

EAST COAST RAILWAY
SAMBALPUR DIVISION

SI. No. SWR/BUDM/59

STATION WORKING RULES OF BADMAL STATION (CODE: BUDM)

BG/MG/NG: BROAD GAUGE

Date of issue:-29.03.2011

Date brought into force: - 07.04.2011

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 above books.

1. STATION WORKING RULE DIAGRAM:

1.1 **STATION WORKING RULE DIAGRAM NO :-** SI/WRD/22082, Alt-A.

1.2 **SIGNAL INTERLOCKING PLAN NO. :-** SI-22082, Alt-B

The Station Working Rule diagram no. SI/WRD/22082 based on CSTE/East Coast Railway Signal Interlocking Plan No. SI/22082 shows the complete layout of the yard, siding, normal position of points, the Signaling and Interlocking arrangements Gradients, and Level crossings within the station limits, number of running lines, actual holding capacity in meters, name of the adjacent block stations and inter distance between the respective centre line of station building etc. This must be referred to for giving details of the points number and signals when reporting accidents.

2. DESCRIPTION OF STATION: -

BADMAL (BUDM) is a four-line station situated in Jharsuguda – Titlagarh section at KM. 724.402 from HWH. It is Standard – II(R) interlocked, 'B' Class station provided with central Electronic Interlocking. Block Proving axle counters for either side of the Block section have been provided at the station for last vehicle check.

2.1 GENERAL : LOCATION:

a)	Name of the station	: BADMAL
b)	Class of station	: 'B' class
c)	Section	: Jharsuguda-Titlagarh,
d)	Double line/Single line	: BG,Single Line.
e)	Electrified/Non Electrified	: Non-Electrified
f)	Railway	: East Coast Railway
g)	Route	: 'D' Special
h)	Situated at	: Km 724.402 (KM 20.039 from TIG)
i)	Reckoned from	: HOWRAH
j)	Number of cabins	: NIL
k)	PI/EI	: EI, Centrally operated Domino type full-fledged panel along with VDU.

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

i)	Block Station at Titlagarh end :-	SIKIR (Code: SFK) inter distance 9.891 K.M.
ii)	Block Station at Jharsuguda end:-	SAINTALA (Code: SFC) inter distance 8.639 K.M.
iii)	Passenger Halt	:- NIL
iv)	Flag station	:- NIL
v)	Outlying siding	:- NIL
vi)	D.K. station	:- NIL
vii)	IBH	:- NIL
viii)	IBS	:- NIL

Correction Slip No-01

Date of issue- 14.05.2012

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

Sl.	Between Stations	The point from which "Block Section" commences.	The point at which "Block Section" ends.
1.	BUDM--SFK	UP Advanced starter signal No. 19 of BUDM	DN Advanced starter signal of SFK.
2.	BUDM-SFC	DN Advanced starter signal No.20 of BUDM.	UP Advanced starter signal of SFC.

2.3.1 STATION SECTION:-

The portion between UP and DN Advanced Starter signals is the station section.

2.3.2 The portion between UP and DN Distant signals is the station limit of this station.

2.4. GRADIENTS: -**i) Towards Jharsuguda end.**

From	To	Inter distance	Gradient
CSB	641 M	641 M	1 in 400 F
641 M	1455 M	814 M	1 in 180 F
1455M	2032 M	577M	Level
2032M	2460 M	428 M	1 in 800 F
2460 M	3762 M	1302 M	1 in 125 F
3762 M	4616 M	854 M	1 in 200 F
4616 M	Block section	----	Level

ii) Towards Titlagarh end.

From	To	Inter distance	Gradient
CSB	260 M	260 M	1 in 400 R
260 M	869.10 M	609.10 M	Level
869.10 M	2151 M	1281.90 M	1 in 200 R
2151 M	2803 M	652 M	Level
2803 M	4171 M	1368 M	1 in 125 R
4171 M	Block Section	-----	Level

2.5 LAY OUT: -

- i) No. of Running lines : - 4 (Four)
- ii) No. of Sidings: - 2 (Two) (i) Sick siding, CAL-107.2 M takes off from Line No.4 with one side entry and (ii) The Exchange Yard of OFBL siding takes off from Line No.4 at SFK end.
- iii) No. of Passenger Platform: - 2 (Two) H.L Passenger Platform of (576M X 14M) beside line No-1 & H.L Passenger Platform of (565M X 6.1) beside line No-4.
- iv) No. of Goods Platform: - NIL.
- v) FOB:- One FOB at CH 60 M connecting Passenger Platform No.-1 & 2.

2.5.1 RUNNING LINES, DIRECTION OF MOVEMENTS AND HOLDING CAPACITY IN CSL: -**(i)**

Sl.No	Line No.	Description	CSL	Isolation provided	
				SFK end	SFC end
1.	Line No.1	1 st Loop	692 M (STR-STR)	SH	SH
2.	Line No.2	Main line	715.5 M (STR-STR)	-	-
3.	Line No.3	2 nd Loop	786.4 M (STR-STR)	ORL	ORL
4.	Line No.4	3 rd Loop	794.3 M (STR-STR)	DS	DS

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

- Trains arriving from SFC end are UP trains.
- Trains arriving from SFK end are DN trains.

2.5.2)

i) **NON-RUNNING LINES AND CSL:-**

Sl.	Description	CSL	Takes off line No.	Exit	Operation
1	Sick Siding	107.2M	Line No.-4	One way	Operated locally by arc lever releasing key controlled by No. 36 of Panel.
2	Exchange Yard of OFBL Siding.	-----	DS point 24 of Line No.-4	One way	Setting the DS point No. 24 in reverse position from Panel.

(ii) **SICK SIDING:**

Sick siding (107.2 M from GJ to DE) with one side entry takes off from line no.4 at SFK end of the yard and it is isolated by Derailing switch. The entrance point and derailing switch are operated individually by arc levers in succession. Hand plunger locks fitted at the entrance point is unlocked by key 'E' released from RKT provided in SM's Office through control no. 36 of panel. After setting the entrance point, Key-F will be extracted and inserted in the Hand plunger lock fitted at DS point. Then DS point is to be set to the desired position by the arc lever at site. All facing and trailing points are to be clamped and padlocked for any placement and drawn out of Wagons/Vehicles in the siding. When control 36 is transmitted from panel signals 1D, C1D, SH3D.SH-9,SH11,SH19,15, SH-15 2D, 2CD, SH4D, SH6 A/B/C/D & 16 will be locked in their normal position.

(iii) **OFBL EXCHANGE YARD:-**

The exchange yard has been provided for exchange of Rakes/wagons between the Railway & the Ordnance factory. The exchange yard of the OFBL defence siding takes off from L/4 at east end of the yard with one side entry. The siding is isolated by DS point No-24 operated from the operating panel/VDU. Shunt signals below Up starter signals No. 9,11,13 & 15 have been provided for movement of trains into exchange yard of OFBL siding & Shunt signal No SH-6 before the DS point No.24 has been provided for movement of trains from exchange yard to station yard on Line No-1 to 4. Detailed siding rules are mentioned in APPENDIX-H.

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

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

Sl. No	Location	Km.	Normal position	Class	Type	Operation	Communication
1.	Between DN Adv. Starter signal & Outermost Point	723.789 (723/12-13)	Open to road traffic	B-1	Interlocked	Electrical operated lifting barrier.	Telephone connection from gate goomty to SM Office /BUDM

ii) **LEVEL CROSSING: - (IN BLOCK SECTION): NIL**

Train Actuated Warning Device is not provided at above Level Crossing Gate.

(Working of the Level crossing gate is detailed in Appendix - 'A')

3.0 **SYSTEM AND MEANS OF WORKING:-**

(Rule no.: - Chapter XIV of G&SR, Chapter III, & IV, Part-I of BWM)

i) **System of working:** Absolute block system on single line:

Trains are worked under Absolute block system in accordance with GR 7.01(1) (a), 8.01(1) (a) &(c), 8.01(2) (b), 8.03(2) (a), (b), (c) (ii), 14.01 to 14.07, 14.08(b) (iv), 14.09 to 14.13 and BWM chapter-IV part I.

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ii) **Block instruments:**

Token less Block Instrument (DIADO) for BUDM-SFK & BUDM-SFC Block sections have been provided and the 'OFF' aspect of the last stop signal is the authority for the Drivers 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) 9A) (1) and GR 5.08.

- iii) Co-operative/Non Co-operative: Co-operative.
- iv) Provision of block telephone: Telephone attached to Block instrument connecting the adjacent block stations concerned.
- v) Custody of keys of block instrument: Block instrument is provided with double locking. One key will be with SM & other key will be with S&T maintainer.

4.0 **SYSTEM OF SIGNALLING AND INTERLOCKING:**

4.1.0

- a) **Standard of Interlocking:** This Station is provided with Standard-II (R) Electronic Interlocking.

b) **Type of signals:**

Multiple Aspect Colour Light Signals. The aspects & indications of the MACLS is governed by GR.3.08(4)(b).

- c) The Station is provided with **central Electronic Interlocking (EI)** and having no end cabins. All signals and points are electrically operated from the central Panel / VDU provided at SM's Office.

d) **Method of operation:**

Central Panel/VDU is provided in the Station Master's office to electrically control all signals and points.

e) **Provision of axle counter and Track circuits:**(I) **AXLE COUNTER: -**

Both side block sections are monitored by axle counter system, electronic axle counters are provided at both end of the station just ahead of advanced starter. A pair of electronic axle counter is provided between SIKIR and BADMAL, one beyond UP advanced starter of BADMAL and another just beyond DN advanced starter of SIKIR 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. Similarly, a pair of axle counter is provided between BADMAL and SAINTALA, one just ahead of UP advanced starter signal of SAINTALA and the other just beyond the DN advanced starter of BADMAL station 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' miniature 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' miniature indication glows when power is ON and GREEN miniature glows when resetting operation is initiated and after passage of 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 stationmaster on duty. Details of the resetting procedure are given in Appendix – B.

The axle counter is interlocked with tokenless Block instrument. 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 that axle counter has failed hence block instrument of that section shall be suspended & necessary action as per GR 14.13 is to be followed.

(II) 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 and 2AT are calling-on track circuits. 21AT, 21BT, 23BT, 25T, 22AT, 22BT, 26AT, 28AT, 28BT, 30T, 32AT, 32BT 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, 20T, 2T, 19AT are for signal replacement, route holding. 2AT and 1AT are Calling- on track circuits. 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.

f) Calling-on signals:

Calling-on signals are provided below Home signals (i.e. in both Up & Down directions) as per GR.3.13 (1) (b), (2) (3) (4) & (6) (b).

g) IBS is not applicable to this station.

h) Control Panel:-

The control Panel is provided with SM's key which shall always remain in the custody of the Station Master on duty for control of points, signals and crank handles control etc in terms of SR 3.36.03(a).

i) A two position switch is provided on the control panel through which SM on duty can select the mode of operation (i.e. from Panel or VDU). The position of all points, signals and running lines are available in the Panel/VDU. Remainder Block collars are provided for use on push button which shall be placed on the point button and /or route button to prevent operation of the button in case of concerned line is blocked. The VDU is provided with SM's key user name and password which shall always remain with the personal memory of the SM on duty.

j) CRANK HANDLE

When any point fails to operate normally by the Route Setting operation through Panel/VDU it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle for motor operated points shall be followed as per operating manual para-20.06. CH1 controls 21A/B & 23A/B, CH2 controls 25A/B, CH3 controls 23A/B, CH4 controls 24, 26A/B and 28A/B. CH5 controls 30A/B and 32A/B.

(The details of standby operation from VDU is given under Appendix-'B')

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

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

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

4.1.1 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). A Calling-on signal shows no light in the 'ON' position and Yellow light when taken "OFF". A calling-on signal, will be taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF' due to failure or any other reason or for admission of train on blocked line. Before taking 'OFF' Calling on signal during failure of track circuit the route and clearance of the track over which the train will be admitted must be checked physically by SM on duty.

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit in rear of the signal. When a train occupies the track circuit a RED light strip will appear on the Panel/VDU. The particular route on which train is intended to be received shall be set by operating the point push button and group button individually or by signal and route buttons pressing or by crank handling in the event of failure of operation of points through panel/VDU. After the route is set, the Calling On signal button 'C-1(A/B/C/D), C-2(A/B/C/C/D) (Red with White dot) shall be pressed (as the case may be) simultaneously along with the concerned route button for 2 to 3 seconds and then 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. Each such operation shall be recorded by the SM on duty along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train or by emergency cancellation.

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

4.1.2 SHUNT SIGNALS:

Shunt signals below starter signal No 9, 11, 13 & 15 have been provided. Independent Back shunt signals SH-3 (A-D), SH-4 (A-D) & SH6 (A-D) have been provided for back shunting purpose.

4.1.3 POINT AND TRAP INDICATOR:- : - NIL

4.1.4 REPEATING SIGNAL (BANNER TYPE):- NIL

4.1.5 EMERGENCY CROSS OVER :- NIL

4.1.6 L.C. GATE OPERATION :- (Given in Appendix A)

4.1.7 ANTI COLLISION DEVICE :- NIL

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

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

The relay room is provided with two separate locks, the arrangement should such that one key is kept with the on duty SM 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 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 is be properly recorded in the relay room key register maintain at the Station and duly signed by SM on duty and maintainer respectively

(A) POWER SUPPLY

Normal: - Local Supply-230v, 50Hz

Stand by: - Two number of DG sets.

A changeover switch is provided in the Station Master's Office with the two power supplies viz., Local and DG for changing the switch to the required supply position. A luminous indicator above the circuit breaker for each supply indicates the availability of the supply.

(ii) For IPS system that provides to EI, auto-change over has been provided.

(iii) There is a remote monitoring SM box provided at the station to monitor the health of IPS.

(B) REMOTE MONITORING SM BOX:

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

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

5. TELECOMMUNICATION FACILITIES: -

- i) Telephone attached with single line Tokenless Block Instruments for either side Block Sections
- ii) Station to Station fixed telephone (hot line) is provided
- iii) Station is provided with Auto telephone connected with Railway Exchange
- iv) BSNL telephone is provided.
- v) The station is connected to Bolangir- Singapur Road control circuit by a control telephone
- vi) Station to station 25w VHF communication is provided.
- vii) Magneto Telephone connection is provided with Station & CH Locations.
- viii) Magneto Telephone connection is provided between Station & Traffic LC Gate at KM.723/12-13.

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 discussion with Drivers, Guards or any other staff.
- (iii) The on duty SM shall obtain Line Clear by the means of communication stated in above Para-5 from item No. (i) to (vi) in order of preference. In case of failure of any of the above means of communication the SM on duty shall work vide SR 6.02.06.

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

5.1 FAILURE OF COMMUNICATION: -

- a. In the event of failure of communications between the adjacent block stations SR 6.02.06 shall be observed, for working the train.
- b. In the event of total failure of communications between the adjacent block stations SR 6.02.04 shall be observed, for working the train.

6. SYSTEM OF TRAIN WORKING:

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

6.1 DUTIES OF TRAIN WORKING STAFF

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

6.1.1 TRAIN WORKING STAFF IN EACH SHIFT:

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

SL NO.	Designation	Roster	No. of staff in each shift	Hrs. of Duty
1.	Station Manager-II----	Continuous	01	----09 hrs.
2.	Dy.SS/SM/ASM-----			-----8 hrs.
3.	TP/Sr.TP/TPM-B/ TPM-A	Continuous	01	8 hrs.
5.	GK/Sr GK	E.I.	01	12 hrs.

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

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

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

6.1.3 ASSURANCE OF THE STAFF IN THE ASSURANCE REGISTER

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

No Railway servant shall be entrusted with any duty involving the safety of the public unless the SS 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 responsible to see that all the staff are well conversant with the Station Working Rules of the Station and their signature obtained in the Assurance Register after he is satisfied that they have thoroughly understood the Working Rules of the Station. In case of class-IV staff, their signature/thumb impression must be obtained after explaining full about their duties and responsibility.

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

The declarations are to be renewed in the following cases:

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

(iii) USE OF PRIVATE NUMBER BOOKS AND IDENTIFICATION NUMBER SHEETS:

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

6.2

(A) CONDITIONS FOR GRANTING LINE CLEAR:

The conditions laid down in GR 8.01 (1) (a), (c), 8.01(2) (b), 8.03 (2) (a), (b), (c) (ii) and BWM 2.07(3) & (4) shall be complied with before the line is considered clear and 'Line Clear' is granted for a train by on duty SM. The line shall not be considered clear and 'Line Clear' shall not be given unless:

- (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 to which such line clear is being given.
- (iv) The line is clear up to Advanced Starter at that end of station nearest to the expected train. (Up advanced starter signal No.19 for a DN train & DN advanced starter signal No.20 for an UP train).

Note: If the light of the reception signal is fused/ not burning, 'Line Clear' shall not be granted for a train till such time it is ensured that the concerned driver is notified of the fact in writing by the SM on duty of the station to which such line clear is granted.

(B) OUTLYING SIDING : - NIL

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

6.2.1.1 SETTING OF POINTS AGAINST BLOCKED LINE

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

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

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

6.2.1.2 RECEPTION OF A TRAIN ON BLOCKED LINE

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

6.2.1.3 RECEPTION OF TRAIN ON NON-SIGNALLED LINE:- Not Applicable

6.2.1.4 DESPATCH OF TRAIN FROM NON-SIGNALLED LINE:- Not Applicable

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

6.2.1.6 SPECIAL RESTRICTIONS:

- (I) The sand hump & 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) Shunting shall not be permitted at both end of the yard unless the engine is leading towards the falling gradient.
- (III) GR 5.20 and SR's thereto apply at this station.
- (IV) Hand shunting and fly shunting is not permitted at both ends of the yard.
- (V) Shunting in face of an approaching train is prohibited.
- (VI) Speed is raised to 30 KMPH on first loop lines on either side of main line and over its turnouts. However, no train shall be allowed to negotiate at a speed more than 15 KMPH if it involves negotiating more than one crossover at a time.

6.2.1.7. SPECIAL INSTRUCTIONS:-

- (i) After any non-signal movement has taken place over point (s) operated by an electric point machine, whether in the facing or trailing direction, the SM on duty shall operate point(s) to normal and reverse setting for the purpose of testing the point. After the SM has ensured that indication regarding the normal and reverse setting is correctly available, further movement may be permitted over such point(s).
- (i) In case of failure of Digital Axle counter provided for monitoring Block section at both ends, the resetting should only be initiated for normalizing the Block Instrument after ensuring complete arrival of the train by physical verification of Last Vehicle by SM on duty.
- (ii) Entire station yard is track circuited. In case of failure of track circuit the clearance of concerned line should be ensured physically before a train is piloted.

6.3 CONDITIONS FOR TAKING 'OFF' APPROACH SIGNAL: -

Reception of trains is governed by General Rule 3.40 (1), (b), (2)(b), (3) (b),4, SR 3.40.01, SR 3.40.02 and other relevant provisions of General and Subsidiary Rules, Block Working Manual and Station Working Rules of the station to be followed.

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

A. CLEARANCE OF ADEQUATE DISTANCE:-

To take off the home signal for admission of a train the adequate distance (signal overlap) as mentioned below shall be kept clear: -(CRS, SE Circle's letter No-1701, dated 29.03.2011).

Sl. No.	UP TRAIN		DN TRAIN		
		FROM	TO	FROM	TO
1	Line No. 1	Foot of the UP starter signal No.9	Up to the end of Sand Hump or UP Advanced starter signal No.19.	Foot of the DN starter signal No.10	Up to the end of Sand Hump or DN Advanced starter signal No.20
2	Line No. 2	Foot of the UP main line starter No.11	UP Advanced starter signal No.19	Foot of the DN main line starter signal No.12	DN advanced starter signal No.20
3	Line No. 3	Foot of the UP starter signal No.13	Up to the end of ORL or Advanced starter signal No.19.	Foot of the DN starter Signal No. 14	Up to the end of ORL or Advanced starter signal No 20.
4.	Line No-4	Foot of the UP starter signal No.15	Up to the end of ORL or Advanced starter signal No.19	Foot of the DN starter Signal No. 16	Up to the end of ORL or Advanced starter signal No 20.

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 SS/SM on duty shall nominate a clear line in consultation with the Section Controller on duty. SS/SM shall personally satisfy himself that the nominated line is clear and free from all obstruction 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 SS/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

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button C1 / C2 (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.

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

If a signal once taken ‘OFF’ for reception/dispatch of a train, has to be, in an emergency put back to ‘ON’. In case of reception signal, the route over which the train would pass shall not be altered until after the train has come to stand unless the route has to be altered to avert an accident. In case of departure signal, before changing the points or allowing any other movements the “Authority to Proceed” if any, handed over to the Loco Pilot must be withdrawn and the Loco Pilot of the train concerned shall be advised of the change in writing and his acknowledgement will be obtained in a memo. [Refer SR 3.36.02 (a) & (b)]

6.4 **SIMULTANEOUS RECEPTION/DESPACTH,CROSSING AND PRECEDANCE OF TRAINS:**

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

(i)	While receiving an UP train on Line No.1 setting overlap to Sand hump.	Reception of a DN train on Line No.3 or 4 setting overlap to ORL or dispatching of an UP train from the Line No.2, 3 & 4.
(ii)	While receiving an UP train on Line No.3 setting overlap to ORL.	Reception of a DN train on Line No.1 setting overlap to sand hump or dispatching of an UP train from Line No.1 or 2 .
(iii)	While receiving a DN train on Line No.1 setting overlap to SH.	Reception of an UP train on Line No.3 or 4 setting overlap to ORL or dispatching of a DN train from the Line No. 2 or,3 or 4.
(iv)	While receiving a DN train on Line No.3 setting overlap to ORL.	Reception of an UP train on Line No.1 setting overlap to sand hump or dispatching of a DN train from the Line No. 1 or 2.

Rules laid down in GR3.47 and GR 3.47.01 shall be followed.

6.4.1 **CROSSING OF TRAINS:**

In addition to normal provision of reception and dispatch of trains, rules laid down in SR 3.47.01 and SR 3.51.06 shall be followed.

Note: The SM on duty should be very careful to see that the signals on the route on which the first train is admitted are not interfered with, unless the first incoming train has come to a stop either at the stop signal or at the usual place of halt and is clear of the fouling mark.

6.5 **COMPLETE ARRIVAL OF TRAINS:** (Rule no. GR 4.16 & SR 4.17.01(a)(b)(c)(iii) (iv), GR 4.17.02, GR 14.10):

The entire block sections between BUDM-SFC and BUDM-SFK are monitored by axle counter system and the position of the block section whether ‘Occupied’ or ‘Clear’ is indicated on Panel/VDU at SM’s office. As soon as train enters in to that block section the RED indication appears on Panel/VDU. After whole train clears the block section GREEN indication appears on the Panel/VDU. This confirms the complete arrival of train and the SM on duty shall give ‘Train out of Block Section’ report on seeing the section clear indication GREEN on the Panel/VDU.

If a train passes through the station without conforming 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.

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

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received from the station in advance supported by a private number. Train passing on adjacent line shall be stopped and Guard and Loco Pilot shall be issued with caution Order to proceed cautiously and stop short of any obstruction as per SR. 4.17.03. On occasions when motor trolley follows a train the points shall not be operated until the following motor trolley is admitted on the same line. In the event of motor trolley is delayed in the section the SM on duty shall take action in terms of SR.15.25.03 (b) (vi).

6.5.1 **FOR THROUGH TRAINS:**

The SM on duty at station shall observe that the last vehicle of every train passing through the station is provided with a tail board or tail lamp or such other device in accordance with the provisions of the GR4.16 and SR thereto.

6.6 **DESPATCH OF TRAINS:**

Dispatch of trains are governed by General Rules 3.36, 3.38, 3.39, 3.42, 5.11 & 8.01 Subsidiary Rule 3.36.04(b), 3.42.04, SR 14.08 and Block Working Manual 2.07(5)(a)(b) and other provision of General Rules, Subsidiary Rules, Block Working Manual and Station Working Rules of the station.

To despatch a train, the SS/SM on duty, having obtained line clear for that train, shall set the route for the outgoing train correctly and satisfy himself by observing the visual indication on the panel board/VDU. He shall suspend all non-isolated shunting, ensure closure of L.C.Gate 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

6.7 **TRAINS RUNNING THROUGH:**

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

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

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

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 **WORKING IN CASE OF FAILURE:**

6.8.1 **PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF A SIGNAL AND 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:**

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

6.8.3 AXLE COUNTER:

In the event of failure of axle counter, concerned Block instrument of monitored block section will be suspended and trains will be worked on PLCT.

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. 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/total failure of Block Instrument the concerned block instrument shall be suspended till its rectification, trains shall be worked as per SR 6.02.06 & Chapter –III Part of BWM.

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. When the block instrument is under suspension, the authority to proceed will be paper line clear ticket.

UP and DN Home signals are electrically interlocked with respective block instrument can be normalised from 'TRAIN ON LINE' to 'LINE CLOSED' position, when the corresponding Home signals are in the 'ON position. However, the Home signals can be taken off in case of failure of the block instruments.

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 handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle for motor operated points shall be followed as per operating manual para-20.06. 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.

6.8.8 RECEPTION OF A 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 Driver 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 driver in terms of GR 4.09 and SRs thereto.

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

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

- i) Trolleys, Motor Trolleys, Lorries which are not insulated shall not be allowed to run except on Line clear.
- ii) Motor Trolleys/Tower Wagon/material Lorries are not likely to actuate the Axle Counter correctly.
- 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.

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

7. BLOCKING OF THE LINES:

Whenever a running line is blocked either by loose vehicles or by stabling train or by a train which is to cross or give precedence to another train, the points at either end should immediately be set against the blocked line except during shunting movement. A clear remark in 'RED' ink shall be made immediately in the train signal register and a record shall be made in the Station Master's diary also. Stable load register is also to be maintained.

The stable load or loose vehicles are to be secured to prevent rolling down of vehicles. [Refer SR 3.36.3(b), GR 5.23 and SR 5.23.01]

A. SECURING OF VEHICLES: -

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

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

B. USE OF REMINDER BLOCK COLLARS :-

Whenever any running line is blocked or when a train is stopped to cross another train or detained for any other reason, even for a short while or during shunting operations, reminder collars shall be used by the SM on duty on the push buttons concerned.

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

- (i) When a running line is blocked by stable load, wagon, vehicles or by a train, which is to cross or to give precedence to another train or immediately after the arrival of a train at the station etc, the points at either end should immediately be set against the blocked line except when any shunting or any other movement is required to be done immediately in that direction on that line.
- (ii) If all the lines at a station happen to be blocked, when "Line Clear" has been granted to a train, the points should be set for the line occupied by a stable load or a goods train in that order, so that in case of any mishap, the chances of casualties are minimized. In case all the lines are occupied by passenger carrying trains, points should be set for a loop line to negotiate of which the speed of the incoming train would be reduced, which in turn would

minimize the consequences/causalities. While doing so, points may be set for a loop occupied by a train, if any, whose engine is facing the direction of approach of the incoming train rather than for a loop occupied by a train whose passenger coach will incase, of collision, receive the impact.

D. LOADING AND UNLOADING FROM VEHICLES ON RUNNING LINES

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

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

8.0 SHUNTING

8.1 GENERAL PRECAUTIONS.

Shunting will be carried out at the station in accordance with General Rule and relevant Subsidiary Rules and Block working Manual [Refer GR 3.46, 3.52 to 3.56, 5.13,5.14,5.16 to 5.17, 5.19, 5.20 to 5.23, 8.05,8.06, 8.09, 8.10, 8.12, 8.13, 8.14 and 8.15] with relevant SRs and OM 7.01, 7.07, 7.08, 5.1(2) (B) shall be followed.

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

8.2 SHUNTING IN FACE OF AN APPROACHING TRAIN:

Shunting in the face of an approach train is strictly prohibited vide GR 8.09 and SR thereto.

8.3 PROHIBITION OF SHUNTING ANY SPECIAL FEATURES IF ANY:

(i) Hand shunting is prohibited at both ends of the yard vide GR 5.20.

(ii) Fly shunting is prohibited at both ends of the yard vide SR 5.21.01 (c).

8.4 SHUNTING ON SINGLE LINE:

SHUNTING ZONE	BLOCK SECTION IS CLEAR	BLOCK SECTION IS OCCUPIED
Shunting within station section	Permitted	Permitted, provided the conditions of GR 8.09 are complied with
Shunting between Last Stop Signal and opposite First Stop Signal	Shunting is permitted, provided the section is blocked back.	Not permitted
Shunting beyond opposite First Stop Signal	The concerned section shall be blocked back vide GR 8.13	Not permitted

8.5 SHUNTING ON DOUBLE LINE: Not Applicable.

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

When shunting in the siding 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 GR 5.14 and SRs thereto are to be followed.

9.0 ABNORMAL CONDITION:-

(i) PARTIAL FAILURE: -

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

- a) Failure/Suspension of Block Instrument or Track Circuit or Axle counters- Line Clear shall be obtained on the Telephone attached to the Block Instrument or station telephone exchanged ID number and supported by Private Number.
- b) Failure/Suspension of Block Instrument or Track Circuit or Axle Counters or telephone attached to the Block Instruments or station fixed telephones-'Line clear' shall be obtained on

Railway auto phone or BSNL phone by exchanging Identification Number supported by a Private Number.

- c) Failure/Suspension of Block Instrument or Track Circuit or Axle counters or telephone attached to the Block Instruments or station to station fixed telephone or Railway auto phone or BSNL phone. 'Line clear' shall be obtained on control phone by exchanging Identification Number supported by a Private Number.
- d) Failure/Suspension of Block Instrument or Track Circuit or Axle counters or Telephone attached to the Block Instruments or Station to station fixed telephone or Railway auto phone or BSNL phone or control phone. 'Line Clear' shall be obtained on the VHF sets by exchanging identification Number supported by a Private Number.
The authority to proceed for the Loco Pilot is PLCT.

ii) **THE AUTHORITY TO PROCEED IN OCCUPIED BLOCK SECTION IN CASE OF OBSTRUCTION OF LINE OR ACCIDENT.**

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

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

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

The block ticket so issued must be collected by SM of either end with a certificate about the complete arrival of the train with its time and the section is clear of all obstructions from the Loco Pilot/Guard of the train and cancels it.

iii) **TRAINS DELAYED IN BLOCK SECTIONS**

If a train carrying passenger does not arrive 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':** Not Applicable.

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- v. **FAILURE OF AXLE COUNTER BLOCK/BPAC:**– Procedure to be followed vide SR 14.13 & 14.14.
- vi. **FAILURE OF MTRC:** Not applicable to this station.

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

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

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

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

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

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

Then keeping point button pressed, emergency point button to be released and the point group normal button or point group reverse button is to be pressed for operating the point to 'NORMAL or REVERSE. Every emergency point operation shall be recorded in the station diary & in the register meant for this purpose. Concerned S&T staff should be advised immediately to get the emergency point operation button resealed after rectification of fault if any.

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

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

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

b) **REPORTING OF FAILURE OF POINTS, TRACK CIRCUITS/AXLE COUNTER & INTERLOCKING:-**

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

The entries in failure register to be done with message to the section controller.

9.1 **TOTAL FAILURE OF COMMUNICATION:**

In the event of total interruption of communication occurring between BUDM-SFC or BUDM-SFK 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 telephone (Hot Line).

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- d. Fixed telephone such as Railway auto telephone & BSNL phone
- e. Control telephone
- f. VHF sets

and actions 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 Driver 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 driver /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 to 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/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.
- (v) A conditional "Line Clear" message for the light engine to return with or without a train attached, supported by a Private Number (T/F602).

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 Driver of light engine. On return trip the Driver will come on booked speed subject to speed and other restrictions in force.

If there be an even flow of trains 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 Driver 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 informed.

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

Rules & regulations for working trains on an obstructed line in case of obstruction or accident on the authority of block ticket (T/A-602) when communications are available shall be followed in accordance with the provisions which are summarized in Para 9.02 (ii). [Refer SR 6.02.05]

9.2 TEMPORARY SINGLE LINE WORKING ON A DOUBLE LINE SECTION : - N.A.

10 VISIBILITY TEST OBJECT: -

The lights of loop Line No.1 starter signals on both ends are nominated as visibility test object. SM/SS 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 relevant SRs.

11 ESSENTIAL EQUIPMENTS AT THE STATION: -

This is mentioned in the Appendix 'E' of the SWR. Essential equipment shall be kept ready on hand in good condition with necessary relief stock.

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

In order to indicate to the Drivers of approaching trains the location of signal during thick, foggy and tempestuous weather or during dust storm, the SS/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.

APPENDICES:

APPENDIX-A	:	WORKING OF LEVEL CROSSING GATES
APPENDIX-B	:	SYSTEM OF SIGNALLING AND INTERLOCKING AND COMMUNICATION ARRANGEMENTS AT THE STATION.
APPENDIX-B1	:	WORKING INSTRUCTIONS ON VDU
APPENDIX-C	:	ANTI COLLISION DEVICE (RAKSHA KAVACH)
APPENDIX-D	:	DUTIES OF TRAIN PASSING STAFF & STAFF IN EACH SHIFT
APPENDIX-E	:	LIST OF ESSENTIAL EQUIPMENT PROVIDED AT THE STATION.
APPENDIX-F	:	RULES OF WORKING OF DK STATION, HALTS, IBH, IBS AND OUTLYING SIDINGS.
APPENDIX-G	:	RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS.
APPENDIX-H	:	RULES FOR WORKING OF TRAINS IN EXCHANGE YARD OF OFBL SIDING.

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 BADMAL STATION.

APPENDIX - 'A'

DETAILS OF LEVEL CROSSING GATES TOGETHER WITH INSTRUCTIONS TO OPERATING STAFF INCLUDING LEVEL CROSSING GATEMAN ABOUT THEIR NORMAL WORKING, THEIR MAINTENANCE AND THEIR WORKING IN CASE OF FAILURE / EMERGENCIES WITH SPECIAL PROVISIONS IF ANY.

1.0 WORKING RULE OF 'B-1' CLASS, TRAFFIC, INTERLOCKED LC GATE AT KM. 723.789 (No.JT-122) BETWEEN UP HOME AND DN ADV. STARTER SIGNAL IN BUDM YARD.

1.1 GENERAL DESCRIPTION:-

1.1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

1.	Number of Level Crossing Gate: -	JT-122
2.	Engineering or Traffic Gate: -	Traffic
3.	Under control of Station Master/PWI:	SM/BUDM
4.	Location KM-	723.789 (723/12-13)
5.	At. Station: -	BUDM
6.	In between Stations: -	BUDM-SFC
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 with station signals.
11.	Means of interlocking: -	Button No-27.
12.	Provision of Gate signal at Kms.	i) Up line- NIL ii) Dn line- NIL
13.	Signalling arrangement: -	NIL.
14.	Means of Communication:	Telephone Connection from Gate Goomty to SM office BUDM.
15.	Width of level crossing Gate: -	7.5 Meters.
16.	Type of road. (NH/SH/Others): -	Others
17.	Name of Road: -	OFBL Road.
18.	Metaled/Non Metaled	Metaled
19.	Approach Road: -	Metaled.
20.	Width of the road: -	5.5 m.
21.	Angle of road crossing (In case of the skew Gates) ----	
22.	Road gradient (If any) i)	North/East side.---Level ii)South/West side-----Level
23.	Road alignment (Straight/Curve): - i)	North/East side---- Curve ii)South/West side---- Straight
24.	Provision of height gauges: -	Not provided.
25.	Type of Barriers: -	Electrically Operated Lifting barriers.
26.	Length of checkrails: -	9.5 Meter.
27.	Road surface in between L C Gates: -	Hexagonal Blocks
28.	Length of speed breakers: -	7.5 Meters.
29.	Road signs: -	Available.
30.	Speed breaker indication board: -	Provided.
31.	TVU: -	18504 on 02/2010
32.	Census next due on: -	02/2013
33.	Demarcation for placement of Detonators: -	Available.
34.	Number of the Gateman working: -	02.
35.	Nearest Railway Medical Assistance: -	TIG.
36.	Nearest Private Medical Assistance available (if any) Badmal.	
37.	List of equipment available Yes/No: -	Yes.

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1.2. **EQUIPMENT:**
ITEMS

	<u>QUANTITY/NUMBERS</u>
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 & 7 in case Hexaple section mounted on sticks)
4. Banner Flag Red	3 (5 on Quadruple/Line or twin single line)
5. Posts for exhibiting red banner flag	2 (4 on Q/Twin single line & 5 on Hexaple 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 L.C. 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 **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.

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.

1. **ROUTINE DUTIES OF GATEMAN:**

- i) Gateman shall ensure that red banner flag by day & red lamp by night is placed across the track whenever the gate is kept in open condition 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) Gateman shall also be prepared to repeat any signal which guard may give to Loco Pilot.
- 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 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 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/BUDM 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 an, 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 two or three attempts he shall first protect the gate and then inform on phone.

The gateman shall protect the line as under: -

- A) 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.
 - i) 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.
 - ii) Gateman shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night.
 - iii) 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.
 - iv) 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.
 - v) Having returned to the gate, he must then take steps to remove the obstruction and warn the Loco Pilot of the approaching train.
 - vi) 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.
 - vii) Thereafter, he shall 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.

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- iii) He shall note down the particulars of the road vehicle, vehicle number, name of the Driver, owner & relay these details to the SM/BUDM & Permanent Way Inspector regarding the particulars & obstructions at the level crossing gate, through messenger or other means available.

1.5 **SPECIAL INSTRUCTIONS:-**

1. **MODE OF OPERATION :-**

This is 'C' class interlocked level crossing gate located within station between UP Home signal and DN Adv. Starter signal of BADMAL station. The gate is provided with coupled lifting barriers and operated with winch from the Gate lodge by the gate man. Telecommunication is provided between the Station Master's office BUDM station and gate goomty. This gate is interlocked with all UP reception signals and DN dispatch signals. The gate shall normally be kept open to road traffic and shall be closed against road traffic for passage of trains, engines or for any shunt movements.

When it is necessary to close the gate for taking OFF signals or for train passing or shunting operations the SM on duty 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, key 'G' is to be extracted from the winch after closing the L.C.Gate releases GF-1. The lever GF-1, when reversed it locks the level crossing boom and releases GF-2 and key-'H'. This Key'H' is transmitted electrically by the gate man through EKT to the panel in conjunction with GF-2 reversed controlling concerned signals. GF-2 has been provided in the gate lodge to put back the concerned signals 'ON' in case of emergency.

After passage of the Train or completion of shunting, the SM on duty shall inform the gateman and press LC gate controlling button No.27 and group button (trans) to transmit the Key 'N1' to gate, the gate man shall then extract the control key 'N1' from the RKT instrument after normalizing 2GF. The gate man will insert the Key 'N1' into 1GF and normalize the same to unlock the gate boom and release Key 'N'. Thereafter he will open the gate by inserting the Key 'N' 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).

2. **INTIMATION TO GATEMAN: -**

- i) Before taking off reception/departure signals Station Master/BUDM 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/ BUDM.
- 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/ BUDM 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/ BUDM 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/ BUDM, which will enable them to take 'OFF' reception/Departure signals.
- iii) When sufficient time is not available because of greater frequency of train service, station Master will issue written authority to the train Loco Pilot to pass the signal at 'ON' position.
- iv) In addition Station Master/ BUDM shall also issue a caution order advising the Loco Pilot to whistle continuously and approach the gate cautiously.

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- 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, Loco Pilot should be prepared 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/ BUDM shall advise the Station Master/SFC, under exchange of private number, that the telephone at the gate has failed.
- vii) The station Master/SFC at the dispatching end shall then issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- viii) He should also advise S&T staff responsible for maintenance of the telephone to rectify the defect at the earliest.
- ix) Normal working will be resumed only after S&T staff rectify the telephone and issue reconnection /fit memo for the same.

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

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

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

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 leaves or the key transmitter, then gateman must immediately inform the Station Master / BUDM on duty on telephone, under exchange of private number.
- ii) Thereafter, the gate must be treated as non – interlocked and procedure for reception/ dispatch of trains as prescribed for non – interlocked gates, should be adopted.
- iii) Station Master on duty/ BUDM shall issue a caution order to the Loco Pilot of a departing train.
- iv) He shall also advise the station Master/SFC, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- v) Station Master/ BUDM will advise S&T staff responsible for maintenance of winch/key transmitter to rectify the defect at the earliest.
- vi) Normal working will be 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/ BUDM on duty on telephone, under exchange of private number.
- ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/dispatch of trains as prescribed for non interlocked gates should be adopted.

- iii) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass the trains on hand signals.
- iv) Station Master on duty/ BUDM shall issue caution order to the Loco Pilot of a departing train.
- v) He shall also advise the station Master/SFC at the dispatching end, under exchange of private number, to similarly issue a caution order to the Loco Pilot before dispatching a train in the block section from his end.
- vi) Station Master/ BUDM will advise S&T staff responsible for maintenance of winch/gate leaves/key transmitter to rectify the defect at the earliest.
- vii) Normal working will be resumed only after S&T staff repairs the winch/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 normalize the GS switch to put back the signals to "ON " position and then fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gateman shall advise the Station Master/ BUDM on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) Stationmaster/ BUDM on duty shall be advised to put the reception/departure signals back to 'ON' position, if taken 'OFF' for a train.
- iv) If there is no response from the Station Master / BUDM after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gateman shall then rush with detonators and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gateman under item No.1.4.(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/ BUDM 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/ BUDM shall also inform the station Master/SFC at the dispatching end, under exchange of private number, asking him not to dispatch any train in the block section from his end, until the track has been clear of all obstruction.
- ix) After the track has been cleared of all obstructions the gateman shall inform the Station Master accordingly, under exchange of private number.
- x) Station Master/ BUDM 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 there after exhibit green hand signal, if the gate is not obstructed.
- xii) Station Master/ BUDM 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/leaf gates and issue reconnection/fit memo for the same.

1.6 OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

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

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

This is a 'B' Class Station with Standard-III interlocking (with isolation) with route setting type panel. The points and signals etc are power operated from a composite miniature 'DOMINO TYPE' full-fledged central panel or VDU installed in the station master's office. This Station is equipped with multi aspect colour light signaling. Tokenless Block Instruments (DIADO) have been provided in the SM panel room for section BUDM-SFC & BUDM-SFK.

1.1 DESCRIPTION OF PANEL:

The yard layout is depicted on the panel and the panel is fixed parallel to the track so that when the Station Master faces the panel, the yard drawing on the panel corresponds to the actual field lay out. A Visual Display Unit (Computer) is provided in the SM's office as a standby option.

(The description and the function of Visual Display Unit is given in APPENDIX-'B1')

1.2 POINT PUSH BUTTONS:

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

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

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

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

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

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

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

1.2.7 DESCRIPTION OF POINT PUSH BUTTON:

SL. NO.	POINT BUTTON NO.	COLOUR	DESCRIPTION
1	21 A/B	Black	Cross over point between L-2 & L-3 at SFC end.
2	22 A/B	Black	Cross over point between L-2 & L-3 at SFK end.
3	23 A/B	Black	Cross over point between L-1 & L-2 at SFC end
4	24 A/B	Black	D S point on L-4 at SFK end
5	25 A/B	Black	Cross over point between L-3 & L-4 at SFC end.
6	26 A/B	Black	Cross over point between L-3 & L-4 for exchange yard of OFBL siding at SFK end
7.	28 A/B	Black	Cross over point between L-3 & L-4 at SFK end
8.	30 A/B	Black	Cross over point between L-2 & L-3 at SFK end
9.	32A/B	Black	Cross over point between L-1 & L-2 at SFK end
10	Point Group button (Normal)	Black with Red dot	Common button for normal operation of points
11.	Point Group button (Reverse)	Black with Red dot	Common button for reverse operation of points
12.	Siding point control-36 button	Block	This button is to be pressed along with the group trains or group release button for siding point operation

1.3 DESCRIPTION OF POINT GROUP BUTTON:

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

1.4 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 ©. 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 SM on duty himself for all trains according to SR 3.69.03©. In such case both ends of the points shall be clamped and padlocked.

1.5 SIGNAL PUSH BUTTON:

These are Red coloured push buttons on the panel near that stop signals on the panel. These are operated in conjunction with Route button (White coloured) to take 'OFF' the signal.

1.6 DESCRIPTION OF SIGNAL BUTTONS:

SL NO	BUTTON NO.	COLOUR	DESCRIPTION
1	C1	Red with white dot	UP Calling 'ON' signal for Line No.1,2,3,4.
2	S1	Red	UP Home signal for Line No. 1,2,3,4.
3	C2	Red with white dot	DN Calling 'ON' signal for Line No. 1,2,3,4.
4	S2	Red	DN Home signal for Line No. 1,2,3,4.
5	SH3	Yellow	Shunt Signal at SFC end for back shunting towards line No.1, 2, 3 & 4.
6	SH4	Yellow	Shunt Signal at SFK end for back shunting towards line no.1, 2, 3 & 4.
7.	SH6	Yellow	Shunt Signal on exchange Yard line at SFK end for back shunting towards line no.1, 2, 3 & 4.
8.	S9	Red	UP Starter signal on Line No-1.
9.	S10	Red	DN Starter signal on Line No-1.
10.	S11	Red	UP Starter signal on Line No-2.

11.	S12	Red	DN Starter signal on Line No-2.
12.	S13	Red	UP Starter signal on Line No-3.
13.	S14	Red	DN Starter signal on Line No-3.
14.	S15	Red	UP Starter signal on Line No-4.
15.	S16	Red	DN Starter signal on Line No-4.
16.	S19	Red	UP Advanced Starter signal at SFK end.
17.	S20	Red	DN Advanced Starter signal at SFC end.
18.	SH9	Yellow	Shunt Signal below UP starter signal No-9 at SFK end.
19.	SH11	Yellow	Shunt Signal below UP starter signal No-11 at SFK end.
20.	SH13	Yellow	Shunt Signal below UP starter signal No-13 at SFK end.
21.	SH15	Yellow	Shunt Signal below UP starter signal No-15 at SFK end.

1.7 **SIGNAL INDICATION:**

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

1.4 **ROUTE BUTTONS:**

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

1.7.2 **DESCRIPTION OF ROUTE BUTTONS:**

SL. NO.	BUTTON NO.	COLOUR	DESCRIPTION
1	L1/1 UN	White with Black dot	Common route button for UP & DN Home signals, UP&DN Calling-On signals and back shunt signal (SH3 or SH4 or SH6) for line No.1 setting overlap to Sand hump.
2	L1/2 UN	White	Common route button for UP and DN Home signal for line No.1 setting overlap to Advanced starter signal.
3	L2 UN	White	Common route button for UP and DN Home signal, Calling-On signal and back shunt signals (SH3 or SH4 or SH6) for Main Line.
4.	L3/1 UN	White with Black dot	Common route button for UP & DN Home signals, UP&DN Calling-On signals and back shunt signals (SH3 or SH4 or SH6) for line No.3 setting overlap to Over Run Line.
5.	L3/2 UN	White	Common route button for UP and DN Home signal for line No.3 setting overlap to Advanced starter signal.
6.	L4/2 UN	White with Black dot	Common route button for UP & DN Home signals, UP&DN Calling-On signals and back shunt signal (SH3 or SH4 or SH6) for line No.4 setting overlap to Over Run Line.
7.	L4/3 UN	White	Common route button for UP and DN Home signal for line No.4 setting overlap to Advanced starter signal.
8.	19 AUN	WHITE	Common Route button for UP starter signal Nos. 9, 11, 13 &15.
9	19 UN	WHITE	Route button for UP Advanced starter Signal No.19
10	20 AUN	WHITE	Common Route button for UP starter signal Nos. 10, 12, 14 &16.

11.	20 UN	WHITE	Route button for UP Advanced starter Signal No.20
12	EY UN	WHITE	Route button for Shunt signal Nos. 9, 11, 13 &15 to Exchange Yard.

1.8 **CRANK HANDLE PUSH BUTTONS-**

All motor operated points in the yard have been grouped into five 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	Point Nos 21 A/B & 23 A/B
2	CH2	BLUE	Point Nos 25A/B
3.	CH3	BLUE	Point Nos 22 A/B
4.	CH4	BLUE	Point Nos 24A/B, 26 A/B & 28 A/B
5.	CH5	BLUE	Point Nos 30 A/B & 32 A/B

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

1.9 **MISCELLANEOUS PUSH BUTTONS**

SL. NO.	BUTTON NO.	COLOUR	DESCRIPTION
1.	Panel PC Switch	-----	To give control of operation from panel to PC and vice versa
2.	SM's Panel operation Key	----	To lock the control panel to prevent unauthorized operation This key is required to be inserted & turned to right for any operation of Points, Signals etc. This key shall be in the personal custody of SM on duty.
3.	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.
4.	Acknowledgement for system failure	Green with red dot	To be pressed to silence system failure buzzer
5.	Group Trans Button	White colour button with Black dot	To be pressed to initiate slot of crank handle or LC gate operation along with concerned slot/Crank Handle/L.C.Gate button.
6.	Group Release Button	White colour button with Black dot	To be pressed to withdraw/Normalize the control of slot of crank handle or LC gate operation along with concerned slot/Crank Handle/L.C.Gate push button.
7.	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.
8.	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
9.	Emergency Route Release Button	White with Red dot	To be pressed for emergency Route Release.
10.	Signal Cancellation Push Button	Red colour button	For cancellation of a signal which has been already taken off.
11.	Signal Lamp Failure /Point Failure Buzzer Muting Button	Red colour with white dot	To be pressed for acknowledging Signal Lamp Failure/Point Failure Buzzer.
12.	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.

13.	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.
14.	Train arrival acknowledge button	Chocolate with white dot	Train arrival acknowledgment buttons are provided for both UP & DN trains to be pressed after arrival of train.

1.6.1 **COUNTERS & BUZZERS:**

1.	Emergency Point operation counters.	This registers the emergency operation of points.
2.	Emergency route release counters.	This registers the emergency route release operation.
3.	Calling on counters	These counters record the operation of UP & DN Calling- on signals.
4.	Common crank handle release counter	This counter records the release of crank handle key.
5.	Emergency gate release counter	This counter records emergency release of L.C. gate
6.	Button held buzzer	This button comes to operation when any of push buttons is stuck up.
7.	System Failure	This buzzer comes to operation when the EI system fails.
8.	Signal / Point failure button	This buzzer comes to operation when any signal aspect goes blank or point fails.

1.7 **POWER FAILURE INDICATION /BUZZER AND POWER ACKNOWLEDGEMENT:**

Power supply to the signaling installation is through integrated power supply system. The IPS is normally fed through AT supply. The 1st standby power supply is Orissa state Electricity Board supply and 2nd standby is Diesel Generator. The available Local/DG supply is fed to the IPS through auto change over switch provided in IPS.

In the event of failure of the local power supply the SM on duty shall start the Diesel Generator. The power supply of the DG set is fed to the auto change over switch provided in IPS. The IPS system is connected with battery for safe working during transition of power. Remote monitoring ASM console for IPS is provided at SM's office which will give the following instructions.

	Instructions	Condition	LED indication	Remarks
A	Run DG set	50% DOD	Red	Auto/visual alarm. Alarm shall be acknowledged by SM on duty.
B	Emergency start	60% DOD	Red	Auto/visual alarm. Alarm shall be acknowledged by SM on duty.
C	System shut down	70% DOD	Red	Signal feed cut off and all DC-DC converters to work. Audio alarm will continue till Generator is started.
D	Call S&T staff	Equipment fault	Red	Failure of any module will give the alarm in SM's panel. Alarm shall be acknowledged by SM on duty for audio cut off.

1.7.1 **LED SIGNAL FAILURE INDICATION (RED SIGNAL LAMP MUTING BUTTON: RED WITH WHITE DOT)**

Whenever LED signal becomes blank, a miniature flashing red light indication appears along with an audio buzzer indicates signal lamp failure. The SM on duty shall press the signal lamp/point failure Ack. Button, there by the buzzer stops but the red indication lamp becomes steady which continues till either LED signal is replaced/rectified or signal assumes other aspect.

1.7.2 EI SYSTEM INDICATION:

EI system indication is provided on the top of the panel for indicating which system is working. This EI unit is consisting of two systems called system 'A' and system 'B'. These two systems status (ON/OFF) will be indicated separately on the panel. If the system indication is ON 'GREEN' indication will appear and if OFF 'RED' indication appears. If any one of the 'ON' line system fails automatically OFF line system will change to ON line with a gap of 180 seconds. A system failure buzzer is provided on the panel board to stop the buzzer. SM on duty has to press the system failure acknowledgement button provided on the top of the panel and intimate the same to ESM/SE/JE in charge for rectification of the failure. Whenever the system changes from A to B or B to A SM on duty has to release all crank handle, L C Gate controls. Two additional indications are provided for monitoring the stations of panel processor and its communication with EI system.

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

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

1.9 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.

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

The Electronic 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 concerned signal button. After this, first the emergency route release button (White with Red Dot) positioned on the top of the panel to be pressed after breaking seal and subsequently the concerned signal button is to be pressed releasing the emergency route release button. A white light will be lit indicating that the timer is working. After a lapse of 120 seconds the white light along with the white strip of light will disappear suggesting that the route has been released. In case the route illumination (white strip lights) does not disappear, it suggests that the route is not released/cancelled. In such case the concerned S&T staff should be advised immediately to release by rectifying the fault. It is to be ensured that after every emergency route release operation S&T staff shall reseal the emergency route release button.

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

3.0 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. A push button (Black with Red dot) for emergency point operation is provided on the top of the Panel. If such operation is necessary, the SM on duty, after ensuring that SM's point Key is 'IN' and no vehicle is standing on the concerned point zone shall press the emergency point operation button (by breaking the seal) along with relevant point button simultaneously. Then keeping point button pressed, emergency point button to be released and the point group normal button or point group reverse button is to be pressed for operating the point to 'NORMAL or REVERSE. Each emergency point operation should be recorded in the emergency point operation counter by registering the next higher

number. All such operations and the new number should be recorded in the station diary counter register and in the train signal register. SM shall ensure resealing of Emergency point operation counter by S&T staff after completion of such operation.

4.0 **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 L.C gate, the SM on duty shall press emergency gate release button after breaking the seal and gate button No.27. After a lapse of 120 secs, a red light will glow over the emergency gate release button indicating that the operation is matured. The SM on duty shall then operate push button no.27 and group Trans button to release the key from RKT in gate Lodge. 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.

4.1 **BUTTON HELD ACKNOWLEDGEMENT(WHITE WITH RED DOT)**

All push buttons are self restoring type. A button held acknowledgement push button along with a white light is positioned at the top of the panel. When any point, route or signal button gets stuck up 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 indication of each point; route or signal will continue to glow until the pressed button is normalized. SM on duty shall try to find out the pressed button for normalization or otherwise inform the maintenance staff to rectify.

4.2 **OVER LAP TIME RELEASE(WHITE LIGHT)**

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

5 **TRACK CIRCUIT:**

Line No.1 to 4 are track circuited. In addition, there are short length track circuits in advance of Advanced Starter Signals and Home signal in both the directions are also provided. For Calling-on signals (7M Rail length) track circuits are also provided in rear of the Home signals in both directions. From last trailing point/fouling mark in either side of Yard to Advanced Starter Signals are also track circuited. Indications for the above track circuits are available on Panel / VDU at SM's office. Normally the panel is blank except point and Block section indications for the above track circuits/ Axle counters are available on Panel/VDU at SM's office. When a signal is cleared the route indication 'Yellow' appears for the particular route set and 'Red' light appears as the train occupies the track circuit.

7.0 **AXLE COUNTER:**

Entire Block Section between BUDM-SFC & BUDM-SFK are provided with Electronic Axle counters.

For SEC: BUDM-SFC:- A pair of digital axle counter is provided between BUDM-SFC, one just beyond DN advanced starter no. 20 of BUDM and another in advance of UP Advanced Starter signal of SFC.

FOR SEC: BUDM-SFK: A pair of Digital axle counter is provided between BUDM-SFK, one just beyond UP Advanced starter signal no.19 of BUDM and another in advance of DN Advanced Starter signal of SFK.

The position of the Block section whether cleared or occupied are reflected in the Panel/VDU provided in the Station Master's office which shows 'GREEN' when the Block Section is clear &

'RED' when occupied. Whenever a train enters in to the Block Section, "Block Section Clear" indication 'GREEN' for the particular block section disappears & 'RED' indication appears.

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

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

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

8.0 STATION MASTER'S PANEL CONTROL KEY:

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

9.0 CRANK HANDLES:

When any point fails to operate normally by the route setting operation or through the concerned point button through panel, it is inevitable to operate the points with crank handle. Station Master on duty shall personally ensure clamping and padlocking all facing and trailing points enroute. Crank handles are interlocked with signals and interlocking system. The CH push button (Blue) and group button (White with Black dot) is provided at the top of the panel board. This button has two indications viz., WHITE and RED. The White indication suggests that the crank handle key is in its interlocked position of the panel. This is called "Crank Handle Key 'IN' indication.

The Red indication suggests that the crank handle key is locked and not free for extraction from RKT. This is called 'Crank handle key locked' indication.

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

Crank handle control for operation of points:

9.1 SETTING OF ROUTE AND TAKING OFF RECEPTION SIGNALS.

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

9.2 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 relevant point button and group button one at a time in the desired position or by operating signal and route button.

To take 'OFF' UP advanced starter signal no.19, LV section between BUDM-SFK should be clear and Line clear must be obtained from the concerned Block section in advance. Then the concerned advanced starter signal button shall be pressed along with the concerned route button for two or three seconds and released. This will clear the Up advanced starter signal and a white strip of light will appear on the panel.

To take 'OFF' DN advanced starter signal no.20, LV section between BUDM-SFC should be clear and Line clear must be obtained from the concerned Block section in advance. Then the concerned advanced starter signal button shall be pressed along with the concerned route button for two or three seconds and released. This will clear the DN advanced starter signal and a white strip of light will appear on the panel.

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

9.3 TAKING OFF CALLING ON SIGNAL

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

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit (1AT, 2AT as the case may be) in rear of the Home signal. When a train occupies the track circuit a RED light strip will appear on the Panel/VDU. The particular route on which train is intended to be received shall be set by operating the point push button and group button individually or by signal and route buttons pressing or by crank handling in the event of failure of operation of points through panel/VDU. After the route is set, the Calling On signal button 'C-1(A-D)/ C-2(A-D) (Red with White dot) shall be pressed (as the case may be) simultaneously along with the concerned route button for 2 to 3 seconds and then 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.

10. RELEASE/ CANCELLATION OF ROUTE.

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

Note:- UP and DN calling on signals, UP and DN advanced starters are to be manually cancelled after the passage of the train to cancel the route.

11.0 REPLACEMENT OF SIGNALS TO ON:

Signals are replaced to 'ON' automatically by the operation of the first track in advance of the signal. It will not be possible to re-clear the signal again unless the due process for clearing the signal is repeated again. For replacement of any signal to 'ON' position manually, the respective signal button and signal cancellation button (RED) is to be pressed simultaneously.

12. INTERLOCKING OF SIGNALS/POINTS

All running line points are fitted with point machines which have in built locking and are electrically detected by the relevant Home signals and starters.

12.1 Advanced starter signals are interlocked with respective Tokenless Block instrument in LINE CLEAR position.

12.2 Home signals are interlocked with respective Tokenless Block instruments. The Block instruments cannot be made to normal unless the respective Home signal is put back to 'ON' aspect and the respective block section monitored by axle counter is clear of trains.

12.3 Signals once taken OFF can be put back to ON in case of emergency by pressing the concerned signal button in conjunction with signal cancellation button even when the panel is locked up with Station Master's key.

13.0 **PILOTING OF TRAINS IN TO THE STATION YARD**

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

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

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

NOTE:

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

13.1 **PILOTING OF TRAINS OUT OF STATION YARD:**

When starter signal has become defective, the SM on duty shall set the points correctly from the panel or advise the TPM to set the concerned points correctly for the outgoing train with the help of crank handle. The TPM on duty shall clamp and padlock both the facing and trailing end points under supervision of SM on duty in both the cases. He shall also advise the gateman to close the level crossing gate/gates on the route for dispatch of a train.

The SM on duty shall then authorize the TPM on duty to hand over the pilot memo T/369(3b) along with other authorities if any to the Loco Pilot of the train. Thereafter, he shall display proceed hand signal at the foot of the starter signal vide subsidiary rule 3.70.01.

In case advanced starter signal becomes defective BWM 3.33 will be followed.

NOTE:

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

14.0 **SHUNTING**

Shunt signals No SH 9, SH 11, SH 13 and SH 15 below Up starter signals have been provided. Independent Back shunt signals SH-3 (A-D), SH-4 (A-D) and SH6 (A-D) are provided for shunting back to the station yard in desired direction. The particular route on which it is intended to do shunting is to be set by operating the desired points individually from the panel or by pressing the shunt signal button and required route button simultaneously for 2-3 seconds. When the route is set and locked correctly white strip of lights will appear on the route and concerned shunt signal shall display 'OFF' aspect.

14.0 **VERIFICATION OF LINE CLEARANCE BY STATION MASTER ON DUTY FOR RECEPTION OF TRAINS INTO THE 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 passage 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 Luminous indications of the track before any movement of trains are permitted on the concerned route subjected to the other conditions such as locking of points etc.

16.0 CRANK HANDLING EMERGENCY OPERATION OF POINTS

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

On account of the doubtful operation of any track circuit by a light vehicle including self propelled vehicle such as Motor trolley or light Diesel/electrical engine or tower wagon, indicating the occupancy of the track. It is necessary to satisfy SM on duty that the said vehicle has cleared point zone track circuits by observing the track indications on either side of the cross over.

17.0 **EMERGENCY OPERATIONS:-** The following are the instructions for emergency operations.

17.1 CANCELLATION BUTTON AND COUNTERS

17.1.1 For the purpose of the emergency operations there is an emergency Route cancellation button (provided at the top of the panel) and also there is a counter for counting emergency operations involving the concurrent operation of the emergency route cancellation button. The Station Master on duty must press the emergency route button along with concerned signal button for which emergency route releases is desired. A yellow indication will appear below the signal indicating that the timer has started operating and after lapse of 120 seconds the desired route will be released provided all other conditions are favorable for the route release.

17.1.2 The counter registers the number of such emergency operations performed for such emergency cancellation and the Station Master on duty shall specify the cause for such usage giving the particulars of cause and the time of operation as related to a particular train etc. in the train signal register. The detailed operation instructions are as follows:

18.0 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 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 the work the Maintainer shall return the key to the Station Master. The details of transaction should be properly recorded in relay room register maintained at the station and duly signed by the Station Master and the Maintainer concerned as per OM 1.14. In addition, the Station Master shall also observe SR 3.51.05.

19.0 MAINTANANCE OF S&T INSTALLATION & ADHERENCE TO MAINTENANCE SCHEDULES:

19.1 Regular maintenance of S&T installations and adherence to the schedules of maintenance is also the mandatory schedules of testing of points, track circuits, point machines, level crossing gates, the associated interlocking apparatus i.e., cables and finally the interlocking functional tests is a must for the safe & satisfactory working of those installations at this Station.

19.2 The tests, checks and replacements etc. including overhauling shall confirm to the schedule of maintenance as indicated in the signal engineering manual as also in the current and extent instruction / circulars on the subject.

19.3 PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF A SIGNAL AND INTERLOCKING INSTALLATIONS:

In case of failure of any interlocking gear at the station, the failure report should be communicated by the Station Master on duty through a memo to the Sectional Maintainer and the Signal Engineer of the Section and others as per G& SR 3.51.04 and 3.68.04 and document all such transactions.

20.1 INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:

Before declaring a Signal as defective the setting of point on the route to which it applies shall be inspected by the Station Master on duty irrespective of the position of the Buttons the Panel in term of SR 3.68.04(c).

20.2 RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:

After receipt of this information, the sectional maintainer shall attend to the failure after giving a disconnection memo. After rectification of the fault the sectional maintainer shall give a reconnection memo detailing rectification. Thereafter the Station Master on duty shall personally check the defective apparatus. After satisfying himself that the gear is in good and proper working order, he shall resume the normal working of the said defective gear in terms of SR 3.64.04 (c) and (d).

21.0 PROCEDURE FOR CARRYING OUT PLANNED MAINTANANCE WORK:

Whenever any normal maintenance or special works for heavy renewals etc., are involved, these works should be pre-planned by the signal & Telecommunication field staff and the Inspector of the section should give to the Station Master in writing "Advance Intimation" about this planned work in terms of GR 15.08.01.

22.0 EMERGENCIES:

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

23.0 PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNALS AND POINTS AND USE OF CRANK HANDLE.

23.1 When crank handle key is removed from RKT for operation of the defective motor operated points, the responsibility for its safe custody rests with the SM on duty, till it is replaced back to RKT.

23.2 The cases of failure of Motor Operated Points should be promptly reported to the Concerned Signal maintainer /Signal Inspector for immediate rectification.

23.3 Whenever an emergency Crank handle is required to be used by a Signal Official for maintenance of work attending to failure, the Signal Official will give a disconnection memo to the Station Master on duty and after making necessary entries in the emergency Crank Handle register, the Station Master on duty; will obtain acknowledgement of the Signal Official in the emergency Crank Handle Register and then handover to him the emergency Crank Handle for the Points concerned. All the concerned Points will be treated as defective till the Emergency Crank Handle is returned back to the Station Master on duty.

23.4 Before parting with the emergency crank handle either for attending failure or for Maintenance work by Signal Maintenance Officials, the Station Master on duty will ensure that the reception and departure Signals are put back to ON position. The Points for the affected lines shall be treated as Non-interlocked. The Station Master on duty is responsible for introduction of Non-interlocked working and the trains Will be piloted IN and OUT duly clamping and Padlocking the Points, both in facing and trailing directions over which the train is to pass, as

per GR 3.69 and 3.70 with relevant SR's. The Station Master on duty will be personally responsible for setting and locking of Points, for reception and dispatch of all trains.

23.5 The Emergency Crank Handle Register is to be maintained vide OM 20.06 note (d) by the SM on duty wherein the particulars of usage of the Emergency Crank Handle must be recorded.

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

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

	Section	Type of Block Instrument
1.	BUDM-SFC	Daido Type Single line Token-less Block Instrument.
2.	BUDM-SFK	Daido Type Single line Token-less Block Instrument.

24.1 **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.

24.2 **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)-**

<u>Despatching Station</u>	:	<u>Receiving Station</u>
[Block handle in 'Line Closed position. All concerned signals & signal buttons normal]	:	[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.	:	3. Inserts SM's key
	:	4. Acknowledges the call attention code of bell signals by pressing the button PB-1.
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| 5. Sends 'Attend telephone' code of bell signals | : | 6. | Acknowledges the 'Attend telephone' code of bell signals & attends on telephone. |
| 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)] | : | 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..... |
| 9. Repeats the Private Number given by SM 'B' and replaces telephone. | : | 10. | Replaces telephone. |
| 11. Sends 'Is line clear enquiry' code of signals through button PB-1 and keeps the buttons PB-1 & PB-2 pressed on the last beat for 5 sec. or until the Galvanometer needle vibrates. | : | 12. | Turns the operating handle to 'Train coming from' position. |
| 14. Turns operating handle | : | 13. | Acknowledges the "Is line clear" code of bell signals through button PB-1 and keeps the buttons PB-1 & PB-2 pressed on the last beat for 5 seconds or till the Galvanometer needle vibrates. |
| 15(a) Takes 'OFF' the last Stop signal (after ensuring that the route is clear and points are correctly set and locked) | : | | |
| (b) Train enters Block section. | : | | |
| (c) Last Stop signal returns to 'ON' position. | : | | |
| (d) 'Train on line' indication appears automatically. | : | | |
| (e) Buzzer I starts operating. | : | 16. | 'Train on Line' indication appears automatically & Buzzer 1 starts operating. |
| 17. Sends 'Call attention' code of bell signals through button PB-1 | : | 18. | Acknowledges 'Call attention' code of bell signals through button PB-1 |
| 19. Sends 'Train Entering Block section' code of bell signals after complying with BMW Rule 2.07 (5) | : | 20. | Acknowledge 'train Entering Block section' code of bell signals through PB-1. Buzzer stops. |
| 21. Buzzer 1 stops. | : | 22. | Takes 'OFF' the reception signals (after ensuring that the line nominated is clear and points are correctly set & locked). |
| | : | 23(a) | Train enters the station. |
| | : | (b) | Reception signals replaced to 'ON' position automatically. |
| | : | (c) | Buzzer 2 starts operating. |
| | : | (d) | Buzzer-2 stops when reset push button is pressed. |
| | : | (e) | comply with BMW Rule 2.07 (6) |
| | : | 24. | Sends 'Call attention' code of bell signals through button PB-1 |
| 25. Acknowledges 'Call attention' code of | : | 26. | Sends 'Train out of block section' code |

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bell signals :

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 & 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. :

24.3 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

Receiving 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. : | (Block Instrument handle at "Train Coming from" position) : |
| 1. Sends "Call attention" code of bell signal on PB-1 : | 2. Acknowledges on PB-1 : |
| 3. Sends "Attend Telephone" code of bell Signal on PB-1 : | 4. Acknowledges on PB-1 and attends telephone. : |
| 5. Takes up telephone, calls out station name and asks for his consent. : | 6. Ensures that reception signal(s) is/are at 'ON', Calls out station name and then gives his consent on telephone. : |
| 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. : | 9. Acknowledges 'Call Attention' code of bell signals. : |

- | | |
|---|---|
| <p>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.</p> <p>12. Turns switch SI to normal position, Turns Block handle to 'Line Closed' position.</p> | <p>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.</p> |
|---|---|

24.4 NORMALISING OF BLOCK INSTRUMENT WHEN TRAIN 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:-

- | <u>Despatching Station</u> | <u>Receiving Station.</u> |
|--|--|
| (Block handle on 'Train Going to' position). | (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. (a) Turns the switch S2 from normal to cancellation position. | |
| (b) The 'Counter' registers next higher number. | |
| (c) Takes 'OFF' the reception signals. | |
| (d) Train enters the station. | |
| (e) Home signal goes to normal | |
| (f) Buzzer 2 for arrival of the train starts operating | |
| (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. | |

24.5 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.

24.6 LAST STOP SIGNAL CONTROL:-

- a) The block working of the section BUDM-SFC & BUDM-SFK is controlled with the provision of Token-less Block Instrument (Diado type),
- b) The Advanced starter signals are interlocked with the respective Block Instrument 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 & 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.
- d) When the Block Instrument is suspended with its handle in 'LINE CLEAR' position for whatever reason, the concerned Last Stop Signals controlled by the Block Instrument must be treated as suspended and trains shall be worked PLCT.

24.7 BLOCK RELEASE:-

- [a] The Block Instruments are restored to normal (Line Closed condition) only after the complete arrival of the train past the block overlap ahead of the respective Home signal on either side of the Station yard.
- [b] All the power signaling installations in the Station yard 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 BUDM-SFC & BUDM-SFK sections.

Thus the Axle Counters provided at the end of the Block Overlap ahead of the respective Home signal to ensure complete arrival of the incoming trains at Station yard.

- [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 station master shall resort to resetting procedure of the axle counter of concerned block section.

25.0 AXLE COUNTER AS LAST VEHICLE CHECKING DEVICE (LVCD):-

- (a) Axle Counter as LVCD has been provided for the section BUDM-SFC & BUDM-SFK 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 BUDM 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 BUDM cannot be taken OFF if axle counter of block section BUDM-SFK fails. Similarly, DN last stop signal cannot be taken OFF if axle counter of block section BUDM-SFC 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

26.0 NORMALISATION OF AXLE COUNTER & 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.

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

- i) Whenever after complete arrival of train, the LVV axle counter continues to show 'RED' on the panel board, the on duty SS/SM at both ends of the section shall resort to reset the axle counter.
- (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 SS/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 the 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 counter has been provided as LVCD, resetting is to be done by both of sending end and receiving end individually.

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

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

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

The SS/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 clear 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.

27.0 BURNING OF SIGNAL LIGHTS:

The station Master on duty must also ensure from Panel board that all the signal lights are glowing properly and brightly. This fact must be recorded in the Diary under a separate entry and confirm to the section controller on duty.

28.0 CORRECTING TIME IN STATION CLOCK:

The station Master shall set the time in his clock according to the time signal given by the section controller on duty at 16.00 Hrs every day according to GR and SR 4.01.01 & 4.01.02.

29.0 TELECOMMUNICATIONS:

- i) Telephone attached with single line Tokenless Block Instruments for either side Block Sections
- ii) Station to Station fixed telephone (hot line) is provided between BUDM-SFC and BUDM -SFK.
- iii) Station is provided with Auto telephone connected with Railway Exchange
- iv) BSNL telephone is provided.
- v) The station is connected to Bolangir- Singapur Road control circuit by a control telephone
- vi) Station to station 25 Watt VHF set is provided for emergency communication.
- vii) Magneto Telephone connection is provided with Station & CH Locations.
- viii) Magneto Telephone connection is provided between Station & Traffic LC Gate at KM.723/12-13.

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 Drivers, Guards or any other staff.
- (iii) The on duty SM shall obtain Line Clear by the means of communication stated in above Para-29.0 from item No. (i) to (vi) in order of preference. In case of failure of any of the above means of communication the SM on duty shall work vide SR 6.02.06.

30.0 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 6.02.04.

APPENDIX 'B1' TO STATION WORKING RULES OF BADMAL STATION VISUAL DISPLAY UNIT (VDU)**Note:**

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

SYSTEM OVERVIEW:

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

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

SELECTION OF CONTROL:

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

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

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

PANEL/PC KEY and PC CONTROL KEY

To prevent the unauthorised operation by other than on duty SM in VDU this facility is provided on VDU. On duty SM need to track the pointer to the "PC CONTROL KEY" icon and click the KEY OUT menu by the left button of mouse, by this a Password window will appear. SM need to enter the password and press OK button provided on the password window. This will lock all the controls in VDU except the Signal Cancellation of All Cleared Signal routes. The PC CONTROL KEY is nothing but a SM's Key in the conventional panel.

CHANGE OVER FROM PANEL WORKING TO PC

Ensure that SM's Key is in ON position.

Ensure that PANEL/PC Change over switch is in PANEL mode.

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

<p>REQUEST PC PANEL ACKNOWLEDGE</p>
--

Click the first Menu – PC REQUEST. (A password required window will appear in the centre of the screen).

Enter the proper USER NAME and PASSWORD in the required text boxes by selecting with mouse, after entering so, click the OK button.

Now both the PANEL and PC indications will start Flashing.

Change the PANEL/PC changeover switch to PC mode in the conventional panel.

Now the PC indication will steady and Panel indication will disappear.

Click the PC CONTROL KEY and click the KEY IN menu. (A password required window will appear in the centre of the screen).

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

Now the Overall control is transferred to VDU.

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The entire operation can be possible from the VDU.

CHANGE OVER FROM PC WORKING TO PANEL

Turn the PANEL/PC changeover switch to PANEL mode.

Now both the PANEL and PC indications will start Flashing.

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

Click the second Menu – PANEL ACKNOWLEDGE. (A password required window will appear in the centre of the screen).

Enter the proper USER NAME and PASSWORD in the required text boxes by selecting with mouse, after entering so click the OK button.

Now the PANEL indication will be steady and the PC indication will disappear.

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

<p><u>PANEL/PC SWITCH</u> REQUEST PC PANEL ACKNOWLEDGE</p>
--

OPERATIONAL PROCEDURE:

VDU INDICATIONS:

MICROLOK II (SSI) INDICATIONS:

In Panel/PC there are two system indication, Green indication mentioning the On-line system and the RED indication mentioning the Off-line system. In addition there are two indications mentioning status of communication and panel processor.

SIGNAL OPERATION:

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

<p><u>SIGNAL 1/C1.</u> HOME CALLING-ON ►</p>

<p><u>Clear Route A (SH)</u> Clear Route A (M/L) Clear Route B Clear Route C (M/L) Clear Route C (ORL) Clear Route D (M/L) Clear Route D (ORL) Cancel Emergency Route Release</p>
--

SETTING A ROUTE:

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

CONDITIONS FOR SETTING A ROUTE:

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

All the Crank handles of the required route related points to be in Key in condition.

All the related siding control keys to be in Key in condition.

If any Level Crossing gates are falling under the route that should be locked (KEY IN) and signal slot lever of the gate to be in reverse position (Can be ensured from the Yellow steady indication just near the LC Gate control).

All the related siding points should be in normal position (can be ensured from Yellow steady indication at the siding point on the route).

CANCELLING A ROUTE/ EMERGENCY ROUTE RELEASE:

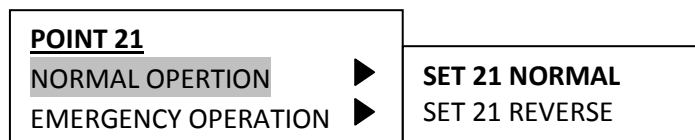
To Cancel a signal route when the route is set and the signal is taken-off, click on the signal cancellation menu (Main/Calling on) of the concerned signal, the signal will immediately go to ON aspect, after doing so click on the Route release menu the route locked indication will start flashing for 120sec. After the completion of 120sec the locked route will be released and counter provided for the route release in the conventional panel will changeover to next higher digit which should be recorded by SM.

SHUNT SIGNAL OPERATION:

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

POINT OPERATION:

To Operate the Point the SM needs to track the mouse pointer to concerned point's normal/reverse indications on the VDU, after clicking by the left button on the mouse a popup menu will appear as below:

**REVERSE TO NORMAL OPERATION:**

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

NORMAL TO REVERSE OPERATION:

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

EMERGENCY NORMAL OPERATION:

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

Before doing the emergency operation A Emergency Point Operation Key to be KEY IN by clicking the KEY IN menu, after the completion of the Emergency point operation, the key to be KEY OUT by clicking KEY OUT menu.

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

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

EMERGENCY REVERSE OPERATION:

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

Before doing the emergency operation A Emergency Point Operation Key to be KEY IN by clicking the KEY IN menu, after the completion of the Emergency point operation the key to be KEY OUT by clicking KEY OUT menu.

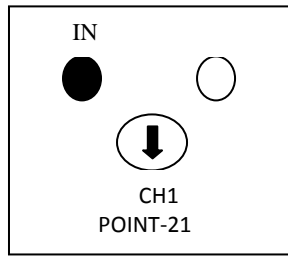
Track the pointer to EMERGENCY REVERSE menu and click, a Reverse flashing indication will appear, the indication will be steady after the point is set to reverse.

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

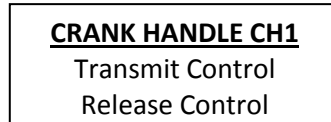
CRANK HANDLE & SIDING CONTROL OPERATION:

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



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

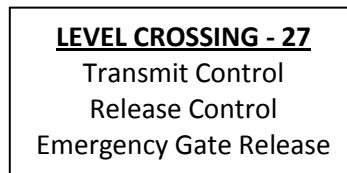


For Transmitting the Crank Handle KEY to the field personnel SM has to click transmit control menu. After transmission the KEY IN indication will start flashing, now the KEY can be extracted from the RKT. After extracting the key from the RKT, the KEY IN indication will disappear. When the Manual point operation is over, after putting the KEY in the RKT, A KEY IN flashing indication will appear on the panel. Now the SM has to release the control for the Steady indication by clicking release control menu.

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

LEVEL CROSSING GATE OPERATION:

To Transmit or Release control of the Level crossing gate, click on the Level crossing control button provided like the following button on the VDU. The appearing pop-up menu gives details of the possible commands on the Level crossing gate.



For transmitting the LC Key to the Gate man, SM has to transmit the control by clicking, after transmission the CLOSED indication will starts flashing, now the KEY can be extracted from the RKT. When the gate has been closed, locked & slot lever is in reverse position, after putting the key in the RKT, a closed flashing indication will appear on the panel. Now the SM has to release the control for the Steady indication.

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

EMERGENCY GATE OPERATION:

If suppose the LC Gate has locked by any of the signal route, For releasing the gate by the Emergency operation the SM has to cancel the signal by signal cancellation control of the relevant signal. Then he has to click the Emergency Gate Release Control in the Gate pop-up menu. This will take 120 sec of time to release the gate. After the time lapsed, the Key can be extracted from the RKT at Gate Lodge and concerned counter provided on the panel board will change to next higher digit number, which should be recorded in the register provided for this purpose.

APPENDIX 'C'

ANTI COLLISION DEVICE [RAKSHA KAVACH]

-NIL-

APPENDIX 'D'**DUTIES TO BE PERFORMED BY THE STAFF AT BADMAL STATION.****1) STATION SUPERINTENDENT:**

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

He is responsible for booking all 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.

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.

2. **DY.SS/SM/ASM**

He shall work in shift duty for train passing and booking of traffic, 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 train passing during his shift. He shall promptly bring to the notice of SS all irregularities and accidents in course of his shift duties. During the absence of SS the duties of Station Superintendent will devolve on him. He shall follow GR 3.49, SR 3.68.01 (c) & (d), SR 14.07.01. His special attention is drawn to chapter II of G & SR (Amendment) 2000 and SR 5.01 to 5.08 with relevant SRs. He shall carry out the instructions given to him by the SS.

3. **TRAFFIC POINTSMAN/TOKEN PORTER:**

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 driver of train.
- (ii) Correct setting and locking and crank handling of points for reception/dispatch and shunting operation under the supervision of Station Master/Guard.
- (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 Driver and Guard of passing trains as directed by the Station Master.
- (viii) Cleaning, Oiling and lighting of lamps.
- (ix) Loading/unloading of parcels, luggage, Guard boxes 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 interact arrival register (T/1410) signed by the Guard as and when required.
- (xi) Serving messages and any other duties entrusted to them by the SMR/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.

4. **SAFAIWALA-CUM LAMP MAN:**

He shall attend to sanitation of Railway premises including SM's office, platforms, staff quarters, and latrines and cleaning of drainages etc., He shall carry out any work instructed to him by Dy.SS/SM on duty.

NOTE: All staff should be in uniform while on duty and follow the rosters issued by DPO/SBP from time to time.

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APPENDIX 'E'**ESSENTIAL EQUIPMENT**

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

Sl. No	Description	Quantity
1	Detonators	10 Nos
2	Battery operated LED based flashing Hand Signal lamps	3 Nos (1 spare)
3	Hand Signal Flags	3 Sets (1 spare)
4	Safety chains with Pad locks	6 Nos
5.	Sprags/Wedges	6 Nos
6.	Clamps with Padlocks	8 Nos
7	Reminder collars	6 Nos
8	Fire Extinguishers (DCPT)	1 No
9	Fire & Sand buckets	5 Nos
10	First Aid Box	1 No
11	Stretcher	1 No
12	Blanket	1 No
13.	Motor Trolley on Line" boards	2 Nos
14.	Block suspension Board	2 Nos

APPENDIX 'F'

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

---NIL---

APPENDIX- 'G'

RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS:

-NOT APPLICABLE TO THIS STATION-.

APPENDIX-‘H’**WORKING RULE OF ORDNANCE FACTORY EXCHANGE YARD, BADMAL**

The exchange yard of the OFBL defence siding takes off from L/4 of BUDM station at east end of the yard with the provision of DS point No-24. It is located at a distance of 2 KM from CSB of BUDM station. The exchange yard is provided for exchange of wagons between the Railway and the siding holder. It is having four lines and three spurs taking off from exchange yard line no.1 at station end. The nomenclature and capacity of the lines in exchange yard is as follows:

Srl.No	Line No.	CSL(In metres)	Holding Capacity (BCX)
i)	Line no. 1 (Loop)	673.60	40
ii)	Line no.2 (Loop)	752.20	44
iii)	Line no.3 (Main)	677.85	40
iv)	Line no. 4 (Loop)	677.85	40
v)	Spur –1 (Single entry)	89.80	5
vi)	Spur – 2 (Single entry)	65.00	3
vii)	Spur – 3 (Single entry)	66.50	4

All the points in exchange yard are ground lever hand operated points. Lines are numbered from platform serially. Line no.1, which is beside the goods platform, is having wagon washing facilities. Line no.3 is directly connected to OFBL factory yard. At the end of the exchange yard towards factory there are two security gates.

SYSTEM OF WORKING: -

Exchange yard is the interchange point between Railways and Ordnance factory. Only one engine (single/coupled) unit either of factory or of Railway will work in the exchange yard at a time. The railway engine (single/couple) is allowed to work upto the exchange yard with reversing facilities at factory end upto the 1st security gate (from exchange yard), and the gate may be opened for such engine reversal facility, if required. Likewise, ordnance factory engine is allowed to work in exchange yard with reversal facilities at station end of the exchange yard. In case of emergency, Rule no. GR 4.66 may be followed for factory engine. In case of failure of railway engine in exchange yard, or on the way in between exchange yard and station, or for any other reason precludes in working of such powers for which relief engine is required the relief power will not be allowed by SM on duty without written memo of the Loco Pilot of the disabled power, which may be handed over to him or collected by shunting supervisor and kept under his custody till handed over to SM on duty and repeated the memo over the telephone of the exchange yard to the SM on duty.

AUTHORITY FOR WORKING IN THE EXCHANGE YARD: -

A metallic badge having logo of the OFBL along with a number is the authority to allow power in to the exchange yard. Normally it should be kept under the custody of SM on duty and a separate register is to be maintained at the station for handing over and taking over of the badge. When OFBL authority desires to send their power to exchange yard this badge is to be taken and after completion of their work their engine must be taken back from the exchange yard after which the badge should be handed over to the SM on duty. For working in the exchange yard by Railways, the SM on duty shall issue T/806 to the Loco Pilot of the railway power (S) only after getting possession of the badge and ensuring that the OFBL engine is not in the exchange yard. While handing over the badge to OFBL authorities, it should also be ensured that no Railway engine is working in the exchange yard. The register as stated above should contain the following columns: -

- (a) Date (b) Time badge taken (c) Time badge returned (d) Reason for taking badge (e) Signature of siding authority (f) Signature of SM on duty (g) Signature of the relieved SM.

R.Das.
DSTE/SBP

D. Nayak.
DOM(G)/SBP

In case of loss of the badge OFBL authority should not allow their power without written authorisation of the SM on duty. It should be prepared in duplicate and while taking authorization memo from SM on duty the siding authority shall acknowledge on the counter foil and after completion of work the memo to be handed over to SM on duty who will cancel the same putting the time of cancellation and paste the counter foil. This practice will continue till a fresh badge is supplied by OFBL authority. Message to Sr.DOM, Sr.DSO and Siding in-charge is to be given by SM on duty regarding such loss and replacement thereto. Preparation of more than one badge at a time is restricted. In case of loss of badge the fresh one which is to be prepared should bear the Logo and a different number.

WORKING OF TRAIN BETWEEN BUDM STATION & OFBL EXCHANGE YARD: -

- (1) In connection with placement/drawn out of loads/empties in exchange yard SM on duty BUDM will consult SCR and act as per his instructions. If control is not available the SM on duty will take prompt action for the placement/clearance as per the situation. He will inform the representative of the factory regarding shunting programme in the exchange yard.
- (2) OFF aspect of the shunt signals below UP Starter signals No. 9,11,13 &15 on the concerned lines along with T/806 is the authority to enter into the exchange yard.
- (3) SM on duty shall take off the shunt signal below Up starter signal for despatching a train to exchange yard of OFBL siding after he is in possession of the badge mentioned above. He will serve T/806, completed in all respect, to the shunting supervisor, who in turn will hand over it to the Loco Pilot explaining the nature of work to be done and instruction to be followed. Both Loco Pilot and shunting supervisor shall sign in the concerned column of the T/806 and return the record foil to the SM on duty. If shunt signal for the concerned line is defective it is the duty of the SM on duty to ensure correct setting, clamping and locking of points pertaining to entry into the exchange yard and points man deputed for shunting will pilot the train with hand signal. In such case only T/806 will be the authority for entering into exchange yard. No. of points man deputed for shunting in the exchange yard will be determined by SM on duty as per the nature of shunting in the exchange yard and not more than two points men will be deputed at a time.
- (4) The Loco Pilot on getting proper shunting authority and seeing the shunt signal of the line is taken off / H.S. is given at the foot of the shunt signal as well as personally satisfied that the concerned points to enter into exchange yard are set and locked shall start his train along with shunting supervisor and points man.
- (5) The speed of the train worked on T/806 from BUDM station to exchange yard and back will be restricted to 8 KMPH while working explosive load and 15 KMPH for empty movement and by pulling only.
- (6) While approaching to the exchange yard the Loco Pilot must stop before the Stop Board. All the points pertaining to the line on which shunting is to be carried out are to be set, clamped and pad locked by the points-man under the supervision of shunting supervisor, who is responsible for proper setting, clamping and padlocking of the concerned points. After compliance of the above, the shunting supervisor will have to exhibit H.S. and pilot the train into the exchange yard. The Loco Pilot ensuring proper setting, clamping and padlocking of the concerned route and observing the indication of H.S. shall start his train into the exchange yard.
- (7) Shunting work of Railway engine to be carried out as indicated in the shunting authority under the supervision of shunting supervisor. Before attaching power on loads/empties in the exchange yard the shunting supervisor has to ensure that appliances used for securing vehicle except hand brakes are removed and before clearance he should ensure that S.R. 4.34.03 regarding securing of doors are complied, hand brakes are not applied and load and empty handles are housed properly.

(8) SECURING OF VEHICLES: -

The responsibility regarding securing of vehicle of the Railway ceases and that of defence department begins as soon as the Railway locomotive leaves the wagons stationary in the exchange yard after applying hand brakes as per SR 5.23.01(b). Hence for securing the vehicles suitably, the defence authority has to take necessary precautions against accidental escape and consequent derailment and damage as per Operating Manual para 7.10. When the factory authority gives placement by their power at exchange yard, it is also their responsibility to secure the vehicles as per rule and inform the securing in detail to SM on duty through their representative available at station. The SM will inform to SCR on duty regarding requirement of power for clearance of loads. OFBL authority has to depute their staff to remove the securing appliances in exchange yard at the time of clearance of loads/empties by Railway power. Securing appliances will remain under the custody of OFBL authority at exchange yard only.

(9) RETURN OF ENGINE WITH OR WITHOUT LOADS: -

After completion of work in the exchange yard, the guard will intimate to the SM on duty over phone about the train with load particulars and LV. Indicator, if any. The points man will set the hand points of the route, clamp and padlock the facing and trailing points. Shunting supervisor after satisfying correct setting, clamping and padlocking of desired points, will signal to the Loco Pilot to start the train.

- (10) The SM on duty after getting information on phone that the train is returning shall consult the SCR on duty and nominate a clear line for reception.
- (11) He shall then take off the Shunt signal No SH-6 for admission of the train on a nominated Line form line No-1 to L-4.
- (12) The Loco Pilot seeing the OFF aspect of Shunt signal No-6 and Guard's signal shall proceed towards station. If shunt signal is out of order SM shall ensure the correct setting and locking of all facing and trailing points pertaining to the nominated line on which his train will be admitted. The Loco Pilot after satisfying the concerned points are correctly set, clamped and padlocked and observing the indication of H.S. shall start his train from the foot of the shunt signal.
- (13) The shunting supervisor shall also verify the complete arrival of the train and berthed by clearing the fouling mark. He has to record in the siding log register maintained at the station about all the particulars such as arrival and departure timings, wagon placement and drawn out, remaining wagons on exchange yard line wise and also certify that the section in between BUDM and exchange yard is clear and free from obstruction. The shunting authority shall be withdrawn, cancelled and pasted in the record foil.
- (14) SIDING VOUCHER: - A competent staff of the factory will be deputed with communication facility round the clock at BUDM station for the purpose of exchange of siding voucher. The transaction of siding voucher will be done at station only.
- (15) When Wagons/Load/Empties are made over to the OFBL, siding voucher is to be submitted by the station to the representative of OFBL at station obtaining his signature on Annexure – A.
- (16) When the wagons are returned to the Railway by the OFBL authority, the representative of the defence department will present Annexure-“B” duly filled in to the SM on duty, who will make necessary entries in Annexure-“A” & “B” and return the same to the defence authority after putting his signature.
- (17) Movement of Power in Exchange Yard and entry to exchange yard. At the time of entry of Railway engine to exchange yard, SM on duty will inform the OFBL authority and likewise, the OFBL authority will inform the SM on duty whenever their engine enters the exchange yard.
- (18) While giving placement/drawn out of empties/loads both shunting supervisors of the railways and factory must ensure that a clear line is kept in the exchange yard for reversing the power. The placement/drawn out in exchange yard in a trip should be on one of the lines. While giving placement of empties/loads in exchange yard OFBL authority shall ensure that wagon doors are properly closed & secured and regarding operation of empties/loads handle of the wagon as per the O.M. Para 17.22 is observed. Sick vehicles, if any, are to be detached on the spurs at exchange yard. Deficiencies/losses in the fittings of wagons caused during working of the siding if noticed will be recorded in a register at the station.

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