

Srl. No: -SWR/JSGR/60

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

**STATION WORKING RULES OF JHARSUGUDA ROAD JN. STATION (CODE:JSGR)**

BG/MG/NG: Broad Gauge  
Date of issue:-10.01.2013  
Date brought into force:-16.01.2013

**NOTE: -**

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

1. **STATION WORKING RULE; -**

1.1 **STATION WORKING RULE DIAGRAM NO.** SI/WRD – 22100, Alt-A

1.2 **SIGNAL INTERLOCKING PLAN NO.:** - S.I – 22100, Alt-B

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

2. **DESCRIPTION OF STATION: -**

JHARSUGUDA ROAD is a four-line junction station situated in Jharsuguda-Sambalpur section at KM 516.316 from HWH & 2.072 km from JSG. It is Standard – II (R) interlocked, Class 'B' station with central panel and having Absolute Block System of Working. LVCD axle counters at either ends are provided at the station for last vehicle check.

2.1 **GENERAL LOCATION:-**

- |    |                             |   |
|----|-----------------------------|---|
| a) | Name of the station         | : JHARSUGUDA ROAD (JSGR)  |
| b) | Class of station            | : 'B' class   |
| c) | Section                     | : Sambalpur–Jharsuguda,   |
| d) | Double line/Single line     | : BG, Single Line towards JSG & IB. Double line towards BXQ.        |
| e) | Electrified/Non Electrified | : Non-Electrified   |
| f) | Railway                     | : East Coast Railway  |
| g) | Route                       | : 'D' Special   |
| h) | Situated at                 | : KM 516.316 from Howrah via Jharsuguda & Km 2.072 from Jharsuguda. |
| i) | Reckoned from               | : Howrah  |
| j) | Number of cabins            | : NIL   |
| k) | PI/EI                       | : PI, Centrally operated Domino type full-fledged panel.            |

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

- i) Jharsuguda end - JHARSUGUDA (Code: JSG) inter distance 2.072 K.M.
- ii) Sambalpur end - BRUNDAMAL (Code: BXQ) inter distance 4.342 K.M.

- iii) Bilaspur end - IB (Code: IB) inter distance 8.547 K.M.
- iv) Passenger halt: - Nil
- v) Flag station: - Nil
- vi) Outlying siding: - Nil
- vii) D.K. station: - Nil.
- viii) IBH: - NIL
- ix) IBS: - NIL

### 2.3 **BLOCK SECTION LIMITS: -**

Between stations	The point from which 'Block section' commences.	The point at which 'Block section' ends.
Between JSG-JSGR	DN Advanced Starter Signal No.26 of JSGR Station.	UP Advanced starter signal 25 of JSG Station
Between JSGR – IB	DN Advanced Starter Signal No 24 of JSGR.	UP Advanced starter signal of IB.
Between JSGR- BXQ (UP Line)	UP Advanced starter signal No.29 of JSGR	Outermost point of point No 51 of BXQ Station on UP Line
Between JSGR- BXQ (DN Line)	Outermost point of point No 30 of JSGR Station on DN Line.	DN Advanced Starter Signal 40 of BXQ.

#### 2.3.1 **STATION SECTION:**

The portion in between UP Advanced starter signal No 29 (at BXQ end) and DN Advanced starter signal No 26 at JSG end & DN Advanced starter signal No 24 at IB end and further, the portion in between DN Advanced starter signal No 26 at JSG end & DN Advanced starter signal No 24 at IB end and point No. 30A on DN line is the station section of JSGR station.

#### 2.3.2 **STATION LIMIT:**

The portion between DN Advanced starter signal No-24 at IB Side and DN Adv starter signal 26 at JSG side to DN Home signal on DN line and UP Adv.Starter signal 29 on UP line of JSGR station is station limit of the Station.

#### 2.4: **GRADIENT: -**

##### (a) **FROM THE CENTER OF STATION BUILDING TOWARDS JHARSUGUDA**

CHAINAGE IN METER		INTER DISTANCE	GRADIENT
<u>FROM</u>	<u>TO</u>		
0	65	65M	LEVEL
65	637.44	572.44M	1 in 400 R
637.44	975	337.56M	1 in 120 R
975	1275	300M	1 in 130 R
1275	1435	160M	1 in 430 R
1435	1655	220M	1 in 260 R
1655	2073	418M	LEVEL

(b) **FROM THE CENTER OF STATION BUILDING TOWARDS IB**

CHAINAGE IN METER		INTER DISTANCE	GRADIENT
FROM	TO		
0	65	65M	LEVEL
65	732	667M	1 in 400 R
732	787	50M	LEVEL
787	1347	560M	1 in 260 F
1347	3247	1900M	1 in 155 F
3247	Block section	----	1 in 680 F

(c) **FROM THE CENTER OF STATION BUILDING TOWARDS BRUNDAMAL(Both UP & DN LINE)**

CHAINAGE IN METER		INTER DISTANCE	GRADIENT
FROM	TO		
0	909	909M	LEVEL
909	1725	816M	1 in 425 F
1725	1925	200M	1 in 280 F
1925	3345	1420M	1 in 150 F
3345	Block section	--	1 in 400 F

2.5 **LAY OUT: -**

- i) No. of running lines :- 4 (Four)
- ii) No. of sidings :- Nil.
- iii) No. of Passenger platform :- 01 (One) High level Platform of dimension 500M X 6.5M beside Line no.-1
- iv) No. of goods shed platform :- Nil.
- v) FOB- :- Nil .

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

DESCRIPTION	CSL	ISOLATION PROVIDED	
		TOWARDS BXQ	TOWARDS JSG/IB
Line No.1 (Common Loop)	707.95 mtrs. (Str. To Str)	ORL	DS
Line No.2 (DN Main Line)	752.10 mtrs. (Str. To SH)	---	ORL
Line No.3 (UP Main line)	721.35 mtrs. (Str to SH)	---	---
Line No.4 (Common Loop)	688.20 mtrs. (Str. To Str)	ORL	ORL

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

- a. Trains arriving from JSG are UP trains.
- b. Trains arriving from IB are DN trains.
- c. Trains arriving from BXQ are DN trains.

2.5.2 **NON-RUNNING LINES AND CSL.** – NIL

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

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

Sl. No.	Location	K.M./No.	Normal Position	Class	Type	Operation	Communication
1	Between UP Adv.Starter No.29 and UP starter signals	517/0-1 (JT-1)	Open to Road Traffic	'Spl'	Interlocked	Winch operated.	Telephone connection with SM/JSGR

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

SL No.	Location	K.M./No.	Normal Position	Class	Type	Operation	Communication
1.	Between JSGR and JSG station	515/8-9 (258 of S.E.Rly.)	Open to Road Traffic.	'C'	Interlocked	Winch operated.	Telephone connection with SM/JSGR
2.	Between DN Adv.Starter 24 and UP Home signal at IB end.	515.470 (JT-1A)	Open to Road Traffic	'C'	Interlocked	Winch operated.	Telephone connection with SM/JSGR
3.	Between JSGR and BXQ Station	518/2 (JT-2)	Open to Road Traffic	"Spl"	Interlocked	Winch Operated	Telephone connection with SM/BXQ

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

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

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

- i) **System of working:** - Absolute Block system of working on single line for JSGR-JSG, JSGR-IB & double line for JSGR-BXQ. the 'OFF' aspect of the last stop signal is the authority for the Loco pilots of all trains to enter into the block section vide GR 14.08(b) (iv).SM on duty is responsible for operation of Block instruments and the keys of the instruments must be under personal custody of the SM on duty vide GR 5.01(4), 14.12(1)(a) & GR 5.08.
- ii) **Type of block instrument:** - (i) Token less Block instrument (DIAODO) for JSGR-IB and JSGR-JSG sections have been provided.  
(ii) DLBI for JSGR-BXQ section has been provided.
- iii) **Instrument:** - TLBI of JSGR-IB & KSGR-KSG is co-operative type & DLBI of JSGR-BXQ is non co-operative type.

- iv) **Block Telephone:** - Provided with respective Block Instruments of section JSGR-IB, JSGR-JSG and JSGR-BXQ Stations.
- v) **Staff responsible for their operations:** - S.M. on duty.
- vi) **Custodian of keys:** - Block instrument is provided with double locking. One key will be with SM & other key will be with S&T maintainer

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

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

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

Maximum equipment of signal – Distant, Home, Starter and Advanced starter signals in either direction.

##### 4.1.2 **STATION MASTER'S CONTROL PANEL:** -

- (i) A push button type electrical control apparatus (operation cum indication panel) is provided in the Station Master's office to operate electrically the UP and DN points and signals. The control apparatus is provided with a lock up key named (SM's Key) which shall always remain in the personal custody of the SS/SM/ASM on duty in terms of GR 5.08. The position of all points, signals and running lines are available in the Station Master's illuminated panel diagram. Reminder collars are provided for use on push buttons, which will be placed on point button, route button, signal button or on any other button to prevent operation of the button in case of concerned line is blocked; or to prevent inadvertent operation of a particular button as and when required.
- (ii) **SEALING OF EMERGENCY OPERATION BUTTONS/KEYS:-** All 'emergency operation buttons' on the Station Master's control panel shall be kept sealed in normal condition by S&T staff. Whenever any emergency operation is initiated. SS/SM on duty shall break open the seal of the concerned button to make the button operative. Immediately after completion of emergency operation SM on duty shall inform concerned S&T staff for resealing of the concerned button.

##### 4.1.3 **TRACK CIRCUIT:** -

All the lines including point zones between Home and Advanced starter signal on either direction and from Home signal of JSGR to Home signal of JSG are track circuited. The position of the running lines including point zones i.e. occupied/clear is indicated in the illuminated diagram at the Station Master's office. Normally there will be no indication of track circuits. It shows 'RED' when the line is occupied and 'WHITE' when the line is clear provided the route is set.

##### 4.1.3.1 **AXLE COUNTER:**

Block sections JSGR-BXQ & JSGR-IB are monitored by axle counter system, digital axle counters are provided at both end of the station. A pair of digital axle counter is provided between JHARSUGUDA ROAD and BRUNDAMAL ( beyond advanced starter of JHARSUGUDA ROAD & in advance of Home signal of BRUNDAMAL on UP Line), another pair of digital axle counter is provided for DN line of JHARSUGUDA ROAD - BRUNDAMAL ( beyond advanced starter of BRUNDAMAL & in advance of Home signal of JHARSUGUDA on DN Line), for counting the axles 'IN' and for counting the axles 'OUT' to indicate whether the block section is clear of trains as well as to verify the last vehicle of the incoming train.

Similarly, a pair of digital axle counter is provided between JSGR and IB, one just ahead of DN advanced starter signal 24 of JSGR and the other just before the UP advanced starter signal of IB station for counting the axles 'IN' and for counting the axles 'OUT' to indicate whether the block section is clear of trains as well as to verify the last vehicle of the incoming train.

The position of block section i.e. clear/occupied is reflected on the reset box panel provided in the Station Master's office which shows 'GREEN' when the block section is clear and 'RED' when the block section is occupied.

A reset box consisting of a counter and one resetting key with a push switch and three indications i.e. 'RED', 'GREEN', 'YELLOW' and GREEN miniature with locking arrangement for each pair of axle counter is kept at the station masters office. 'RED' and 'GREEN' indicates occupation and clearance of Block section respectively, 'YELLOW' indication glows when power is ON and GREEN miniature glows when resetting operation is initiated and after passage of a train the Axle counter will clear. The resetting key of this panel is kept locked and sealed in a separate box. The key of the box is kept under the custody of SM on duty.

Whenever a train enters into the block section, block section clear indication 'GREEN' disappears and occupied indication 'RED' appears. If after the complete arrival of the train, 'RED' indication does not change to 'GREEN', it should be assumed as block instrument failure and necessary action as per GR 14.13 to be followed. The axle counter is interlocked with Block instrument.

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

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

#### **4.1.5 ELECTRICAL KEY TRANSMITTER (EKT):-**

EKTs with crank handle keys are provided at both end locations for the operation of points in case of failure of point motors, The keys for the crank handles are transmitted electrically to the crank handle locations for operating the points by crank handles.

##### **4.1.5.1 IBS : NIL**

##### **4.1.5.2. POINTS AND TRAP INDICATOR: NIL**

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

#### **4.1.6 CALLING ON SIGNALS:-**

'Calling on' signals have been provided below UP, DN Home signals & below DN Starter signal No 12A/B, 14 A/B. & 16A/B. It shows no light when 'ON' and 'YELLOW' light when taken off.

#### **4.1.7 SHUNT SIGNALS:-**

Both dependant and independent shunt signals are provided for forward and back shunting movement.

#### **4.1.8 ANTI COLLISION DEVICE: - NIL**

#### **4.1.9 EMERGENCY CROSSOVER:- NIL**

#### **4.1.10 LC GATE OPERATION:- Given in Appendix 'A'.**

#### 4.1.11 **CRANK HANDLE**

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

The crank handle key can be released from the RKT at the Crank Handle locations. The SM has to press concerned crank handle button and Trans button. This will enable SM/TP to extract crank handle key CH-1/CH-2/CH-3/CH-4/CH-5/CH6 from RKT at end location. SS/SM/TPM on duty after extracting the crank handle key from RKT at end-location, insert it in the space provided for it on the point machine and turn it to open up the slot for crank handle in the point machine. After inserting the crank handle in the point machine he shall operate it to set the point in desired position. After completion of point work the crank handle key is to be inserted in the RKT at end location and transmitted to station. Station Master on getting 'Key IN' flashing indication that will appear on panel, shall press relevant CH button & Group Release button to get the steady key "IN" indication. SM on duty shall personally ensure clamping and padlocking all facing and trailing points en-route. The cases of failure of Motor operated points should be promptly reported to the concerned ESM/Signal Inspector for immediate rectification. SS/SM on duty as per OM 20.06 (d) shall maintain an emergency crank handle register. The procedure for use of crank handle for Motor operated points shall be followed in terms of operating Manual 20.06.

#### 4.1.12 **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. If such operation is necessary, the SM on duty, after ensuring that no vehicle is standing on the concerned point track circuit and SM's emergency point key is 'IN' shall press emergency point operation button by breaking the seal along with relevant point button simultaneously. Then retaining point button pressed, emergency point operation button to be released and the point group button normal / 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. The concerned S&T staff should be advised immediately to get the emergency point button resealed.

#### 4.1.13 **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 the emergency route release button (white with red dot) positioned in the top of panel to be pressed first by breaking the seal and subsequently the concerned signal button is to be pressed releasing the emergency route release button. A white flashing light will lit indicating that the timer is working. After 120 seconds, the white flashing 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 resealed after rectification of fault if any.

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

#### 4.1.14 **EMERGENCY ROUTE RELEASE COUNTER:**

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

#### 4.1.15 **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 the on duty SM in his custody and the other key with the signal maintainer. Whenever required, the Station Master shall hand over the key to the maintainer with proper acknowledgement in the Relay room key register. The maintainer on receipt of the key from the station master may use the same and the key in his custody to open the relay room by inserting the keys one after another separately into the earmarked locks.

After completion of work, the relay room is to be locked using both the keys separately and designated key should be handed over to the SS/SM on duty. The details of the transaction should be properly recorded in the relevant register at the Station duly signed by SS/SM on duty and the signal staff concerned vide SR 3.51.05. If the relay room key is handed over to the Signal staff regarding the interference in safety gears, the train shall be piloted in and piloted out.

NOTE: Details of signalling and interlocking are given in Appendix 'B' of the SWR.

#### 4.1.16 **POWER SUPPLY:**

Normal power supply to the signalling and interlocking installations at this station is drawn from SEB power supply source (AC 230 Volt / 50 Hz). In SM's Office there is SM power panel, which represents the voltage of the integrated power supply system.

1. In case voltage drops 105.9V an audible buzzer appears for starting Generator.
2. In case voltage drops 105.1V an audible buzzer appears for emergency start of Generator.
3. In case voltage drops 104.3V an audible buzzer appears for system shut down.

The SM now has to start the diesel generator for standby (Auxiliary) power supply. After stable run of the Diesel generator, the SM on duty has to operate the change over switch for connecting the auxiliary supply to the signalling installation. On resumption of power supply, the Diesel generator shall be stopped by SM on duty after isolating Diesel generator by change over switch. Each time the power supply goes OFF or ON SM on duty shall acknowledge. In case of any audible buzzer in SM's power panel, SM on duty should acknowledge the buzzer by pressing 'buzzer' stop button.

Secondary cell back up through integrated power supply systems are provided to prevent possibility of blank signals in case of SEB power supply failure. Whenever SEB power supply fails Secondary cell back up through integrated power supply systems will immediately extend power supply to signals thereby preventing blank signals.

Based on the indication shown in the SM's Power Panel SM on duty should start DG for avoiding any case of shut down of power sub system of integrated Power Supply system.

Solar Power supply is provided in the station as standby, power supply.

If there is any indication on SM's power panel regarding deviation in IPS system S&T staff shall be called.

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**5.0 TELECOMMUNICATION FACILITIES: -**

1. Telephone attached with Block Instruments for either side of Block Sections.
2. Station is provided with Auto telephone connected with Railway Exchange.
3. BSNL telephone is provided.
4. The station is connected to BALANGIR-JHARSUGUDA control circuit of SBP by a control telephone. In addition to this, station is connected to CKP and BSP control by control telephones.
5. Station to station 25 Watt VHF communication is provided.
6. Telephone is provided between Station and both end Goomties.
7. Telephone is provided between Station and L.C.Gates at KM 515/8-9, KM 515.470 and KM 517/0-1.

**NOTE:**

- (i) For obtaining line clear, VHF should be used as a last alternative and not as a sole means of communication.
- (ii) VHF and Walkie Talkie sets should not be used for unnecessary discussions with Loco Pilots, Guards or any other staff.
- (iii) The on duty SM shall use the above electrical communication instruments stated in Para-5 from item No. (i) to (vi) strictly in order of preference for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication the SM on duty shall work vide SR 6.02.06

(Details are mentioned in Appendix 'B' of the SWR.)

**6.0 SYSTEM OF TRAIN WORKING: -**

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

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

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

**6.1.1 TRAIN WORKING STAFF: -**

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

SL. NO.	DESIGNATION	ROSTER	NO. OF STAFF IN EACH SHIFT	HRS. OF DUTY
1.	Station Superintendent (in-charge)----- Dy. SS/SM/ASM-----	Continuous	01	----09 hrs. ----08 hrs.
2.	Sr.GK/GK	E.I.	01	12 hrs.
3.	TP/Sr.TP/TPM-B/ TPM-A	Continuous	01	08 hrs.

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

**6.1.2 RESPONSIBILITY OF ASCERTAINING CLEARANCE OF THE LINE: -**

The SS/SM on duty is responsible to ascertain the clearance of the nominated line between outer most facing points of concerned line as per GR.14.10.

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**6.1.3 ASSURANCE OF STAFF IN 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 in such declaration.

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

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

The declaration shall be renewed in the following cases: -

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

**6.2 CONDITIONS FOR GRANTING LINE CLEAR: -****[A] For double line Section-(JSGR-BXQ)**

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

- i) The whole of the last preceding train has arrived complete.
- ii) All necessary signals have been put back to 'ON' behind the said train.
- (iii) The line is clear up to the point No 30A for DN trains.

**[B] For Single Line Section-(JSGR-IB & JSGR-JSG)**

- (i) The whole of the last preceding train has arrived complete.
- (ii) All the necessary signals are put back to 'ON' behind the said train.
- (iii) Block section is clear of trains running in the direction towards the block station for which such line clear is being given.
- (iv) The line is clear up to UP Adv starter signal No.24 for a DN train from IB and DN Adv starter signal No.26 for an UP train from JSG.

**NOTE**-If the light of the reception signal is found not burning, line clear shall not be granted for train till such time it is ensured that concerned Loco Pilot is notified of the fact in writing by the SM of the station to which such line clear is to be granted.[Ref GR:3.49(4) ,8.01(1)(a),(b)(c), 8.01(2)(b),8.03(2),(a),(b), (c) (ii) & 8.03(1) )(a),(b)(c)(ii)

**6.2.1 OUTLYING SIDING: - NIL.****6.2.2 ANY SPECIAL CONDITION TO BE OBSERVED WHILE RECEIVING OR DESPATCHING A TRAIN: - NIL****6.2.2.1 SETTING OF POINTS AGAINST BLOCKED LINE: -**

All Points shall normally be set for the straight except when authorized by special instruction. When a running line is blocked by stable load, wagon, vehicle or by train which is to cross or give precedence to another train or immediately after arrival of a train at the station, the points

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at either end should immediately be set against the blocked line except when shunting or for any other movement towards the blocked line is required to be done vide 3.51.06(a). if all the lines at the station happen to be blocked then SR.3.51.06(b) will be followed.

#### 6.2.2.2 **RECEPTION OF TRAIN ON BLOCKED LINE:** -

Whenever trains are to be admitted on an obstructed line the SM on duty shall authorize the on duty TPM with form T/509 indicating the reason for such admission the line number and the nature of obstruction on that line.

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

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

#### 6.2.3 **RECEPTION OF TRAIN ON NON-SIGNALLED LINE**

Not Applicable.

#### 6.2.4 **DESPATCH OF TRAINS FROM NON-SIGNALLED LINE**

Not Applicable.

#### 6.2.5 **DESPATCH OF TRAINS FROM LINE PROVIDED WITH COMMON STARTER SIGNAL**

Not Applicable

#### 6.2.6 **SPECIAL RESTRICTIONS:**

- (I) The Over run line shall not be obstructed for stabling vehicles or harboring an engine. If it is obstructed through any accident or for any cause it ceases to be a substitute for the adequate distance, in that case the train shall be passed over loop line as per Subsidiary Rule 3.40.02(a).
- (II) GR 5.20 and SR's thereto apply at this station.
- (III) Hand shunting and fly shunting is not permitted at both ends of the yard.
- (IV) Shunting in face of an approaching train is prohibited.
- (V) While receiving a DN train on main line or on loop line setting to main line, line clear cannot be given to JSG and vice versa.

#### 6.2.7. **SPECIAL INSTRUCTIONS:-**

After a non-signal movement has taken place over a point, SM on duty shall operate the point to normal and reverse position for ensuring the correct setting and indication on the panel. Then after further signal movement may be permitted over the point.

#### 6.3 **CONDITIONS FOR TAKING 'OFF' APPROACH SIGNAL:** -

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

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

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

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

Sl. No.	UP TRAIN			DN TRAIN	
		FROM	TO	FROM	TO
1	Line No. 1 (Common Loop)	Foot of the Starter signal No.23	Up to the end of ORL or UP to Advanced starter signal No.29.	Foot of the Starter signal No. 12	Up to the end of DS No.37 or Advanced starter signal No.24/26.
2	Line No. 2 ( DN Main line)	-	-	Foot of the Starter signal No.14	Advanced starter signal No.24/26 or up to the end of ORL.
3	Line No. 3 ( UP Main line)	Foot of the Starter signal No.27	UP to the edge of L.C.gate at KM 517/00-01.	-	-
4	Line No. 4 (Common Loop)	Foot of the Starter signal No.19	Up to the end of ORL or Advanced starter signal No.29.	Foot of the Starter Signal No. 16	Advanced starter signal No.24/26 or up to the end of ORL.

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

In case any of the track circuit on the concerned route shows occupied by RED indication even though the other conditions are satisfied, the operation of panel control buttons by the SM on duty will not permit the concerned signal to be taken off. However, reception of train will be possible in such cases with the "Calling On" signal fixed below Home signal at either end provided the first track circuit in advance of home signal does not show 'RED' indication.

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

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

To take off calling on signal, the train must come to a stop at the foot of the Home signal, occupying track circuit in rear of the signal. When train occupies the track circuit, RED light strip will appear on the panel. The particular route on which the train is intended to be received shall be set by individual point operation by operating point button & point group buttons or by setting route by pressing route button & signal button or by crank handling in the event of failure of operation of point through panel. After the route is set, the calling-on signal button C1 / C2/C3 (Red with white dot), as the case may be, shall be pressed simultaneously along with concerned route button for 2-3 seconds and released. After a lapse of 120 sec, the calling-on signal clears and a yellow light indication appears on the panel for the concerned calling-on signal.

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

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

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

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

(i)	While receiving an UP train from JSG on Line No.1 setting overlap to over run line.	Reception of a DN train on Line No.4 setting overlap to ORL or dispatching of an UP train from Line No.3 or 4.
(ii)	While receiving a DN train from IB on Line No.1 setting overlap to over run line	Reception of a DN train on Line No.2 or 4 or reception of UP train on Line No. 3 or 4 from JSG or dispatching of an UP train to BXQ from the Line No. 3 or 4.
(iii)	While receiving an UP train from JSG on Line No.4 setting overlap to over run line.	Reception of a DN train on Line No.1 or 2 from BXQ or reception of DN train on Line No-1 from IB or dispatching of an UP train from the Line No.1 or 3 towards BXQ.
(iv)	While receiving a DN train from IB on Line No.4 setting overlap to over run line	Reception of a DN train on Line No.1 or Dispatching of an UP train from the Line No.1 or 3 towards BXQ.
(v)	While receiving a DN train on Line No.1 setting overlap to DS	Reception of an UP train on Line No. 3 or 4 from JSG or reception of DN train on line No.3 or 4 from IB or dispatching of an UP train from the Line No. 2 or 4 towards IB or DN train towards JSG.
(vi)	While receiving a DN train on Line No.2 setting overlap to ORL	Reception of an UP train on Line No.4 from JSG or reception of DN train on line No.1 from IB setting overlap to ORL or dispatching of a DN train from Line No.4 towards JSG or UP train from Line No 1 towards IB.
(viii)	While receiving a DN train on Line No.4 setting overlap to ORL	Reception of an UP train on Line No.1 from JSG or Reception of a DN train on Line No.1 from IB setting overlap to ORL or dispatching of a DN train from the Line No. 1 or 2 towards JSG or dispatching of an UP train from the Line No. 1 or 2 towards IB.

Setting of points during crossing of trains shall be done as per provisions in SR 3.47.01,(a, b, c & e) . Rules laid down in SR 3.47.02 shall be followed for berthing and crossing of passenger and goods trains as the station is having single passenger platform.

**6.5 COMPLETE ARRIVAL OF TRAIN: -**

(Rule no. GR 4.16, GR 4.17 & SR 4.17.01(a) (b) (c), (e), GR 4.17.02, GR 14.10)

The SM on duty shall physically verify the complete arrival of trains coming from JSG. However, the entire block sections between JSGR-BXQ & JSGR-IB are monitored by axle counter system and the position of the block section whether 'Occupied' or 'Clear' is indicated on reset panel in SM's office. As soon as train enters in to that block section the RED indication appears on Panel. After the whole train clears the block section GREEN indication appears on the Panel. This confirms the complete arrival of

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train and the SM on duty shall give 'Train out of Block Section' report on seeing the section clear indication GREEN on the Panel.

If a train passes through the station without confirming the last vehicle indicator, the SM on duty shall advise the station in advance to stop the train for last vehicle verification and he need not to withhold closing of block section in rear. He shall obtain confirmation under exchange of private number about the complete arrival of the train with its last vehicle from the station in advance and subsequent trains may be dispatched vide GR 4.17 (3).

In case of failure of Axle counter the SM on duty shall obtain Complete Arrival Certificate from the guard of the train in the Complete Arrival Register (T/1410) maintained at the station for stopping train. For through passing train the SM on duty shall satisfy himself the complete arrival of the train by verification of the Last Vehicle Indicator vide SR 4.16.05 that the train arrived complete.

In case a train passes incomplete, action shall be taken as per SR.4.17.02, the "Train out of Block Section" report shall be withheld to the station in rear until complete arrival Certificate is received from the station in advance supported by a private number.

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).

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

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

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

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

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

In case of failure of axle counter, the Station Master on duty shall obtain complete arrival certificate from the Guard of the train in the complete arrival register (T/1410) maintained at the station for stopping train. For through passing train the station master on duty shall satisfy himself about complete arrival of train by verification of the last vehicle indicator vide Subsidiary Rule 4.16.05 that the train is complete. In case a train arrives/passes incomplete, action shall be taken as per Subsidiary Rules 4.17.02. 'The train out of block section signal' shall be withheld to the station in rear until complete arrival certificate is received from the station in advance supported by a Private Number.

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

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

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

For admission of a train on a blocked line the SM on duty shall comply with the instruction laid down in GR 5.09 and SRs thereto.

**6.6 DESPATCHING OF TRAINS: -**

Dispatch of trains are governed by General Rules 3.36, 3.38, 3.39, 3.42,14.08 & 8.01 Subsidiary Rule 3.36.04(b), 3.42.04 and Block Working Manual 2.07(5)(a)(b) and other provisions of General Rules, Subsidiary Rules, Block Working Manual and Station Working Rules of the station.

To despatch a train, the SM on duty, having obtained line clear for that train, shall set the route for the out going train correctly and satisfy himself by observing the visual indication on the panel board.

He shall ensure all L.C.Gates are closed, suspend all non-isolated shunting and then shall take off the concerned route starter and advanced starter signal by operating concerned push button. After observing the 'OFF' aspect of the route starter and advanced starter signals the Loco Pilot shall start his train.

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 Rules 4.23.02 and 4.25.02 shall be followed.

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

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

**6.7 TRAINS RUNNING THROUGH: -**

The procedure detailed in Para 6.6, 6.6.1 above and General Rules 4.17, 4.42 and Subsidiary Rules 3.36.04(b) (i), 3.42.02(a)(iv), shall be observed.

The SM is responsible to observe/watch the condition of the vehicles on a train and shall wave green hand signal horizontally as per Subsidiary Rule 4.42.02(b)(i) until anything wrong is noticed on train. For this purpose the SM on duty shall stand in such a position that a clear view of the passing train is seen by him and that his hand signals can clearly be seen by the Driver and Guard of the train. He shall depute his points man with hand signal to the other side of the passing train who shall exhibit hand danger signal to draw the attention of the guard/Loco pilot of the train in case of observing any unsafe condition/abnormalities of the train. He shall also report to the SM on duty for taking further suitable action in terms of SR 4.42.02(d).

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 Rules 4.17 and Subsidiary Rules 4.17.02.

**6.8 WORKING IN CASE OF FAILURE OF POINTS AND SIGNAL: -**

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

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

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

**6.8.2 TRACK CIRCUIT**

In the event of failure of track circuit in the yard trains shall be admitted in to yard after piloting 'IN' before piloting a train in to the yard the clearance of the track must be ensured by physical verification.

**6.8.3 AXLE COUNTER**

In the event of failure of axle counter of concerned block section SM on duty shall initiate resetting of axle counter after ensuring the complete arrival of the train by SM of other end Station. After resetting the first train will be piloted 'OUT' to the concerned Block section for normalising the system of working. In case failure of Axle counter Block instrument of concerned block section shall be suspended. Detail operations involved in resetting of axle counter are given in Appendix-'B'.

**6.8.4 DEFECTIVE SIGNALS:**

When signals become defective, the procedure laid down in GR & SR shall be followed. A signal in the OFF position is the final indication that the points are correctly set for the route for which it applies and if it is found impossible to take OFF a signal, the setting of points on the route to which it applies shall be inspected by the Station Master on duty before the signal is declared as defective irrespective of what is indicated by the position of the route, [Refer GR 3.68 to 3.46, 3.52 to 3.56, 3.71, 3.80 and SR 3.68.01 (c)].

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

**6.8.5 BLOCK INSTRUMENT**

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

Both UP and DN advanced Starters are electrically interlocked with respective block instruments so that the same cannot be taken off unless the concerned block instrument is in line clear position (TGT). When the block instrument is suspended in 'Line clear' position, the concerned advanced Starter must also be treated as suspended.

During the failure of Block Instrument of the section JSGR-BXQ the authority will be T/369(3b) with identification number & Private Number issued from the station in advance written both in figure and words. During the failure of Block Instruments of the section JSGR-JSG & JSGR-IB trains will be worked on PLCT.

**6.8.6 DEFECTIVE INTERLOCKING**

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

**6.8.7 DEFECTIVE/DAMAGED POINTS**

When any point fails to operate normally by the route setting operation through panel it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handle keys are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle for motor operated points shall be followed as per operating manual para-20.06. The responsibility of correct setting of points, clamping and padlocking the points for reception and despatch of trains at the station, rests with SM on duty himself.

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

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

**6.8.9 INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:**

However, before declaring a signal is defective, the setting of the point on the route to which it applies shall be inspected by the Station Superintendent/Station Master irrespective of the position of the switches point laid down in GR with relevant SRs shall be followed. [Refer GR 3.68, 3.70 & SR 3.77.01(b)]. Initiate action in accordance with the procedure prescribed in GR and relevant Subsidiary Rules there to. [Refer GR 3.49(4) and 3.68, 3.77]

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

**6.9 WORKING OF MOTOR TROLLEY, MATERIAL LORRIES ETC: -**

- (a) Motor Trolleys are run in accordance with Subsidiary Rules 15.25.03 to 15.25.07.
- (b) Material Trolleys will work in accordance with Subsidiary Rules 15.27.05 to 15.27.08.
- (c) Rail Dolleys will work in accordance with Subsidiary Rules 15.27.10.

The following precautions must be taken:

- i) The section where axle counters are provided in lieu of track circuits, trolleys, motor trolleys, Lorries etc which are not insulated, shall not be allowed to run except on line clear.
- ii) Motor trolleys / tower wagons / material Lorries are not likely to actuate the axle counter correctly. When they are to run over the sections split by axle counters, the whole section to be treated as one and next train to be started after the first train has arrived complete.
- iii) In all other respects, the working of a light Motor trolley shall conform to the rules laid down for ordinary trolleys while running without block protection and to those laid down for motor trolleys while running under block protection or following another light motor trolley or a motor trolley.

**7. BLOCKING OF LINES: -**

Whenever a running line is blocked either by loose vehicles or by stabling train or by a train which is to cross or give precedence to another train, the points at either end should immediately be set against the blocked line except during shunting movement and reminder collars shall be placed on the concerned point push button and route button(s) for the blocked lines vide SR 3.36.03(b). 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 as per General Rules 5.23 and Subsidiary Rules 5.23.01 to prevent rolling down of vehicles.

**7.1 STABLING OF VEHICLES ON RUNNING 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. Whenever a running line is blocked a clear mark in 'RED' ink shall be made immediately in Train Signal register. The time and number of running line on which vehicles are stabled are to be recorded in stable load register. A record thereof shall be rule in lie station diary vide SR 5.23.01(a), (c) & (2).

**7.2 USE OF REMINDER COLLARS :-**

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 even for a short while or during shunting operations the reminder collars must be placed on concerned point push button, signal and route button(s) for the blocked lines on the operating panel by SM on duty.

**7.3 SECURING OF VEHICLES :-**

As far as practicable, loose vehicles shall not be allowed to stand on the running line. However, under unavoidable circumstances, if it is necessary to detach vehicles from a train or to stable a train and leave them standing on running line, SM on duty shall be responsible to secure vehicles/stable loads in accordance with GR 5.23 and SR 5.23.01 to prevent rolling down of vehicles and arrest obstruction & fouling of line.

**NOTE:** Special care shall be taken to secure special type vehicles fitted with roller bearings while standing in siding or on running lines A stabled load register to be maintained shift wise as per FORMAT in Block working manual: -

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

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

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

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

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

If the stations are on gradients, the rake should be properly secured as detailed in SR 5.23.01.

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

8.0 **SHUNTING: -**

8.1 **GENERAL PRECAUTIONS:** - Shunting shall be performed in terms of General Rules 3.46, 3.52 to 3.56, 5.13, 5.14, 5.16, 5.17, 5.19, 5.20 to 5.23, 8.09, 8.14, 8.15 and Subsidiary Rules thereto. The Guard/Asst. Guard/SS/SM/TPM on duty is authorized to supervise shunting operation. The staff supervising shunting shall ensure correct setting of points, clamping and pad locking of points, if necessary. Normally back shunt signals shall be used for shunting operation.

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

Shunting in the face of approaching train is prohibited.

8.3 **PROHIBITION OF SHUNTING AND ANY SPECIAL FEATURE: -**

- a) Hand Fly & Loose shunting is not permitted at both end of the yard.  
b) SR 4.48.01 is applicable for this station.

8.4 **(A)**

SHUNTING ZONE	BLOCK SECTION IS CLEAR	BLOCK SECTION IS OCCUPIED
Shunting within Station section	Permitted.	Permitted provided the necessary signals are at on position vide 8.05 (2).
Shunting in Block section	Permitted provided it is blocked back vide 8.06 (2)&(3).	Not permitted

**(B) DURING FAILURE OF BLOCK INSTRUMENT:** - the SM on duty shall ensure that there is no train in the block section and the last train has arrived complete clearing the fouling mark while conducting shunting at that end of the block section of which block instrument has been suspended and all necessary precautions have been taken as per rules laid down in GR.

8.5 **SHUNTING IN THE STATION YARD:** - When shunting in the station yard back shunt signals & starter signals shall be used. During non signal movement, proper shunting authority on T/806 to be issued to the train staff with clear instruction and limit up to which shunting is to be performed. While performing shunting, relevant provisions of GR 5.14 and SRs thereto are to be followed.

9.0 **ABNORMAL CONDITIONS: -****(a) THE RULES TO BE OBSERVED IN THE EVENT OF ABNORMAL CONDITION: -****[I] PARTIAL FAILURE OF COMMUNICATION: -**

In the event of suspension of Block Instrument and during partial failure of other available means of communications, trains will be worked in terms of Subsidiary Rule 6.02.06 and Chapter-III, Part-II of Chapter V & Chapter VI of Block Working Manual.

**[II] THE AUTHORITY TO PROCEED IN THE OCCUPIED BLOCK SECTION IN CASE OF OBSTRUCTION OF LINE OR ACCIDENT: -**

In case, it is necessary to allow a train into an obstructed block section due to engine failure, obstruction or accident, a block ticket shall be issued in terms of SR 6.02.05 Absolute Block System on the affected block section shall be suspended and concurrence of the SM at other end shall be obtained and recorded in caution order register and train signal register SM's diary. On the block ticket (T/A 602) it shall be mentioned in detail the place of obstruction i.e. Engine at Km., B/Van Km., whether the train is to return or to wait at the place of obstruction for the

arrival of another following train(s) or to proceed to next station and to obey the site officer instructions. A caution order shall be issued restricting the speed to 15 KMPH. in day light hours when the visibility is clear and 10 KMPH at night or whenever clear view of 800 Mtrs. is not clear. On arrival at the station the block ticket shall be collected with necessary endorsement from Loco Pilot/Guard and cancelled and pasted to its record foil shall be sent to the issuing station for cancellation.

In case of accident/engineering block assurance from SE/P.WAY concerned shall be obtained that the line is safe for movement of trains before resumption of normal working. When the obstruction is removed and assurance in writing is obtained from SE/P.WAY concerned or Guard/ Loco Pilot the SM on duty may resume normal working after exchanging proper messages supported by Private Number.

[III] **TRAINS DELAYED IN BLOCK SECTION:** -

If a train carrying passenger does not arrive within 10 minutes or if a goods train does not arrive within 20 minutes after allowing for its normal running time from the station in rear, the SM at the station in advance shall immediately advise the station in rear and the control of this fact. There after SMs at either end of the Block section shall send one Railway servant into block section to collect the whereabouts of train, condition of train and nature of assistance, if any, required. SM on duty shall collect the full particulars from railway servant so deputed and intimate the same to SM at other of block section and to the section control simultaneously for taking action according to circumstances of the case. [Refer GR 6.04 & SRs thereto].

[IV] **FAILURE/PASSING OF INTERMEDIATE BLOCK STOP SIGNAL AT ON:** - NIL

[V] **FAILURE OF LV AXLE COUNTER:** -

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

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

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

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

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

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

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

9.1 **(A) TOTAL FAILURE OF COMMUNICATION (SINGLE LINE):** -

In the event of total interruption of all communications occurring between JSGR-JSG or JSGR-IB stations, i.e when line clear cannot be obtained by one of the following means stated in order of preference viz,

- a. Block Instruments, Track Circuits or Axle Counters
- b. Telephone attached to the Block Instruments
- c. Station to Station fixed telephones whenever available
- d. Fixed telephone such as Railway auto telephone &BSNL phone
- e. Control telephone

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and action shall be taken as per SR 6.02.04. The train which is to be despatched to the affected section will be stopped and the Loco Pilot and Guard of the train shall be informed about the fact. Before dispatching the light engine /main engine/motor trolley /Tower wagon/Trolley /Cycle trolley/Moped trolley/Diesel car/rail motor car/EMU rake, the SM on duty shall hand over a Authority for opening of communication during total failure interruption of communication on Single Line Section to the Loco Pilot /motorman/Guard/SM who is being sent to open communication, which includes.

- (i) An authority to proceed without "Line Clear" in the prescribed form (T/B 602).
- (ii) A Caution Order restricting speed of the train to 15Kmph by day when the view ahead is clear and 10 Kmph during night or when view ahead is obstructed in addition to other speed restrictions in force (T/B 409).
- (iii) Paper Line Clear Ticket to pass the Last Stop Signal at 'ON' position.
- (iv) A "Line Clear" enquiry message (T/E602) asking "Line Clear" for the awaiting train (T/F602).
- (v) A conditional "Line Clear" message for the light engine to return with or without a train attached, supported by a Private Number.

On arrival of the engine at the next station the conditional line clear message and enquiry message shall be collected by the Station Master on duty who shall prepare a conditional line clear ticket for engine to return either light or with train attached and conditional line clear reply message for the enquiry message giving line clear for the train waiting at other station shall be handed over to the Loco Pilot of light engine. On return trip the Loco Pilot will come on booked speed subject to speed and other restrictions in force.

If there be an even flow of in both directions, Enquiry and Conditional line clear message for each succeeding train may be sent through the Guard of the preceding train.

If the Station Master at one end has more than one train to despatch in the same direction he may ask line clear not only for one train but also for the following trains. It must be stated that these later trains will be despatched after the first train at an interval of 30 minutes.

When despatching the second and subsequent train particulars of last preceding train along with its departure time will be endorsed and a caution order restricting the speed to 25 Kmph. over straight when view ahead is clear and 10 Kmph. when the view ahead is not clear is to be issued. While adopting this procedure the Guard and Loco Pilot should be instructed to keep a 'Sharp' lookout and be prepared to stop short of any obstruction. Trains must continue to work on this system until any one of the means of communication is restored.

As soon as any one of the means of communication has been restored, the conditional line clear working of trains shall be cancelled when there is no train in the affected block section and message shall be exchanged supported by Private Number keeping Section Controller

#### 9.1.B **TOTAL FAILURE OF COMMUNICATION BETWEEN JSGR-BXQ (DOUBLE LINE SECTION):**

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

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

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

- (i) Each train before being allowed to enter into the Block Section should be stopped and the Guard and Loco Pilot of the train apprised of the situation.
- (ii) The SM will hand over an authority for working of train during total interruption of communication to the Loco Pilot of each train which shall include-
  - a) Authority to proceed without 'Line Clear'. [T/C 602]
  - b) Authority to pass the Last Stop Signal at its "ON" position, i.e. T/369(3b).
  - c) A caution order restricting the speed to 25KMPH by day when view ahead is clear and 10KMPH by night or when view ahead is not clear.
- (iii) No train shall be allowed to enter the Block Section until there is a clear interval of 30minutes between the train about to leave and the train, which has immediately proceeded.
- (iv) Fixed signals except the last stop signal may be taken "OFF" for the dispatch of the train and for the reception of the train at the next block station, reception signals may be taken off only after the train has been brought to a stand out side it.
- (v) On arrival at the next block station the Loco Pilot shall hand over the authority to proceed with out line clear to the SM on duty who will preserve the same for further inspection.
- (vi) Before resuming normal working when any means of communication is established. SM of either end must satisfy that there is no train in the block section. [Refer SR 6.02.03].

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

During temporary single line working, when one line is clear and the other line is obstructed between JSGR-BXQ the trains shall be worked as per the procedure, [Refer SR 6.02.01] which is summarized as follows:

- (a) Before introducing single line working the SM on duty must satisfy that the line on which single line working will be introduced is clear and free from all obstructions.
- (b) The Lock and Block instrument will be suspended. The Commutators of Lock & Block Instrument will be kept on "Train on line position".
- (c) SM proposing single line working must issue a message with
  - (i) The cause of introduction of single line working,
  - (ii) Line on which the single line will be introduced,
  - (iii) Source of information about the clearance of the line on which single line will be introduced,
  - (iv) Place of obstruction,
  - (v) Restriction of speed, If any,
  - (vi) Assurance about keeping the last stop signal at 'ON' position if the train runs on right line and in case of wrong line all signals are to be kept at 'ON' position etc under the exchange of Private Number.
- (d) SM on duty at the other end of the block section will acknowledge the message and confirm the same by a Private Number.
- (e) After obtaining line clear for the train from the advance station the Loco Pilot must be given as-.
  - (i) Authority for Temporary Single Line (TSL) working on double line (T-D/602) indicating there in
    - Caution order
    - The line on which single line working is introduced.
    - The chainage kilometer of obstruction.
    - Any other speed restriction, if any existing.
    - Endorsement to inform all Gang man and Gateman about the single line working (for the first train only).
    - The speed of the first train to be restricted to 25 KMPH subject to other speed restriction.
    - Authority to pass Signal in "ON" position

- (ii) A pilot memo T/369(3b) to pass the last stop signal at its 'ON' position. The approach stop signals at the station in advance may be taken "OFF". In case a train proceeding on wrong line, the train shall be piloted out and at the receiving station, the train shall be piloted 'IN', on the authority of T/369(3b).

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

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

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

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

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

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

- a) The previous Block Ticket is collected and Cancelled or
- b) Necessary endorsement is given on the previous block ticket with the advise to wait at the site for a next train to follow or
- c) The previous train has met with an accident or has been disabled or
- d) The Block ticket has been cancelled from the Loco Pilot of the previous train by the official –in-charge at the site and kept in the personal custody & shall be kept until the arrival of the next train and such assurance is given over the telephone installed at the site quoting the serial number of the Block Ticket so collected.
- e) SM will suspend the Absolute Block System of Working and both SMs concerned should arrange for running of trains on the authority of Block Ticket
- f) SM at the dispatching end will hand over to the Loco Pilot the block Ticket as the authority which shall include:
  - i. Caution Order: Existing Speed Restriction/s shall be indicated in the Caution Order portion. The Speed Restriction to 15 KMPH during clear visibility and 10 KMPH when visibility is obstructed shall be clearly indicated.
  - ii. An authority to pass the Stop Signal at "ON" position.
- g) Before resumption of normal working a message between the SMs of the concerned stations shall be exchanged with private number.[Ref SR 6.02.05(d)(vi)]  
The Block Ticket so issued must be collected by SM of either end with a certificate about the complete arrival of the train with its time and the section is clear of all obstructions from Loco Pilot /Guard of the train and cancelled.

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

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

11. **ESSENTIAL EQUIPMENTS AT THE STATION:** - This is mentioned in the Appendix 'E' of the SWR. Essential equipments shall be kept ready on hand in good condition with necessary relief stock.

12.0 **FOG SIGNAL MEN NOMINATED TO BE CALLED IN CASE OF FOG:** - In order to indicate to the Loco Pilots of approaching trains the location of signal during thick, foggy and tempestuous weather or during dust storm, the SM on duty shall arrange for fog signalling in terms of General Rule 3.61 and Subsidiary Rules thereto. Assurance of the staff shall be taken in the Fog Signal Register in the month of October every year as token of their having knowledge of Fog Signalling Rules and their use.

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

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

A Register regarding detonator is maintained at the station.

(a) **INSTRUCTIONS:**

This register contains the following parts.

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

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

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

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

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

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

**CERTIFICATE:-**

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

**APPENDICES**

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



**APPENDIX – ‘A’**

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

**1.0 GATE WORKING INSTRUCTIONS OF “SPL” CLASS TRAFFIC INTERLOCKED LEVEL CROSSING GATE AT KM 517/00-01 (NO.-JT-1) OF JSG ROAD STATION YARD AT BXQ END.**

**1.1 GENERAL INSTRUCTIONS:**

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

1.	Number of Level Crossing Gate	:	JT-1
2.	Engineering or Traffic Gate	:	Traffic
3.	Under control of Station Master/P W I	:	SM/ JSG Road.
4.	Location at Km.	:	517/00-01(F/HWH).
5.	At Station	:	JSGR.
6.	In between Stations	:	JSGR -BXQ.
7.	BG/MG/NG	:	BG
8.	Single line/Double line/Multiple line	:	Double line.
9.	Normal Position	:	Open to Road Traffic
10.	Interlocked/non-interlocked	:	Interlocked
11.	Means of Interlocking	:	EKT
12.	Provision of Gate Signal at Km	:	UP line-Nil DN line-Nil
13.	Signalling arrangements	:	MACLS
14.	Means of Communication –Telephone	:	Telephone connection with SM/JSGR.
15.	Width of level crossing gate	:	7.5 m
16.	Type of road (NH/SH/Others)	:	Municipal
17.	Name of Road	:	JSG-SBP
18.	Metalled/Non-Metalled	:	Metalled
19.	Approach road	:	Metalled
20.	Width of the road	:	5.5 m
21.	Angle of road crossing (in case of the skew gates)	:	NA
22.	Road gradient (if any)	:	-
	(i)North/East side	:	-
	(ii) South/West side	:	-
23.	Road alignment (straight/curve)	:	Straight
	(i)North/East side	:	Straight
	(ii) South/West side	:	Straight
24.	Provision of height gauges	:	Yes
25.	Type of Barriers	:	Winch operated Lifting barriers
26.	Length of Check rails	:	9.5 m
27.	Road surface in between Level crossing gates	:	Level
28.	Length of Rumble strip/speed breakers	:	7.5 m
29.	Road signs	:	Provided
30.	Speed breaker indication board	:	Provided
31.	TVU	:	203934 on 03/ 2013
32.	Census next due on	:	03/2016
33.	Demarcation for placement of Detonators	:	Yes
34.	No. of Gatemen working	:	3

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35. Nearest Railway Medical Assistance : JSG  
 36. Nearest Private Medical Assistance available (if any) : JSG.  
 37. List of equipment available Yes/No : Yes

## 1.2 **EQUIPMENT:**

SI No.	Items	Quantity / Numbers
1.	Hand Signal lamp/ Tri colour	: 3
2.	Hand Signal Flag Green	: 1
3.	Hand Signal Flag Red.	: 3
4.	Banner Flag Red.	: 3
5.	Posts for exhibiting red banner flag.	: 2 sets
6.	Spare chains with padlocks	: 2 with stop mark
7.	Detonators	: 10 in a case
8.	Gate lamps.	: 2
9.	Tommy Bar	: 1
10.	Mortar Pan	: 1
11.	Spade/Fowrah	: 1
12.	Rammer	: 1
13.	Pick Axe.	: 1
14.	Tin case for flags.	: 1
15.	Can 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 chains with padlocks to be used in case of failure of gate boom lock.	: 2

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

- i) In addition to the above equipment, following records shall also be kept at the gate lodge.
- ii) Gate Working Instructions in Hindi/English.
- iii) Gate Working Instructions in local vernacular language.
- iv) Gateman Rule Book in local vernacular language.
- v) List for tools and books.
- vi) Duty Roster.
- vii) Certificate for working as gateman.
- viii) Bio-data particulars of Gateman, including date of passing vision test, initial/ refresher course, safety camp, etc.
- ix) Accident Register.
- x) Record of last census of road traffic at level crossing gate.
- xi) Public complain book.
- xii) Inspection book.

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

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

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

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

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

**3. ROUTINE DUTIES OF GATEMAN:**

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

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

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

- i) He shall take prompt action to warn the driver/guard of the passing train by showing red flag by day and red light by night.
- ii) He shall simultaneously try to draw the attention of the Loco Pilot/guard by whistling continuously, shouting, gesticulating, and throwing ballast on the brake van or by any other means.
- iii) If driver/guard fails to take notice, Gateman shall immediately inform the Station Master, 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 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) Therefore, if he is unable to remove the obstruction, gateman shall immediately advise the Station Master on duty, if connected 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) ON DOUBLE LINE SECTION:**

- (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 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 in 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- (v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- (vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
- (vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.

- (viii) Thereafter, he shall warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

**B) OTHER ACTIONS TO BE TAKEN BY GATEMAN:**

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

**1.5 SPECIAL INSTRUCTIONS:**

**1 MODE OF OPERATION:**

Before taking off reception/departure signals the SM on duty at JSGR Station shall inform the gate man about the train number & directions and advise him to close the gate. The gate man shall after satisfying himself that the level crossing is clear of all obstructions shall sound the hooter and operate the winch till the booms are properly seated on their respective rests. Then he shall extract the key 'J' from the winch and insert the same in 'E' type lock provided on gate lever frame GF 1 for unlocking the Lever. When GF-1 is reversed it locks the gate booms and releases lever GF-2 and J-1. When key 'J-1' is transmitted to the SM on duty in conjunction with lever No. GF-2 reversed, it releases concerned UP & DN signals. SM on duty will get the 'green' flashing light indication on the control Panel. SM on duty will press the control push button 56 along with group release button simultaneously. Then the steady green light indication will appear on the Panel and relevant signals can be taken off by SM.

After passage of train, on duty SM/ JSGR Station shall grant permission and transmit the Gate key to the gateman by pressing gate control 56 and group Trans button simultaneously. The green indication starts flashing at SM's control Panel and gate man will get yellow indication near the RKT which indicates that the key 'J-1' can be extracted from RKT by pressing the push button fitted below it. When key 'J-1' is inserted and operated in E type lock fitted on GF-1 it releases GF-1 for normalising the gate lever. When GF-2 and GF-1 are put back to normal this effects the unlocking of the booms and releases KEY "J". Then the key 'J' is to be inserted and operated in E type lock fitted with winch for unlocking the winch for operation. The gate man on duty shall operate the winch for opening the gate for passage of road traffic. In case of Emergency, GF-2 shall be put back to reversed position for putting back the concerned UP or DN Signal to 'ON' position.

Gate is locked when a signal is taken off. Locking of the gate is released only when the train movement for which Signals are taken off is completed. For emergency opening of the LC Gate before completion of train movement or if the route given for a train has not been released, then emergency gate release operation has to be initiated in the following manner. Signal cancellation button and the concerned signal button has to be pressed. Then emergency gate release button along with control 56 button has to be pressed. A flashing Red indication will appear on the top of the emergency gate release button. When the Gate lock indication disappears (i.e. after 120 seconds) gate key can be transmitted by pressing gate key and group trans button simultaneously for opening the gate.

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

## **2. INTIMATION TO GATEMAN:**

- i) Before taking off reception/departure signals Station Master/ JSGR shall inform the gateman, the number, description, and direction of the train.
- ii) The gateman shall close the gate and transfer the key to the Station Master/ JSGR
- iii) The reception/departure signals will then be taken 'OFF'
- iv) In order to ensure that road traffic is not held up for a long time, the Station Master/ JSGR must ensure that the train is ready for departure in all respects before he advises the gateman for closing the gate.
- v) When a train has to be piloted to and from the station yard or any shunting movement is to be done, the staff deputed to pilot the train to perform the shunting across the gate shall be personally responsible to ensure that the gate is closed against road traffic before allowing any movement across the gate.

## **3. FAILURE OF TELEPHONIC COMMUNICATION:**

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

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

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

- i) When the gate cannot be closed due to failure of lifting barriers, the gateman will immediately inform, the Station Master on duty/ JSGR, under exchange of private number, and ensure the lifting barriers of gate do not foul the track.
- ii) He shall immediately fix red banner flag by day and red light by night on the post at that end first from which the train is approaching and then at the other end.
- iii) Gateman shall secure the gate against road traffic by means of safety chains and padlocks.

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

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

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

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

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

**7. OBSTRUCTION AT THE GATE:**

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

- the gateman shall Immediately 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/ JSGR on duty, regarding the defects/obstruction at the gate, under exchange of private number.
  - iii) The Gateman will advise to Stationmaster/ JSGR on duty to put the reception/departure signals back to 'ON' position.
  - iv) If there is no response from the Station Master / JSGR after two or three attempts, he shall first protect the gate and then inform on phone.
  - v) Gateman shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instructions for duties of gateman under item No.1.4. (5).
  - vi) Thereafter he shall protect the gate from the other direction also.
  - vii) He shall note down the particulars of the road vehicle, name of the driver, owner and reply these details to the station Master/ JSGR who shall not start the trains unless he has been assured by the gateman that the road vehicle or the lifting barriers are not fouling the track.
  - viii) The Station Master/ JSGR shall also inform the station Master/BXQ at the despatching end, under exchange of private number, asking him not to despatch any train into the block section from his end, until the track has been cleared of all obstructions.
  - ix) After the track has been cleared of all obstructions the gateman shall inform the Station Master/ JSGR accordingly, under exchange of private number.
  - x) Station Master/ BXQ shall then issue a caution order to Loco Pilots of all trains to proceed cautiously, and pass the gate signal at 'ON' position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
  - xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and they're after exhibit green hand signal, if the gate is not obstructed.
  - xii) Station Master/ JSGR shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
  - xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

#### **8. OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:**

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



## 2.0 WORKING INSTRUCTIONS OF 'C' CLASS INTER LOCKED LEVEL CROSSING GATE AT KM 515.470 (F/HWH) JT-1(A) AT IB END OF THE JSGR STATION YARD.

### 2.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

1	Number of Level Crossing Gate	:	JT-1(A)
2	Engineering or Traffic Gate	:	Traffic
3	Under control of Station Master/P W I	:	SM / JSGR
4	Location at Km.	:	515.470 (F/HWH).
5	At Station	:	JSGR.
6	In between Stations	:	JSGR & IB.
7	BG/MG/NG	:	BG
8	Single line/Double line/Multiple line	:	Single line.
9	Normal Position	:	Open to Road Traffic
10	Interlocked/non-interlocked	:	Interlocked
11	Means of Interlocking	:	EKT.
12	Provision of Gate Signal at Km	:	NA
13	Signalling arrangements	:	MACLS
14	Means of Communication –Telephone	:	Telephone with SM/JSGR Station.
15	Width of level crossing gate	:	7.5 m.
16	Type of road (NH/SH/Others)	:	Others
17	Name of Road	:	Chaukipara Phatak Road
18	Metalled/Non-Metalled	:	Metalled
19	Approach road	:	Metalled
20	Width of the road	:	5.5 m.
21	Angle of road crossing (in case of the skew gates)	:	NA
22	Road gradient (if any)	(i) North/East Side :	--
		(ii) South/West side :	---
23	Road alignment (straight/curve)	(i)North/East side :	Straight
		(ii) South/West side :	Straight
24	Provision of height gauges	:	Yes
25	Type of Barriers	:	Lifting Barriers
26	Length of Check rails	:	9.5 m.
27	Road surface in between Level crossing gates	:	Hexagonal Blocks
28	Length of Rumble strip/speed breakers	:	7.5 m.
29	Road signs	:	Yes
30	Speed breaker indication board	:	Yes
31	TVU	:	6847 on 01/2009
32	Census next due on	:	01/2012
33	Demarcation for placement of Detonators	:	Yes
34	No. of Gatemen working	:	02
35	Nearest Railway Medical Assistance	:	JSG
36	Nearest Private Medical Assistance available (if any)	:	JSG.
37	List of equipment available Yes/No	:	Yes

### 2.2 EQUIPMENT: ITEMS

	QUANTITY/NUMBERS
1. Hand signal Lamp/ Tri Colour Torch	3 (5 on Quadruple/Line or twin single line)
2. Hand signal Flag Green	1 mounted on sticks
3. Hand Signal Flag Red.	3 (6 on Quadruple/line or Twin single line)

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		and 7 in case Hexable section mounted on sticks)
4.	Banner Flag Red	3 (5 on Quadruple/Line or twin single line)
5.	Posts for exhibiting red banner flag section.	2 (4 on Q/Twin single line and 5 on Hexable section.)
6.	Spare chains with padlocks	2 with stop mark
7.	Detonators	10 in tin case
8..	Gate Lamps	2
9..	Tommy Bar	1
10.	Motor Pan	1
11.	Spade/Fowrah	1
12.	Rammer	1 (in case of asphalted road this may not be provided)
13.	Pick Axe	1 (in case of asphalted road this may not be provided)
14.	Tin case for flags	1
15.	Can 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 chains with padlocks to be used in case of failure of gate boom lock.	02

### 2.3 THE GATEMAN SHALL BE PROVIDED WITH FOLLOWING REGISTERS: -

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

### 2.4 DUTIES OF GATEMAN:

1. **ALERTNESS:** The Gateman on duty shall be alert. He should be prepared to take immediate action, when danger is apprehended. Keys of the Gate shall be in his personal custody.
2. **POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:**  
During passage of trains, Gateman will stand in the manner indicated below:
  - i) Gateman will stand attentively in front of the Gate – lodge facing the approaching train.

- ii) In daytime, Gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.
  - iii) In nighttime, Gateman shall hold lighted hand signal lamp with white light facing the track.
  - iv) He shall keep the whistle slung around his neck from a cord.
3. **ROUTINE DUTIES OF GATEMAN:**
- i) Gateman shall ensure that red banner flag by day and red light by night is placed across the track whenever the Gate is kept in open condition during emergencies or obstruction on track.
  - ii) Gateman shall ensure that 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 /trains/battery/box on fire, shifted load, falling material like brake blocks, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.
  - vi) 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 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 station Master, 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 the lifting barriers/leaf gates on sighting a train and hand signal or pilot the past the defective signal. In such case he should inform the Loco Pilot to report the defect at the next station.
  - xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
  - xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
  - xiii) Gateman shall work the gate as per gate working instructions and remain well conversant with these instructions.
  - xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
  - xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
  - xvi) Gateman must 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 tress passing 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, and throwing ballast on the brake van or by any other means.
- iii) If driver/guard fails to take notice, Gateman shall immediately inform the SM on duty to take appropriate action, under exchange of private number.
- iv) In case of train parting, Gateman shall not show stop hand signal but shall show prescribed signal for train parting.
- v) He shall endeavor to attract the attention of the Loco Pilot /Guard by whistling continuously, shouting, gesticulating, and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible.
- vi) In case the train does not stop, Gateman shall immediately inform the SM to take appropriate action, under exchange of private number.

5 **ACTION IN EMERGENCY AT THE LEVEL CROSSING:**

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

The gateman shall protect the line as under: -

a) **ON SINGLE LINE SECTION:**

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

viii) Thereafter, he shall warn the Loco Pilot and stop the approaching train by waving his red flag by day, red hand signal lamp by night repeatedly.

b) Other actions to be taken by Gateman:

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

2.5 **SPECIAL INSTRUCTIONS**

1. **MODE OF OPERATION**

Before taking off reception/departure signals the SM on duty at JSGR Station shall inform the gate man about the train number & direction and advise him to close the gate. The gate man, shall after satisfying himself that the level crossing is clear of the obstructions. He will operate the winch till the booms are properly seated on their respective rests and extract the key 'H' from the winch. Then the gateman will insert the same in 'E' type lock on gate lever GF1 and reverse it. When GF1 is reversed it locks the gate booms and releases lever GF2. When GF2 is reversed it releases key 'H-1'. The key H-1 shall be transmitted to the SM on duty through RKT. SM on duty will get the 'green' flashing light indication on the control Panel. SM/ JSGR receives the steady green light indication on Panel by pressing control push button 59 along with group release button simultaneously, then the relevant signals can be taken off by SM on duty.

After passage of train, on duty SM/ JSGR shall grant permission and transmit the Gate key to the gateman by pressing gate control 59 and group Trans button simultaneously. The green indication starts flashing at SM's control Panel and gate man will get yellow indication near the RKT which indicates that the key 'H-1' can be extracted from RKT by pressing the push button fitted below it. When key 'H-1' inserted and operated in E type lock fitted on GF1 it releases GF1 for normalising the gate lever. Then GF2 and GF1 are put back to normal which effects the unlocking of the booms and releases KEY H. Then the key H is to be inserted and operated in E type lock fitted with winch for unlocking the winch. The gate man on duty shall operate the winch for opening the gate for passage of road traffic. In case of Emergency, GF2 shall be put back to normal from reversed position for putting back the concerned UP or DN Signal to 'ON' position.

Gate is locked when a signal is taken off. Locking of the gate is released only when the train movement for which signals are taken off is completed. For emergency opening of the LC Gate before completion of train movement or if the route given for a train has not been released, then Gate emergency operation of gate has to be initiated in the following manner. Signal cancellation button and the concerned signal button has to be pressed. Then emergency gate release button along with control 59 button has to be pressed. A flashing Red indication will appear on the top of the emergency gate released button. When the Gate lock indication disappear (i.e. after 120 seconds) gate key can be transmitted by pressing gate key and group trans button simultaneously for opening the gate.

2 **INTIMATION TO GATEMAN**

- (i) Before taking off reception/departure signals Station Master/JSGR shall inform the gateman, the number, description and direction of the train.

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- (ii) The gateman shall close the gate and transfer the key to the Station Master/ JSGR.
- (iii) The reception/departure signals will then be taken 'OFF'.
- (iv) In order to ensure that road traffic is not held up for a long time, the Station Master/ JSGR must ensure that the train is ready for departure in all respects before he advises the gateman for closing the gate.
- (v) When a train has to be piloted to and from the station yard or any shunting movement is to be done, the staff deputed to pilot the train or to perform the shunting across the gate shall be personally responsible to ensure that the gate is closed against road traffic before allowing any movement across the gate.

**3 FAILURE OF TELEPHONIC COMMUNICATION** : When Telephone 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/ JSGR shall send written advice to the gateman through the porter with full details of number, description and direction of the train.
- (ii) Gateman on receipt of such advice shall close the gate and transmit the key to the Station Master which will enable him to take "OFF" reception/ departure signals.
- (iii) When sufficient time is not available because of greater frequency of train service, Station Master/ JSGR will issue written authority to the train Loco Pilot to pass the signal at "ON" position.
- (iv) In addition Station Master/ JSGR 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/ JSGR shall advise the Station Master/IB at the despatching end, under exchange of Private Number that the telephone at the gate has failed.
- (vii) The Station Master/IB at the despatching end shall then issue a caution order to the Loco Pilot before despatching 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 rectifies the telephone and issue reconnection/fit memo for the same.

**4 FAILURE OF LIFTING BARRIERS** : When the Gate cannot be closed due to failure of lifting barriers the gateman will immediately inform the Station Master on duty/ JSGR under exchange of Private Number and ensure the lifting barriers do not foul the track.

- i. He shall immediately fix red banner flags by day and red light by night on the post at the end first from which the train is approaching and then at the other end.
- ii. Gateman shall secure the Gate against road traffic by means of safety chain with STOP disc and padlocks.
- iii. After securing the Gate against road traffic, Gateman shall show green hand signal flag by day and green light by night to the Loco Pilot of the approaching train.
- iv. SM on duty/ JSGR shall issue caution order to the Loco Pilot of a departing train.
- v. He shall also advise the SM on duty/IB at the despatching end, under exchange of Private Number, to similarly issue a caution order to the Loco Pilot before despatching a train in the Block Section from his end.

- vi. SM on duty will advise maintenance staff responsible for maintenance of lifting barriers to repair the defect at the earliest.
- vii. Normal working will resumed only after maintenance staff repair the barrier and issue re-connection / fit memo for the same.

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

- i. If the Gate key cannot be extracted from the winch, the Gate lever or the key transmitter, the on duty Gateman must immediately inform the SM on duty/ JSGR on telephone under exchange of Private Number.
- ii. Thereafter emergency operation of the gate shall be resorted to open the Gate for road traffic.
- iii. Thereafter, the Gate must be treated as non-interlocked and procedure for reception/Despatch of trains as prescribed for non-interlocked gate should be adopted.
- iv. SM on duty/ JSGR shall issue a caution order to the Loco Pilot of a departing train.
- v. He shall also advise the SM on duty/IB at the despatching end, under exchange of a Private Number, to similarly issue a caution order to the Loco Pilot before despatching a train into Block Section from his end.
- vi. SM on duty JSGR will advise S & T staff responsible for maintenance of winch/key transmitter to rectify the defect at the earliest.
- vii. Normal working will resume only after S & T staff repair the winch/key transmitter and issue re-connection fit memo for the same.

**6 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, the on duty gateman must immediately inform the SM on duty/ JSGR on telephone under exchange of Private Number.
- ii. Thereafter, the Gate must be treated as non-interlocked and procedure for reception/Despatch of trains as prescribed for non- interlocked gate should be adopted.
- iii. Gateman shall secure the Gate against road traffic by safety chains with 'STOP' and padlocks.
- iv. SM on duty/ JSGR shall issue caution order to the Loco Pilot of a departing train.
- v. He shall also advise the SM on duty/IB at the despatching end, under exchange of a Private Number, to similarly issue a caution order to the Loco Pilot before despatching a train into Block Section from his end
- vi. SM on duty/ JSGR will advise S & T staff responsible for maintenance of winch/key transmitter to rectify defect at the earliest.
- vii. Normal working will resumed only after S & T staff repairs the winch/key transmitter and issue re-connection/fit memo for the same.

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

- (i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the Gate foul the track, or if there is any other obstruction at the Gate, the gateman shall immediately 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 advice the Station Master on duty/JSGR, regarding defects/obstruction at the Gate, under exchange of Private Number.
- (iii) Station Master on duty/JSGR shall be advised to put the Reception/Departure Signals back to 'ON' position if taken 'OFF' for a train.

- (iv) If there is no response from the Station Master after two or three attempts, he shall first protect the Gate and then inform on phone.
- (v) Gateman shall then rush with detonators and Red flag by day and Red hand signal lamp by night in the direction of the approaching train and protect the Gate as stipulated in General Instruction for duties of Gateman under item No.2.4. (5).
- (vi) Thereafter he shall protect the Gate from the other direction also.
- (vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and relay these details to the Station Master/ JSGR who shall not start the train unless he has been assured by the Gateman that the road vehicle or the lifting barriers are not fouling the track.
- (viii) The Station Master/JSGR shall also inform the Station Master/IB at the despatching end, under exchange of Private Number, asking him not to despatch any train in the Block Section from his end, until the track has been cleared of all obstructions.
- (ix) After the track has been cleared of all obstructions the Gateman shall inform the Station Master/ JSGR 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 is clear of any obstruction.
- (xi) Gateman shall secure the Gate against road traffic by means of safety chains with 'STOP' disc and padlocks and thereafter exhibit green hand signal if the Gate is not obstructed.
- (xii) Station Master/JSGR shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- (xiii) Normal working will be resumed only after maintenance staff rectify the defective lifting barriers and issue reconnection/fit memo for the same.

**8. OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING: -**

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment when is visible to the Gateman, the Gateman and Station Master/JSGR will adopt the procedure given under item no. 7 above. If the obstruction fouls the level Crossing Gate, Gateman must keep the Gate closed against road traffic till the track is cleared of the obstructions.



### 3.0 WORKING INSTRUCTIONS OF 'C' CLASS INTERLOCKED LEVEL CROSSING GATE AT KM 515/8-9 (F/HWH) LC No-258 (S.E.Rly) AT JSG END OF THE JSGR STATION YARD..

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

1	Number of Level Crossing Gate	:	258 (S.E.Rly.)
2	Engineering or Traffic Gate	:	Engineering
3	Under control of Station Master/P W I	:	P.W.I.
4	Location at Km.	:	515/8-9(F/HWH).
5	At Station	:	JSGR Station.
6	In between Stations	:	JSGR-JSG.
7	BG/MG/NG	:	BG
8	Single line/Double line/Multiple line	:	Single line.
9	Normal Position	:	Open to Road Traffic
10	Interlocked/non-interlocked	:	Interlocked
11	Means of Interlocking	:	EKT
12	Provision of Gate Signal at Km	:	NA
13	Signalling arrangements	:	MACLS
14	Means of Communication –Telephone	:	Telephone connection with SM/JSGR Station.
15	Width of level crossing gate	:	7.5 m
16	Type of road (NH/SH/Others)	:	Municipality Road.
17	Name of Road	:	Municipality Road.
18	Metalled/Non-Metalled	:	Metalled
19	Approach road	:	Metalled
20	Width of the road	:	5.5 m
21	Angle of road crossing (in case of the skew gates)	:	NA
22	Road gradient (if any)	:	(i) North/East Side : Level
		:	(ii) South/West side : Level
23	Road alignment (straight/curve)	:	(i)North/East side : Straight
		:	(ii) South/West side : Straight
24	Provision of height gauges	:	Yes
25	Type of Barriers	:	Winch operated lifting Barriers
26	Length of Check rails	:	9.5 m
27	Road surface in between Level crossing gates	:	Hexagonal RCC Blocks
28	Length of Rumble strip/speed breakers	:	7.5 M
29	Road signs	:	Provided
30	Speed breaker indication board	:	Provided
31	TVU	:	23290 as on Jan 2007
32	Census next due on	:	Jan 2010
33	Demarcation for placement of Detonators	:	Provided
34	No. of Gatemen working	:	02
35	Nearest Railway Medical Assistance	:	JSG
36	Nearest Private Medical Assistance available (if any)	:	JSG.
37	List of equipment available Yes/No	:	Yes

#### 3.2 EQUIPMENT:

	<b>ITEMS</b>	<b>QUANTITY/NUMBERS</b>
1.	Hand signal Lamp/ Tri Colour Torch	3 (5 on Quadruple/Line or twin single line)
2.	Hand signal Flag Green	1 mounted on sticks
3.	Hand Signal Flag Red.	3 (6 on Quadruple/line or Twin single line and 7 in case Hexable section mounted on sticks)

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4.	Banner Flag Red	3 (5 on Quadruple/Line or twin single line)
5.	Posts for exhibiting red banner flag section.	2 (4 on Q/Twin single line and 5 on Hexable)
6.	Spare chains with padlocks	2 with stop mark
7.	Detonators	10 in tin case
8.	Gate Lamps	2
9.	Tommy Bar	1
10.	Motor Pan	1
11.	Spade/Fowrah	1
12.	Rammer	1 (in case of asphalted road this may not be provided)
13.	Pick Axe	1 (in case of asphalted road this may not be provided)
14.	Tin case for flags	1
15.	Can 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 chains with padlocks to be used in case of failure of gate boom lock.	2

### 3.3 THE GATEMAN SHALL BE PROVIDED WITH FOLLOWING REGISTERS: -

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

### 3.4 DUTIES OF GATEMAN:

1. **ALERTNESS:** The Gateman on duty shall be alert. He should be prepared to take immediate action, when danger is apprehended. Keys of the Gate shall be in his personal custody.
2. **POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:**  
During passage of trains, Gateman will stand in the manner indicated below:
  - i) Gateman will stand attentively in front of the Gate – lodge facing the approaching train.
  - ii) In daytime, Gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.

- iii) In nighttime, Gateman shall hold lighted hand signal lamp with white light facing the track.
- iv) He shall keep the whistle slung around his neck from a cord.

### 3. ROUTINE DUTIES OF GATEMAN:

- i) Gateman shall ensure that red banner flag by day and red light by night is placed across the track whenever the Gate is kept in open condition during emergencies or obstruction on track.
- ii) Gateman shall ensure that 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 gate against road traffic, before leaving the gate.
- iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
- v) Gateman shall watch all passing trains and keep sharp like out for any unusual like hot axle, hanging chains, hanging battery, any vehicle/wagons /trains/battery/box on fire, shifted load, falling material like brake blocks, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.
- vi) 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 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 station Master, 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 the lifting barriers of gate on sighting a train and hand signal or pilot the past the defective signal. In such case he should inform the driver to report the defect at the next station.
- xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing gate.
- xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- xiii) Gateman shall work the gate as per gate working instructions and remain well conversant with these instructions.
- xiv) Gateman shall ensure that equipment supplied at the gate is in good order and ready for immediate use.
- xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- xvi) Gateman must 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 tress passing 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 driver/guard of the passing train by showing red flag by day and red light by night.
- ii) He shall simultaneously try to draw the attention of the Loco Pilot /guard by whistling continuously, shouting, gesticulating, and throwing ballast on the brake van or by any other means.
- iii) If driver/guard fails to take notice, Gateman shall immediately inform the SM on duty to take appropriate action, under exchange of private number.
- iv) In case of train parting, Gateman shall not show stop hand signal but shall show prescribed signal for train parting.
- v) He shall endeavor to attract the attention of the Loco Pilot /Guard by whistling continuously, shouting, gesticulating, and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible.
- vi) In case the train does not stop, Gateman shall immediately inform the SM to take appropriate action, under exchange of private number.

5. **ACTION IN EMERGENCY AT THE LEVEL CROSSING:**

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

The gateman shall protect the line as under: -

a) **ON SINGLE LINE SECTION:**

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

- viii) Thereafter, he shall warn the Loco Pilot and stop the approaching train by waving his red flag by day, red hand signal lamp by night repeatedly.
- b) Other actions to be taken by Gateman:
- i) At night Gateman shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub paras (a) and (b) above.
  - ii) If the Gate is broken by a road vehicle, which is fouling the track or if lifting barriers or any other part of the Gate foul the track or if there is any other obstruction at the Gate, the Gateman shall take immediate action.
  - iii) He shall note down the particulars of the road vehicle, vehicle number, name of the driver, owner and relay these details to the SM / JSGR regarding the particulars and obstructions at the level crossing Gate, through messenger or other means available

### 3.5 SPECIAL INSTRUCTIONS:

- 1 **MODE OF OPERATION:** - Before taking off departure signals the SM on duty at JSGR Station shall inform the gate man about the train number and advise to close the gate. The gate man shall, after satisfying himself that the level crossing is clear of the obstructions, operate the winch till the booms are properly seated on their respective rests. He will extract the key 'G' from the winch and insert the same in 'E' type lock provided on gate lever 1GF for unlocking the Lever and put the lever 1GF from normal to reverse position. 1GF when reversed it locks the gate booms and releases Gate lever GF2. When GF2 is reversed it releases key 'G-1'. After reversing the lever No.GF2, the key G-1 shall be transmitted to the SM on duty through RKT. SM on duty will get the 'green' flashing light indication on the control Panel. SM/JSGR will get the steady green light indication on Panel by pressing control push button 57 along with group release button simultaneously then relevant signals can be taken off by the SM on duty.

After passage of train, on duty SM/ JSGR Station shall grant permission and transmit the Gate key to the gateman by pressing gate control 57 and group Trans button simultaneously. The green indication starts flashing at SM's control Panel and gate man will get yellow indication near the RKT which indicates that the key 'G-1' can be extracted from RKT by pressing the push button fitted below it. When key 'G-1' is inserted and operated in E type lock fitted on GF1 it releases GF1 for normalising the gate lever. When GF2 and GF1 are put back to normal this effects the unlocking of the booms and releases Key G. Then the key 'G' is to be inserted and operated in E type lock fitted with winch for unlocking the winch for operation. The gate man on duty shall operate the winch for opening the gate for passage of road traffic. In case of Emergency, GF-2 shall be put back to reverse position for putting back the concerned UP & DN Signals to 'ON' position..

Gate is locked when a signal is taken off. Locking of the gate is released only when the train movement for which signals are taken off is completed. For emergency opening of the LC Gate before completion of train movement or if the route given for a train has not been released, then emergency operation of gate has to be initiated in the following manner. Signal cancellation button and the concerned signal button has to be pressed. Then emergency gate release button along with control 57 button has to be pressed. A flashing Red indication will appear on the top of the emergency gate release button. The Gate lock indication disappears (i.e. after 120 seconds) gate key can be transmitted by pressing gate key and group trans button simultaneously for opening the gate.

### 2 INTIMATION TO GATEMAN

- (i) Before taking off reception/departure signals Station Master/JSGR shall inform the gateman, the number, description and direction of the train.

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- (ii) The gateman shall close the gate and transfer the key to the Station Master/ JSGR.
- (iii) The reception/departure signals will then be taken 'OFF'.
- (iv) In order to ensure that road traffic is not held up for a long time, the Station Master/ JSGR must ensure that the train is ready for departure in all respects before he advises the gateman for closing the gate.
- (v) When a train has to be piloted to and from the station yard or any shunting movement is to be done, the staff deputed to pilot the train or to perform the shunting across the gate shall be personally responsible to ensure that the gate is closed against road traffic before allowing any movement across the gate.

**3** **FAILURE OF TELEPHONIC COMMUNICATION** : When Telephone 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/ JSGR shall send written advice to the gateman through the porter with full details of number, description and direction of the train.
- (ii) Gateman on receipt of such advice shall close the gate and transmit the key to the Station Master which will enable him to take "OFF" reception/ departure signals.
- (iii) When sufficient time is not available because of greater frequency of train service, Station Master/ JSGR will issue written authority to the train Loco Pilot to pass the signal at "ON" position.
- (iv) In addition Station Master/ JSGR 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/JSGR shall advise the Station Master/JSG at the despatching end, under exchange of Private Number that the telephone at the gate has failed.
- (vii) The Station Master/JSG at the despatching end shall then issue a caution order to the Loco Pilot before despatching a train into 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.

**4** **FAILURE OF LIFTING BARRIERS** : When the Gate cannot be closed due to failure of lifting barriers the gateman will immediately inform the Station Master on duty/ JSGR under exchange of Private Number and ensure the lifting barriers do not foul the track.

- i. He shall immediately fix red banner flags by day and red light by night on the post at the end first from which the train is approaching and then at the other end
- ii. Gateman shall secure the Gate against road traffic by means of safety chain with STOP disc and padlocks.
- iii. After securing the Gate against road traffic, Gateman shall show green hand signal flag by day and green light by night to the Loco Pilot of the approaching train.
- iv. SM on duty/ JSGR shall issue caution order to the Loco Pilot of a departing train.
- v. He shall also advise the SM on duty/JSG at the despatching end, under exchange of Private Number, to similarly issue a caution order to the Loco Pilot before despatching a train into the Block Section from his end.

- vi. SM on duty/JSGR will advise maintenance staff responsible for maintenance of lifting barriers to repair the defect at the earliest.
- vii. Normal working will be resumed only after maintenance staff repair the barrier and issue re-connection / fit memo for the same.

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

- i. If the Gate key cannot be extracted from the winch, the Gate lever or the key transmitter, the on duty Gateman must immediately inform the SM on duty/ JSGR on telephone under exchange of Private Number.
- ii. Thereafter, the Gate must be treated as non-interlocked and procedure for reception/Despatch of trains as prescribed for non-interlocked gate should be adopted.
- iii. SM on duty/ JSGR shall issue a caution order to the Loco Pilot of a departing train.
- iv. He shall also advise the SM on duty/JSG at the despatching end, under exchange of a Private Number, to similarly issue a caution order to the Loco Pilot before despatching a train into Block Section from his end.
- v. SM on duty JSGR will advise S & T staff responsible for maintenance of winch/key transmitter to rectify the defect at the earliest.
- vi. Normal working will resume only after S & T staff repair the winch/key transmitter and issue re-connection fit memo for the same.

**6 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, the on duty gateman must immediately inform the SM on duty/ JSGR on telephone under exchange of Private Number.
- ii. Thereafter, the Gate must be treated as non-interlocked and procedure for reception/Despatch of trains as prescribed for non- interlocked gate should be adopted.
- iii. Gateman shall secure the Gate against road traffic by safety chains with 'STOP' and padlocks.
- iv. SM on duty/ JSGR shall issue caution order to the Loco Pilot of a departing train.
- v. He shall also advise the SM on duty/JSG at the despatching end, under exchange of a Private Number, to similarly issue a caution order to the Loco Pilot before despatching a train into Block Section from his end
- vi. SM on duty/ JSGR will advise S & T staff responsible for maintenance of winch/key transmitter to rectify defect at the earliest.
- vii. Normal working will resumed only after S & T staff repairs the winch/key transmitter and issue re-connection/fit memo for the same.

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

- (i) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers or any other part of the Gate foul the track, or if there is any other obstruction at the Gate, the gateman shall immediately 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 advice the Station Master on duty/JSGR, regarding defects/obstruction at the Gate, under exchange of Private Number.
- (iii) Station Master on duty/JSGR shall be advised to put the Reception/Departure Signals back to 'ON' position if taken 'OFF' for a train.
- (iv) If there is no response from the Station Master after two or three attempts, he shall first protect the Gate and then inform on phone.

- (v) Gateman shall then rush with detonators and Red flag by day and Red hand signal lamp by night in the direction of the approaching train and protect the Gate as stipulated in General Instruction for duties of Gateman under item No.3.4. (5).
- (vi) Thereafter he shall protect the Gate from the other direction also.
- (vii) He shall note down the particulars of the road vehicle, name of the Driver, owner and relay these details to the Station Master/ JSGR who shall not start the train unless he has been assured by the Gateman that the road vehicle or the lifting barriers are not fouling the track.
- (viii) The Station Master/JSGR shall also inform the Station Master/JSG at the despatching end, under exchange of Private Number, asking him not to despatch any train into the Block Section from his end, until the track has been cleared of all obstructions.
- (ix) After the track has been cleared of all obstructions the Gateman shall inform the Station Master/ JSGR 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 is clear of any obstruction.
- (xi) Gateman shall secure the Gate against road traffic by means of safety chains with 'STOP' disc and padlocks and thereafter exhibit green hand signal if the Gate is not obstructed.
- (xii) Station Master/JSGR shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- (xiii) Normal working will be resumed only after maintenance staff rectify the defective lifting barriers and issue reconnection/fit memo for the same.

**8. OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING: -**

If there is a rail fracture or obstruction on the track due to falling of a tree, fouling by road vehicle or derailment when is visible to the Gateman, the Gateman and Station Master will adopt the procedure given under item no. 7 above. If the obstruction fouls the level Crossing Gate, Gateman must keep the Gate closed against road traffic till the track is cleared of the obstructions.



#### **4.0 WORKING INSTRUCTIONS OF 'SPL' CLASS INTERLOCKED ENGINEERING LEVEL CROSSING GATE AT KM.518/2 (No.JT-02) BETWEEN BXQ – JSGR STATIONS.**

##### **4.1 GENERAL INSTRUCTIONS: -**

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

1.	Number of level crossing gate	:	JT-2
2.	Engineering or Traffic Gate	:	Engineering
3.	Under control of Station Master or PWI	:	SE (P-way)
4.	Location at KM	:	518/2
5.	At station	:	BXQ
6.	In between station	:	BXQ-JSGR
7.	BG/MG/NG	:	BG
8.	Single line/Double Line/Multiple Line	:	Double line
9.	Normal position	:	Open to road traffic
10.	Interlocked/Non-interlocked	:	Interlocked
11.	Means of interlocking	:	Interlocked with Gate signals.
12.	Provision of gate Signal at Kms	:	UP line- Up gate stop signal at Km-517.890. DN line- DN gate stop signal at Km-518.240
13.	Signaling arrangement	:	MACLS
14.	Means of communications Telephone/Bell etc.	:	Telephone connection with SM/BXQ
15.	Width of Level Crossing Gate	:	7.5 MTRS
16.	Type of Road	:	Others (ODR)
17.	Name of Road	:	---
18.	Metaled/Non Metaled	:	METALED
19.	Approach Road	:	METALED
20.	Width of the Road	:	7.5 MTRS.
21.	Angle of Road Crossing (incase of the SKEW gates)	:	-----
22.	Road Gradient (if any)	:	(a) North-East side--- 1 in 60 (b) South/West side--- 1 in 60
23.	Road alignment (straight/curve)	:	(a) North-East side--- Curve (b) South/Westside--- Curve
24.	Provision of height gauge	:	Not Provided
25.	Type of Barrier	:	Winch operated lifting barrier
26.	Length of check Rail	:	9.5M
27.	Road surface in between level crossing gates.	:	Leveled with hexagonal concrete Blocks
28.	Length of Rumble strip/speed breakers.	:	9.5mtrs
29.	Road Signs	:	Provided
30.	Speed breakers indication board	:	Provided
31.	TVU	:	264080 on 01/2009
32.	Census next due on	:	01/2012
33.	Demarcation for placement of detonators.	:	Provided
34.	No.of gateman working	:	03
35.	Nearest Railway Medical Assistance	:	JSG
36.	Nearest Private Medical Assistance available (if any)	:	JSG
37.	List of equipment available Yes / No.	:	Yes

4.2 **EQUIPMENTS TO BE AVAILABLE AT THE GATE:**

<b><u>SL. NO.</u></b>	<b><u>ITEMS</u></b>	<b><u>QUANTITY</u></b>
1.	Hand signal lamp /Tri Colour Torch	: 03 (5 on Quadruple/Line or twin single line)
2.	Hand Signal Flag Green	: 01(Mounted on stick)
3.	Hand Signal Flag Red	: 03 (6 on Quadruple/line or Twin single line and 7 in case Hexable section mounted on sticks)
4.	Banner Flag Red	: 03 (5 on Quadruple/Line or twin single line)
5.	Posts for exhibiting red banner flag	: 02 (4 on Q/Twin single line and 5 on Hexable section.
6.	Spare chains with padlocks	: 02(with stop mark)
7.	Detonators	: In tin case 10
8.	Gate lamps	: 02
9.	Tommy bar	: 01
10.	Motor pan	: 01
11.	Spade/Fowrah	: 01
12.	Rammer	: 01(in case of asphalted road this may not be provided)
13.	Pick axe	: 01(in case of asphalted road this may not be provided)
14.	Tin case for flag	: 01
15.	Cane for oil	: 01
16.	Water pot/Bucket	: 01
17.	Canister for Muster Roll	: 01
18.	Set of spare spectacles of gateman wearing glasses	: 01
19.	Board demarcating protection of level crossing Gate diagram in case of obstruction on gate	: 01
20.	Basket	: 01
21.	Whistle	: 01
22.	Wall clock	: 01
23.	Small size chains with padlocks to be used in case of failure of gate boom lock.	: 02

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

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

- i) Gate working instructions in Hindi / English.
- ii) Gate working instructions in local vernacular language.
- iii) Gateman Rule Book in Local vernacular language.
- iv) List for tools and books
- v) Duty Roster.
- vi) Certificate for working as gateman.
- vii) Bio-Data particulars of Gateman, including date of passing vision test, initial/refresher course, safety camp etc.
- viii) Accident Register.

- ix) Records of last census of road traffic at level crossing gate.
- x) Public complaint Book.
- xi) Inspection Book.
- xii) S & T Register.

#### 4.4 **DUTIES OF GATEMAN:**

1. **ALERTNESS:** The Gateman on duty shall be alert. He should be prepared to take immediate action, when danger is apprehended. Keys of the Gate shall be in his personal custody.
2. **POSITION OF GATE KEEPER DURING PASSAGE OF TRAINS:**  
During passage of trains, Gateman will stand in the manner indicated below:
  - i) Gateman will stand attentively in front of the Gate – lodge facing the approaching train.
  - ii) In daytime, Gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.
  - iii) In nighttime, Gateman shall hold lighted hand signal lamp with white light facing the track.
  - iv) He shall keep the whistle slung around his neck from a cord.
3. **ROUTINE DUTIES OF GATEMAN:**
  - i) Gateman shall ensure that red banner flag by day and red light by night is placed across the track whenever the Gate is kept in open condition for passage of road vehicles during emergency and obstruction on the track.
  - ii) Gateman shall ensure that all Gate lamps and hand signal lamps are lighted and kept burning continuously from sunset to sunrise.
  - iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the Gate unless his reliever arrives and takes over charge from him. However, if it is necessary to leave the Gate in an emergency, he must close and lock the Gates against road traffic, before leaving the Gate.
  - iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.
  - v) Gateman shall watch all passing trains and keep sharp look out for any unusual like hot axle, hanging chains, hanging battery, any vehicle/wagons /trains/battery/box on fire, shifted load, falling material like brake blocks, brake beams, safety bracket, vacuum cylinder or any other situation endangering safe running of trains.
  - vi) If lifting barriers get damaged or becomes out of order, the Gateman shall use the spare chain with disc and padlocks for securing the Gate against road traffic.
  - vii) Gateman shall report the SM or PWI any defect in his Gate or apparatus pertaining to it, as soon as possible.
  - viii) Gateman shall wear badge and prescribed uniform while on duty at level crossing Gate.
  - ix) Gateman shall ensure that he is having competency certificate in his possession while on duty.
  - x) Gateman shall work the Gate as per Gate working instructions and remain well conversant with these instructions.
  - xi) Gateman shall ensure that equipment supplied at the Gate is in good order and ready for immediate use.
  - xii) Gateman shall see that the channel for the flange of the wheel is kept clear.
  - xiii) Gateman must keep the road surface well-watered and rammed in case of un-metalled roads.
  - xiv) Gateman must be vigilant to see that inconvenience to road users due to closure of Gates should be to the minimum possible extent.

- xv) Gateman shall prevent tress passing by persons or cattle to the maximum extent.

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

**7 ACTION IN EMERGENCY AT THE LEVEL CROSSING:**

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

The gateman shall protect the line as under: -

**(b) ON DOUBLE LINE SECTION:**

- (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 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 in 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- (v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- (vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.

- (vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- (viii) Thereafter, he shall warn the Loco Pilot and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(c) **Other actions to be taken by Gateman:**

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

4.5 **SPECIAL INSTRUCTIONS:-**

1 **MODE OF OPERATION :-**

This is an Engg. interlocked L.C. Gate situated at Km-518.060 in BXQ-JSGR section. This gate is interlocked with Gate stop signals. UP Distant of BXQ station is combined with UP Gate stop signal of the gate. Telephone communication is provided between the L C. gate lodge with SM office of BXQ Station. The level crossing gate is of lifting barrier type operated by means of winch provided at the gate lodge. The normal position of the gate is open to road traffic. A Four-lever ground frame is provided at the gate lodge. The key of the LC remains in the winch when the gate is opened condition. When it is necessary to close the gate for taking OFF signals or for train passing, the SM on duty/BXQ shall inform the gate man to close and lock the gate. The gate man on duty shall then close the barriers of the LC gate by operating winch. Then key 'M' is to be extracted from the winch, which releases GF-2 when inserted in the lever of GF-2. When GF-2 is reversed, it locks the booms of the gate and releases GF-3 & GF-4. Then Gateman shall reverse the GF-3 or GF-4 for taking OFF concerned UP & DN Gate Stop signals. GF-3 or GF-4 can be used to put back the concerned Gate stop signal to on position in case of emergency. Lever No. GF-1 is spare lever.

The approach Warning provided which will be effective with occupation of track circuit 29 T at UP Adv.starter of JSGR. Similarly, in DN direction with track circuit 40T of BXQ.

After passage of the Train, the gate man shall normalize the concerned GF-3 or GF-4, which will unlock the gate boom and releases Key 'M'. The gate man shall extract the control key 'M' from the GF-2 and open the gate by inserting the Key 'M' into the winch for normal passage of road traffic. The LC gate shall be so worked as to cause least possible inconvenience to the vehicular traffic consistence with safety as per subsidiary rule 16.03.01 (a).

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

2. **INTIMATION TO GATEMAN-**

- i) Immediately after departure of train, Station Master/BXQ shall advise the gateman through telephone connected at his end, the number, description, direction and expected time of passage of the train at the gate.
- ii) This advice shall be given by the Station Master/BXQ to the gateman, as soon as he receives train entering section advice from SM/JSGR.

- iii) If the actual running time of the train from either end of the section is less than 10 minutes, Station Master/BXQ will convey this advice to the gateman before obtaining/granting line clear.
- iv) It should be the duty of the gateman to ensure that the gate is closed in time, so that there is no detention to the train or excessive detention to road traffic.

### **3. FAILURE OF TELEPHONIC COMMUNICATIONS:**

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, Station Master/BXQ shall issue a caution order to the Loco pilot of DN train.
- ii) Station Master/BXQ shall advise the Loco pilot to whistle continuously and proceed cautiously while approaching the gate.
- iii) In case the gate signal is 'ON' he should stop at the gate signal and follow the procedure laid down under GR 3.73.
- iv) In case of an approaching train, the Station Master/BXQ shall advise the Station Master/JSGR under exchange of private number that the telephone at the gate has failed.
- v) The Station Master/JSGR shall then issue a caution order to the Loco pilot before dispatching a train in the block section from his end.
- vi) Station Master/BXQ will also advise the gateman through Gangman/Patrolman/Loco pilot of the first train that the telephone has become defective.
- vii) Station Master/BXQ should also advise S&T staff responsible for maintenance of the telephone to rectify the same at the earliest.
- viii) Normal working will be resumed only after S&T staff rectifies the telephone and issue reconnection/fit memo for the same.

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

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

### **5. 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 gate winch, gate lever or the key transmitter, then gateman must immediately inform the Station Master / BXQ on duty on telephone, under exchange of private number.

- ii) Thereafter, the gate must be treated as non – interlocked and procedure for reception/ despatch of trains as prescribed for non – interlocked gates should be adopted.
- iii) Station Master on duty / BXQ shall issue a caution order to the Loco pilot of a departing train.
- iv) He shall also advise the station Master/JSGR at the despatching end, under exchange of private number, to similarly issue a caution order to the Loco pilot before despatching a train into the block section from his end.
- v) Station Master / BXQ will advise S&T staff responsible for maintenance of winch/key transmitter to rectify the defect at the earliest.
- vi) Normal working will resumed only after S&T staff repairs the winch/key transmitter and issue reconnection/fit memo for the same.

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

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

#### **7. DEFECTIVE GATE SIGNALS:**

- (i) The gateman shall treat the gate signal as defective and must not take off them under following circumstances:
  - (a) If gate signals can be taken 'OFF' without closing the gate, or
  - (b) The key can be extracted from the operating winch when the gate is in open condition, or
- (ii) If the Gate or the Gate Signal or Distant Signal becomes defective in 'OFF' position, the gateman will make all efforts to put it at 'ON' position even by cutting signal wires/power, if necessary.
- (iii) The gateman will immediately advise the Station Master/BXQ on duty, under exchange of private number, regarding defective gate signals.
- (iv) Thereafter, the gate must be treated as non – interlocked and procedure for reception/dispatch as prescribed for non-interlocked gates should be adopted.
- (v) He shall show green hand signal flag by day and green light by night to the passing train after closing the gate.
- (vi) Station Master on duty/BXQ will issue a caution order to the Loco pilot of DN train.
- (vii) He shall also advise the Station Master/JSGR, under exchange of private number, to similarly issue a caution order to the Loco pilot before despatching train into the block section from his end.

- (viii) Station Master/BXQ shall advise S&T staff responsible for maintaining the gate signal to repair the same at the earliest.
- (ix) Normal working will be resumed only after S&T staff rectify the defective gate signal and issue reconnection/fit memo for the same.

**8. OBSTRUCTION AT THE GATE:**

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

**9. OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:**

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



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

This is a ‘B’ Class Station with Standard II (R) Interlocking (with isolations). The points and Signals are power operated from composite miniature central panel installed in the Station Master’s Office. The Station is equipped with manually operated Multi Aspect Colour Light Signalling.

**1.1 DESCRIPTION OF PANEL:**

The yard layout is depicted on the panel and the panel is fixed parallel to the track so that when SM on duty faces the panel, the yard drawing of the panel corresponds to the actual layout.

**1.1.1 DESCRIPTION OF POINT PUSH BUTTON (RUNNING LINE POINT): -**

<b>Sl. No.</b>	<b>POINT No.</b>	<b>COLOUR OF BUTTON</b>	<b>DESCRIPTION</b>
1.	30	BLACK	Cross over Point between DN main line and UP main Line at BXQ end.
2.	31	BLACK	Cross over Point between Line No.2 and Line No. 3 at JSG end.
3	32	BLACK	Cross over Point between UP main line and DN main line at BXQ end.
4	33	BLACK	Cross over Point between Line No.1 and Line No. 2 at IB end.
5	34	BLACK	Cross over Point between Line No.3 and Line No. 4 at BXQ end.
6	35	BLACK	Cross over Point between Line No.2 and Line No. 3 at JSG/IB end.
7	36	BLACK	Cross over Point between Line No.1 and Line No. 2 at BXQ end.
8	37	BLACK	DS Point on Line No.1 at IB end.
9	39	BLACK	Cross over Point between Line No.1 and Line No. 2 at JSG/IB end.
10	41	BLACK	Cross over Point between Line No.3 and Line No. 4 at JSG/IB end.

**1.1.2 DESCRIPTION OF POINT GROUP BUTTON: -**

These are two buttons at the top of panel one for Normal and one for reverse operation of points. 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.

**1.1.3 OPERATION OF POINTS BY POINT PUSH BUTTONS: -**

Points are operated for NORMAL to REVERSE or vice versa by operating concerned point push button along with common point group button for normal or reverse operation. When the points are required to set from normal to reverse, the concerned point push button along with common point group button for reverse operation are to be pressed simultaneously. As soon as the operation is initiated the RED indication will start flashing till the point is correctly set to reverse at site and GREEN indication glows. Similar operation shall be done when the points are required to be set from reverse to normal. Only one point can be operated individually at a time.

**1.2.0 POINT INDICATIONS: -**

Points are normally operated automatically along with route setting operation. However, required points can also be operated individually. For this, POINT BUTTONS, which are 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 (which are BLACK with red dot on it) 'N' or 'R' as per requirement fitted on the top of panel board. The indication for points are as follows; -

- 1.2.1. When a point is set and locked in Normal position, a horizontal 'WHITE' indication appears suggesting that the point is set in NORMAL position.
- 1.2.2. When a point is set and locked in REVERSE position, a diagonal 'WHITE' indication appears suggesting that the point is set in REVERSE position
- 1.2.3. When the points of any route have been correctly set and relevant signal taken 'OFF', RED indication near the point on the panel appears indicating that the concerned points are locked either in NORMAL or REVERSE position as the case may be.
- 1.2.4. When the points are not set or locked either in NORMAL or in REVERSE correctly, the normal and reverse steady indication will not be there but the WHITE indication will start flashing till such time the point is housed & 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 WHITE indication will flash during operation of point also. After completion operation of point during crank handle operation, NORMAL or REVERSE indication appears on panel.
- 1.2.5. All points over running lines are operated by electric point machines.

**1.2.6 NON SETTING OF POINTS: -**

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

**1.2.7 DESCRIPTION OF CRANK HANDLE BUTTONS: -**

All motor operated points in the yard have been grouped into six crank handle zones for emergency / manual operation of points by crank handles as follows:

SL NO.	CRANK HANDLE	COLOUR OF BUTTON	CONTROL POINTS
1	CH1	BLUE	36 A and B, 39 A and B.
2	CH2	BLUE	30 A and B, 32 A and B.
3	CH3	BLUE	34 A and B, 41 A and B.
4	CH4	BLUE	31 A and B, 35 A and B.
5	CH5	BLUE	33 A and B.
6	CH6	BLUE	37.

Crank Handle buttons must be operated in conjunction with GROUP TRANS or GROUP RELEASE button to transmit or receive the crank handle.

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### 1.3.0 **SIGNAL PUSH BUTTON:**

Push buttons for operation of signals are provided near the signals on the panel. These are operated in conjunction with Route button (white coloured) to operate the signals.

### 1.3.1 **DESCRIPTION OF SIGNAL BUTTONS:**

SL. NO.	BUTTON NO.	COLOUR	DESCRIPTION
01	S1	RED	Press to take 'off' UP Home Signal for Line No. 1,3 & 4 from JSG end along with respective route button
02	C1	RED with WHITE DOT	Press to take 'off' UP calling on Signal for line No. 1,3 & 4 from JSG end along with respective route button after the train has occupied Calling-on track circuit.
03	S2	RED	Press to take 'off' DN Home Signal for Line No.1, 2 & 4 from BXQ end along with respective route button.
04	C2	RED with WHITE DOT	Press to take 'off' DN calling on Signal for line No. 1, 2 & 4 from BXQ end along with respective route button after the train has occupied Calling-on track circuit.
05	S3	RED	Press to take 'off' Home Signal for Line No. 1,3 & 4 from IB end along with respective route button.
06	C3	RED with WHITE DOT	Press to take 'off' calling on Signal for line No. 1, 3 & 4 from IB end along with respective route button after the train has occupied Calling-on track circuit.
07	SH4	YELLOW	Shunting towards line no. 1, 2, 3 & 4 (BXQ end)
08	SH9	YELLOW	Shunting towards line no. 1, 2, 3 & 4 ( JSG end)
09	SH11	YELLOW	Shunting towards line no. 1, 2, 3 & 4.(IB end)
10	S12	RED	Press to take 'off' DN Starter on line No.1 along with route button.
11	SH12	YELLOW	Shunting from line No-1 towards IB/JSG.
12	C 12	RED with WHITE DOT	Press to take 'off' calling on Signal below starter No-12 along with respective route button.
13	S14	RED	Press to take 'off' DN Starter on line No.2 along with route button.
14	SH14	YELLOW	Shunting from line No-2 towards IB/JSG.
15	C 14	RED with WHITE DOT	Press to take 'off' calling on Signal below starter No-14 along with respective route button.
16	S16	RED	Press to take 'off' DN Starter on line No.4 along with route button.
17	SH16	YELLOW	Shunting from line No-4 towards IB/JSG.

18	C 16	RED with WHITE DOT	Press to take 'off' calling on Signal below starter No-16 along with respective route button.
13	S19	RED	Press to take 'off' UP starter on line No.4 along with route button.
14	SH 21	YELLOW	Shunting from line No.2 towards BXQ end
15	SH 22	YELLOW	Shunting from line No. 3 towards JSGR/IB end.
16	S23	RED	Press to take 'off' UP starter on line No.1 along with route button.
17	S24	RED	Press to take 'off' UP Advanced starter signal with route button towards IB.
18	S26	RED	Press to take 'off' DN Advanced starter signal with route button towards JSG.
19	S27	RED	Press to take 'off' UP starter on line No.3 along with route button towards BXQ.
20	S29	RED	Press to take 'off' UP Advanced starter signal along with route button towards BXQ.

### 1.3.2. **SIGNAL INDICATIONS:** -

All signals in the yard are depicted on the panel alongside the track as per their respective position in the yard. The aspects of all signals in the yard, at any time, are shown on the signal indications depicted on panel.

### 1.4 **ROUTE BUTTONS:** -

Route buttons are provided separately on each running line on the panel for initiation of route (viz. L1 UN, L1UN1,L1UN2, L2 UN,L2UN1,L2UN2, L3 UN, L4 UN & L4UN1). Common route buttons are also provided for taking off starters (viz.: 24AT UN, 26 AT UN & 29 AT UN). An individual route button is provided for taking off Advance starter (Viz.: 24 UN, 26 UN & 29 UN). For clearing the signals it is necessary to operate the signal buttons and the concerned route button concurrently. In the panel, the routes are set automatically by operation of entry and exit button.

### 1.4.2 **DESCRIPTION OF ROUTE BUTTONS**

SL. NO.	BUTTON NO.	COLOUR	DESCRIPTION
1	L1 UN	WHITE	Common route button for taking off Home signal of line No.1 setting overlap up to advanced starter signal No 24 at IB end.
2	L1 UN1	WHITE with BLACK DOT	Common route button for taking off Home signal setting overlap to ORL/DS or UP/DN Calling-On or back shunts (SH-4 or SH-9 or SH-11) for Line No.1.
3	L1 UN2	WHITE with BLACK DOT	Common route button for taking off Home signal of line No.1 setting overlap up to advanced starter signal No 26 at JSG end.
4	L2 UN	WHITE	Common route button for DN Home for line No.2 setting overlap up to advanced starter -26.

5	L2 UN1	WHITE with BLACK DOT	Common route button for DN Home setting overlap to ORL or UP/DN Calling-On or back shunts (SH-4 or SH-9 or SH-11) for Line No.2
6	L2 UN2	WHITE with BLACK DOT	Common route button for DN Home for line No.2 setting overlap up to advanced starter -24.
7	L3 UN	WHITE	Common route button for UP Home for line No.3 setting overlap up to edge of LC Gate at KM 517/00-01 or UP Calling-On or back shunts (SH-4 or SH-9 or SH-11) for Line No.3.
8	L4 UN	WHITE	Common route button of Line No.4 for DN Home setting overlap up to advanced starter No-26 or UP Home setting overlap up to advanced starter No-29.
9	L4 UN1	WHITE with BLACK DOT	Common route button for UP or DN Home setting overlap to ORL or UP/DN Calling-On or back shunts (SH-4 or SH-9 or SH-11) for Line No.4
10	24 AT UN	WHITE	Common Route button for Starter signal Nos.12 or 14 or 16 or 22 towards IB.
11	24 UN	WHITE	Route button for advanced starter signal No.24 towards IB.
10	26 AT UN	WHITE	Common Route button for DN starter signal No.12 or 14 or 16 or 22 towards JSG.
11	26 UN	WHITE	Route button for DN advanced starter signal No. 26.
12	29 ATUN	WHITE	Common Route button for UP starter signal No.19 or 23 or 27.
13	29 UN	WHITE	Route button for UP advanced starter signal No. 29 towards BXQ.

#### 1.5 DESCRIPTION OF KEYS, COUNTERS , INDICATIONS AND OTHER BUTTONS.

SL. NO.	BUTTON NO.	COLOUR	DESCRIPTION
1	SM's Emergency Point Key		This key is required to be inserted and turned to right whenever the point is to be operated in track circuit failure condition. This key shall be in the personal custody of SM on duty.
2	SM's Panel operation Key		This key is required to be inserted and turned to right for any operation of Points, Signals etc. This key shall be in the personal custody of SM on duty.
3	Emergency Point operation push button	Black colour with Red dot	This is to be pressed for emergency operation of point in association with SM's emergency point key when concerned point zone track circuit has failed.
4	Emergency Point operation counters.		This registers the emergency operation of points.
5	Emergency route release counters.		This registers the emergency route release operation.

6	Emergency Route Release Button	White with Red dot	For Emergency Route Release
7	Group Trans Button	White colour button with Black dot	To be pressed for transferring the control to concerned Crank Handle along with concerned Button
8	Group Release Button	White colour button with Black dot	To be pressed for releasing the control from the concerned Crank Handle along with concerned Push Button
9	Point Normal push button	Black colour with Red dot	This is to be pressed to initiate Normal setting of points along with concerned button for individual operation of points
10	Point Reverse push button	Black colour with Red dot	This is to be pressed to initiate Reverse setting of points along with concerned button for individual operation of points
11	Signal Cancellation Push Button	Red colour button	For cancellation of a signal, which has been already taken off.
12	Signal Lamp Failure /Point Failure Buzzer Muting Button	Red colour with White dot	To be pressed for acknowledging Signal Lamp Failure/Point Failure Buzzer.
13	Button held buzzer		This button comes to operation when any of push buttons is stuck up
14	Signal/Point failure buzzer		This button comes to operation when signal/Point failure occurs.
15	Button Held Buzzer ack. Button	White colour button with black dot	For muting the button held buzzer, which starts buzzing when a button is held up.
16	Calling on counters		These are counters to record the operation of UP & DN Calling- on signals.
17.	Gate release button	Chocolate	This button is to be pressed along with group trans/release button
18.	Emergency gate release button	Chocolate with Red	This button is to be pressed along with concerned gate button.
19.	Train arrived Ack. Button	Chocolate with White dot	This button is to be pressed after complete arrival of train for block release.

### 3.0 **TRAIN ARRIVAL INDICATION THROUGH AXLE COUNTER:**

The system provides for automatic check for last vehicle arrival through provision of axle counter. Axle counters are provided in JSGR – BXQ (both for UP & DN line) and JSGR - IB section to check the complete arrival of trains. The system is interlocked with respective Block Instrument. When the Axle counter section indication provided for each direction on the panel individually for sections indicates 'RED' i.e. occupied even after the complete arrival of trains, the Block instrument of the respective section can be normalized after ensuring complete arrival

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of trains by means of physical verification of last vehicle for stopping as well as run through trains (refer resetting procedure of Axle counter).

#### 4.0 **POWER FAILURE:**

Normal power supply to the signalling and interlocking installations at this station is drawn from SEB power supply source (AC 230 Volt / 50 Hz). In SM's Office there is SM power panel, which represents the voltage of the integrated power supply system.

1. In case voltage drops 105.9V an audible buzzer appears for starting Generator.
2. In case voltage drops 105.1V an audible buzzer appears for emergency start of Generator.
3. In case voltage drops 104.3V an audible buzzer appears for system shut down.

The SM now has to start the diesel generator for standby (Auxiliary) power supply. After stable run of the Diesel generator, the SM on duty has to operate the change over switch for connecting the auxiliary supply to the signalling installation. On resumption of power supply, the Diesel generator shall be stopped by SM on duty after isolating Diesel generator by change over switch. Each time the power supply goes OFF or ON SM on duty shall acknowledge. In case of any audible buzzer in SM's power panel, SM on duty should acknowledge the buzzer by pressing 'buzzer' stop button.

Secondary cell back up through integrated power supply system are provided to prevent possibility of blank signals in case of SEB power supply failure. Whenever SEB power supply fails Secondary cell back up through integrated power supply system will immediately extend power supply to signals thereby preventing blank signals.

Based on the indication shown in the SM's Power Panel SM on duty should start DG for avoiding any case of shut down of power sub system of integrated Power Supply system.

Solar Power supply is provided in the station as standby, power supply.

If there is any indication on ASM's power panel regarding deviation in IPS system, S&T staff shall be called for rectification.

#### 5.0 **EMERGENCY ROUTE RELEASE COUNTER**

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

#### 6.0 **EMERGENCY ROUTE RELEASE INDICATION (WHITE) / EMERGENCY ROUTE RELEASE BUTTON (WHITE WITH RED DOT)**

This panel interlocking is based on the principle of 'DEAD APPROCH LOCKING'. As such when a route is set and signal is taken off on the route, the route gets locked. Normally the route is released by the passage of the train over the route. When it becomes necessary to alter the route after the signal has been taken off vide SR 3.36.02 (a), the concerned signal must be put back to danger by pressing the Signal cancellation button and the concerned signal button. Then the emergency route release button (white with red dot) positioned at the top of panel to be pressed after breaking the seal and subsequently the concerned signal button pertaining to the route is to be pressed. A white light will flash (Up or Down) indicating that the timer is working. After 120 seconds, the white light along with the white strip of light will disappear suggesting the route has been released.

In case the route illumination (a white strip of lights) does not disappear, it suggests that the route is not released/cancelled. In such case the emergency cancellation of route has to be resorted to. The concerned S&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.

7.0 **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. If such operation is necessary, the SM on duty, after ensuring that no vehicle is standing on the concerned point track circuit and SM's emergency point key is 'IN' and turned shall press emergency point operation button by breaking the seal along with relevant point button simultaneously. Then retaining point button pressed, emergency point operation button is to be released and the point group button normal / 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. Before initiating emergency point operation when the concerned point zone track circuit is showing occupied SM on duty must carry out physical verification at site to ascertain that the said track circuit is clear of vehicles. The concerned S&T staff should be advised immediately to get the emergency point operation button resealed after rectification of fault, if any.

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

All push button are self-restoring type. A button held acknowledgement push button (white with red dot) 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 till 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.

9.0 **OVERLAP TIME RELEASE INDICATION (WHITE LIGHT) :** -

These are two indications (white lights) for UP overlap time release and DN overlap time release to indicate the release of overlap. These indications will flash during releasing of overlap

10.0 **TRACK CIRCUITS:** -

The station yard is fully track circuited from Home signal to Home signal and also for 7 rail lengths in rear of the Home signals on either side. Track circuits 1AT, 2AT & 3 AT are calling-on trackcircuits.30AT/30BT, 31/33BT, 31AT, 32AT, 32BT, 33AT, 34AT, 34BT, 35/39AT, 35BT, ,36AT, 36BT, 37/39T, 41AT, 41BT are Point zone track circuits. L1T1, L1T2, L1T3, L2T1, L2T2, L2T3, L3T1, L3T2, L3T3, L4T1, L4T2, L4T3 are berthing track circuits. Other track circuits namely 1T, 2T1, 2T2, 3T, 3T1, 24AT, 26AT, 29T & 29AT are for signal replacement, route holding, block release, etc. Indications for all track circuits are indicated on the panel. Normally these are not lit when the track circuits are clear and RED light appears when the track circuit is occupied/failed. White strip lights for the track indications appear when the relevant route is set. In case of failure of any track circuit, the controlled signals or points are to be treated as non-interlocked and trains shall be worked as per relevant rules.

11.0 **STATION MASTER'S PANEL CONTROL KEY:** -

The panel is fitted with Station Master's lock up key to prevent any unauthorized operation of the Panel. The SM/SS 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 & GR 5.08. The key locks the panel board and no operation is 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'.



**12.0 CRANK HANDLE CONTROL KEY AND OPERATION: -**

When any point fails to operate normally by the route setting operation or through the concerned Point button from control panel, it is inevitable to operate the points with crank handle. Crank handles are interlocked with signals and interlocking system. Crank handles are for all motor operated points at the station. The Crank Handle push button no. CH1/CH2/CH3/CH4/CH5 and CH6 (BLUE) and Group Trans/Release button (WHITE WITH BLACK DOT) are provided at the top of the panel board. The CH 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 extraction from RKT. This is called 'Crank handle key LOCKED' indication. When there is no light or blank, it suggests that the KEY is OUT of RKT. The crank handle key in RKT in the end locations can be released from the RKT. The SM has to press concerned crank handle button and Trans button. This will enable SM/TP to extract crank handle key CH1/CH2/CH3/CH4/CH5 and CH6 from RKT at end location. SS/SM/TPM on duty after extracting the crank handle key from RKT at end-location, insert it in the space provided for it on the point machine and turn it to open up the slot for crank handle. After inserting the crank handle in the point machine he shall operate it to set the point in desired position. After completion of point work the crank handle key is to be inserted in the RKT at end location and transmitted to station. Station Master on getting 'Key IN' flashing indication that will appear on panel, shall press relevant CH button & Group Release button to get the steady key "IN" indication. SM on duty shall personally ensure clamping and padlocking all facing and trailing points en-route. The cases of failure of Motor operated points should be promptly reported to the concerned ESM/JE/SE(Signal) for immediate rectification. SM on duty as per OM 20.06 (d) shall maintain an emergency crank handle register. The procedure for use of crank handle for Motor operated points shall be followed in terms of operating Manual 20.06.

**13.0 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 point group button one at a time in the desired position or by operating signal button and route Button. As soon as the points on route, overlap and isolation 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 & locked. The signal 'off' indication will appear on the panel provided other conditions for taking 'OFF' reception signals are satisfied.

**14.0 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 point 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 and closure of L.C.gates must be ensured. Then the concerned Advanced starter signal button shall be pressed along with the Advanced starter route button for two to three seconds and released. This will clear the Advanced starter signal and a white strip of light will appear on the panel up to the foot of the Advanced starter signal.

To take off the starter signal, concerned signal button to be pressed along with common Route button to be pressed for two to three seconds and released. This will clear starter signal and a white Strip of light will appear on the route from the concerned Starter to the Advanced starter signal.

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

Miniature colour light Calling on signal is provided below the Home signals in terms of GR 3.13(6) (b) and below starter signal No.12, 14 & 16. A Calling on signal shows no light in the 'ON' position. A calling on signal below Home signal is taken 'OFF' for reception of a train when

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the Home signal above it cannot be taken 'OFF' due to failure of track circuit or any other reason or for admission of train on blocked line. A calling on signal below starter signal is taken 'OFF' for dispatch of a train when the starter signal above it cannot be taken 'OFF'.

To take off Calling-on signal the train must come to a stop at the foot of the 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 by 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 switches 'C1'/ 'C2/C4' (RED WITH WHITE DOT) as the case may be), shall be pressed simultaneously along with the concerned route button for few 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. For loop lines, route button UN1 (WHITE WITH BLACK DOT) shall be pressed for respective setting of the overlap points. Each operation of Calling On signal shall be registered in respective Calling On signal counter (UP or DN) by registering next higher number. A separate register is to be maintained for this purpose.

#### 14.2 **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.

#### 14.3 **REPLACEMENT OF SIGNALS TO 'ON':**

Signals are replaced to 'ON' automatically by the passage of a train past 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) are to be pressed simultaneously.

#### 14.4 **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 signal and starter signals.

Home signals and Advanced Starter signals are interlocked with respective Block instruments. Adv. Starter No.26 of JSGR is released by Home signal No.4 Of JSG and similarly, Adv. Starter No.25 of JSG is released by Home signal No.1 of JSGR.

Advanced starter is interlocked with respective block instrument in sending position i.e., train going to position and by axle counter for last vehicle check.

The block instrument cannot be made normal unless the respective Home signal is put back to 'ON'.

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.

#### 14.5 **PILOTING OF TRAINS:** -

In the event of failure of both Home signal and Calling ON signal simultaneously, it is inevitable to pilot the train 'IN'. For piloting the train, the setting of route must be ensured by SM on duty personally and the points en-route must be clamped & padlocked at both facing & trailing end by Operating staff. Same procedure shall be adopted when route illumination fail to disappear. Facing and trailing ends of the all-motor operated points must be clamped and padlocked while piloting 'IN' or 'OUT' and during non-signalled movement.

#### 14.6 **SHUNTING:**

For shunting, OFF aspect of starter & shunt signals shall be used. For back shunting, shunt signals provided on each side of the yard shall be used.

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## 15.1 TOKEN LESS BLOCK INSTRUMENT

### **KEYS & BUTTONS**

**SM's KEY**-Intended to lock the instrument and to prevent unauthorised manipulation of the same during the absence of SM.

**Shunting Key**- This key remains normally inserted in the instrument and can be removed only if block handle is in either line closed position or TGT position.

**Push button PB1**- This is a push button used to transmit DC pulses for exchanging bell code signals.

**Push button PB2**- This is a push button used in conjunction with PB1 for releasing block handle of other instrument.

**Switch S1 with counter**- It is used for cancellation of line clear. The counter registers number of such operation.

**Switch S2 with counter**- For cancellation of line clear by the sending station after the train has entered the block section & return to the sending station and received on proper signals. The counter registers the number of such operation.

**TOL Indicator**- This indicator normally displays a white indication and displays red indication with caption "Train on line" when a train enters the block section.

**Time-release indicator**- This indicator is operated during canceling line clear operation when the required time delay has taken place. Normally the indicator displays white with caption 'Locked' and changes over to green with caption 'Free' when occupied.

**Galvanometer**- It deflects the flow of current from one instrument to another when either push button PB1 or PB2 is pressed

**Block handle**- Block handle can be set at 'N' (Line closed), 'L' (Train going to) and 'R' (Train coming from position). It is locked by the block lever lock in all positions.

**Buzzer BZ1**- Audible indications at both stations when the train enters the block section.

**Buzzer BZ2**- Audible indication at the receiving station when the whole of the train has arrived.

## 15.2 MODE OF SIGNALING OF TRAINS ON DAIDO TYPE TOKENLESS BLOCK INSTRUMENT FOR A TRAIN TO LEAVE A BLOCK STATION FOR THE BLOCK STATION IN ADVANCE (BWM 4.33)-

### Despatching Station

[Block handle in 'Line Closed position. All concerned signals & signal buttons normal]

1. Inserts SM's key and turn
2. Presses the button PB-1 & sends call attention code of bell signals.
5. Sends 'Attend telephone' code of bell signals
7. Attends on telephone, gives the name of the station & asks B if he is prepared to receive train No .....  
[Refer BWM Rule No.2.07 (3)]

### Receiving Station

[Block handle in 'Line Closed position. All concerned signals and signal buttons normal]

3. Inserts SM's key
4. Acknowledges the call attention code of bell signals by pressing the button PB-1.
6. Acknowledges the 'Attend telephone' code of bell signals & attends on telephone.
8. Gives out the name of the station, and if he is prepared to receive, replies, 'Yes' take line clear for train No. .... Private Number.....

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| <p>9. Repeats the Private Number given by SM 'B' and replaces telephone.</p> <p>11. Sends 'Is line clear enquiry' code of signals through button PB-1 and keeps the buttons PB-1 &amp; PB-2 pressed on the last beat for 5 sec. or until the Galvanometer needle vibrates.</p> <p>14. Turns operating handle</p> <p>15(a) Takes 'OFF' the last Stop signal (after ensuring that the route is clear and points are correctly set and locked)</p> <p>(b) Train enters Block section.</p> <p>(c) Last Stop signal returns to 'ON' position.</p> <p>(d) 'Train on line' indication appears automatically.</p> <p>(e) Buzzer 1 starts operating.</p> <p>17. Sends 'Call attention' code of bell signals through button PB-1</p> <p>19. Sends 'Train Entering Block section' code of bell signals after complying with BMW Rule 2.07 (5)</p> <p>21. Buzzer 1 stops.</p> | <p>10. Replaces telephone.</p> <p>12. Turns the operating handle to 'Train coming from' position.</p> <p>13. Acknowledges the "Is line clear" code of bell signals through button PB-1 and keeps the buttons PB-1 and PB-2 pressed on the last beat for 5 seconds or till the Galvanometer needle vibrates.</p> <p>16. 'Train on Line' indication appears automatically &amp; Buzzer 1 starts operating.</p> <p>18. Acknowledges 'Call attention' code of bell signals through button PB-1</p> <p>20. Acknowledge 'train Entering Block section' code of bell signals through PB-1. Buzzer stops.</p> <p>22. Takes 'OFF' the reception signals (after ensuring that the line nominated is clear and points are correctly set and locked).</p> <p>23(a) Train enters the station.</p> <p>(b) Reception signals replaced to 'ON' position automatically.</p> <p>(c) Buzzer 2 starts operating.</p> <p>(d) Buzzer-2 stops when reset push button is pressed.</p> <p>(e) comply with BMW Rule 2.07 (6)</p> <p>24. Sends 'Call attention' code of bell signals through button PB-1</p> |
|---|---|

25. Acknowledges 'Call attention' code of bell signals
26. Sends 'Train out of block section' code of bell signals through PB-1 & the buttons PB-1 & PB-2 pressed on the last beat for 5 sec. or till the Galvanometer needle vibrates.
27. Turns operating handle to 'Line Closed' position.
28. Acknowledges 'Train out block section' code of bell signals through PB-1 and keeps "Buttons PB-1 and PB-2" pressed on the last beat for 5 seconds or till the Galvanometer needle vibrates.
29. Turns operating handle to "Line Closed" position and thus buzzer 2 stops.

14.09 **TO CANCEL A LINE CLEAR WHICH HAS BEEN OBTAINED (BWM 4.34):**

Before proceeding to cancel the line clear obtained, the Station Master at the station at which the instrument is in 'Train going to' position, shall personally ensure that the train concerned has not started, the Last Stop Signal has been properly put back to 'ON' position and the concerned buttons on the panel are normal, and that they remain so until the cancellation procedure is completed.

Despatching Station

(Block Instrument handle at "train going to" position, concerned Last Stop signal is restored to normal) If the departure signals had been taken 'OFF' they are replaced to 'ON' position.

1. Sends "Call attention" code of bell signal on PB-1
3. Sends "Attend Telephone" code of bell Signal on PB-1
5. Takes up telephone, calls out station name and asks for his consent.
7. (a) Turns switch SI, from normal to cancellation position.  
(b) The 'Counter' registers next higher number,  
(c) Waits for 2 minutes.  
(d) T.E.R (Time Element Relay) Indicator operates.
8. Sends 'Call attention' code of bell signals.

Receiving Station.

(Block Instrument handle at "Train Coming from" position)

2. Acknowledges on PB-1
4. Acknowledges on PB-1 and attends telephone.
6. Ensures that reception signal(s) is/are at 'ON', Calls out station name and then gives his consent on telephone.
9. Acknowledges 'Call Attention' code of bell signals.

10. Sends cancellation code of bell signals through PB-1 and keeps the buttons PB-1 & PB-2 pressed for 5 second on the last beat.
11. Turns his Block handle to 'Line Closed' position and acknowledges the code of bell signals through PB-1 and keeps PB-1 and PB-2 pressed for 5 seconds.
12. Turns switch SI to normal position, Turns Block handle to 'Line Closed' position.

**14.10 NORMALISING OF BLOCK INSTRUMENT WHEN TRAINS RETURNS TO THE DISPATCHING BLOCK STATION (BWM 4. 35):-**

Before receiving the train back into the station from which it started, the following is the sequence of actions to be taken:-

- | Despatching Station<br>(Block handle on 'Train Going to' position).  | Receiving Station.<br>(Block handle on 'train Coming from' position)   |
|--|--|
| 1. Advises SM at other end on telephone the intention to push back the train.  | 2. Gives consent on telephone.   |
| 3. Turns the switch S2 from normal to<br>(a) cancellation position.<br>(b) The 'Counter' registers next higher number.<br>(c) Takes 'OFF' the reception signals.<br>(d) Train enters the station.<br>(e) Home signal goes to normal<br>(f) Buzzer 2 for arrival of the train starts operating<br>(g) Buzzer 2 stops when reset push button is pressed. |  |
| 4. Sends 'Train out of Block Section' code of bell signals through PB-1 & keeps the buttons PB-2 pressed for 5 sec. on the last beat or till the galvanometer needle vibrates.   | 5. Turns his block handle to 'Line Closed' position.   |
|  | 6. Acknowledges 'Train out of Block Section' code of bell signal and keeps buttons PB-1 & PB-2 pressed for 5 sec. on the last beat or till the galvanometer needle vibrates. |
| 7. Turns switch S2 to normal position.   |  |
| 8. 'Turns the Block handle to 'Line Closed' position.  |  |

**14.11 OTHER OPERATIONS OF TLBI (DIADO) INSTRUMENT:**

SM shall follow the detail procedure vide para No. 4.36 for shunting between last stop signal & the first stop signal from the opposite direction, 4.37 for shunting between the last stop signal & opposite first stop signal behind departing train, 4.38 for shunting outside first stop signal, 4.39 for working of Motor trolley, 4.40 for working of material trolley, 4.43 for failure of electrical instrument & 4.45 for resumption of normal working of BWM Chapter-IV, Part-II.

**15.0 INTERLOCKING BETWEEN SIGNALS AND BLOCK INSTRUMENTS:**

This station is equipped with the following types of Block Instruments to control movements of trains from and to adjacent Block Sections.

	<b>Section</b>	<b>Type of Block Instrument</b>
1.	JSGR- BXQ	Double Line Lock & Block Instrument.
2.	JSGR- IB	Daido Type Single line Token-less Block Instrument.
3.	JSGR- JSG	Single line token Block Instrument.

**15.1 LAST STOP SIGNAL CONTROL:-**

- a) The block working of the section JSGR- BXQ is controlled by double line SGE Block Instrument, JSGR- JSG single line section is controlled by Token Block Instrument and JSGR- IB single line section is controlled by Tokenless Block Instrument.
- b) The Advanced starter signals are interlocked with the respective Block Instruments in such a way that the Advanced starter signal cannot be taken off unless the Line Clear is obtained from the block station in advance and the handle of the Block Instrument is turned to "TGT" position.
- c) The concerned Advanced starter signal aspect will be changed its "OFF" aspect to "ON" aspect as soon as the leading pair of the train wheels occupies the concerned Advanced starter signal replacement track circuit provided ahead of the respective signal.

**15.2 BLOCK RELEASE:-**

- [a] The Block Instruments are restored to normal (Line Closed condition) only after the complete arrival of the train past the block over lap ahead of the respective Home signal on either side of the Station yard.
- [b] All the power signaling installations in Station are centrally controlled from the Panel and it is explicit in this arrangement that the complete arrival of a train into the yard from the block section cannot be ensured by the operating personnel in the centrally located Panel hence, to ensure complete arrival of the incoming train, Axle Counters are provided between JSGR- BXQ & JSGR- IB sections. However, SM on duty has to ensure complete arrival of trains from JSG through physical verification as no axle counters provided for section JSGR- JSG.
- [c] In the event of failure of Axle Counter, block working of the section concerned is to be suspended, Line clear Station Master shall not normalize the commutator of the concerned Block Instrument to "Line Closed" position and shall not despatch "Train out of block section" report to the station in rear until he is satisfied by seeing the Last Vehicle Indicator on the last vehicle of the incoming train (after arrival) of which Axle Counters failed or obtaining the complete arrival certificate from the Guard of the train. Then SM shall resort to resetting procedure of the axle counter of concerned block section.

**16.0 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 SM on duty personally through panel 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.

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

Crank handle keys are interlocked with the signalling and interlocking system at this station. Crank handles which are normally locked inside the RKT instrument at the station, can be taken out only when all the signals are in the 'normal' position and the route is not locked for whatever

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reasons. Crank handle key can be released by operating common 'TRANS' push button and concerned crank handle button simultaneously. When this key is taken out, no signal of the concerned route can be taken off in the yard. This key can be electrically transmitted to both ends of the yard.

On account of failure of point zone track circuits or crank handle key "LOCK" indication or when route is not released, crank handle key cannot be transmitted by normal operation. Hence SM on duty has to resort to emergency crank handling of points. He shall press the concerned CH button and Trans button simultaneously after ensuring that no vehicle is on the point. The RED and WHITE indication of the CH button will start flashing and after 120 sec the RED indication will disappear indicating that crank handle is free to be extracted by normal crank handle operation. He shall then follow the procedure detailed in para 12.0.

On account of the doubtful operation of any track circuit by a light vehicle including self-propelled vehicle such as motor trolley or light /Diesel shunting engine or tower wagon, indicating the occupation of track, the SM on duty shall satisfy himself positively that the said vehicle has cleared the point zone track circuits by observing the track indications of the track on either side of the crossovers.

#### 18.0 **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. SM 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 SM 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.

#### 19.0 **EMERGENCY OPERATIONS:**

The following are the instructions for emergency operations.

#### 20.1 **EMERGENCY ROUTE 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 SM on duty must press the emergency route cancellation button by breaking the seal and the signal button conforming to the section for which emergency route release is desired. A flashing indication will appear indicating that the cancellation operation has been initiated and after lapse of 120 seconds, the desired route will release provided all other conditions are favorable for route release.

The Veeder counter registers the number of such emergency cancellation operations. SM 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 concerned S&T staff should be advised immediately to get the emergency route release button resealed after rectification of fault if any. The detailed operational instructions are as follows:

#### 20.2 **EMERGENCY OPERATIONS – CANCELLATION OF THE LOCKING OF POINTS NOT RELEASED AFTER THE PASSAGE OF THE TRAIN FOR WHATEVER REASON: -**

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



- a) Firstly it must be ensured that the Signal is in the normal position.
- b) Operation as detailed in para 6.0 of Appendix-B to be followed. In case route is not released even after emergency route cancellation, facility of crank handling of points shall be used. For releasing the crank handle even when lock indication of crank handle appears on the panel, press Group Trans button and crank handle button. After two minutes key from RKT can be extracted. For further operation 17.0 of Appendix 'B' shall be followed.

### 20.3 **EMERGENCY GATE RELEASE OPERATION:**

Emergency gate release operation facility is provided in the panel when the route gets locked out of some failure. For emergency release of gate, the SM on duty shall press emergency gate release button after breaking the seal and concerned gate button. After a lapse of 120 seconds, a red light will glow over the emergency gate release button indicating that the operation is matured. The SM on duty shall then operate concerned gate push button and group Trans button to release the key from RKT on gate. All such operations will be registered in the emergency gate operation counter. SM shall record this and all such operations in the station diary & in the register meant for it. Normally the emergency gate release button is in sealed condition. The concerned S&T staff should be advised immediately to get the emergency gate release button resealed after rectification of fault if any.

### 21.0 **LOCKING OF RELAY ROOM: -**

The relay room should be kept locked with two separate locks, the arrangement should such that one key is kept with the on duty SM in his custody and the other key with the signal maintainer. Whenever required, the Station Master shall hand over the key to the maintainer with proper arrangement with proper acknowledgement in the basement/Relay room key register. The maintainer on receipt of the key from the stationmaster may use the same and the key in his custody to open the relay room by inserting the keys one after another separately into the earmarked locks.

After completion of work, the relay room is to be locked using both the keys separately and designated key should be handed over to the SM on duty. The details of the transaction should be properly recorded in the relevant register at the Station duly signed by SS/SM on duty and the signal staff concerned. If the relay room key is handed over to the Signal staff regarding the interference in safety gears the train shall be piloted in and piloted out.

### 22.0 **MAINTENANCE OF S&T INSTALLATION & ADHERENCE TO MAINTENANCE SCHEDULES:**

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

The tests, checks and replacements etc., including overhauling shall conform 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. During checking/ testing or during day-to-day as well as regular maintenance of S&T gears, SM on duty shall co-operate with S&T staff for safe and satisfactory maintenance.

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

In case of failure of any interlocking gear at the station, the failure report should be communicated by the SM on duty to the sectional Maintainer, the JE/SE/SSE (SIG) of the Section and others through a memo as per G & SR 3.51.04 and 3.68.04 and document all such transactions.

### 22.2 **INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:-**

However, before declaring a signal or any other S&T gear as defective SM on duty shall verify them and setting of points on the route and overlap for a signal to which it applies shall be

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inspected by the SM on duty irrespective of the position of buttons and indications on the panel and will work vide GR 3.68.

**22.3 RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING: -**

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

**22.4 PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK: -**

Whenever any normal maintenance or special works for major renewals etc., are involved, the signal & Telecom should pre plan these works. Field staff and the JE/SE/SSE (SIG) should give 'Advance Intimation' to the SS/SM in writing about this work in terms of GR & SR 15.08.01.

**22.5 EMERGENCIES: -**

Notwithstanding anything contained in the aforesaid paras when equipment is found to be defective and unsafe for passage of trains, the Signal & telecom. Staff must at once suspend the working of the equipment and associated installations and issue 'Suspension Memo' explaining the seriousness of defect or damage to the interlocking installation to the SM on duty and take the Station Master's acknowledgement. After this, the usual practice of exchange of disconnection memo and reconnection memo can follow.

The SM on duty 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 according to extant instructions as contained in G & SR 3.77.

**23 PROCEDURE TO BE FOLLOWED IN THE CASE OF FAILURE OF SIGNALS AND POINTS AND USE OF EMERGENCY CRANK HANDLE: -**

Whenever a signal or a point becomes defective, any movement over the points on the running lines shall be made after clamping and padlocking of both facing and trailing points supervised by SM on duty personally for all trains at this station.

- 23.1 In case of failure of a signal or a point and in case the point cannot be operated from the panel, emergency crank handle, which is interlocked with system is to be extracted and the following procedure is to be adopted.
- 23.2 Emergency crank handle is provided for all motor operated points. This is mechanically attached to the key on RKT and can be released by pressing Crank Handle control push button CH1/CH2/CH3/CH4/CH5/CH6 and Group Trans button simultaneously. All signals will be locked in normal position as soon as the key is released. SM on duty shall transmit the key to required end of the yard and operate the point manually.
- 23.3 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.
- 23.4 The case of failure of motor operated points should be promptly reported to the concerned Signal maintainer/JE/SE/SSE for rectification.
- 23.5 Whenever 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 SM on duty and after making necessary entries in the Crank Handle Register. The SM on duty will obtain the acknowledgement of the signal official in the Crank Handle Register and then hand over to him

- the Crank Handle. The points will be treated as defective till the Crank Handle is returned back to the SM on duty.
- 23.6 Before parting with the Crank Handle either for attending failures or for maintenance work by Signal maintenance officials, the SM 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 SM 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 trailing points over which the train is to pass, as per GR 3.69 and 3.70 with relevant SRs. The SM on duty will be personally responsible for setting and locking of points for reception or despatch of all trains.
- 23.7 The Emergency Crank Handle Register is to be maintained vide OM 20.06 note (d) by the SM on duty wherein the particulars of the usage of the Emergency Crank Handle must be recorded.
- 24.0 **SUSPENSION OF LAST STOP SIGNALS:** -  
When the Block Instrument is suspended for whatever reason, the concerned Last Stop Signal controlled by the Block Instrument must be treated as suspended. During the failure of Block Instrument the authority will be T/369(3b) with identification number & Private Number issued from the station in advance written both in figure and words. Trains towards IB & JSG will be worked on PLCT.
- 24.1 The SM on duty shall not grant 'LINE CLEAR' unless he has ensured that the lamps of fixed signals, which apply, to the train are burning. If the signal lights cannot be kept burning, the SM on duty before giving 'LINE CLEAR' shall initiate action in accordance with the procedure prescribed in GR 3.61 to 3.71 & relevant SRs vide GR 3.49 (4).
- 24.2 The SM on duty shall not grant or ask 'LINE CLEAR', if the Axle Counter Section indicates section occupied and will treat the Block Instrument as suspended.
- 25.0 **SIGNAL LIGHTS:** -  
The SM on duty must also ensure from panel board that all the signal lights are burning properly and brightly. In case of any failure the S&T staff should be called for rectification.
- 26.0 **CORRECTING TIME IN STATION CLOCK:** -  
The SM shall set the time in his clock according to the time transmitted by the Section Controller on duty at 16.00 hours every day as per GR 4.01 & SR 4.01.01 and 4.01.02.
- 27.0. **NORMAL POWER SUPPLY:** -  
Normal power supply to the signalling and interlocking installations at this station is drawn from SEB power supply source (AC 230 Volt / 50 Hz). In SM's Office there is SM power panel, which represents the voltage of the integrated power supply system.
1. In case voltage drops 105.9V an audible buzzer appears for starting Generator.
  2. In case voltage drops 105.1V an audible buzzer appears for emergency start of Generator.
  3. In case voltage drops 104.3V an audible buzzer appears for system shut down.
- 27.1 **POWER FAILURE AND REPORTING SUCH FAILURES:** -  
For Power failure refer Para-4 of Appendix- B.
- 27.2 The SM on duty must maintain record of power failure and he must promptly report the failure to the section controller and the concerned electrical and S&T maintenance staff.
- 28.0 **AXLE COUNTER AS LAST VEHICLE CHECKING DEVICE (LVCD):-**  
(a) Axle Counter as LVCD has been provided for the section JSGR-BXQ and JSGR-IB as last vehicle checking device. The axle counter will also have control over the UP/DN last stop signals and block instrument of respective direction of JSGR station.

- (b) The occupation and clearance of the axle counter section is indicated by RED and GREEN indication respectively provided on the panel.
- (c) UP last stop signal of JSGR cannot be taken OFF if axle counter of block section JSGR-BXQ fails. Similarly last stop signal of JSGR towards IB cannot be taken OFF if axle counter of block section JSGR-IB fails. On the other hand, on arrival of a train at station if the axle counter continues to show occupied the block instruments of concerned block section cannot be turned to line closed position.

#### 28.1 **NORMALISATION OF AXLE COUNTER AND BLOCK WORKING BY RESETTING OF AXLE COUNTER**

- (A) After the train has been received by the receiving station or after a block back operation or when no train has entered into the block section and the axle counter displays RED, then the following procedure shall be adopted to reset the axle counter. Resetting operation of the axle counter is non co-operative type.

#### (B) **VERIFY THE BLOCK SECTION IS CLEAR OF ANY VEHICLES**

- (i) Procedure laid down in GR 4.17 & relevant SRs thereto shall be followed for the purpose.
- (ii) By checking the train register, the detail of the train passed through the block section and finding out from the station at other end of the concerned block section or from Controller that last train has passed and arrived complete. SM on duty shall exchange private number with the SM at other end of the concerned block section or with the Controller or from whom the complete arrival has been confirmed.
- (iii) If the failure has occurred after arrival of a train, SM on duty shall also obtain intact position from the guard of stopping train or by exchanging all right signal with the guard of through train, so that he can ensure that the train has arrived completely before resorting to reset of LVCD axle counter.

#### (C) **RESETTING PROCEDURE:-**

After complete arrival of train, if the axle counter of the section does not clear or Axle counter section free indication (GREEN) does not appear in the axle counter panel, The receiving station SM shall call the attention of the station in rear through telephone for resetting and shall establish communication with the said station if resetting of 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, if arrived fully, shall intimate authenticated by exchanging Private number with the sending station.

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

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

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

- a. Insert SM's LV reset key, turn right and keep pressed.
- b. Press LV reset button provided on the panel.
- c. Release SM's LV reset key and reset button.
- d. Turn left the SM's LV reset key and remove it.
- e. The system obtains preparatory reset state and preparatory reset indication (miniature Green) glows on the panel.

- f. The counter reading increases by one count after a gap of 5 seconds approximately.
- g. The counter reading should be recorded.
- h. First train is to be piloted out to the section to make the system normal.  
The SM shall record in his Train Signal Register, Station Diary and register meant for it the details of resetting operation giving details of train number, time, Private Number exchanged with SM in rear and reasons for the resetting operation.

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

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

29. **TELECOMMUNICATION FACILITIES: -**

1. Telephone attached with Block Instruments for either side of Block Sections.
2. Station is provided with Auto telephone connected with Railway Exchange
3. BSNL telephone is provided.
4. The station is connected to BALANGIR-JHARSUGUDA control circuit of SBP by a control telephone. In addition to this, station is connected to CKP and BSP control by control telephones
5. Station to station 25 Watt VHF communication is provided.
6. Telephone is provided between Station and both end Goomties.
7. Telephone connection is provided between Station and L.C.Gates at KM 515/8-9, KM515.470 and KM517/0-1.

**NOTE: -**

1. For obtaining Line Clear, VHF should be used as a last alternative and not as a sole means of communication.
2. VHF and Walkie-Talkie sets should not be used for unnecessary discussions with Drivers, Guards or any other staff.
3. The on duty SM shall use the above electrical communication instruments stated in Para-29. from item No. (1) to (5) strictly in order of preference for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication the SM on duty shall work vide SR 6.02.06

30. **FAILURE OF COMMUNICATION / FAILURE OF BLOCK INSTRUMENTS:**

- 1) In the event of failure/suspension of block instrument, Track circuit & Axle Counter 'Line Clear' shall be obtained over telephone attached to the block instrument or station to station telephone by exchanging identification number and supported by private number as per SR 6.02.06 (a) and Chapter-III Part-I of Block Working Manual.
- 2) In the event of failure/suspension of block instrument and telephone attached to the block instrument, or the Station to station fix telephone 'Line Clear' shall be obtained on Railway auto phone or BSNL phone, by exchanging identification number supported by private number vide SR 6.02.06 (1)(b) and Chapter-III Part-I of Block Working Manual.
- 3) In the event of failure/suspension of block instrument, telephone attached to the block instrument and station to station fixed telephone or Railway auto phone or BSNL phone, Line Clear shall be obtained over the control phone exchanging identification number and supported by 'Private Number' vide SR 6.02.06(1) (c) and Chapter-III Part-I of Block Working Manual.
- 4) In the event of failure / suspension of block instrument or block telephone attached to the block instrument, or station to station fixed telephone or Railway auto telephone or BSNL phone or

control telephone line clear shall be obtained on the VHF sets exchanging ID number supported by PN provided that the instructions contained in SR 14.01.02 are followed vide SR 6.02.06 (1) (d) Chapter-III Part-I of Block Working Manual.

- 5) In the event of total failure of all communications trains shall be worked vide SR 6.02.03 on double line section and vide SR 6.02.04 in single line section..

### **APPENDIX - 'C'**

#### **ANTI COLLISION DEVICE (RAKSHA KAVACH)**

NIL

### **APPENDIX - 'D'**

#### **1.0 STATION MANAGER (INCHARGE) :**

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

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

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

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

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

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

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

He is responsible for booking all staffs working under him for PME and Refresher Course / Safety camp in their due time. His Special attention is drawn out to chapter II of General and Subsidiary Rules and GR 5.01 to 5.08 with relevant Subsidiary Rules, Chapter – XXII of Operating Manual.

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

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

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

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

His special attention is drawn to chapter No.II of G & SR (Amendment) 2000 and GR 5.01 to 5.08 with relevant SRs. He shall follow the instruction laid down in SR 3.68.01© & (d) and SR 14.07.01 and BWM 2.09 (e). He shall conduct surprise night inspection, safety meetings and fire drills. He shall maintain good public relation as well as look after passenger's amenities and be helpful to travelling public.

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

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

The declaration shall be renewed in the following cases: -

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

#### 2.0 **USE OF PRIVATE NUMBER BLOCKS IDENTIFICATION NUMBER SHEET :-**

Sufficient Private Number books and I.D number sheets in sealed covers shall be kept always in the stock by Station Superintendent under lock and key. He shall maintain a register for this purpose.

#### 3.0 **ACCIDENTS:**

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

#### 4.0 **TESTING OF POINTS AND SIGNALS :**

The Station Superintendent shall test the working of the reception signals daily during the day when there is no train due to arrive/leave the station. He shall also test the working of points, crossings etc. and record the result in the Station Master's diary.

**5.0 Dy SS/STATION MASTER/ASSISTANT STATION MASTER:**

He shall work in 8 hrs. shift for train passing and booking of traffic, coaching returns and other statements shall be prepared and submitted by him in time under the direction of the Station Superintendent in charge. He shall assist the Station Superintendent in charge for the up keep of the station in all aspects.

Station Master on duty who makes an entry in the train signal register must continue on duty till all the entries pertaining to the trains are completed vide Subsidiary Rule 14.07.01.

He is responsible for working beyond this period when called upon to do so in the exigencies of services. He will follow SR 3.68.01© & (d), SR 14.07.01. Their special attention is drawn to Chapter II of G & SR (Amendment) 2000 and GR 5.01 to 5.08 with relevant SRs. As an Assistant to the SS, he shall follow the instructions given to him by the Station Superintendent.

**6.0 HANDING OVER AND TAKING OVER CHARGE:**

The Station Superintendent in charge/Station Master/Assistant Station Master on duty shall record in the diary the condition of all the running lines, the caution orders in force at the time of handing over charge. These entries must be counter signed by Station Master/Assistant Station Master coming on duty while taking over charge. This will not, however, relieve any one of the SS/SM of his responsibility to ensure by physical check that the nominated line is clear of all obstructions before admission of any train on it.

**7.0 TRAFFIC POINTSMAN:**

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

- (i) Delivery of authority to proceed and caution order etc. to the Loco Pilot of train.
- (ii) Correct setting and locking and crank handling of points for reception/dispatch and shunting operation under the supervision of Station Master.
- (iii) To couple and uncouple vehicles under the supervision of Station Master/Guard when shunting operation is in progress.
- (iv) Piloting and hand signalling of trains when necessary.
- (v) Knowledge of hand signals, detonators and their use.
- (vi) Protection of line in emergency and fog signalling.
- (vii) Exchange of signals with the Loco Pilot and Guard of passing trains as directed by the Station Master.
- (viii) Cleaning, Oiling and lighting of lamps.
- (ix) Loading/unloading of parcels, luggage and packages to and from the train and watching the packages and other materials by properly stacking in the station premises.
- (x) Dusting of station office, filling up the fire buckets with sand/water and getting train arrival register (T/1410) signed by the Guard as and when required.
- (xi) Serving messages and any other duties entrusted to them by the SS/SM from time to time.
- (xii) Uses of emergency crank handle for setting of points.
- (xiii) To supervise shunting as per SR 5.13.03.
- (xiv) They must be thoroughly conversant with the GR 3.38, 3.46, 3.77(I), 5.09, 3.52 to 3.60, 3.62, 5.13, 5.15, 5.16, 5.21, 5.23 & SRs there to and their special attention is drawn to chapter No.II of G & SR (Amendment) 2000 also.
- (xv) When necessary, they will work in the Goomties for observing and reporting the complete/incomplete arrival/departure of trains as per the order of the SM on duty in case of failure of Axle Counter/Track Circuit.



**GENERAL**

- i. All staff should be in uniform while on duty and follow the rosters issued by DPO/SBP from time to time.
- ii. A set of Red and Green flags and Tricolor hand signal lamps will be part of the essential equipments of staff while on duty. They shall not leave the station except when required by the SM on duty or with his permission. They shall comply with SR 4.42.02 (b) & (c).

**APPENDIX - 'E'****ESSENTIAL EQUIPMENTS OF THE STATION**

Below is the list of essential safety equipments, which shall be readily available in good working order with necessary relief stock.

<b>Srl No.</b>	<b>Description</b>	<b>Quantity</b>
1.	Detonators	20 in tin case
2.	Battery operated LED based flashing Hand Signal lamps.	04 Nos.
3.	Hand signal flags	05 sets.
4.	Safety chains with pad locks	08 Nos.
5.	Wedges/ Sprags	08 Nos.
6.	Fire buckets (with sand and water)	05 Nos.
7.	Clamps with padlocks	08 Nos.
8.	Reminder collars	06 Nos.
9.	First aid Box	01 No.
10.	Fire extinguisher	01 No.
11.	Stretcher	01No.
12.	Blanket	01 No.
13.	Block suspension Board	03 Nos
14.	"Motor Trolley on Line" boards	03 Nos.

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

NIL.

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

NIL.

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