

**EAST COAST RAILWAY
SAMBALPUR DIVISION**

Sl. No. SWR/THV/33

STATION WORKING RULES OF THERUVALI STATION (CODE: THV)

BG/MG/NG: Broad Gauge

Date of issue: 02.05.2011

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

1. STATION WORKING RULE DIAGRAM: -

1.1 **STATION WORKING RULE DIAGRAM NO.** S.I/WRD – 22083

1.2 **SIGNAL INTERLOCKING PLAN NO.:-** S.I – 22083 (ALT-A)

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

2. **DESCRIPTION OF STATION:-** THERUVALI is a four line station situated in TITLAGARH --- VIZIANAGARAM section at KM. 323.846 from Raipur. It is a Standard – II (R) interlocked, Class 'B' station with central Electronic Interlocking and Multi Aspect Colour Light Signalling. 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 | : THERUVALI (Code:-THV) |
| b) | Class of station | : 'B' class |
| c) | Section | : TITLAGARH ---VIZIANAGARAM, |
| d) | Double line/Single line | : BG, Double Line. |
| e) | Electrified/Non Electrified | : Non-Electrified |
| f) | Railway | : East Coast Railway |
| g) | Route | : 'D' Special |
| h) | Situated at | : Km 323.846 from Raipur. |
| i) | Reckoned from | : Raipur |
| 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 & THEIR DISTANCE AND OUTLYING SIDINGS: -

- i) TITLAGARH end- Bissamcuttack (Code: BMCK) inter distance 18.482 K.M..
- ii) Vizianagaram end –Block Hut of Tie Line 'B' Cabin inter distance 5.230 K.M
- iii) Passenger Halt: - Nil
- iv) Flag station: - Nil

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- v) Outlying siding: - Nil
vi) D.K. station: - Nil.
vii) IBH: - Provided at KM 313.440 between THV-BMCK.
viii) IBS: - IBSSignal is provided between THV-BMCK Stations on both Up &Dn Lines at KM 313.440 & 313.935 respectively.

2.3 BLOCK SECTION LIMITS: -

Between stations	The point from which 'Block section' commences.		The point at which 'Block section' ends.
THV-BMCK	DN Line	DN Adv Starter No.18 of THV Station	400m beyond DN IB Home Signal No.20
		400m beyond DN IB Home Signal No.20	BSLB of BMCK on DN Line.
	UP line	UP Advanced starter of BMCK	400m beyond UP IB Home Signal No.15
		400m beyond UP IB. Home Signal No.15.	180m beyond UP Home sig S-1 of THV.
THV-Block Hut of the Line 'B' Cabin	DN line	DN Advanced starter signal of Block hut of tie line 'B' cabin.	BSLB of THV Station of DN Line.
	UP line	UP Advanced starter signal No. 17 of THV Station.	Outermost facing point on UP Line of Block Hut of tie line 'B' Cabin.

2.3.1 STATION SECTION:

- (a) UP LINE: -Between 180m beyond UP Home signal S-1 to UP Advanced starter Signal No. 17.
(b) DN LINE:-Between BSLB on DN Line to DN Advanced starter Signal No. 18.

2.3.2 STATION LIMIT:

- i) UP line- It starts from the UP Distant signal to UP Advanced starter signal No.17
ii) DN line - It starts from the DN Distant signal to DN Advanced starter signal No.18

2.4: GRADIENT: -

- (a) From the Centre of the station building towards BMCK.

CHAINAGE IN METER		INTER DISTANCE	GRADIENT	REMARKS
FROM	TO			
CSB	992.734 M	992.734 M	Level	UP & DN LINE.
992.734 M.	2026.134 M	1033.400. M	1 in 100 R	UP & DN LINE.
2026.134 M.	2496 M	469.866 M	Level	UP & DN LINE.
2496 M	4232 M	1736 M	1 in 100 R	UP & DN LINE
4232 M	Block Section	---	1 in 700 R	UP & DN LINE

(b) Gradients on UP & DN lines at IBS.

CHAINAGE IN METER		INTER DISTANCE	GRADIENT	REMARKS
FROM	TO			
KM 319.664	KM 318.914	750 M	1 in 700 R	DN LINE.
KM 318.914	KM 317.814	KM1.100	1 in 100 R	DN LINE.
KM 317.814.	KM 317.664	150 M	Level	DN LINE.
KM 317.664	KM 305.839	KM11.825	1 in 100 R	DN LINE.
KM 318.512.	KM 317.292	KM1.220	Level	UP LINE
KM 317.292	KM 306.00	KM 11.292	1 in 100 R	UP LINE
KM 306.00	Block Section	-----	1 in 700 F	UP LINE

2.4.1 From the CSB towards Block hut of tie line 'B' cabin

DN Line:-

Chainage		Inter distance	Grade
From	To		
0.000 M	575.00 M.	575.00 M.	1 in 2725 F
575.00 M.	2380.00 M.	1805.00 M.	1 in 150 F
2380.00 M.	2954.00 M.	574.00 M.	Level
2954.00 M.	4157.52 M	1203.52 M	1 in 320 F

UP LINE:-

Chainage		Inter distance	Grade
From	To		
0.000 M	571.00 M.	571.00 M.	1 in 2725
571.00 M.	1392.00 M.	821.00 M.	1 in 100 F
1392.00 M.	1454.00 M	62.00 M	Level
1454.00 M	2185.00 M	731.00 M	1 in 100 F
2185.00 M	2554.00 M	369.00 M	Level
2554.00 M	3221.00 M	667.00 M	1 in 150 R
3221.00 M	Block Section	----	Level

2.4.2 Gradients of IMFA siding from CSB.

Chainage		Inter distance	Grade
From	To		
0.000 M	250.00 M.	250.00 M.	Level
250.00 M.	623.66 M.	373.66 M.	Level
623.66 M.	908.5 M	284.84 M	1 in 400 F

2.5 LAY OUT: -

(A)

- i) No. of Running lines: - 4 (Four).
- ii) No. of Passenger Platform:- 2 (Two) one low level Passenger platform (518 m.x8m) beside Line No.1(Commonloop) and one low level Pass. platform (540 m. x 7.5M) beside Line No.4(CommonLoop).

- iii) No. of Sidings: - 4 (Four)
- a) A goods siding takes off from Line No.1 at VZM end of the yard
 - b) Banking Engine siding takes off from Line No.4 at VZM end of the yard.
 - c) A shunting neck takes off from ORL of Line No.1 at VZM end of the yard.
 - d) M/s. IMFA Private Siding with two spurs takes off from the extension of the goods siding line at VZM end of common loop (line No, 1).
- iv) No. of goods platform : - 1 (one) beside goods siding (45.72 x 6.40 M)
- v) No. of FOB : 1 (One) at CH 30.48 M F/CSB.

(B) DESCRIPTION OF SIDINGS :

Goods Siding: - The goods siding (CSL 50 M from DS to DE) takes off from common loop (line no.1) at VZM end of the yard and terminates into a dead end. The Siding point is isolated by a derailing switch. The entrance point and derailing switch are operated individually by arc levers in succession. The entrance point and the corresponding derailing switch are fitted with hand plunger locks and are operated by Arc lever at site. Hand plunger locks fitted at the take off point to goods siding and IMFA siding is unlocked by key 'A' released from RKT provided in SM's Office controlled by button No. 34 of panel/VDU. After setting the entrance point, Key-C will be extracted and inserted in the Hand plunger lock fitted at entrance point to siding. Then entrance point will be set and Key-D will be extracted and inserted in the Hand plunger lock fitted at DS point. 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 34 is transmitted from panel/VDU signals 1A, C1A, SH3A, 9, SH-9, 2C, C2C, SH4D, SH6 will be locked in their normal position.

Banking Engine Siding

The Banking Engine Siding (CSL-80 M from SH to SB) takes off from extended portion of common loop (line no.4) at VZM end of the yard and terminates into a dead end. The Siding point is isolated by a derailing switch point No-32. The derailing switch point is operated from Panel/VDU. For movement of Engine in to the siding the shunt signal No-SH13 below UP starter signal No-13 and movement of Engine out of the siding SH8 shall be taken off. When the shunt signal No-SH13 is taken off Up and Down signals i.e. 1C, C1C, 13, 2A, C2A, SH4A, SH8 & 10 and whenshunt signal No-SH8 is taken off Up and Down signals i.e. 1C, C1C, SH 3D, SH13, 13, 2A, C2A, SH4A & 10 are held locked in their normal position.

Shunting Neck

The Shunting Neck (CSL-70 M from SH to SB) takes off from Over Run line of common loop (line no.1) at VZM end of the yard and terminates into a dead end. The Siding point is isolated by a derailing switch point No-26. The derailing switch point is operated from Panel/VDU. For movement of Engine in to the siding the shunt signal No-SH 9 and movement of Engine out of the siding SH6 shall be taken off. When the shunt signal No-SH 9 below UP starter signal N0-9 is taken off Up and Down signals i.e. 1A, C1A, 9, 2C, C2C, SH4D, SH6 & 14 and whenshunt signal No-SH6 is taken off Up and Down signals i.e. 1A, C1A, SH3A, 9, SH9, 2C, C2C, SH4D & 14 are held locked in their normal position.

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M/s.IMFA Private Siding :

The M/s I.M.F.A. Private Siding line takes 'off' from the extension of the goods siding line at VZM end of the yard. It is isolated by derailing switches. The entrance points 34 (W) & 34 (E) are interlocked and the hand plunger locks fitted in the points is unlocked by Key-A controlled by button No-34 of panel/VDU. When control 34 is transmitted from panel/VDU signals 1A, C1A, SH3A, 9, SH-9, 2C, C2C, SH4D, SH6 will be locked in their normal position. A separate weigh bridge siding line takes off from the lead line of IMFA siding. All the points in the IMFA siding are free hand points. All facing and trailing points are to be clamped and padlocked for any placement and drawn out of Wagons/Rakes in the siding. The siding consists of two spurs with the following length:-

SPUR No.1-340 Mts.(DE-FB) and SPUR No.2-340 Mts.(DE-FB)

Detailed siding working is given in Appendix – H.

2.5.1 Running lines, direction of movements and HOLDING CAPACITY IN CSL:-

(I)

SI No	Line No.	Description	CSL	Isolation provided	
				BMCK END	BLOCK HUT OF TIE LINE 'B' CABIN END
1.	Line No 1.	Common loop	701 M (STR-STR)	Sand Hump	ORL
2.	Line No.2	UP Main Line	750 M (STR-SB)	---	--
3.	Line No.3	DN Main Line	870 M (STR-SB)	--	--
4.	Line No.4	Common loop	858 M (STR-STR)	DS	DS

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

Trains arriving from BMCK end are UP trains.

Trains arriving from Block Hut of Tie line 'B' Cabin end are DN Trains.

2.5.2 i) NON-RUNNING LINES AND CAL:

Srl. No	Description	CSL	Takes off line No.	Exit	Operation
1.	Goods siding	50 M(DS-DE)	Line No.1	One Way	Operated locally by arc lever releasing key controlled by No. 34 of Panel/VDU.
2.	Banking Engine Siding	80 M (SH-SB)	Line No. 4	One Way	Setting the DS point No. 32 in reverse position from Panel/VDU
3.	Shunting Neck	70 M (SH-SB)	Line No. 1	One Way	Setting the DS point No. 26 in reverse position from Panel/VDU
4.	IMFA Siding (i) Spur-1 (ii) Spur-2	340 M(FB-DE) 340 M(FB-DE)	Line No. 1	One Way	Operated locally by arc lever releasing key controlled by No. 34 of Panel/VDU

2.5.3 ANY SPECIAL FEATURES IN THE LAYOUT: - NIL

2.6. i) Level Crossings :- (Station Section): -

Srl. No	Between	Km.	Class	Type	Normal Position	Operation	Communication
1	Between UP Distant & UP Home signal S-1	322.454	'C'	Unmanned	---	---	---
2	Outermost trailing point No.22A & UP Adv S-17. Starter.	324/2.3	'C'	Interlocked	Open to road traffic	Winch operated lifting barrier	Telephone connection between Gate Lodge and SM office/THV. Controlled by panel/VDU No.40

ii) Level Crossings: - (In Block Section)

Sl. No	Between	Km.	Class	Type	Normal Position	Operation	Communication
1.	THV-BMCK	308/2-3	'A'	Interlocked	Open to road traffic	Winch operated lifting barrier	Telephone connection between Gate lodge and SMoffice/ BMCK

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

3.0 SYSTEM AND MEANS OF WORKING:

(Rule No. Chapter XIV of GR & SR, Chapters III, IV & V of BWM)

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

i) **System of working:** -Absolute block System of working on double line.

ii) **Type of block instruments:**-SGE type Double Line lock & Block Instrument with adjacent station 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).

The DN Advanced Starter signal No.18 of THV is controlled by the clearance of IB section Track circuit and axle counter. The IB Home signals are controlled in turn through the line clear position of respective Double line lock and block instruments & LV section monitoring axle counter at the receiving station.

Trains between intermediate block signal to Home signal of Station in advance are worked by means of SGE type lock block instrument vide 4.09, 5.07, 14.01 to 14.14 of the GR & SR and chapter V of BWM.

DN last stop signal to the intermediate block stop signal is controlled by Electronic Axle counter and are worked under absolute block system in terms of G & SR 14.01, 14.13.

iii) **Instruments:** - Non Co-operative type.

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- iv) **Block Telephone:-** Connected with adjacent stations BMCK&BLOCK HUT OF TIE LINE 'B' CABIN.
- v) **Staff responsible for their operation:** -SM on duty.
- vi) **Custodian of keys:** - Block instrument is provided with double locking. One key will be with SM & other key will be with S&T maintainer. 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.

4.0 **SYSTEM OF SIGNALLING AND INTERLOCKING:**

4.1.1 **STANDARD OF INTERLOCKING AND TYPE OF SIGNALLING:** This Station is provided with Standard-II (R) Electronic Interlocking.

4.1.2 **Type of signals:**

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

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

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:** -

For section THV-Block Hut of Tie line "B: Cabin, Digital axle counters are provided at both end of the station for Up and Down sections to check the complete arrival of trains. A pair of Digital axle counter is provided in advance of UP advanced starter signal of THV and beyond UP Home Signal of Block Hut Tie line "B: Cabin on UP line. A pair of Digital axle counter is provided in advance of DN advanced starter signal of Block Hut Tie line "B: Cabin and near BSLB of THV on DN line. Axle counters are also interlocked with Block Instruments of the stations at either side to prove the clearance and occupation of Block sections. UP Advanced starter signal cannot be taken off if axle counter of THV-Block Hut of Tie line "B: Cabin section fails. Block handle of the SGE Block instrument remains locked in case of failure of Axle Counter pertaining to that section. 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 SM shall reset the axle counter. Resetting procedure of Axle Counter for section THV-Block Hut of Tie line "B: Cabin is given in Appendix – 'B'

For section THV-BMCK, a pair of Digital axle counter is provided between THV-BMCK on Up line, one just beyond Up advanced starter No.13 on 24T1 of BMCK and another one on 15T2 for proving UP IB section between BMCK-THV. A pair of Digital Axle counter is provided beyond UP IB Home Signal No. 15 of BMCK-THV and another near first facing point No. 21 of THV for proving UP LVV for section BMCK-THV. Another pair of digital axle counter is provided between THV-BMCK on DN line, one just beyond DN advanced starter No-18 of THV on 18T of THV and another on 20T2 for proving DN IB section between THV-BMCK. A pair of Digital Axle counter is provided beyond DN IB Home signal No.20 of THV and another one on 2T1 beyond DN Home Signal No.2A/B/C of BMCK for proving DN LVV for section THV-BMCK.

Resetting procedure of Axle Counters for section THV-BMCK is given in Appendix – 'F'.

(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 of 5 rail length in advance of DN advanced starter has been provided on line at BMCK end. Track circuits 1AT and 2AT are calling-on-track circuits. 21AT, 21BT, 22AT, 22BT, 23T, 25AT, 25BT, 24AT, 24BT, 27AT, 27BT, 28AT, 28BT, 30BT 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 1T1, 1T2, 2T1, 2T2, 17T, 17AT, 18AT, 18T, 20T1, 20T2 in advance of DN IB Home signal and 15T1, 15T2 in advance of UP IB Home signal are for signal replacement, route holding. Indications for all track circuits are indicated on the panel/VDU. 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 Signal-**(GR 3.11, SR 3.42.05 and GR 3.75)

The block section between THV-BMCK has been split into two block sections by providing Intermediate Block Stop signals at KM 313.440 [controlled by BMCK station] for UP line and, on DN line at KM 313.935 [controlled by THV station]. Intermediate Block stop signals are controlled through double line lock and block instruments at the respective receiving ends. (Trains will be worked vide SR 3.42.05 and GR 3.75)

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 & 27A/B, CH3 controls 22A/B/24A/B, CH4 controls 26, 28A/B and CH5 controls 30A/B and 32.

(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), C-2(A/B/C) (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, & 13 have been provided. Independent Back shunt signals SH-3 (A-D), SH-4 (A-D) have been provided for back shunting purpose. Shunt signals SH-8 & SH-6 have been provided in Banking engine and shunting neck respectively for shunting in the sidings.

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 be such that one key is kept with the on duty SM & the other key with the Signal Maintainer.

Whenever required, the SM shall handover the key to the maintainer with proper acknowledgement in the Relay room key register. The maintainer on receipt of the key from the SM may use the same and the key in his custody to open the basement/ relay room by inserting the keys one after another separately into the earmark locks. After completion of the work, the relay room is to be locked using both the keys separately & designated key should be handed over to the SM.

The details of transaction is to be properly recorded in the Relay room key register maintained at the station and duly signed by the SM and maintainer respectively.

(A) POWER SUPPLY

- (i) 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.

- 4.3 **SEALING OF EMERGENCY OPERATION BUTTONS/KEYS:-** All 'emergency operation buttons' on the Station Master's control panel shall be kept sealed in normal condition by S&T staff. Whenever any emergency operation is initiated. SS/SM on duty shall break open the seal of the concerned button to make the button operative. Immediately after completion of emergency operation SS/SM on duty shall inform concerned S&T staff for resealing of the concerned button.

5.0. **TELECOMMUNICATION FACILITIES: -**

- i) Telephone attached with Double line Lock & Block Instruments for either side Block Section.
- ii) Station to Station fixed telephone (hot line) is provided
- iii) Station is provided with Auto telephone connected with Railway Exchange
- iv) BSNL telephone has been provided.
- v) The station is connected to BLGR-SPRD control circuit by a control telephone.
- vi) Station to station 25w VHF communication is provided.

- vii) Telephone connection from station to DN IBH Post.
- viii) Telephone is provided between Station and both end crank handle locations.
- ix) Magneto telephone connection is provided between station & LC gate at Km. KM 324//2-3.

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 use the above electrical communication instruments stated in Para-5.0 strictly in order of preference for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication the SM on duty shall work vide SR 6.02.06
(Details are mentioned in Appendix 'B' of the SWR.)

5.1 FAILURE OF COMMUNICATION: -

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

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

6.0 SYSTEM OF TRAIN WORKING:

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

6.1 DUTIES OF TRAIN WORKING STAFF

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

6.1.1 TRAIN WORKING STAFF: -

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

SL NO.	Designation	Roster	No. of staff in each shift	Hrs. of Duty
1.	Station Manager (In-charge)----- SS/SM/ASM-----	Continuous	01	----09 Hrs -----08 hrs.
2	TP/Sr.TP/TPM-B/TPM-A	Continuous	01	08 hrs.
3	GK/ Sr. GK	Continuous	01	08 hrs.
4	SCLM/LCS	E.I	01	12hrs(In broken roster).

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

6.1.2 RESPONSIBILITY OF ASCERTAINING CLEARANCE OF THE LINES:

The SM/SM on duty is responsible to ascertain the clearance of the nominated line between outer most facing points of concerned line as per SR. 3.40.02(b) 3rd Para.

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6.1.3 ASSURANCE OF STAFF IN ASSURANCE REGISTER:-

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

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

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

The declaration shall be renewed in the following cases: -

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

6.2 (A) CONDITIONS FOR GRANTING LINE CLEAR: -

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

- (i) The whole of the last proceeding train has arrived completely clearing the fouling mark concerned.
- (ii) All necessary signals are put back to 'ON' behind the said train.
- (iii) The line is clear up to the BSLB on DN line for DN trains and Outermost point No-21 on UP line for UP trains.

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 SS/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:

For receiving a train on loop lines Station Master on duty shall ensure that the ORL/Sand Hump is clear of all obstructions even when the ORL/Sand Hump falls in the trailing direction.

6.2.1.1 SETTING OF POINTS AGAINST BLOCKED LINE: -

All Points shall normally be set for the straight except when otherwise authorised by special instructions. When a running line is blocked by a stable load, wagon, vehicle or by a train which is to cross or give precedence to another train or immediately after arrival of a train at the station, the points inrear should immediately be set against the blocked line except when shunting or for any other movement towards the blocked line is required to be done vide SR 3.51.06(a). If all the lines at the station happen to be blocked, then SR. 3.51.06 (b) will be followed

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RECEPTION OF TRAIN ON BLOCKED LINE: -

In case reception of a train on an obstructed line, the SMs shall follow GR 5.09 & SR 5.09.01.

6.2.1.2 RECEPTION OF TRAIN ON NON-SIGNALLED LINE: -

Not Applicable.

6.2.1.3 DESPATCH OF TRAINS ON NON-SIGNALLED LINE: -

Not Applicable.

6.2.1.4 DESPATCH OF TRAINS FROM LINE PROVIDED WITH COMMON STARTER SIGNAL:

Not Applicable.

6.2.1.6 SPECIAL RESTRICTIONS -

- i) The Over run line/Sand Hump shall not be obstructed for stabling vehicles or harboring engine. If it is obstructed through any accident or for any cause it ceases to be substitute for the adequate distance, in that case the train shall be passed over loop line as per Subsidiary Rules 3.40.02(a).
- (ii) Due to existence of gradient steeper than 1 in 400 beyond 50m of outer most point in the station yard, no shunting beyond outer most points on the steep gradient side should be allowed unless a locomotive is attached at the lower end of the load.
- (iii) Shunting shall not be permitted at either end of the yard unless the engine is leading towards falling gradient.
- (iv) Hand shunting, loose shunting and fly shunting is not permitted at both end of the yard.
- (v) Shunting in the face of an approaching train is prohibited.
- (vi) Ballast/Material train shall not be allowed to be pushed into block section THV-Block Hut of Tie line 'B' Cabin as per SR 4.62.06(f).
- (vii) While allowing motor Trolley/four wheeler tower wagon/material trolley etc, entire block section between THV-BMCK shall be treated as one Block section and shall be issued T-369(3b) for passing IBS at 'ON' position.
- (viii) Motor trollies on following line clear shall not be allowed into section between THV- BMCK vide SR 15.25.03 (b)(xiii).
- (ix) Material trolley working on from 'B' shall not be allowed between THV- BMCK due to sharp curves and steep gradients.
- (x) When line clear is given in UP direction to BMCK, no signaling movement shall be carried out with point No-25 reverse and vice-versa.

SPECIAL INSTRUCTIONS-

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

6.3 CONDITIONS FOR TAKING 'OFF' APPROACH SIGNALS: -

Reception of trains is governed by General Rules 3.36, 3.38, 3.40, and SRs 3.40(1),(a), (2)(a) and Subsidiary Rule 3.40.01 and other relevant provisions of General and Subsidiary Rules, Block Working Manual and Station Working Rules of the station to be followed.

Adequate distances to be kept clear vide General Rule 3.40(3) (a) 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: -

LINE NO.	CLEARANCE OF ADEQUATE DISTANCE			
	UP TRAINS		DN TRAINS	
	FROM	TO	FROM	TO
Line No.1 (Common Loop)	Foot of the UP starter signal No. 9	UP advanced starter No. 17 or upto the end of overrun line i.e.DS 26.	Foot of the Starter Signal No. 14	DNadvanced starter signal No. 18 or upto end of Sand Hump.
Line No. 2 (UP Main Line)	Foot of the UP main line starter No. 11	UP advanced starter signal No. 17	----	----
Line No. 3 (DN Main Line)	----	----	Foot of the DN starter signal No. 12	DN advanced starter signal No. 18.
Line No. 4 (Common loop)	Foot of the UP starter signal No. 13	Up to the DS No-32 or Foot of UP adv starter No.17.	Foot of the DN Starter Signal No. 10	DN advanced starter signal No. 18 or up to the DS No-23.

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. He shall personally satisfy himself that the nominated line is clear and free from all obstructions by seeing the track circuit indication on 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 (Home signal replacement track circuit) 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 circuits 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.

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After the route is set, the calling-on signal button C1/C2 (Red with white dot), as the case may be, shall be pressed simultaneously along with 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 for any reason after taking off signals, it is required to put back the signal and alter the route, in terms of Subsidiary Rules 3.36.02, a time delay of 2 minutes shall be observed before the points can be altered.

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

(a)	While receiving an UP train on line No. 1 (Common loop) set to overrun line	(a)	Despatch of an UP train from Line No. 2 or 4.
(b)	While receiving an UP train on line No. 4 (Common loop) set to DS no-32.	(b)	Reception of a DN train on line No. 1 with overlap set to SH.
(c)	While receiving a DN train on line No. 1 (Common loop) set to SH	(c)	Despatch of a DN train from the line No. 3 or 4.
(d)	While receiving a DN train on line No. 4 (Common loop) set to DS No-23.	(d)	Despatch of a DN train from line No. 1 or 3
(e)	While receiving an UP train on line No. 4 (Common loop) set to DS no-32.	(e)	Despatch of an UP train from line No. 1 or 2.

Rules laid down in GR3.47 and GR 3.47.01(b), (c), (d) shall be followed.

6.5 **COMPLETE ARRIVAL OF TRAIN:** -

(Rule no. GR 4.16 & SR 16.01, 4.160.2.4.16.03, 4.16.04, 4.16.05 GR4.17& SR 4.17.01, SR 4.17.02, GR 14.10)

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

- b) **MODE OF VERIFICATION:** Through AXLE COUNTER or through physical verification when Axle counter fails.
- c) The entire block section between THV-BMCK and THV-Block Hut Tie line B Cabin on both Up and Down Lines are monitored by axle counter system and the position of the block section whether 'Occupied' or 'Clear' is indicated 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.
- d) If a train passes through the station without conforming the last vehicle indicator, the Station Master on duty shall advise the station in advance to stop the train for last vehicle verification and he need not to withhold closing of block section in rear. He shall obtain confirmation under exchange of private number about the complete arrival of the train with its last vehicle from the station in advance and subsequent trains may be dispatched.
- e) 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.

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- f) In case a train passes incomplete, action shall be taken as per SR.4.17.02, the "Train out of Block Section" report shall be withheld to the station in rear until complete arrival Certificate is received from the station in advance supported by a private number. Train passing on adjacent line shall be stopped and Guard and Loco Pilot shall be issued with caution Order to proceed cautiously and stop short of any obstruction as per SR. 4.17.03.

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

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

6.6 **DESPATCH OF TRAINS: -**

Despatch of trains are governed by General Rules 3.36, 3.38, 3.39, 3.75 3.42,5.11& 8.01, Subsidiary Rules 3.36.04(b), 3.42.04, 3.42.05 and Block Working Manual 2.07(5)(a)(b) and other provisions of General Rules, Subsidiary Rules, Block Working Manual and Station Working Rules of the station.

To despatch a train, the 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 shunting on the non-isolated line, 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.

However, SM/THV can send a DN train upto IBS between THV-BMCK without line clear. For despatching a DN train, the SM on duty shall ensure that the portion of line between Advanced Starter and 400 Mtrs beyond IBS is clear of obstruction and indication to this effect is available. SM/THV shall advise the Station Master BMCK the train No. and description of such intended train to be dispatched and shall take his assent supported by Private Number and shall then set and lock the route and take off the Starter and Advanced Starter.

The DN Advanced Starter signal No.18of THV are controlled by the clearance of IB section monitoring axle counters and the IB Home signal is controlled in turn through the line clear position of Double line lock and block instrument. SM/THV shall take off the IBS signal only when line clear has been received on Block instrument. Deatail working of trains to IBS is given in Appendix-F

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 is worked without a Guard or Brake Van, the instructions laid down in Subsidiary Rules 4.23.02 and 4.25.02 shall be followed.

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

If a signal once taken 'Off' for reception/despatch of a train has to be, in an emergency, put back to 'ON', the procedure laid down in General Rules 3.36.02 shall be followed. In case of reception of train, route shall not be altered until the train has come to a stand outside Home signal. In case of departure signal before changing route, the line clear authority is to be withdrawn from the Driver with a memo, taking his acknowledgement thereof.

6.7 **TRAINS RUNNING THROUGH: -**

The procedure detailed in Para 6.3, 6.6 above and General Rules 4.17, 4.42 and Subsidiary Rules 3.36.04(b)(i) 3.42.02(a)(iv), shall be observed.

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

The Station Master on duty is responsible to see that a train passes complete with its last vehicle indicator. If a train passes without last vehicle indicator or its authorized substitute, action shall be taken as per General Rules 4.17 and Subsidiary Rules 4.17.02.

6.8 WORKING IN CASE OF FAILURE: -

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

6.8.1 PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF A SIGNAL & INTERLOCKING:

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

6.8.2 TRACK CIRCUIT:

In the event of failure of track circuit in the yard concerned signal shall be suspended and trains shall be admitted on calling-on signal. If calling-on signal fails then train shall be piloted 'IN'. Before piloting a train in to the yard the clearance of the track must be ensured by physical verification.

6.8.3 AXLE COUNTER:

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

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].

In case of failure of intermediate block stop signal, SM shall treat the entire section up to the block station immediately ahead of the intermediate block post as one block section and issue a

written authority to the driver to pass the defective intermediate Block Stop Signal at "ON" without stopping at the signal in accordance with the procedure prescribed by special instruction.

A written authority as mentioned in GR 3.75(4) shall be in Form T/369[3b] in which the Private Number and identification Number obtained from the station in advance in support of the "Line Clear" shall be recorded. Display of "Proceed hand signal at the foot of defective Intermediate Block Stop Signal may be dispensed with.

6.8.5 BLOCK INSTRUMENT:

In the event of partial interruption/ failure of block instrument the concerned block instrument shall be suspended till its rectification and trains shall work as per GR. [Refer GR 6.02 .03, 6.02.04 and SR 6.02.06].UP advanced Starter signal No-17 is electrically interlocked with block instrument so that the same cannot be taken off unless the concerned block instrument is in line clear position (TGT). When the block instrument is suspended in 'Line clear' position, the concerned advanced Starter must also be treated as suspended.

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

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..

DN Advanced Starter signal No.18of THV are controlled by the clearance of IB section through respective IB section monitoring axle counters and the IB Home signal is controlled in turn through the line clear position of Double line lock and block instrument at BMCK.

Trains between intermediate block signal to respective Home signal of Station in advance are worked by means of SGE type lock block instrument vide 4.09, 5.07, 14.01 to 14.14, SR 3.42.05 of the GR& SR and chapter V of BWM.

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 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.

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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]

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 WORKING OF MOTOR TROLLEY, MATERIAL LORRIESETC:

- a) Motor Trolleys shall be worked in accordance with Subsidiary Rules 15.25.03 to 15.25.07 & BWM 4.39, 5.11(2) 5.12. and 5.13.
- b) Motor trolleys on following line clear shall not be allowed into the section THV-BMCK vide SR 15.25.03 (b) (xiii).
- c) Material trolleys shall be worked in accordance with Subsidiary Rules 15.27.05 to 15.27.08 and andBWM 5.11(2), 5.13 & 5.14 (2) (b).
- d) While allowing motor trolley/4 wheeler tower wagon/material trolley etc., entire section between THV-BMCK shall be treated as one block section and shall be issued T-369 [3B] for passing IBS at "ON" position.
- e) After the complete arrival of the said Motor Trolley/4 wheeler tower wagon/material trolley etc., at the station ahead, Station Master at adjacent station shall exchange Private Number in token of complete arrival and then shall resume normal working by resetting the Axle Counter as stated in the SWR.
- f) In all other respects the working of a light Motor trolley shall conform to the rules laid down for ordinary trolleys while running without block protection and to those laid down for motor trolleys while running under block protection or following another light motor trolley or a motor trolley.

The following precautions must be taken:

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

7.0 BLOCKING OF LINES: -

Whenever a running line is blocked either by loose vehicles or by a stabling train or by a train which is to cross or give precedence to another train, the points in rear should immediately be set against the blocked line except during shunting movement and reminder collars shall be placed on the concerned point push button and route button(s) for the blocked lines. A clear remark in 'RED' ink shall be made immediately in the train signal register and a record shall be made in the Station Master's diary also. Stable load register is also to be maintained.

The stable load or loose vehicles are to be secured as per General Rules 5.23 and Subsidiary Rules 5.23.01 to prevent rolling down of vehicles.

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7.1 USE OF REMINDER COLLARS:-

Whenever a running line is blocked either by loose vehicles or by stabled train or by a train which is to cross or give precedence to another train even for a short while or during shunting operation, the reminder collars must be placed on concerned point push button, signal and route button(s) for the blocked lines on the operating panel by SM on duty.

7.2 SECURING OF VEHICLES: -

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

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

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

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

7.4 LOADING AND UNLOADING FROM VEHICLES ON RUNNING LINE:-

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

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

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

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

8.0 SHUNTING: -

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

8.1 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.

(R.Das)
DSTE/SBP

(D.Nayak)
DOM(G)/SBP

8.2 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).

8.3 SHUNTING ON SINGLE LINE:

Not applicable.

8.4 SHUNTING ON DOUBLE LINE:**SHUNTING OUT SIDE THE HOME SIGNAL:**

The procedure of block back/block forward given in BWM 5.15(1) (b) shall be followed. When line clear has been given, no shunting shall be permitted in the block section in rear. Shunting or obstruction for any other purpose shall not be permitted in the block section in rear unless it is clear and it blocked back vide GR 8.06.

Shunting or obstruction for any other purpose shall not be permitted in the block section in advance unless it is clear and block forward vide GR 8.06(3).

8.5 SHUNTING IN THE SIDING TAKING OFF FROM STATION YARD:-

When shunting in the sidings, relevant GR 5.14 and SRs thereto to be followed. In case of failure of shunt signals all facing and trailing points of the route shall be clamped and padlocked. While performing shunting in the block section, relevant GR 8.15 and SRs thereto are to be followed.

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

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

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

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

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

- a) The previous Block Ticket is collected and Cancelled or
- b) Necessary endorsement is given on the previous block ticket with the advise to wait at the site for a next train to follow or
- c) The previous train has met with an accident or has been disabled or
- d) The Block ticket has been cancelled from the driver of the previous train by the official –in-charge at the site and kept in the personal custody & shall be kept until the arrival of the next train and such assurance is given over the telephone installed at the site quoting the serial number of the Block Ticket so collected.
- e) SM will suspend the Absolute Block System of Working and both SMs concerned should arrange for running of trains on the authority of Block Ticket
- f) SM at the dispatching end will hand over to the driver the block Ticket as the authority which shall include:
 - i. Caution Order: Existing Speed Restriction/s shall be indicated in the Caution Order portion. The Speed Restriction to 15 KMPH during clear visibility and 10 KMPH when visibility is obstructed shall be clearly indicated.
 - ii. An authority to pass the Stop Signal at “ON” position.

- g) Before resumption of normal working a message between the SMs of the concerned stations shall be exchanged with private number.[Ref SR 6.02.05(d)(vi)]
The Block Ticket so issued must be collected by SM of either end with a certificate about the complete arrival of the train with its time and the section is clear of all obstructions from Driver/Guard of the train and cancelled.
- [III] **TRAINS DELAYED IN BLOCK SECTION:** -
If a train carrying passenger does not arrive within 10 minutes or if a goods train does not arrive within 20 minutes after allowing for its normal running time from the station in rear, the SM at the station in advance shall immediately advise the station in rear and the control this fact. There after SMs at either end of the Block section shall immediately stop all trains proceeding in to the block section on adjacent line in either direction and warn the Loco Pilots and Guards of such trains by issue of suitable Caution Orders. [Refer GR 6.04 & SRs thereto]
- [IV] **FAILURE/PASSING OF INTERMEDIATE BLOCK STOP SIGNAL AT ON:** -Drivers shall pass the IBS at "ON" vide GR 3.75 and SRs thereto.
- [V] **FAILURE OF L V AXLE COUNTERBLOCK/BPAC:**
Details of the operation are given in Appendix 'B' and 'F' of SWR.
- [VI] **FAILURE OF MTRC:** Not applicable to this station.
- [VII] **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.
- [VIII] **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.

- [IX] **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.
- (A) **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.
- (B) **PROCEDURE FOR EMERGENCY OPERATION OF POINTS BY CRANK HANDLE:-**
 Details of the operation are given in Appendix 'B' of SWR.
- (C) **CERTIFICATION OF CLEARANCE OF TRACK BEFORE CALLING-ON SIGNAL IS OPERATED**
 To take 'OFF' a calling on signal during failure of track circuit on the route, the clearance of the track over which the train would pass must be physically checked by the SS/SM on duty. After satisfying himself SS/SM on duty shall initiate the calling on signal operation. The procedure shall be strictly followed.
- (D) **REPORTING FAILURE OF POINTS, TRACK CIRCUIT / AXLE COUNTER AND INTERLOCKING:-**
 In case of failure of any interlocking gear at the station, the failure report should be communicated by the SS/SM on duty to the sectional Maintainer, the JE/SE/SSE (SIG) of the Section & others through a memo as per G & SR 3.68.04 & document all such transactions.
- 9.1 **TOTAL FAILURE OF COMMUNICATION: -**
 In the event of total failure of communications between THV-BMCK or THV-Tie Line "B" Cabin stations i.e. when line clear cannot be obtained by any one of the following means stated in order of preference viz.
- (a) Block Instruments, Track Circuits or Axle counters,
 - (b) Telephone attached to the Block Instruments,
 - (c) Station to station fixed telephone (hot line)
 - (d) Fixed telephones such as Railway auto phones & BSNL phones,
 - (e) Control telephone, and
 - (f) VHF set.
- The trains shall be worked in terms of GR.6.02.03, which is summarized in brief as follows:
- (i) Each train before being allowed to enter into the Block Section should be stopped and the Guard and Driver of the train apprised of the situation.
 - (ii) The SM will hand over an authority for working of train during total interruption of communication to the driver of each train which shall include-
 - a) Authority to proceed without 'Line Clear'. [T/C 602]
 - b) Authority to pass the Last Stop Signal at its "ON" position, i.e. T/369(3b).
 - c) A caution order restricting the speed to 25KMPH by day when view ahead is clear and 10KMPH by night or when view ahead is not clear.
 - (iii) No train shall be allowed to enter the Block Section until there is a clear interval of 30minutes between the train about to leave and the train, which has immediately proceeded.
 - (iv) Fixed signals except the last stop signal may be taken "OFF" for the dispatch of the train and for the reception of the train at the next block station, reception signals may be taken only after the train has been brought to a stand outside it.No train shall be backed. In exceptional circumstances when it may be unavoidable, to back a train, the train shall be backed only after providing protection by placing one detonator at 250 meters and two detonators in 10 meters apart at 500 meters at rear of the point up to which the train shall be backed.

- (v) On arrival at the next block station the driver shall hand over the 'Authority to proceed without line clear' to the SM on duty who will preserve the same for further inspection.
- (vi) Before resuming normal working when any means of communication is established. SM of either end must satisfy that there is no train in the block section and block section clearance has been obtained from driver/guard/PWI.. [Refer SR 6.02.03].

9.2 **TEMPORARY SINGLE LINE WORKING ON A DOUBLE LINE SECTION: -**

During temporary single line working when other line is obstructed either between THV-BMCK or THV-Tie Line "B" Cabin stations, train shall be worked as per the detail procedure in SR 6.02.01, which is summarized as below:

- (a) Before introducing single line working the SM on duty must satisfy that the line on which single line working will be introduced is clear and free from all obstructions.
- (b) The Lock and Block instrument will be suspended. The Commutators of Lock & Block Instrument will be kept on "Train on line position".
- (c) SM proposing single line working must issue a message with
 - (i) The cause of introduction of single line working,
 - (ii) Line on which the single line will be introduced,
 - (iii) Source of information about the clearance of the line on which single line will be introduced,
 - (iv) Place of obstruction,
 - (v) Restriction of speed, If any,
 - (vi) Assurance about keeping the last stop signal at 'ON' position if the train runs on right line and in case of wrong line all signals are to be kept at 'ON' position etc under the exchange of Private Number.
- (d) SS/SM on duty at the other end of the block section will acknowledge the message and confirm the same by a Private Number.
- (e) After obtaining line clear for the train from the advance station, the Driver must be given as-
 - (i) Authority for Temporary Single Line (TSL) working on double line (T-D/602) indicating there in
 - Caution order
 - The line on which single line working is introduced.
 - The chainage/ kilometer of obstruction.
 - Any other speed restriction, if any existing.
 - Endorsement to inform all Gang man and Gateman about the single line working (for the first train only).
 - The speed of the first train to be restricted to 25 KMPH subject to other speed restriction.
 - Authority to pass Signal in "ON" position
 - (ii) A pilot memo T/369(3b) to pass the last stop signal at its 'ON' position. The approach stop signals at the station in advance may be taken "OFF". In case a train proceeding on wrong line, the train shall be piloted out and at the receiving station, the train shall be piloted 'IN', on the authority of T/369(3b).

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

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

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

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

(R.Das)
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(D.Nayak)
DOM(G)/SBP

The Station Master will take action as per SR 6.02.03 for despatch of trains under authority to proceed without line clear. Actions shall be taken to assist the crippled train as per SR 6.02.05.

In case, it is necessary to allow a train into an obstructed block section due to engine failure, obstruction or accident, a Block ticket shall be issued in terms of SR 6.02.05. Absolute Block System on the affected block section shall be suspended and concurrence of the SS/SM at other end shall be obtained and recorded in caution order register and train signal register.

On the Block ticket (T/A 602), it shall be mentioned in detail the place of obstruction i.e. Engineering Km., B/Van Km., whether the train is to return or to wait at the place of obstruction for the arrival of another following train(s) or to proceed to next station.

A caution order shall be issued restricting the speed to 15 KMPH. in day light hours when the visibility is good and 10 KMPH at night or whenever clear view for 800 Mtrs. is not available. On arrival at the station, the Block ticket shall be collected with necessary endorsement from Driver / Guard and be cancelled and pasted to its record foil or shall be sent to the issuing station for cancellation. In case of an accident/engineering block assurance from SE (P.WAY) concerned shall be obtained that the line is safe for movement of trains before resumption of normal working. When the obstruction is removed and an assurance in writing is obtained from SE (P.WAY) concerned or Guard/Driver, the SS/SM on duty may resume normal working after exchanging proper messages supported by Private Number.

9.4 **TRAINS DELAYED IN BLOCK SECTION**

If a train carrying passenger does not arrive within 10 minutes and if a goods train does not arrive within 20 minutes after allowing for its normal running time from the station in rear, the SM at the station in advance shall immediately advise the station in rear and the control this fact. There after SMs at either end of the Block section shall immediately stop all trains proceeding in to the block section on adjacent line in either direction and warn the Drivers and Guards of such trains by issue of suitable Caution Orders. [Refer GR 6.04 & SRs thereto].

10.0 **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.

10.0 **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.

11.0 **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

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

A Register regarding detonator is maintained at the station.

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(D.Nayak)
DOM(G)/SBP

(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 IMFAPvt.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 THERUVALI STATION.

APPENDIX - 'A'

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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 GATE WORKING RULES OF “C” CLASS TRAFFIC LEVEL CROSSING GATE AT KM 324/2-3 (NO.RV-241) AT BLOCK HUT OF TIE LINE ‘B’ CABIN END OF THV YARD: -

1.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

1	Number of Level Crossing Gate: -	RV-241
2	Engineering or Traffic Gate: -	Traffic
3	Under control of Station Master/PWI:	SM/THV
4	Location KM	324/2-3
5	At. Station: -	THV
6	In between stations: -	THV-Block Hut of the line ‘B’ cabin.
7	BG/MG/NG: -	BG
8	Single line/Double line/Multiple line: -	Double Line
9	Normal Position: -	Open to road traffic
10	Interlocked/Non Interlocked: -	Interlocked
11	Means of interlocking: -	EKT
12	Provision of Gate signal at Kms.	i) Up line NIL ii) Dn line NIL
13	Signalling arrangement: -	Interlocked with station stop signals
14	Means of Communication:	Magneto Telephone Connection from Gate Goomty to SM office/THV
15	Width of level crossing Gate: -	7.5 Meters
16	Type of road. (NH/SH/Others): -	Others
17	Name of Road: -	Theruvalli-Kaliguda
18	Metaled/Non:	Metaled
19	Approach Road: -	Metaled
20	Width of the road: -	5.50 m.
21	Angle of road crossing (In case of the skew Gates) -----.	
22	Road gradient (If any)	i) East/North side. --- ii) West/South side----
23	Road alignment (Straight/Curve): -	i) East/North side -Straight ii) Wst/South side -Straight
24	Provision of height gauges: -	Not Provided.
25	Type of Barriers: -	Lifting Barriers
26	Length of check rails: -	7.50 Meters.
27	Road surface in between Level: -	Hexagonal RCC Blocks.
28	Length of speed breakers: -	5.5 m
29	Road signs: -	Available
30	Speed breaker indication board: -	Provided
31	TVU: -	5821 on 09/2010
32	Census next due on: -	09/2013.
33	Demarcation for placement of Detonators: -	Provided
34	No. of the Gateman working: -	02.
35	Nearest Railway Medical Assistance: -	RGDA
36	Nearest Private Medical Assistance available (if any) :- THV	
37	List of equipment available Yes/No: -	Yes

1.2 EQUIPMENT:

(R.Das)
DSTE/SBP

(D.Nayak)
DOM(G)/SBP

<u>ITEMS</u>	<u>QUANTITY / NUMBER</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 Quardruple/line or Twin single lien and 7 in case Hexaple section mounted on stick)
4 Banner Flag Red	3 (5 on Quadruple/Line or twin single line)
5 Posts for exhibiting red banner flag	2 (4 on Q/Twin single line and 5 on Hexaple section)
6 Spare Chains with Padlocks	2 with stop mark
7 Detonators	10 in tin case
8 Gate lamps	2
9. Tommy Bar	1
10 Mortar Pan	1
11 Spade/ Fowrah	1
12 Hammer	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 Cane for oil	1
16 Water pot/Bucket	1
17 Canister for Muster roll	1
18 Set of spare spectacles of gateman wearing glasses	1
19 Board demarcating protection of level crossing gate diagram in case of obstruction on gate	1
20 Basket	1
21 Whistle	1
22 Wall clock	1
23 Small size chain with padlocks to be used in case 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 Rules 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) Record 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:**

(R.Das)
DSTE/SBP

(D.Nayak)
DOM(G)/SBP

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 and blow the whistle to draw the attention of Driver & Guard of the passing train.

3. **ROUTINE DUTIES OF GATEMAN:**

- i) Gateman shall ensure that red banner flag by day and red lamp by night is placed across the track whenever the Gate is kept in open condition in case of emergency and obstruction on the track.
- ii) Gateman shall ensure that Gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
- iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the Gate unless 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 lookout 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 the driver on walkie talkie or any other way.
- vii) If lifting barriers get damaged or becomes out of order, the Gateman shall use the spare chain with disc and padlocks for securing the Gate against road traffic.
- viii) Gateman shall report to the nearest SM, Gangmate or Permanent Way Inspector any defect in his Gate or apparatus pertaining to it, as soon as possible.
- ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the ON position even by disconnecting the signal or the wire, if necessary.
- x) At the gate whose signal have become defective, the gateman shall close and lock the lifting barriers/left gates on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the driver to report the defect at the next station.
- xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing Gate.
- xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- xiii) Gateman shall work the Gate as per Gate working instructions and remain well conversant with these instructions.
- xiv) Gateman shall ensure that equipment supplied at the Gate is in good order and ready for immediate use.
- xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- xvi) Gateman must keep the road surface well-watered and rammed in case of unmetalled roads.
- xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of Gates should be to the minimum possible extent.
- xviii) Gateman on electrified section shall watch that road vehicles/animals passing from gates should be to the minimum possible extent.
- xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.

4. ACTION IN CASE OF UNUSUAL OCCURRENCE OF TRAIN.

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

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

5. ACTION IN EMERGENCY AT THE LEVEL CROSSING:

- i) In case of an obstruction at the level crossing Gate, he shall place banner flag/red light lamps on the stave on track at 5 m. away from the edge of the road at Level Crossing.
- ii) Thereafter, if he is unable to remove the obstruction, Gateman shall immediately advise the SM on duty/ THV regarding the defects/obstructions at the Gate, under exchange of private number.
- iii) If there is no response from the SM on duty after three attempts, he shall first protect the Gate and then inform on phone.

a) The Gateman shall protect the line as under: -

The gateman shall protect the line as under: -

- i) If both lines are obstructed the Gateman shall plant a red banner flag by day and a red light by night 5 meters away from the line on which train is expected to arrive first.
- ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
- iii) Gateman shall then proceed to protect the gate along with detonators, fusees and red flag by day and red hand signal lamp by night.
- iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and 400 meters on MG/NG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 meters on BG and 800 meters on MG/NG from the level crossing gate and place 3 detonators on the track in 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonators on his way back.
- vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the driver of the approaching train.
- vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- viii) Thereafter, he shall light up and fix the fusee to warn the driver and stop the

approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(b) Other actions to be taken by Gateman:

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

1.5 SPECIAL INSTRUCTIONS:

1. MODE OF OPERATION:

This is a Manned, interlocked traffic L.C.Gate situated at Tie Line "B" cabin end of the yard in between Up Starter and Up Adv. Starter signal at Km 324/2-3. This gate is interlocked with Station stop signals. Telephone communication is provided between the L C. gate lodge with SM on duty of THV Station. The level crossing gate is of lifting barrier type operated by means of winch provided at the gate lodge.

The normal position of the gate is opened to road traffic. A two-lever frame has been provided at the gate Lodge. The key of the LC remains in the winch normally. When it is necessary to close the gate, for taking off signals or for shunting operations the SM on duty shall inform the gate man to close and lock the gate. The gateman shall clear the road traffic and close the gate by operating the winch and extract key "M" from the winch. The key "M" shall be inserted into lever No.GF-2 and turned. This will release GF-2. When GF-2 is reversed it locks the gate boom and releases GF-1 and key-M. The Gateman transmits the key "M" electrically to panel in conjunction with GF-1 reversed. The SM on duty shall then press the level crossing control button No.40 and common Group Release button. The L.C Gate closed indication will appear in the panel and SM can take off concerned signal. Lever No.GF-1 can be used to put back the concerned signal in case of emergency.

After passage of train or completion of shunting, the SM on duty shall inform the Gateman and push L.C Gate control button No.40 and common Group Trans button to enable the Gateman to extract key 'N' from the RKT instrument. Gateman shall normalize the lever GF-1 and insert, key-N in lever GF-2. When GF-2 is normalized it will unlock the gate boom and releases Key-"M". The Gateman shall extract the control Key-"M" from GF-2 and open the L.C Gate by operating the winch.

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

The level crossing gate shall be so worked as to cause the least possible inconvenience to vehicular traffic in consistence with safety.

2. INTIMATION TO GATEMAN:

- i) Before taking off reception/departure signals Station Master/THV 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.

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- 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 SM/THV 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/ THV 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/THV, which will enable him to take 'OFF' reception/Departure signals.
 - iii) When sufficient time is not available because of greater frequency of train service, station Master/THV will issue written authority to the train driver to pass the signal at 'ON' position.
 - iv) In addition, Station Master/ THV shall also issue a caution order advising the driver to whistle continuously and approach the gate cautiously.
 - v) The train driver shall be instructed to pass the gate cautiously, on before signaled by the gateman. If hand signal is not seen, driver should be prepared stop short of the gate and ensure that gate is closed following GR.3.73.
 - vi) In case of an approaching train, the Station Master/ THV shall advise the Station Master/Tie Line "B" cabin, under exchange of private number, that the telephone at the gate has failed.
 - vii) The station Master/ Tie Line "B" cabin, shall then issue a caution order to the driver before despatching a train into the block section from his end.
 - viii) He should also advise S&T staff responsible for maintenance of the telephone 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:**

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

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

- i) If the gate key cannot be extracted from the gate leaves or the key transmitter, then gateman must immediately inform the SM/THV on duty on telephone, under exchange of private number.

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

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

- i) If the gate key cannot be extracted from the winch, gate lever or key transmitter then gateman must immediately inform the Station Master on duty/ THV on telephone, under exchange of PN.
- ii) Thereafter, the gate must be treated as non-interlocked and procedure for reception/despatch of trains as prescribed for non interlocked gate should be adopted.
- iii) Gateman shall secure the gate against road traffic by means of chains and padlocks and pass the trains on hand signals.
- iv) Station Master on duty/ THV shall issue caution order to the driver of a departing train.
- v) He shall also advise the station Master/Tie Line “B” cabin, at the despatching end, under exchange of private number, to similarly issue a caution order to the driver before despatching a train into the block section from his end.
- vi) Station Master/ THV will advise S&T staff responsible for maintenance of winch/key transmitter to rectify the defect at the earliest.
- vii) Normal working will resumed only after S&T staff repair 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 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/ THV on duty, regarding the defects/obstruction at the gate, under exchange of private number.
- iii) Stationmaster/ THV 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 / THV after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gateman shall then rush with detonators, fusee and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gateman under item No.1.5. (5).
- vi) 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/ THV 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/ THV shall also inform the station Master/Tie Line "B" cabin, at the despatching end, under exchange of private number, asking him not to despatch any train in the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the gateman shall inform the Station Master/ THV accordingly, under exchange of private number.
- x) Station Master/ THV shall then issue a caution order to drivers of all trains to proceed cautiously, and pass the gate signal at 'ON' position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and they're after exhibit green hand signal, if the gate is not obstructed.
- xii) Station Master/ THV shall advise maintenance staff responsible for maintaining the lifting barriers to repair the same at the earliest.
- xiii) Normal working will be resumed only after maintenance staffs rectify the defective lifting barriers and issue reconnection/fit memo for the same.

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

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

2. GATE WORKING RULES OF "A" CLASS ENGG. INTERLOCKED LEVEL CROSSING GATE AT KM 308/2-3 (No- RV-236) BETWEEN THV-BMCK STATIONS: -

2.1 DESCRIPTION OF THE LEVEL CROSSING GATE:

1.	Number of Level Crossing Gate: -	RV-236.
2.	Engineering or Traffic Gate: -	Engineering.
3.	Under control of Station Master/PWI:	PWI.
4.	Location at KM	308/2-3
5.	At. Station: -	BMCK.
6.	In between stations: -	THV -BMCK.
7.	BG/MG/NG: -	BG.
8.	Single line/Double line/Multiple line: -	Double Line.
9.	Normal Position: -	Open to road traffic.
10.	Interlocked/Non Interlocked: -	Interlocked.
11.	Means of interlocking: -	RKT.
12.	Provision of Gate signal at Kms.	KM 308/5-6 & 307/14-15
13.	Signalling arrangement: -	MACLS.
14.	Means of Communication:	Telephone from Gate Goomty with SM/BMCK.
15.	Width of level crossing Gate: -	10 Meters.
16.	Type of road. (NH/SH/Others): -	S.H
17.	Name of Road: -	Rayagada-Bhawanipatna
18.	Metaled/Non-mataled:	Metaled
19.	Approach Road: -	Metaled.
20.	Width of the road: -	9.10 m.
21.	Angle of road crossing (In case of the skew Gates)	Skew (45 Degree).
22.	Road gradient (If any)	i) North/East side. --- ii) South/West side-----
23.	Road alignment (Straight/Curve): -	i) North/East side -Curve i) South/West side -Curve
24.	Provision of height gauges: -	Not Provided.
25.	Type of Barriers: -	Winch operated Lifting Barriers
26.	Length of check rails: -	12.90. Meters.
27.	Road surface in between Level crossing gate: -	Hexagonal RCC Block.
28.	Length of speed breakers: -	9.10 Mtrs.
29.	Road signs: -	Available
30.	Speed breaker indication board: -	Provided
31.	TVU: -	49658 on 09/2010
32.	Census next due on: -	09/2013.
33.	Demarcation for placement of Detonators: -	Displayed.
34.	N0 of the Gateman working: -	03.
35.	Nearest Railway Medical Assistance: -	Rayagada.
36.	Nearest Private Medical Assistance available (if any)	Bisamcuttack.
37.	List of equipment available Yes//No: -	yes.

2.2 EQUIPMENT:

	ITEMS	QUANTITY / NUMBER
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 Quadrduple/line or Twin single lien and 7 in case Hexaple section mounted on stick)
4	Banner Flag Red	3 (5 on Quadruple/Line or twin single line)
5	Posts for exhibiting red banner flag	2 (4 on Q/Twin single line and 5 on Hexaple section)

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6	Spare Chains with Padlocks	2 with stop mark
7	Detonators	10 in tin case
8	Gate lamps	2
9.	Tommy Bar	1
10	Mortar Pan	1
11	Spade/ Fowrah	1
12	Hammer	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	Cane for oil	1
16	Water pot/Bucket	1
17	Canister for Muster roll	1
18	Set of spare spectacles of gateman wearing glasses.	1
19	Board demarcating protection of level crossing gate diagram in case of obstruction on gate.	1
20	Basket	1
21	Whistle	1
22	Wall clock	1
23	Small size chain with padlocks to be used in case failure of gate boom lock.	2

2.3 **THE GATEMAN SHALL BE PROVIDED WITH FOLLOWING REGISTERS:**

- i) Gate working Instructions in Hindi / English.
- ii) Gate working instructions in local vernacular language.
- iii) Gateman Rules 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) Record of last census of road traffic at level crossing gate.
- x) Public Complaint Book.
- xi) Inspection Book.
- xii) S&T Register.

2.4 **DUTIES OF GATEMAN:**

1. **ALERTNESS:**

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

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

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

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

3. **ROUTINE DUTIES OF GATEMAN:**

- i) Gateman shall ensure that red banner flag by day and red lamp by night is placed across the track whenever the Gate is kept in open condition in case of emergency and obstruction on the track.
- ii) Gateman shall ensure that Gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
- iii) Gateman shall perform his duties strictly according to the duty roster and shall not leave the Gate unless 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 lookout 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 the driver on walkie talkie or any other way.
- vii) If lifting barriers get damaged or becomes out of order, the Gateman shall use the spare chain with disc and padlocks for securing the Gate against road traffic.
- viii) Gateman shall report to the nearest SM, Gangmate or Permanent Way Inspector any defect in his Gate or apparatus pertaining to it, as soon as possible.
- ix) In the event of gate signal becoming defective the gateman shall maintain the signal in the ON position even by disconnecting the signal or the wire, if necessary.
- x) At the gate whose signal have become defective, the gateman shall close and lock the lifting barriers/left gates on sighting a train and hand signal or pilot the train past the defective signal. In such case he should inform the driver to report the defect at the next station.
- xi) Gateman shall wear badge and prescribed uniform while on duty at level crossing Gate.
- xii) Gateman shall ensure that he is having competency certificate in his possession while on duty.
- xiii) Gateman shall work the Gate as per Gate working instructions and remain well conversant with these instructions.
- xiv) Gateman shall ensure that equipment supplied at the Gate is in good order and ready for immediate use.
- xv) Gateman shall see that the channel for the flange of the wheel is kept clear.
- xvi) Gateman must keep the road surface well-watered and rammed in case of unmetalled roads.
- xvii) Gateman must be vigilant to see that inconvenience to road users due to closure of Gates should be to the minimum possible extent.
- xviii) Gateman on electrified section shall watch that road vehicles/animals passing from gates should be to the minimum possible extent.
- xix) Gateman shall prevent trespassing by persons or cattle to the maximum extent.

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

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

- i) He shall take prompt action to warn the driver/guard of the passing train by showing red flag by day and red light by night.
- ii) He shall simultaneously try to draw the attention of the driver/guard by whistling continuously, shouting, gesticulating, and throwing ballast on the brake van or by any other means.

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

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

- i) In case of an obstruction at the level crossing Gate, he shall place banner flag/red light lamps on the stave on track at 5 m. away from the edge of the road at Level Crossing.
- ii) Thereafter, if he is unable to remove the obstruction, Gateman shall immediately advise the SM on duty/ BMCK regarding the defects/obstructions at the Gate, under exchange of private number.
- iii) If there is no response from the SM on duty after three attempts, he shall first protect the Gate and then inform on phone.

b) The Gateman shall protect the line as under: -

The gateman shall protect the line as under: -

- i) If both lines are obstructed the Gateman shall plant a red banner flag by day and a red light by night 5 meters away from the line on which train is expected to arrive first.
- ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
- iii) Gateman shall then proceed to protect the gate along with detonators, fusees and red flag by day and red hand signal lamp by night.
- iv) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and 400 meters on MG/NG and place one detonator on the line. Thereafter he shall proceed to a distance 1200 meters on BG and 800 meters on MG/NG from the level crossing gate and place 3 detonators on the track in 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
- v) Thereafter, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (iv) above and return to the site of obstruction, picking up the intermediate detonators on his way back.
- vi) Having returned to the gate, he must then take steps to remove the obstruction and warn the driver of the approaching train.
- vii) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far away as he can go.
- viii) Thereafter, he shall light up and fix the fusee to warn the driver and stop the approaching train by waving his red flag by day red hand signal lamp by night repeatedly.

(c) Other actions to be taken by Gateman:

- i) At night Gateman shall light two hand signal lamps and take action to exhibit red light and protect the lines as described in sub paras (a) and (b) above.
- ii) If the Gate is broken by a road vehicle, which is fouling the track, or if lifting barriers or any other part of the Gate foul the track, or if there is any other obstruction at the Gate, the Gateman shall take immediate action.

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

2.5 **SPECIAL INSTRUCTIONS:**

1. **MODE OF OPERATION:**

This is an Engg, interlocked L.C.Gate situated at THV end at Km 308/2-3. Telephone communication is provided between the L.C. gate lodge with SM on duty of BMCK station. The level crossing gate is of lifting barrier type operated by means of winch provided at the gate lodge. The normal position of the gate is open to road traffic. A Two-lever ground frame is provided at the gate lodge. The key of the LC remains in the winch when the gate is open condition. When it is necessary to close the gate, for taking OFF signals or for train passing, 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 the winch. Then key 'X' is to be extracted from the winch, which releases lever No. GF-2. Lever No. GF-2 thus reversed effects boom locking and releases key No "Y" and GF-3 & GF-4. The key "Y" is inserted in the EKT at gate lodge and reversed the No. GF-3 or GF-4 for taking OFF concerned Gate stop signals. GF-3 or GF-4 can be used to put back the concerned Gate stop signal in case of emergency. Lever No. GF-1 is spare lever.

After passage of the Train the gateman shall normalize the gate signals and extract key "Y". Then key "Y" is inserted in Lever No.2 to normalize the lever No.2. The gate man shall open the gate by operating the winch after extracting the key 'X' from Lever No.2, the Lc gate shall be so worked as to cause least possible inconvenience to the vehicular traffic in consistence with safety as per subsidiary rule 16.03.01 (a).

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

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

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3. FAILURE OF LIFTING BARRIERS OF GATE:

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

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

- (i) If the gate key cannot be extracted from the gate winch or the key transmitter, then gateman must immediately inform the Station Master/ BMCK 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/ BMCK shall issue a caution order to the driver of a departing train.
- (iv) He shall also advise the Station Master/THV at the dispatching end, under exchange of private number, to similarly issue a caution order to the driver before dispatching a DN train into the block section from his end.
- (v) Station Master/ BMCK 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.

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

- (i) If the gate key cannot be extracted from the winch, gate signal lever or key transmitter then gateman must immediately inform the Station Master/ BMCK 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) The 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/ BMCK shall issue caution order to the driver of a departing train.
- (v) He shall also advise the Station Master/THV at the dispatching end, under exchange of private number, to similarly issue a caution order to the driver before dispatching a DN train into the block section from his end.
- (vi) Station Master/ BMCK will advise S&T staff responsible for maintenance of winch/ 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.

6. DEFECTIVE GATE SIGNAL:

- (i) The gateman shall treat the gate signal as defective and must not lower them under following circumstances:
 - (a) If gate signals can be taken 'OFF' without closing the gate, or
 - (b) The key can be extracted from the operating winch when the gate is in open condition, or
 - (c) The key can be extracted from the gate lever when the gate stop signal is in reversed condition.
- (ii) If the Gate home Signal or Distant Signal becomes defective in 'OFF' position, the gateman will make all efforts to put it at 'ON' position even by cutting signal wires/power, if necessary. The gateman immediately advise the Station Master on duty/ BMCK, under exchange of private number, regarding defective gate signals In case of failure of gate signal in OFF position, the gateman shall at once close and lock the gates against road traffic place detonators 90 meters away from the defective signal and renew it after passage of every train.
- (iii) Station Master on duty/ BMCK will issue a caution order to the driver of departing UP train. He shall also advise Station Master/THV, under exchange of private number, to similarly issue a caution order to the driver before dispatching a DN train into the block section from his end.
- (iv) Station Master/ BMCK shall advise S&T staff responsible for maintaining the gate signal to repair the same at the earliest .Normal working will be resumed only after S&T staff rectifies the defective gate signal and issue reconnection/fit memo for the same.

7. OBSTRUCTION AT THE GATE:

- i) If the gate is broken by a road vehicle, which is fouling the track, or if lifting barriers or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gateman shall immediately fix red banner flag by day and red lamp by night on posts provided at both ends of the gate, for this purpose.
- ii) Immediately after this, the gateman shall advise the station Master/ BMCK on duty, regarding the defects /obstructions at the gate, under exchange of private number.
- iii) Station Master / BMCK 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/BMCK after two or three attempts, he shall first protect the gate and then inform on phone.
- v) Gateman shall then rush with detonators, fusee and red flag by day and red hand signal lamp by night in the direction of the approaching train and protect the gate as stipulated in General Instruction for duties of gateman under item No.2.4. (5).
- vi) Thereafter he shall protect the gate from the other direction also.
- vii) He shall note down the particulars of the road vehicle, name of the driver, owner and reply these details to the station Master/ BMCK 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/ BMCK shall also inform the station Master/THV under exchange of private number, asking him not to despatch any train into the block section from his end, until the track has been cleared of all obstructions.
- ix) After the track has been cleared of all obstructions the gateman shall inform the Station Master/ BMCK accordingly, under exchange of private number.
- x) Station Master/ BMCK shall then issue a caution order to drivers of all trains to proceed cautiously, and pass the gate signal at 'ON' position on green hand signal of the gateman, if the gate is broken, but is clear of any obstruction.
- xi) Gateman shall secure the gate against road traffic by means of safety chains and padlocks and they're after exhibit green hand signal, if the gate is not obstructed.

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

8. OBSTRUCTION ON THE TRACK NEAR LEVEL CROSSING GATE:

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

APPENDIX 'B'**DETAILS OF SIGNALLING & INTERLOCKING INSTALLATIONS, INSTRUCTIONS FOR WORKING THEM NORMALLY & EMERGENCIES ETC., INCLUDING THE POWER SUPPLY ARRANGEMENTS.****1.1 BRIEF DESCRIPTION OF THE SIGNALLING AND INTERLOCKING INSTALATION:**

This is a 'B' Class Station with Standard-II(R) 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. Block Proving axle counters for either side of the Block section and for IBS at BMCK end have been provided.

1.2 DESCRIIPTION 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')

1.3 POINT PUSH BUTTONS:

Points are normally operated automatically along with route setting operation. However, if 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.

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.

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.

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.

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.

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

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 alltrains according to SR 3.69.03 ©. In such case both ends of the point shall be clamped and padlocked.

1.3.1 DESCRIPTION OF POINT PUSH BUTTON:

SL. NO.	POINT BUTTON NO.	COLOUR	DESCRIPTION
1	21 A/B	Black	Cross over point between DN&UP Main lines at BMCK end
2	22 A/B	Black	Cross over point between UP & DN Main lines at Tie Line "B'Cabin end.
3	23 A/B	Black	Cross over point between DN Main line and DN loop line No.4 at BMCK end.
4	24 A/B	Black	Cross over point between DN Main line and UP Main line at Tie Line "B'Cabin end.
5	25 A/B	Black	Cross over point between UP Main line and DNMain line at BMCK end.
6	26	Black	DS point in shunting neck at 'B' cabin end.
7.	27 A/B	Black	Cross over point between UP Main line and Common Loop line No.1 at BMCKend.
8.	28 A/B	Black	Cross over point between DN Main line and Common Loop line No.1 at Tie Line "B'Cabin end.
9.	30 A/B	Black	Cross over point between DN Main line and DN loop line No.4at Tie Line "B'Cabin end.
10.	32	Black	DS point isolating Banking engine siding from Line No-4 at Tie line "B" Cabin end.
11	Point Group button (Normal)	Black with Red dot	Common button for normal operation of points
12.	Point Group button (Reverse)	Black with Red dot	Common button for reverse operation of points

1.4 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.

1.5 NON SETTING OF POINTS: -

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

1.6 SIGNAL PUSH BUTTON:

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

1.7 DESCRIPTION OF SIGNAL BUTTONS:

SL NO	BUTTON NO.	COLOUR	DESCRIPTION
1	C1	Red with white dot	UP Calling 'ON' signal for Line No.1,2,4.
2	S1	Red	UP Home signal for Line No. 1,2,4.
3	C2	Red with white dot	DN Calling 'ON' signal for Line No. 1,3,4.
4	S2	Red	DN Home signal for Line No. 1,3,4.
5	SH3	Yellow	Shunt Signal at BMCK end on DN line for back shunting towards line No.1, 2, 3 & 4.
6	SH4	Yellow	Shunt Signal at Tie line "B" Cabin end for back shunting towards line no.1, 2, 3 & 4.
7.	SH6	Yellow	Shunt Signal on shunting neck for back shunting towards line no. 1.
8.	SH8	Yellow	Shunt Signal on Banking engine siding for back shunting towards line no. 4.
9.	S9	Red	UP Starter signal on common Loop Line No-1.
10.	S10	Red	DN Starter signal on common Loop Line No-4.
11.	S11	Red	UP Starter signal on UP main Line No-2.
12.	S12	Red	DN Starter signal on DN Main Line No-3.
13.	S13	Red	UP Starter signal on common Loop Line No-4.
14.	S14	Red	DN Starter signal on common Loop Line No-1.
15.	S17	Red	UP Advanced Starter signal at Tie line "B" Cabin end.
16.	S18	Red	DN Advanced Starter signal at BMCK end.
17.	SH9	Yellow	Shunt Signal below UP starter signal No-9 at Tie line "B" Cabin end.
18.	SH13	Yellow	Shunt Signal below UP starter signal No-13 at Tie line "B" Cabin end.
19.	S20	Red	DN IBS signal control on DN line atBMCK end.

1.8 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.

1.9 ROUTE BUTTONS:

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.

1.9.1 **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 UP&DN shunt signals(SH3 or SH4) & SH-6 for line No.1 setting overlap to Over Run Line and sand hump respectively.
2	L1/2 UN	White	Common route button for UP and DN Home signal for line No.1 setting overlap on Main line
3	L2 UN	White	Common route button for UP Home signal, Calling-On signal and back shunt signals (SH3 or SH4) for Main Line.
4.	L3 UN	White	Common route button for DN Home signal, Calling-On signal and back shunt signals (SH3 or SH4) for Main Line
5..	L4/1 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 SH8) for line No.4 setting overlap to DS.
6..	L4/2 UN	White	Common route button for UP and DN Home signal for line No.4 setting overlap to Advanced starter signal.
7.	17 AUN	WHITE	Common Route button for UP starter signal Nos. 9, 11, 13 & SH9, SH13..
8	17 UN	WHITE	Route button for UP Advanced starter Signal No.17
9	18 AUN	WHITE	Common Route button for DNstarter signal Nos. 10, 12, 14 .
10.	18 UN	WHITE	Route button for DN Advanced starter Signal No.18
11	BES UN	WHITE	Route button for Shunt signal No. SH13 to Banking Engine siding.
12	SNUN	WHITE	Route button for Shunt signal No. SH9 to Shunting Neck
13	20 UN	WHITE	Route button for DNIB signal of THV

1.10 **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& 27 A/B
3.	CH3	BLUE	Point Nos 22 A/B& 24 A/B
4.	CH4	BLUE	Point Nos 26 & 28 A/B
5.	CH5	BLUE	Point Nos 30 A/B & 32

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

1.11 **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.
15.	IB reset push button	Red colour	This is to be pressed for resetting of IB Axle counter when IB axle counter has failed
16.	DN IB reset Key	---	This key is to be inserted and turned to right whenever resetting of IB Axle counter is required. This key shall be in the personal custody of SM on duty.
17.	Permission Acknowledgement button	Green	This is to be pressed after getting permission from other station for resetting of IB Axle counter.

18.	Train Runaway acknowledgement button	Red colour with white dot	To be pressed to silence the buzzer during train run away.
20	Train entering Lock & Block acknowledgement button	Red colour with white dot	To be pressed to silence the buzzer when a train passed the IBS signal.
21	Reset permission button	Yellow	To be pressed to grant permission for reset of DN Block section Axle counter.
22.	Reset permission acknowledgement button	Green	To be pressed to acknowledge permission for reset of UP Block section Axle counter.

1.12 **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.
9.	DN IB reset counter	This registers the resetting operation of IB Axle counter
10.	DDLV reset permission granting counter.	This registers the permission granted to BMCK for resetting operation of DN Block section Axle counter.
11.	Up IB reset counter	This registers the resetting operation of IB Axle counter
12.	URLV reset permission granting counter.	This registers the permission received from BMCK for resetting operation of UP Block section Axle counter.
13.	DN train entering section Buzzer	This buzzer comes to operation when the DN train passes IBS.
14.	DN train run away Buzzer	This buzzer comes to operation when the DN train passes IBS at on position.
15.	UP train entering section Buzzer	This buzzer comes to operation when the UP train passes IBS.
16	UP train run away Buzzer	This buzzer comes to operation when the UP train passes IBS at on position.

1.13 **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.

1.13. **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 indicating 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.

1.14 **VHLC INDICATION:**

A VHLC (Vital Harmonic Logic Controller) indication is provided on the top of the panel for indicating which system of VHLC is working. This EI unit is consisting of two VHLC systems called system' A' and system' B. These two systems status (ON/OFF) will be indicated separately on the panel. If the VHLC 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 VHLC unit buzzer. SM on duty has to press the system failure acknowledgement button provided on the top of the panel and intimate the same to ESM/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.

1.15 **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.

1.16. **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 buttons 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.40. 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.40 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.

5.0 **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.

6.0 **AXLE COUNTER:**

For section THV-Block Hut of Tie line "B: Cabin, Digital axle counters are provided at both end of the station for Up and Down sections to check the complete arrival of trains. A pair of Digital axle counter is provided in advance of UP advanced starter signal of THV and beyond UP Home Signal of Block Hut Tie line "B: Cabin on UP line. A pair of Digital axle counter is provided in advance of DN advanced starter signal of Block Hut Tie line "B: Cabin and near BSLB of THV on DN line

For section THV-BMCK, a pair of Digital axle counter is provided between THV-BMCK on Up line, one just beyond Up advanced starter No.13 on 24T1 of BMCK and another one on 15T2 for proving UP IB section between BMCK-THV. A pair of Digital Axle counter is provided beyond UP IB Home Signal No. 15 of BMCK-THV and another near first facing point No. 21 of THV for proving UP LVV for section BMCK-THV. Another pair of digital axle counter is provided between THV-BMCK on DN line, one just beyond DN advanced starter No-18 of THV and another on 20T2 for proving DN IB section between THV-BMCK. A pair of Digital Axle counter is provided beyond DN IB Home signal No.20 of THV and another one on 2T1 beyond DN Home Signal No.2A/B/C of BMCK for proving DN LVV for section THV-BMCK.

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..

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.

7.0 **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.

8.0 **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 handle keys 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).

9.0 **SETTING OF ROUTE AND TAKING OFF RECEPTION SIGNALS.**

For setting a route all the concerned points must be set by operation of relevant point button and 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.

9.1 **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.17, LV section between THV-Block Hut of Tie line "B" line 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.18, SM on duty shall ensure that the portion of line between Advanced Starter and 400 Mtrs beyond IBS at BMCK end is clear of obstruction and indication to this effect is available. IB section monitoring axle counter is clear and 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.

9.2 **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-C)/ C-2(A-C) (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.

10.0 **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.

12.0 **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.

UP Advanced starter signal is interlocked with Block instrument in LINE CLEAR position. DN Advanced Starter signal No.18 of THV are controlled by the clearance of IB section through IB section monitoring axle counter.

Home signals are interlocked with respective 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.

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.

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 below starter signal No 9, & 13 have been provided. Independent Back shunt signals SH-3 (A-D), SH-4 (A-D) have been provided for back shunting purpose. Shunt signals SH-8 & SH-6 have been provided in Banking engine and shunting neck respectively for shunting in the sidings.

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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.

15.0 **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 signalling and interlocking system. When a route is not released after passage of a train or the Crank handle is in locked condition due to any failure, the "CH key" can also be extracted from the CH location box by applying emergency Crank Handle operation. The procedure is same for transmitting the CH key. In key "in" and lock condition, when the CH button and group trans button are pressed simultaneously, both the lock indication and key "in" indication start flashing. After 120 seconds the lock indication disappears and the key in indication continues to flash. At this position the key can be extracted from the RKT in the CH location box by pressing the push button switch provided inside the CH location box. The procedure for receiving the CH key is same like the normal operation of Crank handle.

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

17.0 **CANCELLATION BUTTON AND COUNTERS**

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.

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:**

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.

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.

20.0 **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.**

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.

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

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.

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.

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 **LAST STOP SIGNAL CONTROL:-**

- a) The Block working for section between THV-BMCK on UP and Down lines is controlled by the provision of Double line Lock and Block Instruments (SGE type) and are provided at THV station and BMCK station. The UP Advanced starter signal No.17 is interlocked with block instrument and DN Advanced Starter signal No.18 is controlled by the clearance of IB section through respective IB section monitoring axle counters and the IB Home signals are controlled in turn through the line clear position of respective Double line lock and block instruments at the receiving station.
- b] Trains between intermediate block signal to respective Home signal of Station in advance are worked by means of SGE type lock block instrument vide 4.09, 5.07, 14.01 to 14.14 of the G & SR and chapter V of BWMB)
- (c) UP Advanced starter signal is interlocked with the 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 Signal/ IBS signal controlled by the Block Instrument must be treated as suspended. During the failure of Block Instrument the authority will be T/369(3b) with identification number & Private Number issued from the station in advance written both in figure and words.

24.1 **BLOCK RELEASE:-**

- [a] The Block Instruments are restored to normal (Line Closed condition) only after the complete arrival of the train past the block over lap ahead of the respective Home signal on either side of the Station yard.

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- [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 have been provided.

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) The occupation and clearance of the axle counter section is indicated by RED and GREEN indication respectively provided on the panel.
- (b) Last stop signal cannot be taken OFF if axle counter of block section 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 of section THV-Block Hut tie line "B' Cabin.

(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 SM at both ends of the section shall resort to reset the axle counter.
- (ii) Procedure laid down in GR 4.17 & relevant SRs thereto shall be followed for the purpose.
- (iii) 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
- (iv) 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.
- (v) 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.

(Details are given in Appendix-F for resetting of Axle counters between THV-BMCK and IBS Axle counters)

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 Double line Lock & Block Instruments for either side Block Section.
- ii) Station to Station fixed telephone (hot line) is provided
- iii) Station is provided with Auto telephone connected with Railway Exchange
- iv) BSNL telephone has been provided.
- v) The station is connected to BLGR-SPRD control circuit by a control telephone.
- vi) Station to station 25w VHF communication is provided.

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- vii) Telephone connection from station to DN IBH Post.
- viii) Telephone is provided between Station and both end crank handle locations.
- ix) Magneto telephone connection is provided between station & LC gate at Km. KM 324//2-3.

NOTE:

- (i) For obtaining line clear, VHF should be used as a last alternative and not as a sole means of communication.
- (iv) VHF and Walkie Talkie sets should not be used for unnecessary discussions with Drivers, Guards or any other staff.
- (v) The on duty SM shall use the above electrical communication instruments stated in Para-29.0 strictly in order of preference from (i) to (vi) for obtaining/granting line clear vide SR 14.01.01. In case of failure of any of the above means of communication the SM on duty shall work vide SR 6.02.06

30.0 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 GR 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 GR 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 GR 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 GR 6.02.06 (1) (d) Chapter-III Part-I of Block Working Manual.
- 5) In the event of total failure of all communications trains shall be worked vide SR 6.02.03.

APPENDIX 'B1'**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.

1. 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.

2. 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.

3. 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.

4. 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.

The entire operation can be possible from the VDU.

5. **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>
--

6. **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.

7. **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 pop-up menu will appear as below:

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

<p>Clear Route A (SH) 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>

8. **SETTING A ROUTE:**

To set a route of a signal, click on a possible route of the signal, having 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.

9. 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).

10. CANCELLING A ROUTE/ EMERGENCY ROUTE RELEASE:

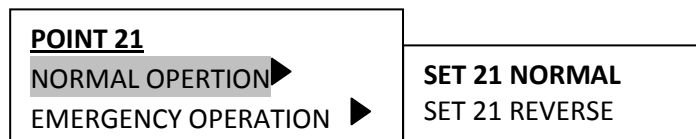
To Cancel a signal route when the route is set and the signal is taken-off, click on the signal cancellation menu (Main/Calling on) of the concerned signal, the signal will immediately go to ON aspect, after doing so click on the Route release menu the route locked indication will start flashing for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

11. 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.

12. 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:



13. 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.

14. 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.

15. 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.

16. 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.

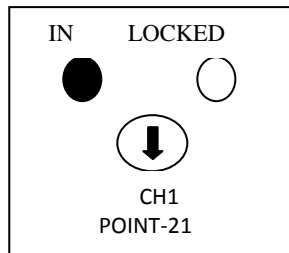
Before doing the emergency operation A Emergency Point Operation Key to be KEY IN by clicking the KEY IN menu, after the completion of the Emergency point operation the key to be KEY OUT by clicking KEY OUT menu.

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.

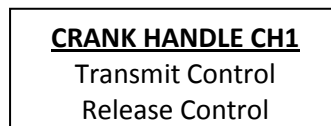
After the Emergency point operation a specific counter provided in the Domino panel board will change to its next higher digit and this number should be recorded in the register provided for this purpose by the SM.

17. CRANK HANDLE & SIDING CONTROL OPERATION:

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



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



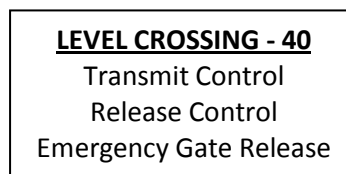
For Transmitting the Crank Handle KEY to the field personnel SM has to click transmit control menu. After transmission the KEY IN indication will start flashing, now the KEY can be extracted from the RKT. After extracting the key from the RKT, the KEY IN indication will disappear.

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.

18. 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.

19. 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'**1.0 STATION MANAGER (IN-CHARGE):**

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

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

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

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

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

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

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

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

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

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

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.

2.0 ASSURANCE REGISTER:

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

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

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

2.3 The declaration shall be renewed in the following cases:-

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

3.0 USE OF PRIVATE NUMBER BOOKS& IDENTIFICATION NUMBER SHEET: -

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

4.0 ACCIDENTS:

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

5.0 TESTING OF POINTS AND SIGNALS:

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

6.0 DY.SS/STATION MASTER/ASSISTANT STATION MASTER:

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

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

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

7.0 HANDING OVER AND TAKING OVER CHARGE:

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

8.0 TRAFFIC POINTSMAN:

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

- (i) Delivery of authority to proceed and caution order etc. to the 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 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.

9.0 DUTIES OF TRAFFIC GATEMAN:

Mentioned in Gate working instructions of concerned L.C.gates in Appendix-A. In addition to that he shall follow the GR 2.05 to 2.11 and other relevant rules laid down in GR & SR.

10.0 SAFAIWALA /LCS-

He shall attend the sanitation of Railway premises including SM's office Passengers awaiting room platform and platform latrines, cleaning of night soils, lighting of lamps and clearing of drainage. He shall remove night soil in staff quarters and dump in and also for clearing of the drains attached to staff quarters. He shall do any other duties entrusted to him by the SS/SM.

GENERAL

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

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

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

Srl No.	Description	Quantity
1.	Detonators	10 in tin case
2.	Battery operated LED based flashing Hand Signal lamps.	05 Nos.
3.	Hand signal flags	05 sets.
4.	Safety chains with pad locks	08 Nos.
5.	Wedges/Sprags	06 Nos.
6.	Fire buckets (with sand and water)	05 Nos.
7.	Clamps with padlocks	08 Nos.
8.	Reminder collars	06 Nos.
9.	First aid Box	01 No.
10.	Fire extinguisher	01 No.
11.	Stretcher	01No.
12.	Blanket	01 No.
13.	Block suspension Board	02 Nos
14.	"Motor Trolley on Line" boards	02 Nos.

APPENDIX - 'F'**RULES FOR WORKING OF DK STATIONS, HALTS, IBH, IBS AND OUTLYING SIDING-****- NIL-****IBH:RULES FOR WORKING INTERMEDIATE BLOCK SIGNALLING BETWEEN THV-BMCK**

The block section between THV-BMCK has been split into two block sections by providing Intermediate Block Stop signals at KM 313.440 [controlled by BMCK station] for UP line and, on DN line at KM 313.935 [controlled by THV station]. Intermediate Block stop signals are controlled through double line lock and block instruments at the respective receiving ends.

- a] The Block working for section between THV-BMCK on UP and Down lines is controlled by the provision of Double line Lock and Block Instruments (SGE type) and are provided at THV and BMCK stations. The UP Advanced starter signal No.13 of BMCK and DN Advanced Starter signal No.18 of THV are controlled by the clearance of IB section through respective IB section monitoring axle counters and the IB Home signals are controlled in turn through the line clear position of respective Double line lock and block instruments and respective LV section monitoring axle counter at the receiving stations.
- b] Trains between intermediate block signal to respective Home signal of Station in advance are worked by means of SGE type lock block instrument vide GR 3.75, 4.09, 5.07, 14.01 to 14.14 of the G & SR and chapter V of BWM.
- c] Last stop signal to the intermediate block stop signal is controlled by Electronic Axle counter and are worked under absolute block system in terms of G & SR 14.01, 14.13.
- d] **INDICATIONS PROVIDED FOR I.B. SECTION.**
The indications of signals of IB in both down and up directions are provided at THV Station and BMCK Station.

SECTION THV-BMCK:

SN	Signal Aspect [S-18]	IB Section Indication [18 AXT]	IB Home Aspect [S-20]	Block Section Indication	Remarks.
1	Green	Green Illuminated, when LSS of THV taken off. When train enters the section, RED illuminated	-	-	Advanced starter No:18 is taken off to dispatch a train up to IB Home.
2	Red	Red Illuminated	-	-	IB Section is occupied.

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DSTE/SBP(D.Nayak)
DOM(G)/SBP

3	-	-	Green	Green Illuminated, When LSS of THV taken off. When train enters the section, RED illuminated	IB Home taken off for train up to Home of BMCK.
4	-	-	Red	Red Illuminated	Block section is occupied or IB Home passed at danger.

SECTION BMCK-THV

SN	Signal Aspect [S-13]	IB Section Indication [13 AXT]	IB Home Aspect [S-15]	Block Section Indication	Remarks.
1	Green.	Green Illuminated When Signal is taken off if Gate is closed. When train enters the section, RED illuminated	-	-	Advanced starter No:13 is taken off to dispatch a train up to IB Home.
2	Double Yellow	Signal Taken off if gate is not opened.			
3	Red.	Yellow Illuminated	-	-	IB section occupied.
4	-	-	Green	Green Illuminated when IB Home is taken off. When train enters the section, RED illuminated	IB Home taken off for train up to home of THV.
5	-	-	Red	Red Illuminated	Block section is occupied or IB Home passed at danger.

E] Buzzer/Bell

One audio Multimedia speaker has been provided in the SM room at THV and BMCK to detect Train Entering section for out going trains. After train passes the intermediate block stop signal, the buzzer/bell will start ringing. On hearing the buzzer/bell the SS/SM in rear must acknowledge the same by clicking on IB train entering section [TES] muting button to stop the buzzer/bell and then send train entering section report to the station in advance who shall turn commutator of the Double Line Lock and Block Instrument from the Line Clear position to 'Train On Line position' and acknowledge train entering section following the procedures laid down vide Block Working Manual.

- F] In the event of failure of I.B. track circuit [i.e. track clear indication not available] which shall not permit taking 'OFF' last stop signal, it should be ensured by SS/SM on duty at the dispatching station through exchange of private number with the SS/SM of the receiving station that the last train that has passed the last stop signal of his station has fully arrived at receiving station, before allowing the next train to enter in to the section, such permission to the next train shall be

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(D.Nayak)
DOM(G)/SBP

granted and the section THV-BMCK as the case may be shall be treated as single section. by issuing the pilot memo when normalization of the system is not possible. In such case, line clear has to be taken on lock and block instrument. Trains are to be dispatched from the station only after obtaining line clear till such time track circuit or last stop signal is restored to normal.

G] NORMALIZATION OF THE TRACK CIRCUIT AND OF BLOCK WORKING BY RESETTING FEATURE:

- i] No train should be allowed to leave station in any particular direction unless I.B track clear indication is available for the relevant track circuited portion of I.B.section and last stop signal can not be taken off also.
- ii] A Resetting arrangement for the resumption of I.B. Axle counter under failure condition through co-operative feature of both the SM on duty at either end station of the Block section is provided, which should only be resorted to after the train that was lastly sent arrives fully at the receiving station and is certified in this respect by the SM at the receiving station through exchange of private number.
- iii] For monitoring of I.B. section working & re-setting of I.B. Axle counters, Track Indications and Re-setting arrangements are provided with button THV and BMCK stations. Counters are also provided for the purpose of recording the re-settings for the I.B. Axle Counters in case of failures in IB section.
- iv] The SM on duty at THV station shall maintain a separate register for use of resetting at IB Axle Counters wherein every operation of the resetting shall be recorded giving details of date of use, train number, time, number registered in the counter on Veader Counter and reasons for resetting and initial each such entry.
- v] The procedure for resetting of the I.B. Axle counters in terms of clause g].ii above shall be as follows:

SECTION BMCK-THV ON UP LINE:

	DISPATCHING STATION [BMCK]		RECEIVING STATION [THV]
1	SMBMCK on duty shall call the attention of SMTHV of station through Telephone for granting Permission to re-set I.B. Axle counter zone as well as Train Passed signal with Danger [train run away condition] giving details of last train left the station into the section.	1	<p>SM on duty at THV after verifying that the said dispatched train arrived fully, shall exchange private number with SM on duty at BMCK and gives permission to re-set by pressing the 'Permission Granting' Push button provided.</p> <p>"Permission Granting" & "Permission Restore". "Permission Granting", SM will find a "yellow" colour Indication above the Push button.</p> <p>For each such operation the permission granting counter shall increase by one digit.</p> <p>SM on duty shall make an entry of changed permission granting counter number in counter register</p>

<p>2 On getting permission to reset from THV, a Green indication will appear on {permission Received from THV} above permission Acknowledgement button. Which shall be acknowledged by SM on duty by pressing 'Permission received from THV' acknowledgement push Button and flashing indication will become steady.</p> <p>On duty SM at BMCK will then turn IB Reset key the key. Indication changed from Red to Green in color. Then the SM will press the IB reset Push button for getting IB Axle counter to be reset. On doing the above process for resetting of the IB Axle counter first train has to be piloted. On passing of the first piloted train IB Axle counter will get reset.</p> <p>In case of train passed at danger, the aforesaid resetting procedure is to be carried out and no need of first train piloting.</p> <p>For each such operation the IB reset counter provided shall increase by one digit. SM on duty shall make an entry of changed Reset counter number in re-setting register.</p>	<p>2 SM on duty at THV shall withdraw the permission by releasing the 'Permission Granting' Push button provided. After pressing of Push button, "Permission restore" button, the yellow color indication above the Push button will go to Blank.</p>
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SECTION THV-BMCK ON DN LINE:

	DISPATCHING STATION [THV]		RECEIVING STATION [BMCK]
1	SM on duty THV shall call the attention of SM of BMCK station through Telephone for Permission granting to re-setting I.B. Axle counter zone as well as Train Passed signal with Danger [train run away condition] giving details of last train left the station into the section.	1	<p>SM on duty at BMCK after verifying that the said dispatched train arrives fully, shall exchange private number with SM on duty at THV and gives permission to re-set 'Permission Granting' Push button provided after pressing of Push button, press "Permission Granting" button, SM will find a "yellow" color Indication above the Push button.</p> <p>For each such operation the permission granting counter provided shall increase by one digit.</p> <p>SM on duty shall make an entry of changed permission granting counter number in counter register</p>
2	On getting permission to reset from BMCK, a flashing indication will appear above	2	SM on duty at BMCK shall withdraw the permission by Push button provided. After

<p>permission Acknowledgement button, which shall be acknowledged by SM on duty by pressing 'Permission received from BMCK acknowledgement push Button and flashing indication will become steady.</p> <p>On duty SM at THV will then turn IB Reset key. Then the SM will press the IB Reset Push button red for getting IB.Axle counter to be reset.</p> <p>After doing the above process for resetting of the IB Axle counter first train has to be piloted. On passing of the first piloted train IB.Axle counter will get reset.</p> <p>In case of train passed at danger, the aforesaid resetting procedure is to be carried out and no need of first train piloting.</p> <p>For each such operation the IB.reset counter provided in SM's room shall increase by one digit. SM on duty shall make an entry of changed Reset counter number in re-setting register.</p>	<p>pressing of Push button press "Permission button, the yellow color indication above the Push button will go to Blank.</p>
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H] **DISPATCH OF TRAINS:**

Dispatch of trains is governed by the provision of G &SR 3.42, 3.70 and Block working manual rules.

I] **From THV towards BMCK.**

Train will be dispatched in accordance with the General Rules 3.42, 3.70., 3.75, 4.35 and 8.01 and subsidiary Rules thereto.

J] **THV TO IBS ON UP AND DOWN LINE:**

The SM on duty shall ensure that the portion of line between Advanced Starter and 400 Mtrs beyond IBS at their respective ends is clear of obstruction and indication to this effect is available and shall also ensure any non-isolated shunting at their respective ends suspended and shunting authority issued if any is withdrawn and kept in his custody.

Advise the Station Master at the station in advance, of the train No. and description of such intended train to be dispatched and shall take his assent supported by Private Number and shall then set and lock the route and take off the Starter and Advanced Starter.

K] **IBS SIGNAL TO THE STATION IN ADVANCE:**

The SM on duty THV shall obtain line clear over lock & Block instrument from the station in advance to dispatch a train passed the IBS signal and shall take off the IBS signal by means of taking of signal No.18 of THV for DN line.

After the train passes the intermediate Block Stop signal of THV a buzzer will ring. On hearing the buzzer/bell the SM must acknowledge the same by pressing train entering section [TES] muting button to stop the buzzer/bell and then send train entering section report to the station master of the station in advance who in turn will turn commutator of the Double line Lock and

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Block Instrument from the line clear position to Train On Line position and acknowledge train entering section. After dispatch of a train from THV into the Block section and intermediate Block Post in case when the intermediate stop signal is not taken 'off' but the buzzer has started ringing, this may be either due to the train passing intermediate Block stop signal at 'ON' position or due to failure of the track circuit in advance of that intermediate Block Signal. The SM on duty will then inform the matter to SCR on duty and concerned S&T official.

The procedure must be rigidly followed irrespective of the fact whether line clear for train has been received from station in advance or not and this must be recorded in the Train Signal Register and SM's diary book of both the Stations.

- L] (i) Dispatch of trains towards BMCK station in case of failure of the Down Advanced Starter signal as the case may be at THV Station due to failure of "Axle Counter" device or otherwise-

If the failure of the Advanced starter of THV due to the failure of axle counting device or the indication lamp (repeated by indication lamp) showing 'Red' light either due to power failure or due to any other cause the re-setting "Button" provided with Veeder counter at the SM office for resorting to the normal function of the signal should be operated accordingly to the following instruction. Whenever the DN Advanced starter signal of THV is found defective by the Station Master the following procedure shall be adopted.

On receipt of this information, the SM on duty after ensuring that all trains which had left his Block Station had arrived complete and intact at BMCK station (by exchanging Private Number with the SM BMCK & confirming this), shall press the resetting button icon of the axle counter. When the resetting is successful, it shall be indicated by a green light provided in the panel. The use of this resetting button is registered on the veeder Counter and the SM should record this giving the details of the occasion with timings in the Veeder Counter register kept in the station.

If it is not possible to restore normal working of the IBS by use of the resetting button, the ESM-in-charge of the section shall be served with a written memo to attend the defective signal and rectify the same. The ESM-in-charge of the section on being served with a memo by the SM, shall attend the failure and rectify the fault. The ESM after ensuring that all S&T gears relating to defective signal have been attended to and are in working order except the axle counter which needs re-setting shall establish communication with SM concerned and ask him to reset the axle counter by pressing the reset push button. There after the SM on duty, after ensuring that all the trains which had left his Block Station had arrived complete and intact at BMCK (by exchanging of P.N with SM/BMCK confirming this) shall press the resetting button provided and resume the normal working.

M] **DESPATCH OF TRAINS IN CASE OF FAILURE OF INTERMEDIATE BLOCK STOP SIGNAL:**

- [a] When a driver finds an intermediate Block Stop signal at 'ON' Position he shall stop his train in rear of the signal and advise the guard of the fact by sounding long continuous whistle and shall then contact the Station Master of the Block Station in rear over the signal post telephone provided for the purpose vide SR.3.75.01[i].

- [b] If the SM of THV station, on being contacted over Telephone by the driver, finds that the signal is defective, he shall, after obtaining "Line Clear" for the train from the station in advance, authorize the driver on the telephone to pass intermediate Block Signal at "ON" and enter the block section ahead. He shall give Driver the Private Number and identification Number under which he has received "Line Clear" for the train from the station in advance.

The driver shall then sound one short, one long and one short whistle and, on receipt of Guard's signal shall proceed ahead duly exchanging signals with him.

The station Master on being contacted by the Driver on signal post telephone if he is unable to

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obtain "Line Clear" for the train due to total interruption of communications, shall call for the Guard's through the Driver and on being contacted by guard, he shall advise the guard of the circumstances and give a Private Number for the train to proceed up to the next block station. The guard shall prepare a memo in duplicate authorizing the Driver to proceed with the Private Number received from the Station Master. In such case the speed of the train shall be restricted as prescribed in GR 3.75(3).

- [c] In such case the Driver shall pass the IB signal at "ON" and proceed cautiously and be prepared to stop short of any obstruction, at a speed not exceeding 15 Kilometers an hour if he has a good view of the line ahead otherwise, at a speed not exceeding 8 kilometers an hour and report the failure to the Station Master at the block station ahead.

While complying with the instructions contained in GR 3.75(3), when the Driver has to pass IB signal at "ON" after waiting for 5 minute at the signal, he shall proceed cautiously preparing to stop short of any obstruction at a speed not exceeding 15KMPH when view ahead is clear and 8 KMPH when view ahead is not clear due to curve, obstruction, rain, fog or any other cause until he reaches the foot of the next stop signal and even the signal is "OFF" the Driver shall continue to look out for possible obstruction short of the same and will act upon its indication only after he has reached it. Before starting, the Driver shall sound one long whistle which may be repeated as necessary and shall then start his train on receipt of Guard's signal. Thereafter he shall exchange signals with the Guard.

On reaching the block station ahead the Driver shall report the failure of the signal to the Station Master. If, the telephone is provided at the intermediate Block Stop signal Post is out of order the Driver will pass the IB signal as per GR 3.75(3) & SR 3.75.02, and on reaching the block station ahead, the Driver shall report the failure of the signal to the SM, Following train shall not be allowed to leave THV unless the complete arrival of the receiving train is certified by the SM on duty at BMCK under exchange of Private Numbers.

The station Master of the block station working the intermediate block stop signal on becoming aware that such a signal is defective shall, before dispatching the train, treat the entire section up to the block station immediately ahead of the intermediate block post as one block section and issue a written authority to the driver to pass the defective intermediate Block Stop Signal at "ON" without stopping at the signal in accordance with the procedure prescribed by special instruction.

A written authority as mentioned in GR 3.75(4) shall be in Form T/369[3b] in which the Private Number and identification Number obtained from the station in advance in support of the "Line Clear" shall be recorded. Display of "Proceed hand signal at the foot of defective Intermediate Block Stop Signal may be dispensed with.

- [d] However, if the SM on the Block station immediately in rear of an intermediate Block Signal is aware that UP/DN intermediate Block Signal is defective shall before Dispatching a train shall verify that all trains which had left his Block Station had arrived complete and intact at BMCK station (by exchanging Private Number with SM BMCK Station) shall press the resetting button of Axle counter equipment. Thereafter driver shall be handed over the authority of T-369[3b] to pass IBS Signal at "ON" position where in, the Private Number and identification number obtained for line clear, shall also be written. The use of this re-setting push button is registered on the veeder counter and SM should record this usage giving details of the occasion with timings in the veeder Counter/register and also train registers.

[N] **INDICATION CUM RESETTING PROVISION AT THV:**

Provided for following light indications:

- a) Yellow indications for the track- circuited portion by Axle Counter, which remain normally lit to indicate that the track is clear. These lamps extinguish as soon as the train passes the last stop

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- b) signal and in their place two red indication are lit to indicate that the track is occupied.
- b) Red indications for the last stop signal replacement track circuit which remain lit so long this track- circuit is occupied or in under failure condition.
- c) Red indication ahead of the IBS Signal, which are lit if the train passes the IBS signal in "ON" Position. The indication continues to glow till such time the lock and block working is resumed through emergence re-setting feature.
- d) Red indications just ahead of IBS Signal for the IBS signal replacement track circuit. The indication normally remain Yellow and are lit either during occupation by a train or during failure of this track circuit.
- e) Yellow indications for the block section for receiving trains. The indication shall normally remain yellow indication and shall be lit only when the incoming train passes the IBS signal. It remains lit till such time train arrives fully and Block Instrument is normalized.

O] RE SETTING PROVISION IN THE SM's OFFICE AT THV STATION:

In case of failure of DN IB axle counter resetting procedure is to be applied after exchanging PN by SM of both station. Permission will be given by SM BMCK by pressing Permission granting button. Permission receive indication Green will appear at SM's Panel. After receiving Permission granting indication SM/THV will press Reset Button. Similar operation will be carried out in reverse way for Resetting in case of Up IB axle Counter failure .

P] SPECIAL INSTRUCTION IN CASE OF A TRAIN PASSING IBH AT 'ON' POSITION:

- I] In case train run away indication appears the SM receiving Station shall not turn the block instrument handle to line clear position and SS/SM at sending station shall not take any action to dispatch the third train unless the second train which passed the IB signal in the 'ON' position has actually arrived and its complete arrival is verified by the receiving station.
- II] Every case of a train passing IB signal at 'ON' position without strictly following the provision of GR 3.75 should be treated as a breach of block rule by the driver and action to be taken accordingly.
- III] When train run away indication appears at the dispatching Station without any train in the section, the IBS system should be treated as failed and Signal Maintainer should be advised. All the subsequent trains shall be Piloted OUT after duly taking line clear treating entire section as one Block section as per GR 3.75(4).
- IV] Whenever a train after having obtained line clear passes IBS (when not taken off) in "ON" position the train run away indication appears at the dispatching station and train entering section indication appears at the receiving station, under such circumstances no further train shall be allowed in the section till the said train arrives completely at the receiving station i.e., station in advance, and its complete arrival received at the receiving station i.e. station in rear supported by Private Number treating the entire block section as single section.
- V] If any train passes IB Signal at 'ON' position when there is a train in the Section between IBS and the station ahead, the train run away indication will appear at both receiving and dispatching station. Under such circumstances the SM in the receiving station shall not turn the Block instrument to Line Clear position and SM at sending station shall not dispatch the (3rd) train, unless the 2nd train which passes the IBS in the 'ON' position has actually arrived and its complete arrival is verified by the receiving station.
- VI] Permission button to be pressed for the run away train by breaking and opening the seal only after verifying that the last vehicle of the run away train has arrived in tact and ensured by exchange of private number with the SM of the sending station. In case of failure of Axle

Counter equipment at the sending station, permission button may also be pressed for normalizing the system only after verifying that there is no train in the section and after duly exchanging Private number with the SM of the sending station.

- VII] Whenever a train run away indication appears when there is a train in the section, no further train should be allowed in the section till resetting is done..
- VIII] Before any re-setting operation is done, the Dispatching station should advise the receiving station giving details of the last train that has entered the section and should ensure by exchanging of private number that the last train has arrived complete at receiving station.

Every Case of re-setting shall be entered in a register in the following proforma.

Date and time	Train No. Last entered the block section	Private No. of station ahead for Complete Arrival of the train Under Col.2	Veeder Counter No Before resetting operation completed	Train No. Entering Block section Immediately after the resetting operation	Remarks	Signature of SS/SM
1	2	3	4	5	6	7

IX] If resetting is not possible under item as mentioned above, the system should be treated as failed and train will work treating the entire section up to the Block Station immediately ahead of the IBS Post as one block section as per GR 3.75(4).

X] **ACTION TO BE TAKEN WHEN A TRAIN PASSES INTERMEDIATE BLOCK STOP SIGNAL AT 'ON'**

a) **By SM of Block Station in advance of the Intermediate Block Stop signal.**

- I] Shall not turn the Block Instrument commutator to "Line Closed" Position Unless the complete arrival of the train which passed IBS at "ON" position is ensured, without any exception even for such a train which leaves the rear station after obtaining line clear and passes IBS at "ON" position, since there is a chance of leaving a vehicle or vehicles in the Axle Counter area where the function of Axle Counter also fail.
- II] In case the bottom needle of the SGE type block instrument is in its 'Line closed' position action should be taken to turn the block instrument comutator to 'TOL' Position vide BWM 5.16(2)(iv) and must not turn to "Line closed" and then to "Line clear" position unless the train which had passed the "Intermediate Block Stop Signal" in the 'ON' position arrives complete and its complete arrival is verified. SM of Block Station in rear of the intermediate Block Stop Signal must ensure that last stop signal controlling entry of trains into the section between the last stop signal and the intermediate Block Stop Signal is in its 'ON' position and shall under no circumstances take 'OFF' or attempt to take 'OFF' the said last Stop signal even if the Axle counter/Track circuit section from his block station up to and including the adequate distance beyond the Intermediate Block Stop signal shows 'clear,' unless the train which had passed the intermediate Block Stop signal in the 'ON' position arrives complete at the block station in advance and its complete arrival is verified, and the SM of the block station in advance intimate the number, description and the arrival time of the last train arrived from, under exchange of Private number.

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- b] **By the SM of both the block stations in rear and in advance of the intermediate Block Stop Signal.**
- I] After the complete arrival of the last train, according to the information received vide sub-para (a) above, the SM of the block station in advance shall communicate the same to the SM of the station in rear supported by a Private Number which shall be acknowledged by the later by issuing Private Number. Thereafter the SM of the dispatching station and the SM of the receiving station shall operate the 'Resetting ' and 'reset' panel respectively in conjunction. This simultaneous operation will cause the 'counter' to 'reset panel' at the departure end of the dispatching station to illuminate then the station Master shall operate the push button which in turn will record the next higher number in the counter.
- II] The SM of the Block Station in advance shall then take steps or authorize Station master of the receiving station supported by a Private Number to normalize the block instrument.
- III] Record of Private Number exchanged and the number shown in the counters shall be maintained by the concerning SM in the train signal (Cum log) Register/Train Log Register.
It is to be noted that in terms of GR3.75 whenever intermediate block stop; signal is at 'on' a driver must stop his train in rear of the signal and contact the SM of the block Station in rear on the telephone provided on the signal post who will authorize him to pass the signal in 'ON' position supported by Private Number and identification number which were taken for the line clear from the station in advance. If the telephone is not provided or is out of order, the driver, after waiting for 5minutes shall pass it at "ON" but he must report the failure to the SS/SM at the Block Station ahead after following the provision in GR.3.75(3). This would mean that the driver shall either get an authority on telephone from the station master or must report at the station ahead about the failure of the telephone. If none of those provisions are complied with, it should be taken as breach of Block Rules.
- Q] (a)In the event of failure of IBS signal in the "OFF" position or cannot resume to "ON" position immediately after it has been passed by a train, the station master controlling the signal shall take steps to put back the IBS signal to "ON" position and treat IBS signal failed and train shall be dispatched treating entire section between his station and station in advance as one Block section.
- R] **RUNNING OF MOTOR TROLLYS ON IBS ZONE:**
- i) While allowing motor trolley/4 wheeler tower wagon/material trolley etc., entire section between THV-BMCK shall be treated as one block section and shall be issued T-369 [3B]for passing IBS at "ON" position.
- ii) After the complete arrival of the said Motor Trolley/4 wheeler tower wagon/material trolley etc., at the station ahead, Station Master at adjacent station shall exchange Private Number in token of complete arrival and then shall resume normal working by resetting the Axle Counter as stated in the SWR.
- iii) Motor Trolleys shall not be allowed on following line clear.
NOTE:- Backing of train on the portion of line after passing the intermediate Block Stop signal normally shall not be allowed, However, if it becomes inevitable to back, such backing may be done with great caution as mentioned in SR 3.75.04.
- S] **SIGNAL POST TELEPHONE:**
A telephone socket (RE Type portable telephone kept with drivers) with a RED Press button at the bottom is provided at the foot of each IB signal and is meant for driver to contact the SS/SM in rear by pressing the RED button. The driver of the train encountering the IB signal at 'ON' position shall contact the station in rear to find out the occupancy or otherwise of the block section ahead.

T] NORMAL POWER SUPPLY TO IBS GOOMTIES AT KM 313.440:

Normal power supply to the Signaling and Interlocking installation at the IBS goomties is drawn from the local power sources (230V-50 HZ) from BMCK. Apart from Local Power Supply 2 Nos. of DG Sets provided at IBS Goomty with changeover arrangement. Whenever local Power supply fails at BMCK, DG Set can be started remotely from BMCK station through arrangement provided at BMCK.

In addition to the above, Solar Power system provided as stand by to charge IBS battery during day light hours.

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

NIL

APPENDIX - 'H'

WORKING INSTRUCTIONS OF M/S INDIAN METAL AND FERRO ALLOYS LTD (PRIVATE SIDING):

PART-I

The M/s I.M.F.A. Private Siding line takes 'off' from the extension of the goods siding line at VZM end of the yard. It is isolated by derailing switches. The entrance points 34 (W) & 34 (E) are interlocked and the hand plunger locks fitted in the points is unlocked by Key-A controlled by button No-34 of panel/VDU. When control 34 is transmitted from panel/VDU signals 1A, C1A, SH3A, 9, SH-9, 2C, C2C, SH4D, SH6 will be locked in their normal position. A separate weigh bridge siding line takes off from the lead line of IMFA siding. All the points in the IMFA siding are free hand points. All facing and trailing points are to be clamped and padlocked for any placement and drawn out of Wagons/Rakes in the siding. The siding consists of two spurs with the following length:-

SPUR No.1- 334 Mts.(DE-FB) and SPUR No.2- 334 Mts.(DE-FB)

WORKING OF THE SIDING:-

The SM on duty shall advise the TPM on duty about the work to be done and the line and point from which the train will proceed to the siding in presence of the guard. He shall hand over the key released from the RKT of the concerned point with instructions to set points correctly, clamp and padlock for the concerned route for the safe passage of the train

The Loco Pilot of the train/Engine who will work in the siding will be given through the guard, the shunting authority to enter and work in the siding. The Guard of the train after ensuring that the route to the siding is correctly set and properly locked shall show hand signal to the Loco Pilot to enter into the siding. The Loco Pilot and Guard of the train/Engine should be vigilant and should whistle frequently while entering the siding and shall not exceed 8 kmph. The Loco pilot will enter the siding pushing the wagons and return with engine leading. Hand Shunting and Fly shunting is prohibited in the siding. The Guard of the pilot must pin down/tighten the brakes of all vehicles before leaving the siding. The IMFA authorities will take additional precautions necessary and responsible for securing of the vehicles.

PART-II

SECURING OF VEHICLES IN ISOLATED PRIVATE SIDING:-

Users of assisted and private siding and out laying Railway sidings are responsible for the safety of the vehicles placed in such sidings intended for loading and unloading and as such they should see that the vehicles are kept suitably secured against accidental escape and consequent derailment and damage.

The responsibility rests with the user from the time Railway locomotive leaves the siding after placement of the vehicles. The Railway staff must leave the vehicles stationary for application of hand brakes. The user's representative will thereafter take necessary additional precautions.

PART-III

During the season when storms are prevalent, the user shall adopt the following precautions:-

- a) The hand brakes of all wagons must be firmly applied and the levers pinned down.
- b) The end vehicles should be secured by safety chains.
- c) Hand shunting should not be done during storm or gale is on.
- d) Doors of covered wagons should not be kept open during storm.
- e) Hand Shunting is not permitted in the siding.
- f) Wagons should not be uncoupled unless required to be moved before uncoupling other wagons, the hose/ AP/FP pipes must first be uncoupled and placed on dummy plugs.
- g) Particular care must be taken to remove the chains and sprags before the wagons are coupled up to the train. The representative will remove the chains and sprags, if any used just before the Railway engine enters the siding but the brakes of all wagons must be kept on. He must also see that there is no one either under the wagon or in any position, who may likely to be injured by the movement of the wagons.

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