

NO. 122

STATION WORKING RULES OF BHUSANDPUR STATION

BG Station:

Date of Issue: 30.05.11

Date brought into force: 31.05.11

NOTE:

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

1. **STATION WORKING RULE DIAGRAM:**

The Station Working Rule diagram No. SI/WRD/21037 based on CSTE/East Coast Railway's Signal Interlocking Plan No. SI/21037 ALT "D" shows the complete lay out of the yard, siding, normal position of points, the Signaling and Interlocking arrangements, Gradients and Level Crossings within the station limits. This must be referred to for giving details of the point numbers and signals when reporting accidents.

2. **DESCRIPTION OF STATION**

2.1. **GENERAL LOCATION**

BHUSANDPUR (Code – BSDP) is a 'B' class four lined station provided with standard III (R) Interlocking and equipped with Central Panel/VDU, Multiple Aspect Colour Light signals situated at Km. 488.730 from Howrah on the Howrah-Vishakhapatnam Main line electrified (BG) section. The station is worked under Absolute Block System of GR & SRs.

[Refer GR. 8.01(1) a, b, 2(b), 8.03(1), a, b, c (ii), 8.05(2) (3) & 8.06, 8.14, 8.15 and 8.16, 14.01 to 14.13 and **Chapter-VI** of block working manual]

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

2.2. i. **BLOCKS STATIONS ON EITHER SIDE OR THEIR DISTANCES:-**

BHUSANDPUR is situated between Nirakarpur (code-NKP) in the North side at a distance of 7.00 KM and Kaluparaghat (code-KAPG) in the south side at a distance of 9.9 KM.

2.2. ii. **IBH/IBS/OUT LYING SIDING/DK STATION:-**

NIL.

2.2.iii **PASSENGER HALT:-**

Mukteswar (Code. MKTP) is situated between BHUSANDPUR and Kaluparaghat station at Km.492.2 from Howrah.

2.3.a. **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.
NKP-BSDP UP Direction	Up Advanced starter signal No-11 of NKP station	Up BSLB on UP line of BSDP station
BSDP-NKP DN Direction	DN Advanced starter signal No-12 of BSDP station	Outermost facing Point No. 18A of NKP station
BSDP-KAPG Up Direction	Up Advanced starter signal No-11 of BSDP station	Up BSLB on UP line of KAPG station
KAPG -BSDP DN Direction	DN Advanced starter signal No-12 of KAPG station	Outermost facing Point No. 18A of BSDP station

(Correction Slip No. 2 Dated _____)

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b. **STATION SECTION:-**

Station Section	The Point from which the 'Station Section' Commences	The Point at which the 'Station Section' end
UP Line	Up Block Section Limit Board on Up line of BHUSANDPUR	Up advanced starter no.11 of BHUSANDPUR
DN Line	Outer facing point No.18A of BHUSANDPUR	Down advanced starter no.12 of BHUSANDPUR.

c. **STATION LIMIT**

	FROM	TO
Up Line	UP Inner distant signal	Up Advanced starter signal no-11
DN Line	DN Inner distant signal	Down Advanced starter signal no-12

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

From	To	Gradient
CSB	CH:716.0 M	1 in 500 'F'
CH: 716.0 M	CH: 1017.0 M	1 in 500 'R'
CH: 1017.0 M	CH: 1082.0 M	Level.
CH: 1082.0 M	CH: 2013.0 M	1 in 151 'F'
CH: 2013.0 M	CH: 2329.0 M	1 in 200 'F'
CH: 2329.0 M	Towards Block Section	Level.

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

From	To	Gradient
CSB	CH: 345.948 M	1 in 500 'R'
CH: 345.948 M	CH: 792.48 M	1 in 2000 'R'
CH: 792.48 M	CH: 1310.48 M	1 in 175 'R'
CH: 1310.48 M	CH: 1493.48 M	1 in 200 'R'
CH: 1493.48 M	CH: 1706.48 M	1 in 500 'R'
CH: 1706.48 M	CH: 1812.48 M	1 in 300 'F'
CH: 1812.48 M	Towards Block Section	Level.

2.5 **LAYOUT:**

The station is provided with four running lines in the Main yard (namely Down Loop, Down Main, Up Main, Common Loop), and two non running line i.e goods siding and hot axle siding.

i. **GOODS SIDING (ELECTRIFIED).**

The Goods siding at VSKP end of the yard with both side entries are taking off from Common Loop (Line No.4). The siding is isolated from line no.4 by provision of derailing switches. The entrance point and corresponding derailing switch are coupled and operated by an arc lever at site. Both the entrance points are fitted with hand plunger locks. These hand plunger locks are unlocked by Goods siding keys P1 & P2 are released by pressing the button No.24 provided on panel/VDU at SM's office. Reception signals i.e. 1A. C1A. in Up direction, 2C. C2C. in Down direction, shunt signal Nos.SH3A, SH4B and Starter Signal No. 5 & 8 are electrically interlocked in such a way that these signals cannot be taken 'OFF' if the Goods siding key is taken 'OUT' from the RKT provided at Goods siding location at site.

ii. **HOT AXLE SIDING (ELECTRIFIED).**

The Hot axle siding at HWH end of the yard with one side entry is taking off from Down Loop (Line No.1). The siding is isolated from line no.1 by provision of derailing switch. The entrance point and corresponding derailing switch are coupled and operated by an arc lever at site. Both the entrance points are fitted with hand plunger locks. These hand plunger locks are

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unlocked by Hot axle siding key 'Q1' released by pressing the button No.25 provided on panel/VDU at SM's office. Reception signals i.e. 2A. C2A. in Down direction, shunt signal Nos.SH3D & Starter Signal No.6 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.

PLAT FORMS

- 1) Line No. 1 & 2 (DN Loop & DN Main) : R.L.P.F.
- 2) Line No. 3 & 4 (UP main & Common Loop) : L.L.P.F.

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

The yard consists of four running lines viz , DN loop , DN Main , UP Main & common loop line (i.e line no 1 , 2 , 3 & 4 respectively) and are provided with 25 KV AC electric traction .

DIRECTION OF TRAFFIC:

The trains coming from NKP end are UP trains and the trains coming from KAPG end are DN trains.

HOLDING CAPACITIES:

<u>Line No.</u>	<u>Nomenclature.</u>	<u>CSL</u>			
1	Down Loop	CSL	751.5 M	(Electrified).	From Starter to SB
2	Down Main	CSL	768.8 M	(Electrified).	From starter to SB
3	Up. Main	CSL	781.1 M	(Electrified).	From starter to SB
4	Common Loop	CSL	751.1 M	(Electrified).	From starter to starter

2.5.2 **NON RUNNING LINES AND THEIR CAPACITIES IN CSR:**

1. Goods Siding CSL 91.44 Meters (Electrified). From AC to DC
2. Hot axle Siding CSL 88.5 Meters (Electrified). From DE to AC

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

-NIL-

a. **SPECIAL RESTRICTIONS:**

- i) Shunting in the face of an approaching train is prohibited.
- ii) Hand shunting/Loose shunting/fly shunting is prohibited at both ends of the yard.
- iii) The over run line must not be used for stabling of vehicle or harboring an engine with or without vehicle.
- iv) No DN trains shall be dispatched from common loop when line clear for an UP train has been given unless the said UP train comes to a stop at the first stop signal or has been received at the station clearing the fouling mark OR if a starter signal has been taken OFF for DN Train from common loop line clear for an UP train shall not be given unless the said DN train with its last vehicle indicator has cleared cross over points between UP & DN lines.
- v) DN Trains running through over common loop 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 Starter Signals before the same is taken "OFF".
- vi) When line clear is granted to NKP in UP direction, no signaling movement shall be carried out with point 17 reverse till the whole UP train is received complete or brought to a stand at UP Home Signal.

b. **SPECIAL INSTRUCTIONS:**

- i. Up & Down Mainlines are track circuited whereas Down Loop & Common Loop are Axle countered. In case of failure of track circuit/Axle Counter the clearance of the concerned line should be ensured physically before a train is piloted. In case of failure of axle countered, train shall be piloted as per rule.
- ii. From Up main line home signal to 180m beyond it and from Down Main Line home signal to 180m beyond it are track circuited. In case of failure of track circuit the train shall be piloted as per rule.
- iii. When a non signal movement has to take place over a point operated by motor whether facing or trailing direction SM on duty shall operate the points to normal and reverse setting

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for the purpose of setting the point. After clamping & padlocking both facing & trailing points & the indication is correctly available, further movement may be permitted over the points.

- iv. Movement of non-insulated push trolley is prohibited between BSDP-KAPG and BSDP-NKP section. [Refer SR 15.25.04 (c)].
- v. In case of failure of Digital Axle Counters provided for monitoring Block Section at both end, 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.
- vi. 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.

2.6 **LEVEL CROSSINGS:**

- i. There is a 'C' class mid-section manned non-interlocked level crossing gate No. 221 situated at Km. 485/25-27 (UP) & 485/28-26 (DN) between BSDP-NKP. Telephonic communication is provided between the Gate lodge and on duty SM/BSDP.
- ii. There is a 'C' class manned interlocked level crossing gate No. 224 situated at Km. 488/9-11 (UP) & 488/12-10 (DN) towards NKP end of BSDP yard. Telephonic communication is provided between the Gate lodge and on duty SM/BSDP.
- iii. There is a 'C' class manned interlocked level crossing gate No. 225 situated at Km. 489/9-11 (UP) & 489/12-10 (DN) towards KAPG end of BSDP yard. Telephonic communication is provided between the Gate lodge and on duty SM/BSDP.
- iv. There is a 'C' class mid-section manned interlocked level crossing gate No. 227 situated at Km. 490/23-25 (UP) & 490/26-24 (DN) between BSDP-KAPG. Telephone communication is provided between the Gate lodge and on duty SM/BSDP.

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

Trains are worked under Absolute Block System by means of SGE type Double Line Lock and Block Instrument for BSDP-KAPG & NKP-BSDP 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. [Refer Chapter-XIV of GR & SRs, **Chapter -VI** of Block Working Manual and GR 14.08(a)]. Telephone is attached to Block instruments for granting/obtaining line clear by SM on duty.

4.0 **SYSTEM OF SIGNALLING AND INTERLOCKING:**

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

The Station is provided with central panel (Electronic Interlocking) and having no end cabins. All signals and points are electrical operated from the central panel/VDU provided at SM's Office. Calling-on signals are provided below Home signals (i.e. in both UP & DN directions) [Refer GR 3.13 (1) (b), (2) (3) (4) & (6) (b)]. Central panel with miniature push buttons or VDU are provided in the SM'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 SM 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 Point button, and/or route button to prevent operation of the button in case of concerned line is blocked. (The details of stand by operation from VDU is given under APPENDIX-'B-1'),

All points are motor operated where as Goods siding and hot Axle siding points are hand operated and keys are electrically connected to central panel.

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- a) 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	----- 17.
CH-2	----- 18.
CH-3	----- 19,20
CH-4	----- 21,22.

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 obtaining 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 at site that there is no obstruction. SM on duty shall personally ensure the clamping and padlocking of all facing and trailing points. If the Crank Handle is in locked condition and it is necessary to operate the concerned point by Crank Handle due to whatever reason then the concerned signal should be put back to "ON" position then Crank Handle Key can be taken out after two minutes by pressing common 'TRANS' push button and concerned Crank Handle control push button simultaneously. 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 motor point should be promptly reported to the concerned signal maintainer/signal inspector for immediate rectification.

b) TAKING OFF CALLING-ON SIGNAL:

Miniature colour light Calling-on signal is provided below the Home signals [Refer 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 track over which train will be admitted must be checked physically by SM on duty.

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit in rear of the signal. When a train occupies the track circuit a RED light strip will appear on the 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' – 'C2A/B/C' (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 a train on Calling-on.

- c) **SHUNT SIGNALS**
Back shunt signals 3/A/B/C/D and 4A/B are provided at HWH and VSKP end respectively for shunting purpose.
- d) **EMERGENCY CROSS OVER**
Emergency cross over is provided in either end of the yard.
- e) **L.C. GATE OPERATION**
Details described in Appendix-'A'.
- f) **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 Axle Counter. A push button (Black with Red dot) 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 axle counter, shall 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.
- g) **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.
- h) **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 yellow light will lit indicating that the timer is working. After 120 seconds, the white light along with the white strip of light will disappear suggesting the route has been released. In case the route illumination (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.

TRACK CIRCUITS:

Both Up and Down main Lines are track circuited where as berthing portion of Line No.1 (Down Loop) and are monitored by axle counters. Similarly, Line No.4 (Common loop) is

monitored by Axle Counters. The sand hump portions of L1 & L4 towards HWH end are monitored by track circuits. All the point zones in the yard are monitored by axle counters.

In addition, there are short length track circuits in advance of Advanced starter Signals and Home signal 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 are also track circuited (i.e. 11AT and 12AT in Up and Down directions respectively). Indications for the above track circuits/Axle Counters are available on panel/VDU at SM's office. Yellow light on panel indicates track clear and Red light indicates track occupied condition.

j) **AXLE COUNTER:**

- (i) Electronic Analog Axle Counters are provided for Down Loop & Common loop berthing portions and for all the point zones in the yard for counting Axles 'IN' and counting axles 'OUT' which indicate whether the concerned berthing track/point zone track monitored by analog axle counters is clear or occupied.
- (ii) The entire Block Section on both Up and Down Lines between the stations BSDP-KAPG & BSDP-NKP are monitored by Digital Axle counter system. These Digital Axle Counters are provided for Last Vehicle check on either Block Sections as well as for dispatching a train in block section from either end of the section. These Digital Axle counter system counts the Axles 'IN' and counting axles 'OUT' in the respective block sections which indicate whether the concerned sections monitored by digital axle counters is clear or occupied.
- (iii) Fiberglass trolley wheels are to be provided for push trolleys in lieu of trolley suppression track circuits.

A pair of electronic axle counter is provided between NKP-BSDP on Up line one just beyond Up advanced starter NKP and another on track circuit no 1T2 i.e beyond Up Home signal of BSDP. Similarly a pair of electronic axle counter is provided between BSDP-NKP on down line, one just beyond Down Advanced starter of BSDP and another on track circuit no 2T2 i.e beyond Down Home signal of NKP.

A pair of electronic axle counter is provided between BSDP-KAPG on Up line one just beyond Up advanced starter BSDP and another on track circuit no 1T2 i.e beyond Up Home signal of KAPG. Similarly a pair of electronic axle counter is provided between KAPG-BSDP on down line, one just beyond Down Advanced starter of KAPG and another on track circuit no 2T2 i.e beyond Down Home signal of BSDP.

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

After complete arrival of the train the 'RED' indication will disappear and 'GREEN' indication will appear. If after the complete arrival of the train the 'RED' indication does not change to 'GREEN' it should be assumed as Block Instrument failure for the particular section and necessary action as per GR is to be followed. [Refer GR.14.13]

The axle counters are interlocked with the respective block instruments for that section. If axle counter fails, Advanced Starter signal shall not come to OFF and the concerned instrument shall remain locked in last operated position.

A resetting arrangement for, resumption of the system in case of failure of axle counter has been provided in the SM office of the adjacent Block stations after being assured by both the SM that the Train has arrived complete with its Last Vehicle at the receiving station, by exchanging Private Number then resetting to be complied with.

(Details of resetting procedure given in APPENDIX-'B')

- (iv) In case of failure of Axle Counter the re-setting of axle counter must be done as per the procedure given in Appendix-"B". In the event of failure of Axle Counter/ Track circuit the clearance of loop lines

and main lines will be ensured by physical check by the SM on duty and train shall be admitted as per GR and SR there to. [Refer GR.3.69]

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 track indicators/Axle counter indicators will exhibit Red Light when track is occupied and Yellow light when track is clear with route is set and signal cleared.

4.2 **CUSTODY OF RELAY ROOM 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.

4.3 **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.
Eg: 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 mean 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.
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 **TELECOMMUNICATIONS:**

- a) The Station is connected to Khurda Road Control by a telephone on the KUR-BSDP & BSDP-PSA Control Circuit.
- b) Telephone attached to SGE type Lock and Block Instruments for sections BSDP-KAPG and BSDP-NKP.
- c) Railway Auto Telephone is provided in the SM's office.
- d) Telephone communication is provided between Station Master on duty and both end Crank Handle Locations.
- e) Telephone communication is provided between SM's office and the LC Gates at Km. 489/9-11 (UP) & 489/12-10 (DN) ,490/23-25 (UP) & 490/26-24 (DN), 485/25-27 (UP) & 485/28-26 (DN),488/9-11 (UP) & 488/12-10 (DN) respectively
- f) Telephone communication is provided between Station Master on duty to both end Goods Siding Location.
- g) Telephone communication is provided between SM on duty and Hot Axle siding location.
- h) BSNL phone is provided at this station.
- i) VHF set is provided at the station.
- j) The station is connected to KUR-PSA traction control circuit.

NOTE:

- a) For obtaining line clear VHF should be used as a last alternative and not as a sole means of communication.
- b) VHF & Walkie Talkie sets should not be used for unnecessary 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, Operating Manual and any other safe working instructions issued from time to time.

In the event of suspension of control working the Station Superintendent /Station Master on duty shall work independently in conjunction with the Station Superintendent/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 **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.

		<u>In each shift</u>
SS/Dy.SS/SM/ASM	1 (One)	in each shift
Traffic points man	1 (One)	in each shift
Traffic Gateman	2 (Two)	One in each gate lodge 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 Station Supdt's office and in Gate lodge for traffic gate man (details 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 Station Supdt. is satisfied that the concerned staff is competent for the post. No Railway servant unless duly examined and certified shall be allowed to work the points and signals. The Station Supdt. is responsible to see that all the staff are well conversant with the Station Working Rules of the Station and their signature obtained in the Assurance Register after he is satisfied that they have thoroughly understood the working Rules of the Station. In case of class-IV staff, their signature/thumb impression must be obtained after explaining full about their duties and responsibility.

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

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 above.

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, 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 shall ensure that:

- (i) The whole of the last preceding train has arrived complete.
- (ii) All necessary signals have been put back to 'ON' behind the said train.
- (iii) The line is clear up to BSLB on Up Line for Up Trains and up to point No. 18A on Down Line for Down trains.

NOTE:

- (i) 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 by the Station Master of the station to which such line clear is to be granted.
- (ii) Before granting line clear to UP train the SM on duty shall ensure the closure of the LC Gates at Km. 485/25-27 (UP), 485/28-26 (DN) from the gateman on duty **under exchange of** private number.
- (iii) Before granting line clear to a DN train the SM on duty shall intimate to the gate man of L.C.Gate at Km. 490/23-25 for closing the gate against the road traffic.

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

6.2.1.1 **SETTING OF POINTS AGAINST BLOCKED LINE**

When a running line is blocked by stabled load wagon, vehicle or by a train which is to cross or give precedence to another train or immediately after the arrival of a train, the points in rear 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)].

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

6.2.1.2 RECEPTION OF A TRAIN ON BLOCKED LINE

Whenever trains are to be admitted on a blocked line, Calling ON signal may be taken off. If calling on signal failed then the SM on duty shall authorized on duty TPM with form T/509, indicating reasons for such admission the line no and nature of obstruction on the line. Before handing over the authority the SM on duty shall ensure the correct setting, clamping & pad locking 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 45 mtrs from the point of obstruction to indicate the Loco Pilot as to where the train shall be brought to stand.

6.2.1.3 RECEPTION OF TRAIN ON NON-SIGNALLED LINE

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

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

6.2.1.4 DESPATCH OF TRAIN FROM NON-SIGNALLED LINE.

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

6.2.1.5 DESPATCH OF TRAIN FROM LINE PROVIDED WITH COMMON STARTER SIGNAL.

NIL.

6.2.1.6 RECEPTION OF TRAIN (SPECIAL CONDITION)

- a. For receiving Up & Down trains on common loop, the clearance of the overrun line/sand hump should be ensured.
- b. Both Up and Down Main Lines are track circuited. In case of failure of track circuits, the clearance of the nominated line has to be ensured physically before taking-off calling on signal.
- c. Both Up and Down loop Lines are axle countered. In case of failure of axle counter, the clearance of the nominated line has to be ensured physically before resetting the axle counter.

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 with drawn 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(ii)]

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SIMULTANEOUS RECEPTION/DESPACTH AND PRECEDANCE OF TRAINS:

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

1	Reception of an UP train on line No.4 (common loop)	Reception/Dispatch of a DN train on/from line No. 1 or 2 and dispatch of an UP train from the line No.3.
2	Reception of an Up train on line No.3 (UP Main)	Reception/Dispatch of a DN train on/from line No. 1 or 2
3	Reception a DN train on line No.1 (DN Loop) setting to sand hump	Reception/Dispatch of a DN train on/from line No. 3 or 4 OR dispatch of a DN train from line no.2 or 4
4	Reception of a DN train on line No.2 (DN Main)	Reception/ dispatch of an UP train on/from line No.3 or 4.
5	Reception of a DN train on line No.4 (Common loop) setting to Sand Hump.	Dispatch of a Down train from the line No.1or 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].

CLEARANCE OF ADEQUATE DISTANCE

FOR UP TRAINS:-		
Line Number	From	To
3. Up Main	Up Main Line starter signal No.9	Up to the Up advanced starter signal no.11
4. Common Loop	Common Loop Starter signal No.5	Up to Up Advanced Starter Signal No.11 OR Up to the end of the over run line.

FOR DOWN TRAINS		
1. Down Loop	Down Loop starter signal No.6	Up to Down advanced starter signal No.12.OR Up to the end of the sand hump.
2. Down Main	Down main line starter signal No.10	Up to Down Advanced starter signal No.12.
4. Common Loop	Common loop starter Signal No.8	Up to the Down Advanced Starter Signal No.12 OR Up to the end of the sand hump.

6.5

COMPLETE ARRIVAL OF TRAINS:

The entire block sections between KAPG-BSDP and BSDP-NKP 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 to see the complete arrival of the train under exchange of private number and shall close the Block instrument for the concerned section vide GR 4.17 (3). After obtaining confirmation about the complete arrival of the said train under exchange of private number, he may send another train into the block section.

In case of failure of axle counter at either end of the block section, the traffic gate man on duty shall ensure that the train has arrived complete and shall give one private number to SM on duty vide SR 4.17.01 (e) (iv). For through passing train the SM on duty shall satisfy himself the complete arrival of the train by verification of the last vehicle indicator vide SR 4.16.01 (a) 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

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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 In case a train passes incomplete, action shall be taken as per SR.4.17.02, the "Train out of Block Section" report shall be withheld to the station in rear until Complete Arrival Certificate is received from the station in advance supported by a private number. Train passing on adjacent line shall be stopped and Guard 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).

6.6 **DESPATCH OF TRAINS:**

To dispatch a train, the Station master on duty having obtained line clear for that train, shall set the route for the outgoing train correctly and satisfy himself by observing the visual indication on the panel board. 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. [Refer GR 3.38, 3.42, SR 3.36.04(b), 3.42.04 and BWM 2.07.5(a)]

The Station Master on duty shall watch the safe passage of the train with its last vehicle indicator. After the train passes the advanced starter complete, he shall send the train entering block section signal to the station in advance. If a train worked without Guard or Brake Van the instruction laid down in Subsidiary Rule shall be followed. [Refer SR. 4.23.02 & 4.25.02]

NOTE:-

- i) Before dispatching a DN train into BSDP-NKP Block section, the SM on duty ensure the closure of the LC Gate at km 485/25-27 (UP),485/28-26 (DN) from the gateman on duty **under exchange of** private number.
- ii) Before dispatching of an UP train, the SM on duty shall intimate to the gate man on duty of L.C.Gate at Km 490/23-25 in advance to close the gate against road traffic.

6.7 **TRAINS RUNNING THROUGH:**

The procedure detailed in Para 6.4, 6.5 shall be observed. The Station Master is responsible to observe/watch the condition of the vehicles on a passing train and shall wave green hand signal horizontally until 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]. He shall also depute the TPM on duty to the other side, for passing the train. The TPM on duty shall wave Green hand signal horizontally. He shall show danger hand signal, if he notices anything is wrong on the passing train & reports the same to the SM on duty.

The Station Master on duty is responsible to see that a train passes complete with its last vehicle indicator. If a train passes without last vehicle indicator or its authorized substitute, action shall be taken as per General and Subsidiary Rule. [Refer GR 4.17 & 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 CIRCUIT**

Both UP & DN main lines are track circuited where as berthing portion of DN loop & common loop & point zone are monitored by axle counters. In addition there are short length track circuits in advance of advance starter signals and home signal in both the directions are also provided. For calling on signals (7 rail length) track circuit are also provided in rear of the

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home signals in both directions. From last trailing point/fouling mark in either side of yard to advance starter signal are also track circuited (i.e 11 AT & 12 AT in UP & DN directions respectively). Indications for the above track circuits / axle counters are available in the panel / VDU at SM's office. Yellow light on panel indicates track clear and RED light indicated track occupied condition

B. AXLE COUNTER

- i) Electronic Analog Axle Counters are provided for Down Loop & Common loop berthing portions and for all the point zones in the yard for counting Axles 'IN' and counting axles 'OUT' which indicate whether the concerned berthing track/point zone track monitored by analog axle counters is clear or occupied.
- ii) The entire Block Section on both Up and Down Lines between the stations BSDP-KAPG & BSDP-NKP are monitored by Digital Axle counter system. These Digital Axle Counters are provided for Last Vehicle check on either Block Sections as well as for dispatching a train in block section from either end of the section. These Digital Axle counter system counts the Axles 'IN' and counting axles 'OUT' in the respective block sections which indicate whether the concerned sections monitored by digital axle counters is clear or occupied.
- iii) Fiberglass trolley wheels are to be provided for push trolleys in lieu of trolley suppression track circuits.

A pair of electronic axle counter is provided between NKP-BSDP on Up line one just beyond Up advanced starter NKP and another on track circuit no 1T2 i.e beyond Up Home signal of BSDP. Similarly a pair of electronic axle counter is provided between BSDP-NKP on down line, one just beyond Down Advanced starter of BSDP and another on track circuit no 2T2 i.e beyond Down Home signal of NKP.

A pair of electronic axle counter is provided between BSDP-KAPG on Up line one just beyond Up advanced starter BSDP and another on track circuit no 1T2 i.e beyond Up Home signal of KAPG. Similarly a pair of electronic axle counter is provided between KAPG-BSDP on down line, one just beyond Down Advanced starter of KAPG and another on track circuit no 2T2 i.e beyond Down Home signal of BSDP.

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

After complete arrival of the train the 'RED' indication will disappear and 'GREEN' indication will appear. If after the complete arrival of the train the 'RED' indication does not change to 'GREEN' it should be assumed as Block Instrument failure for the particular section and necessary action as per GR is to be followed. [Refer GR.14.13]

The axle counters are interlocked with the respective block instruments for that section. If axle counter fails, Advanced Starter signal shall not come to OFF and the concerned instrument shall remain locked in last operated position.

A resetting arrangement for, resumption of the system in case of failure of axle counter has been provided in the SM office of the adjacent Block stations after being assured by both the SM that the Train has arrived complete with its Last Vehicle at the receiving station, by exchanging Private Number then resetting to be complied with.

(Details of resetting procedure given in APPENDIX-'B')In the event of failure of axle counter of Down Loop, Common Loop and point zones of the yard, action will be initiated for resetting as elaborated in Appendix-'B'. if the failed zone, or line could not be reset then trains shall be admitted in to the yard by piloting 'IN' after physical verification of the concerned line/zone.

In the event of failure of axle counter of concerned block section initiation will be taken for resetting after ensuring the complete arrival of the train by either end SM. After resetting the

first train will be piloted 'OUT' to the concerned Block section for normalising the system of working. Details of operations involved in resetting of axle counter is given in Appendix-'B'.

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 track indicators/Axle counter indicators will exhibit Red Light when track is occupied and Yellow light when track is clear with route is set and signal cleared.

C. **BLOCK INSTRUMENT(S)**

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 GR 6.02.03 and SR 6.02.6].

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.

D. **RECEPTION OF TRAIN ON OBSTRUCTED LINE**

Whenever trains are to be admitted on an obstructed line, Calling ON signal may be taken off. If calling on signal failed then the SM on duty shall be authorized on duty TPM with form T/509, indicating reasons for such admission the line no and nature of obstruction on the line. Before handing over the authority the SM on duty shall ensure the correct setting, clamping & pad locking 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 45 mtrs 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-signaled line, the SM shall ensure that The train is brought to a stand at the first stop signal.

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.

All points over which the train has to pass are correctly set and both the facing & trailing points clamped & padlocked.

The Loco Pilot is authorized to pass the approach stop signals at 'ON' through a written authority. T/369(b)[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 point laid down in GR with relevant SRs shall be followed. [Refer GR 3.68, 3.70 & SR 3.77.01(b)]

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

H. DEFFECTIVE 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(b)(i)].

I. DEFFECTIVE/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

CONTROL POINTS

CH-1	-----	17.
CH-2	-----	18
CH-3	-----	19,20
CH-4	-----	21,22.

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 obtaining 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 at site that there is no obstruction. SM on duty shall personally ensure the clamping and padlocking of all facing and trailing points. If the Crank Handle is in locked condition and it is necessary to operate the concerned point by Crank Handle due to whatever reason then the concerned signal should be put back to "ON" position then Crank Handle Key can be taken out after two minutes by pressing common 'TRANS' push button and concerned Crank Handle control push button simultaneously. An emergency Crank handle register shall be maintained by the SM on duty at the station. [Refer 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 motor point should be promptly reported to the concerned signal maintainer/signal inspector for immediate rectification.

6.9 PROVISIONS FOR WORKING OF TROLLIES/ MOTOR TROLLIES/MATERIALS LORRIES ETC"

Motor trolleys are run in accordance with rules laid down in GR & SRs. Material lorries will work in accordance with SR & rules laid down in BWM. [Refer SR 15.25.03 to 15.25.07, 5.11(2) and 5.12, 5.13 of BWM]

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 and the concerned berthing route button (UN OR UN1) and group "TRANS" button is to be pressed to inactivate the concerned route button. A RED flashing indication appears near the route

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button on panel/VDU. To activate the route button concerned route button along with the Group 'RELEASE' button is to be pressed. After route button is activated the flashing indication will disappear. And also reminders collars shall be placed on the concerned point push button controlling the blocked line. 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]

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. [Refer GR 5.23 & SR 5.23.01]

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)]

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

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

LOADING & UNLOADING OF VEHICLES ON RUNNING LINES

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

8.0 SHUNTING:

8.1. GENERAL PRECUATIONS

Shunting will be carried out at the station in accordance with General Rule and relevant Subsidiary Rules and Block working Manual. [Refer GR 5.13, 5.14, 5.16, 5.19, 5.20 to 5.23, 8.09, to 8.15]

The Guard/ SM on duty is authorized to supervise shunting operation. Normally caution aspect of starter signals and back shunt 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

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'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.

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

- i) Shunting in the face of an approaching train is prohibited.
- ii) No shunting beyond the outer most point should be allowed unless a locomotive is attached at the lower end of the load from the point of view of gradient.

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

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

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).

(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 is the Goods siding/H. A. 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.

i. **GOODS SIDING (ELECTRIFIED).**

The Goods siding with both side entry is taking off from Common Loop (Line No.4). The entrance point and corresponding derailing switch are coupled and operated by an arc lever at site. Both the entrance points are fitted with hand plunger locks. These hand plunger locks are unlocked by Goods siding keys P1 & P2 released by pressing the button No.24 provided on panel/VDU at SM's office. Reception signals i.e. 1A. C1A. in UP direction, 2C. C2C. in Down direction, shunt signal Nos. SH3A, SH4B and Starter Signal No. 5 & 8 are electrically interlocked in such a way that these signals cannot be taken 'OFF' if the Goods siding key is taken 'OUT' from the RKT provided at Goods siding location at site.

ii. **HOT AXLE SIDING (ELECTRIFIED).**

The Hot axle siding at HWH end of the yard with one side entry 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. Both the entrance points are fitted with hand plunger locks. These hand plunger locks are unlocked by Hot Axle siding keys Q1 released by pressing the button No. 23 provided on panel/VDU at SM's office. Reception signals i.e. 2A. C2A. in DN direction, shunt signal Nos. SH3D & Starter Signal No. 6 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.

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.

- 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 exchanging 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 on Double line territory is T/369(3b) bearing identification Number and Private Number received from the station in advance written both in figure and words. [Refer SR 6.02.06 & **Chapter-VI** 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 provisions which is summarized as follows. [Refer SR 6.02.05]

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

- (a) The previous block ticket is collected & cancelled, or
- (b) Necessary endorsement is given on the previous block ticket with the advise to wait at the sate 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.
- (e) 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.
- (f) SM at the dispatching end will hand over to the Loco Pilot the BLOCK TICKET as the authority, which shall include.
 - a. 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.
 - b. An authority to pass the stop signals at 'ON' position.
- (g) 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.

iii. **TRAINS DELAYED IN BLOCK SECTIONS**

If a train carrying passenger does not arrive with in 10 minutes of 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 Pilots and Guards of such trains by issue of suitable Caution Orders. [Refer GR 6.04 & SRs thereto]

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- iv. **Failure of Axle Counter Block/BPAC** – Procedure for working in case of failure of axle counter has been explained in preceding chapters.
- v. **Procedure for emergency operation of points by crank handle.**
 - a. The detailed procedure for emergency operation of points by Crank Handle of motor operated points is illustrated above of Main body.
 - b. Procedure for emergency operation of points with point zone axle counter/Track circuits failure and emergency route release. [GR 3.39 & GR 3.77].
 - c. 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.
 - d. Reporting of failure of points, Track circuits/axle counter or any interlocking- Whenever there is a failure of points, Track circuits/ axle counter or any interlocking gear at station, the failure should be reported by SM on duty to the concerned Signaling Maintenance Staff on duty responsible for attending to the failure and only after receipt of the written memo from the Signaling Maintainer for rectification of the fault. SM should restore the normal working.

The entries in failure registers to be done with message to the Section Controller.

9.1 **TOTAL FAILURE OF COMMUNICATION: -**

In the event of total failure of communications between BSDP-KAPG and BSDP-NKP 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. Fixed telephones such as Railway auto phones & BSNL phones.
- D. Control telephone.
- E. 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/C 602) for working of trains during total interruption of communication on Double line section to the Loco Pilot of each train which shall include-
 - a) Authority to proceed without 'Line Clear'.
 - b) Authority to pass the Last Stop Signal at its "ON" position.
 - c) A caution order restricting the speed to 25KMPH by day when view ahead is clear and 10KMPH 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 and reception signals may be taken only after the train has been brought to a stand out side it.
- v) On arrival at the next block station the Loco Pilot shall hand over the authority to proceed with out line clear to the SM on duty who will preserve the same for further inspection. Before resuming normal working when any means of communication is established. SM of either end must satisfy that there is no train in the block section. [Refer SR 6.02.03].

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

During temporary single line working, when one line is obstructed either between BSDP-KAPG and BSDP-NKP, trains shall be worked as per the procedure as detailed below. [Refer SR 6.02.01]

- 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

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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) 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 Loco Pilot must be given the following documents.
 - a) An authority for TSL working on double line (T/D 602) indicating there in.
 - (i) The line on which single line is introduced.
 - (ii) The kilometers of obstruction.
 - (iii) Any other speed restriction existing, in the section.
 - (iv) Endorsement to inform all Gang man and Gateman about the single line working (for the first train only).
 - (v) The speed of the first train to be restricted to 25 KMPH subject to other speed restriction.
 - (vi) 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).

On being ensured 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 is summarized as follows. [Refer SR 6.02.05]

After sending a train a 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 advice to wait at the side 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.
- (e) SM will suspend the absolute block system of working of both SM's concerned should arrange for running of trains on the authority of block ticket.
- (f) SM at the dispatching end will hand over to the Loco Pilot the BLOCK TICKET as the authority which shall include.
- (i) Caution Order: Existing speed restriction shall be indicated in the caution order portion. The speed restriction to 15Kmph during year visibility and 10 kmph when visibility is obstructed shall be clearly indicated.

- (ii) An authority to pass the stop signals at 'ON' position.
- (g) Before resumption of normal working a message between the SM's of the concerned station shall be exchanged with private number. [Refer SR 6.0.2.05(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. **VISIBILITY TEST OBJECT:**
The signal lights of Common loop starter signal No. 5 & 8 during day and night are the visibility test objects for UP & DN lines vide GR 3.61.2 (b) (iii).
11. **ESSENTIAL EQUIPMENT AT THE STATION:**
(Details are given in Appendix-'E')

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

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 Gangman 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. As soon as a man is posted to or detailed for duty at a station as a Fog Signalman, the Station Master must satisfy himself that the man is fully acquainted with and understands the rules relating to the placing of detonating (fog) signals at stations during thick or foggy weather. As an assurance of this, the Station Master shall take the signature or thumb impression of such men in the appropriate column of Part - I of this register.
- c. In-charge of the station shall ensure that the information maintained in the register is kept up to date and is accurate in all respects.
- d. 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.

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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

APPENDIX 'A' TO STATION WORKING RULES OF BHUSANPUR STATION

1.0 WORKING OF 'C' CLASS MID-SECTION MANNED NON INTERLOCKED LEVEL CROSSING GATE No.221 AT KM. 485/25-27(UP), 485/28-26 (DN) BETWEEN BSDP-NKP.

1.1 BRIEF DESCRIPTION:

1.	No. of Level Crossing Gate	221
2.	Engineering or Traffic gate	Engg
3.	Under control of station master or permanent way inspector.	SE/P.Way/KAPG
4.	Location at Km.	485/25-27(UP) , 485/28-26 (DN)
5.	At station	-
6.	In between station	NKP-BSDP
7.	BG/MG/NG	BG
8.	Single line/double line/multiple line	Double line
9.	Normal position	Close to road traffic
10.	Interlocked/ Non-Interlocked	Non-Interlocked
11.	Means of Interlocking	-
12.	Provision of gate single at Km.	-
13.	Signaling arrangement	-
14.	Means of communication Telephone.	Telephone with SM/BSDP
15.	Width of the level crossing gate	7.50 Mtrs
16.	Type of road	Others
17.	Name of road	Haripur-Oramarsingh
18.	Metalled /Non-Metalled	Non-Metalled
19.	Approach road	Moorum
20.	Width of the road	5.5 Mtrs
21.	Angle of road crossing (in case of the SKEW gates)	-
22.	Road gradients (if any)	[a]North/East Side 1:30 [b] South/West Side 1:30
23.	Road alignment (straight/Curve)	[a] North/East Side : Curve [b] South/West Side : Straight
24.	Provision of height gauges	Provided
25.	Type of barriers	Lifting
26.	Length of check rails	9.50 Mtrs.
27.	Road surface in between level crossing gates.	C. C. Block
28.	Length of rumble strip/ speed breakers.	7 Mtrs
29.	Road signs	Yes
30.	Speed breakers indication board	Yes
31.	TVU	5184/Nov 2009
32.	Census next due on	Nov- 2012
33.	Demarcation for placement of detonators.	Available
34.	No. of gateman working	Two (2)
35.	Nearest Railway Medical Assistance	KUR
36.	Nearest Private Medical Assistance available (if any)	Nirakarpur.
37.	List of equipment available (Yes/No)	Yes

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1.2.A. 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	1
9.	Tommy Bar	2
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

B. 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.

1.3 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.

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- (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 ensure that red banner flag is placed across the track whenever the gate is kept in open condition for passage of road vehicles.
- (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 the 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 OF 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.

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) The 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 and fix 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 Para (a) 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.

1.4 **MODE OF OPERATION:**

NORMAL WORKING OF THE LEVEL CROSSING GATE (NON-INTERLOCKED):

The level crossing gate is normally kept closed against road traffic and it will be opened for passage of road traffic only when it is necessary and safe to do so. The Gateman on duty before opening the gate shall ensure that he has not exchanged any Private Number with the station or if he has exchanged Private Number with the station, the whole of the train with last vehicle indicator has passed over the level crossing gate and the Station Master has not exchanged Private Number with him for any movement immediately in the rear of that train or on the adjacent line (s).

1.5 **EXCHANGE OF PRIVATE NUMBER:**

- (i) The normal position of the level crossing gate is "Closed to Road Traffic".
- (ii) The Station Master before permitting each train to enter into the block section, shall ask Gateman on the telephone by giving a Private Number whether, gate is closed against road traffic for the passage of train. The Gateman only after ensuring that the gate is actually closed and locked against road traffic shall give a Private Number to the Station Master in assurance of gate being closed & locked against road traffic.
- (iii) The Station Master shall not permit any train to enter the block section, unless he is assured of the closure and locking of the gate by the gateman supported by exchange of Private Number.
- (iv) When the gateman desires to open the gate for passage of road traffic he should ensure that:
 - (1) He has not exchanged any private number with the station as per 1.5 (ii) above, or
 - (2) If he has exchanged private number with the Station Master, the whole of the train with last vehicle indicator has passed over the level crossing gate and the Station Master has not exchanged private number with him for any other movement immediately in rear of that train or on the adjacent line (s).

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

- (v) In case the Gateman is not responding on the telephone or incase the telephone becomes defective or private number is not received from the Gateman, the Station Master shall adhere to the procedure prescribed in SR 16.03.04.

In the event of failure of telephone, if the gate is required to be opened for the passage of road traffic, the gateman shall look out in both directions before opening the gate to ensure that no train is approaching from either end. He shall then plant a banner flag during day and a hand signal lamp with the red light during night, 5 meters away from the gate on the track on either side. He will thereafter, open the gate for passing the road traffic keeping a red flag/red hand signal lamp ready in his hand to stop approaching train if any.

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1.6 FAILURE OF TELEPHONIC COMMUNICATION

When telephonic communication fails or it does not get any response from gateman despite 2 or 3 attempts, the following procedure should be adopted:

- (i) Station master at dispatching end shall issue caution order to the Loco Pilot of the departing train.
- (ii) The caution order shall advise the Loco Pilot to whistle continuously and approach the gate cautiously.
- (iii) The Loco Pilot shall be instructed to pass the gate cautiously, on being hand signaled by the gate man. If hand signal is not seen, the Loco Pilot should prepare to stop short of the gate and depute his assistant Loco Pilot to see the condition of the gate. If gate is closed, the assistant Loco Pilot will give all right signal and if the gate is not closed the assistant Loco Pilot must close the gate and then give all right signal. In the absence of the assistant Loco Pilot, the Loco Pilot may take the assistance of assistant guard/guard.
- (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) The station master shall advise the gateman through gangman/patrol man or the Loco Pilot of the first train that the telephone has become defective.
- (vii) He should also advise S&T staff responsible for maintenance of the telephone to rectify the same at the earliest.
- (viii) Normal working will be resumed only after S&T staff rectifies 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 or leaf gates, the gateman will immediately inform the Station Master on duty, under exchange of private number, and ensure that 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 at night to the Loco Pilot of the approaching train.
- (v) Station Master on duty shall issue caution order to the Loco Pilot of 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 maintenance staff responsible for maintenance of lifting barriers/ leaf gates to rectify the defect at the earliest.
- (viii) Normal working will resumed only after maintenance staff rectify the lifting barrier/ leaf gates and issue reconnection/ fit memo for the same.

1.8 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.
- (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.

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- (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 the gate vide GR.16.07.
- (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 ensured 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 Pilots of all trains to proceed cautiously, and pass the gate on green hand signal of the gateman, if the gate is broken, but 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 staff rectify the defective lifting barriers/ leaf gates and issue reconnection/ fit memo for the same.

1.9 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment which is visible to the gateman, the gateman and Station Master will adopt the procedure given under item No.1.8 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 'C' CLASS MANNED INTERLOCKED LEVEL CROSSING GATE NO.224 AT KM. 488/9-11(UP) , 488/12-10 (DN) TOWARDS HWH END OF THE YARD:

2.1 BRIEF DESCRIPTION:

1.	No. of Level Crossing Gate	224
2.	Engineering or Traffic gate	Traffic
3.	Under control of station master or permanent way inspector.	SM/BSDP
4.	Location at Km.	488/9-11(UP),488/12-10 (DN)
5.	At station	BSDP
6.	In between station	-
7.	BG/MG/NG	BG
8.	Single line/double line/multiple line	Double line
9.	Normal position	Open
10.	Interlocked/ Non-Interlocked	Interlocked
11.	Means of Interlocking	EKT
12.	Provision of gate single at Km.	Nil
13.	Signaling arrangement	Station Stop Signal
14.	Means of communication Telephone.	Telephone with SM/BSDP
15.	Width of the level crossing gate	7.50 Mtrs
16.	Type of road	Others
17.	Name of road	Singipur
18.	Metalled /Non-Metalled	Non-Metalled
19.	Approach road	Moorum
20.	Width of the road	5.50 Mtrs
21.	Angle of road crossing (in case of the SKEW gates)	
22.	Road gradients (if any)	[a]North/East Side. 1:30 [b] South/West Side. 1:30
23.	Road alignment (straight/Curve)	[a] North/East Side : Curve [b] South/West Side : Curve
24.	Provision of height gauges	Provided
25.	Type of barriers	Lifting barriers
26.	Length of check rails	9.50 Mtrs.
27.	Road surface in between level crossing gates.	C. C. Block
28.	Length of rumble strip/ speed breakers.	8.50 Mtrs
29.	Road signs	Yes
30.	Speed breakers indication board	Yes
31.	TVU	5103, Nov 2009
32.	Census next due on	Nov- 2012
33.	Demarcation for placement of detonators.	Available
34.	No. of gateman working	Three (3)
35.	Nearest Railway Medical Assistance	KUR
36.	Nearest Private Medical Assistance available (if any)	Bhusandapur (Kantelbari)
37.	List of equipment available (Yes/No)	Yes

2.2 A) EQUIPEMENT TO BE AVAILABLE AT THE GATE :

1.	Battery Operated LED based flashing lamp	3
2.	Hand Signal Flag Green	1 mounted on sticks
3.	Hand Signal Flag Red	3 mounted on stick
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	1
9.	Tommy Bar	2
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

B) RECORDS TO BE KEPT AT GATE LODGE

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

- i) Gate Working Instructions in Hindi/English.
- ii) Gate Working, Instructions in local vernacular language.
- iii) 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.

2.3 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.

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- (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 emergencies and obstruction on 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 the 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 OF 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) The 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.

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- (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 and fix 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.

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.

2.4 **INTERLOCKING AND NORMAL WORKING:**

This gate is interlocked with UP & DN reception signals & DN dispatch signals. The interlocking is achieved by means of Electrical Key Transmission system. The normal position of the gate is open. A two-lever ground frame is provided at the gate lodge. The key of the L.C.Gate remains in the winch when the gate is opened. When it is necessary to close the gate for taking 'OFF' signals or for shunting operation the Station Master on duty shall inform the Gateman to close and lock the gate.

The Gateman on duty shall then close the barriers of the L.C.Gate by operating winch. The key 'R' is to be extracted from the winch, which will be inserted in the lever of GF-2. When GF-2 reversed locks the booms of the gates and Key 'S' and GF-1' releases. This key 'H' will be inserted in the EKT and turned and lever No.GF1 will be reversed for taking "OFF" 1A/B, C1A/B SH 3A/B/C/D, Starter signal no.6/8/10, 2B and 2A when set to main line. Station Master on duty will press level crossing control button No.27 (Chocolate) and common 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.27 and common group button (Trans) and keep it pressed till such time the Gateman extracts the gate control key 'S' from the EKT instrument. After getting the Key 'R' the Gateman will open the L.C.Gate by normalising the levers. The gateman can put back the signal to danger by pulling the GF-1 to normal in case of Emergency.

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.27. 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 26 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.

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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 10 minutes at a stretch according to SR 16.03.01(b).

2.5 INTIMATION TO GATEMAN:

- i. Before taking off reception/departure/Shunt signals, SM 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 SM.
- 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 SM must ensure that the trains 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.

2.6 FAILURE OF TELEPHONE 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 Points Man with full details of number, description and direction of the train.
- (ii) Gateman on receipt of such advice shall close the gate and transmit the key to the Station Master which will enable them to take "OFF" reception/ departure 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 signaled by the gateman. If hand signal is not seen, Loco Pilot should be prepared to stop short 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) He 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.

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- (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. Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- (vii) 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) 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 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 shall be replaced in the emergency key box and resealed by the 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 resume only after S & T staff repairs the winch/gate lever/key transmitter and issues reconnection/ fit memo for the same.
- (viii) After rectification, the emergency shall be replaced in the emergency key box and resealed by the S&T maintainer.

2.10 OBSTRUCTION AT THE GATE:

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- a. 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.
- b. Immediately after this, the gateman shall advise the Station Master on duty, regarding the defects / obstructions at the gate, under exchange of private number.
- c. Station Master on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- d. 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.
- e. 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 vide GR.16.07.
- f. Thereafter he shall protect the gate from the other direction also.
- g. 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.
- h. 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.
- i. After the track has been cleared of all obstructions the gateman shall inform the Station Master accordingly, under exchange of private number.
- j. 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.
- k. 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.
- l. Station Master shall advise maintenance staff responsible for maintaining the lifting barriers/leaf gate to repair the same at the earliest.
- m. 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.

3.0 WORKING OF 'C' CLASS MANNED INTERLOCKED LEVEL CROSSING GATE NO.225 AT KM. 489/9-11(UP) , 489/12-10 (DN)TOWARDS VSKP END OF THE YARD:

3.1 BRIEF DESCRIPTION:

1.	No. of Level Crossing Gate	225
2.	Engineering or Traffic Gate	Traffic
3.	Under control of station master or permanent way inspector.	SM/BSDP
4.	Location at Km.	489/9-11(UP),489/12-10 (DN)
5.	At station	BSDP
6.	In between station	-
7.	BG/MG/NG	BG
8.	Single line/double line/multiple line	Double line
9.	Normal position	Open
10.	Interlocked/ Non-Interlocked	Interlocked
11.	Means of Interlocking	EKT
12.	Provision of gate single at Km.	Nil
13.	Signaling arrangement	Station Stop Signal
14.	Means of communication Telephone.	Telephone with SM/BSDP
15.	Width of the level crossing gate	7.50 Mtrs
16.	Type of road	Others
17.	Name of road	Bhusandpur Gate
18.	Metalled /Non-Metalled	Metalled
19.	Approach road	Bituminous
20.	Width of the road	5 Mtrs
21.	Angle of road crossing (in case of the SKEW gates)	-
22.	Road gradients (if any)	[a] North/East Side. 1:30 [b] South/West Side. 1:30
23.	Road alignment (straight/Curve)	[a] North/East Side : Curve [b] South/West Side : Curve
24.	Provision of height gauges	Provided
25.	Type of barriers	Lifting
26.	Length of check rails	9.50 Mtrs.
27.	Road surface in between level crossing gates.	C. C. Block
28.	Length of rumble strip/ speed breakers.	5 Mtrs
29.	Road signs	Yes
30.	Speed breakers indication board	Yes
31.	TVU	11583/Nov 2009
32.	Census next due on	Nov- 2012
33.	Demarcation for placement of detonators.	Available
34.	No. of gateman working	Three (3)
35.	Nearest Railway Medical Assistance	KUR
36.	Nearest Private Medical Assistance available (if any)	Bhusandapur (Kantelbari)
37.	List of equipment available (Yes/No)	Yes

3.2.A. 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	1
9.	Tommy Bar	2
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

B. RECORDS TO BE KEPT AT GATE LODGE

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

- i) Gate Working Instructions in Hindi/English.
- ii) Gate Working, Instructions in local vernacular language.
- iii) 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.

3.3 INTERLOCKING AND NORMAL WORKING:

This gate is interlocked with all UP & DN reception signals and UP dispatch signals. The interlocking is achieved by means of Electrical Key Transmission system. The normal position of the gate is open. A two-lever ground frame is provided at the gate lodge. The key of the L.C.Gate remains in the winch when the gate is opened. When it is necessary to close the gate for taking 'OFF' signals or for shunting operation the Station Master on duty shall inform the Gateman to close and lock the gate.

The Gateman on duty shall then close the barriers of the L.C.Gate by operating winch. The key 'G' is to be extracted from the winch, which will be inserted in the lever of GF-2.

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When GF-2 reversed locks the booms of the gates and Key 'H' and GF-1' releases. This key 'H' will be inserted in the EKT and turned and lever No.1GF will be reversed for taking "OFF" Down Home/Calling-on Signals (2/C-2A/B/C), Up Starter Signal No.5 & 9 and shunt signal no-4 A/B. Station Master on duty will press level crossing control button No.26 (Chocolate) and common 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.26 and common group button (Trans) and keep it pressed till such time the Gateman extracts the gate control key 'H' from the EKT instrument. After getting the Key 'G' the Gateman will open the L.C.Gate by normalising the levers. The gateman can put back the signal to danger by pulling the GF-1 to normal in case of Emergency.

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.26. 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 26 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 any 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 10 minutes at a stretch according to SR 16.03.01(b).

3.4 **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:**

(1) Gateman shall place red banner flag across the track during emergencies and obstruction on track.

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- (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 the 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 OF 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.

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- (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.

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) The 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 and fix 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.

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.

3.5 INTIMATION TO GATEMAN:

- i. Before taking off reception/departure/Shunt Signals, SM 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 SM.
- 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 SM 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.

3.6 FAILURE OF TELEPHONE 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 Points Man with full details of number, description and direction of the train.
 - ii) Gateman on receipt of such advice shall close the gate and transmit the key to the Station Master which will enable them to take "OFF" reception/ departure 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 signaled by the gateman. If hand signal is not seen, Loco Pilot should be prepared to stop short 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) He 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

- 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. Station Master shall advise maintenance staff responsible for maintenance of lifting barriers/ leaf gates to repair the defect at the earliest.
- vii) 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:

- 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.

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.

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- 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:**

- a) 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.
- b) Immediately after this, the gateman shall advise the Station Master on duty, regarding the defects / obstructions at the gate, under exchange of private number.
- c) Station Master on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- d) 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.
- e) 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 vide GR.16.07.
- f) Thereafter he shall protect the gate from the other direction also.
- g) 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.
- h) 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.
- i) After the track has been cleared of all obstructions the gateman shall inform the Station Master accordingly, under exchange of private number.
- j) 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.
- k) 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.
- l) Station Master shall advise maintenance staff responsible for maintaining the lifting barriers/leaf gate to repair the same at the earliest.
- m) 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.

4.0 WORKING OF 'C' CLASS MID SECTION MANNED INTERLOCKED LEVEL CROSSING NO. 227 AT KM 490/23-25(UP) , 490/26-24 (DN) BETWEEN BSDP-KAPG:

4.1 BRIEF DESCRIPTION:

1.	No. of Level Crossing Gate	227
2.	Engineering or Traffic gate	Engg
3.	Under control of station master or permanent way inspector.	SE/P.Way/KAPG
4.	Location at Km.	490/23-25(UP),490/26-24(DN)
5.	At station	-
6.	In between station	BSDP-KAPG
7.	BG/MG/NG	BG
8.	Single line/double line/multiple line	Double line
9.	Normal position	Open
10.	Interlocked/ Non-Interlocked	Interlocked
11.	Means of Interlocking	Gate stop signal
12.	Provision of gate single at Km.	-
13.	Signaling arrangement	UP Gate Stop Signal & DN Gate signal of L.C.Gate at Km 490/24-26 cum DN distant of BSDP
14.	Means of communication Telephone.	Telephone with SM/BSDP
15.	Width of the level crossing gate	7.50 Mtrs
16.	Type of road	Others
17.	Name of road	Ujala Road
18.	Metalled /Non-Metalled	Metalled
19.	Approach road	Bituminous
20.	Width of the road	5.0 m
21.	Angle of road crossing (in case of the SKEW gates)	-
22.	Road gradients (if any)	[a]North/East Side. 1:30 [b] South/West Side. 1:30
23.	Road alignment (straight/Curve)	[a] North/East Side : Curve [b] South/West Side : Curve
24.	Provision of height gauges	Provided
25.	Type of barriers	Lifting
26.	Length of check rails	9.50 Mtrs.
27.	Road surface in between level crossing gates.	C. C. Block
28.	Length of rumble strip/ speed breakers.	5.0 m
29.	Road signs	Yes
30.	Speed breakers indication board	Yes
31.	TVU	10449/Nov 2009
32.	Census next due on	Nov- 2012
33.	Demarcation for placement of detonators.	Available
34.	No. of gateman working	Two (2)
35.	Nearest Railway Medical Assistance	KUR
36.	Nearest Private Medical Assistance available (if any)	Bhusandapur (Kantelbari)
37.	List of equipment available (Yes/No)	Yes

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4.2.A. 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	1
9.	Tommy Bar	2
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

B. 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.

4.3 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.

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- (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 emergencies and obstruction on 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 the 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 OF 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.

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) The 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 and fix 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.

4.4 **INTERLOCKING AND NORMAL WORKING:**

This gate is interlocked with UP and DN gate stop signal. The normal position of the gate is open to road traffic. A four-lever ground frame is provided at the gate lodge. The key of the 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 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.

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 of GF-2 and releases GF-2. When GF-2 reversed locks the booms of the gates and releases UP and Down Gate Stop signal lever GF-3 & GF-4 respectively. After passage of the train this signal levers to be normalized and key 'M' 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 10minutes 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).

4.5. **INTIMATION TO GATEMAN**

- i) SM shall advise the gateman through telephone the number, description, direction and expected time of the passage of the train at the gate.
- ii) SM will convey this advised to the gateman before obtaining/granting line clear.
- iii) It should be the duty of the gateman to ensure that the gate is closed in time, so that there is no detention to the train or excessive detention to road traffic.

4.6 **FAILURE OF TELEPHONE 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.

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- 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 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.
- 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.

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. (In this gate the emergency key is not available)
- iii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/ dispatch of trains as prescribed for non-interlocked gates, should be adopted.
- iv) Station Master on duty shall issue a caution order to the Loco Pilot of a departing train.
- v) He shall also advise the Station Master at the 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.

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- vii) 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.

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.

4.10 DEFECTIVE GATE SIGNALS:

- i) The gateman shall treat the gate signal as defective and must not lower them under following circumstances:
- ii) If gate signals can be taken "OFF" without closing the gate, or
- iii) The key can be extracted from the operating winch when the gate is in open condition, or
- iv) 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.
- v) The gateman will immediately advise the Station Master on duty, under exchange of private number, regarding defective gate signals.
- vi) 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.
- vii) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.
- viii) Station Master on duty will issue caution order to the Loco Pilot of a departing train.
- ix) 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.
- x) Station Master shall advise S & T staff responsible for maintaining the gate signal to repair the same at the earliest
- xi) 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 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.

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- 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 vide GR.16.07.
- 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.

APPENDIX 'B'

APPENDIX 'B' TO STATION WORKING RULES OF BHUSANDPUR STATION

1.0 SYSTEM OF SIGNALLING, INTERLOCKING & COMMUNICATION ARRANGEMENTS AT THE STATION

This is a 'B' class station Standard –III (R) Electronic Interlocking (with isolations). 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 lay out 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) (N) or (R) 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 on straight line indication 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 in reverse indication 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.[Refer GR & 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. In such case both ends of the point shall be clamped and padlocked. [Refer SR 3.69.03(C)]

1.2.7 DESCRIPTION OF POINT PUSH BUTTON

a) HWH END POINTS:

SL. No.	Button No.	Colour	Description
1.	17A/B WN	BLACK	Crossover point between Up and Down main lines.
2.	19A/B WN	BLACK	Crossover point between Down Loop and Down Main Lines.
3.	21A/B WN	BLACK	Crossover point between Common Loop and Up Main Lines.

b) **VSKP END POINTS**

SL. No.	Button No.	Colour	Description
1.	18 A/B WN	BLACK	Crossover point between Up and Down Main Lines
2.	20 A/B WN	BLACK	Crossover point between Down Loop and Down Main Lines.
3.	22 A/B WN	BLACK	Crossover point between Up Main and Common Loop Lines.
4.	CONTROL 25	BLUE	Control on Hot Axle siding.
5.	CONTROL 24	BLUE	Control on Goods siding.

1.2.8 **DESCRIPTION OF POINT GROUP BUTTON:**

These are two buttons at the top of panel one for Normal and one for Reverse. These are coloured Black with red dot. 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.

1.3.1 **DESCRIPTION OF SIGNAL BUTTONS:**

SL. No.	Button No.	Colour	Description
1.	C1 A/B	RED with WHITE Dot	Up Calling-on signal for Up Main and Common Loop lines.
2.	1 A/B	RED	Up Home signal for Up Main and Common Loop Lines..
3.	2 A/B/C	RED	Down Home Signals for Down Main, Down Loop and Common Loop Lines.
4.	C2 A/B/C	RED with White dot.	Down Calling-on signal for Down Main, Down Loop and Common Loop Lines.
5.	SH3	YELLOW	Shunt signal for Up Main, Common Loop, Down Main and Down Loop Line.
6.	SH4	YELLOW	Shunt signal for Up Main and Common Loop lines.
7.	5	RED	Common Loop Line Starter
8.	6	RED	Down Loop Line starter
9.	8	RED	Common Loop Line Starter
10.	9	RED	UP Main Line Starter
11.	10	RED	Down Main Line Starter
12.	11	RED	Up Advanced Starter
13.	12	RED	Down Advanced starter

1.3.2 **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.

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 signals, it is necessary to operate the signal buttons and the concerned route button simultaneously for taking "OFF" concerned signal.

1.4.2 **DESCRIPTION OF ROUTE BUTTONS:**

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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/Calling-on/Shunt signal 3 setting to over run line for Dn loop line
3.	L2-UN	WHITE	Route button for Down Home/Down Calling-on/shunt signal No.3 for Down main line.
4.	L3-UN	WHITE	Route button for Up Home/UP Calling-On/Shunt Signal No.3/Shunt Signal No 4 for Up main Line.
5.	L4-UN	WHITE	Route button for Up Home Signal for Common Loop Line set to Main Line.
6.	L4-UN1	WHITE WITH BLACK DOT	Route button for Up/Down Home set to over run line or Sand Hump/Up Calling –on/ Dn Calling –on /Shunt signal Nos.3/4 for common loop line.
7.	11AT- UN	WHITE	Common route button for Up main starter signal No.9 and Up common loop starter signal No.5.
8.	12AT-UN	WHITE	Common route button for Down Main Starter Signal No.10 and Down Common Loop starter signal No.8 and Down Loop starter signal No.6.
9.	11 UN	WHITE	Route button for Up advanced starter signal No.11.
10.	12 UN	WHITE	Route button for Down advanced starter signal No.12.

CRANK HANDLE PUSH BUTTON

1.	CH-1	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 17 along with “TRANS” Push Button
2.	CH-2	BLUE	To be pressed to extract Crank Handle Key for operation of Point No. 18 along with “TRANS” Push Button.
3.	CH-3	BLUE	To be pressed to extract crank handle key for operation of point No. 19 & 20 along with “TRANS” push button.
4.	CH-4	BLUE	To be pressed to extract crank handle key for operation of point No.21 & 22 along with “TRANS” push button.

MISCELLANEOUS PUSH BUTTONS

1.	SM'S EMERGENCY POINT / 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.	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.
4	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.
5	POINT NORMAL	GROUP PUSH	BLACK WITH RED	To be pressed to initiate “NORMAL” setting of point along with concerned point push

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	BUTTON	DOT.	button.
6	POINT GROUP REVERSE PUSH BUTTON	BLACK WITH RED DOT.	To be pressed to initiate "REVERSE" setting of point along with concerned point push button.
7	EMERGENCY ROUTE RELEASE PUSH BUTTON	WHITE WITH RED DOT.	To be pressed for emergency Route Release.
8	SIGNAL CANCELLATION PUSH BUTTON	RED	To be pressed for canceling a signal which is already then "OFF" or to release a Rout after passage of train.
9	SIGNALLAMP FAILURE / POINT FAILURE ACKNOWLEDGEMENT	RED WITH WHITE DOT	To be pressed for acknowledging signal lamp failure/ point failure Buzzer.
10	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.
11	EMERGENCY GATE RELEASE BUTTON FOR L.C. GATE AT KM 489/9-11.	CHOCOLATE WITH RED DOT.	To be pressed for emergency Gate Release at KM 489/9-11.
12	EMERGENCY GATE RELEASE BUTTON FOR L.C. GATE AT KM 488/9-11.	CHOCOLATE WITH RED DOT.	To be pressed for emergency Gate Release at KM 488/9-11.
13	L.C. GATE CONTROL 26 PUSH BUTTON	CHOCOLATE	To be pressed for extending Control to open L.C. Gate at 489/9-11.
14	L.C. GATE CONTROL 27 PUSH BUTTON	CHOCOLATE	To be pressed for extending Control to open L.C. Gate at 488/9-11.
15	HOT AXLE SIDING CONTROL POINT NO.25 PUSH BUTTON.	CHOCOLATE	To be pressed along with TRANS button for extracting key from RKT to operate the siding point.
16	GOODS SIDING CONTROL POINT NO.24 PUSH BUTTON.	CHOCOLATE	To be pressed along with TRANS button for extracting key from RKT to operate the siding point.
17	RESET PUSH BUTTON FOR DN LV AT NKP END	RED	To be pressed for initiating reset for axle counter for section BSDP-NKP.
18	RESET PUSH BUTTON FOR UP LV AT NKP END	RED	To be pressed for initiating reset for axle counter for section BSDP-NKP.
19	RESET PUSH BUTTON FOR DN LV AT KAPG END	RED	To be pressed for initiating reset for axle counter for section BSDP-KAPG.
20	RESET PUSH BUTTON FOR UP LV AT KAPG END	RED	To be pressed for initiating reset for axle counter for section BSDP-KAPG.
21	RESET KEY FOR DN LV AT NKP END		Reset key to be inserted on the panel for resetting the Axle counter for section BSDP-NKP.
22	RESET KEY FOR UP LV AT NKP END		Reset key to be inserted on the panel for resetting the Axle counter for section BSDP-NKP.

23	RESET KEY FOR DN LV AT KAPG END		Reset key to be inserted on the panel for resetting the Axle counter for section BSDP-KAPG.
24	RESET KEY FOR UP LV AT KAPG END		Reset key to be inserted on the panel for resetting the Axle counter for section BSDP-KAPG.
25	PREP RESET		YELLOW INDICATION WILL APPEAR ON THE PANEL AFTER RESETTING.
26.	UP BLOCK RELEASE PUSH BUTTON	CHOCOLATE WITH WHITE	To be pressed for normalizing the Block Instrument for section BSDP-NKP.
27.	DN BLOCK RELEASE PUSH BUTTON	CHOCOLATE WITH WHITE	To be pressed for normalizing the Block Instrument for section BSDP-KAPG.
28.	SM's A/C COMMON RESET KEY		Common Key to be turned for resetting the axle counters for point zones and loop lines.
29	Point Zone A/C reset button.	Blue	Common button to be pressed for resetting the Axle counters for Point zones and loop lines.
30.	Panel PC switch		Required for selection of operation from PC or panel.

1.5 **MICROLOCK INDICATION**

A micro Lock Indication is provided on the top of the panel for noting the failure of the Micro Lock of Electronic Interlocking unit. This Electronic Interlocking consists of two Micro Locks called system 'A' and system 'B'. These two systems status (ON/OFF) will be indicated separately on the panel. If the Micro lock unit is ON, 'GREEN' indication will appears and if OFF 'RED' indication appears. If the 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 Micro Lock 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.

1.6 **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 failure-muting button besides audible Buzzer. The buzzer stops when the point failure-muting button is pressed, but the flashing light above the muting 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 muting button will disappear.

1.7 **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 till replacing the bulb rectifies the failure. 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.

1. Up inner distant & Up distant.
2. Up Home & Down Advanced starter.
3. Down starters.
4. Up Starters.
5. Down Home & Up Advanced starter.
6. Down inner distant & Down distant.

1.8 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.

1.9 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' [Refer 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 white light will lit indicating that the timer is working. After 120 seconds, the white light along with the white strip of light will disappear suggesting the route has been released.

In case the route illumination (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.

1.10 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. 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 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.

1.11 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 gate, the SM on duty shall press emergency gate release button and gate button No.26/27. A red flashing (Gate lock) indication will appear and after a lapse of 120 seconds. 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 26/27 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.

1.12 BUTTON HELD ACKNOWLEDGE (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 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 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.

1.13 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.

1.14 TRACK CIRCUITS:

Both Up and Down Main Lines are track circuited whereas Down Loop & Common loop line are axle countered in berthing portion. All the point zones are also axle countered. In addition there are (5 Rail length) track circuits near Advanced starter Signals in both the directions and Home signal tracks are also provided. Calling-on signal (7 Rail length) track circuits are also provided before the Home signals in both directions. From last trailing point/fouling mark to Advanced Starter Signal are also track circuited in both directions. (i.e. 11AT and 12AT in Up and Down directions respectively). Indications for the above track circuits/Axle Counters are available on panel at SM's office. Yellow light on panel indicates route set and track clear and Red light indicates track occupied condition.

1.15 AXLE COUNTER:

- (i) Electronic Analog Axle Counters are provided for Down Loop & Common loop berthing portions and for all the point zones in the yard for counting Axles 'IN' and counting axles 'OUT' which indicate whether the concerned berthing track/point zone track monitored by analog axle counters is clear or occupied.
- (ii) The entire Block Section on both Up and Down Lines between the stations BSDP-KAPG & BSDP-NKP are monitored by Digital Axle counter system. These Digital Axle Counters are provided for Last Vehicle check on either Block Sections as well as for dispatching a train in block section from either end of the section. These Digital Axle counter system counts the Axles 'IN' and counting axles 'OUT' in the respective block sections which indicate whether the concerned sections monitored by digital axle counters is clear or occupied.
- (iii) Fiberglass trolley wheels are to be provided for push trolleys in lieu of trolley suppression track circuits.

A pair of electronic axle counter is provided between NKP-BSDP on Up line one just beyond Up advanced starter NKP and another on track circuit no 1T2 i.e beyond Up Home signal of BSDP. Similarly a pair of electronic axle counter is provided between BSDP-NKP on down line, one just beyond Down Advanced starter of BSDP and another on track circuit no 2T2 i.e beyond Down Home signal of NKP.

A pair of electronic axle counter is provided between BSDP-KAPG on Up line one just beyond Up advanced starter BSDP and another on track circuit no 1T2 i.e beyond Up Home signal of KAPG. Similarly a pair of electronic axle counter is provided between KAPG-BSDP on down line, one just beyond Down Advanced starter of KAPG and another on track circuit no 2T2 i.e beyond Down Home signal of BSDP.

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

After complete arrival of the train the 'RED' indication will disappear and 'GREEN' indication will appear. If after the complete arrival of the train the 'RED' indication does not change to 'GREEN' it should be assumed as Block Instrument failure for the particular section and necessary action as per GR is to be followed. [Refer GR.14.13]

The axle counters are interlocked with the respective block instruments for that section. If axle counter fails, Advanced Starter signal shall not come to OFF and the concerned instrument shall remain locked in last operated position.

A resetting arrangement for, resumption of the system in case of failure of axle counter has been provided in the SM office of the adjacent Block stations after being assured by both the SM that the Train has arrived complete with its Last Vehicle at the receiving station, by exchanging Private Number then resetting to be complied with.

(Details of resetting procedure given in APPENDIX-'B')

- (iv) In case of failure of Axle Counter the re-setting of axle counter must be done as per the procedure given in Appendix-"B". In the event of failure of Axle Counter/ Track circuit the clearance of loop lines and main lines will be ensured by physical check by the SM on duty and train shall be admitted as per GR and SR there to. [Refer GR.3.69]

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 track indicators/Axle counter indicators will exhibit Red Light when track is occupied and Yellow light when track is clear with route is set and signal cleared.

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

The panel is fitted with Station Master's lock up key to prevent any simultaneous operation of the panel. The Station master on duty is the only authorised 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 releasing the panel lock 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. Station Master on duty shall personally ensure clamping and padlocking all facing and trailing points enroute. 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 glass fronted wooden box 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 beside 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 are in operation 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 white 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 advanced starter, line clear must be obtained from the concerned block station in advance. Then the concerned advance starter signal button shall be pressed along with the advanced starter route button for two to three seconds and released. This will clear the advance starter signal and a Yellow strip of light will appear on the panel.

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 Yellow strip of light will appear on the route from the concerned starter to the advanced starter.

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

Miniature colour light Calling-on signal is provided below the Home signals [Refer 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 a 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 signal and route button pressing 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., a 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.

.ii. **SHUNT SIGNALS**

Back shunt signal 3A/B/C/D and 4/A/B are provided at HWH end and VSKP end respectively for shunting operation.

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 DN Calling-on signals and Up and Down Advanced starters 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 passage of a train pass 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) 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. Advanced starter is interlocked with respective Block Instrument in Line Clear Position.

2.8 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.

2.9 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.

2.10 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, trains can 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 to set the nominate route correctly with the help of crank handle during failure of points. He shall clamp and padlock both the facing and trailing end points in both cases under the supervision of SM on duty.

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 will satisfy himself 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 home signal.

NOTE:

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

PILOTING OF TRAINS - OUT OF STATION YARD :

When starter signal has becomes 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 out going train with the help of crank handle. The TPM on duty shall clamp and padlock both facing and trailing end points under the supervision of SM on duty in both the cases. He shall also advise the gateman to close the level crossing gate 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 SR 3.70.01.

(Correction Slip No. 2 Dated _____)

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In case of advance 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 SR 3.70.02. The TPM shall hand over the pilot memo in form T/369 (3b) to the Loco Pilot after the train stopped.

NOTE:

- (1) The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of the facing points, if any and ensure clearance on the nominated route vide SR [Refer SR 3.69.03 (c)].
- (2) The keys of padlock of the clamps put ON to the points on the route for piloting OUT shall be in the personally custody of the SM on duty or any other authorized operating officials such time the train / engine / vehicle has utilized the route or alternatively such movement cancelled.
- (3) The SM on duty shall ensure the closure of the interlocked L. C. gate from the Gateman on duty under exchange of Private Number.

2.11 **SHUNTING:**

For shunting, caution aspect of starter signals shall be used.

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 individual from the point 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 Yellow strip of lights will appear on the route and the concerned shunt signal shall display 'OFF' aspect.

3.0 **DESCRIPTION OF SIDING:**

GOODS SIDING (ELECTRIFIED).

The Goods siding with both side entry is taking off from Common Loop (Line No.4). The entrance point and corresponding derailing switch are coupled and operated by an arc lever at site. Both the entrance points are fitted with hand plunger locks. These hand plunger locks are unlocked by Goods siding keys P1 & P2 released by pressing the button No.24 provided on panel/VDU at SM's office. Reception signals i.e. 1A. C1A. in Up direction, 2C. C2C. in Down direction, shunt signal Nos.SH3A, SH4B and Starter Signal No. 5 & 8 are electrically interlocked in such a way that these signals cannot be taken 'OFF' if the Goods siding key is taken 'OUT' from the RKT provided at Goods siding location at site.

HOT AXLE SIDING (ELECTRIFIED).

The Hot axle siding at HWH end of the yard with one side entry is taking off from Down Loop (Line No.1). The entrance point and corresponding derailing switch are coupled and operated by an arc lever at site. Both the entrance points are fitted with hand plunger locks. These hand plunger locks are unlocked by Hot axle siding keys Q1 released by pressing the button No.23 provided on panel/VDU at SM's office. Reception signals i.e. 2A. C2A. in Down direction, shunt signal Nos. SH3D & Starter Signal No.6 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.

(Correction Slip No. 2 Dated _____)

LEVEL CROSSINGS:

- i. There is a 'C' class mid-section manned non-interlocked level crossing gate no.221 situated at Km 485/25-27 (UP) & 485/28-26 (DN) between BSDP-NKP. Telephonic communication is provided between the Gate lodge and on duty SM/BSDP.
- ii. There is a 'C' class manned interlocked level crossing gate no.224 situated at Km 488/9-11 (UP) & 488/12-10 (DN) towards NKP end of BSDP yard. Telephonic communication is provided between the Gate lodge and on duty SM/BSDP.
- iii. There is a 'C' class manned interlocked level crossing gate no.225 situated at Km 489/9-11 (UP) & 489/12-10 (DN) towards KAPG end of BSDP yard. Telephonic communication is provided between the Gate lodge and on duty SM/BSDP.
- iv. There is a 'C' class mid-section manned interlocked level crossing gate no.227 situated at Km 490/23-25 (UP) & 490/26-24 (DN) between BSDP-KAPG. Telephone communication is provided between the Gate lodge and on duty SM/BSDP.

EMERGENCY GATE RELEASE

This is a control provided with a button coloured 'CHOCOLATE' with RED DOT for each gate on the top of the station panel. Gate is locked when signal is given. Locking is released after train comes and signal route is cancelled. For some reason if gate remains locked, emergency operation is required. This emergency operation is to be carried in the following manner. First the given signal is to be cancelled by pressing signal button and signal cancellation button simultaneously. After releasing these buttons emergency gate release button is to be pressed and keeping this button pressed gate button is to be pressed simultaneously and then both buttons are to be released.

A flashing 'WHITE' indication will appear on the top of Emergency Gate Release Button which indicates that cancellation is in progress.

After flashing indication becomes steady, lock indication 'RED' will disappear and gate 'GREEN' indication will flash. Then gate button and Trans button are to be pressed simultaneously.

A counter is provided on the panel just above the emergency gate release push button to register the number of emergency operations made. The Station Master on duty must record the last number registered on the counter while Taking over/Handing over duly.

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 are in the 'normal' position and the route is not blocked 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.

- 4.2 On account of the doubtful operation of any track circuit by a light vehicle including self-propelled vehicle such as motor trolley or light engine or tower wagon, indicating the occupancy of track, it is necessary that the Station Master on duty satisfies himself that the said vehicle has cleared the

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point zone track circuits/Axle Counter by observing the track indications of the track on either side of the crossovers by positively checking the 'entrance' and 'exit' track circuits/Axle Counter are showing occupancy and clearance in accordance with the train movement.

4.3 **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 be informed for attending to this.

5.0. **EMERGENCY OPERATIONS:**

The following are the instructions for emergency operations.

5.1. **CANCELLATION BUTTON AND VEEDER COUNTER:**

For the purpose of emergency operations there is an emergency 'Route cancellation'. 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 1.9 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 favorable for route release.

5.2 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:

5.3 **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 normal position.
- (b) Operation as detailed in the above Para to be followed.

6.0 **MAINTENANCE OF S & T INSTALLATION & ADHERENCE TO MAINTENANCE SCHEDULES:**

6.1 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.

6.2 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.

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

In case of failure of any interlocking gear at the station, the failure report should be communicated by the Station Master to the sectional Maintainer, the signal inspector of the section and others through a memo. [Refer GR and SR 3.51.04 and 3.68.04]

7.1 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.

7.2 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 this defective apparatus. After satisfying himself that the gear is in good and proper working order, he shall resume the normal working of the said defective apparatus in terms of SR. [Refer SR.3.68.04 (C) and (D)]

8.0. 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. [Refer GR and SR.15.08.01]

9.0 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. [Refer GR and SR.3.77.]

10.0 PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNALS AND POINTS AND USE OF CRANK HANDLE:

10.1 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.

10.2 The cases of failure of motor operated points should be promptly reported to the concerned Signal maintainer/Signal Inspector for rectification.

10.3 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.

10.4 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, [Refer GR.3.69 and 3.70]

The Station Master on duty will be personally responsible for setting and locking of points for reception and despatch of all trains.

10.5 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.

11.0 **SUSPENSION OF LAST STOP SIGNALS:**

When the Block Instrument is suspended with its handle in 'TRAIN GOING TO' 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'.

11.1 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 glowing. 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 & SR [Refer GR.3.61 to 3.72 and SRs there to GR.3.49(4)]

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

12.1 Digital Axle Counters are provided on both Up and Down line Block Sections between BSDP-NKP and BSDP-KAPG.

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

12.3 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.

12.4 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 'OUT'

12.5. 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.

12.6. Reset arrangements are provided in the operation cum indication panel in the SM's office for sections BSDP-NKP and BSDP-KAPG with DLBI. The Up & Dn resetting key along with reset push button for either sections are provided on the Panel for resetting the axle counter in case of its failure. 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.

13.0 **RESETTING OF DIGITAL AXLE COUNTER WHEN FAILED (FOR SECTION NKP-BSDP AND BSDP-KAPG)**

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 call the attention of the station in rear through telephone for resetting and shall establish communication with the said station if resetting of equipment is considered necessary giving details of last train that has arrived complete at his station and the block section is clear.

The receiving station shall inform the sending station as to whether the last train that entered into the section has arrived or not. 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). The status of the section LVCD i.e. Clear (GREEN), occupied (RED), preparatory reset (YELLOW) and power on indications (YELLOW) are provided in the panel.

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

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- 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.
- 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 Station Master on duty shall record in his Train Register the resetting operation giving details of train number, time, Private Number exchanged with Station Master in rear, 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):**

Common Loop and Down Loop is provided with analog axle counters and is grouped as L4AXT, L1AXT. All the point zones are also provided with analog axle counters and is grouped as 17/19AXT, 17/21AXT, 18/20AXT, 18/22AXT AND 22BXT.

Whenever a particular 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, an 'YELLOW' indication appears in the panel and when once the resetting is completed, then appears 'GREEN' indication and the 'YELLOW' indication extinguishes. A panel with indications, Veeder counter for each Axle counter zone, SM's key common push button along with one individual push button for loop lines/point zones for resetting is installed at station to indicate the occupation/clearance of track circuit/Axle counters of the full yard.

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

Whenever any axle counter in any point zone fails 'RED' indication will appear in the panel at the station. The on duty Station Master shall send a traffic points man for physical verification of the zone at site. After physical verification if there is no obstruction over the axle counter zone the traffic pointsman will inform the fact to the Station Master over telephone supported by a Private Number. The Station Master will advise the traffic pointsman to press the verification button. On receipt of the zone verified indication i.e. 'YELLOW' and zone clearance verification Private Number, the Station Master shall finally press the concerned reset button with Station Master's axle counters common reset key 'IN' provided on the panel to initiate resetting. When once thus pressed the 'YELLOW' indication which appeared previously extinguishes and after completion of resetting. And the zone is clear a 'GREEN' indication appears in the panel.

When Common loop/ Down Loop line berthing zone Axle Counter fails, 'RED' indication will appear in the SM's panel. The Station Master on duty shall then physically verify the particular section. After physical verification if there is no obstructions over the line he shall advise the on duty TPM to open the line/zone Verification box located by the side of the track and press the reset key. One 'YELLOW' indication appears in the panel. He shall then press line nominated

button along with SM's axle counter common reset key 'IN' provided on the panel. 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 Station Master 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.

16.0 **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.

17.0 **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 GandSR.4.01.01 and 4.01.02

18.0 **TELECOMMUNICATIONS:**

- a) The station is connected to Khurda Road control by a telephone on the **BSDP**-PSA and BSDP-BRAG-KUR-PUI control circuit.
- b) Telephone attached to SGE type lock and Block instruments for section KUU-KAPG and KUU-GNGD.
- c) Telephones are provided in SM's office connecting the gate lodges of L.C. Gates at KM 503/23-25 (UP), 503/26-24 (DN), 505/31-33 (UP), 505/34-32 (DN) and 508/33-509/1 (UP), 509/2-508/34 (DN).
- d) VHF set is provided at the station.
- e) BSNL phone is provided at the station.
- f) This station is connected to BRAG-PSA traction control circuit.

NOTE

- a. For obtaining line clear VHF should be used as a last alternative and not as a sole means of communication.
- b. VHF & Walkie Talkie sets should not be used for unnecessary discussion with Loco Pilots/Guards and any other staff.

(Correction Slip No. 2 Dated _____)

APPENDIX 'B1' TO STATION WORKING RULES OF BHUSANDPUR 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) consists of a Pentium-4 CPU with a high-resolution 21" colour monitor; keyboard and pointing device (mouse) are 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.

1.1 SELECTION OF CONTROL:

This VDU (Computer) is provided as a stand by of conventional panel for the operation of signals, points, L.C. gates, crank handles, 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 21037 ALT-D.

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.

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 needs 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.



PANEL TO VDU (PC-COMPUTER) CHANGE OVER:

1. Ensure that SM's Key is in ON position.
2. Ensure that PANEL/ PC Change over switch is in PANEL mode.
3. Click the PANEL/ PC key provided in the left top corner of the VDU. (A pop-up menu will appear)



4. Click the first Menu – PC REQUEST. (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 so click the OK button. The user name of this station is ECOR and the password for this station is BSDP.
6. Now both the PANEL and PC indications will start Flashing.
7. Change the PANEL/ PC change over switch to PC mode in the conventional panel.
8. Now the PC indication will steady and Panel indication will disappear.
9. Click the PC CONTROL KEY and click the KEY IN menu. (A password required window will appear in the centre of the screen).



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

Now the Over all control is transferred to VDU, The entire operation can be possible from the VDU.

VDU (PC-COMPUTER) TO PANEL CHANGE OVER:

1. Turn the PANEL/ PC change over switch to PANEL mode.
2. Now both the PANEL and PC indications will start Flashing.
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 so click the OK button.
6. Now the PANEL indication will be steady and the PC indication will disappear.

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Now the Over all control is transferred to PANEL, The entire operation can be possible from the PANEL.

OPERATIONAL PROCEDURE:

VDU INDICATIONS:

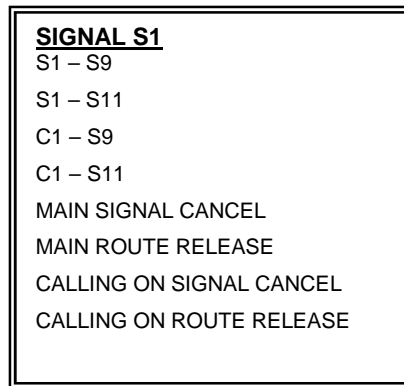
MICROLOK II (SSI) INDICATIONS:

In Panel/ PC there are two system indication, Green indication mentioning the On-line system and the Red indication mentioning the sleep mode system.



SIGNAL OPERATION:

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 on the mouse a popup menu will appear as below:



SM on duty will select as per the requirement by clicking on the menu. It will set the route and clear the signal. Similar operation for other signals also.

(a) **SETTING A ROUTE:**

To set a route of a signal, click on a possible route of the signal, after done so the route initiated Red indication will appear on the replacement track of the signal. And all the relevant points Normal/ Reverse set indications will starts flashing if it is not available in the required position. After setting of point in the route required condition (Flashing indication will be steady) a complete yellow route set indication will appear from the Replacement Track of the signal to the last track of overlap of the route also the points will be locked (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 just bellow the signal. The signal will be Taken-Off now. The yellow route set indication will turn to red when the train occupies the track circuit.

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.

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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 locked (KEY IN) and lever no 2 of the gate to be in reverse position (Can be ensured from the white 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)

(b) **CANCELING A ROUTE/ EMERGENCY ROUTE RELEASE:**

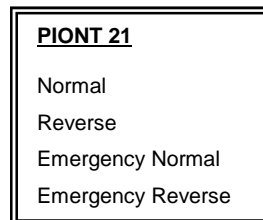
To cancel a signal route when the route is set and the signal is taken-off, click on the signal cancellation menu (Main/ Calling on) of the concerned signal, the signal will immediately go to ON aspect, after doing so click on the Route release menu the route locked indication will start flashing for 120 sec, 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.

SHUNT SIGNAL OPERATION:

To setting and Canceling the signal route for the shunt signal the same procedure shall be followed as explained in Signal Operation.

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 popup menu will appear as below:



(a) **REVERSE TO NORMAL OPERATION:**

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

(b) **NORMAL TO REVERSE OPERATION:**

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

(c) **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 A Emergency Point Operation Key to be KEY IN by clicking the KEY IN menu, the user name and password to be logged in. The user name of this station is ECOR and password of this station is BSDP. Emergency normal menu to be clicked. After the completion of the Emergency point operation, the Key to

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be KEY OUT by clicking KEY OUT menu. The user name and password to be given for KEY OUT also.

Track the pointer to EMERGENCY NORMAL menu and click, a Normal flashing indication will appear, 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.

(d) **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.

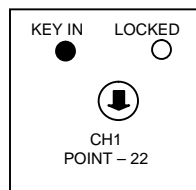
Before doing the emergency operation A Emergency Point Operation Key to be KEY IN by clicking the KEY IN menu, the user name and password to be logged in. The user name of this station is ECOR and password of this station is BSDP. Emergency reverse menu to be clicked. After the completion of the Emergency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

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

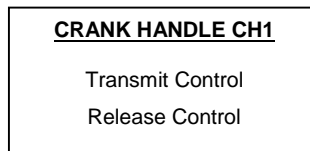
After the Emergency point operation a specific veeder counter provided in the Domino panel board will change to its next higher digit and this number should be recorded in the register provided for this purpose by the SM.

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 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.

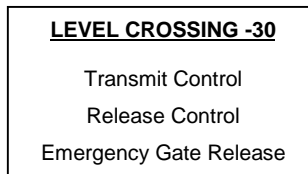
When the Manual point operation is over, after putting the KEY in the EKT, A KEY IN flashing indication will appear on the panel, now the SM has to Release the control for the Steady indication by clicking release control menu

A Crank handle locked indication will appear when the particular point has locked by any of the possible signal routes.

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 has to transmit the control by clicking, after transmission the CLOSED 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 closed 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 any of the possible signal routes.

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 has to cancel the signal by signal cancellation control of the relevant signal. Then he has to click the Emergency Gate release control in the Gate pop-up menu. This will take 120 sec of time to release the gate. After the time lapsed 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.

APPENDIX 'C' TO STATION WORKING RULES OF BHUSANDPUR STATION

ANTI COLISION DEVICE (RAKSHA KAVACH)

=== NIL ===

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(D. NAYAK)
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APPENDIX 'D' TO STATION WORKING RULES OF BHUSANPUR STATION

(Operating and Commercial duty amalgamated)

1.0 STATION SUPERINTENDENT:

He is in-charge of the Station. He shall perform day shift duty for train passing duties in turn with his assistants. He is responsible for the efficient discharge of duties devolving upon all the staff employed at the station according to rules, safe working instructions and Station Working Rules. He shall see that all signals, points, L.C. Gates and whole machinery at the station are in proper working order. He shall report all defects to the concerned officials. He shall satisfy himself that the staff employed under him at this station are thoroughly conversant with Station Working Rules and perform their duties correctly. It is his personal responsibility to maintain the station working rules, other rule books and the Assurance Registers up to date. He shall see that all records of the station are properly maintained and due statements returns and other corresponding documents are up-to-date. He shall see that the staff are civil courteous and help full to all users of railway. He shall see that all station premises are kept clear and tidy. He is responsible for booking off all Group-‘C’ and Group-‘D’ staff for PME and refresher course/safety camp in their due time.

His special attention is drawn to rules applying Railway servants and working in station. [Refer Chapter-II of GR and SR and GR 5.01 to 5.08 and SRs thereto, Chapter-XXII of Operating Manual, SR 3.68.01(c) & (d) and SR 14.07.01 Para 2.09 (e) of BWM].

He shall follow the instructions laid down in of Block Working Manual. He shall supervise the works of staff and conduct night inspections. Safety meetings and fire drills and report lapses of staff working under him. He shall also ensure that the safety equipments in the station and gate lodge as mentioned in the station working rules are supplied in full and they are good working order with necessary relief stock.

The SS special attention is drawn to the GR where details are indicated [Refer GR 5.01 to 5.23].

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 Station Supdt. is satisfied that the concerned staff is competent for the post. No Railway servant unless duly examined and certified shall be allowed to work the points and signals. The Station Supdt. 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 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/SM Incharge.

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DOM/KUR

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 Station Supdt., 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/Dy.SS/SM/ASM in accordance with the instructions laid down in the Accident Manual. Whenever the SS/Dy.SS/SM/ASM 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.

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

2.0 **DY.SS/SM/ASM:**

He shall work in train passing duties and booking of traffic, coaching returns and other statements shall be prepared and submitted by him in time. The Station Master on duty shall record in the diary the condition of all the running lines, siding, the caution orders in force at the time of handing over charge. These entries shall be countersigned by the Station Master coming on duty and taking over charge. This will not however relieve the Station Master of his responsibility to ensure by physical check, that the respective line is clear of obstruction before admission of any train on it. The Station Master on duty who makes an entry in the train signal register shall continue till all the entries pertaining to the trains are completed. [Refer SR.14.07.01].

He shall promptly bring to the notice of SS 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 rules applying Railway servants and working in station.[Refer chapter-II of GR & SR, GR 5.01 to 5.08 and SRs there to, Chapter-XXII of Operating Manual, SR 3.68.01(c) & (d) & SR 14.7.01 & Para 2.09 (e) of BWM].

3.0 **TRAFFIC POINTSMAN:**

He shall work under the instructions of SS/Dy.SS/SM/ASM on duty.

He shall remain responsible for:

- (a) Correct setting and locking and crank handling of points for reception/dispatch and shunting operation.
- (b) Coupling and un-coupling of vehicles.
- (c) Protection of line in an emergency
- (d) Piloting and hand signaling of trains of trains when necessary and handing over caution orders/or any other line clear authorities to the Driver and guards of the trains.
- (e) Attending off side to observe safe running of run through trains at stations and correct display of hand signals and ringing the station bell.
- (f) Securing of vehicles, as directed, protection of vehicles of a train.

- (g) Being conversant with the layout of the yard and compliance of rules relating to shunting operation.
- (h) Observing General Rules and relevant subsidiary Rules during shunting [Refer 5.13 to 5.21].
- (i) Cleaning of hand signal lamps if required
- (j) Cleaning and Oiling of clamps and padlocks if required.
- (k) 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.
- (l) Cleaning and Dusting of SM's office room furniture and equipments Office.
- (m) Carrying messages cell books etc where a separate call boy messengers are not posted.
- (n) Working as fog signal man as and when required.
- (o) Filling up the fire buckets with sand/water.
- (p) Getting train interact arrival register (T/1410) signed by the Guard as and when required.
- (q) Any other duties entrusted to him by the Station Master 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 Station Master on duty or with his permission and shall comply with subsidiary rules. [Refer 4.42.02 (b) (i) and (d)].
2. Staff working at the station must be able to distinguish UP and DN line clear tickets and educated in distinguishing other operational forms and documents, delivered to Loco Pilot and Guards and must also know how and when to ring the station bell.

APPENDIX 'E' TO STATION WORKING RULES OF BHUSANDPUR 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	Quantity
1.	Detonator	20
2.	Battery operated LED based flashing lamps	4
3.	Hand signal Flags	4 set (4 Red & 4 Green)
4.	Safety chain with Padlocks.	6
5.	Clamps with padlocks	12 (4 at station and 4 in each goomty)
6.	Skids: i) Iron skid = 3 ii) Wooden skid = 3	6
7.	Fire and Sand Buckets.	7
8.	Reminder Collar	8
9.	Motor Trolley on line label.	2
10.	Fire extinguisher	2 (DCPT)
11.	First Aid Box	1
12.	Stretcher	1
13.	Block Suspension Board	3
14.	Power Block Collar	2

(Correction Slip No. 2 Dated _____)

(A.K.JENA)
DSTE/KUR

(B.PANDA)
DOM/KUR

APPENDIX 'F' TO STATION WORKING RULES OF BHUSANDPUR STATION

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

- 1.1 **MID-SECTION OUTLAYING SIDING:-**
There is no mid-section siding on either end of block section
- 1.2. **IBH, IBS/DK STATION:-NIL**
- 1.3 **PASSENGER HALT:-**
Mukteswar Passenger halt (Code: MKTP) is situated between BSDP and KAPG at Km.492/2 from HWH.

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