

NORTH CENTRAL RAILWAY JHANSI DIVISION

STATION WORKING RULE

SWR. NO. 451

Date of issue:

Date brought into force:

UDAIPURA STATION (BG)

NOTE: The Station Working Rules must be read in conjunction with General and Subsidiary and Block Working Manual. These Rules do not in any way supersede any rule in above books.

1. STATION WORKING RULES DIAGRAM:

The track accommodation is as shown on the Diagram No. 2445/ ALT 'C' & ALT 'D' dated 17.10.2019 based on SIP DRG No.SIP-2445/C dated 01.07.19 & SIP-2445/D dated 10.10.19 and ALT 'B' kept in abeyance.

2. DESCRIPTION OF STATION.

2.1 GENERAL LOCATION.

UDAIPURA Station is a 'B' Class station interlocked to Std. II (R) (Route setting type) with Panel operation of points and signals. The Station is situated on LAR- UDPR electrified Section at KMs. 1069.760 from CSTM.

2.2 BLOCK STATION ON EITHER SIDE AND THEIR DISTANCE:

- i) BIRARI 16.020 KM (LAR end)
- ii) TIKAMGARH 19.405 KM (KHAJURAHO end.)
- iii) 'D' Class Station are as under: - No 'D' class station at both side.

2.3 BLOCK SECTION LIMITS ON EITHER SIDES OF STATION ON DIFFERENT ROUTE.

BETWEEN STATION	THE POINT FROM WHICH BLOCK SECTION COMMENCES	THE POINT FROM WHICH THE BLOCK SECTION ENDS.
UDPR AND BRR	UP Advance Starter S-2 of UDPR	DN Advanced Starter S - 20 of BRR
UDPR AND TKMG	DN Advanced Starter S-19 of UDPR	UP Advanced Starter S-1 of TKMG

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2.4 GRADIENTS:- UP DIRECTION.

From Section To KM 1071.59	1 in 165 falling
KM 1071.59 To CH 1600	LEVEL
CH 1600 To CH 739.00	1 in 150 rising
CH 739.00 To CH 675.00	1 in 865 rising
CH 675.00 To CH 00.00	1 in 865 rising
CH 00.00 To CH -707.00	1 in 1200 rising
CH -707.00 To CH -743.559	1 in 150 rising
CH -743.559 To CH -3520	1 in 191.6 rising
CH -3520 To Further	1 in 191.6 rising

DN DIRECTION

From Section To CH -3520	1 in 191.60 falling
CH -3520 To CH -743.559	1 in 191.60 rising
CH -743.559 To CH -707.00	1 in 150 falling
CH -707.00 To CH 00.00	1 in 1200 falling
CH 00.00 To CH 739.00	1 in 865 falling
CH 739.00 To CH 1600	1 in 150 falling
CH 1600 To KM 1071.59	LEVEL
KM 1071.59 To Further	1 in 165 rising

2.5 LAY OUT:

2.5.1 RUNNING LINES DIRECTION OF MOVEMENT AND HOLDING CAPACITY:

There are five running lines as under: -	CSR	Platform
i) UP Main Down Line No.2	841.622 Mtrs	----
ii) UP 1 st Loop Down Line No 1	722.08 Mtrs.	ML Platform
iii) UP 2 nd Loop Down Line No.3	714.55 Mtrs	RL Platform
iv) Up 3 rd Loop Down Line No 4	735 Mtrs.	RL Platform
v) Up 4 th Loop Down Line No 5	735 Mtrs.	----

2.5.2 NON-RUNNING LINES AND THEIR CAPACITY:

i) A & D Siding	93.7 Mtr
ii) A & D Siding	113.5 Mtr

2.5.3 ANY ABNORMAL FEATURES IN THE LAY OUT:- NIL

2.6 LEVEL CROSSINGS :- NIL

3. SYSTEM AND MEANS OF WORKING:-

- a) Trains are worked on Absolute Block system.

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- b) **MEANS OF WORKING.**
- i) UFSBI block panel along with Dual BPAC with Station to Station telephones are installed in the Station Masters office for working the trains between UDAIPURA-BIRARI.
 - ii) UFSBI block panel along with Dual BPAC with Station to Station telephones are installed in the Station Masters office for working the trains between UDAIPURA-TIKAMGARH.
 - iii) SM on duty is responsible for their operation and custody of the keys.

4 SYSTEM OF SIGNALLING AND INTERLOCKING:

- 4.1(i)** Station is equipped with multiple aspect colour light signals and interlocked to Std. II (R) The Points and signals are worked from Panel.
- ii) Track circuiting is provided between up home signal to down home signal including Calling On' track circuits and point zone area on UP & DN line.
 - iii) Continuous track circuiting is provided between UDPR and R & D yard between siding advance starter S-13 and advance starter of R & D yard S-1.

TRAPS:

- i) Sand hump taking 'OFF' from the UP 2ND loop DN line at both end is the trap for protection of Up Main Down Line.
- ii) Sand hump taking 'OFF' from the UP 1st Loop DN line at KURJ end and Dead end at LAR end is the trap for protection of Up Main Down Line.
- (iii) Derailing switch No 288 is the trap for the protection of Up 1st Dn loop line..
- (iv) Derailing switch No. 208 and 283 on UP/DN 3rd Loop Line is the trap for the protection of 3rd UP & DN Loop line.
- (vi) Derailing switch No. 209 and 282 on UP/DN 4th Loop Line is the trap for the protection of 4th UP & DN Loop line.
- (vii) Derailing switch No. 297 on LPGCL Siding Line is the trap for the protection station yard from siding.

NOTE: Sand hump must not be used for loading unloading and stabling of vehicle. (Details of signaling and interlocking are given in Appendix 'B')

CALLING 'ON' SIGNAL CO-18 is provided below up home signal number S-18 and CO-1 is provided below down home signal number S-1.

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 double lock. The key of one lock will remain in the custody of SM/ASM on duty while the key of other lock will remain in the custody of ESM. The SM/ASM on duty will hand over the key to the maintainer on demand whenever he visits for maintenance. SM/ASM on duty will ensure that the key is returned to him after maintenance. A register to record the transaction of Key on proper proforma will be maintained by the ASM/SM on duty.

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4.3 **POWER SUPPLY EQUIPMENT AND POWER SUPPLY FAILURES:**

- (A)i)** Normally all the signalling circuits are fed and worked by AT power supply, local power supply & generator power supply from the distribution board provided in the ASM office. An illuminated red pilot lamp fitted on the switch board in the ASM's office indicate that the AT power supply & local supply is available. The above red pilot lamp when extinguished will indicate that AT power supply or local power supply has failed. In the event of AT supply failure, auto change over panel will automatically transfer the load on to local power supply and if local power supply also failed then the auto change over panel will automatically transfer the load on to the generator power supply, SM will start the generator and extend the supply.
- (ii)** An auto change over panel provided in SMs room will display availability of power supply in following order-
- i) AT Power supply.
 - ii) Local Power supply.
 - iii) Power supply of generator
- And changeover will take effect in this order only. However if auto change over system fails to work then ASM on duty will attempt manual change over by the switch provided on auto changeover panel.
- (iii)** When the AT supply & local supply are not available ASM will start the Generator and extend the supply.
- (iv)** After the above operation of the switch when the AT supply or local supply restored the generator should be stopped as per the instructions for starting and stopping of the Diesel Generator.
- (v) **FAILURE OF PANEL INDICATION :-****
SM/ASM on duty on power supply panel should check whether AT power supply or local power supply is available or not. The same can be checked on the indication provided on the power supply panel provided in the ASM's Office. In case of AT power supply or local power supply is not available. He will operate the Diesel Generator provided at the station for normal working on the power supply panel. In case of AT power supply or local power supply and generator supply are not available due to any defect and operating VDU is blank, no normal operation from the VDU shall be done. Points shall be clamped and movements will be done as per G & SR 3.77 in a non-interlocked yard.
- (vi) **GENERAL INSTRUCTIONS :-****
In case of Neon Lamp on the board remaining permanently extinguished showing non availability of the normal supply. ASM on duty will arrange to inform the SE/JE (Electrical), TPC & ESM of the section through XR/Control message for attending the equipment with copies to JE (E) & SE(S) of the section.
- (vii) **INSTRUCTIONS TO START AND STOP THE DIESEL GENERATOR:-****
Start/Stop push button for the generator has been provided in generator room. Green button to be pressed to start the generator and red button to be pressed for stopping the same.
ASM on duty can start or stop generator set as per requirement by observing power supply indication on the auto change over panel.

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- (B)** If the power supply is uninterrupted for more than 3 days a test run of the engine should be carried out on load and if it fails to run, the matter should be reported to JE/SSE/Signal of the Section immediately by XR Telegram.
- (C)** The Station Master on duty should check up daily the diesel oil level in the tank and lubricating oil level in the diesel engine by means of the indicator (Dip Stick) provided for the purpose. If diesel oil or mobil oil level falls below the mark given on the dip stick he will get the required oil filled in by his staff up to required level.
- i.** Signal lights are normally lit by power available from AT power supply. In the event of failure of AT or commercial power supply the Signal Lamps are lit by means of Stand by Diesel Generator.
 - ii** In the case of AT or commercial supply failure, the SM with the help of Points man will change over the Switch to Generator side and start the D.G. set in the Generator room.
 - iii** If the Signals get extinguished due to any reason whatsoever after the permission has been granted and the train has left the Station in rear, the SM shall depute a competent Railway Servant with necessary hand signal/detonators as required to warn the Drivers of approaching trains about the location of unlit stop signals and arrange to pilot the train as per the extent rule.
 - iv** When the AT or commercial supply is restored, the Generator should be stopped.
 - v** Diesel Oil will be filled in the Generators and suitable entry made in the log book by S.M. The S.M. on duty will also maintain record of the use of 'Diesel Generator in the log book. Details of Service/over hauling repairs etc. should also be entered in the log book by S&T Staff in the remarks column.

The S.M. on duty will maintain the record of the Power Supply failure/restoration in the following proforma in the log book.

Sr. No.	Date	Time Commercial Power Failed	Time Commercial Power Restored		Duration of Commercial Power Failure	Time Generator Started
1	2	3	4		5	6
	Time Generator Stopped	Duration of Generator Run	Quantity Filled		Signature of Station Manager	Remarks
			Diesel	M. Oil		
7		8	9	10	11	12

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- (vi) Diesel Generator sets may also be operated in case of Low Voltage of commercial Supply.
- (vii) In case of failure of D.G. Set, S.M. will inform the Signal Staff.

POWER SUPPLY SYSTEM FOR S&T EQUIPMENTS, SIGNALS, POINTS, VDU ETC

An integrated power supply system (IPS) is provided in equipment room to fulfill requirement of various power supplies required for S&T equipments, signals, track circuit, axle counters, points, VDU etc. This power supply system ensures uninterrupted supply to signaling system to avoid failure of signaling gear even when the mains power supply fails. The system has a very limited capacity to feed power in the absence of main supply. There is an indication panel provided in SM's room indicating the health of battery and the action required to be taken by SM. depending upon the alarm received on IPS indication panel, SM must immediately take action and inform sectional signaling and electrical staff as early as possible.

5. TELECOMMUNICATION:

The following telephones and telecommunication facilities have been provided at this station.

S.N.	Type of Communications	Location
1	Block Telephone	UFSBI block panel along with Dual BPAC provided for working trains between UDPR - BRRJ Section.
	Block Telephone	UFSBI block panel along with Dual BPAC provided for working trains between UDPR – TKMG Section.
	Control telephones	
	Control Telephone of JHS- LAR -UDPR control	In SMs Office
2	Auto/DOT Telephones	
	Railway Administrative Phone- BSNL Phone -----	In SMs Office In SMs Office
3	Magneto Telephone/Group Telephone with the Cabin/Gates.	NIL
4	Telephone with IBS	NIL
5	Telephone with Axle Counter reset boxes	NIL
6	Magneto/Group Telephone for LPGCL siding Yard Communication	In SMs Office
7	VHF Communication 25W VHF base Station	Between SM's Office and Loco Pilot & Guards of running train and in emergency with adjacent stations
8	MTRC	NIL

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6. SYSTEM OF TRAIN WORKING:

6.1.1 TRAIN WORKING STAFF IN EACH SHIFT.

i)	SM/ASM	1 As per roster.
ii)	Points-man	2 As per roster.

NOTE: See Appendix 'D' for the duties of the staff.

6.1.2 RESPONSIBILITY FOR ASCERTAINING CLEARANCE OF LINE AND ZONE OF RESPONSIBILITY:

- a) 'Line Admission Book' is not in-force at this station.
- b) Station Master/Assistant Station Master on duty is responsible for ascertaining clearance of all lines through Panel indications when working otherwise physically.

6.1.3 ASSURANCE OF STAFF IN THE ASSURANCE REGISTER :

Every train passing staff posted newly at the station or leave reserve staff at the station or regular staff who has resumed his duties after more than 15 days absence must go through Station Working Rules in force and give assurance in the prescribed Assurance Register i.e. 'SWR Acknowledgement Register'.

6.2 CONDITIONS FOR GRANTING "LINE CLEAR".

The line shall not be considered clear and "line clear" shall not be given unless –

- a) The whole of the last preceding train has arrived complete.
- b) All necessary signals have been put back to 'ON' position behind the said train, and,
- c) The line is clear – Up to Advanced starter signal nearest to the approaching train as per GR 8.03(2) of G&SR.

NOTE:

- (i) Before granting 'Line clear' SM on duty must ensure that the reception signals are lit. If reception signals are not lit, he should advise SM in rear under exchange of private number to issue caution order to the loco pilot for stopping the train.
- (ii) Before granting 'Line clear' SM on duty shall satisfy by himself seeing the Block section clear indication green LED (Large) indication appears at Reset box of Digital Axle Counter in UP/DN direction provided near the Block panel.

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

BERTHING OF TRAIN:

- i) A train carrying passenger and stopping at the station must ordinarily be received on the UP & DN 1st loop line (Platform line). If it is necessary to cross two trains both carrying passenger and stopping at the station, the first train must be received on the UP & DN 1st loop line (Platform line) and the second train on common UP & DN loop line 4.
- ii) A Goods train stopping at the station must ordinarily be received on the loop line (Platform) unless that line is occupied or is required for a train carrying passenger in which case the goods train may be received on Main line.

6.2.1.1 Setting of points against block line: When running line is blocked the points should be set for a vacant line/less important load line/loop line etc. Besides the points of the blocked line must be set clamped and pad locked against the line and keys kept with the SM/ASM as per SR: 5.23-1 of G&SR. The button collars must be placed on the buttons on the panel as when the line is blocked.

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6.2.1.2 Reception of a train on block line: GR 5.09 must be followed.

6.2.1.3 Reception of a train on Non single line: GR 5.10 must be followed.

6.2.1.4 Dispatch of a train Non single line: GR 5.11 must be followed

6.2.1.5 Dispatch of a train from line provided with common starter signal: GR 5.12 must be followed

6.2.1.6 Any special conditions should be mentioned and giving reference of G & SR: NIL

6.3 CONDITIONS FOR TAKING OF APPROACH SIGNAL: (GR 3.40)

A) Before the home signals are authorized to be taken 'OFF' by the SM on duty for reception of a train the following conditions must be complied with :-

i) TRAINS TO BE RECEIVED ON THE UP MAIN DOWN LINE:

The Line must be clear up to the advanced starter at the far end. When two trains are to be crossed from opposite directions signals may be taken 'OFF' for the train to be received on the Main Line, provided the home signals for the trains from the opposite direction are maintained in the 'ON' position. Signals are to be taken 'Off' for the reception of only one train at a time.

ii) DOWN TRAINS TO BE RECEIVED ON THE UP 1st LOOP DN LINE:

The points at the far end of the loop line must be set to connect with the main line and the line must be clear up to advanced starter No.S-19.

When however, another train is being dispatched in the same direction or two trains are to be crossed from opposite direction, the points at the far end of the loop line must be set to connect with sand hump, and the line must be clear up to sand hump. Signals may be taken 'OFF' for the reception of the train to be received on the 1st loop line.

iii) UP TRAINS TO BE RECEIVED ON THE UP 1st LOOP DOWN LINE:

The points at the far end of the loop line must be set to connect with the main line and the line must be clear up to Adv. Starter No.2

When, however another Up train being dispatched in the same direction from main line or two trains are to be crossed, the points at the far end of the Up 1st loop line must be set to connect with the over run and the line must be clear, up to the over run. Signals may be taken 'OFF' for the reception of the train to be received on the Up 1st Loop Line.

iv) DOWN TRAINS TO BE RECEIVED ON THE UP AND DOWN LOOP LINE No-3:

The points at the far end of the Up and down loop line No-3 must be set to connect with the UP Main DN line and the line must be clear up to the down advanced starter No.S-19.

When however, another train is being dispatched in the same direction or two trains are to be crossed from opposite direction, the points at the far end of the loop line must be set to connect with LPGCL siding the line must be clear up to derailing switch 297 in open condition, signals may be taken off for the reception of the train to be received in the UP and DN loop line No-3.

v) UP TRAINS TO BE RECEIVED ON THE UP AND DOWN LOOP LINE No-3:

The points at the far end must be set to connect with the UP Main DN line and the line must be clear up to the Up advanced starter No.S-2.

When, however another Up train being dispatched in the same direction from main line or two trains are to be crossed, the points at the far end of UP and DN loop line No-3 must be set to connect with the over run and the line must be clear, up to the over run. Signals may be taken 'OFF' for the reception of the train to be received on the UP and DN loop line no-3

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vi) DN TRAINS TO BE RECEIVED ON THE COMMON UP AND DN LOOP LINE No-4:

The points at the far end of the Common UP AND DOWN LOOP LINE No-4 must be set to connect to sand hump. Signals may be taken 'OFF' for the reception of the train to be received on the common UP and DN loop line no-4:

vii) UP TRAINS TO BE RECEIVED ON THE COMMON UP AND DN LOOP LINE No-4:

The points at the far end of the common UP and DN loop line no-4 line must be set to connect to over run. Signals may be taken 'OFF' for the reception of the train to be received on the common UP and DN loop line no-4:

viii) DOWN TRAINS TO BE RECEIVED ON THE COMMON UP AND DN LOOP LINE No-5:

The points at the far end of the common UP & DN 5th loop down line must be set to connect to sand hump. Signals may be taken 'OFF' for the reception of the train to be received on the Common UP & DN 5th Loop Line.

ix) UP TRAINS TO BE RECEIVED ON THE COMMON UP AND DN LOOP LINE No-5:

The points at the far end of the common UP and DN loop line no-5 must be set to connect to over run. Signals may be taken 'OFF' for the reception of the train to be received on the common UP and DN loop line no-5:

Note:

1. Speed indicator board is provided on both distant signals for Loco Pilot to negotiate the speed at turn out while receiving train on loop lines.
2. Speed of first loop line is raised from 15KMPH to 30KMPH as per letter no.
 - i) CRS/NE circle letter no. 3367/NCR/Pt.15/SANC-09 dated 03.08.2020.
 - ii) Sr.DEN/East/Jhansi letter no. JHS/W/DO/Tr/East/30Kmph/LAR-KURJ dated 21.09.2020.

6.3(B) Procedure for the Reception of trains:

- i) On receipt of 'Is Line Clear' signal for a train to approach from the station in rear the SM/ASM on duty will grant the same supported by a private number provided the conditions as laid down in 6.3 above are complied with.
- ii) The Station Master will select a vacant line for the admission of the train and verify the clearance of selected line and set the far end points in accordance with Para 6.3 (A)(i) to (v) above. SM/ASM will then take 'Off' the correct Home Signals for the reception of the train on the selected line and verify the indications on the Panel.
- iii) Immediately after the train has passed the Home Signal completely, the Station Master on duty will ensure that the Signals taken 'Off' for the train are restored automatically to 'ON' position as per 8.03 of BWM.

6.3(C) RECEPTION OF A TRAIN ON NON-SIGNALLED LINE:

Not applicable since reception signals for all lines are provided for both Up& DN direction.

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6.4 SIMULTANEOUS RECEPTION/CROSSING OF TRAINS:

a) Simultaneous reception of trains at this station is permitted provided one train is received on the UP & DN common loop line No-4 or 5 or UP & DN loop line No-3 and other train on the up 1st loop Down line and the points at the far end of the respective lines are connected to the Sand Hump/over run/siding respectively and the line is clear up to sand hump/siding/over run as the case may be.

b) CROSSING OF TRAINS.

i) A train carrying passengers and stopping at the station must, ordinarily, be received on the UP 1st loop DN line (Platform). If it is necessary to cross two trains both carrying passengers and stopping at the station, the first train must, be received on the UP 1st loop DN line (Platform) and the second train on the UP & DN loops line No.-3 or UP & DN common Loop line No-4 or 5. A goods train stopping at the station must, ordinarily be received the UP & DN loop line No.-1, 3 or Up & DN common Loop line No-4 or 5 if these lines are required for a train carrying passengers, in which case the goods train may be received on the UP Main DN Line.

6.5 COMPLETE ARRIVAL OF A TRAIN: (GR 14.10 & SR 4.56/1)

i) The SM/ASM is responsible for giving 'Train out of section' by seeing Clear indication on the Block proving by Axle Counter Block Instrument. However, if the complete arrival of the train inside the Fouling marks cannot be ascertained by clear indication on panel or by personal observation on the BPAC (Digital Axle Counter), when BPAC is failed SM/ASM on duty must ascertain the complete arrival of train in the manner indicated in SR 4.56/1 of G&SR must also be followed.

NOTE: Immediately after arrival of a Down or an Up train at the station the points should immediately be set against the blocked line, except when any shunting or other movement is required to be done immediately in that direction on that line (GR.3.38/2) before giving 'Train out of section' signal to the station in rear.

6.6(a) DESPATCH OF TRAINS:

- i) When a train is ready to leave, the Station Master on duty will obtain line clear from the station in advance on the concerned block instrument. On confirming personally that the required route is clear, the SM/ASM will take 'Off' the departure signals. (i.e. Advance starter signal shall first be taken OFF and then concerned starter signal should be taken OFF).
- ii) After the complete passage of the train, the signals taken 'off' will go to 'ON' position automatically and the red indication on Panel will get extinguished. SM on duty is responsible to see that the signal taken 'OFF' for passage of train have been restored to 'ON' position (SR 3.36/2).

6.6(b) DESPATCH OF TRAINS TO LPGCL SIDING

When a train is ready for dispatch to LPGCL siding ASM on duty will take permission from cabin at R & D yard of LPGCL siding who will give slot to ASM on duty. Signal No 13 of siding will be taken off by pressing signal button and route RZ button and then concerned starter signal button and route button RX. Block working between UDPR and R&D yard will be done by means of continuous track circuiting.

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6.6(c) DESPATCH OF A TRAIN FROM NON-SIGNALLED LINE:

Not applicable since departure signals for all running lines are provided for both UP and DN direction.

6.7 TRAINS RUNNING THROUGH:

- i) A train is ordinarily being allowed to run through the station over the Up main down line only. If the Up main down line is occupied, a non-stopping up or down train may be passed over the UP & DN 1st loop line and UP & DN loop line No-3 at a speed not exceeding 30 KMPH and via 4th / 5th common Up & Dn loop line a speed not exceeding 15 KMPH provided the points are correctly set and locked and correct signals are taken 'OFF'.
- ii) In case of a run through train over Up main down line or Up loop down line as the case may be, the SM on duty will obtain line clear supported by a private number from the station in advance, will take 'Off' correct signals for the through passage of the train. (i.e. Advance starter signal shall first be taken OFF and then concerned starter signal should be taken OFF and then reception signals to be taken OFF)
- iii) If a train passes the station without Tail Lamp/Tail Board being visible to the SM, he must not send 'Train out of section' signal to the station in rear but send 'Train passed without Tail lamp/Tail Board to the station in advance and must inform section controller also. [SR. 4.17/1 (a) & (b)].

6.8 WORKING IN CASE OF FAILURE**a) FAILURE OF SIGNALS AND INTERLOCKING**

When any signal becomes defective, the procedure laid down in general and subsidiary rules 3.68, 3.69, 3.70, 3.71, 3.75 & 3.76 must be followed if calling on signal also cannot be taken 'off'.

- b) **T-369/3B FOR PASSING DEFECTIVE SIGNAL:-** Authority T-369/3b for passing defective stop signal at 'ON' position will be issued by SM/ASM after the points protected by the signals are correctly set, clamped and padlocked and duly verifying by SM/ASM as per SM SR 3.68-1, 3.51/1 and 3.68/7 of G& SR must also be followed rigidly.

c) FAILURE OF POINTS

When any point is defective and indication is not available on the panel, action as per SR 3.77-1 must be complied with i.e. points should be re-operated and inspected for any obstruction etc. and S&T staff should be advised. No movements should be permitted over the point unless it is correctly set clamped and padlocked under personal supervision of the SM on duty as per SR.3.68 -1 of G&SR SR: 3.51-1and SR 3.68/7 should also be followed.

d) FAILURE OF SIGNAL LIGHTS :{3.69-1(c) (ii)}

"In colour Light signaling territory, in the event of approach signal (s) going blank(no light etc.) due to power failure or otherwise, the Station Master of the Station in rear/nominated station will issue T/409 apart from T/369(1), advising the Loco pilot for the absence of any light on the signal (s) and therefore he should keep a good vigil and look out for the hand signal of Points man /porter at the foot of defective signal and obey it.

e) FAILURE OF AXLE COUNTERS/ TRAIN PASSED AT ON:-

For detailed working in case of failure of Axle Counter please see App 'B'.

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- f) **FAILURE OF TRACK CIRCUITS :-** In case of failure of track circuits the trains shall be received by taking 'off' calling on signal and the SM/ASM will personally verify the clears of lines and if calling on signals also fail then procedure as detailed in Para 6.8 (a) must be followed.
Note: - Before issuing T369 (3b) to Loco Pilot under the track circuit failure condition, SM/ASM on duty must personally ensure that concern track is clear of any vehicle/obstruction/rail fracture.
- g) **FAILURE OF BLOCK INSTRUMENTS: -**
When the single line UFSBI block panel along with Dual BPAC installed for working the train between UDPR-TKMG and single line UFSBI block panel along with Dual BPAC installed for working the train between UDPR-BRRI appears to be affected by outside influences causing erratic movement of needles and ringing of bell or in any other way works defectively they must be considered as having failed and the trains must be worked as per Para 9.06 of BWM.
(For detailed working see Appendix-'B')
- h) **PROCEDURE FOR WORKING OVER DAMAGED POINTS:-** When the points are damaged/defected the procedure laid down in G& SR GR No. 3.77 must be complied with.
- i) **RECEPTION OF TRAINS ON OBSTRUCTED LINES: -**
The provision of SR 5.09 of G& SR must be followed.
- j) **RECEPTION OF TRAIN NON-SIGNALLED LINE INCLUDING FAILURE AND OCCUPATION OF LINE BY TROLLEY OR LIGHT ENGINE ETC: - Nil**
- k) **Failure/Resetting of Axle counters.-** Please see Appendix "B"
- l) **Failure of Power supply-** Please see Appendix "B"

6.9 ANY SPECIAL PROVISIONS FOR WORKING OF MOTOR TROLLIES MATERIAL LORRIES ETC:

- i) Provisions of GR: 15.18 to 15.28 and SRs there under should be followed.
- ii) When material lorries, motors trolley, T.T. Machine & Rail motor Car Tower Wagon (4 wheeler) has to run in the section provided with the Axle counter block panel. These shall be worked as per SR 15.18/1 (13) C. The section will be closed after ensuring by private no. and physical verification of the block section which has in fact been cleared. Thereafter the Axle Counter shall be reset to normal by the SM on duty provided Axle Counter not comes to normal.

7. BLOCKING OF LINES:

Whenever it is necessary to block a running line, the station master on duty shall obtain the permission from the section controller & follow the procedure given as under:-

- i) Whenever vehicles/load is stabled on running lines or sidings it must be:-
- Chained and pad locked.
 - Secured by use of wooden wedges/sprags etc;
 - Coupled with other vehicles.
- ii) Hand brakes of at least six wagons from either end must be fully tightened. From front portion hand brakes of 6 wagons will be tightened by ALP & from rear end side hand brakes of 6 wagons will be tightened by Guard of the train. In case coaching vehicles are stabled, guards hand brakes in SLR/SLRs must be applied by the Guard of train.

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- iii) The points must be set, clamped and locked against the blocked line/lines and scotch blocks wherever available should be used to isolate the line/lines and the keys kept with Station Master.
- iv) Stop collars must be placed on relevant signal and points buttons/levers.
- v) Remark to the effect that 'Line No. ___ is blocked be made in TSR/SM diary.
- vi) After any rake is stabled the station master must inform the section controller under exchange of private number that all laid down precautions for stabling have been taken. the section controller must obtain this assurance from station master before allowing the next train to pass through the station.
- vii) SR 5.19/1 & SR 3.38/1 of G&SR should also be complied with.
- viii) Stabled load on running line will be secured as per SR 5.23/1 & SR 5.23/2 of G&SR.

The button collars must be placed on the buttons on the panel as under when the line is blocked:-

Line occupied	Button Collar to be placed on the route buttons
Up main down line.	Route Button of Up main down line. (B)
UP & DN 1 st Loop line.	Route Button of UP & DN 1 st Loop line (A)
UP & DN Loop line No-3	Route Button of UP & DN Loop line No-3 (C)
Common UP & DN Loop line No-4	Route Button of Common UP & DN Loop line No-4 (D)
Common UP & DN Loop line No-5	Route Button of Common UP & DN Loop line No-5 a(E)

NOTE: Button collars should be removed when the line is cleared.

8.1 SHUNTING:

- (i) All shunting should be performed under personal supervision of Guard of a train/SM/ASM/ in charge of the shunting.
- (ii) T-806 must be issued to the Guard and Loco Pilot of the train for all shunting operations prior to commencement of shunting.
- (iii) Shunt signals must be taken 'Off' for shunting operations.
- (iv) Shunting restriction must be acknowledged by the Guard before commencing the shunting.

8.2 SHUNTING IN FACE OF AN APPROCHING TRAIN.

Shunting outside the Advance Starters is not permitted unless the train has come to a stop at the home signal and station Master personally has satisfied himself to this effect and provisions of GR 8.09 of G&SR must be followed rigidly.

8.3 PROHIBITION OF SHUNTING ANY SPECIAL FEATURES: SHUNTING IN GENERAL

- i) Hand shunting that will foul the Main line is prohibited..
- ii) When line clear has been granted for a train to approach in either direction, no hand or loose shunting shall be permitted on the Main line or non-isolated loop line.
- iii) Hand shunting of any vehicle fitted with roller bearing such as BOXs, BOBs, BCXs, BRHs etc is not permitted except on siding isolated from running lines.
- iv) Loose shunting of such stock fitted with roller bearings is strictly prohibited.
- v) All stock shall be protected as per SR 5.23-2 and as per SR 5.23-1.

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- vi) In case of any shunting operation at the station, the Station Master on duty must ensure that shunting move fouling the line on which it is intended to receive a train is stopped before allowing the approach signals to be taken 'OFF'.
- vii) Shunt signals may be taken 'Off' for shunting purpose where possible.
- viii) T/806 must be issued to the guard and Loco Pilot of train for all shunting operations prior to commencement of shunting.

8.4 SHUNTING ON SINGLE LINE:-

8.4(a) SHUNTING WITHIN STATION SECTION:

If the necessary signals are kept at ON, shunting may be carried on within station section even after granting line clear to an approaching train as per GR.8.10 of G & S Rules

Note: The Engine should be kept leading towards DN direction the falling gradient in accordance with GR 5.20 and SR's there under.

When signals have been taken off for an incoming train on to a line, which is not isolated, no shunting movement shall be carried on towards the points over which the incoming train will pass.

8.4(b) SHUNTING OUTSIDE STATION SECTION:

A TOWARDS BIRARI END

- i) Shunting or obstruction for any other purpose outside the station section shall not be permitted unless it is blocked back.
- ii) At this station such shunting outside the station section shall be performed only after the section has been blocked back and shunt/occupation key handed over to the loco pilot as per SR. 8.12/1.
- iii) The Loco Pilot shall be authorized to pass the relevant Advance starter signal in "ON" position by an endorsement on shunting order (T-806). Suitable entries to this effect shall be made in Train Signal Register of SM/ASM.

B TOWARDS TKMG END

- i) Shunting or obstruction for any other purpose outside the station section shall not be permitted unless it is blocked back.
- ii) At this station such shunting outside the station section shall be performed only after the section has been blocked back and ball token handed over to the loco pilot as per SR. 8.12/1.
- iv) The Loco Pilot shall be authorized to pass the relevant Advance starter signal in "ON" position by an endorsement on shunting order (T-806). Suitable entries to this effect shall be made in Train Signal Register of SM/ASM.

Note: The Engine should be kept leading towards the falling gradient in accordance with GR 5.20 and SR's there under

8.5 (i) SHUNTING ON DOUBLE LINE. – Nil

(ii) SHUNTING UP TO IBS:- Nil

(iii) Shunting may be performed during failure of Block Instruments vide para No. 9.06 of BWM and T/806 must be given to Loco pilot/Guard of train

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8.6(i) SHUNTING IN THE SIDING TAKING OFF FROM STATION YARD GOODS SHED.

All shunting in siding taking 'OFF' from station yard, will be done under personal supervision of Guard of train/SM/ASM/person in charge of shunting.

WORKING OF LALITPUR POWER GENERATION COMPANY LIMITED SIDING TAKING OFF FROM UDAIPURA YARD AT TKMG END OF UDPR STATION VIDE JPO DATED 06.05.2017:

- i) Before sending any load to LPGCL R & D yard on duty station master UDPR will take line clear from staff of LPGCL R & D yard.
- ii) Before granting line clear to UDPR staff of LPGCL R & D yard will select a line to receive the load then they will release control to UDPR Station.
- iii) After receiving control from LPGCL R & D yard on duty SM UDPR will take OFF starter signal of concerned line and also will take OFF advance starter signal.
- iv) Loco Pilot and Guard of the train will proceed up to the 1st stop signal of LPGCL R & D yard and follow aspect of 1st stop signal and if signal is in OFF position they will proceed in R & D line and stop at a place prescribed for stopping of train.
- v) If 1st stop signal of LPGCL R & D yard is defective then staff of LPGCL R & D yard will issue prescribed form to the Loco Pilot of train to pass the defective stop signal in ON position. After receiving the prescribed form and piloted by LPGCL R & D yard staff the Loco Pilot will proceed with load cautiously.
- vi) When empty load from LPGCL R & D yard is required to dispatch to UDPR Station then LPGCL R & D yard staff will take line clear from UDPR station and will take OFF starter signal of concerned line.
- vii) If starter signal of LPGCL R & D yard is defective then LPGCL R & D yard will clamp and Pad lock the concerned points and will issue prescribed form to the Loco Pilot.
- viii) Responsibility of all movement including shunting in LPGCL R & D yard will be of LPGCL R & D yard staff.

8.6(ii) WORKING OF OUTLYING SIDING, IF ANY. – As mentioned above.

9. ABNORMAL CONDITIONS:-

- (a) **The Rules to be observed in the Event of abnormal Conditions:-**
(The Procedure to be followed for working trains during abnormal working).
 - (i) During partial interruption /failure of Electrical communication instrument; line clear will be obtained from any means given in Para 1.18 of BWM.
 - (ii) The authority to proceed in the occupied Block section in case of obstruction of line or accident; SR.6.05/2 of G&SR must be followed.
 - (iii) Trains delayed in Block section GR.6.04 must be followed.
 - (iv) Failure/Passing of IBS at 'ON' - Nil
 - (v) Failure of Axle Counter Block/BPAC as per Para 7.29 of BWM. (Details working to please see in Appendix 'B').
 - (vi) Failure of MTRC: - Nil
- (b) **Procedure for emergency operation of points by crank handle.**
Manual operation of motor point & custody and use of crank handle

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9.(A) Custody and use of Crank Handle.

- (1) Crank Handle has been provided at this station in SM office (Panel Room) for manual setting of Motor Operated Points during the failure or maintenance. This shall be kept in a case specially provided for this purpose. This case will be locked and the key shall be kept in the personal custody of SM on duty. The Crank Handle case will be sealed by the ESM of the section in addition to the locking by SM.
- (2) For the purpose of Crank Handle Interlocking, the points have been divided into the following groups:-
- | | | |
|-------------|----|---------------------------|
| Group No.1 | .. | Point No. 201/202 |
| Group No.2 | .. | Point No. 203/204/205/206 |
| Group No.3 | .. | Point No. 207/208/209 |
| Group No.4 | .. | Point No. 211/212 |
| Group No.5 | .. | Point No. 282/283/284 |
| Group No.6 | .. | Point No. 285/286 |
| Group No.7 | .. | Point No. 288/289 |
| Group No.8 | .. | Point No. 290/291 |
| Group No.9 | .. | Point No. 292/293 |
| Group No.10 | .. | Point No. 294/295/298/299 |
| Group No.11 | .. | Point No. 297 |

NOTE:

- i) Key transmitted electrically in SM's Office (Panel Room) for these groups.
- ii) These Crank Handle Keys have been provided for uncovering the flap of point machines of the above groups. The crank handle cannot be inserted in the point machines unless the flap is uncovered by means of relevant Keys. These Keys are normally held locked in separate key locked relays housed in the boxes in SM Office/Panel Room and cannot be released, if any one of the concerned routes/overlap is set. Key locked relay boxes are kept padlocked by SM and sealed by S&T staff.
- iii) Circular white and Red Light indication have been provided on the panel for the each groups, indicating whether the crank handle Key is held locked in the relay box or it has been released for the manual operation of points. For releasing the control of Crank Handle key of the Point, the SM will press the following buttons shown against each group simultaneously and release.

Group No.	Point No.	Buttons to be operated
1.	201/202	'CHYN' & Point Button 201/202
2.	203/204/205/206	'CHYN' & Point Button 203/204/205/206
3.	207/208/209	'CHYN' & Point Button 207/208/209
4.	211/212	'CHYN' & Point Button 211/212
5.	282/283/284	'CHYN' & Point Button 282/283/284
6.	285/286	'CHYN' & Point Button 285/286
7.	288/289	'CHYN' & Point Button 288/289
8.	290/291	'CHYN' & Point Button 290/291
9.	292/293	'CHYN' & Point Button 292/293
10.	294/295/298/299	'CHYN' & Point Button 294/295/298/299
11.	297	'CHYN' & Point Button 297

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- iv) Before releasing the control of the crank handle, the SM will ensure that the Group of points are not engaged in any route. The operation of 'CHYN' & the point button will cause the white indication of the particular group to flash till crank handle key is taken out from the key locked relay. Simultaneously, a 'Red' light indication will appear above the concerned key locked relay. When the crank handle key is taken out from the key lock relay, the white flashing indication will disappear and red circular indication of that group will appear on panel. After the use, the insertion of crank handle key in the key lock relay and its operation will cause the 'Red' indication of the group to disappear and a flashing white indication of this group will re-appear. Now pressing CHYRN and relevant point button will cause the flashing white indication to become steady and also the 'Red' indication above the key lock relay to disappear.
- v) Once the control on the crank handle key has been released, the corresponding signals cannot be cleared.
- vi) After releasing the control, if the crank handle key is not extracted, control can be withdrawn by Operating 'CHYRN' Button and point button of the group.
- vii) The signal controlling the movement over the point can be cleared after the control to the relevant crank handle key is returned.
- viii) Unless the relevant crank handle key is inserted in the lock on the point machine and operated for uncovering the aperture, crank handle cannot be inserted in the point machine.

9.(B) USE OF CRANK HANDLE DURING MAINTENANCE.

- i) Whenever, it becomes necessary for the crank handle to be used for general maintenance and repairs, a member of S&T Staff not below the rank of ESM will issue a Disconnection memo with an endorsement on top '**Crank Handle**' required for the concerned points and obtain the key from the SM to open the lock. The seal of the crank handle case will then be broken by the S&T staff in the presence of SM on duty. Before crank handle is removed, an entry shall be made in the crank handle register provided for this purpose. The Register will have the following columns:-
 - i) Serial Number.
 - ii) Name and Designation of the persons who requires to use the crank handle and the concerned crank handle key.
 - iii) Time and Date of removal of Crank Handle & the crank handle keys.
 - iv) Whether for normal maintenance or failure.
 - v) Disconnection Memo Number, if given.
 - vi) Initials of the person who removes the crank handle.
 - vii) Initials of the SM on duty.
 - viii) Time and Date of return of Crank Handle & the Crank handle keys.
 - ix) Details of use made of crank handle.
 - x) Reconnection Memo Number, if given.
 - xi) Initials of the person who return the crank handle.
 - xii) Trains passed over disconnected/defective points giving Private Number against each train.
 - xiii) Initials of the SM on duty.

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- ii) After the purpose for which the Crank Handle was taken from the case is over, that will be replaced in the case by the S&T staff. The Crank Handle case will then be locked and sealed as laid down in clause (1) above. The particulars required in the crank handle register will then be posted against the relevant entry and will be signed by the S&T staff and SM on duty.
- NOTE:-** In case a disconnection Memo is issued for a point, but Crank Handle is not required, an endorsement that **Crank Handle not required** must be made on top of the disconnection memo .
- iii) During the period from the issue of Disconnection Memo by the S&T staff and the issue of Crank Handle to them to the time of its return by them and issue of reconnection Memo, if traffic has to be passed on the disconnected point, procedure detailed in Sub-Para 9.D shall be followed.
- iv) Whenever it becomes necessary for the Crank Handle to be removed to pass the traffic during Point Failure, the Dy.SS/SM on duty will do so only after making relevant entries in the Register in a manner indicated in clause 9.B (i) above procedure detailed in Sub-Para 9.C shall be followed. He will immediately advise ESM on duty about the failure and record the failure in the S&T Failure Register.

(C) WORKING OF TRAINS DURING FAILURES

Passage of trains when Motor Points are defective:

- i) When an electrically operated Motor Point fails to respond to the Button operation, the SM on duty will first re-set the point to the last operated position and deputes the Pointsman to find out if any obstruction is lying in between the tongue and stock rails at both ends of the cross over.
- ii) The Pointsman on arrival at the Point will look for any obstruction between the stock and Switch rails, remove the same if found any and display an alright signal to SM on duty for setting the Point. In case, obstruction is found, the Pointsman will display hand danger signal.
- i) On receipt of an all right signal from the Pointsman, the SM on duty will set the Points to the required position. If the Point still fails to respond or on receipt of Hand Danger Signal from the Pointsman, the SM on duty will remove the Crank Handle and the relevant crank handle key, proceed to the site of defective point after locking the Control Panel and retaining the key in his personal custody.
- On reaching the defective point, he will set the point manually in the required position (both the ends in case of cross over points), clamp and padlock it and will come back to panel room and unlock the panel. He will operate point button along with point group button, so that point indication on the panel will be corresponding to that at site and then authorize the move.
- NOTE:** While setting the crossover point from 'Normal' to 'Reverse' care should be taken to set marked 'A' first and then set the other end marked 'B'. Similarly, while setting from 'Reverse' to 'Normal' end marked 'B' should be set first and then the end marked 'A'.
- In case, after setting the Point manually and the relevant 'N' or 'R' indication is available on the panel and the requisite signal can be cleared for the move, clamping and padlocking of points is not necessary provided there is no damage to the machine & roddings connected.
- iv) If the ESM is available, he will assist the SM in manual setting of Points.

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(D) Passage of trains when points are disconnected:

- i) While the S&T Staff are attending to disconnected/defective points and traffic has to be passed over them. SM on duty will proceed to the concerned points with the object of getting the points set by the S&T Staff as per S.R. 3.51-2. of G & SR
- ii) He will take with him a special Register opened for this purpose in which an entry of the move will be made and the signature of the S&T Staff attending to the points will be obtained against that entry as an assurance that the S&T Staff has agreed to the move. The SM will also sign against the entry. After the points have been set for the contemplated move, SM will clamp and padlock the points, & retain the keys and crank handle in his personal custody and return to the station for undertaking the move. After the passage of traffic, the SM will return the Crank Handle, Crank handle key and the padlock keys to the S&T Staff for continuing their work on points.

(E) Additional Precaution to be observed:

Button Collars shall be placed on the button of defective/ disconnected point and the relevant route button. The Button Collars shall not be removed except under the following circumstances:-

- [a] When the disconnected point is re-connected and a Reconnection Memo to this effect is received or
- [b] When the defective point has been put right and a Reconnection Memo is received.
- [c] When the Operating staff at the site authorizes the SM to undertake the movement over the points and exchange Private Numbers in token of this.

NOTE: Manual setting of points by Crank Handle for passing traffic should not be carried out by the S&T staff unless the Operating staff not below the rank of ASM is present at site.

(F) Certification of Clearance of Track Before Calling On Signal Operation Is initiated

- i) The calling on signals provided below the DN Home signal, UP Home signal can be taken off during the failure of track circuits; provided the requisite points have been set to the required position in the route and isolation points are set to required position. Before clearing the 'Calling ON' signal under the track circuit failure condition, SM /ASM on duty must personally ensure that concern track is clear of any vehicle/obstruction and also when track immediately in rear to signal is occupied, and he will set the requisite route by pressing the relevant signal button and COGGN button. Then he will release COGGN button, keeping the signal button press and press concerned route button and release them. This will cause flashing white indication to appear on the right side of the signal on the panel. The 'Calling ON' signals will clear after a lapse of one minutes when the flashing white indication on the panel will become steady and will disappear on clearance of Calling ON signal. The Calling ON signal, once cleared may not restore to 'ON' position automatically even after passage of the train, and therefore the SM/ASM, after passage of the train for which the Calling ON signal was cleared, shall immediately restore the Calling ON signal to 'ON' position by pressing the concerned signal button and Emergency signal Cancellation Button (ERN) simultaneously and releasing every clearing of 'Calling ON' signal will be recorded on COGGN Counter.

Note:- When ever in case of Main signal failed, Calling on Signal should be taken "OFF" the care should be taken the through signal (Starter Signal) must not be taken "OFF" otherwise Calling on Signal will not 'Clear'.

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ii) **Working of trains during the failure of track circuits when the 'Calling ON' signal has also failed.**

The SM on duty will check up regarding the failure of track circuit and the latter will proceed to the affected track circuit along with a pointsman. The SM after verifying the clearance of the defective track Circuit will set the requisite route, place reminder collar on the signal button and then issue 'T/369(3b)' to the Loco Pilot to pass defective signal at 'ON', provided the requisite point is set and locked indications are available on the illuminated Diagram and the track circuits other than the track circuit certified are clear. The route for which T/369(3b) is issued should not be cancelled until the entire route including the overlap is cleared by the train except in the case of trains which are likely to be detained on Platform lines in which case the route may be cancelled after the complete arrival, clear of track circuits controlling the points in rear.

iii) Movement affected by the track circuit failure should not be done simultaneously over the crossover. Simultaneous movements are permitted only on the Straight routes under these circumstances.

ii) Whenever any non-signalled move has taken place over a point operated by electric point machine, either in the facing or trailing direction, the SM on duty shall operate the point to the normal/reverse settings for the purpose of setting

iii) the point. After the SM has ensured that indication regarding the normal/reverse settings is correctly available, further movements may be permitted over the point.

NOTE:-In the case of disconnected/defective points, the setting of the other end or ends where the work is/are not carried out will be done by the SM on duty.

(G) Reporting Failure of Points, Track Circuit/Axle Counter and Interlocking

SR 3.68/6 of G & SR must be followed.

9.1 TOTAL FAILURE OF COMMUNICATION

In the event of total interruption of the communications, that is (i.e.) when 'Line clear' cannot be obtained by any one of the following means namely –

- i) Block instruments.
- ii) Telephone attached to block instruments.
- iii) Railway/BSNL Fixed phones.
- iv) Control telephone.
- v) VHF sets

The trains shall be worked in accordance with the procedure as detailed in SR 6.02-4 of G&SR.

9.2 TEMPORARY SINGLE LINE WORKING ON A DOUBLE LINE SECTION.

Not applicable being single line section.

9.3 DESPATCH OF TRAINS UNDER AUTHORITY TO PROCEED WITHOUT LINE CLEAR TO ASSIST THE CRIPPLED TRAIN.

Whenever it is necessary to send a train to assist the crippled train into the block section on 'Authority to proceed without line clear' the station master will: -Inform the Station Master at the other end of the affected section.

- i) Advise Guard and Loco Pilot of the assisting train of the circumstances.
- ii) Handover an authority (T/A-602) to the Loco Pilot and Guard of assisting train specifying the line on which the train will run. Provisions of SR 6.05/2 of G&SR must be complied with.

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10. VISIBILITY TEST OBJECT

- a) UP & DN main line starter signal No. S-16 is nominated as visibility test object at this station.
- b) **WORKING OF TRAINS IN THICK AND FOGGY WEATHER:-**
Whenever on account of Fog, dust, storm or rains, the VTO is not visible from opposite the SM's Office, the SM on duty must immediately arrange for detonators to be placed in accordance with the provision of SR 3.61-1/(B) of G&SR.

11. ESSENTIAL EQUIPMENT AT THE STATION.

(For essential equipment see appendix 'E').

12. NAMES OF THE FOG SIGNALMEN NOMINATED TO BE CALLED IN CASE OF FOG.

S.N.	Names of the fog Signalmen	Design	Deptt	Remarks
(Only permanent staff to be nominated)				
STATION MASTER UDAIPURA				

LIST OF APPENDIX

- Appendix 'A'**- Not Applicable
- Appendix 'B'** System of Signalling & interlocking and Communication arrangements at the station.
- Appendix 'C'** Anti-Collision Device (Raksha Kavach): Not applicable
- Appendix 'D'** Duties of Train passing Staff and Staff in each shift.
- Appendix 'E'** List of Essential Equipments provided at the station.
- Appendix 'F'** - Rules for working of 'DK' Stations, Halts, IBH, IBS, and Outlying sidings - Nil
- Appendix 'G'** Rules for working of trains in Electrified sections: Not applicable

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APPENDIX “B”

SYSTEM OF SIGNALLING AND INTERLOCKING:-

1. LAYOUT:

The track accommodation is as shown on the Diagram No. 2445/ ALT ‘C’ & ALT ‘D’ dated 17.10.2019 based on SIP DRG No.SIP-2445/C dated 01.07.19 & SIP-2445/D dated 10.10.19 and ALT ‘B’ kept in abeyance.

- 1.1 Class of Station : “B” Class, Single line
- 1.2 Mode of Signaling: Multiple Aspect Colour Light Signaling.

2. METHOD OF INTERLOCKING:

- 2.1 The Station is “B” Class Interlocked to Standard II (R) and is provided with colour light signaling with Distant signal, Home signal, Starter signal and advance starter signal on either side of station. Interlocking is by means of Relay Interlocking (Route Setting type) through Control Panel installed in SM’s office. Continuous Track Circuiting is provided between DN Home and UP Home and 65 meters (5RL) beyond them.
- 2.2 All Points / Signals/ controls are operated electrically by means of push buttons located on the control panel. All the movements including shunting are controlled from Control panel.

3. WORKING OF CONTROL PANEL:

3.1 CONTROL PANEL:

The control panel is installed in the SM’s office. The panel depicts the schematic reproduction of the entire track layout of the station with different track circuit sections being painted in different colours. All the points, signals and controls are controlled by means of push buttons located within the track layout diagram on the panel at their respective geographical positions. Indications regarding setting of the points, setting of the route and signal aspects are given on the panel. The panel is also equipped with SM’s lock up key to enable the ASM on duty to lock up the panel. (The ASM on duty must not permit unauthorized persons to operate the control panel and must lock the panel whenever he leaves his seat.

3.2 SYSTEM OF BLOCK WORKING:

- i) UFSBI block panel along with Dual BPAC with Station to Station telephones are installed in the Station Masters office for working the trains between UDPR- BRRI.
- ii) UFSBI block panel along with Dual BPAC with Station to Station telephones are installed in the Station Masters office for working the trains between UDPR- TKMG.
- iii) SM on duty is responsible for their operation and custody of the keys.
The ASM on duty on Panel is responsible for operation of the Block instruments and should keep Keys in his personal Custody.

4. FUNCTIONS AND DESCRIPTION OF VARIOUS PUSH BUTTONS OF THE CONTROL PANEL:

a. Signal Button:

It is provided near the concerned signal and is of ‘RED’ in colour for stop signal and ‘Yellow’ in colour for shunt signal. The number of each signal button is inscribed near its location.

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Whenever any signal is to be taken “OFF” the route button of the concerned line along with signal button is to be pressed simultaneously for 10 seconds minimum and then released. Distant signals are not having any buttons on the control panel. Circuitry arrangements permit this signal to assume the corresponding aspect, depending upon the aspect displayed by home Signal ahead. The normal aspect displayed by distant signals is ‘CAUTION’ i.e. One yellow it changes to “Attention” aspect i.e. ‘Double Yellow’ when the concerned Home Signal ahead is taken “OFF” and it changes to ‘Proceed’ aspect i.e. Green in conjunction with “Proceed” aspect of the concerned Home Signal..

b. Point Button:

It is located near the each crossover point with the number of point inscribed by its side and is ‘Blue’ in colour. Whenever any crossover point is required to be set, the group button along with the concerned point button is to be pressed. When the point is set, the concerning ‘Slit’ in the direction of points setting will get illuminated indicating white light. When any particular points are engaged by a route, this will be indicated on the panel by small white light provided in round slit on the point’s position indicating that points are not free for operation.

c. Route Button:

Each route button is positioned appropriately on the panel and is ‘Grey’ in colour. It is pressed along with relevant signal button whenever the concerned signal is to be taken “OFF”.

d. Control Button:

- i) The slot button is provided for releasing controls from crank handle Keys, which are locked in KLR box.. For releasing keys at site, the point button (WN) along with the Group Slot button CHYN in blue colour is to be pressed simultaneously. This operation will enable the authorized person on duty to extract Keys from KLR Box.
- ii) For withdrawing Control Slot, key of concern point are put back at proper place in KLR box and then SM on duty will press Control Button CHYRN along with WN simultaneously. This operation will lock the Key in the KLR Box.

e. Group Button:

The group buttons are normally provided on the top of control panel. The following are the nomenclatures, colours, and description etc. of the buttons.

Sr. No.	Group Code	Button Colour	Functions
1.	WWN	Blue	Group point button for individual operation of points / crossover. This button is to be pressed along with the concerned point button for point operation when track circuits are clear for setting the point to the required position
2.	CHYN	Blue	Group slot button for releasing slot to Crank Handles (To be pressed along with concerned point button).
3	CHYRN	Blue	Group slot button for withdrawing slot to Crank Handles (To be pressed along with concerned point button).
4	COGGN with counter	Red	Common ‘Calling ON’ Signal button for taking off the Calling ON Signal (To be pressed along with the respective Home Signal Button) when the calling on track circuit is occupied by the train.

f. Emergency Buttons:

In addition to the points, signals, slots and group buttons, some emergency buttons are also provided for emergency use such as operation of points when track circuit controlling the points has failed, putting back signals to danger, cancellation of route section and releasing the route when locked as well as the overlap when the train is not on the approach track.

The following are the nomenclatures, colours, description etc of the various buttons

Sl. No	Group Code	Button Colour	Functions
1.	EWN with counter on the panel	Blue	Emergency group Button for point operation for operating the point individually when the track circuit controlling the point has failed. Button remains sealed normally, and is provided with counter 'EWN' to count the number of operation. ASM will break the seal before the operation.
2.	ERN	Red	Emergency Group Signal for putting back a signal /Shunt Signal to "ON" in case of an emergency even without SM's key in the panel.
3.	EUYN button key with counter on the panel. (Route release button when the track circuit has failed.)	Grey.	This button to be used for releasing a portion of route which could not get released (though other sub route are released) after passage of train or otherwise. ASM on duty will have to turn the key then press EUYN and concern signal button/ point button and counter counts each such operation and inform the S&T staff immediately so that the button can be resealed. SM/ASM on duty will make the necessary entry in the detail in the register.
4.	EUUYN with counter on the panel	Grey	Emergency route release button is used for releasing the route when locked and also the overlap when the train is not on the approach track. To cancel a route press concerned Signal and ERN buttons, release ERN keeping Signal button pressed, press EUUYN button, release it and press concerned route button keeping signal button press and the counter counts each cancellation.

NOTE: Emergency point operation button (EWN) will be kept sealed by ESM/JE/SE. Whenever this button is made use of, after the seal is broken, the ESM/JE/SE should be advised immediately so that the button can be re-sealed. Use of the button should be recorded in a register.

SMs Key- This key is taken out by SM, ASM to avoid unauthorized operation of the panel in his absence. In case panel seized to operation, SM/ASM must see that SM's key is inserted and kept turned to its proper position. In addition Separate RESET BOXES/INDICATIONS for track section Axle counters of either side station in each direction of UP/DN /BPAC is provided in front of main operating panel.

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An “Emergency SM’s key” has been also provided on the control panel. This key is normally to be kept ”OFF” and remain in safe custody of SM/ASM on duty and to be used when main SM’s key ‘OUT ‘ indication (Red) appears on panel due to main SM’s Key contact failure. The Emergency SM’s key will be used by SM/ASM on duty by turning the key to ‘ON’ to normalize the panel operation. After verifying the SM’s key “IN” indication (Yellow) on the panel and the failure of main SM’s key to be advised to on duty S&T staff available at station.

g. Indication Buttons:

Indication buttons GXYN, WXYN and CHXYN are provided for silencing bell buzzer when any signal or points or Crank handle have failed.

The following are the nomenclatures, colours, description etc. of indication buttons & various indications on the panel.

Sr. No	Group Code	Button Colour	Functions
1.	GXYN Signal lamp failure buzzer Silencing button	Red	In case of failure of Signal lamp & steady (G) indication appears along with buzzer. Buzzer can be Silenced by pressing the Button but the indication will remain till the failure is put right. The concerned Signal indication will flash to indicate failure.
2.	WXYN Point failure buzzer silencing button	Blue	In case of failure of Point detection, steady (W) indication appears along with buzzer. Buzzer can be silenced by pressing the button but the indication ‘W’ will remain Steady till the failure is put right. The concerned point indication will flash to indicate the failure.
3	CHXYN Crank handle failure/ buzzer silencing button	Grey	In case of failure of crank handle & steady (CH) indication appears along with buzzer. Buzzer can be Silenced by pressing the Button but the indication will remain till the failure is put right. The concerned crank handle indication will flash to indicate failure.
4.	NCR. Group Button failure indication	Red indication	It is only a red light indication without button. Whenever any button on the panel fails to come back to normal position when released red indication appears along with Buzzer.
5.	GNCR Button checking indication for signal buttons	S indication	This indication will appear when any of the signal buttons fails to come back to normal when released or kept pressed for long time. Indication appears along with the Buzzer.
6.	UNCR Button checking indication for route buttons.	R indication	This indication will appear when any of the route buttons fail to come back to normal position when released or kept pressed for long time. Indication appears with Buzzer.

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7.	WNCR Button checking indication for point buttons	P indication	This indication will appear when any of the point buttons fails to come back to normal when released or kept pressed for a long time. Indication appears along with the Buzzer.
8.	CHYNCR Button checking indication for crank handle.	CH indication	In case of failure of crank handle & steady (CH) indication appears along with buzzer. Buzzer can be Silenced by pressing the Button but the indication will remain till the failure is put right. The concerned crank handle will flash to indicate failure.

Note:

- 1) All cancellation facilities are provided with Counter and that each number should be entered in the Register specially provided for along with brief reasons for cancellation.
 - 2) Buttons provided with seal;- Assistant Station Master (Panel) can break such seal in emergency but the JE/SE/ESM on duty must be informed immediately for resealing the button / buttons.
 - 3) EUYN (Sub route cancellation) is meant for releasing any sub route, if not released by passage of train or otherwise but the same can be used in emergency for release of full route also if process of EUUYN fails to release full route
 - 4) The Assistant Station Master (Panel) on duty will be responsible for all emergency operations done by him and it is to be explained in the Special register giving corresponding numbers of the respective counters. The numbers on each counter will be registered in the Assistant Station Master's (Panel) charge book while handing over & taking over charge of the panel.
 - 5) Facility is provided to the Assistant Station Master (Panel) on duty for operation of Motor Operated points in case of failure of point controlling track circuits by means of 'EWN' button. Before breaking the seal of the button and operating the same, Assistant Station Master (Panel) on duty should physically verify or get the same verified by Platform Assistant Station Master that the point/ track is not occupied by any vehicle and that the track concerned is intact and safe for the passage of trains.
- 1) When one Signal or point failure is already indicated and the buzzer/bell already silenced, the second Signal or point failure will not be indicated by the Sounding of buzzer/bell. However, the respective Signal or point failed will be flashing on the panel.
 - 2) The audible buzzer sounded along with button checking indication cannot be silenced unless the failure is put right. Assistant Station Master (Panel) on duty should check for any of the buttons remaining in the operated/ pressed condition and if so, the same should be released by him. JE/SE/ESM on duty should be informed in case if he is not able to locate the faulty button.

5. PANEL INDICATION:**5.1 Point Indication:**

The position of the points is indicated on the control panel by the illuminated rectangular slits near the points on the panel. The normal setting of a point is indicated by the illuminated slit on the straight route and reverse setting by illuminated slit on the diverting route.

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These slits will display a steady white light, if the points are properly set and the track circuits controlling the points are clear or a steady red light if the track circuit controlling the points are occupied or have failed. In the event of a point failing to set properly, this steady white light change into white 'flashing' light. The flashing light indication will also appear for a short period when the points are being moved from one position to other. The Station Master should not mistake this as a point failure unless the flashing indication continues for more than 10 seconds. No setting of route should be attempted over point showing flashing light.

5.1.1 Point Locking Indication:

When any particular point is engaged by a route, this will be indicated on the panel by a small white light provided in round slit on the 'point position' indicating slits, indicating that the points are not free for operation. **When this locking indication appears the Station Master must not interfere with the point.**

5.2 SIGNAL INDICATIONS:

5.2.1 The aspects of all signals are indicated on the control panel in the Station Master's Office which proves that the signals are illuminated at site.

The indications of all signals will be repeated on the control panel. The 'ON' aspect of a stop signal is indicated by 'RED' light on the control panel and the 'OFF' aspect of a main stop signal on the control panel will be yellow, Double yellow or Green light as displaying the 'Yellow' or 'Double Yellow' or 'Green' aspects at site. In case of distant signal the normal position of distant signal is CAUTION aspect will be indicated on the control panel by a single Yellow light and the 'OFF' aspect 'Double Yellow' or 'Green' aspects will be indicated by Double Yellow or 'Green' light.. In the case of ground type shunt signals, the 'ON' and 'OFF' aspects are indicated on the control panel by the horizontal white and diagonal white slits respectively.

A White dot indication is lit below the main Signal when a calling on Signal or Shunt Signal provided below the main Signal is taken 'OFF'. Normally it has no light.

5.2.2 Indication of Directional Route Indicator:

Signals fitted with directional route indicator pointing to direction of diversion, have normally no light on route indicator slot on control panel but when any one directional route indicator is lit up at site a vertical slit showing white indication appears on the concerned signal on the panel.

5.2.3 Route Indications :

When the route is set by the operation of the signal button along with the concerned route button, white light will appear in the slits on the portion of the track circuited section covering the route up to the next signal and the overlap. When the route is thus set & locked, this will be indicated by a circular white light near the concerned points in the route. The white light on this track circuited portion will change into 'Red light' when the track section is occupied by a train or vehicle and until the track is cleared again. After the passage of the train when the track section is clear the white light will reappear and will extinguish only when the route gets released. In the case of shunt signals, the portion of the route excluding the berthing tracks and non track circuited portion will only be illuminated by the appearance of white route lights.

5.3 Track Circuit Indication:

- 5.3.1 All the Track circuits are marked in different colours on the track layout of controlled territory drawn on indication panel. Track circuit indicators on the panel consist of white and red lamps within the track lines. Normally, these indicators are not lit. When a route is set & locked, white light on all track sections of that particular route including overlap are lit. Subsequently, when train occupies the track sections, white lights extinguish and red lights are lit to indicate the presence of the train. Red light extinguishes and white lights are re-lit when the train travels and clears the track section. White light finally extinguish when the corresponding route section is released automatically or by cancellation.
- 5.3.2 Failure of Track Circuit section is indicated on control panel by lighting up of Red light of that particular track section irrespective of whether or not a route involving that tracks circuit section has been set. To prevent suppression of a track failure indication in case of an indication lamp failure, track circuit strip indicators are always formed with two or more indication lamp in parallel.

5.4 FLASHER INDICATIONS:

A continuous flashing indication has been provided at the top row of the panel. Presence of this indication on the panel all the time will indicate to SM/ASM at the panel that the flasher relay equipment is working. Should that the equipment become faulty, this indication will become steady and accordingly even when the points are not set properly the flashing indication will not appear for that particular point and instead steady indication will appear, which is therefore misleading.

SM on duty should therefore check for this continuous flashing indication at the time the points are set for a movement and signal is taken "OFF" and it should be ensured that flashing indication is always there.

During the period of failure of flasher indication signaled move are permitted without clamping and padlocking of the points involved in the route but before authorizing any unsignalled move, the SM/ASM must ensure that the relevant points in the route are correctly set., clamped and padlocked. The SM /ASM on duty should advise to JE/SE/ESM for 'failure of continuous flashing indication'.

- 5.5 **POINT OR SIGNAL LAMP FAILURE INDICATIONS:** In the event of a Point Failure or Failure of a Signal Lamp, the concerned Point or signal Indication on the control Panel will change from steady light to a flashing light for that particular indication. Signal at site will show less restrictive aspect and panel will also indicate accordingly.

But if the green/yellow flashing indication on the panel is also accompanied by the steady red indication, this will mean that the off aspect lamps of the Signal have fused and that the signal is exhibiting the 'ON' aspect. The failure of Red lamp of a signal will be indicated by a flashing red indication on the panel. In the event of failure of red lamp of a signal, the flashing red indication on the panel also is accompanied by a audible alarm. On hearing such an alarm and on seeing the flashing indication, the SM on duty should press the signal/point ack. button to silence the buzzer. The ASM on duty should press the GXYN button in case of a signal lamp failure and WXYN button in case of point failure and CHXYN button in case of crank handle failure.

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Pressing of GXYN/ WXYN/CHXYN will cause the alarm to stop but a permanent an illuminated letter 'G' or 'W' or CH as the case may be, will continue to appear on the panel red indication will remain till the failure is put right.

On hearing audible alarm and noticing the fusing of Red lamp of Home signal or blanking of distant signal of both UP & DN lines, SM on duty will immediately advise the concerned Station Master of the station in rear to issue caution order to the Loco pilot of the train to be vigilant and see the blank signal. He will also take action to advise ESM to replace the fused signal lamp.

Note:- All Main signal lamps are provided "LED" type at this station

5.6 Indication for Prolonged Operation of Button :

If any of the button is kept pressed for more than 10 seconds, button detection NCR indication (Red light) will appear with buzzer. Panel ASM on duty should check and locate the button which has remained pressed and pull the same to release it.

So long as NCR indication persists, no operation of points or signal from the panel will be possible and panel will become inoperative. Panel ASM on duty should, therefore, be alert to notice NCR indication. Whenever, panel becomes inoperative, he should specially check NCR indication. Even after panel ASM on duty has attempted to pull and return to normal position a pressed button if NCR indication persists, he should immediately inform ESM/JE/SE.

6 PANEL OPERATION:

For every operation on the control panel, two buttons have to be pressed simultaneously and released i.e. the signal button and the route button for setting route and clearing a signal or point and points group button for setting a point etc. Panel ASM on duty must ensure that not more than two buttons are operated simultaneously at any time.

6.1 Operation of Points:

The points will remain in the last operated position. in order to set the point either from 'Normal to Reverse' or from 'Reverse to Normal', individual point button WN and point group button 'WWN' should be simultaneously pressed and released which will cause the point to change over, provided the points are not engaged by any route and also the track circuit controlling the point is unoccupied.

Note: In the event of failure of the track circuit controlling the points, if the points have to be operated, the panel ASM on duty will first personally verify that the concerned track circuit is not occupied by any train or vehicle and then press the concerned point button simultaneously with the Emergency Point Button (EWN) and release. Each time a point is thus operated, it will be recorded on the (EWN) counter. A register is maintained for EWN counter and each operation is recorded in it. The register has the same columns as mentioned for EUUYN and EUYN counter. SM on duty will break the seal before the operation and will immediately inform ESM to reseal the EWN button and make necessary entries in the register.

6.2 Operation of Main Signals:

The signal taken "OFF" by pressing the concerned signal button and route button simultaneously and releasing them. , the points in the route and the isolation points will be automatically set to the required position, if not already in that position, provided slot from the slotting agencies is received in case of slotted signals. Point in the overlap will be set automatically in normal position. If diversion overlap is required then starter signal to be take off first before taking 'OFF' home signal.

6.3 Operation of Shunt Signals:

In the case of shunting movements, the signal taken “OFF” by pressing the concerned Shunt signal button and route button simultaneously and releasing them., the points in the route should be automatically set to the required position, if not already in that position. Provided slot from the slotting agencies is received in case of slotted signals.

6.4 Operation of Calling on Signals:

‘Calling ON’ signals are fixed on the same post below the Home stop signals No. S-1, S-18 & S-20 governing the admission of trains. This will show normally no light in the ‘ON’ position and miniature Yellow light in the ‘OFF’ position and will be provided with a marker, consisting of a white enamel disc with letter ‘C’ in Black. In the event of failure of stop signal or due to failure of any track circuit in the route, it is not possible to receive a train by taking “OFF” the Home signal, but it can be received on calling on signal.

A train intended to be received on “Calling ON” signal should be brought to a dead stop short of the Home Signal occupying calling on track circuit CO1T or CO18T or CO20T (as the case may be). For clearing calling on signal for a particular route (Required route to be set), when main signal is not clearing and the route is set, first press concerned home signal button and ERN button for throwing signal to danger, release the buttons and then again press concerned home signal button with COGGN button and then release COGGN button only and then press concern route button keeping signal button pressed after which both the buttons are released. A white light will start flashing in round slit near the home signal on the panel which will become steady after one minutes and simultaneously the calling on signal will assume” OFF” aspect at site and white indication will appear in the calling on round slit on the panel. The calling on signal shall be automatically extinguished as soon as track circuit CO-1 or CO-18 or CO20 as the case may be is picked up. Each time the calling on signal is operated, it is recorded on COGGN counter.

Note : If it is visible by seeing Panel indications that any track circuit of the route is failed than no necessity to attempt for home signal and than to cancel instead Calling On can be attempted directly by pressing signal button and COGGN keeping signal button pressed COGGN to be released and route button to be pressed for 10 second after which both the buttons to be released when white light will start flashing for one minutes after which light will become steady and Calling On signal will assume “OFF”.

7. RESTORING SIGNAL TO ‘ON’ AND CANCELLATION OF ROUTES:

7.1 Restoring Signal to ‘ON’:

Whenever it is required to put back a signal to ‘ON’ position during an emergency or due to any other reason, this can be done by pressing the concerned signal button along with the emergency signal cancellation button (ERN)& releasing them.

7.2 Cancellation of Route already set when Points have not Failed (EUUYN) Operation

Ordinarily a route once set need not be cancelled as the same gets cancelled automatically by the passage of the train over the entire route and this is indicated on the Control Panel by the extinguishing of the route lights. However, should it become necessary to cancel a route already set due to any reason the SM on duty should first restore the Signal Controlling the movement over the route to ‘ON’ as indicated in Sub-Para 7.1 above.

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The SM on duty will then press the concerned Signal [other than Advanced Starter Signal] Button and the Emergency Route Release Button (EUUYN) simultaneously and release the latter (i.e. EUUYN Button) keeping the signal button still pressed and press the concerned route button. This will release the route including the overlap, provided no train has occupied the approach track circuit. However, if the approach track circuit is occupied, the route locked flashing indication will appear (a small circular white light) at the right side of the signal. The route locked indication will remain for stipulated time interval i.e. not less than 120 seconds for the release of the approach locking. The route should then be cancelled by repeating the procedure indicated above, only after the route locked indication becomes steady. Each time the route is thus cancelled, it will be recorded on the Emergency Route Release Button (EUUYN) counter provided on the control panel. However, in the case of Advanced Starter Signals, the route will get cancelled when the signal is restored to 'ON' position by means of Emergency Signal cancellation Button (ERN). In case of any failure of track circuit on the route, the three-button cancellation must not be attempted by ASM as it may cause failure Calling On signal on the route.

In case, the route locked indication on the panel control extinguishes immediately before the lapses of stipulated time interval i.e. not less than 120 seconds due to the failure of equipment the SM on duty should wait for two minutes and then cancel the route in the usual manner. further, the SM should report the failure to the ESM immediately and record the same in the S&T failure register.

The Register will have the following columns: -

- i) Sr. No.
- ii) Date and Time
- iii) Route to be cancelled
- iv) Reason mentioning train no.
- v) Signature of the SM/ASM on duty
- vi) Time route cancelled
- vii) Reading of the EUUYN counter after cancellation of the route.
- viii) Remarks

CANCELLATION OF OVER LAP: After the train arrives and occupies the berthing track, the overlap gets automatically released after the lapse of a stipulated time interval of 120 seconds. Should the overlap (having points in the overlap) not get released automatically after the arrival of a train due to any reason, which will be indicated by the overlap portion remaining illuminated, the SM on duty should press the Route Button behind the overlap and the Overlap Release Button (OYN) simultaneously and release them. This will enable the overlap to be released. Each time the overlap is thus released, it will be recorded in the 'OYN' Counter provided on the Control Panel.

RECORDING OF THE READINGS OF COUNTER: Operation of the following Buttons are recorded on the counters provided separately for each of these Buttons:

1	Emergency point button (EWN)
2	Emergency route release button (EUUYN).
3	Overlap release button (OYN).
4	Emergency sub route section release button (EUYN).
5	Group button for calling on signal (COGGN).

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The SM on duty should keep a proper record of all such operations. Separate Registers should be maintained for each of the above buttons wherein each time the Button is operated, the reading on the counter should be recorded stating clearly the circumstances under which the emergency operation had to be resorted to. The SM on duty before handing over charge to his reliever should record the last reading of all the counters in the concerned Registers.

The SM who takes over the charge must verify by actual observation of the readings, on the counters that the last readings on the counters have been correctly recorded in the appropriate Register and the registers should be signed by the SM on duty in token of it.

- 7.2.2** In case when a signal has been restored to 'ON' position, the route should cancel after a lapse of 120 seconds, if it is observed that the white flashing light near the signal becomes steady or extinguishes immediately before the lapse of the stipulated time interval i.e. less than 120 seconds due to the failure of the equipment, the ASM on duty should wait for two minutes after restoring the signal to 'ON' and then cancel the route in the usual manner. Further, the ASM should advise the ESM of the section on duty immediately about the failure and also record the failure in S&T failure register. Each time the route is thus cancelled it will be recorded on EUUYN counter.

7.3 CANCELLATION OF SUB ROUTE WHEN TRACK CIRCUIT OR POINTS IN THE ROUTE ARE IN FAILED CONDITION (EUYN OPERATION):

Normally, the route set gets released automatically after the passage of the train over the same, when track circuit or point in the route has not failed. But when a track circuit or point failed after the passage of train the route does not get released either automatically or by EUUYN. The route will now be cancelled by another emergency operation called EUYN cancellation. This operation should be restored to only after verifying by personal observation by ASM/panel operator that the defective track circuit is not occupied by a train or vehicle.

The ASM/ Panel operator will first turn the emergency sub-section route release key (EUYN KEY) provided on panel to reverse position for authentic operation and then press EUYN button on panel.

- a. By doing so, sub section route release timer will start and flashing yellow indication will appear on panel. Now EUYN button can be left but key will remain in turned in reverse position. After 120 sec of time lapse, flashing yellow indication will turn into steady yellow (ESUYKE) indication.
- b. After that ASM/ Panel operator will press the EUYN button and concerned route point/signal button to release the sub-section route which increment the EUYN counter.
- c. After releasing the concerned sub-section route, the ASM/ Panel operator will turn the EUYN key to normal position causing steady (ESUYKE) indication to disappear and remove the key to keep in his safe custody.
 - ii] The SM on duty will maintain a Register for recording the reading and the other details of the route cancellation with the emergency sub route section release Button (EUYN) provided on the panel.
 - iii) The Register will have the following columns: -
 - 1) Sr. No.
 - 2) Date & time
 - 3) Route to be cancelled
 - 4) Reason for cancellation of the route.

- 5) The train No. before/after which route to be cancelled.
- 6) Sig. of the SM/ASM on duty
- 7) Time route cancelled
- 8) Reading of the EUYN counter after cancellation of the route
- 9) Remarks

7.3.1 Cancellation of route when a train is received on “CALLING ON” Signal:

When a Berthing track circuit has failed, the train can be received on “Calling On” Signal. On arrival of train on the berthing track the route will get released automatically. If it does not get released automatically it can be released by EUUYN operation as indicated above in Para 7.2.

7.4 Recording the Reading of Counter :

Operations of the following buttons are recorded on the counters provided with each of these buttons: -

- | | | |
|------|--|-----------------------------|
| i) | Emergency Point button. | (EWN) |
| ii) | Emergency Route Release Button | (EUUYN) |
| iii) | Emergency Route Section Release Button | (EUYN) |
| iv) | Calling ‘ON’ Signal clear Button | (COGGN) |
| v) | Overlap cancellation button | (OYN) |
| vi) | Dual BPAC resetting push button | (BXT1,BXT2(BRRI-TKMG Side)) |

Panel ASM on duty will be held personally responsible for all such emergency operations carried out during his duty and he should keep a proper record of such operations. Separate register should be maintained for each of the above emergency operations where in each time the buttons are operated and the reading of the counters should be recorded stating clearly the circumstances under which the emergency operations had to be performed. Panel ASM on duty before handing over the charge must verify that the actual readings on the counters have been correctly recorded in the appropriate register and the seals are intact.

8. WORKING OF INTERLOCKED CRANK HANDLE FOR POINT MACHINES:

8.1 Panel Control CH1 (201/202), CH2 (203/204/205/206) CH3 (207/208/209), CH4 (211/212), CH 5 (282, 283/284) , CH 6 (285/286), CH 7 (288/289), CH 8 (290/291), CH 9 (292/293), CH 10 (294/295, 298/299) and CH 11 (297).

In case of the failure of Point Machines and in case of testing or maintenance of the Point Machines the crank handle is required by the operating & signal staff. The crank handle is interlocked with the signals. The interlocking is achieved by interlocking the ‘CRANK HANDLE KEY’ key. The CRANK HANDLE KEY Key is a device which when turned in the key hole of a Point Machine cuts “OFF” the power supply and it also opens the slot for inserting crank handle. As long as the CRANK HANDLE KEY is not turned in the Point Machine the crank handle cannot be inserted in the point machine for manual operation.

8.2 KLR RELAY WITH CRANK HANDLE KEY :

The CRANK HANDLE KEY normally remains locked in the relay called KLR. Such KLR of concerned crossover/points are provided in a box located in ASM room.

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8.3 Control units: On the panel, one control unit for each group is provided which consists of the following :-

1.	CH control Button	For releasing or withdrawing the control on CRANK HANDLE KEY.
2	WN	For releasing control on CRANK HANDLE KEY WN & CHYN button to be pressed and released
3	WN	For returning control on CRANK HANDLE KEY WN & CHYRN button to be pressed and released.
4	White Light	Provided above Slot Button, normally steady and flash as -soon as control is released.
5	Red Light	Provided adjacent to Slot Button, white flashing light turn to red steady no sooner CRANK HANDLE KEY extracted from KLR Relay.

8.4 Operations:

Whenever crank handle operation of the points is desired the competent staff of traffic or signal department obtains crank handle from panel ASM on duty who should issue it after making necessary entries in the register.

The staff concerned will go to the box of KLR located in ASMs office to take CRANK HANDLE KEY for the concerned points. The Panel ASM on duty will press concerned WN Slot and CHYN buttons and release them. The white indication near slot button on panel will start flashing. Transmission of CRANK HANDLE KEY control of crank handle will be indicated by the appearance of red light on the key lock relay box. On seeing this red light, the push button provided on the key lock relay box is pressed and the key turned through 90 degree in the anti clock-wise direction to extract the key. Now the flashing white indication will disappear and red steady indication will appear on the panel.

The CRANK HANDLE KEY thus released is taken by the staff to the required Point Machine. After opening the key hole cover, CRANK HANDLE KEY is inserted & turned which makes opening for the insertion of the crank handle. The point machine now can be operated by rotating the crank handle. After the point is set & locked in the required position by the traffic staff in case of failure or after signal maintainer's work is over and after confirming from the panel ASM on duty the respective steady white point indication on the panel, the CRANK HANDLE KEY is taken to relevant KLR relay Box. CRANK HANDLE KEY is inserted & turned through 90 degree in clock wise and control is returned to the panel. On the panel, the red light will disappear and white flashing light will appear above CH Slot button. The Panel ASM on duty on seeing this, presses and releases CHYRN and WN Slot buttons on the panel and flashing white light will now become steady indicating the return of the crank handle control to Panel.

Panel ASM can now take "OFF" the signal and make a signaled move over the affected point. If the point indication still flashes then the point has to be clamped and padlocked and the ASM on duty has to pilot the train as per G&SR 3.70 for defective points. The Panel ASM himself can take the control back, only if the CRANK HANDLE KEY has not been extracted from KLR. In that case Panel ASM has to press WN 'slot' & 'CHYRN' buttons simultaneously and release them.

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As long as the CRANK HANDLE KEY is out and in case the key is inserted back in 'KLR' and turned but the ASM does not get the control back on the panel after the proper operation of buttons due to the failure of slot circuit itself, signal leading over affected points will be treated as a case of signal failure and trains received / dispatched as per GR 3.68, 3.69, 3.70 G&SR.

Crank handle register have the following columns:

- i) Sr. No.
- ii) Designation of person who required to use the crank handle and the concerned handle key.
- iii) Date & time of removal of crank handle and the crank handle keys.
- iv) Purpose whether for normal maintenance or failure.
- v) Disconnection memo No. if given.
- vi) Signature of the person who removes the crank handle.
- vii) Signature of SS/ASM on duty.
- viii) Date & time of return of crank handle & concerned handle key .
- ix) Details of the use made of the crank handle and crank handle key.
- x) Reconnection memo No. if given
- xi) Signature of the person who returns the crank handle and crank handle key
- xii) Trains passed over disconnected/ defective points giving private number against each item.
- xiii) Signature of the SS/ASM on duty.

8.5 Button Collars :

Six numbers of button collars have been provided on the panel and these should be placed on the signal/control buttons for which the line is blocked.

Button collars must be placed, when running lines is/are occupied obstructed, or fouled, on the slides/ push buttons that work / release the points and/or signals or control as indicated below :

Sr. No.	Running Lines	Stop Collars to be placed on Route Button
1.	UP & DN Main Line No.2	B
2.	UP & DN 1 st Loop Line No.1	A
3.	UP & DN Loop Line No.3	C
4.	Common UP & DN Loop Line No.4	D
5.	Common UP & DN Loop Line No.5	E

9. WORKING OF COLOUR LIGHT SIGNALS:

- a. Normal indication of all running signals is stop (Red) except that of the Distant Signal. The distant signal has Three Aspect & the normal indication of the signal is Caution aspect (Single Yellow). Attention aspect (Double Yellow) this signal is automatically displays in conjunction with the caution aspect for Main line/Loop Line displayed by the home signal ahead.

Clear (Green) of this signal is automatically displays in conjunction with the Clear, aspect for main line displayed by the home signal ahead.

b. Route Indicators :

Position light route indicators have been provided on UP Home and Down Home Signals. The route indicator will display a row of five white light illuminated directing towards the direction of turn out along with the 'Yellow' light indicating that the route is set for diversion and not for Straight-line movement.

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c. Aspect chart :

The aspect of various signals for movements shown is as under:

R	=	Red (Stop)
Y	=	Yellow (Caution)
YY	=	Double Yellow (Attention)
G	=	Green (Clear)
RI/YU	=	Route Indicator.

i. Down Trains :

Down Train Movement from Down Main Line	Down Distant	Down Home	Down Main Starter	Down Advance Starter
	A1	S 1	S 17	S 19
Running through from Down Main Line	G	G	G	G
Stopping on Down Main Line	YY	Y	R	R
Stopping on Loop Line	YY	YU (With Route)	-	-
Stopping on Home	Y	R	-	-
Running through from Down Main Line to LPGCL siding	YY	Y	YU	-

ii. Up Trains :

Up Train Movement from Up Main Line	Up Distant	Up Home	Up Main Starter	Up Adv Starter
	A18	S- 18	S -16	S-2
Running through from Up Main Line	G	G	G	G
Stopping on Up Main Line	YY	Y	R	R
Stopping on Loop Line	YY	YU (With Route Indicator)	-	-
Stopping on Home	Y	R	-	-

10 TRACK CIRCUITS:

Track Circuits designations and their jurisdiction on Main & Loop Line are indicated in the SWR diagram.

11. BOBBING / FLICKERING OF THE SIGNALS:

Whenever signals changes its aspect in succession, shall be treated as bobbing/flickering signal and shall be considered as showing the most restrictive aspect and it should be passed by observing instructions contained in GR 3.68, 3.69, 3.70 & SRs there under.

The SM/ASM on receipt of information of a bobbing/flickering shall record the defect in the failure register and advise SE/JE/ESM concerned immediately to rectify the defect. Such failures should also be reported to the section controller, who will record the same on the chart and take action accordingly.

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12 UNSIGNALLED MOVE OVER ELECTRICALLY OPERATED POINTS:

Whenever any unsignalled move has to be taken place on a point operated by a electric point machines whether in the facing or trailing direction, the SM/ASM on duty shall operate the points to the normal and reverse setting for the purpose of testing the points. After the panel operator has ensured that indication regarding the normal and reverse setting are correctly available normal signaled movements may be permitted over the points. In the event of no indication appearing, the points shall be treated defective and procedure a laid down under SRs 3.77-1 be followed.

13. DESCRIPTION OF SIGNALS:**i) DN distant signal of A1:-**

Normal aspect of the signal is “Caution” aspect (One yellow light)

“**Attention**” aspect (Two yellow light one above the other) is displayed automatically in conjunction with “Caution’ aspect or Caution aspect with Route of DN home Signal S-1.

“**Clear**” aspect is displayed automatically in conjunction with “Clear’ aspect of down home signal number S-1

ii) Down Home signal(S-1): Normal aspect of the signal is Red.

Caution aspect (one yellow light) of the signal is controlled by signal button No. S-1 & Main line route button on the panel.

One yellow light with route indicator of the signal is controlled by signal button No. S-1 and UP & DN loop lines route button on the panel.

Clear aspect is automatically controlled in conjunction with clear aspect of main line starter number S-17.

iii) Down Main line starter(S-17): Normal aspect of the signal is red.

Clear aspect (one green light) of the signal is controlled by SM signal button S-17 and route button DX on the panel in conjunction with clear aspect of down advance starter number S-19.

One yellow light with route indicator of the signal is controlled by signal button No. S-17 and RX route button on the panel.

iii) UP & DN Down loop line Down starter (S-15): Normal aspect of the signal is red.

Caution aspect - One yellow light with route indicator of the signal is controlled by signal button No. S-15 and DX/ UX route button on the panel.

v) UP & DN Down loop line Down starter (S-11): Normal aspect of the signal is red.

Caution aspect - One yellow light with route indicator of the signal is controlled by signal button No. S-11 and DX/ UX route button on the panel.

vi) UP & DN Down loop line Down starter (S-9): Normal aspect of the signal is red.

Caution aspect - One yellow light with route indicator of the signal is controlled by signal button No. S-9 and DX/ UX route button on the panel.

vii) UP & DN Down loop line Down starter (S-7): Normal aspect of the signal is red.

Caution aspect - One yellow light with route indicator of the signal is controlled by signal button No. S-7 and DX/ UX route button on the panel.

viii) Down Advance starter(S-19): Normal aspect of the signal is Red.

Clear aspect is controlled by TKMG side UFSBI block panel in TGT position and also by SM signal button S-19 and route button DZ on the panel.

ix) Up distant signal of A18: Normal aspect of the signal is “Caution” aspect (One yellow light)

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“**Attention**” aspect (Two yellow light one above the other) is displayed automatically in conjunction with “Caution” aspect or Caution aspect with Route of home signal.

“**Clear**” aspect is displayed automatically in conjunction with “Clear” aspect of UP home signal number S-18

- x) **Up Home signal (S-18):** Normal aspect of the signal is Red.
Caution aspect (one yellow light) of the signal is controlled by SM signal button No.S-18 & Main line route button on the panel. One yellow light with route indicator of the signal is controlled by SM signal button No. S-18 and UP & DN loop lines route button on the panel.
Clear aspect is automatically controlled in conjunction with clear aspect of main line starter number S-16.
- xi) **Up main line starter (S-16):** Normal aspect of the signal is Red.
Clear aspect (one green light) of the signal is controlled by SM signal button S-16 and route button UX on the panel.
- xii) **UP & DN loop line UP starter (S-14):** Normal aspect of the signal is red.
Caution aspect (one yellow light) of the signal is controlled by SM signal button S-14 and route button UX on the panel.
- xiii) **UP Advance starter (S-2):** Normal aspect of the signal is Red.
Clear aspect is controlled by BRRRI side UFSBI block panel in TGT position and also by SM signal button S-2 and route button UZ on the panel.
- xiv) **UP & DN loop line UP starter (S-6):** Normal aspect of the signal is red.
Caution aspect (one yellow light) of the signal is controlled by SM signal button S-6 and route button UX on the panel.
- xv) **UP & DN loop line UP starter (S-10):** Normal aspect of the signal is red.
Caution aspect (one yellow light) of the signal is controlled by SM signal button S-10 and route button UX on the panel.
- xvi) **UP & DN loop line UP starter (S-12):** Normal aspect of the signal is red.
Caution aspect (one yellow light) of the signal is controlled by SM signal button S-12 and route button UX on the panel.
- xvii) **LPGCL UP Home signal (S-20):** Normal aspect of the signal is Red.
Caution aspect (one yellow light with route indicator) of the signal is controlled by SM signal button No.S-20 & Main line route button/UP & DN loop lines button on the panel.
- xviii) **LPGCL Down Advance starter(S-13):** Normal aspect of the signal is Red.
Caution aspect (one yellow light with route indicator) of the signal is controlled by SM signal button No.S-13 and route button RZ on the panel

14(a) AXLE COUNTERS ARE INSTALLED IN BLOCK SECTION.

- i) Between BRRRI DN advance starter Signal to UP advance starter Signal UDPR (BXT1 UDPR –BRRRI & BXT2 UDPR –BRRRI)
- ii) Between UDPR DN advance starter Signal to UP advance starter Signal TKMG (BXT1 UDPR – TKMG & BXT2 UDPR – TKMG)

14.(b) FUNCTION OF AXLE COUNTER IN BLOCK SECTION :-

- (a) In lieu of the conventional Track Circuits for the running line between BRRRI – UDPR & UDPR–TKMG block section, Axle counter have been provided. Indication for the occupation and clearance of Axle counters are given on the indication panel. These indications show green/white light when portion of the block section is clear and RED light when the train is occupied or when the axle counter equipment has failed.

When the Axle counter equipment controlled the Axle counter section fails, the SM UDPR will advise to SM- BRRI & TKMG accordingly, supported by private number and obtain his confirmation supported by private Number in regard to the complete arrival of the last train and the clearance of the block section between block section. Then SM- UDPR & SM-BRRI, SM/TKMG will simultaneously operate the relevant cooperative button and normalize the Axle counter section, and then a green indication will appear, every operation of the resetting buttons is recorded in the counter provided for the same in the reset box.

- (b) The SM on duty at UDPR shall make relevant entry for every resetting operation in the register provided for this purpose, which will require the following particulars to be recorded :-
- (i) Date, Time & train No. for which re-setting of the Axle counter has to be done.
 - (ii) Reading of the counter before re-setting.
 - (iii) Reading of the counter after re-setting.
 - (iv) Number and description of the last train dispatched from the station after which the Axle counter equipment has failed.
 - (v) Date and time the train cleared the section.
 - (vi) Private number received from SM of station in advance in token of the clearance of block section.
 - (vii) Signature of SM on duty re-setting the Axle counter.
- (c) If the Axle counter equipment cannot be reset, the ASM will issue a message to ESM about the failure undersign a copy to SE/JE(M)/ESM .
- (d) If the re-setting button is required to be operated by the ESM for the purpose of the maintenance or testing etc, the entries must be made in the counter register and jointly signed by the S&T staff and S.M. on duty.
- (e) It must be ensured that, lorries/Motor Trollies & push trollies are invariably worked either obtaining specific permission of the SM on duty under clear memo.
- (f) The SM on duty should reset Axle counter only when trollies /Lorries have been removed 'Off' the track and removal will be confirmed by the officer-In-Charge of trolley in writing.

Movement to the insulated Axle of the trollies will not be effect the function of Axle Counter.

NOTE:- Last reading of the resetting counter must be entered on Train Register by the SM on duty while handing over taking over charge.

15 GENERAL INSTRUCTIONS:

(a) Passage of train when points are defective:

- (i) When an electrically operated motor point fails to respond to the panel operation the SS/ASM first set the point to the last operated position and depute a Points-man to find out if any obstruction is lying between the tongue and stock rails.
- (ii) The Points-man on arrival at the concerned point will look for any obstruction between the stock and switch rails at both ends in case of cross over point and remove the same if found & display alright signal to the SM/ASM on duty to set the point by waving and arm by day or white light by night across the body. In case no obstruction has found the Points-man will display hand danger signal.

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- (iii) On receipt of an all right signal from Points-man the SM/ASM will set the points to the required position. If the point still fails to respond or on receipt of hand danger signal from Points-man the SM/ASM will remove the crank handle and the concerned handle key, proceed to the defective point and set the same in the required position. He will then proceed to the station and authorize the move.

Note: While setting a cross over point from normal to reverse provided with motors on both side care should be taken to set the end marked 'A' first and then set the other end marked 'B' later. Similarly while setting from reverse to normal, End marked 'B' should be first set and then end marked 'A' later.

(b) Passage of trains when points are disconnected:

While the S&T staff is attending to disconnected defective points and traffic has to be passed over them, the SM/ASM on duty will proceed to the concerned points with the object of setting the points in the required position for the move. The SM/ASM will also take with him special register opened for the purpose in which an entry of the move will be made and the Signature of S&T staff attending to the points will be obtained against that entry as a assurance that the S&T staff has agreed to the move. The SM/ASM on duty will also sign against that entry. After the both end points have been set, clamped and padlocked for the contemplated move by the SM/ASM. He will retain the padlock keys in his personal custody and then returned to the station for undertaking the move. After the passage of traffic the SM will return the padlock keys to the S&T staff to continue their work on points.

- (c) Whenever a Motor Trolley or any other light vehicle is to be passed over a crossover controlled by a particular track circuit, SM on duty must in addition to watching track indication on the control panel ensure through visual verification also that the vehicle has cleared the concerned track circuit and has entered the next track section which can be verified from the control panel before interfering with the points set for the movement or before permitting any other movement on the affected lines.
- (d) Button Collars have been provided and these should be placed on the route buttons of the line which is blocked.

16A. WORKING OF BLOCK PROVING AXLE COUNTER PANEL BLOCK

Instrument between SM- UDPR-BRRI and UDPR-TKMG For the purpose of line clear working UFSBI Block Proving Axle counter panel block instruments have been provided between SM UDPR-BRRI & UDPR-TKMG.

These block panels are provided with various push buttons, keys, indicators, counters and buzzers. Their nomenclature and functions are detailed below.

i) PUSH Buttons

Push Button	Functions
BELL	(i) To transmit BELL codes (ii) To take Line clear, when pressed along with TGT button (iii) To cancel Line Clear when pressed along with CANCEL button
TRAIN GOING TO (TGT) RED	Station Master of dispatching station operates it along with bell button. When TGT button is pressed along with bell button, by the station which is dispatching a train, the block panel of that station gets green TGT indication. Simultaneously, the Block panel of the receiving station gets GREEN TCF indication.

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CANCEL YELLOW IN COLOUR	It is operated along with 'Bell' button to enable cancellation of 'Line Clear' condition if the train has not entered the block section or after the train has pushed back to the station in rear. This operation for cancellation of Line clear is done by the train receiving station.
CANCEL CO-OP. GREEN IN COLOUR	It is operated by train dispatching station for extending cancel co-operation to train receiving station.
CANCELL ATION COUNTER	To register cancellation of Line Clear.
ACKN. BLACK IN COLOR	It is operated to acknowledge the section occupied or section free condition. It mutes the SECTION OCCUPIED/FREE buzzer.

ii) Description of Keys :

Key	Functions
S.M. Key	This key when taken out prevents the following operations: i) Transmission of BELL Code operations: ii) Transmission of Line Clear enquiry request. iii) Cancellation of line clear
MAINTENANCE BACK COVER LOCK KEY	A lock is provided at the back of block panel for maintenance purpose. To open or lock the back cover by authorized signal staff for maintenance or repairs, Provided SM's back cover lock key.
SM's BACK COVER LOCK KEY	For double lock arrangement of a lock on the back of Block Panel is provided which can be operated by key kept in the custody of Station Master.
SHUNT RELEASE KEY	Shunt Release key (normally OUT) The following operation is possible when IN a) To take out SHUNT KEY from electric key transmitter (EKT).which serves as tangible authority for driver to shunt beyond last stop signal upto first stop signal. b)The following operation are not possible when IN i) To take line clear ii)other side station to take line clear iii)closing of block iv)To take off the last stop signal

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iii Description of Indicators :

Indicators	Function
'LINE CLOSED'	Circular indication in between directional arrowhead. In lit condition (yellow), it indicates that section is free from vehicles & Line Clear has not been granted or received.
TRAIN COMING FROM GREEN FLASHING GREEN	<p>Its shape is directional arrowhead pointing downwards for incoming traffic at train receiving station and a rectangular indication named TCF.</p> <p>To indicate LINE CLEAR granted, when TRAIN GOING TO button and BELL button have been pressed at sending station and conditions for granting line clear at receiving station has been complied with.</p> <p>To indicate</p> <p>(a) Line Clear has been withdrawn before the entry of train in block Section or,</p> <p>(b) Block Section has cleared after the arrival of train, but associated signals & their controls have not been put to normal at either of the stations.</p> <p>(c) Block section is cleared after arrivals of train, associated controls are normal at both the stations but after unintentional insertion of shunt key 'IN' in the sending section when the train was in the section.</p>
TOL INDICATION RED	<p>In a directional arrow head pointing upward and rectangular indication for outgoing traffic of the train sending station</p> <p>To indicate TRAIN ON LINE on entry of incoming train on LINE CLEAR</p>
'TRAIN GOING TO' GREEN FLASHING GREEN	<p>In a directional arrow head pointing upwards for outgoing traffic at train sending station and a rectangular indication named TGT.</p> <p>To indicate LINE CLEAR received, when TRAIN GOING TO button and BELL button have been pressed at sending station and the conditions for taking line clear have been complied with at both stations.</p> <p>To indicate:</p> <p>(a) Line Clear has been withdrawn before the entry of train in Block Section or,</p> <p>(b) Block Section has cleared after the arrival of train, but associated signals & their controls have not been put to normal at either of the stations.</p> <p>(c) Block section is cleared after arrivals of train, associated controls are normal at both the stations but after unintentional insertion of shunt key 'IN' in the sending section when the train was in the section.</p>

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TOL INDICATION RED	In a directional arrow head pointing upward and rectangular indication for outgoing traffic of the train sending station To indicate TRAIN ON LINE on entry of outgoing train on LINE CLEAR
CANCELCO- OPERATION INDICATION YELLOW	Indication to indicate co-operation extended by station at other end for cancellation of line clear by pressing cancel cooperation button
CANCEL INDICATION FLASHING YELLOW STEADY YELLOW	Circular LED To indicate progress of LINE CLEAR cancellation timer of 120 seconds. The indication lights up on pressing of CANCEL button along with bell button in presence of Cancel co-operation indication, WHEN TRAIN COMING FROM displays with FLASHING GREEN indication To indicate Cancellation timer matures but due to some reason the system does not go to line closed.
LINE FREE GREEN	An indication is provided near the arrowhead indication to show block section is clear of vehicles
SNKE (LOCAL) YELLOW	Two such indications are provided i) SNK: Yellow indication provided near TRAIN GOING TO directional arrowhead to indicate LAST STOP SIGNAL and its control at ON/Normal ii)SNK: Yellow indication provided near TRAIN COMING FROM directional arrowhead to indicate Home signal and its control at ON/Normal
SNKE (OTHER END) YELLOW	i) Provided near TRAIN COMING FROM directional arrow head to indicate LAST STOP SIGNAL, Reception signal and its control at ON/Normal ii) Shunt Key of EKT at other station is 'IN' and Shunt release key in SM block panel is 'OUT'
LAST STOP SIGNAL RED GREEN	Circular in monogram signal. To indicate LAST STOP SIGNAL is 'ON' To indicate LAST STOP SIGNAL is 'OFF'
LINE OCCUPIED INDICATION RED	An indication is provided near arrowhead indication to show block section is occupied or axle counter is failed.
SM KEY (IN) GREEN	Indication near SM Key To indicate SM Key IN
SHK-IN/OUT	It has two indications, GREEN indicates Shunting key has been taken out and RED indicates shunting key has been extracted.
TRAIN ACKNOWLEDGE MENT IN/OUT	An indication near ACKN button this is lit up (yellow) at the time of train entry into and exit from the Block Station Section. It remains lit until acknowledged.
UFSBI/MUX OK indication	GREEN when UFSBI is OK otherwise extinguished

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UFSBI/MUX FAIL indication	RED when UFSBI goes into a failure mode otherwise extinguished.
Communication LINK FAIL indication	Steady YELLOW when LINK between two UFSBI's FAILS else flashing.

(iv) **Description of Counters :**

Counters	Functions
CANCEL Line Clear	It keeps a record of cancellations of Line clear when train has not entered Block section or when a train has been pushed back.

(v) **Description of Buzzers :**

Counters	Functions
BLOCK Bell	It gives signal as per BELL Code sent by SM of the station at the other end of block section
SECTION Buzzer	It is an audible signal which informs the SM that the train has either occupied or cleared the block section.

(B) **WORKING OF SINGLE LINE DUAL BLOCK PROVING AXLE COUNTER PANEL BLOCK INSTRUMENTS FOR DISPATCHING TRAINS UDPR-BRRI & UDPR-TKMG:-**

Whenever a train is to be dispatched from UDPR to BRRI/TKMG, the ASM on duty at UDPR shall ask 'line clear' from SM on duty at BRRI/TKMG and shall inform SM on duty at BRRI/TKMG, the trains & its description supported by his Private Number, requesting for granting 'line clear'. Making suitable entries in the train register, ASM on duty at BRRI/TKMG will grant verbal line clear supported by his private number after ensuring that all the conditions for granting line clear are fulfilled.

On getting this verbal permission supported by Private Number from ASM BRRI/TKMG, the ASM on duty at UDPR shall press the 'BELL' button and 'TGT' button on his block panel simultaneously. As soon as the buttons are pressed as mentioned above, the 'LINE CLOSED' indication disappears and the relevant arrowhead indication with green lights appears on the block panel at both the ends i.e. 'TGT' at UDPR, and TCF' at BRRI/TKMG will be illuminated. The 'LINE FREE' indication at both the ends will continue to exhibit green lights as usual, indicating that the block section is still clear.

After setting of route for Dispatch of an UP train/DN train, ASM/UDPR on duty shall Take "OFF" the Starter & Advanced starter Signal. As soon as the train occupies the block section, the Directional arrowhead indications and 'LINE FREE' indication turn red at both stations. SECTION buzzer starts ringing and also TGT, TCF indication turns to RED of block panel at UDPR, BRRI/TKMG respectively. To stop the buzzer ASM on duty shall press the ACKN button.

After this, ASM BRRI/TKMG shall take "off" the UP/DN Home signal. When the train clears the block section, SECTION buzzer starts ringing and 'TRAIN COMING FROM' indication turns to flashing green at BRRI/TKMG.

To stop the buzzer at BRRI/TKMG, ASM on duty shall press ACKN button 'LINE FREE' indication turns green, 'SECTION' buzzer starts ringing and 'TRAIN GOING TO' indication turns to flashing green at UDPR. ASM on duty at UDPR acknowledges the buzzer by pressing ACKN button. 'TRAIN GOING TO' indication disappears and LINE CLOSED indication appears at UDPR.

When all the controls pertaining to reception of train at BRRI/TKMG are normalized, SNKE (Local) indication appears, TRAIN COMING FROM indication disappears and LINE CLOSED indication appears. At UDPR also TRAIN GOING TO indication disappears and LINE CLOSED indication appears on the block panel.

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(C) WORKING OF SINGLE LINE DUAL BLOCK PROVING AXLE COUNTER PANEL BLOCK INSTRUMENT FOR RECEPTION OF TRAINS BRR/TKMG to UDPR :-

When a request for granting 'line clear' is received from ASM- BRR/TKMG, for particular train supported by his Private Number, the ASM on duty at UDPR shall note down the particular in the train register and after satisfying himself that conditions for granting 'line clear' indicated on the block panel are complied with, shall grant verbal line clear supported by his Private Number.

On getting this verbal permission supported by Private Number from ASM/UDPR, the ASM on duty at BRR/TKMG shall press the 'BELL' button and 'TGT' button on his block panel simultaneously. As soon as the buttons are pressed as mentioned above, the 'LINE CLOSED' indication disappears and the relevant arrowhead indication with green lights appears on the block panel at both the ends i.e. 'TGT' at BRR/TKMG, and TCF' at UDPR will be illuminated. The 'LINE FREE' indication at both the ends will continue to exhibit green lights as usual, indicating that the block section is still clear.

After this ASM BRR/TKMG shall take off the UP/DN Advanced Starter. As soon as the train occupies the block section, the Directional arrowhead indications and 'LINE FREE' indication turn red at both stations. SECTION buzzer starts ringing and also TGT, TCF indication turns to RED of block panel at BRR/TKMG & UDPR respectively.

To stop the buzzer ASM on duty shall press the ACKN button. After setting of route for reception of UP/DN train, ASM/UDPR on duty shall take off the UP/DN Home Signal. When the train clears the block section, SECTION buzzer starts ringing and 'TRAIN COMING FROM' indication turns to flashing green at UDPR. To stop the buzzer at UDPR ASM on duty shall press ACKN button. 'LINE FREE' indication turns green, 'SECTION' buzzer starts ringing and 'TRAIN GOING TO' indication turns to flashing green at BRR/TKMG. ASM on duty at BRR/TKMG acknowledges the buzzer by pressing ACKN button. 'TRAIN GOING TO' indication disappears and LINE CLOSED indication appears at BRR/TKMG. When all the controls pertaining to reception of train at UDPR are normalized, SNKE (Local) indication appears, TRAIN COMING FROM indication disappears and LINE CLOSED indication appears. At BRR/TKMG also TRAIN GOING TO indication disappears and LINE CLOSED indication appears on the block panel.

BLOCK BACK OPERATION:-

The SM, who intends to Block back the line, shall inform the SM of station at other end on telephone for permission to Block Back, who will acknowledge the message supported by private number. SM puts the shunt release key in SM Block panel to 'IN' and takes SHUNT key of EKT OUT and hand over to Loco pilot of the train being block backed to perform shunting in block section.

On completion of shunting, section clear message will be sent to SM of station at other end on telephone about obstruction removed supported by private number. Thereafter SM will insert shunt key of EKT and turn to IN position and takes out the shunt release key.

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PUSH BACK OPERATION

After the train has been pushed back into train sending station following action appears-

SENDING STATION	RECEIVING STATION
Train clears the block section, LINE FREE indicator turns GREEN. Section BUZZER starts ringing. ACKN indicator lights up	Train clears the block section, LINE FREE indicator turns GREEN. Section BUZZER starts ringing. ACKN indicator lights up
TRAIN GOING TO arrowhead indication turns to FLASHING GREEN	TRAIN COMING FROM arrowhead indication turns to FLASHING GREEN
Acknowledges the buzzer by pressing ACKN button. ACKN button turn off.	Acknowledges the buzzer by pressing ACKN button. ACKN button turn off.
Advises receiving end station SM about cancellation on telephone after prescribed call attention buzzer.	Agrees to request, ensures SNK indicator YELLOW, SNOEK indicator YELLOW, SHUNT KEY indicator GREEN and gives consent on telephone
After verbal consent from other end SM to ensure SNK indication yellow, shunt key indication green, presses CANCEL CO-OP button and releases on receipt of call attention buzzer	CO-OP to light up yellow, press BELL & CANCEL button with SM key IN. CANCEL COUNTER INCREMENTS. CANCEL indication lights up FLASING YELLOW & continues flashing for 120 seconds
TRAIN GOING TO arrowhead turns off, LINE CLOSED INDICATION lights up.	On expiry of 120 seconds. TRAIN COMING FROM arrowhead indication and cancel indication turns off. LINE CLOSED INDICATION LIGHTS UP

Sequence of Operations of Signaling a train between two stations.

If the block section is clear and the 'LINE CLOSED' indication is displayed on block panel at both the stations, the action is taken by the sending station SM as under:

SENDING STATION	RECEIVING STATION
SM ensures LINE CLOSED indication YELLOW, SNK indication YELLOW, SNOEK indication YELLOW, LINE FREE indication GREEN UFSBI / MUX OK indication GREEN Communication Link fail Extinguished SM inserts SM key & turn to IN. a) SM sends 'Call Attention' signal to receiving station by pressing BELL button	SM inserts SM key & turn to IN SM acknowledges the 'Call Attention' signal by pressing BELL button.
SM sends 'Attend Telephone' signal by pressing BELL button	SM Acknowledges the Pressing BELL button and attends Telephone.

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<p>SM attends telephone and advises station in advance the about the intended movement of the train on telephone & asks for LINE CLEAR</p>	<p>d) Exchanges information regarding train movement and ensures LINE CLOSED indication YELLOW, SNK indication YELLOW, SNOEK indication YELLOW, LINE CLEAR indication GREEN, UFSBI / MUX OK indication GREEN, Communication link fail flashing & Turn LCB Key IN e) Grants verbal LINE CLEAR</p>
<p>SM presses BELL & TRAIN GOING TO until 'TRAIN GOING TO' arrowhead indication lights up GREEN. (If aforesaid indicator does not appear after 3 sec. (Aprox) of pressing the buttons, SM releases the button & rechecks conditions at his station and asks station at other end to recheck the conditions for granting of LINE CLEAR).</p>	<p>'LINE CLOSED' indicator turns off and 'TRAIN COMING FROM' arrowhead indications lights up GREEN.</p>
<p>'LINE CLOSED' indicator turns off 'TRAIN GOING TO' arrowhead indication lights up GREEN. Release BELL & TRAIN GOING TO buttons</p>	
<p>Take LSS to 'OFF' Train enters the block section LSS replaces to 'ON' LINE OCCUPIED indicator turns to RED. SECTION buzzer sounds & 'TRAIN GOING TO' arrowhead indication turns RED. ACKN indication lights up. Acknowledges the buzzer by placing ACKN button. ACKN indications turn 'OFF'. Push back the LSS control to Normal. Ensures SNK Lights up YELLOW.</p>	<p>LINE OCCUPIED indicator turns to RED. SECTION buzzer sounds & 'TRAIN COMING FROM' arrowhead indication turns RED. ACKN indication lights up. Acknowledges the buzzer by placing ACKN button. ACKN indications turn 'OFF'. SNK Lights up YELLOW. Takes reception signal 'OFF' to receive the train. Train passes Home Signal. Home Signal replaces to 'ON' Train Clears the Block Section including Block Overlap</p>
<p>SECTION buzzer sounds. ACKN indication lights up YELLOW. LINE FREE indicator turns to GREEN. TRAIN GOING TO arrowhead indication turns to FLASHING GREEN. Acknowledge the buzzer by pressing ACKN button. ACKN indications Turns OFF.</p>	<p>SECTION buzzer sounds. ACKN indication lights up YELLOW. LINE FREE indicator turns to GREEN. TRAIN COMING FROM arrowhead indication turns to FLASHING GREEN. Acknowledge the buzzer by pressing ACKN button. ACKN indications Turns OFF.</p>

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<p>SNOEK indication lights up YELLOW. 'TRAIN GOING TO' arrowhead indication turns 'OFF'.</p> <p>LINE CLOSED indication lights up.</p>	<p>Replaces all controls pertaining to reception of train to normal.</p> <p>SNOEK indication lights up YELLOW. 'TRAIN COMING FROM' arrowhead indication turns 'OFF'.</p> <p>LINE CLOSED indication lights up.</p>
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16(C) Working of Block proving Axle Counter:-

(A) FAILURE OF DIGITAL AXLE COUNTER:

- (i) When at reset box **clear (Green) LED** indication is available but block section including its overlap is not clear.
- (ii) When at reset box **occupied (Red) LED** indication is available but block section including its overlap is clear
- (iii) When at reset boxes "No" indication is available.

(D) RESET BOX FOR RESETTING DIGITAL AXLE COUNTER:

1. Green (large) indication shows the clearance and Red (large) indication shows occupations the block section on reset box of digital axle Counter provided at station, separate reset boxes are provided for UP & DN line of a block section and a reset - operation button (one) for each digital axle Counter.
2. On reset box one reset key/ lock (key insert, press and turn). One reset push and an electrical counter (for counting the number of reset attempts carried out) has been provided. The reset box of the digital axle counter also provides an indication near.

FOLLOWING INDICATIONS ARE SHOWN ON RESET BOX:

- | | |
|---|--|
| <p>A Block section clear</p> <p>B Block section occupied</p> <p>C 24V Electrical supply available for axle counter</p> <p>D Axle counter is in preparatory reset mode (when axle counter has failed and resetting attempted at both the ends.</p> | <p>Green LED (Large size)</p> <p>Red LED (Large size)</p> <p>Yellow LED (Small size)</p> <p>Green LED (Small size)</p> |
|---|--|
3. Glowing of Green LED (small) indication indicates Digital axle counter after failure has been re-setted by inserting (turning and pressing the) key with reset button at both the ends with the glowing of this indication Green **LED (small)** along with flickering of 24 V supply indication **yellow LED (small size)** indicate the axle counter is in preparatory reset mode. As the digital axle counter is in preparatory reset mode, hence the last stop signal can be taken to OFF position.
As this train passes the Home signal at receiving end and clears the block section with overlap track circuit, the Green LED (large) will glow and the Green LED (small) along with the Red LED (large) extinguishes which indicate the clearance of block section. Normal working for following train will be introduced.
 4. The counter increments by one count, every operation of resetting should be recorded in separate register as per the columns indicated below:

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- i. Serial No.
- ii. Date and Time.
- iii. Failed after the train number.
- iv. First train which was passed on PLC/ T369 (3b).
- v. Counter reading (prior to resetting)
- vi. Counter reading (after resetting)
- vii. First train which passed on proper line clear after normalization of axle counter.
- viii. Signature of on duty Station Master reset-operation done.
- ix. Remarks of SSE/JE (Sig).

1. NOTE:

No resetting of axle counter to be done if section is occupied or is going to be occupied. This must be ensured by on duty Station Master.

2. SSE/JE Sig and ESM must ensure the replacement with same size LED if the same gone defective.

RESETTING PROCEDURE OF DIGITAL AXLE COUNTER:-

Resetting of digital axle counter is required to be carried out when Red LED (large) indication for occupied position remain glowing at resetting box of digital axle counter at station even after complete arrival of UP/DN train or after block back/block forward movement or with no train entering in the block section, notices that the digital axle counter has failed. The SM on duty shall ensure complete arrival of train as well as clearance of block section including its overlap for the particular block section line. Then both receiving end SM and dispatching end SM shall carry out the resetting process as under (clearance of block section including its overlap from a train/obstruction shall be certified by the following means).

By watching LV Board /Tail lamp by Station Master as per GR 4.17.

By checking train signal register for last through train passing the station and description and details of the last preceding train received completely from SM's of next block section and also from section controller. The certification of complete arrival of the last preceding train will be supported with exchange of private number by on duty SM with SM of next block section/section controller.

After above certification, following procedure will be adopted for resetting of digital axle counter.

RESETTING OF DIGITAL AXLE COUNTER

SN	RECEIVING END STATION MASTER	SN	DISPATCHING END STATION MASTER
1	Call attention beat to be transmitted.	2	Acknowledge the call attention.
3	Attend block telephone.	4	Block telephone attended.
5	After complete arrival of train information for failure of axle counter to be given.	6	Acknowledge the information.

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7	On duty ASM/SM after verified the complete arrival of last train and will convey his intention to reset, the axle counter of the concerned block line to dispatching end ASM. In support of this he will exchange private number.	8	He will acknowledge and exchange private number in confirmation and intimation for intension of resetting of axle counter at his end also.
9	On duty stationmaster will insert the resetting key, turn and press along with the reset button. he will release the reset button only after telephonically verification from other end ASM for having done reset operation this will cause increment of electrical counter by one number for each reset operation, with completion of reset operation reset indication glows green led(small) on the reset box.(which indicate axle counter is in preparatory reset mode.)	10	On duty stationmaster will insert the resetting key, turn and press along with reset button. he will release the reset button only after telephonically verification from other end ASM for having done reset operation this will cause increment of electrical counter by one number for each reset operation, with completion of reset operation reset indication glows green led (small) on the reset box. (which indicate axle counter is in preparatory reset mode.)
11	On duty Station Master will take out the key and keep in his safe custody	12	On duty Station Master will take out the key and keep in his safe custody
13	On duty Station Master will confirm the complete arrival and clearance of block section including overlap by watching tail lamp/tail board of the train, which was sent on proper signal by sending end and exchange private number.	14	On duty Station Master will exchange the private number with station master on duty at receiving end station in confirmation of complete arrival of train at receiving station and also that now the section is clear.
15	On duty Station Master will watch the block section clearance indications available i.e. green led (Large), preparatory reset mode indication glows led (small) disappears, occupation indication red led (Large), disappears and repeat them to other end station master.	16	On duty Station Master will watch the block section clearance indications available i.e. green led (Large), preparatory reset mode indication glows led (small) disappears, occupation indication red led (Large), disappears and repeat them to other end station master.

- (i) First train will go on PLC.
- (ii) When Red LED (large) extinguishes and Green (large) glows normal working is to be introduced. The block instruments is electrically controlled in such a way that ‘Train On Line’ position cannot be turned to line closed position unless whole of train passes home signal and clears not only the block section, but overlap section also and track circuit/ axle counter shows clear indication also. The free indication provided near the block instrument appears with the clearance of block section with overlap track circuit/Axle counter. After getting the “free indication“ of block instruments can be brought from train on line position to line closed position.
- Normal working of following trains will be introduced. If after adopting the above method for resetting the digital axle counter, axle counter does not go in preparatory reset mode.

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WORKING OF AXLE COUNTERS IN REDUNDANCY MODE FOR BLOCK PROVING AND BLOCK WORKING BETWEEN UDPR-BRRI SECTION AND UDPR-TKMG SECTION: -

Block working between UDPR-BRRI AND UDPR-TKMG has been achieved through two Axle Counters for each track section. This is achieved by providing two Axle Counters having own Resetting Boxes.			
DIGITAL AXLE COUNTER FOR DUAL DETECTION having single track sections in UDPR-BRRI AND UDPR-TKMG Section without provision of IBS.			
Axle Counters provided in (UDPR - BRRI) with one Track sections.	BXT 1 (UDPR-BRRI)/ BXT2 (UDPR-BRRI)	Detection for track section is provided from foot of Advance Starter signal to 180m ahead of Home Signal of station in ahead.	
Axle Counters provided in (UDPR - TKMG) with one Track section.	BXT 1 (UDPR-TKMG)/ BXT2 (UDPR -TKMG)	Detection for track section is provided from foot of Advance Starter signal to 180m ahead of Home Signal of station in ahead.	

Working of dual detection digital axle counter in parallel to another digital axle counter installed between foot of DN Advance starter signal of UDPR station to DN home signal of TKMG station & it's overlap and between foot of UP Advance starter signal of UDPR station to UP home signal BRRI station& it's overlap.

The Dual Detection Axle counter provided in UDPR-BRRI section is nominated as BXT 1 (UDPR-BRRI) for main mode axle counter and BXT 2 (UDPR-BRRI) for redundancy mode axle counter. Similarly Dual Detection Axle counter provided in UDPR-TKMG section is nominated as BXT 1 (UDPR-TKMG) for main mode axle counter and BXT 2 (UDPR-TKMG) for redundancy mode axle counter. Both axle counters i.e main and redundancy will work independently. Indication for each track section has been given separately over the indication cum resetting panel of each axle counter provided at operating cum indication panel at both end of stations. The occupancy and clearance of each track section is shown over this indication cum resetting panel. Each track section shall be treated as Clear if green indication exists on either of the track section on indication cum resetting panel. And each track section shall be treated as occupied if red indication on the both of the track section on indication cum resetting panel of axle counters.

In case, any track section of any of the axle counter has failed after passage of any train and it is showing "Occupied" (Red indication) status over the SM's resetting panel and other axle counter of same track section is showing "Clear" status, the failed axle counter will be automatically resetted by the "Clear" status of other axle counter of same track section and failed axle counter will come in preparatory reset mode and preparatory indication (Small green indication) will be lit on resetting box. After coming in preparatory reset mode the failed axle counter will show the "Clear" status (green indication) after complete passage of first passing train over that track section. If after the complete passage of first train passing over the failed track section of axle counter does not show the "Clear" status (green indication) on duty SS/SM will advise to S&T staff to attend the failure of failed axle counter.

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PROCEDURE FOR RE-SETTING OF AXLE COUNTER

RE-SETTING OF AXLE COUNTER

In the station master's offices Re-set box for re-setting of axle counter is provided for proving the occupancy of trains in block section on either end of stations.

- A 1. In case of sections provided without IBS working i.e. (UDPR-BRRI) & (UDPR-TKMG) block section are provided with one track section.
- B 2. UDPR-BRRI BXT2 & UDPR-TKMG BXT2 are used for redundancy mode.

C RE-SETTING OF AXLE COUNTER WILL BE AS FOLLOWS:-

- D (a) Axle Counter should reset in preparatory mode only
- (b) Line verification box should be dispensed with.
- (c) A working Axle counter will auto reset a failed Axle Counter after 10 Seconds.
- (d) When both Axle Counter have failed, manual resetting by station master will be done in addition to informing S&T maintenance staff.
- (e) On manual resetting, both the Axle Counter should reset to preparatory mode simultaneously.

17 DOUBLE LOCK ARRANGMENT ON RELAY ROOM

17.1 The Relay Room is provided with double lock. The key of one lock will remain in the custody of SM/ASM on duty while the key of other lock will remain in the custody of ESM. The SM/ASM on duty will handover the key to the maintainer on demand whenever he visits for maintenance. ASM on duty will ensure that the key is returned to him after maintenance.

17.2 A register to record the transaction of Key on proper proforma will be maintained by the ASM/SM on duty.

- [a] Whenever the relay room is to be opened, the JE/SE/ESM ON DUTY will take the key from the SM/ASM on duty making relevant entries in the relay room register maintained at the station.
- [b] On completion of work, the relay room will be locked up and the SM's key handed over to the SM on duty. Necessary entries must be completed in the relay room register.
- [c] The relay room register shall contain the following columns:
 - i) Date.
 - ii) Time the key taken.
 - iii) Signature of SM/ASM on duty.
 - iv) Signature of S&T Officials.
 - v) Time key handed over.
 - vi) Time locked by SM/ASM on duty.
 - vii) Signature of the SM/ASM on duty.
 - viii) Signature of S&T Officials.
 - ix) Remarks.

18. S&T REGISTER: - The following S&T registers are kept at the station in the custody of SM/ASM. Signal Inspection & failure register SM/ASM on duty will record the signaling failures in appropriate columns. The following will be under the custody of S&T officials.

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- i) Signal History Register: - S&T staff will make entries in the book.
- ii) Signal Maintenance Book: - It will be filled by the maintainer on their visit.

19. POWER SUPPLY EQUIPMENT AND POWER SUPPLY FAILURES:

(A)i) Normally all the signalling circuits are fed and worked by AT power supply, local power supply & generator power supply from the distribution board provided in the ASM office. An illuminated red pilot lamp fitted on the switch board in the ASM's office indicate that the AT power supply & local supply is available. The above red pilot lamp when extinguished will indicate that AT power supply or local power supply has failed. In the event of AT supply failure, auto change over panel will automatically transfer the load on to local power supply and if local power supply also failed then the auto change over panel will automatically transfer the load on to the generator power supply, SM will start the generator and extend the supply.

(ii) An auto change over panel provided in SMs room will display availability of power supply in following order-

- i) AT Power supply.
- ii) Local Power supply.
- iii) Power supply of generator

And changeover will take effect in this order only. However if auto change over system fails to work then ASM on duty will attempt manual change over by the switch provided on auto changeover panel.

(iii) When the AT supply & local supply are not available ASM will start the Generator and extend the supply.

(iv) After the above operation of the switch when the AT supply or local supply restored the generator should be stopped as per the instructions for starting and stopping of the Diesel Generator.

(v) FAILURE OF PANEL INDICATION :-

SM/ASM on duty on power supply panel should check whether AT power supply or local power supply is available or not. The same can be checked on the indication provided on the power supply panel provided in the ASM's Office. In case of AT power supply or local power supply is not available. He will operate the Diesel Generator provided at the station for normal working on the power supply panel. In case of AT power supply or local power supply and generator supply are not available due to any defect and operating VDU is blank, no normal operation from the VDU shall be done. Points shall be clamped and movements will be done as per G & SR 3.77 in a non-interlocked yard.

(vi) GENERAL INSTRUCTIONS :-

In case of Neon Lamp on the board remaining permanently extinguished showing non availability of the normal supply. ASM on duty will arrange to inform the SE/JE (Electrical), TPC & ESM of the section through XR/Control message for attending the equipment with copies to JE (E) & SE(S) of the section.

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(vii) INSTRUCTIONS TO START AND STOP THE DIESEL GENERATOR:-

Start/Stop push button for the generator has been provided in generator room. Green button to be pressed to start the generator and red button to be pressed for stopping the same.

ASM on duty can start or stop generator set as per requirement by observing power supply indication on the auto change over panel.

- (B)** If the power supply is uninterrupted for more than 3 days a test run of the engine should be carried out on load and if it fails to run, the matter should be reported to JE/SSE/Signal of the Section immediately by XR Telegram.
- (C)** The Station Master on duty should check up daily the diesel oil level in the tank and lubricating oil level in the diesel engine by means of the indicator (Dip Stick) provided for the purpose. If diesel oil or mobil oil level falls below the mark given on the dip stick he will get the required oil filled in by his staff up to required level.
- i.** Signal lights are normally lit by power available from AT power supply. In the event of failure of AT or commercial power supply the Signal Lamps are lit by means of Stand by Diesel Generator.
- ii** In the case of AT or commercial supply failure, the SM with the help of Points man will change over the Switch to Generator side and start the D.G. set in the Generator room.
- iii** If the Signals get extinguished due to any reason whatsoever after the permission has been granted and the train has left the Station in rear, the SM shall depute a competent Railway Servant with necessary hand signal/detonators as required to warn the Drivers of approaching trains about the location of unlit stop signals and arrange to pilot the train as per the extent rule.
- iv** When the AT or commercial supply is restored, the Generator should be stopped.
- v** Diesel Oil will be filled in the Generators and suitable entry made in the log book by S.M. The S.M. on duty will also maintain record of the use of 'Diesel Generator in the log book. Details of Service/over hauling repairs etc. should also be entered in the log book by S&T Staff in the remarks column.

The S.M. on duty will maintain the record of the Power Supply failure/restoration in the following proforma in the log book.

Sr. No.	Date	Time Commercial Power Failed	Time Commercial Power Restored		Duration of Commercial Power Failure	Time Generator Started
1	2	3	4		5	6
	Time Generator Stopped	Duration of Generator Run	Quantity Filled		Signature of Station Manager	Remarks
			Diesel	M. Oil		
7		8	9	10	11	12

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- (vi) Diesel Generator sets may also be operated in case of Low Voltage of commercial Supply.
- (vii) In case of failure of D.G. Set, S.M. will inform the Signal Staff.

POWER SUPPLY SYSTEM FOR S&T EQUIPMENTS, SIGNALS, POINTS, VDU ETC

An integrated power supply system (IPS) is provided in equipment room to fulfill requirement of various power supplies required for S&T equipments, signals, track circuit, axle counters, points, VDU etc. This power supply system ensures uninterrupted supply to signaling system to avoid failure of signaling gear even when the mains power supply fails. The system has a very limited capacity to feed power in the absence of main supply. There is an indication panel provided in SM's room indicating the health of battery and the action required to be taken by SM. depending upon the alarm received on IPS indication panel, SM must immediately take action and inform sectional signaling and electrical staff as early as possible.

20 SIGNAL AND ROUTE TABLE:

Signal and Route Buttons to be pressed and released for taking "OFF" a particular signal are given below-

S.N.	Signal No.	Description	Signal Button	Route Button
1	S-2	Up advance starter.	S-2	UZ
2	S-1(i)	Down home to UP main DN line No.2	S-1	B
3	S-1(ii)	Down home to UP & DN loop line No.1	S-1	A
4	S-1(iii)	Down home to UP & DN loop line No.3	S-1	C
5	S-1(iv)	Down home to UP & DN loop line No.4	S-1	D
6	S-1(v)	Down home to UP & DN loop line No.5	S-1	E
7	CO-1(i)	Down Calling on to UP main DN line No.2	S-1	COGGN+ B
8	CO-1(ii)	DN Calling on to UP & DN loop line No. 1,3,4 &5	S-1	COGGN+ A/C/D/E
9	SH-101	DN shunt from UP main down line up to signal no.- S-17/SH117	SH-101	B
10	SH-101	DN shunt from UP main down line up to signal no.- S-15/SH115	SH-101	A
11	SH-101	DN shunt from UP main down line up to signal no.- S-11/SH111	SH-101	C
12	SH-101	DN shunt from UP main down line up to signal no.- S-9/SH109	SH-101	D
13	SH-101	DN shunt from UP main down line up to signal no.- S-7/SH107	SH-101	E
14	SH-101	DN shunt from UP main down line up to signal no.- SH-108	SH-101	AD1
15	S-14	UP 1 st DN loop line No.1 to UP advance starter S-2	S-14	UX
16	SH-114	UP 1 st DN loop line No.1 to UP advance starter S-2	SH-114	UX

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17	S-16	UP and DN main line No.2 to up advance starter S-2	S-16	UX
18	SH-116	UP and DN main line No.2 to up advance starter S-2	SH-116	UX
19	S-6	UP and DN loop line No.3 to up advance starter S-2	S-6	UX
20	SH-106	UP and DN loop line No.3 to up advance starter S-2	SH-106	UX
21	SH-108	A & D siding to up advance starter S-2	SH-108	UX
22	S-10	UP and DN loop line No.4 to up advance starter S-2	S-10	UX
23	SH-110	UP and DN loop line No.4 to up advance starter S-2	SH-110	UX
24	S-12	UP and DN loop line No.5 to up advance starter S-2	S-12	UX
25	SH-112	UP and DN loop line No.5 to up advance starter S-2	SH-112	UX
26	S-19	Down Advance Starter signal.	S-19	DZ
27	S-18(i)	UP home to UP main DN line No.2	S-18	B
28	S-18(ii)	UP home to UP & DN loop line No.1	S-18	A
29	S-18(iii)	UP home to UP & DN loop line No.3	S-18	C
30	S-18(iv)	UP home to UP & DN loop line No.4	S-18	D
31	S-18(v)	UP home to UP & DN loop line No.5	S-18	E
32	CO-18(i)	UP Calling on to Up main DN line No.2	S-18	COGGN+ B
33	CO-18(ii)	UP Calling on to UP & DN loop line 1,3,4&5	S-18	COGGN+A/ C/D/E
34	SH-198	UP shunt from UP main down line No.2 up to signal no.-S-16/SH116	SH-198	B
35	SH-198	UP shunt from UP main down line No.1 up to signal no.-S-14/SH114	SH-198	A
36	SH-198	UP shunt from UP main down line No.3 up to signal no.-S-6/SH106	SH-198	C
37	SH-198	UP shunt from UP main down line No.4 up to signal no.-S-10/SH110	SH-198	D
38	SH-198	UP shunt from UP main down line No.5 up to signal no.-S-12/SH112	SH-198	E
39	SH-198	UP shunt from UP main down line up to signal no.-SH-113	SH-198	AD
40	S-15	UP 1 st DN loop line No.1 to DN advance starter S-19	S-15	DX
41	S-15	UP 1 st DN loop line No.1 1to LPGCL advance starter S-13	S-15	RX
42	SH-115(i)	UP 1 st DN loop line No.1 to DN advance starter S-19	SH-115	DX
43	SH-115(ii)	UP 1 st DN loop line No.1to LPGCL advance starter S-13	SH-115	RX
44	S-17	UP and DN main line No.2 to DN advance starter S-19	S-17	DX
45	S-17	UP 1 st DN loop line No.2 1to LPGCL advance starter S-13	S-17	RX
46	SH-117(i)	UP & DN mainline to No.2 to DN advance starter S-19	SH-117	DX
47	SH-117(ii)	UP & DN main line No.2 to LPGCL advance starter S-13	SH-117	RX

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48	S-11	UP & DN loop line No.3 to DN advance starter S-19	S-11	DX
49	S-11	UP 1 st DN loop line No.3 1to LPGCL advance starter S-13	S-11	RX
50	SH-111(i)	UP & DN loop line No.3 to DN advance starter S-19	SH-111	DX
51	SH-111(ii)	UP and DN main line to LPGCL advance starter S-13	SH-111	RX
52	SH-113(i)	A & D siding to DN advance starter S-19	SH-113	DX
53	SH-113(ii)	A & D siding to LPGCL advance starter S-13	SH-113	RX
54	S-9	UP & DN loop line No.4 to DN advance starter S-19	S-9	DX
55	S-9	UP 1 st DN loop line No.4 1to LPGCL advance starter S-13	S-9	RX
56	SH-109(i)	UP & DN loop line No.4 to DN advance starter S-19	SH-109	DX
57	SH-109(ii)	UP & DN loop line No.4 to LPGCL advance starter S-13	SH-109	RX
58	S-7	UP & DN loop line No.5 to DN advance starter S-19	S-7	DX
59	S-7	UP 1 st DN loop line No.5 1to LPGCL advance starter S-13	S-7	RX
60	SH-107(i)	UP & DN loop line No.5 to DN advance starter S-19	SH-107	DX
61	SH-107(ii)	UP & DN loop line No.5 to LPGCL advance starter S-13	SH-107	RX
62	S-13	LPGCL Advance starter	S-13	RZ
63	SH-196	LPGCL siding shunt up to signal no.-S-16/SH-116	SH-196	B
64	SH-196	LPGCL siding shunt up to signal no.-S-14/SH-114	SH-196	A
65	SH-196	LPGCL siding shunt up to signal no.-S-6/SH-106	SH-196	C
66	SH-196	LPGCL siding shunt up to signal no.-S-10/SH-110	SH-196	D
67	SH-196	LPGCL siding shunt up to signal no.-S-12/SH-112	SH-196	E
68	SH-196	LPGCL siding shunt up to signal no.-SH113	SH-196	AD
69	S-20(i)	LPGCL siding home signal to Up and Dn main line No.2	S-20	B
70	S-20(ii)	LPGCL siding home signal to Up and DN loop line No.1	S-20	A
71	S-20(iii)	LPGCL siding home signal to Up & DN loop line No.3	S-20	C
72	S-20(iv)	LPGCL siding home signal to Up & DN loop line No.4	S-20	D
73	S-20(v)	LPGCL siding home signal to Up & DN loop line No.5	S-20	E
74	CO-20(i)	LPGCL siding home signal to Up & Dn main line No.2	S-20	COGGN+ B
75	CO-20(ii)	LPGCL siding home signal to Up Dn loop line No.1,3,4&5	S-20	COGGN+A/C/D/E

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21 TRACK CIRCUITS:

The following track circuits are provided at this station as shown in the station Working Rule Diagram:

(A) UP&DN MAIN LINE LINE No.2:

C18T, 18/19T, 17T, 298T, 294T,292T, 290T, 02CT, 02BT, 02AT, 212T, 202T, 16T, 1/2T & C1T

(B) UP&DN LOOP LINE LINE No.1:

C18T, 18/19T, 17T, 298T, 294T, 292T, 291T, 289T, 01CT, 01BT, 01AT, 211T, 202T, 16T, 1/2T & C1T

(C) UP&DN LOOP LINE LINE No.3:

C18T, 18/19T, 17T, 298T, 294T, 299T, 295T, 286T, 293T, 03CT, 03BT, 03AT, 205T, 203T, 201T, 202T, 16T, 1/2T & C1T

(D) UP&DN LOOP LINE LINE No.4:

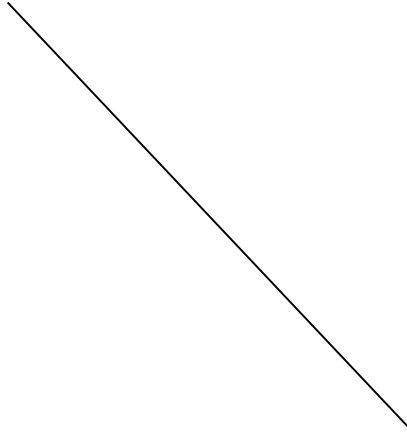
C18T, 18/19T, 17T, 298T, 294T, 299T, 295T, 286T, 285T, 284T, 04CT, 04BT, 04AT, 207T, 204T, 201T, 202T, 16T, 1/2T & C1T

:(E) UP&DN LOOP LINE LINE No.5:

C18T, 18/19T, 17T, 298T, 299T, 295T, 286T, 285T, 282T, 05CT, 05BT, 05AT, 209T, 204T, 201T, 202T, 16T, 1/2T & C1T

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APPENDIX 'C'**ANTI-COLLISION DEVICE (RAKSHA KAVACH)****NOT APPLICABLE**

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APPENDIX –‘D’

DUTIES OF THE STAFF:

DUTIES OF THE SM /ASM:

- a) The Station Master on duty shall be responsible for the efficient discharge of duties devolving upon the several members of the staff either permanent or temporarily under his orders at the station or within station limits and such staff shall be subject to his authority and direction in the working of the station.
- b) The Station Master on duty shall also be responsible that the general working at the station is carried out in strict accordance with the rules for the time being in force.
- c) No person other than the Station Master on duty shall ask for/or give line clear or give authority to proceed, T-369(3b), Caution order and Authority to proceed without line clear etc.
- d) The Station Master is responsible for giving ‘Train out of Section’ signal as per SR 4.56/1 of G&SR after ensuring that the train has passed with tail lamp / tail board on the last vehicle or the Guard’s alright signal or Train intact register.
- e) The Station Master on duty is responsible for ensuring that signals taken off for a train are put back to ‘ON’ immediately the train has passed them as per P ara 8.03 of BWM.
- f) In case of unusual occurrence, the station master on duty must ensure safety reporting of occurrence and render assistance as per GR. 2.11 of G&S Rules.
- g) SM/ASM on duty is also responsible for watching safe passage of trains and exchanging of all right signals with crew of trough passage of train.

DUTIES OF THE POINTSMAN

- 1) The Points-man on duty are responsible to clamp and pad lock points as and when required and to exchange hand signals with train crew of all passing through trains from ‘OFF’ side.
- 2) The points-man on duty shall be responsible for handing over all the authorities to the loco pilot and guard as & when required. He will be responsible for exchanging alright signals for run through trains from the opposite side of the Station Master.
- 3) Points-man will secure Vehicle as per S.R.5.23-1 and SR 5.23-2 of G&SR under supervision of Guard/SM/ASM person in charge of shunting.
- 4) He shall obey all lawful orders given to him by SM / ASM on duty.

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APPENDIX 'E'**ESSENTIAL EQUIPMENT AT THE STATION:**

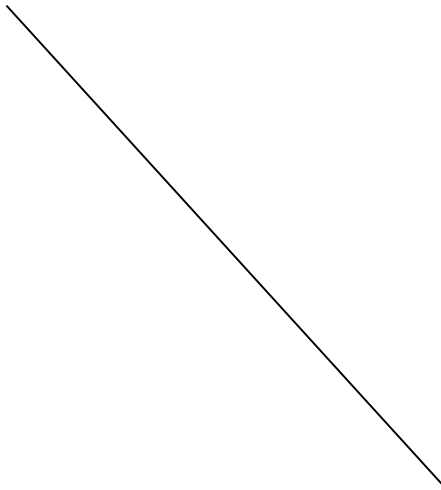
S.N.	Name of equipment	Total number
01	Switch clamps	12
02	Padlocks	18
03	Button collar	06
04	LED based H.S. Lamp	04
05	Flags Green	06
06	Flags Red	08
07	Fire extinguisher	02
08	Stretcher	01
09	Detonators	20
10	Fire buckets with stand	04
11	First Aid Box.	01
12	Wooden wedges	04
13	Safety chains	06
14	Safety Gloves	02

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

Working of LPGCL R & D yard can be seen in General portion of this SWR.



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APPENDIX 'G'

RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS SINGLE LINE:-

1. KNOWLEDGE OF RULES:

SR 17.01/1 SM shall ensure that all station staff working in the area where electric traction is in use is thoroughly conversant with the rules applicable for running of trains in the section provided with 25 KV AC traction. Ignorance of the rules shall not be taken as an excuse for non compliance.

2. REPORTING OF BREAKDOWNS:

Any break down or defects reported to SM shall be conveyed to the Traction Power Controller through TPC telephone or through section controller immediately. In case of failure of communication, he shall use his discretion regarding movement of traffic and advise the nearest traction official.

3. SAFE CUSTODY OF OHE SWITCHES KEYS AND OPERATION OF SWITCHES:

SR 17.03/4. SM shall make them self fully aware, through supplement to the SWR for AC traction, of the location of Isolator Switches provided for control of OHE power supply equipment at his station [SR 17.05/1(4)] and shall be fully conversant with the correct method of opening and closing the same in emergency. Key for all outdoor OHE switches shall be kept locked in glass fronted box provided with a lock, the key of which shall be kept in the custody of the SM. The key of OHE switches shall be issued on demand, only to authorized person whose signatures for receipt shall be obtained in register maintained for the purpose.

3.1 In the event of breakage of glass of the box containing the key of the OHE switches shall be kept in safe custody by the SM till the glass of the box is replaced. He shall also advise the concerned SSE (OHE) to arrange immediate replacement of the glass.

3.2 In case of emergency the SM by himself shall operate such OHE switches as per specific direction of the Traction Power Controller (TPC). If the TPC wishes to have any isolator switch opened or closed he shall ask Station Master under exchange of private number to carry out the required switching operation, if SSE (OHE) is not available to him. The SM by himself who after carrying out the orders lock the switch in last operated position and inform the TPC of the action taken. He shall not part with the key until receipt of further order from TPC. Record of every such operation shall be maintained on key transaction register. The key shall be deposited back to the SM who intern shall lock the keys in the glass fronted box and make an entry in the register maintained for transaction of the keys in case the SM has not done the operation by himself.

4. ISSUE OF CAUTION ORDERS: In case of OHE breakdown on having been reported by the Traction Foreman or SSE (OHE), the SM, in consultation with the Section Controller shall issue the Caution Order in accordance with SR 4.09/1, to all Loco Pilots entering into the affected section mentioning clearly of the condition.

5. WORKING OF OHE STAFF IN STATION LIMITS: SR 17.03/8. No person shall disturb the OHE, or carryout bonding or any other work within the Station limits, in such a way as to obstruct the line and necessitate showing of danger signals, without prior permission of the SM.

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(NITIN VERMA)
Sr. DEE/TD/JHS

6. POWER BLOCK:

- 6.1 The SM shall grant local power blocks for working into the siding which does not affect the normal train working under advice to the Section Controller.
- 6.2 SM shall not permit any electric engine to enter into area over which power block has been granted. He shall put button collars on such points leading movement into the area which shall be removed only after cancellation of the block. He shall make entry on the log book accordingly while handing over charge to in coming SM.

- 7. WORKING OF TOWER WAGON:** SR 17.08/1. A tower wagon is to be treated like a train and shall be worked without a guard. In case of an arranged OHE block, one or more Tower wagons can be worked and follow one another. The SM while authorizing the following Tower Wagon/ Tower Wagons into occupied affected OHE section, shall issue an 'Authority to proceed without line clear' and a caution order mentioning the site of work indicating the speed which under no circumstances, shall exceed 10 KMPH. A Tower Wagon shall however not be permitted to enter the section following a train. The After completion of the work in charge of the Tower Wagon which entered last I the section shall certify at the station in advance about clearance of the section and initial against the relevant entry in the Train signal register in token of the section having been cleared of the last Tower wagon.

8. DUTIES & RESPONSIBILITIES OF STATION MASTER IN CASE OF NO TENSION-FAULT TRIPPING IN OVERHEAD EQUIPMENT: SR 17.09/1

- 8.1 In case of power supply in a section become faulty, on getting such information from TPC, the Section Controller shall advise the same to the SM under exchange of private numbers. The SM shall treat the section as under emergency power block and shall take action accordingly.
- 8.2 In case the train has entered into the faulty section: In case the train has entered into the faulty section and also into the section which has been isolated, the SM shall not allow any train to enter into the affected block section.

9. DUTIES OF THE STATION MASTER IN CASE OF UNSAFE CONDITION OF A TRAIN WORKING ON ELECTRIFIED SECTION:

- 9.1 in case of unsafe condition of a train working on electrified traction, the TPC shall advise the Section controller after switching off the power supply of the effected section, on getting such information from TPC, the Section Controller shall advise the same to the SM under exchange of private numbers. The SM shall treat the section as under emergency power block and shall take action accordingly. The SM shall not allow any train to enter into the affected section unless, there is no infringement.

Note :-Traction working rule with TWRD is attached separately as appendix G which is part of SWR.

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