up line to monitor the IB section from UP Advanced starter signal no.25 of BAM to 400m beyond the UP IBS signal No. 27. These pair of axle counters will monitor track and count the axles "IN" and axles "out" to indicate whether the UP IB Section is clear of trains as well as to verify the last vehicle of the incoming train.

DOWN IB SECTION GTA-BAM: A pair of Analog axle counter is provided on Down line to monitor the IB section from Down Advanced starter signal no.12 of GTA to 400m beyond the Down IBS signal No. 16. These pair of axle counters will monitor track and count the axles "IN" and axles "out" to indicate whether the Down IB Section is clear of trains as well as to verify the last vehicle of the incoming train.

ii) **Digital Axle counter is provided in the following sections:**

- A. DN LV/BLOCK SECTION BAM-GTA: A pair of Digital axle counter is provided on Down line between 400m beyond the IBS signal No.16 to beyond 180 m of DN home signal of BAM.
- B. UP LV/BLOCK SECTION BAM-GTA: A pair of Digital axle counter is provided on UP line between 400m beyond the IBS signal No.27 to Beyond 180 m of Up home signal of GTA).
- C. DN LV/BLOCK SECTION JNP-BAM: A pair of Digital axle counter is provided on Down line between DN Advanced Starter of BAM to 180 m beyond Down Home signal no 2 of JNP).
- D. UP LV/BLOCK SECTION BAM-JNP: A pair of Digital axle counter is provided on Up line between UP Advanced Starter no 11 of JNP to BSLB of BAM).

(Details IBH and LV working is given in APPENDIX-'F' of this SWR)

NOTE:

Before taking off reception and dispatch signals for Up and Down directions the SM on duty should ensure that the entire route including overlap and berthing portion is clear of all obstructions by observing the Track indication/Axle counter indication. The indication of track circuit / Axle counter will exhibit Red Light when track is occupied. There will be no track indication when any route is not set.

2.0 **STATION MASTER'S PANEL CONTROL KEY:**

The panel is fitted with Station Master's lock up key to prevent any unauthorized operation of the panel. The Station master on duty is the only authorized person to operate the panel and the panel key must always remain in his personal custody vide SR.3.36.03 and GR.5.08. The key locks the panel board and no operations are possible. In case of emergency, signals can be put back to danger by operating concerned signal button and signal cancel button without SM's key also. However, the provisions, of SR.3.36.02 shall be followed while replacing the signals to 'ON'.

2.1 **CRANK HANDLES:**

When any point fails to operate normally by the route setting operation or through the concerned point button through panel, it is inevitable to operate the points with crank handle.

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Station Master on duty shall personally ensure clamping and padlocking all facing and trailing points in the route. Crank handles are interlocked with signals and interlocking system. The CH push button (Blue) and group button (white with black dot) is provided at the top of the panel board. This button has two indications, viz., WHITE and RED. The WHITE indication suggests that the crank handle key is in its interlocked position of the panel. This is called 'Crank Handle Key' 'IN' indication.

The Red indication suggests that the crank handle key is locked and not free for extract from RKT. This is called 'Crank handle key locked' indication. The Crank Handle is normally kept in a locked box fitted in panel room and the key is with SM on duty. This crank handle is Common to all points and is to be taken along with CH key for manual operation of point.

For extracting CH key from RKT SM has to press relevant CH button and group trans button simultaneously. The white light besides the CH button starts flashing. After extraction of CH key from RKT at Location box flashing white light disappears. On extraction of CH key from RKT, the points in that particular group can not be operated from the panel. After completion of point operation the CH key will be retransmitted to the station electrically by inserting the CH key in RKT at Location box and turned, the white flashing indication appears on the panel board. The flashing will be stopped and steady indication appears on pressing concerned CH button and group release button (white with black dot).

Release of Crank Handle when Route is locked:

When a route is Locked and the crank handle has to be taken out, then first the concerned Signal Button and Signal Cancellation Button has to be pressed for canceling the Signal. Thereafter for extracting CH key from RKT SM has to press relevant CH button and group trans button simultaneously. After 120 seconds The red locked Light disappears and. The white light besides the CH button starts flashing after extraction of CH key from RKT at Location box flashing white light disappears. On extraction of CH key from RKT, the points in that particular group can not be operated from the panel. After completion of point operation the CH key will be retransmitted to the station electrically by inserting the CH key in RKT at Location box and turned, the white flashing indication appears on the panel board. The flashing will be stopped and steady indication appears on pressing concerned CH button and group release button (white with black dot).

2.2 SETTING OF ROUTE AND TAKING OFF RECEPTION SIGNALS:

For setting a route all the concerned points must be set by operation of relevant point button and group button one at a time in the desired position or by operating signal button and route Button. As soon as the required points are set to the required position, the concerned signal for the route will clear and a yellow strip of light will appear on the entire route confirming that the Route is set and locked. The signal 'off' indication will appear on the panel.

2.3 SETTING OF ROUTE AND TAKING OFF DEPARTURE SIGNALS:

For setting a particular route for departure of a train, all the concerned points must be set by operation of point button and group button one at a time in the desired position or by operating signal button and route button.

To take off Down advanced starter, Down LV section should be clear and line clear must be obtained from the concerned block station in advance. To take OFF the UP advanced starter signal, the axle counter section must be clear. Then the concerned advanced starter signal button shall be pressed along with the advanced starter route button for two to three seconds and released. This will clear the advanced starter signal and a white strip of light will appear on the panel. The UP IB signal can be taken OFF only when the UP LV section is clear and also line clear has been obtained from station in advance i.e. GTA.

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To take off the starter signal the concerned signal button to be pressed and at the same time Common Route button to be pressed for two to three seconds and released. This will clear starter signal and a white strip of light will appear on the route from the concerned starter to the advanced starter.

2.4 **TAKING OFF CALLING-ON SIGNAL:**

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

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. The particular route on which train is intended to be received shall be set by operating the point push button and group button individually or by pressing signal and route button or by crank handling in the event of failure of operation of points through panel. After the route is set, the Calling-on signal button 'C1'/ 'C2' (Red with white dot) (as the case may be), shall be pressed simultaneously along with the concerned route button for 2-3 seconds and released. After a lapse of 120 seconds, the Calling-on signal clears i.e. yellow light glows at the concerned Calling-on signal on the panel.

NOTE:

SM on duty to ensure that no through signals are given while receiving a train on Calling-on.

2.5 **RELEASE/CANCELLATION OF ROUTE:**

Normally when a train is received on any route and dispatched, the route illumination will disappear automatically after passage of the train suggesting that the route is released.

NOTE:

Up and Down Calling-on signals, Up and Down Advanced starters and UP IBH signal are to be manually cancelled after the passage of the train to cancel the route.

2.6 **REPLACEMENT OF SIGNALS TO 'ON':**

Signals are replaced to 'ON' automatically by the occupation of first track in advance of 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 respective signal button and the signal cancellation button (RED) is to be pressed simultaneously.

2.7 **INTERLOCKING OF SIGNALS/POINTS:**

All running line points are fitted with facing point locks in the point machine and are electrically detected by the relevant Home signals and starters.

- 2.7.1. DN Advanced starter and UP IBH signals are interlocked with respective Block Instruments in Line Clear Position.
- 2.7.2. The Block Instrument cannot be made normal unless the respective Home signal is put back to 'ON' aspect and the respective block section monitored by axle counter is clear of trains.
- 2.7.3. Signals once taken 'OFF' can be put back to danger in case of emergency by pressing concerned signal button and signal cancellation button even when the panel is locked up with Station Master's key.

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2.8 PILOTING OF TRAINS IN TO STATION YARD:

Whenever Home signal becomes defective, trains can be admitted by taking off Calling-on signal. When both Home and Calling-on signal failed, then the trains will be piloted 'IN' in terms of SR 3.69.3(a) & (c).

The SM on duty shall nominate a clear line and shall set the nominated route correctly from the panel or shall advise the TPM on duty at station to set the nominate route with the help of crank handle during failure of points .The TPM shall set the facing and trailing points and clamp and padlock the same under the supervision of SM on duty at station in both the cases.

Then the SM on duty shall then hand over the written authority (T/369(3b)) to the TPM for "Piloting IN" the train. While going towards Home signal, the TPM shall check that the points have been correctly set, clamped and padlocked.

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 defective signal.

NOTE:

- (1) The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of both end points for admission of a train.
- (2) The keys of padlock used for clamps on the points shall be kept in the personal custody of SM on duty till such movement is either completed or alternatively cancelled.
- (3) The SM on duty shall ensure the closure of the interlocked gate supported by a Private Number from the Gateman on duty.

2.9 PILOTING OF TRAINS - OUT OF STATION YARD :

When starter signal has become defective, the SM on duty shall set the points correctly from the panel or advise the TPM to set the concerned points correctly for the outgoing train with the help of crank handle. The TPM on duty shall clamp and padlock both the facing and trailing end points under supervision of SM on duty in both the cases. He shall also advise the gateman to close the level crossing gate /gates on the route for dispatch of a train. The SM on duty shall then authorize the TPM on duty to hand over the Pilot Memo T/369(3b) along with other authorities if any to the Loco Pilot of the train. Thereafter, he shall display proceed hand signal at the foot of the starter signal vide subsidiary Rule 3.70.01.

In case Advanced starter signal becomes defective ,such signal shall be passed on the written authority on the form T/369(3b).Proceed hand signal shall not be displayed vide subsidiary rule 3.70.02 .The TPM shall hand over the pilot memo in form T/369(3 b) to the Loco Pilot after the train stopped along with paper line clear ticket.

Note:

- (1) The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of both end points for dispatch of a train.
- (2) The keys of padlock used for clamps on the points shall be kept in the personal custody of SM on duty till such movement is either completed or alternatively cancelled.
- (3) The SM on duty shall ensure the closure of the interlocked gate supported by a Private Number from the Gateman on duty.

3.0 SHUNTING:

- (i) For shunting on main line up to Advanced starter, caution aspect of starter signals shall be used.
- (ii) For back shunting, individual shunt signal No. 3 and 4 are provided at North and South side of the yard respectively for shunting back to the station yard in desired direction. The particular route on which it is intended to do shunting is to be set by operating the desired points

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individually from the panel or by pressing the shunt signal button and the required route button simultaneously for 2-3 seconds. When the route is set and locked correctly white strip of lights will appear on the route and the concerned shunt signal shall display 'OFF' aspect.

- (iii) Shunt Signals No. SH18, SH20 & SH22 are provided at North end of the Yard to enable shunting into the shunting Neck.
- (iv) Shunt Signals No. SH5 & SH7 are provided at North end of the Yard to enable shunting for coming out of the shunting Neck.
- (v) Shunt Signals No. SH15 & SH17 are provided at South end of the Yard to enable shunting into the shunting Neck.
- (vi) Shunt Signals No. SH6 is provided at south end of the Yard to enable shunting for coming out of the shunting Neck.

3.1 **DESCRIPTION OF SIDING:**

While shunting in the Hot axle siding it should be authorized by issuing T/806 clearly mentioning the limits up to which shunting is permitted as also the lines occupied in shunting. The relevant provisions in GR 5.14 and SR's there to shall be meticulously followed for shunting operations.

3.2 **HOT AXLE SIDING:**

The Hot axle siding at HWH end of the yard is taking off from DN Loop (Line No.1). The entrance point and corresponding derailing switch are coupled and operated by an arc lever at site. The entrance point is fitted with hand plunger lock. The hand plunger locks is unlocked by Hot axle siding keys A1 released by pressing the button No.47 provided on panel/VDU at SM's office. Reception signals 2A. C2A. in DN direction, shunt signal Nos.SH3E and starter signal no 16 electrically interlocked in such a way that the signal cannot be taken 'OFF' if the Hot axle siding key is taken 'OUT' from the RKT provided at Hot axle siding location at site.

3.3 **DESCRIPTION OF LEVEL CROSSINGS:**

- A. There is a mid-section 'Spl' class manned interlocked level crossing gate (L.C.No. 304) situated at Km. 594/17-19 (Up), 594/20-18 (Dn) between JNP and BAM. Telephone communication is provided between the Gate lodge and the SM's office of JNP.
- B. There is an 'SPL' class mid-section manned interlocked level crossing gate (L.C.No. 306) situated at Km. 596/30-28 (Dn), 596/27-29 (Up) between JAGANNATHPUR and BRAHMAPUR stations and is equipped with gate signals. Telephone communication is provided between the Gate Lodge and the SM's office of JNP station.
- C. There is a 'Spl' class mid-section manned interlocked level crossing gate (L.C. No. 309) situated at Km. 599/7-9 (UP) & 599/10-8 (DN) between BAM-JNP. Telephone communication is provided between the Gate lodge and the SM's office of BAM.
- D. There is a 'Spl' class manned interlocked level crossing gate (L.C.No. 311) situated at Km. 600/41-601/1 (Up) & 601/2-600/42 (Dn) at HWH end of the Station yard. Telephonic communication is provided between gate lodge & SM's office of BAM.
- E. There is a 'Spl' class manned interlocked level crossing gate (L.C.No. 312) situated at Km. 602/19-21 (Up) & 602/22-20 (Dn) at VSKP end of the Station yard. Telephonic communication is provided between gate lodge & SM's office of BAM.
- F. There is a 'Spl' class mid-section manned interlocked level crossing gate (L.C.No. 313) situated at Km. 604/17-19 (Up) & 604/20-18 (Dn) between BAM-GTA. Telephonic communication is provided between gate lodge & SM's office of BAM.
- G. There is a 'B2' class mid-section manned interlocked level crossing gate (L.C.No. 314) situated at Km. 605/19-21 (Up) & 605/22-20 (Dn) between BAM-GTA. Telephonic communication is provided between gate lodge & SM's office of BAM.

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- H. There is a mid-section manned non-interlocked level crossing gate (L.C.No. 316) situated at Km. 607/23-25 (Up), 607/26-24 (Dn) between BAM-GTA. Telephone communication is provided between the gate lodge and the SM/GTA.
- I. There is a 'A' class mid-section manned interlocked level crossing gate (L.C.No. 317) situated at Km. 608/13-15 (Up) & 608/16-14 (Dn) between BAM-GTA. Telephonic communication is provided between gate lodge & SM's office of GTA.
- J. There is a mid-section manned non-interlocked level crossing gate (L.C.No. 319) situated at Km. 610/17-19 (Up), 610/20-18 (Dn) between BAM-GTA. Telephone communication is provided between the gate lodge and the SM/GTA.
- K. There is a 'B1' class mid-section manned interlocked level crossing gate (L.C.No. 320) situated at Km. 611/24-22 (Dn) & Km 611/21-23 (Up) between BAM-GTA. Telephonic communication is provided between the gate lodge & SM/GTA.

4.0 **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 and this portion of the yard should be 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 Station master on duty personally through Luminous indications 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.

4.1 **CRANK HANDLING EMERGENCY OPERATION OF POINTS:**

Crank handle operation is interlocked with the Signalling and interlocking system at this station. Key for Crank handles are normally locked inside the RKT instrument at the Location box, can be taken out only when all the 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 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 Diesel shunting engine or tower wagon, indicating the occupancy of track, it is necessary that the Station Master on duty satisfies himself that the said vehicle has cleared the point zone track circuits by observing the track indications of the track on either side of the crossovers by positively checking the 'entrance' and 'exit' track circuits are showing occupancy and clearance in accordance with the train movement.

4.2 **INSTRUCTIONS REGARDING 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 shall be informed for attending to this.

5.0 **EMERGENCY OPERATIONS:**

The following are the instructions for emergency operations.

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5.1 CANCELLATION BUTTON AND VEEDER COUNTER:

5.1.1 For the purpose of emergency operations there is an emergency 'Route cancellation' button. There is a 'Veeder counter' for counting emergency operations involving operation of the emergency route cancellation button (provided at the top of the panel). The Station Master on duty must press the emergency route cancellation button and the signal button in accordance with para 1.8 confirming to the section for which emergency route release is desired. An indication will appear indicating that the timer has started operating and after a lapse of 120 seconds, the desired route will be release, provided all other conditions are favourable for route release.

5.1.2 The veeder counter registers the number of such emergency cancellation operations. Station Master on duty should specify the cause for its usage giving the particulars of causes and the time of operation as related to a particular train etc., in the train signal register as well as in a separate register meant for this purpose. The detailed operational instructions are as follows:

5.2 EMERGENCY OPERATIONS – CANCELLATION OF THE LOCKING OF POINTS NOT RELEASED AFTER THE PASSAGE OF THE TRAIN FOR WHATEVER REASON:

If the locking of the route does not get released for one reason or the other after passage of the train, it is necessary to take recourse to the following emergency operations.

- a) Firstly, it must be ensured that the signal is in the "ON" position.
- b) Operation as detailed in Para 1.8 to be followed.

6.0 LOCKING OF RELAY ROOM:

The relay room should be kept locked with a double lock, which can be opened only after both the keys are used. One key of the lock shall be kept with the Station Master on duty in his custody and the other with maintainer. Whenever required, the key in the custody of Station Master shall be given to the maintainer, after completion of work; the maintainer will return the key to Station Master. The details of the transaction should be properly recorded in the relevant register at the Station duly signed by Station Master on duty and the maintainer concerned.

7.0 MAINTENANCE OF S&T INSTALLATION AND ADHERENCE TO MAINTENANCE SCHEDULES:

7.1 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.

7.2 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.

8.0 PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF AN INTERLOCKING GEAR:

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

8.2 INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:

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

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- 8.3 **RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:**
After receipt of this 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 the defective apparatus. After satisfying himself that the gear is in good and proper working order, he shall resume the normal working of the said defective apparatus in terms of SR.3.68.04 (C) and (D).
- 9.0 **PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:**
Whenever any normal maintenance or special works for major renewals etc., are involved, the Signal and Telecom should preplan these works. Field staff and the Inspector of the section should give to the Station master in writing 'Advance Intimation' about this work in terms of G and SR.15.08.01.
- 10.0 **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.
- 11.0 **PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNALS AND POINTS AND USE OF CRANK HANDLE:**
- 11.1 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 Station Master on duty, till it is replaced back in RKT.
- 11.2 The cases of failure of motor operated points should be promptly reported to the concerned Signal maintainer/Signal Inspector for rectification.
- 11.3 Whenever an Emergency Crank Handle is required to be used by a signal official for maintenance work or attending to failure, the signal official will give a disconnection memo to the Station master on duty and after making necessary entries in the Emergency Crank Handle Register. The Station master on duty will obtain the acknowledgement of the signal official in the Emergency Crank Handle Register and then hand over to him the Emergency Crank Handle. The points will be treated as defective until the Emergency Crank Handle is returned back to the Station Master on duty.
- 11.4 Before parting with the Emergency Crank Handle either for attending failures 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 for the affected lines should be treated as non-interlocked. The Station Master on duty is responsible for introduction of non-interlocked working and the trains will be piloted 'IN and 'OUT' duly clamping and padlocking both facing and tailing points over which the train is to pass, as per GR.3.69 and 3.70 with relevant SRs. The Station Master on duty will be personally responsible for setting and locking of points for reception and despatch of all trains.
- 11.5 The Emergency Crank Handle Register is to be maintained vide OM 20.06 note (d) by the Station Master on duty wherein the particulars of the usage of the Emergency Crank Handle must be recorded.

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12.0 SUSPENSION OF LAST STOP SIGNALS:

When the Block Instrument is suspended with its commutator in TOL position for whatever reason, the concerned last stop signal controlled by the Block Instruments must be treated as suspended and trains shall be piloted 'OUT'.

- 12.1 The Station Master on duty shall not grant 'LINE Clear' unless he has ensured that the lamps of fixed signals which apply to the train are burning. If the signal lights can not be kept burning, the Station Master on duty before giving 'LINE CLEAR' shall initiate action in accordance with the procedure prescribed in GR.3.61 to 3.72 and relevant SRs vide GR.3.49(4).

13.0 NORMALISATION OF THE BLOCK AXLE COUNTER AND OF BLOCK WORKING BY RESETTING FEATURE:

- 13.1 Analog Axle Counters are provided on Up and Down lines for monitoring the IB section between BAM-GTA. Digital Axle Counters are provided on Up and Down lines for monitoring the LV section between BAM-GTA Double Line section. Working of IB section and LV section between BAM-GTA is given in Appendix F.

- 13.2 The occupation and clearance of the axle counter section are indicated on the panel by 'RED' and 'GREEN' light.

- 13.3 If any Block proving Axle Counter section fails, the Last Stop Signal at the rear station cannot be taken 'OFF' and Block instrument at Advance Station cannot be turned to 'Line Closed' position after arrival of a train and in such case, resetting of last vehicle Checking Device is to be resorted to in either Section.

- 13.4 Even after completion of reset operation, LVCD Axle Counter will show clear only if next train is passed. The next train is to be piloted.

- 13.5 No train should be allowed on signal to leave a station in any particular direction unless :-
Track clear indication is available for the relevant Axle Counter track circuited portion and Last Stop Signal is taken OFF.

- 13.6 A resetting arrangement for the resumption of the track circuit by means of Axle counter under failure condition through both the SMs on duty at either end Station of the Block section is provided, which should only be resorted to after the train that was lastly sent, arrives fully at the receiving station and is certified in this respect by the SM at the receiving station through exchange of Private Number.

- 13.7 Reset arrangements are provided in the operation cum indication panel in the SM's office for sections BAM-GTA and BAM-JNP with DLBI. The resetting key and reset permission granting button on the resetting Panel should normally be kept sealed by the Maintainer and SM will inform the Maintainer for resealing the same for every such operation of the resetting button and shall be recorded giving details of date of use, train number, time, number registered on the counter and reasons for resetting and initial each such entry.

13.8 RESETTING OF LV DIGITAL AXLE COUNTER WHEN FAILED (FOR SECTION BAM-JNP).

After complete arrival of train, if the axle counter of the section does not clear or Axle counter section free indication (G) does not appear in the panel, The receiving station SM shall apprise the sending station SM through telephone for resetting giving details of last train that has arrived complete at his station and the block section is clear.

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

As digital Axle counters are provided as LVCD in Block section, resetting is to be done by both of sending end and receiving end individually. (No co-operation or permission is required from the other station).

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The status of the section LVCD i.e. Clear (GREEN), occupied (RED), preparatory reset (GREEN) and power on indications (WHITE) are provided in the Panel/VDU.

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

- A. Insert SM's LV reset key, turn right
- B. Press LV reset button provided on the panel.
- C. Release SM's LV reset key and reset button.
- D. Turn left the SM's LV reset key and remove it. The power on indication glows momentarily.
- E. The system obtains preparatory reset state and preparatory reset indication (Yellow) glows on the panel.
- F. The counter reading increases by one count after a gap of 5 seconds approximately.
- G. The counter reading should be recorded.
- H. One train is to be piloted in the section to make the system normal.

The SM on duty shall record in it Train in the Register the resetting operation giving details of train number, time, Private Number exchanged with SM of sending station giving reasons for the resetting operation.

If the axle counters functioning properly now, then Block Section cleared indication 'G' will appear on the panel and the concerned Block working will be normalised.

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

14.0 **ANALOG AXLE COUNTER AND DESCRIPTION OF RESETTING EQUIPMENT (WITH STATION YARD):**

33/35 AXT is provided with analog axle counters.

Whenever Axle counter zone is occupied or failed, a visual 'RED' indication appears on the panel at station and when verified for clearance and initiated for resetting, a 'YELLOW' indication appears in the panel and when once the resetting is completed, then appears 'GREEN' indication and the 'YELLOW' indication extinguishes. A Veeder counter, Indications of Zone verified, Zone clear, Zone verified is provided for 33/35 AXT Axle counter zone. Also a SM's A/C common reset key along with one individual push button for 33/35 AXT resetting is installed on the panel for resetting.

14.1 **PROCEDURE FOR RESETTING IN THE EVENT OF FAILURE OF AXLE COUNTER (WITH IN STATION YARD):**

When 33/35 AXT Axle Counter fails, 'RED' indication will appear on the 33/35 AXT track on the SM's panel. The SM on duty shall then physically verify the particular section. After physical verification if there is no obstruction over the line he shall advise the on duty TPM to open the line Verification box located by the side of the track and press the button. One 'YELLOW' indication appears in the panel. SM on duty shall then press line nominated button (33/35 AXT-AZVBN) along with the SM's A/C common reset key. The 'RED' and 'YELLOW' indications will disappear from the panel and 'GREEN' indication will appear.

The Veeder counter provided on the panel will record next higher number indicating the number of such operations for the particular axle counter section. If 'GREEN' indication does not appear on the reset panel and 'RED' indication continues to appear, the sectional ESM/JE(S)/SE(s), may be advised that the concerned Axle Counter has failed and to attend for rectification.

The SM on duty shall pilot the trains if any, till the rectification.

Separate register shall be maintained in the Station to record every operation of resetting and the number in the veeder counter in addition this should be recorded in TSR. While taking over/handing over duties the SM shall record in the TSR the number displayed in the veeder counter and shall acknowledge the same.

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15.0 SIGNAL LIGHTS:

The Station Master on duty at 00.00 hours (2nd night shift) must also ensure from panel board that all the signal lights are glowing properly and brightly. This fact must be recorded in the Diary under a separate entry and confirm to the Section Controller on duty.

16.0 CORRECTING TIME IN STATION CLOCK:

The Station Master shall set the time in his clock according to the time signal given by the Section Controller on duty at 16.00 hours every day according to GR and SR.4.01.01 and 4.01.02.

17.0 TELECOMMUNICATIONS:

- i. The Station is connected to Khurda Road Control by a telephone on the BSDP - PSA Control Circuit.
- ii. Telephone attached to SGE type Lock and Block Instruments for sections GTA - BAM and BAM-JNP.
- iii. Railway Auto Telephone is provided in the SM's office.
- iv. Telephone communication is provided between Station Master on duty to UP IBH post and Hot axle siding location.
- v. Telephone communication is provided between Station Master on duty to Up CH locations and to Dn CH Locations.
- vi. Telephone attached to L.C.Gate at Km. 599/7-9 (Up) & 599/10-8 (Dn), 600/41-601/1(Up) & 601/2-600/42 (Dn), 602/19-21 (Up) & 602/22-20 (Dn), 604/17-19(Up) & 604/20-18 (Dn) & 605/19-21 (Up) & 605/22-20 (Dn),
- vii. The Station is connected to KUR - PSA traction power control circuit.
- viii. VHF set is provided at this station.
- ix. BSNL phone is provided at the station.

NOTE

- i). For obtaining line clear VHF should be used as a last alternative and not as a sole means of communication.
- ii). VHF & Walkie Talkie sets should not be used for un-necessary discussion with Loco Pilot/ Guards and any other staff.

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**APPENDIX 'B1' TO STATION WORKING RULES OF BRAHMAPUR STATION
VISUAL DISPLAY UNIT (VDU)**

Note:

The stand by system (VDU) has provided with the Conventional panel for the operation of Signals, Points, L.C Gates, Crank Handles, Siding Controls and Resetting of all type of Axle counters.

1.0 SYSTEM OVERVIEW:

In addition to the panel, an operator console (VDU) consisting of a Pentium-4 CPU with a high resolution 21" colour monitor, keyboard and pointing device (mouse) is provided. Both the serial ports (Com1 and Com2) in the CPU are connected to the Microlok II CPU board for exchange of control and indication messages. The Software is installed to display the Station Yard Mimic Panel diagram on the VDU and that it allows access to all functions through pop-up menus. When a particular function is selected, an appropriate Menu will appear on the screen by selecting a required operation clicking by the Left button of the pointing device (mouse) a function (Signal clear and cancellation, Route release, Point operation, Gate release etc.,) can be executed.

The Computer (VDU) or panel any one may be used for controlling and monitoring the station, however indications on the Station yard mimic diagram of VDU and panel will be dynamically updated.

2.0 SELECTION OF CONTROL:

This VDU (Computer) is provided as a standby of conventional panel for the operation of signals, points, L.C. Gates, crank handles, and siding controls From the Mimic panel diagram. A Mimic panel diagram will be displayed on the VDU, which is an exact replica of operation cum indication panel and suits the yard plan as per SI plan SI/21062 ALT-A.

One two-position switch (Red colored) is provided on the conventional panel along with the SM's Key used for selection of Panel or VDU called PANEL/ PC Change over switch.

SM of the station can select any of the controls, for the selection of one control to another there are certain procedures to be followed for the control transfer. The procedure to be followed as mentioned below.

2.1 PANEL/ PC KEY and PC CONTROL KEY:

To prevent the unauthorized operation by other than on duty SM in VDU this facility is provided on VDU. On duty SM need to track the pointer to the "PC CONTROL KEY" icon and click the KEY OUT menu by the left button of the mouse, by this a Password window will appear. SM need to enter the password and press the OK Button provided on the Password window. This will lock all the controls in VDU except the Signal cancellation of All Cleared Signal routes. The PC CONTROL Key is nothing but a SM's KEY in the conventional panel. In case you have entered incorrect password or user name please repeat the operation till you enter the correct password.



2.2 PANEL TO VDU (PC-COMPUTER) CHANGE OVER:

1. Ensure that SM's Key is in "KEY IN" position.
2. Ensure that Panel/PC changeover switch is in PANEL mode position.

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3. Click the PANEL/ PC key provided in the left top corner of the VDU. (A pop-up menu will appear)
4. **PANEL/PC CONTROL**



5. Click the first Menu – PC REQUEST. (A password required window will appear in the centre of the screen).
6. Enter the proper USER NAME and PASSWORD in the required text boxes by selecting with mouse, after entering so click the OK button. The user name of this station is ECOR and the password for this station is BAM.
7. Now PC indications will start flashing & Panel indication remains steady which means that the control is still with Panel but the PC operator is requesting for transfer of control to PC.
8. Move the PANEL/ PC switch to PC side in the conventional panel.
9. Now the PC indication will become steady and Panel indication will disappear. This indicates that the control is now transferred successfully to PC.
10. Click on the PC CONTROL KEY and click the KEY IN menu. (A password required window will appear in the centre of the screen).
- 11.



12. Enter the USER NAME and PASSWORD and click the OK button.
Now the OP VDU is ready for use & the entire yard can be controlled from the VDU.

2.3 **VDU (PC-COMPUTER) TO PANEL CHANGE OVER:**

1. Turn the PANEL/ PC change over switch to PANEL mode in conventional Panel.
2. Now PANEL indication will start Flashing & PC indication remains steady which means that the control is still with PC but the Panel operator is requesting for transfer of control to PC.
3. Click the PANEL/ PC key provided in the left top corner of the VDU. (A pop-up menu will appear)
4. Click the second Menu – PANEL ACKNOWLEDGE. (A password required window will appear in the centre of the screen).
5. Enter the proper USER NAME and PASSWORD in the required text boxes by selecting with mouse, after entering correctly click the OK button.
6. Now the PANEL indication will be steady and the PC indication will disappear. This indicates that the control is now transferred successfully to Panel.
Now the Over all control is transferred to PANEL, The entire operation can be possible from the PANEL.

2.4 **VDU (PC-COMPUTER) TO PANEL CHANGE OVER: (IN PC Failed condition):**

While SM is operating from PC if PC fails due to any reason either communication, power or any other failure then the control can be transferred to PC by the following method.

1. Turn the PANEL/ PC change over switch to PANEL mode in conventional Panel.
2. Now the PANEL indication will be steady and the PC indication will disappear. This signifies that the control is now transferred successfully to Panel. Still if the control is not transferred to Panel then switch off the PC completely in this condition & the control will be definitely transferred to Panel.

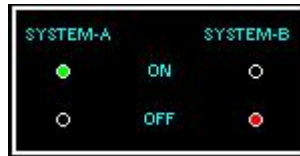
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3 **OPERATIONAL PROCEDURE: VDU INDICATIONS:**

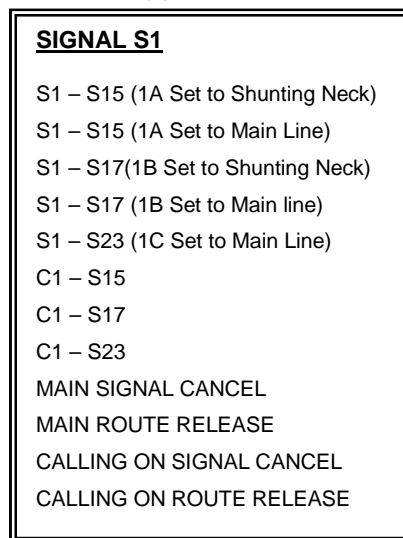
3.1 **MICROLOK II (SSI) INDICATIONS:**

In Panel/ PC there are two system indications, Green indication mentioning the On-line system and the Red indication mentioning that the system is in power off condition.



3.2 **SIGNAL OPERATION:**

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



SM on duty will select the route as per the requirement by moving the mouse pointer on the appropriate menu & left clicking on the menu. It will set the route and clear the signal provided all the condition required for the signal to clear is being satisfied. Similar operation for other signals also.

3.2.2. **SETTING A ROUTE:**

To set a route of a signal, click on a possible route of the signal, after doing so the route gets initiated & Red-flashing indication will appear on the replacement track of the signal. And if all the required points Normal/ Reverse set indications will starts flashing if favorable point detection is not available. After setting of points in the route & overlap required condition (Flashing indication will be replaced by steady indication) a complete yellow route set indication will appear from the Replacement Track of the signal to the last track of overlap section of the route also the points lock indication will appear (A Point locked can be ensured from the Red Steady indication will appear near the point). Finally a Route locked Yellow

Steady indication will appear on the immediate rear of the signal. Now the signal will be Taken-off. The yellow route set indication will turn to red when the train occupies the track circuit within the route.

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3.2.3. CONDITIONS FOR SETTING A ROUTE:

The following condition to be ensured before setting the route by the SM.

1. All the Crank handles of the required route related points to be in Key in condition.
2. All the related Siding control keys to be in Key in condition.
3. If any Level Crossing gates are falling under the route that should be closed (KEY IN) and 2GF of the gate to be in reverse position (Can be ensured from the Yellow steady indication just near the LC Gate control).
4. All the related siding points should be in normal position (can be ensured from yellow steady indication at the siding point on the route).

3.2.4. CANCELING A ROUTE/ EMERGENCY ROUTE RELEASE:

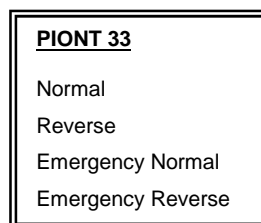
To cancel a signal route when the route is set and the signal in taken-off, click on the signal. After clicking by the left button on the mouse a pop-up menu will appear as shown above – Click on the cancellation menu (Main/ Calling on) of the concerned signal, the signal will immediately go to ON aspect, after doing so click on the Route release menu the route locked indication will starts flashing for 120 sec & the RTRELUPKE or DNKE will flash for the entire time interval. After the completion of 120 sec the locked route will be released and veeder counter provided for the route release in the conventional panel will change to next higher digit which should be recorded by SM. Signal Cancellation is possible from the VDU even if SMKEY (in conventional Panel & PC Control Key is in out condition).

3.2.5. SHUNT SIGNAL OPERATION:

To set and Canceling the signal route for the shunt signal the same procedure as for main signal has to be followed as explained under Signal Operation.

3.3 POINT OPERATION:

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

**3.3.1. REVERSE TO NORMAL OPERATION:**

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

3.3.2. NORMAL TO REVERSE OPERATION:

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

3.3.3. EMERGENCY NORMAL OPERATION:

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

Before doing the emergency operation the Emergency Point Operation Key is to be made "KEY IN" by clicking the KEY IN menu. The user name and password is to be logged in. The user name of this station is ECOR and password of this station is

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

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

After the Emergency point operation a specific veeder counter provided in the Domino panel board will change to its next higher digit and this number should be recorded in the register provided for this purpose by the SM.

3.3.4. EMERGENCY REVERSE OPERATION:

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

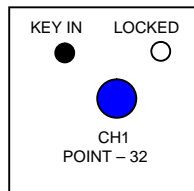
Before doing the emergency operation an Emergency Point Operation Key is to be made "KEY IN" by clicking the KEY IN menu. The user name and password is to be logged in. The user name of this station is ECOR and password of this station is SPT. Emergency reverse menu to be clicked. After the completion of the Emergency point operation, the Key to be KEY OUT by clicking KEY OUT menu. The user name and password is to be given for "KEY OUT" also.

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

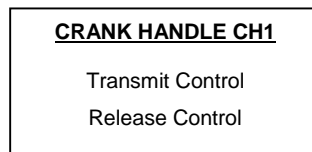
After the Emergency point operation a specific veeder counter provided in the Domino panel board will change to its next higher digit and this number should be recorded in the register provided for this purpose by the SM.

3.4 CRANK HANDLE & SIDING CONTROL OPERATION:

To Transmit or Release control of the Crank Handle, click on the crank handle/ Siding control button provided like the following button on the VDU.



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



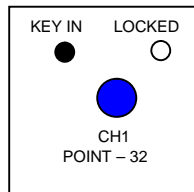
For Transmitting the Crank Handle KEY to the field personnel SM /ASM has to click transmit control menu. After transmission the KEY IN indication will starts flashing, now the KEY can be extracted from the EKT. After extracting the key from the EKT, the key IN indication will disappear.

When the Manual point operation is over, after putting the KEY in the EKT, A KEY IN flashing indication will appear on the panel, Now the SM/ ASM has to Release the control for the Steady indication by clicking release control menu.

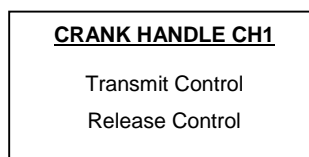
A Crank handle locked indication will appear when the particular point concerned any of the possible signal routes is initiated.

3.4.1. CRANK HANDLE OPERATION (In Route Locked Condition) :

To Transmit or Release control of the Crank Handle in case when route is locked, then first we have to cancel the relevant signal & then click on the crank handle/ Siding control button provided like the following button on the VDU.



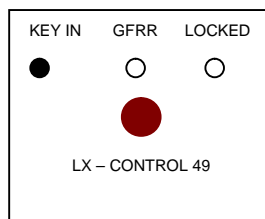
The appearing pop-up menu gives details of the possible commands on the Crank Handle



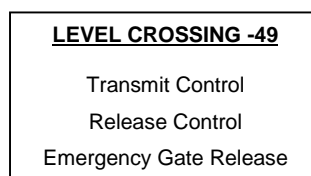
For Transmitting the Crank Handle KEY to the field personnel SM /ASM has to click transmit control menu. After transmission the KEY LOCKED indication will start to flash for 120 seconds & KEY IN remains steady. After a lapse of 120 seconds the KEY LOCKED indication will vanish & KEY IN indication will start to FLASH. After extracting the key from the EKT, the key IN indication will disappear. When the Manual point operation is over, after putting the KEY in the EKT, A KEY IN flashing indication will appear on the panel, Now the SM/ ASM has to Release the control for the Steady indication by clicking release control menu.

3.5 LEVEL CROSSING GATE OPERATION:

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



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



For Transmitting the LC KEY to the Gate man, SM /ASM has to transmit the control by clicking, after transmission the KEY IN indication will starts flashing, now the KEY can be extracted from the EKT.

When the gate has been closed, locked & slot lever is in reverse position, After putting the key in the EKT, A KEY IN flashing indication will appear on the panel. Now the SM has to release the control for the steady indication. The locked indication will appear when the LC Gate has locked by initiation of any of the possible signal routes.

3.5.1. **EMERGENCY GATE OPERATION:**

If suppose the LC gate has locked by the any of the signal route, For releasing the gate by the Emergency operation the SM/ ASM has to cancel the signal by signal cancellation control of the relevant signal. Then he has to click the Emergency Gate release control in the Gate pop-up menu. Now the LOCKED indication will flash for 120 seconds & after the time has elapsed the LOCKED indication will vanish. Now the SM has to transmit the GATE in this condition. Now the KEY can be extracted from the RKT at Gate Lodge and concerned Veeder counter provided on the panel board will change to next higher digit number, which should be recorded in the register provided for this purpose.

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APPENDIX 'C' TO STATION WORKING RULES OF BRAHMAPUR STATION

ANTI COLISION DIVICE (RAKSHA KAVACH)

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APPENDIX 'D' TO STATION WORKING RULES OF BRAHMAPUR STATION

DUTIES TO BE PERFORMED BY THE STAFF AT BRAHMAPUR STATION.

1. STATION SUPERINTENDENT (IN-CHARGE):

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

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

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

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

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

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

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

He is responsible for booking all 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.

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

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

He shall see that the law and order in the station area is taken care of with the help of G.R.P. and R.P.F and civil authorities as per need.

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

Demonstration of Crank Handle operation of at least one pair of point is to be done in a week & register is to be maintained properly.

1.1. **CERTIFICATE OF COMPETENCY:** No person shall be allowed to operate the Block Instrument, Signals, Points & level crossing gates at the station unless he has passed the special examination and hold a valid certificate of competency applicable to his duties at his station.

1.1.1 **ASSURANCE REGISTER:**

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

No Railway servant shall be entrusted with any duty involving the safety of the public unless the SS (In-charge) is satisfied that the concerned staff is competent for the post. No Railway servant unless duly examined and certified shall be allowed to work the points and signals. The SS (In-charge) 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 fully about their duties and responsibility.

The SS (In-charge) 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 Class-III staff and other for Class-IV staff. A duplicate copy of the Assurance Register must be maintained and kept in the personal custody by the SS (In-charge).

The declaration is to be renewed in the following cases:

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

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

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

1.3 **ACCIDENTS:**

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

1.4 The SS shall test the working of the reception signal and emergency crossovers daily during the day when there is no train due to arrive/leave the station and record the results in the SM's diary Vide SR 5.03 (c)(ii) & SR 5.03(d).

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2. **SS/Dy.SS/SM:**

He shall work train passing duties and booking of traffic, coaching returns and other statements shall be prepared and submitted by him in time. The SS/Dy.SS/SM on duty shall record in the diary the condition of all the running lines, siding, and the caution orders in force at the time of handing over charge. These entries shall be countersigned by the SS/Dy.SS/SM coming on duty and taking over charge. The SS/Dy.SS/SM on duty who makes an entry in the train signal register shall continue till all the entries pertaining to the trains are completed vide SR.14.07.01. He shall promptly bring to the notice of SS (In-charge) all irregularities and accidents in course of his shift duties. During the absence of SS, the duty of SS will devolve on him. His special attention is drawn to chapter-2 of G & SR 2000 and GR5.01 to 5.08 with relevant SRs as an assistant to SS (In-charge), given to him by the SS.

3. **TRAFFIC POINTSMAN:**

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

He shall remain responsible for:

- i). Correct setting and locking and crank handling of points for reception/dispatch and shunting operation.
- ii). Coupling and un-coupling of vehicles.
- iii). Protection of line in an emergency
- iv). Piloting and hand signaling of trains of trains when necessary and handing over caution orders/or any other line clear authorities to the Loco Pilots and guards of the trains.
- v). Attending off side to observe safe running of run through trains at stations and correct display of hand signals.
- vi). Securing of vehicles, as directed, protection of vehicles of a train.
- vii). Being conversant with the layout of the yard and compliance of rules relating to shunting operation.
- viii). Observing General Rules 5.13 to 5.21 and relevant Subsidiary Rules during shunting.
- ix). Cleaning and lighting of hand signal lamps if required. Cleaning and oiling of clamps and padlocks if required.
- x). Loading and un-loading of parcels and luggage's, packages goods and guards boxes to and from the trains and watching the packages and other materials by properly stocking in the station premises.
- xi). Cleaning and Dusting of SM's office room furniture and equipments in the Office.
- xii). Carrying messages since a separate call boy messenger is not posted.
- xiii). Working as fog signal man as and when required.
- xiv). Filling up the fire buckets with sand/water.
- xv). Getting train intact arrival register (T/1410) signed by the Guard as and when required.
- xvi). Any other duties entrusted to him by the SM on duty from time to time.

GENERAL

- 1) A set of flags and battery operated LED based flashing lamps will be part of the essential equipment of the staff while on duty. He shall not leave the station except when required by the SM on duty or with his permission and shall comply with subsidiary rules 4.42.02(b) (i) and (d).
- 2) Staff working at the station must be able to distinguish Up and Down line clear tickets and educated in distinguishing other operational forms and documents, delivered to Loco Pilots and Guards and must also know how and when to ring the station bell.

APPENDIX 'E' TO STATION WORKING RULES OF BRAHMAPUR STATION

A list of Essential Safety Equipment's which should be kept readily available in good working order with necessary relief stock.

| Sl. No. | Description | Station |
|---------|---|--|
| 1. | Detonator Signals | 20 |
| 2. | Battery operated LED flashing Hand signal lamps | 6 |
| 3. | Hand signal Flags | 6 sets |
| 4. | Safety chain with Padlocks | 6 |
| 5. | Clamps with padlocks | 12 (4 at station and 4 at each goomty) |
| 6. | Skids(i) Iron=3 (ii) Wooden =3 | 6 |
| 7. | Fire and Sand Buckets. | 5 |
| 8. | Reminder Collar | 12 |
| 9. | Motor Trolley on line label. | 3 |
| 10. | Fire extinguisher | 2 (DCPT). |
| 11. | First Aid Box | 1 |
| 12. | Stretcher | 1 |
| 13. | Block Suspension Board | 3 |
| 14. | Power Block Collar | 3 |

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APPENDIX – F TO STATION WORKING RULES OF BRAHMAPUR STATION

RULES FOR WORKING OF DK STATIONS HALTS, IBH, IBS, AND OUTLYING SIDINGS

1.0 MID-SECTION OUTLAYING SIDING:

There is no mid-section siding on either end of block section

2.0 INTREMEDATE BLOCK STOP SIGNALS ON BRAHMAPUR-GOLANTHARA SECTION:

2.1 DESCRIPTION:

Intermediate Block Posts at KM 606.750 on UP line and at KM 607.650 on DN line of BRAHMAPUR-GOLANTHARA Section are provided bifurcating UP and DN lines by means of Intermediate Block Signalling with Electronic axle counters and trains are worked under Absolute Block system in accordance with General Rule No.1.02 (7), (31) & (32), 3.11, 3.42, 3.75, 8.01(1) (a), 8.01(2) (a).

2.2 SIGNAL DIAGRAM:

The Station Working Rule diagram no. SI/WRD/21062 ALT-A based on CSTE/East Coast Railway's and Signal Interlocking Plan No. SI/21062 ALT-A shows the layout of Intermediate Block Signals, Distant Signal with all signalling features and gradients etc.

2.3 TELEPHONE COMMUNICATION:

Telephones fitted to Intermediate Block Home Signal Posts with socket provided for communications to the SM in rear i.e. SM/Brahmapur in case of UP line and SM/Golanthara in case of Down line. The telephone on the Intermediate Block Stop Signal post is provided with two press buttons. The right hand side button is to be pressed by the Loco Pilot for calling the attention of the SM of the Station in rear and left hand side button is to be pressed for speaking and released for hearing.

2.4 THE FOLLOWING SIGNALS ARE PROVIDED ON UP AND DOWN LINES:

- (i) IB Home
- (ii) IB Distant

Legend Boards with legend "Backing is not permitted beyond this point" are provided 400 meters beyond UP and DN Intermediate Block Stop Signals on BRAHMAPUR-GOLANTHARA Section.

2.5 DETAILS OF BLOCK SECTIONS ON BRAHMAPUR-GOLANTHARA SECTION:

The UP and DN Block sections between BAM-GTA are split into two portions, each constituting of separate block section by provision of Intermediate Block Signalling which are controlled and operated by block station in rear i.e. Brahmapur in case of UP line and Golanthara in case of DN line on BAM-GTA section vide GR 1.02 (31) and (32). Refer 2.3 Para of main body for details of block section.

2.6 INTERLOCKING OF SIGNALS:

- i) The Intermediate Block Stop Signals are interlocked with Lock and Block instruments Concerned in such a way that the same cannot be taken 'OFF' unless "Line Clear" has been received from block station concerned in advance of the Intermediate Block Stop Signal concerned with the needle of the Lock and Block Instrument indicating "Line Clear" position.
- ii) The Up Advanced Starter of BRAHMAPUR is Interlocked with Axle counter in such a way that the same cannot be taken 'OFF' unless the block section in advance of the signal controlled by axle counters is clear and the UP IBS section on SM panel shows "clear" indication.

- iii) Track circuits are provided beyond Intermediate Block Stop Signals and Advanced Starter Signals in order to restore these signals to their normal positions automatically when a train passes over them and the IB signals cannot assume "OFF" aspect until and unless "Line Clear" is received for a subsequent train.

2.7 CLOSURE OF INTERMEDIATE BLOCK SIGNAL POST:

In the event of suspension of Lock and Block Instrument or Failure/Suspension of Intermediate Block Home or failure of track circuits beyond the Intermediate Block Signal on UP or DN line or failure of Axle counter mechanism, the concerned section shall be suspended, the Intermediate Block Post concerned shall be deemed to be closed and section between the stations on either side of the Intermediate Block Post concerned shall be treated as one block section vide GR14.14. The authority to pass the Advanced Starter and Intermediate Block Stop Signal concerned at 'ON' shall be issued by the SM Immediately in rear of such signal (Refer GR 14.14,3.70 & 3.75).

2.8 DESCRIPTION OF AXLE COUNTERS AND PANEL INDICATIONS PROVIDED AT BAM IN CONNECTION WITH IBS FOR BRAHMAPUR-GOLANTHARA SECTION:

2.8.1 AXLE COUNTING SYSTEM:

- i) Digital Axle counter is provided in the following sections:
- a. DN LV/BLOCK SECTION GTA-BAM: A pair of Digital axle counter is provided on Down line between 400m beyond the DN IBS signal No.16 of GTA to beyond 180 m of Dn home signal of BAM.
- b. UP LV/BLOCK SECTION BAM-GTA: A pair of Digital axle counter is provided on UP line between 400m beyond the IBS signal No.27 of BAM to 180 m beyond the Up Home.
- ii) Electronic Analog Axle counters is provided for following section
- a. Up IB section between BAM-GTA:A pair of Analog Axle counter is provided on Up line to monitor the UP IB section from Advanced starter signal of BAM to 400m beyond the UP IBS signal No 27 of BAM. These pair of axle counters will monitor track and count the axles "IN" and axles "out" to indicate whether the UP IB Section is clear of trains.
- b. DOWN IB SECTION between GTA-BAM: A pair of Analog Axle counter is provided on Down line to monitor the Down IB section from Advanced starter signal of GTA to 400m beyond the Down IBS signal No 16 of GTA. These pair of axle counters will monitor track and count the axles "IN" and axles "out" to indicate whether the Down IB Section is clear of trains.

2.8.2 IB PUSH BUTTONS/PANEL INDICATIONS PROVIDED IN THE CENTRAL PANEL AT BRAHMAPUR:

2.8.2.1 IB PUSH BUTTONS ON PANEL:

- i) **UP TRAIN RUN AWAY MUTING BUTTON:**
This is to be operated for acknowledging and stopping the ring of the buzzer in case of UP train passing UP IBS at 'ON' position.
- ii) **UP TRAIN RUN AWAY AUDIBLE BUZZER:**
This will ring when "UP train run away" indication appears on the panel.
- iii) **UP TRAIN ENTERING LOCK & BLOCK SECTION BUZZER:**
This rings with the passage of every UP train past UP Intermediate Block Stop Signal and operates track circuit beyond it indicating that the UP train has entered the Block Section between UP Intermediate Block Stop Signal and Golanthara.

- iv) **UP TRAIN ENTERING LOCK & BLOCK SECTION BUZZER MUTING PUSH BUTTON:**
This is to be operated for acknowledging the passage of UP trains past UP Intermediate Block stop Signal on UP line.
- v) **ACKNOWLEDGEMENT BUTTON FOR PERMISSION RECEIVED FROM GTA:**
This is to be operated after receipt of permission from SM/GTA for resetting UP IB section axle counting system on UP line.
- vi) **UP IB SECTION RESET KEY:**
This is provided to control the re-setting the axle counting system of UP IB section and to be kept in the personal custody of the SM/JNP on duty.
- vii) **UP IB SECTION RE-SET PUSH BUTTON:**
This is to be operated by SM for re-setting the axle counting system of UP IB section between Brahmapur and Golanthara on the UP line.
- viii) **UP IB SECTION RE-SET VEEDER COUNTER:**
This registers the next higher number every time the resent push button is operated for re-setting the UP IB section axle counting system on UP line. Relieved and incoming SS/SM should jointly record the number on the counter and sign in the Train Signal Register while taking over charge.
- ix) **DOWN TRAIN RUN AWAY BUZZER MUTING PUSH BUTTON:**
This is to be operated for acknowledging the passage of Down trains past Down intermediate Block Stop Signal on Down line at 'ON' position.
- x) **DOWN TRAIN RUN AWAY AUDIBLE BUZZER:**
This will ring when "Down train run away" indication appears on the panel.
- xi) **PERMISSION – BUTTON FOR IB SECTION of Down LINE:**
This is to be operated for granting permission to SM/Golanthara for resetting the axle counting system on Down line.
- xii) **PERMISSION GRANTED VEEDER COUNTER FOR IB SECTION of DOWN LINE:**
This registers the next higher number every time Permission button is operated for resetting axle counting system on down line respectively. Relieved and incoming Station Master should jointly record the number on the counter and sign in the Train Signal Register while taking over charge.

2.8.2.2 **IB INDICATIONS ON SMs PANEL AT BAM:**

The following luminous indications are displayed on the SMs panel:

- i) **UP train running away:** "UP train running away" indication appears only in all cases of a train passing UP Intermediate Block Stop Signal at 'ON' position.
- ii) **UP IB section Resetting Permission received from Golanthara:** "Permission received from Golanthara" appear flashing after permission is received from the SM /Golanthara and becomes steady when acknowledgement button is pressed.
- iii) **UP IB Axle Counting Section occupied in RED:** UP Axle counting section occupied in "RED" will appear when the section UP Advanced Starter to UP Intermediate Block Signal section is occupied by a train.

- iv) **UP IB Axle Counting section clear in GREEN:** UP Axle counting section clear in "GREEN" will appear when the section UP Advanced Starter to UP Intermediate Block Stop Signal Section is clear.
- v) **UP Advanced Starter track circuit occupied/failed in RED:** UP Advanced Starter track circuit when occupied/failed "RED" indication will appear and when the track circuit is clear/working no indication will be there.
- vi) **UP Intermediate Block Stop Signal track circuit occupied/failed in RED:** UP Intermediate Block Stop Signal track circuit when occupied/failed "RED" indication will appear. When the track circuit is clear/working, no indication will be there.
- vii) **UP train entering Lock and Block section:** "UP train entering section" indication appears in all cases of UP train passing UP IBS track circuit.
- viii) **DOWN train running away:** "DOWN train running away" indication appears only in case of a train passing DOWN Intermediate Block Stop Signal at 'ON' .
- ix) **Permission granted to Golanthara:** "Permission granted to Golanthara" indication appears when permission granted to Golanthara button is pressed for resetting Down IB section axle counting system on Dwon line.
- x) **Block Handle free:** "Block Handle Free" indication appears when an UP train arrives completely within the station section. The "Block Handle" then becomes free and the instrument can be normalized.
- xi) UP Intermediate Block Stop Signal at 'ON' in RED.
- xii) UP Intermediate Block Stop Signal at 'OFF' in GREEN.
- xiii) UP Intermediate Block Distant Signal at "ON" shows Yellow indication.
- xiv) UP Intermediate Block Distant Signal at "OFF" shows GREEN indication.

NOTE:

Normal aspect of Intermediate Block, UP Distant Signal is YELLOW. The Distant signal is provided with "P" Marker and its higher aspects are controlled by UP Intermediate Block Stop Signal. When the UP Intermediate Block Stop Signal is GREEN, UP Intermediate Block Distant Signal will be "GREEN".

2.8.3 PROCEDURE TO BE FOLLOWED FOR RESETTING THE AXLE COUNTING SYSTEM ON UP LINE BETWEEN BRAHMPUR AND IBS STOP SIGNAL IN CASE OF ITS FAILURE:

On occupation of UP Advanced Starter track circuit, luminous UP IB section axle counting section occupied "RED" indication will appear on the panel at SM/Brahmpur. On occupation and clearance of the train over track circuit provided 400 meters beyond UP Intermediate Block Stop Signal "Axle Counting Section Clear" indication in "GREEN" will appear on the panel. In the event of unequal count of axles or failure of axle counting system, such Green Axle counting section clear indication will not appear but continue to display "Axle counting section occupied" indication in "RED" indicating the failure/occupation of axle counting mechanism. In the event of such failure, Intermediate Block Signalling and Lock and Block Working between Bramhapur and Golanthara on the double line shall be suspended and the Intermediate Block Post shall be deemed as closed and the section between Bramhapur and Golanthara on either side of the Intermediate Block Post shall be treated as one block section vide GR 14.14 until the axle counting system is reset in the following manner. The same procedure may be adopted for resetting the axle counting panel after passage of motor trolley/tower wagon.

NOTE:

The failure of axle counting system should be recorded in the Train Signal Register at SMs office at Bramhapur and Golanthara and as well as in failure register & dairies of Station Master Bramhapur and Golanthara.

2.8.4 PROCEDURE OF RESETTING AXLE COUNTING SYSTEM FOR UP IBS SECTION:

On complete arrival of the train (after the passage of which the axle counting system failed) at the block station in advance i.e. Golanthara, the SM Of Bramhapur and Golanthara must satisfy themselves under exchange of messages supported by Private Numbers that the UP line between Bramhapur and Golanthara is clear of all obstructions.

On being advised by SM/ Bramhapur, SM/. Golanthara should insert Station Master Control Key and turn and press the "Permission button" on his panel. The Veeder Counter on the panel at Golanthara registers the next higher number and "Permission received from GTA" flashing indication appears on the SM's Panel at Bramhapur. The SM/ Bramhapur shall press the acknowledgement button on his panel as soon as he receives "Permission Receipt" indication. The flashing indication becomes steady. SM / Golanthara should keep the permission button pressed for about 10-15 seconds. After that the following procedure to be followed by SM/BAM.

- A. Insert SM's UP IB section reset key, turn right.
- B. Press UP IB section reset button provided on the panel.
- C. Release SM's UP IB section reset key and reset button.
- D. Turn left the SM's UP IB reset key and remove it.
- E. The UP IB section Axle counting system obtains preparatory reset state.
- F. The counter reading increases by one count.
- G. The counter reading should be recorded.
- H. One train is to be piloted in the section to make the system normal.
- I. For the system to Reset UP LV section must be clear.

After piloting of one train "Axle counting section clear" indication will appear on the panel of the Station Master's Office "and the preparatory reset indication disappears indicating that the axle counting system is reset. Now, Intermediate Block Signalling and Lock and Block Working on UP line may be restored.

- i) The readings on the UP IB section Reset Veeder Counter on the Station Master's panel in the SMs. Office should be recorded in the Train Signal Register mentioning the reasons for the use briefly with timings for every operation.
- ii) A Register showing the particulars of resetting operations as per the following perform should be maintained in the Station Master's Office/Brahmapur in which the details of resetting operations should be recorded by the SM On duty.

PROFORMA:

| Date and time | Train No. Last entered the block section | Private No. of the station ahead for complete arrival of the train under col.2 | Veeder Counter before/after resetting operation is completed. | | Train No. entering the block section immediately after the resetting operations. | Remark | Signature of the Station Master on duty. |
|---------------|--|--|---|-----------------|--|--------|--|
| | | | Before resetting | After resetting | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | | | | |

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- iii) Electrical Signal Maintainer should be advised to re-seal the reset/acknowledgment/button of the Station Master's Panel at Brahmapur after resetting operation is done.
- iv) If there is any movement of non-insulated Trolley/Material Trolley/Motor Trolley past the Intermediate Block Stop Signal at 'ON' position, "Train run away" indication will appear at the dispatching station and the system will fail.
- v) Even after adopting the procedure for resetting, if the axle counting system is not reset, the Lock and Block Working and Intermediate Block Signalling on the concerned line should be suspended, treating the entire block section between Brahmapur –Golanthara and either side of Intermediate Block post as one block section vide GR 3.75(4) and 14.14.

2.8.5 PROCEDURE OF RESETTING AXLE COUNTING SYSTEM FOR Down IBS SECTION between GTA-BAM:

First The SM Of Bramhapur and Golanthara must satisfy themselves under exchange of messages supported by Private Numbers that the Down line between Bramhapur and Golanthara is clear of all obstructions On being advised by on duty SM Golanthara, SM / Brahmapur shall press the Down IB "Permission button" on his panel. The Down IBS permission to Golanthara Veeder Counter on the panel at Brahmapur registers the next higher number and "Permission granted to GTA" indication appears on the SM's Panel at Brahmapur. SM/JNP should keep the permission button pressed for about 10 seconds. After that the procedure for resetting Down IB section as mentioned in the SWR of GTA is to be followed.

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

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

after he has reached it. Before starting, the Loco Pilot shall sound one long whistle, which may be repeated as necessary and shall then start his train on receipt of Guard's signal. Thereafter he shall exchange signals with the guard.

- vii) DN train run away indication or UP Train run away indication as the case may be will appear on the SM's panel.
- viii) DN train run away Buzzer or UP Train run away Buzzer as the case may be will Ring which can be silenced by pressing DN/UP train run away muting push button on the SM's panel.
- ix) Procedure for Resetting as in 2.8.4, 2.8.5 to be followed for UP trains and Down trains respectively.

2.9 RESETING OF UP LV/DN LV SECTION DIGITAL AXLE COUNTER WHEN FAILED (FOR SECTION BAM-GTA):

After complete arrival of train, if the Last vehicle axle counter of the section does not clear or Last vehicle Axle counter section free indication (G) does not appear in the panel, The receiving station SM shall apprise the sending station SM through telephone for resetting giving details of last train that has arrived complete at his station and the block section is clear. The receiving station shall inform the sending station as to whether the last train that entered into the section has arrived or not. And, if arrived fully shall so intimate authenticated by exchanging Private number with the sending station.

The status of the section LVCD i.e. Clear (GREEN), occupied (RED), preparatory reset (GREEN) and power on indications (WHITE) are provided on the Panel/VDU.

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

- A. On being advised by SM/ Brahmapur, SM Golanthara presses the "Down LV Permission granted to BAM button" on his panel. The Veeder Counter on the panel at GTA registers the next higher number and Down LV "Permission received from GTA" flashing indication appears on the SM's Panel at Brahmapur. The SM/Brahmapur shall then press the acknowledgement button on his panel as soon as he receives "Permission Receipt" from GTA indication. The flashing indication becomes steady. In Case of UP LV resetting Permission will be given by SM BAM to SM GTA and SM GTA will follow the procedure as given in "B" to "I".
- B. SM/BAM shall then Insert SM's LV reset key, and turn right
- C. Press LV reset button provided on the panel.
- D. Release SM's LV reset key and reset button.
- E. Turn left the SM's LV reset key and remove it.
- F. The system obtains preparatory reset state and preparatory reset indication (Green) glows on the panel. The counter reading increases by one count after a gap of 5 seconds approximately.
- G. The counter reading should be recorded.
- H. One train is to be piloted in the section to make the system normal.
The SM on duty shall record in it Train in the Register the resetting operation giving details of train number, time, Private Number exchanged with SM of sending station giving reasons for the resetting operation.
- I. If the axle counters functioning properly now, then Block Section cleared indication 'G' will appear on the panel and the concerned Block working will be normalised.
- J. If the LV axle counter section indication does not appear 'Green' and continues to show 'RED' indication, the concerned Block section shall be suspended and failure intimation to be given to sectional signal Maintainer/JE/SE (Signal) for early rectification.

3.0 HALT STATION: There is no passenger halt station on either end of block section

4.0 DK STATION:
Nil.