

# **EAST COAST RAILWAY**

## **WALTAIR DIVISION**

### **STATION WORKING RULES** **OF**

### **LAKSHMIPUR ROAD**

### **STATION**

**SI/WRD-23218 ALT-'B'**



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**EAST COAST RAILWAY  
WALTAIR DIVISION**

**STATION WORKING RULES OF LAKSHMIPUR ROAD [LKMR] [BROAD GAUGE]**

No.WTP/5/SWR/LKMR

Date of Issue:

Date brought in force:

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

**(1) STATION WORKING RULE DIAGRAM:**

- a) Station Working Rule Diagram No:- SI/WRD/23218 ALT-'B'
- b) CSTE/E.Co.Rly/DRG No:-SI-23218 ALT-'B'
- c) Date up to which corrected:

**(2) DESCRIPTION OF STATION:**

**2.1. GENERAL LOCATION:**

a)	Name of the station	LAKSHMIPUR ROAD (LKMR)
b)	Class of station	'B' class
c)	Section	Koraput – Rayagada
d)	Double line/Single line/ Multiple line	Single line
e)	Electrified/Non Electrified	Electrified
f)	Gauge BG/MG/NG	BG
g)	Railway	East Coast Railway
h)	Route	'D'
i)	Situated at	Km 61.170
j)	Reckoned from	Koraput
k)	Operation	Centrally operated with Visual Display Unit (VDU).
l)	Type of Interlocking	Standard II (R)

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

S.No	Adjacent Block Station	Distance	Direction
1.	SINGARAM	13.382 km	RGDA end
2.	KAKIRIGUMA	15.285 km	KRPU end
3.	Provision of IBS	Nil	
4.	Automatic signal	Nil	
5.	DK station/Outlying sidings	Nil	
6.	Passenger halt	Nil	

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

Between Stations	The Point from which the Block section commences	The Point at which the 'Block Section' ends
LKMR-KKGM	From UP advanced starter signal no. 19 of LKMR.	DN Advanced starter signal no.18 of KKGM.

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LKMR-SGRM.	From DN Advanced starter signal no.20 of LKMR.	UP Advanced starter signal no.17 of SGRM.
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**2.4. GRADIENTS:**

Station towards	Chainage		Inter distance	Gradient
	From	To		
LKMR-KKGM	0.000 F/CSB	98.000M	98.00M	1 in 800 Falling
	98.000M	821.67M	723.67M	LEVEL
	821.67M	In to section	--	1 in 100 Raising
LKMR-SGRM	Chainage		Inter Distance	Gradient
	From	To		
	0.000 F/CSB	702.00M	702.00M	1 in 800 Raising
	702.00M	In to section	---	1 in 200 Raising

**2.5. LAY OUT:**

**A) RUNNING LINES IN THE MAIN YARD:**

Sl no	Name of the Line	Electrified/Non Electrified	Platforms with Length
1.	Line No.1 (1 <sup>st</sup> Loop)	Electrified	High Level (244.00M x 6.40M)
2.	Line No.2 (Main Line)	Electrified	--
3.	Line No.3 (2 <sup>nd</sup> Loop)	Electrified	--
4.	Line No.4 (3 <sup>rd</sup> Loop)	Electrified	--

**B) SIDINGS:**

Sl no	Name of the Siding	Electrified/Non Electrified	Platforms with Length	Isolation from Running line
1.	Line No.5 (Ballast Siding)	Electrified	--	Isolated from Line No.4 by DS with Motor operated on both ends
2.	Goods Siding	Electrified	70M x 6.1M	Isolated from Line No.1 by DS with Motor operated on both ends
3.	Shunting Neck	Electrified	--	Isolated from Line No.4 by DS with Motor operated on SGRM end.
4.	Tower Wagon Siding	Non Electrified	--	Isolated from Line No.4 by DS with Motor operated on KKGM end.

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

S.No	Name of the Line	Holding Capacity in CSL	Direction of movements
1.	Line No.1 (1 <sup>st</sup> Loop)	690M (From STR to STR)	a) Trains coming from KKGM and proceeding

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2.	Line No.2 (Main Line)	720M (From STR to STR)	towards SGRM are UP trains. b) Trains coming from SGRM and proceeding towards KKGm are DN trains.
3.	Line No.3 (2 <sup>nd</sup> Loop)	720M (From STR to STR)	
4.	Line No.4 (3 <sup>rd</sup> Loop)	688M (From STR to STR)	

**2.5.2. NON RUNNING LINES AND THEIR CAPACITY IN CSL:**

S.No	Name of the Line	Holding Capacity in CSL	Whether Electrified/Non Electrified
1.	Line No.5 (Ballast Siding)	510M (From SH to SH)	Electrified
2.	Goods Siding	110M (From GJ to GJ)	Electrified
3.	Shunting Neck	295M (From SH to S.B)	Electrified
4.	Tower Wagon Siding	37M (From SH to DE)	Non Electrified

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

--NIL--

**2.6. LEVEL CROSSINGS:**

--NIL--

**(3) SYSTEM AND MEANS OF WORKING:-**

<i>System of Working in force</i>	Absolute Block System of Working.
<i>Double Line/Single Line</i>	Single Line.
<i>Block Instruments</i>	Diado type Token less Block Instruments.
<i>Co-operative/Non Co-operative</i>	Co-operative.
<i>Block Telephone</i>	Attached with Block Instruments.
<i>Staff responsible for custody of key and operations.</i>	SM on duty

**(4) SYSTEM OF SIGNALLING AND INTERLOCKING:**

1.	<i>Standard of Interlocking</i>	Standard-II (R).
2.	<i>Type of signaling</i>	MACLS
3.	<i>Mode of operating the signals</i>	Electronic Interlocking
4.	<i>Provision of Calling-On signals</i>	Calling-on signals are provided below Home signals (i.e. in both UP & Down directions) as per GR.3.13 (1)(b), (2)(3)(4) & (6) (b).
5.	<i>Provision of shunt signals</i>	Shunt back signals SH-3(A-E) and SH-4(A-E) are provided towards SGRM end of the yard and towards KKGm end of the yard respectively. Shunt signals SH-8 and SH17 are provided on Line No.5 towards SGRM end of the yard and towards KKGm end of the yard respectively. Shunt Signal SH5 & SH6 are provided on Shunting Neck and Tower

		Wagon Siding respectively. Dependent Shunt Signals SH12A/B and SH13A/B are provided on Line No.4 towards SGRM end and KKGM end respectively.
6.	<i>Emergency Cross over</i>	Nil
7.	<i>Track circuits</i>	The provision of track circuits is mentioned in Appendix-B Para No.10 of this SWR.
8.	<i>Axle counters</i>	Provided Single Section Digital axle counter (SSDAC) for last vehicle verification between LKMR-KKGM and LKMR-SGRM Block sections.
9.	<i>Crank Handles</i>	<p>When any point fails to operate normally by the Route Setting operation through VDU, it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle for motor operated points shall be followed as per operating manual chapter-2, para-2.18 &amp; 2.19 and Para No.4.7 of Appendix-'B'.</p> <p style="text-align: center;">                 CH1      --      51A/B, 53A/B                  CH2      --      55A/B, 57A/B, 59A/B                  CH3      --      52A/B, 54A/B                  CH4      --      56A/B, 60A/B             </p>
10.	<i>Emergency Point operation</i>	Emergency point operation facility is provided to operate the point from the VDU in case of failure of point controlling track circuit/Axle Counter. For Emergency Point operation procedure laid down in Para No.5.2 of Appendix-'B' shall be followed. Each operation of emergency point operation shall be recorded in the station diary and in the register meant for this purpose.
11.	<i>Showing of Veeder counter</i>	The counters as mentioned in the Para No.9 of Appendix-'B' are provided in this station for record the Emergency operations. The increment in counter number for each and every such action should be recorded by the SM on duty who shall record the details of the Operation along with the latest counter number in a register.
12.	<i>Emergency Route Release operation</i>	All the signals in this station are provided with 'DEAD APPROACH LOCKING'. As such when a route is set and signal is taken 'OFF' on the route, the route gets locked. Normally the route is released by the passage of the train over the route. When it becomes necessary to alter the

		route after the signal has been taken 'OFF' vide SR 3.36.02(a), Emergency route release operation procedure as mentioned in Para No.5.1 of Appendix-'B' in this SWR shall be followed.
13.	<i>Emergency Crank Handle Release operation.</i>	Emergency crank handle release operation facility is provided to operate the point by using the crank handle in case of Route locked condition. For Emergency crank handle operation the procedure laid down in Para No.5.3 of Appendix-'B' shall be followed. Each operation of emergency crank handle operation shall be recorded in the station diary and in the register meant for this purpose.

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

Custody of Relay room key and procedure for its handover and taking over between SM and S&T staff has to follow the procedure as per JPO issued by COM and CSTE vide No. JPO/02/2012 dated 29.08.2012.

**4.2. POWER SUPPLY:**

The power supply arrangement for this station is described in detailed in the Para No.25 & 26 of APPENDIX-B.

**(5) TELECOMMUNICATIONS:**

- i). The station is connected to KRPU-RGDA control Circuit.
- ii). The station is connected to KRPU-RGDA traction power control circuit.
- iii). Railway Auto Telephone provided at the station is connected to Divisional Exchange at WAT through Exchange at KRPU.
- iv). Telephones attached to single line Token less Block Instruments are connected to adjacent stations on either side.
- v). Hot Line Telephone communication is provided between LKMR-SGRM and LKMR-KKGM stations.
- vi). Telephone communication is provided between Station Master on duty and UP CH locations and to DN CH Locations.
- vii). Telephone communication is provided between Station Master on duty and Goods siding Locations 1 & 2.
- viii). 25w VHF set is provided at the station for emergency communication.

**5.1. FAILURE OF COMMUNICATION: -**

- a) In the event of total failure of communications between the adjacent block stations SR 6.02.04 shall be observed for single line section for working the train.



- b) In the event of partial interruption/failure of communications between the adjacent block stations SR 6.02.06 shall be observed for working the train.

**(6) SYSTEM OF TRAIN WORKING:**

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

The duties of Train working operational staff are detailed in Appendix-'D' of this SWR.

**6.1.1. TRAIN WORKING STAFF IN EACH SHIFT:**

COMPLEMENT OF STAFF	STAFF IN EACH SHIFT
Station Master	1
Traffic Points Man	1

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

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

The SM on duty is responsible to ascertain the clearance of the nominated line between first facing point and advanced starter signal in each direction. The private number book should be under the custody of SM on duty that is authorized to use it.

**6.1.3. ASSURANCE OF THE STAFF IN THE ASSURANCE REGISTER:**

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

No Railway servant shall be entrusted with any duty involving the safety of the public unless the SM (In-Charge) is satisfied that the concerned staff is competent for the post. No Railway servant unless duly examined and certified shall be allowed to work the points and signals. The SM (In-Charge) is responsible to see that all the staff are well conversant with the Station Working Rules of the Station and their signature obtained in the Assurance Register after he is satisfied that they have thoroughly understood the working Rules of the Station. In case of Class-IV staff, their signature/thumb impression must be obtained after explaining full about their duties and responsibility.

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

Fresh assurance shall be obtained in the Assurance Register when:

1. He joins at the station as a new member.
2. There is any change in the Station Working Rules.

3. He resumes duty at the station after an absence of 15 consecutive days or more.

**6.2. CONDITIONS FOR GRANTING LINE CLEAR:**

- a) The trains are worked under Absolute block system of working with Single line between LKMR-KKGM and LKMR-SGRM and MACLS signaling vide GR 8.03.
- b) Adequate distances for reception of trains in this station as follows.

Line No.	Up Trains		DN trains	
	From	To	From	To
Line No.1 (1 <sup>st</sup> Loop)	Up starter Signal No.7	The end of Over run line. OR Up Advanced Starter Signal No.19.	DN Starter Signal No.18	The end of Sand Hump OR DN Advanced Starter Signal No.20.
Line No.2 (Main Line)	Up starter Signal No.9	Up Advanced Starter Signal No.19.	DN Starter Signal No.16	DN Advanced Starter Signal No.20.
Line No.3 (2 <sup>nd</sup> Loop)	Up starter Signal No.11	The end of Sand Hump. OR Up Advanced Starter Signal No.19.	DN Starter Signal No.14	The end of DS No.51B. OR DN Advanced Starter Signal No.20.
Line No.4 (3 <sup>rd</sup> Loop)	Up starter Signal No.13	The end of Overrun Line. OR Up Advanced Starter Signal No.19	DN Starter Signal No.12	The end of DS No.57. OR DN Advanced Starter Signal No.20.

**6.2.1. ANY SPECIAL CONDITIONS TO BE OBSERVED WHILE RECEIVING OR DESPACTHING A TRAIN:-**

NIL

**6.2.1.1. SETTING OF POINTS AGAINST BLOCKED LINE:**

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

**Safety Point Alarm Unit(SPAU):**

A safety Point Alarm is provided on the VDU table with different indications:

- 1. On complete arrival of a train at the station, the SM has to set the Points immediately against the occupied line.

2. In case the SM forgets to alter the points, after a time lag of 02 minutes, an audible buzzer will be heard from this instrument along with the 'RED' indication of the line on which the train has arrived.
3. The SM shall then press 'ACK' button to mute the buzzer, and immediately set the required points against the line on which the train has arrived.
4. On setting the points against the occupied line, the RED indication will disappear.

If all the lines of a station happen to be blocked, when line clear has been granted to a train, the points should be set for the line occupied by a stabled load or a goods train in that order so that, in case of mishap, the chance of casualties are minimized [Refer SR.3.51.06 (b)]. In case of all the lines are occupied by Coaching train, points should be set for a loop line to negotiate with the speed of incoming train would be reduced which in turn, would minimize the consequences/causalities.

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

**6.2.1.2. RECEPTION OF A TRAIN ON BLOCKED LINE:**

Trains are to be admitted on a blocked line, by taking off calling-on signal as per GR 5.09(2) (a) or if calling signal cannot be taken off, trains are to be piloted in on a written authority on Form T/509 given by SM on duty and delivered by a competent railway servant to the Loco Pilot of the train as per GR 5.09 (2)(C)(3)(4)(5) and SR 5.09.01.

**6.2.1.3. RECEPTION OF TRAIN ON NON-SIGNALLED LINE:**

Before receiving a train on Non-Signaled line, the SM shall ensure that-

- a) The train is brought to a stand at the first stop signal.
- b) The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand.
- c) All the points over which the train has to pass are correctly set, the facing and trailing points are clamped and padlocked and
- d) The Loco Pilot is authorized to pass the approach stop signals at ON through a written authority [Refer GR 5.10].

**6.2.1.4. DESPATCH OF TRAIN FROM NON-SIGNALLED LINE:**

Whenever a train is to be dispatched from a Non-Signalled line a starting order on form T-511 shall be given to the Loco Pilot to start from the Non-Signalled line [Refer SR.5.11.1].

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

NIL

**6.2.1.6. ANY SPECIAL CONDITIONS:**

a) **SPECIAL RESTRICTIONS:**

NIL

**b) SPECIAL INSTRUCTIONS:**

All Starter Signals are placed at a distance of 0 to 3M from the replacement track circuit glued joint in order to increase the CSL, as per Railway board's Letter No. (i) 2012/sig/SEM-II/Misc, dated 10.10.12. (ii) 2012/safety/(A&R)/1915 dated 13.06.13. Hence necessary precaution to be taken by SM on duty.

**6.3. CONDITIONS FOR TAKING "OFF" APPROACH SIGNALS:-**

The SM on duty shall nominate a Clear line not only up to the station but also for an adequate distance beyond it for reception of trains. (Refer GR. 3.36, 3.40, 4.17 and SR 3.36.01, 3.36.02, 3.36.04, 3.40.01, 3.40.02, 3.47.01, 4.17.02 and Block Working manual)

**6.3.1. RESPONSIBILITY OF STATION MASTER FOR RESTORATION OF SIGNALS TO "ON":**

Station master should ensure that signal is put back to 'ON' after passage of the train as per GR 3.36 (2) (b).

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

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

1.	Reception of an UP train on Line No.1 setting overlap to Overrun Line (1 <sup>st</sup> Loop).	AND	Reception of a DN train on Line No.3 or 4.  OR Dispatch of another UP train from Line No.2 or 3 or 4.
2.	Reception of an UP train on Line No.3 setting overlap to Sand Hump (2 <sup>nd</sup> Loop).	AND	Reception of a DN train on Line No.1.  OR Dispatch of another UP train from Line No.1 or 2.
3.	Reception of an UP train on Line No.4 setting overlap to DS No. 58 (3 <sup>rd</sup> Loop).	AND	Reception of a DN train on Line No.1.  OR Dispatch of another UP train from Line No.1 or 2 or 3.
4.	Reception of a DN train on Line No.4 setting overlap to DS No. 57 (3 <sup>rd</sup> Loop).	AND	Reception of an UP train on Line No.1.  OR Dispatch of another DN train from Line No. 1 or 2 or 3.
5.	Reception of a DN train on Line No.3 setting overlap to DS No. 51B (2 <sup>nd</sup> Loop).	AND	Reception of an UP train on Line No.1.  OR Dispatch of another DN train from Line No. 1 or 2.
6.	Reception of a DN train on Line No.1 setting overlap to Sand Hump (1 <sup>st</sup> Loop).	AND	Reception of an UP train on Line No.3 or 4.  OR

			Dispatch of another DN train from Line No. 2 or 3 or 4.
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**6.5. COMPLETE ARRIVAL OF TRAINS:**

The entire block section between LKMR-KKGM and LKMR-SGRM are provided with Single section Digital Axle counter (SSDAC).

**For Section LKMR-KKGM:**

A Pair of Single Section Digital axle counter (SSDAC) is provided between LKMR-KKGM one at just beyond UP advanced starter signal No.19 of LKMR and another on 1T track circuit of KKGM for last vehicle verification.

**For Section LKMR-SGRM:**

A Pair of Digital axle counter is provided between LKMR-SGRM one at just beyond DN advanced starter signal no.20 of LKMR and another on 2T track circuit of SGRM for last vehicle verification.

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

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

A resetting arrangement is provided in the SM office to reset the system to normal position in case of failure of Single Section Digital axle counter(SSDAC). The resetting to be initiated by the SM at the receiving station only after physical verification of complete arrival of train by exchanging private number. The resetting can be accomplished only with the co-operation of SMs at either end of the block section. Details of resetting procedure is given in Appendix-'B'

**Note:**

Before taking off reception and dispatch signals for UP or down directions the SM on duty should ensure that the entire route including overlap and berthing portion is clear of all obstructions by observing the Track indication/Axle counter indication.

**6.6. DESPATCH OF TRAINS:**

- a) Dispatch of trains is governed by the provisions of GR. 3.42 and SRs 3.36.04(b), 3.42.04; 3.42.01(a) and BWM 3.07(5) (a), (e), (f) & (g) and other relevant provisions of G & SR, BWM and SWR.

**b) DESPATCH OF TRAINS FROM NON-SIGNALLED LINE:**

Dispatch of trains from non-signalled line is governed by the provision of GR 5.11 and SR 5.11.01.

**c) ISSUE OF CAUTION ORDERS:**

Whenever in consequence of the line being under repairs or for any other reasons special precautions are necessary a Caution Order detailing the Kilometres and Speed at which train should run with reasons for taking such precautions shall be handed over to the Guard and Loco Pilot in terms of GR 4.09 and SR thereto.

**6.7. TRAINS RUNNING THROUGH:**

In addition to the procedure detailed in paras "Reception and Dispatch of trains" rules laid down in GR 3.40, 4.17, 4.42 with relevant SRs 3.42.02 (a) (iii) and other relevant provisions of G&SR, BWM, OM shall be followed. (Refer GR 4.1, 4.11(2)).

**6.8. WORKING IN CASE OF FAILURE:**

<i>Track Circuits</i>	In case of failure of track circuits, the clearance of the concerned line should be ensured physically before a train is piloted.
<i>Axle Counters</i>	If the axle counter fails between the block sections, resetting procedure should be adopted as per Para 6.1 of SWR (APP-B). If the axle counter indication does not appear 'GREEN & continues to show 'RED' condition after resetting, the concerned block section shall be suspended & failure intimation to be given to sectional signal Maintainer /JE/SE (signal) for their rectification.
<i>Block Instruments</i>	In the event of failure of block instrument, the concerned block instrument shall be suspended till its rectification and trains shall work as per GR (Refer SR 6.02.04 & 6.02.06).
<i>Reception of a train on obstructed line</i>	Trains are to be admitted on a blocked line, by taking off calling-on signal as per GR 5.09(2)(a) or if calling signal cannot be taken off, trains are to be piloted as per GR 5.09(2)(C)(3)(4) (5) and SR 5.09.01.
<i>Reception of a train on non-signalled line</i>	Before receiving a train on Non-Signaled line, the SM shall ensure that-  <ol style="list-style-type: none"> <li>1. The train is brought to a stand at the first stop signal.</li> <li>2. The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand.</li> <li>3. All the points over which the train has to pass are correctly set, the facing and trailing points are clamped and padlocked and</li> <li>4. The Loco Pilot is authorized to pass the approach</li> </ol>

	stop signals at ON through a written authority [Refer GR 5.10].
<i>Defective Signals</i>	Whenever signals become defective, the procedure laid down in GR 3.68 to 3.71, 3.80 and SR 3.68.01 (c) shall be followed.  In case of disconnection of signal and interlocking for repairs and maintenance procedure laid down in GR and relevant SRs shall be followed. In the event of signal showing no lights, station master on duty shall before giving line clear initiate action in accordance with the procedure laid down in GR and the relevant SRs (Refer 3.57, 3.69, 3.49 (4), 3.68 to 3.77).
<i>Defective Interlocking</i>	When interlocking becomes defective the SM on duty shall be responsible for correct setting, clamping, padlocking of points for admission of train. [Refer SR 3.69.03 (c) & 3.69.01].
<i>Defective/Damaged Points</i>	The procedure detailed in Para No. 4.1 (4) of Appendix-B shall be followed.

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

- i) The section where Axle counters are provided in Lieu of track circuits, trolleys, Motor trolleys, Lorries etc., which are not insulated shall not be allowed to run except on line clear.
- ii) Motor trolleys shall be worked as per GR 15.25 and SR thereto, BWM 5.39, 5.40, 5.41, 6.11(1)(2), 6.12, 6.13, 6.14(2)(a) and circulars and orders issued from time to time.
- iii) Material Lorries shall be worked as per GR 15.27 and SRs thereto and in accordance with the provisions of Block Working Manual.
- iv) Tower Wagon/OHE cars shall be worked as per GR 17.08 and SR thereto and BWM 4.39.

**(7) BLOCKING OF THE LINES:**

Whenever a running line is blocked either by loose vehicles or by stabling train or by a train which is to cross or give precedence to another train, the points at either end should immediately be set against the blocked line except during shunting movement. 'Line Block' is to be activated on VDU by SM on duty following procedure laid in para No.5.4.1 & 5.4.2 of Appendix-B. A clear remark in 'RED' ink shall be made immediately in the train signal register and a record shall be made in the Station Master's diary also. Stable load register is also to be maintained. The stable load or loose vehicles are to be secured to prevent rolling down of vehicles. [GR 5.23 and SR 5.23.01]

**(8) SHUNTING:**

**8.1. GENERAL PRECAUTIONS:**

The rules laid down in GR 3.46, 3.52 to 3.56, 5.13, 5.14, 5.16 to 5.23, 8.05, 8.06, 8.14 and 8.15 with relevant SR's and OM 7.01, 7.07, 7.08, 5.15 (1) (B) and 5.1 (2) (B) shall be followed.

All shunt movements shall be supervised by Guard/SM on duty or by a competent Railway servant deputed by SM on duty as the case may be. The authority for shunting shall be taken off of shunt Signal or on form T/806. The limit up to which shunting is permitted and the line involved must write on the shunting authority.

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

Shunting in face of an approaching train is prohibited on both ends vide GR 8.09.02 (ii) (a).

**8.3. PROHIBITION OF SHUNTING, SPECIAL FEATURES IF ANY:**

- i) Hand shunting is prohibited at both ends of the yard vide GR 5.20.
- ii) Fly shunting is prohibited at both ends of the yard vide SR 5.21.01 (c).

**8.4. SHUNTING ON SINGLE LINE:**

- i) ***Within station section:*** Shunting within station may be carried on within the station section up to Advanced starter, provided the necessary Reception Signals are kept at ON vide GR 8.10 (1). But this shall be done only when there is no approaching train since shunting in the face of an approaching train is prohibited at this station.
- ii) ***Beyond station section:*** Governed by GR 8.12.
- iii) ***Beyond opposite first stop signal:*** Unless the line is blocked back, the line outside the first stop signal shall not be obstructed vide GR 8.13.
- iv) ***During failure of Block instrument:*** Block back messages shall be exchanged between Station master at either end of the section which is intended to be obstructed supported by private number. Both the Station Masters shall fix line block collars on respective Block Instruments and shall continue shunting provided the Block section is clear.

**8.5. SHUNTING ON DOUBLE LINE:**

Not Applicable

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

**a) Shunting in the Ballast Siding:**

While shunting in the Ballast siding, it should be authorized by shunt signal/ issuing shunting authority on form T/806 clearly mentioning the limits up to which shunting is permitted as also the lines occupied in shunting.

The relevant provisions of GR 5.14 and SRs thereto shall be meticulously followed for shunting operations in goods shed.

**b) Goods Siding:**

Working procedure are detailed in Appendix-B, Para No.18.1 & 18.2.



**(9) ABNORMAL CONDITION:-**

**a) RULES TO BE OBSERVED IN THE EVENT OF ABNORMAL CONDITIONS:**

- i) During partial interruption/failure of electrical communication instruments SR 6.02.06 shall be followed.
- ii) The authority to proceed in the occupied block section in case of obstruction of line or accident etc is T/A-602 and SR 6.02.05 shall be followed.
- iii) Trains delayed in the block section: GR 6.04 and relevant SRs shall be followed.
- iv) Failure/ passing of IBS signed in ON position: Nil.
- v) Failure of Axle Counter Block/BPAC : As per Appendix-'B'.
- vi) Failure of MTRC: Nil.

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

- (i) The detailed Procedure for emergency operation of points by Crank Handle of motor operated points is mentioned in Para No.5.3, 5.3.1 and 5.3.2 of Appendix-'B' of this SWR.

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

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

The detailed Procedure for emergency operation of points in case of failure of Point zone Track Circuit is mentioned in Para No.5.2, 5.2.1 and 5.2.2 of Appendix-'B' of this SWR.

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

**c) CERTIFICATION OF CLEARANCE OF TRACK BEFORE CALLING-ON SIGNAL OPERATION IS INITIATED:-**

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

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

- (i) Whenever there is a failure of points, Track circuits/axle counter or any interlocking gear at station, the failure should be reported by SM on duty to the

concerned Signaling Maintenance Staff on duty responsible for attending to the failure and only after receipt of the written memo from the Signaling Maintainer for rectification of the fault, SM should restore the normal working.

- (ii) The entries in failure register to be done with message to the section controller.

**9.1. TOTAL FAILURE OF COMMUNICATION:**

- a) In the event of total failure of communication on Single Line, trains shall run on the authority to proceed without line clear in terms of SR 6.02.04.
- b) During partial interruption of communication the rules laid in SR 6.02.06 shall be followed.

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

--NIL--

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

- i). In the event of total failure of communication, trains shall run on the authority to proceed without line clear in terms of SR 6.02.04.
- ii). In the event of necessity to send a train to assist the crippled trains, SR 6.02.05 shall be followed.

**(10) VISIBILITY TEST OBJECT:**

The signals lights of DN Starter Signal No.18 and UP Starter Signal No.7 of Line No.1 are earmarked to serve as visibility test object during day and night vide GR 3.61 (2) (b) (iii).

**(11) ESSENTIAL EQUIPMENT AT THE STATION:**

Details are given in Appendix-E.

**(12) FOG SIGNAL MEN NOMINATED TO BE CALLED IN CASE OF FOG:**

- (i) During thick, foggy or tempestuous weather impairing visibility of the Signals the SM on duty shall initiate action to depute Fog signal man with detonators vide GR 3.61 in order to indicate the location of the station approach signals to the Loco pilot of an approaching train.
- (ii) The fog signal man shall be proceed to the 1<sup>st</sup> stop signal of the station and place one detonator at a distance of 270M from the 1<sup>st</sup> approaching stop signal towards the approaching train and another detonator at a distance of 10M from the 1<sup>st</sup> one and he shall stand 45M away from the detonator.
- (iii) The fog signal man shall be permanent employee, no temporary or casual labour shall be deployed as fog signal man.
- (iv) The assurance of fog signal man available at the station (including engineering branch if available) shall be obtained in the fog signal register every year in the month of "OCTOBER".

- (v) Details of supply of detonators available stock, use and testing etc., shall be maintained in the fog signal register of the station as per GR 3.64 and SRs there to.

**Note:** Names of fog signal man available at the station shall be exhibited in SM's office.

**LIST OF APPENDICES:**

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

**APPENDIX 'A'**

**WORKING OF LEVEL CROSSING GATES AT LAKSHMIPUR ROAD STATION**

**--NIL--**

**APPENDIX 'B' TO STATION WORKING RULES OF LAKSHMIPUR ROAD  
STATION**

(Detail description of signalling and interlocking installations, instructions for working them normally and in emergencies etc. including power supply arrangements).

**1. BRIEF DESCRIPTION OF THE SIGNALLING AND INTERLOCKING INSTALLATIONS:**

LAKSHMIPUR ROAD is a Class 'B' station provided with Standard-II (R) Interlocking. The station is provided with Route setting type Electronic Interlocking between points, signals, track circuits and other signaling gears. The station is equipped with Multiple Aspect Colour Light Signaling. All points and signals are power operated through a central **Visual Display Unit (VDU)** installed in the SM's Office.

**2. DESCRIPTION OF OPERATOR CONSOLE CUM VISUAL DISPLAY UNIT (VDU):**

The Operator Console cum Visual Display Unit (VDU) in dual configuration is provided for operation of Signals, points, Crank handles and controls etc. A mimic yard diagram based on SI plan No. SI/23218 shall be displayed on the VDU. The VDU is used for controlling and monitoring the station. Indications on the station mimic diagram of VDU will be dynamically updated.

**3. SYSTEM OVERVIEW**

The PC-based **operator VDU** is used for the operation of Signals, Points, Crank Handles and Siding Controls, etc. The SM of a station (*here in after referred as operator*) required to be familiar on the specific station's SWR (station working rules).

Operator VDUs consist of CPU with a color monitor, keyboard and pointing device (mouse). Through communication media the exchange of control and indication messages takes place with operator VDU. The Software is installed to display the Station Yard Mimic diagram on the operator VDU and it allows access to all functions by selecting menus with a click of mouse on the corresponding function icon. By selecting the menu, the function (Signal clear and cancellation, Route release, Point operation, Gate release etc.,) can be executed.

The operator VDU is used for controlling and monitoring the station. However, indications on the Station yard mimic diagram of operator VDU will be dynamically updated.

**3.1. DUAL VDUs – MODE OF SELECTION:**

The privilege has been given to the operator for controlling the station through VDU-1 or VDU-2 by selection through switch provided on the SM's table.

The operator VDU is having controls to operate the field gears through the Mimic diagram. A Mimic panel diagram displayed on the operator VDU is an exact replica of yard that suits SI plan.

**4. CONTROL(S) & INDICATION(S):**

**4.1. ICONS AND INDICATIONS PROVIDED ON THE VDU:**

In addition to mimic yard diagram including signal, points, track circuit, Axle counters, L.C. gates, sidings as indicated in the WRD, various other ICONS and indications have been provided on the VDU. A brief description of the same are described below.

<b>SN</b>	<b>ICONS</b>	<b>INDICATIONS</b>	<b>FUNCTIONS</b>	<b>REMARKS</b>
1.	PC Control	Yellow light when key is 'ENABLE'	Ensures operation of VDU by authorized person	Protected by pass word
2.	---	Emergency Route release - UP & DN	Flashing indication appears when Emergency route release operation is initiated.	For each operation concerned counter shall register one count higher.
3.	Emergency Point operation key	Yellow light when key is 'IN'. Yellow light indication appears showing request for Emergency point operation is acknowledged.	Ensures emergency point operation by authorized person	Protected by Pass word. For each operation concerned counter shall register one count higher.
4.	Point failure Ack. button	Red	Flashing indication appears when any point fails. SM has to left click on the icon to acknowledge.	Buzzer will sound. On acknowledgement, buzzer stops. After verification at site inform S&T staff immediately if failure persists.
5.	Signal failure Ack. button	Red	Flashing indication appears when any signal fails. SM has to left click on the icon to acknowledge.	Buzzer will sound. On acknowledgement, buzzer stops. Inform S&T staff immediately if failure persists
6.	CH-1, CH-2, CH-3, CH-4, -----, buttons	Yellow lamp indicates 'KEY IN'. Red lamp indicates ' CH LOCKED'	In normal condition yellow lamp will be lit. Whenever the crank handle is locked in route or	

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SN	ICONS	INDICATIONS	FUNCTIONS	REMARKS
			otherwise red indication will glow.	
7.	SDG CNT-62, 64 button.	Yellow lamp indicates 'KEY IN'. Red lamp indicates 'SDG KEY LOCKED'	In normal condition yellow lamp will be lit. Whenever the Siding Control key is locked in route or otherwise red indication will glow.	
8.	UP Train arrival Ack button	Yellow - indicates complete train arrived.	On getting indication SM shall left click on the button icon which shall mute the arrival buzzer coming from TLBI.	After complete arrival of train this will be activated
9.	DN Train arrival Ack button	Yellow - Prepared for Block release.	On getting indication SM shall left click on the button icon which shall release Block Handle.	
10.	Line Block button	Red when blocked	SS/Dy. SS shall point the cursor on the icons provided on the berthing track and right click. One drop menu will appear indicating line blocked and unblocked, SS/Dy. SS has to select the required menu.	When line block is selected the concerned button on the particular line turns to RED.

**4.2. PC SM KEY:**

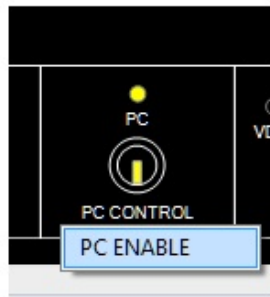
SM key is physically provided on VDU change over panel, outside the VDU on SM's Table. This key when inserted in the lock [provided on VDU change over panel] and turned right the VDU becomes operative. The key when inserted in the lock and either turned to left or extracted out from the lock renders the VDU inoperative except for putting back the signals to 'ON' position in case of emergencies. When SM's key is inserted and turned to right a red indication lit above the SM's Key icon on the VDU.

**PC Control:**

If any one of VDU has shut down for maintenance or in case of failure, after resumed to normal working or rectification, for getting the operations from the

**APPENDIX-'B'**

VDU, first enable the PC which is virtual SM's Key. To enable the PC, right click on the PC icon which activates the PC enable option.



Then click on the PC enable option which will enable the password window to appear. After the valid entry of user name and password, the PC will be enabled. The user name is ECOR and the password of this station is LKMR.



**4.3. ELECTRONIC INTERLOCKING (E.I) SYSTEM INDICATIONS:**

**a) Vital Interlocking Computer Status:**

In EI, two Vital Interlocking Computer cards are available normally. The status of each of the VIC is provided on VDU as following.

VIC – A Indications



VIC-A is Active



VIC-A is Stand By



VIC-A is Not Available

VIC –B Indications



VIC-B is Active



VIC-B is Stand by



VIC-B is Not Available

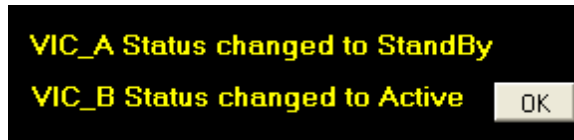
**(S PRABHU)**  
**DSTE/Proj./KRP**

**(K.SIVA HARSHA)**  
**DOM/WAT**



**APPENDIX-'B'**

If there is any change in VIC's status, its current status will be displayed along with OK button and a buzzer is turned on to alert the operator. The Buzzer stops and the indication message disappear when the OK button is pressed by the Operator.



**Action by SM:** If at least one VIC is available and is in Active State, then EI shall continue to function. On observing this fault, SM shall acknowledge the fault and immediately inform Signal Maintainer for further action.

**b) Link Status Indication:**

The EI VDU receives the data from EI Equipment through two OFC channels. The Link Status Indication of the same is provided on the VDU.

When Channel - A or Channel - B link is healthy, corresponding Yellow indication will be glowing steadily. When Channel - A or Channel - B link is faulty, corresponding red indication will be shown steady.



Channel -A Link Status is Healthy



Channel - A Link Status is Faulty



Channel - B Link Status is Healthy



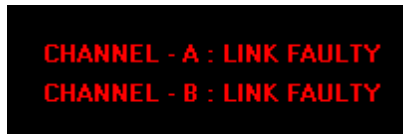
Channel - B Link Status is Faulty

**Buzzer and Acknowledgment:**

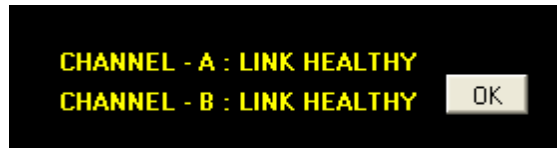
When Channel A link or Channel B Link fails, a Buzzer is turned on automatically to alert the operator. To acknowledge the fault, right click on this control, a pop-up menu is displayed and then click on the Ack menu option. The Buzzer stops when the fault is acknowledged by the Operator.



When any of the channels link fails, an indication is shown in red color.



When any of the links is recovered, the indication is shown in yellow color along with one OK button. The indication message disappears if OK button is pressed.



**Action by SM:** If at least one of the Communication Channels is Healthy, EI VDU shall continue to function as usual emanating all indications. On observing any communication channel faulty indication, SM shall acknowledge the fault and immediately inform the Signal Maintainer.

**c) EI Equipment Critical Fault:**

If EI is shut down due to any critical fault, a message is displayed in red color along with OK button and a buzzer is turned on to alert the operator. The Buzzer stops and the indication message disappear when the Operator presses the OK button.



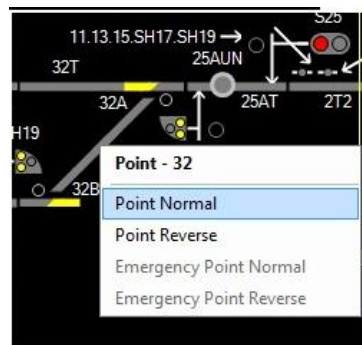
**Action by SM:** SM shall acknowledge the fault, inform the Signal Maintainer.

**4.4. VDU ACTIVE INDICATIONS:**

Whenever the VDU is in active condition a RBG sequence will be running in the top right corner of the screen. That is in a flashing sequence in the screen.

**4.5. OPERATION AND INDICATION OF POINT:**

To operate the point, the operator needs to track the mouse on to the concerned points then click the right button on the mouse. After clicking by the right button on the mouse a pop-up menu will appears as below. Then select the Normal/Reverse option on the menu appearing at the point in the operator VDU.



**4.5.1. REVERSE TO NORMAL OPERATION:**

Click on the **POINT NORMAL** in the menu appearing at the point in the operator VDU, Normal flashing indication will appear, the indication will be steady after the point is set to Normal.

**4.5.2. NORMAL TO REVERSE OPERATION:**

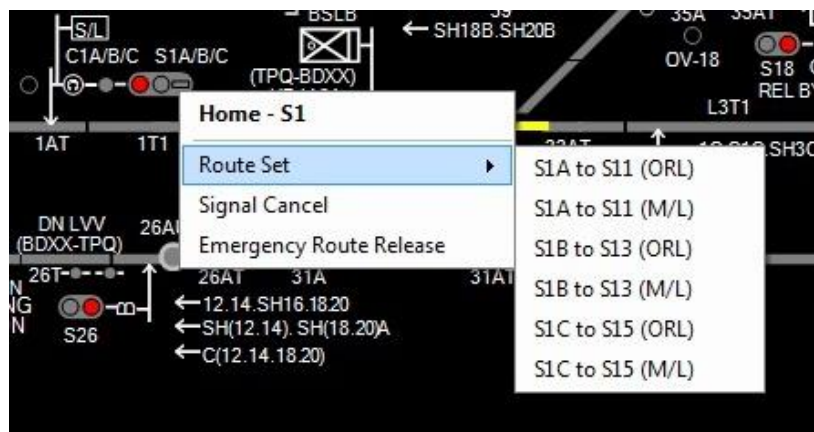
Click on the **POINT REVERSE** in the menu appearing at the point in the operator VDU, a Reverse flashing indication will appear, the indication will be steady after the point is set to Reverse.

**4.5.3. POINT INDICATIONS:**

When the point is free a steady yellow strip of light will appear either in the normal portion of point zone (In case of cross over at both ends) or in the reverse portion of point zone depending up on the position of point, indicating that the point is set. When the point is operated from the normal to reverse the strip of light in the normal portion disappears and starts flashing in the reverse portion and becomes steady when the point is set and detected. Similarly when the point is operated from the reverse to normal the strip of light in the reverse portion disappears and starts flashing in the normal portion and becomes steady when the point is set and detected. When the point is engaged in a route, a yellow indication will appear near the point and red indication appears in the point lock indication showing that the point is locked and cannot be operated.

**4.6. SIGNAL OPERATION:**

To take-off a signal on the desired route, the operator needs to Right click the mouse on the concerned signal on the operator VDU. After clicking on the Signal, a pop-up menu will appear as below for route set, signal cancellation and route release operations.



**4.6.1. SETTING A ROUTE:**

To set a route for a signal, track the mouse on the 'Route set' sub menu which shows all the possible routes of the signal, then click the left button of mouse on the required route on route set sub menu. After doing so, the route gets

initiated & Red flashing indication appears on the replacement track of the signal. All the relevant points Normal/ Reverse set indications will start flashing if favorable point detection is not available. After setting of points in the route, overlap and isolation in required condition flashing indication will be steady and a complete yellow 'Route set' indication will appear over the route right from replacement track of the signal to the last track of overlap section of the route. Also the point lock indication will appear through Red indication near the point. Finally a route locked yellow steady indication will appear immediate to rear of the signal. Now the signal will be taken-off. The yellow route set indication will turn to red when the train occupies the concerned track circuit.

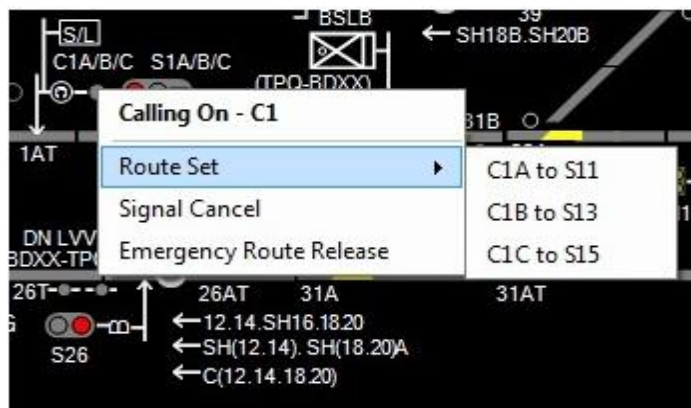
**4.6.2. SHUNT SIGNAL OPERATION:**

To set a route of a shunt signal, the same procedure as main signal has to be followed as explained above. To set the signal route for shunt signals SM on duty shall put the pointing device on the Shunt signal icon and right click on the same. After clicking on the Signal, a pop-up menu will appear as above for route set, signal cancellation and route cancellation operations. Track the mouse on the 'Route set' sub menu which displays all the possible routes of the signal, then click the left button of mouse on the required route on route set sub menu. After doing so, desired route will be initiated and the Shunt signal will be taken off.

**4.6.3. CALLING ON SIGNAL OPERATION:**

Calling on signal route set operation follows the same procedure as mentioned for the main signal. For calling on Signal, route is set after a train occupies the approach track circuit in immediate rear of the stop signal. The calling on Signal is cleared after a lapse of 60 Seconds provided other conditions are fulfilled.

To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit (1AT & 2AT as the case may be) in rear of the signal. When a train occupies the track circuit a RED light strip will appear on the VDU. The particular route on which train is intended to be received shall be set by tracking the pointer in VDU on to the signal below which the calling on signal is provided. Right click on the calling on Signal which will appear a pop-up menu as follows.

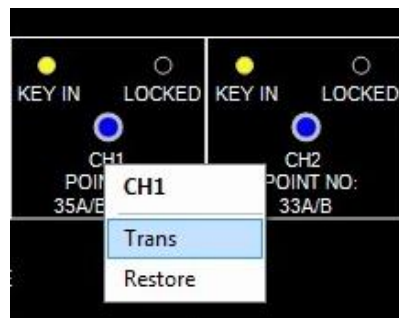


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Then the SM must drag the pointer and click over the 'route set' sub menu which displays all possible routes then click over the particular Calling on route amongst the various options displayed in the sub menu by the left button of the mouse as a result of which the calling-on signal will blink for 60 seconds. For all home signals the time delay is 60 seconds, the Calling on signal clears i.e. a white light glows at the concerned calling-on signal on the VDU. This action will be recorded in a respective counter of the counter box provided on SM's table. Every such operation shall be recorded by the SS/SM on duty along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train by Signal cancellation only.

**4.7. CRANK HANDLE CONTROL OPERATION:**

Normally a 'KEY IN' (Yellow) indication will appear on the VDU indicting that the Crank Handle is free. To Transmit or Release control of the Crank Handle, right click on the concerned Crank handle control button provided on the operator VDU.



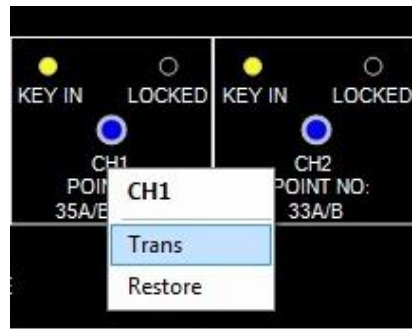
For Transmitting the Crank Handle KEY to the field personnel, right click on the Crank Handle and select the **Trans** in the menu appeared. After transmission, the KEY IN indication will start flashing; now the KEY can be extracted from the EKT. After extracting the key from the EKT, the key IN indication will disappear. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Crank Handle operation along with the latest counter number in a register.

When the Manual point operation is completed, after putting the KEY in the EKT, corresponding Crank Handle KEY IN flashing indication will appear on the VDU. Now the operator has to Release the control for the steady indication, for that right click on the Crank Handle and select the **Restore** in the menu appeared.

A Crank handle locked indication (Red) will appear, when the particular point is locked through the signal route set over it or engaged on route setting in any other way.

**4.8. SIDING CONTROL OPERATION:**

Normally a 'KEY IN' (Yellow) indication will appear on the VDU indicting that the Siding point is free. To Transmit or Release control of the Siding point, right click on the concerned Siding control button provided on the operator VDU.



For Transmitting the Siding control KEY to the field personnel, right click on the Siding control and select the **Trans** in the menu appeared. After transmission, the KEY IN indication will start flashing; now the KEY can be extracted from the EKT. After extracting the key from the EKT, the key IN indication will disappear. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Crank Handle operation along with the latest counter number in a register.

When the Manual point operation is completed, after putting the KEY in the EKT, corresponding Siding control KEY IN flashing indication will appear on the VDU. Now the operator has to Release the control for the steady indication, for that right click on the Siding control and select the **Restore** in the menu appeared.

A Siding control locked indication (Red) will appear, when the particular point is locked through the signal route set over it or engaged on route setting in any other way.

#### 4.9. **OVERLAP TIME RELEASE:**

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

### 5. **EMERGENCY OPERATIONS:**

To carry out different emergency operations the following procedures are to be followed.

#### 5.1. **CANCELLING A ROUTE/ EMERGENCY ROUTE RELEASE:**

To cancel a signal route when the route is set and the signal is taken-off, click on the signal cancellation option on the menu (Main/ Calling on) of the concerned signal, the signal will immediately go to ON aspect, after doing so click on the emergency Route release option on the same menu a popup menu

will displayed for conformation. Since all the Signals are having Dead approach, the route locked indication near the signal start flashing. After the completion of 120 Seconds, route nomination and route locked flashing indication disappears and the counter provided for the route release will change to next higher digit. This number should be recorded by the SM on duty who shall record the details of the Route cancellation along with the latest counter number in a register.

**5.2. EMERGENCY POINT OPERATION:**

When the point zone track circuits failed without any point lock condition through respective signal route(s), a point can be operated by the Emergency Point operation.

**Note:** Before resorting to this operation SM on duty shall verify that the point zone is clear of any vehicle occupying the track section and the same is clear of any obstruction.

Before doing the emergency operation, SM on duty shall enable the Emergency Point Operation Key. To 'KEY IN' the Emergency Point Operation the on-duty SM, by clicking on Emergency point operation Icon, a pop-up menu will appear as shown below.



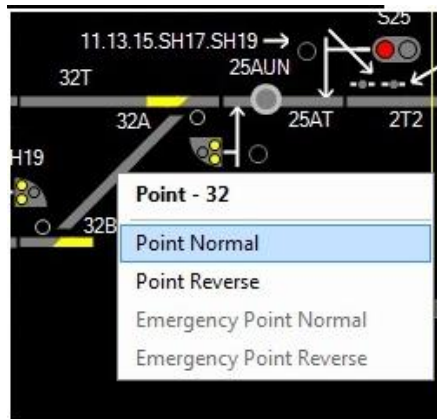
Click on the KEY IN in the menu appeared and should provide User name and password for the same as follows.



The user name of this station is 'ECOR' and password of this station is LKMR. Then point operation can be done to either normal or reverse as per requirement.

**5.2.1. EMERGENCY NORMAL OPERATION:**

Right click on the point, so that a pop-up menu will appear as follows.



Click on the emergency point normal from the menu then normal flashing indication will appear at the point. Flashing will stop and steady indication will appear after the point is set to Normal. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the details of the Emergency Point Operation along with the latest counter number in a register.

### 5.2.2. **EMERGENCY REVERSE OPERATION:**

Right click on the point; so that a pop-up menu will appear as shown above, select the emergency point reverse from the menu then reverse flashing indication will appear at the point. Flashing will stop and steady indication will appear after the point is set to Reverse. This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SS/SM on duty who shall record the details of the Emergency Point Operation along with the latest counter number in a register.

After the completion of the Emergency point operation, the Key to be switched over to 'KEY OUT'. Same procedure as mentioned for KEY IN shall be followed for KEY OUT also. To 'KEY OUT' the Emergency Point Operation key right click on the SM's Emergency point operation key a pop-up menu will appear as shown in the Para No.5.2 above. Click on the KEY OUT in the menu appeared and shall provide User name and password. The user name of this station is 'ECOR' and password of this station is LKMR.

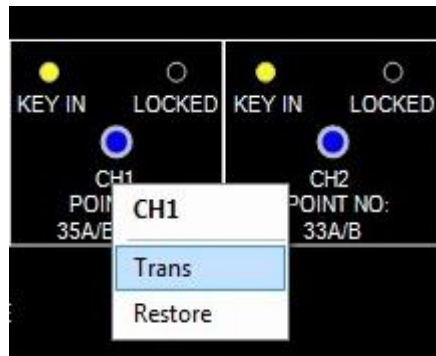
**Note:** The Emergency Point Normal and Emergency Point Reverse options are normally in disabled mode. These are enabled only when the Emergency Key is in KEY-IN position.

### 5.3. **EMERGENCY CRANK HANDLE RELEASE OPERATION:**

When a crank handle is locked due to earlier set route is not released or otherwise. To Transmit or Release control of the Crank Handle, SM on duty shall cancel the relevant signal first and then click on the crank handle control button



icon provided like the following on the VDU. On clicking, the pop-up menu gives details of the possible commands on the Crank Handle.



For Transmitting the Crank Handle KEY to the field personnel SM on duty has to click on '**Trans**' menu. After transmission the 'KEY LOCKED' (Red) and 'KEY IN' (White) indications will start to flash for 120 seconds. After this the 'KEY LOCKED' indication will vanish & 'KEY IN' indication will start to flash. After extracting the key from the RKT, the 'KEY IN' indication will disappear. When the Manual point operation is over, after putting the crank handle key in the RKT, flashing 'KEY IN' indication will appear on the VDU, now the SS/DY. SS on duty shall Release the control for the Steady indication by clicking '**Restore**' menu.

This action will be recorded in a respective counter of the counter box provided on SM's table. The counter will increment the number for each and every such action and also, this number should be recorded by the SM on duty who shall record the details of the Emergency Crank Handle Operation along with the latest counter number in a register.

**5.3.1. EMERGENCY CRANK HANDLE RELEASE DURING FAILURE OF BOTH THE VDUs (ACTIVE & STAND BY):**

When both the VDUs (Active & Stand by) provided for operation of signals & points in EI station cease to work at the same time due to power failure or what so ever the reason, the SM on duty shall put the VDU key to middle position and turn the key (ECH) to right provided in the key box fixed on the SM table. By resorting to this, timer is initiated and all the crank handles are released at a time after 120 seconds. This will be indicated by the indicator provided on the SM Key box. The SM on duty can set the required point/points through crank handles manually by extracting the key/keys from EKTs provided in the location boxes.

CRANK HANDLE CONTROLS FOR EMERGENCY OPERATION OF POINTS			
S No	CRANK HANDLE	CONTROL POINTS	PROVIDED IN
1.	CH1	51A/B, 53A/B	UP CH LOC, SGRM End
2.	CH2	55A/B, 57, 59A/B	UP CH LOC, SGRM End
3.	CH3	52A/B, 54A/B	DN CH LOC, KKGM End
4.	CH4	56A/B, 58, 60A/B	DN CH LOC, KKGM End

**5.3.2. EMERGENCY CRANK HANDLE RELEASE DURING FAILURE OF BOTH EI (ACTIVE & STAND BY) SYSTEMS:**

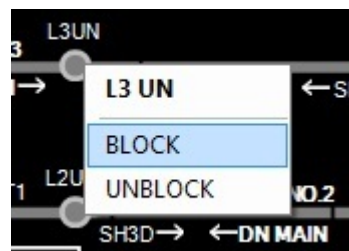
When both the EI systems fails to operate due to power failure or whatever the reason, all the crank handles are released at a time and the SM on duty can set the required point/ points through crank handles manually by extracting the key/keys from EKTs provided in the location boxes. The signaling staff i.e., JE/SSE/Sig or ESM shall be intimated immediately regarding the failure for rectification of the same.

**5.4. BLOCK AND UNBLOCK (REMINDER COLLAR) OPERATION:**

Block option is used to block the particular line on which SM on-duty is intended not to receive any train for certain period of time for some reason or the other.

**5.4.1. BLOCK OPERATION:**

To block/unblock a particular line, right clicking on the route button on concerned line displays 'BLOCK' and 'UNBLOCK' options on the menu as shown below.



Then select the Line block option. After selecting the Line block option that particular line will be blocked for berthing portion on that particular line. The Line block 'RED' colour indication will be displayed after the successful application of such a blocking process on the VDU, during which no signal will be taken off for that line.

**5.4.2. UNBLOCK OPERATION:**

To release the blocking of any particular line, the SM on duty should select the Line Unblock option. After selecting the line unblock option that particular line will be available for the train movement leading to the all possible track circuit section.

**6. DIGITAL AXLE COUNTER:**

Digital Axle Counters are provided as a Last Vehicle Checking Device (LVCD) for block sections between LKMR-KKGM and between LKMR-SGRM.

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

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

In case of failure of the Digital Axle Counters, the SM on duty should resort to resetting of the same along with the SM on duty of adjacent station after confirming that the whole of the train sent by sending station has been arrived at the receiving station. The resetting of the LVCD shall be initiated as mentioned below at both the stations after exchanging the Private Number vide G&SR 4.17, 4.17.01.

A Reset Box is provided on SM's table for each block section to reset the Axle Counter in case of failure. Reset Box gives the status of the block section i.e. Clear (GREEN), occupied (RED), preparatory reset (Miniature GREEN) and power on indications (WHITE). It also having the Reset Key, push button for resetting the LVCD and a counter is provided to record the operation.

#### **6.1. RESETTING OPERATION FOR LVCD (DIGITAL AXLE COUNTER):**

After complete arrival of train, if the LVCD of the section does not clear and Block section clear indication (Green) does not appear in the VDU, the receiving station SM shall apprise the sending station SM through telephone for resetting the Axle Counter giving the details of last train that has arrived complete at his station and the block section is clear.

The receiving station shall inform the sending station as to whether the last train that entered into the section has arrived or not. And, if arrived fully shall so intimate the SM of sending station authenticated by exchanging Private number.

Then the SM on duty shall adopt the following resetting procedure at both the sending and receiving stations individually.

- a) On being advised by SM of LAKSHMIPUR ROAD Station, SM of SGRM/KKGM should perform the following step by step procedure from (b) to (i) for resetting the Digital Axle Counter (SSDAC).
- b) SM of LAKSHMIPUR ROAD Station and SGRM/KKGM Station shall then Insert SM's reset key, and turn right.
- c) Press simultaneously both the Push button and the Reset Key which are provided on the Reset Box for at least 5 seconds continuously at LKMR and SGRM/KKGM station.
- d) Release SM's Reset Key and Push button.

- e) Turn the SM's Reset Key to left and remove it.
- f) The system goes to preparatory reset state and preparatory reset miniature indication (Green) glows on the Reset box. The counter reading incremented after a gap of 5 seconds approximately.
- g) The counter reading should be recorded in the concerned register by SM on duty.
- h) One train is to be piloted out in the section to make the system normal.
- i) The SM on duty shall record it in the Train Signal Register indicating the resetting operations in detail i.e. train number, time, Private Number exchanged with SM of sending station and giving reasons for the resetting operation.
- j) If the axle counter works properly, then Block Section cleared indication 'Green' will appear on the Reset box and the concerned Block working will be normalized after arrival of train which is piloted out.
- k) If the LVCD section indication does not appear 'Green' and continues to show 'RED' indication, the concerned Block instrument shall be suspended and failure intimation is to be given to sectional signal Maintainer/JE/SE (Signal) for early rectification.

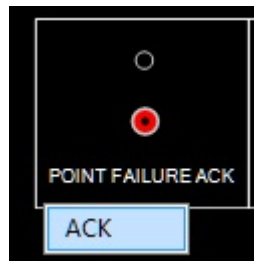
**7. SIGNAL LAMP FAILURE INDICATION AND BUZZER ACKNOWLEDGEMENT:**

LED signal lamps have been used for all signals at this station. In case of failure of the same LED signal, will be indicated by showing 'RED' light on VDU along with audible buzzer, which can be acknowledged and muted by pressing the 'SIGNAL FAILURE ACK' button icon. However the RED light will continue to glow until the lamp is replaced by a new lamp. For rectification of failure SM on duty should inform the concerned S&T staff.



**8. POINT FAILURE INDICATION (RED), POINT FAILURE BUZZER AND POINT FAILURE ACKNOWLEDGEMENT:**

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



**9. COUNTERS:**

The following counters are provided for recording the actions such as emergency point operation, emergency route release etc.

1. Emergency Route Release Counter.
2. Emergency Point Operation Counter.
3. Crank Handle Release Counter.
4. Up Calling on Counter.
5. DN Calling on Counter.

In addition to the above counters, a counter is provided on the Reset Box of each Block section LVCD and two counters are provided on TLBI instrument for line clear cancellation and push back operation. The increment in counter number for each and every such action should be recorded by the SS/SM on duty who shall record the details of the Operation along with the latest counter number in a register.

**10. TRACK CIRCUITS:**

DN Loop, DN main line, UP main & DN Dispatch line & Common loop lines and all the point zones are track circuited as L1T1, L1T2, L1T3, L2T1, L2T2, L2T3, L3T1, L3T2, L3T3, L4T1, L4T2, L4T3, 51T, 53AT, 53BT, 55AT, 55BT, 56AT, 56BT, 54AT, 54BT, 52AT, 52BT.

Approach track circuits 1AT & 2AT of 5 Rail length for Calling on Signal are provided in rear of the Up and DN Home signals respectively. In addition there are short length track circuits 2T in advance of DN Home Signal and 1T in advance of UP Home Signal are also provided. From the last trailing point/fouling mark in either side of yard to Advanced Starter Signals are also track Circuited i.e 20AT and 19AT in DN and UP directions respectively.

Indications for the above track circuits are available on VDU. Yellow Strip on VDU indicates Route is set and track is clear and Red strip indicates Track is in occupied condition.

On account of the doubtful operation of any track circuit by a light vehicle including self-propelled vehicle such as motor trolley or light engine or tower wagon etc., indicating the occupancy/clearance of track, it is necessary that the Station Master on duty satisfies himself that the said vehicle has cleared the point zone track circuits by observing the track indications of the track on either

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side of the cross overs by positively checking the entrance and exit track circuits are showing occupancy and clearance in accordance with the train movement.

**11. RELEASE/CANCELLATION OF ROUTE:**

Normally when a train is received on or dispatch from any route, the route illumination will disappear automatically after passage of the train suggesting that the route is released. When the route is not released automatically after passage of train over it or when on SM on duty intends to cancel the route set by him shall follow the procedure for cancellation of route described in Para No.5.1 of Appendix-B above. If the route is not released even after resorting to cancellation the SM on duty should inform the Signal Maintainer/JE/SSE for its rectification.

***Note:** UP & DN Calling on Signals and UP & DN Advanced Starter Signals are to be manually cancelled after the passage of the train to release the route. In both the cases after passage of train, cancel the signal to release the route.*

**12. REPLACEMENT OF SIGNALS TO 'ON':**

Signals are replaced to 'ON' automatically by the passage of a train beyond the signal. It will not be possible to re-clear the signal again unless the due process for clearing the signal is repeated again. For replacement of any signal to 'ON' position manually, the SM on duty shall follow the Para No.5.1 of Appendix-B.

**13. PILOTING OF TRAINS IN TO STATION YARD:**

Whenever Home signal becomes defective, trains can be admitted by taking off Calling-on signal. Whenever both Home signal and Calling-on signal failed, all trains will be piloted in vide SR. [Refer SR 3.69.03(a) & (c)].

**14. PILOTING OF TRAINS - OUT OF STATION YARD:**

- i) In case starter Signal has become defective SR 3.70.1 shall be followed.
- ii) In case Advanced Starter Signal has become defective SR 3.70.2 & 3.70.3 shall be followed.

**15. SHUNTING:**

Caution Aspect of DN starter Signals are used for shunting on SGRM end up to DN Advanced Starter. Caution aspect of UP starter signals are used for shunting on KKGM end up to UP Advanced Starter. For back shunting individual Shunt signals SH-3(A-E) and SH-4(A-E) are provided towards SGRM end of the yard and towards KKGM end of the yard respectively. Shunt signals SH-8 and SH17 are provided on Line No.5 towards SGRM end of the yard and towards KKGM end of the yard respectively. Shunt Signal SH5 & SH6 are provided on Shunting Neck and Tower Wagon Siding respectively. Dependent Shunt Signals SH12A/B and SH13A/B are provided on Line No.4 towards SGRM end and KKGM end respectively. For taking OFF Shunt signals please refer Para No. 4.6.2 of APPENDIX-B.

**16. VERIFICATION OF LINE CLEARANCE BY STATION MASTER ON DUTY FOR RECEPTION OF TRAIN INTO STATION YARD:**

In the Station yard, a route on the running line comprises entrance, berthing and dispatch portion of the yard shall be kept clear of any obstruction for the passages of any train or for any other movements. The clearance of the route including overlap must be ensured by the DY.SS/SM on duty personally through VDU indications and/or physical verification of track before any movement of trains are permitted on the concerned route subject to the other conditions such as locking of the point's etc.

**17. MAINTENANCE OF S & T INSTALLATION AND ADHERENCE TO MAINTENANCE SCHEDULES:**

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

The tests, checks and replacements etc., shall confirm to the schedules of maintenance as indicated in the Signal Engineering Manual as also as per the current and extant instructions/circulars on the subject.

**18. GOODS SIDING:**

The SM on duty shall follow the procedure laid down in Para No.4.8 of Appendix-B for operation of Goods Siding points from VDU. Once the control is extended from VDU the electrical operation of siding point is given as follows.

**18.1. WORKING OF GOODS SIDING POINT NO.64A/B:**

Electrical operation of siding control point No.64A/B is carried out at site from the Goods Siding location No.1. In Goods Siding location No.1 there are two EKT's namely EKT-1 & EKT-2, three buttons for normal and reverse operation along with common point button. Point indications for normal & reverse and point free indications are provided. Working of Electrical operation of Siding Points is as follows:

1. To operate Siding point Key 'P' is required to be extracted from EKT-1 and to be inserted in EKT-2.
2. Key 'P' can be extracted from EKT-1 only after SM extends permission from SM's VDU. Extraction of Key 'P' from the EKT-1 will block all signaled movement on Line No.1.
3. Key 'P' thus extracted is inserted in EKT-2 (Lock free EKT), point free indication appears on the board. Point button and normal or reverse buttons are simultaneously pressed to set the point No.64A/B in normal or reverse position as the case may be.
4. After the point is set to reverse position, key 'P' should be extracted from EKT-2 (Lock Free EKT) and to be kept in personal custody of shunting porter. Extraction of Key-'P' from EKT-2 will lock the point No.64A/B.

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5. After completion of the movement Key 'P' is to be inserted in EKT-2 & point No. 64A/B is to be operated to normal position. After ensuring that both ends of point No.64A/B is in normal setting, Key 'P' is to be extracted from EKT-2 (Lock Free EKT) & inserted in EKT-1 to enable SM release the control 64. Key 'P' in EKT-1 will resume all signalled movements on Line No.1 over Point No.64A/B in normal position.
6. In case of failure of electrical operation Key-'P' is to be extracted from EKT-1, to be used for manual operation of point No.64A/B by crank handling.

**18.2. WORKING OF GOODS SIDING POINT NO.62A/B:**

Electrical operation of siding control point No.62A/B is carried out at site from the Goods Siding location No.2. In Goods Siding location No.2 there are two EKT's namely EKT-1 & EKT-2, three buttons for normal and reverse operation along with common point button. Point indications for normal & reverse and point free indications are provided. Working of Electrical operation of Siding Points is as follows:

1. To operate Siding point Key 'Q' is required to be extracted from EKT-1 and to be inserted in EKT-2.
2. Key 'Q' can be extracted from EKT-1 only after SM extends permission from SM's VDU. Extraction of Key 'P' from the EKT-1 will block all signaled movement on Line No.1.
3. Key 'Q' thus extracted is inserted in EKT-2 (Lock free EKT), point free indication appears on the board. Point button and normal or reverse buttons are simultaneously pressed to set the point No.62A/B in normal or reverse position as the case may be.
4. After the point is set to reverse position, key 'Q' should be extracted from EKT-2 (Lock Free EKT) and to be kept in personal custody of shunting porter. Extraction of Key-'Q' from EKT-2 will lock the point No.62A/B.
5. After completion of the movement Key 'Q' is to be inserted in EKT-2 & point No. 62A/B is to be operated to normal position. After ensuring that both ends of point No.62A/B is in normal setting, Key 'Q' is to be extracted from EKT-2 (Lock Free EKT) & inserted in EKT-1 to enable SM release the control 62. Key 'Q' in EKT-1 will resume all signalled movements on Line No.1 over Point No.62A/B in normal position.
6. In case of failure of electrical operation Key-'Q' is to be extracted from EKT-1, to be used for manual operation of point No.62A/B by crank handling.

**19. RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:**

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

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**20. PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:**

Whenever any normal maintenance or special works for major renewals etc., are involved, the Signal and Telecom department should pre-plan these works. Field staff and the Inspector of the section should give to the Station master in writing 'Advance Intimation' about this work in terms of G and SR.15.08.01.

**21. EMERGENCIES:**

Notwithstanding, anything contained in the aforesaid paras when equipment is found defective and unsafe for passage of trains, the Signal and Telecom staff must at once suspend the working of the equipment and associated installations and issue 'Suspension Memo' explaining the seriousness of the defect or damage to the interlocking installation to the Station master and take the Station Master's acknowledgement. After this, the usual practice of exchange of disconnection memo and reconnection memo can follow. The Station Master must act promptly on such messages and take adequate precaution treating the S&T installation as defective and pass trains over the affected interlocking equipment's according to extant instructions as contained in GR.3.77.

**22. PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNAL OR POINTS AND USE OF CRANK HANDLE:**

- a) When any point fails to operate normally by individually or Route Setting operation through VDU, the points can be operated by using the crank handle. Normally these crank handles are interlocked with the signaling and interlocking system at this station and normally locked inside the RKT instrument at the respective Crank Handles Locations.
- b) In event of failure/defect of points trains may be received/dispatched on signals after manual operation of points by the emergency crank handles which are interlocked with the signals provided-

The station master deposes a responsible operating official with the crank handle to operate the defective point manually. The emergency crank handle is electrically transmitted to him by the Station Master on duty with instructions to set the defective point(s) to the desired position (viz., Normal or reverse) and clamp and padlocked the same. Both the ends of a cross over must be set in correspondence (viz., Normal or Reverse), the facing and trailing points must be clamped and padlocked. The operating official so deputed, after complying with such instructions should return the emergency crank handle by transmit electrically to station Master on duty.

- c) The station Master on duty should verify from the visual indication available on the VDU/other means that the points are set to the desired position as instructed by him (Normal or Reverse) and thereafter return the crank handle received by him to the respective location box.
- d) He should also verify from the operating official deputed to set the defective point(s) that the same is also clamped and padlocked, supported by a private number.

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- e) The station master on duty after ensuring the correct setting of defective point(s) as required in above Paras (b), (c), (d) can take off the concerned signals for movement of the trains over the point(s).
- f) If even after complying with the instructions contained in paras (b) to (e) by station master on duty, the correct setting of the defective points to the desired position is not indicated in the visual indication provided, the train shall be piloted in and out in terms of SRs 3.69.01, 3.69.02, 3.69.02, 3.70.01 and 3.70.02.
- g) The cases of failure of motor point should be promptly reported to the concerned signal maintainer/signal SSE/JE for immediate rectification of the same.
- h) Whenever a Crank Handle key is required to be used by a Signal Official for maintenance or attending to failure, the Signal Official will give a disconnection memo to the Station Master on duty and after making necessary entries in the Crank Handle register, the Station Master on duty will obtain acknowledgement of the Signal Official in the Crank Handle Register and then handover to him the Crank Handle key for the Points concerned. All the Points will be treated as defective till the Crank Handle key is returned back to Station Master on duty.
- i) Whenever the emergency crank handle(s) is/are handed over to a Signal official for maintenance work or rectification of a failure, the points for the effected line should be treated as non-interlocked and the Station Master on duty is responsible for introduction of Non-interlocked working and the trains will piloted IN and OUT duly clamping and Padlocking the Points over which the train is to pass, as per SRs 3.69.01, 3.69.02, 3.69.02, 3.70.01 and 3.70.02.
- j) The Crank Handle Register is to be maintained in the following pro-forma by the Station Master on duty wherein the particulars of usage of the Crank Handle must be recorded:
  - 1. Date:
  - 2. Point Number which failed or required to be tested:
  - 3. Time failure:
  - 4. Disconnection memo number received from S&T Staff:
  - 5. Signature of SM/Signal Official to whom the Emergency Crank Handle is handed over:
  - 6. Time Emergency Crank Handle is sent out:
  - 7. Signature/PN of the Operating official to ensure correct setting, Clamping and Padlocking of the Points:
  - 8. Date and Time fault rectified.
  - 9. Time of Emergency Crank Handle received back by SM on duty.
  - 10. Signature and Designation of the Signal Official who rectified the fault.
  - 11. Remarks.

**23. INTERLOCKING OF SIGNALS WITH BLOCK INSTRUMENTS:**

**23.1. INTERLOCKING WITH HOME SIGNALS:**

Both the TLBIs are Electrically interlocked with the respective Home signals, so that the handle of the TLBI Instrument cannot be turned from TRAIN COMING

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FROM position to LINE CLOSED position of UP or DOWN direction as the case may be unless the respective Home Signals is put back to NORMAL position and the respective Block Section monitored by Axle Counter is clear of trains.

**23.2. INTERLOCKING WITH ADVANCED STARTER SIGNALS:**

The UP Advanced Starter Signals No.19 is electrically interlocked with respective TLBI of section LKMR-KKGM so that this Signal cannot be taken OFF until the Handle of the concerned Block Instrument is in 'TRAIN GOING TO' position.

The DN advanced starter signal No.20 is interlocked with TLBI of section LKMR-SGRM so that this Signal cannot be taken OFF until the Handle of the concerned Block Instrument is in 'TRAIN GOING TO' position.

**23.3. SUSPENSION OF LAST STOP SIGNALS:**

When the TLBI instrument for section LKMR-SGRM or LKMR-KKGM is suspended with its handle in any position for whatever reason the concerned Last Stop Signals controlled by the TLBI must be treated as suspended and trains shall be worked as per GR 14.25, SR 3.70.02 & 3.70.03.

**24. NORMALISATION OF THE BLOCK SECTION AXLE COUNTER AND OF BLOCK WORKING BY RESETTING FEATURE:**

1. Digital Axle Counters (SSDAC) are provided for Block Sections between LKMR-KKGM and between LKMR-SGRM.
2. The occupation and clearance of the axle counter section are indicated on the VDU by 'RED' and 'GREEN' light.
3. If any Block proving Axle Counter [LVCD] section fails, the Last Stop Signal at the rear station cannot be taken 'OFF' and Block instrument at Advance Station cannot be turned to 'Line Closed' position after arrival of a train and in such case, resetting of last Vehicle Checking Device is to be resorted to in either Section.
4. No train shall be allowed on signal to leave a station in any particular direction unless:

Block Section clear indication is available for the relevant Axle Counter section portion and Last Stop Signal is taken OFF. [Refer Para No: 6.1 of appendix 'B' for procedure of resetting of LVCD Axle counter].

**25. POWER SUPPLY ARRANGEMENT FOR SIGNALLING INSTALLATIONS:**

Power signaling and interlocking installations and the ancillary field units are fed from the following sources of power Supply.

- i). Normal Supply from AT connected to OHE traction distribution [230V 50HZ].
- ii). Stand by Supply: 1<sup>st</sup> standby: Odisha State Electricity Supply and 2<sup>nd</sup> standby: DG set.

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Normal power Supply [Single-phase 230V-50 HZ] to the signalling and interlocking installation at the station is drawn from the traction power sources through AT. Whenever traction power Supply fails the SM on duty shall operate the changeover switch provided in the SM's office connecting the power Supply from the healthy sources to the installation in case the knob is not in Auto mode.

The SM on duty however maintain the record of power failures either of the traction Supply or local Supply and he must promptly report the failure of any one or both the power sources immediately through the section controller and to the concerned Elect. Staff and S&T maintenance staff.

- i) The station works on 230V single phase power Supply. The normal power Supply is from the auxiliary transformer (25KVA Rating) connected to OHE traction distribution.
- ii) Standby power Supply: First Standby: Odisha State Electricity Board Supply and second Standby: DG set.
- iii) An Auto changeover switch is provided in the Station Master's Office with the two power Supplies viz., AT and Local Supply for automatic selection from available source or changing the switch position to the required Supply manually. A luminous indicator provided above the circuit breaker for each Supply indicates the availability of the Supply.
- iv) Normally the switch is kept in auto mode. In case of failure of the AT Supply without any power block, the on duty SM has to check whether the circuit breaker has tripped (Three circuit breakers are provided in the changeover switch board one for each Supply and their normal position is Up and when tripped it goes down). In case of failure of Supply, the Local Supply shall be utilized by operating the switch. If the circuit breaker is tripping even after resetting, no attempt shall be made to hold it by any means and a message shall be given to concerned SSE [Elect.] and SSE/PSI [OHE] for prompt rectification.
- v) Normally manual changeover switch is kept in selected Supply from CLS panel position, if in case failure of both AT and Local supply, changeover switch is changed to DG Supply position by on duty SM.
- vi) There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

**26. WORKING OF INTEGRATED POWER SUPPLY [IPS, INDICATIONS & ACTION TO BE TAKEN BY SM ON DUTY:**

Power Supply to the signalling installation is fed through Integrated Power Supply System [IPS] installed in the S&T power Supply room. For IPS system, a manual changeover switch is provided at SM's Office with the two power Supply viz., selected Supply from CLS panel and DG Supply for changing the switch to required Supply position. Normally manual changeover switch is kept in selected Supply from CLS panel position, if in case any emergency changeover switch is

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changed to DG Supply position. There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

The IPS system is connected with battery as a backup power source for safe working during transition of power and in case 230 AC Supply is not available due to any reason.

In the event of failures of all the sources of 230V 50HZ AC Supply, the signalling system shall be fed by backup battery bank connected to IPS for a limited power of 3 to 4 hours. The health of the battery bank is monitored through one IPS Monitoring Panel provided in the SM's room which shall display the voltage of 110V DC battery bank provided as backup source of power Supply. Depending up on the health of the battery bank and the system the following indications/alarm will appear on the remote monitoring panel. The indications/alarm, their implications and action to be taken by SM on duty is tabulated below:

SN	Instruction	Health of Battery Bank/Equipment.	Visual Indication	Audio Indication	Action to be taken by SM on duty
A	-	50% DOD	Red	Alarm	Alarm shall be acknowledged by SM on duty.
B	-	60% DOD	Red	Alarm	-do-
C	System shutdown	70% DOD	Red	Alarm	Signal feed cut off and all DC-DC converters to Work. Audio alarm will continue till power Supply is restored.
D	Call S&T staff.	Equipment fault.	Red	Alarm	Failure of any module will give the alarm in ASM's panel. Alarm shall be acknowledged by SM on duty for audio cut off.

On duty SM in each shift shall check and record the readings, indications, etc. in the station dairy duly initiating rectification of failures of IPS System, if any. In the event of failure of Remote monitoring ASM console due to any reason when both traction power and local power failed the SM on duty shall inform concerned Electrical staff immediately. In case ` call S&T staff ` or `system shut down` indication appear on the remote monitoring panel of IPS and/ or mal

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functioning of the remote monitoring panel SM on duty shall inform the same to concerned S&T staff immediately.

**NOTE:** [i] DOD indicates depth of discharge of battery bank of IPS [ii] In case of failure of all AC Supply sources; IPS battery bank can provide power Supply maximum up to 3 to 4 hours before system shut down indication of IPS.

**27. WORKING OF AUTOMATIC FIRE DETECTION AND ALARM SYSTEM:**

- In case of any alarm in any particular area due to fire or dust-Zone number on the LCD display can be seen.
- Note down the zone No. and panel display name, by referring display chart.
- Once you find the zone number rush to that particular area where the detector gives alarm.
- The moment the smoke detector detects any smoke particles, the RED LED will blink along with the alarm.
- Once you reach the area where the detector is giving the alarm, check whether the alarm is due to the fire or for any other reason.
- To alert the people in case of emergency press "\*" sign of the fire which is present inside the key pad together for few seconds. This will enable you to hear the panel alarm.
- To reset the panel press "OFF" button and enter the code 1111 (1 digit four times).
- The control panel will get reset and siren muted.
- If the power fails on this will enable us to see the red indicator on the panel.
- In case of failure in power and if the battery is fully charged, the panel can function effectively as long as the charge in the battery is present.

**AUTO DIALLING:**

If you hear alarm from the panel, this system will dial the Railway telephone numbers you fed. The pre recorded messages will be heard on the phone. If you want to make two way communications, press "6" on your mobile. You can have this communication for 50 seconds. If you want to talk more, press again "6" before completion of 50 seconds for another 50 seconds or you can acknowledge the receipt of call by pressing "2" on SSE/Signal mobile, in case number "2" is not pressed the system will dial again the same telephone number as per the programmed dial attempt and still if acknowledgement not come from 1<sup>st</sup> number then panel will dial 2<sup>nd</sup> number till the time acknowledgement comes it will keep on dialing.

**APPENDIX 'C' TO STATION WORKING RULES OF LAKSHMIPUR ROAD**  
**STATION**  
**ANTI COLLISION DEVICE [[RAKSHA KAVACH]:**

-NIL-

**APPENDIX 'D' TO STATION WORKING RULES OF LAKSHMIPUR ROAD STATION**

The following staffs are concerned with the movement of the trains whose duties are given below:

**1. STATION MASTER (IN CHARGE):**

- a) He is responsible for trains passing during his shift.
- b) He is responsible for the general and satisfactory working of the station and for the efficient discharge of duties by staff working under him.
- c) He shall keep all Rule books, Registers, Files and documents neat and up to date.
- d) He shall ensure that all equipment, apparatus, and instruments including signaling and interlocking gears and fittings are kept clean and oiled by S&T officials.
- e) His special attention is drawn to Chapter-II of G&SR and GR 5.01 to 5.08 with relevant SRs and O.M. Chapter-2.
- f) He shall follow the instructions laid down in SR.3.68.01 (c) and (d) and SR 14.07.01 and B.W.M.2.09 (e).
- g) He shall promptly attend to accidents and report them.
- h) He shall supervise the work of safe working staff and conduct night inspections and report lapses of staff working under him.

**2. STATION MASTER:**

- a) He is responsible for trains passing during his shift.
- b) He shall promptly bring to the notice of SM in-charge all irregularities and accidents in course of his shift duties.
- c) During the absence of SM I/C, the duties of the Station Master will devolve on him.
- d) He shall follow SR 3.68.01(c) and (d) SR 14.07.I and OM Chapter-2.
- e) His special attention is drawn to Chapter-2 of G&SR 1976 and GR 5.01 to 5.08 with relevant SRs.
- f) As an assistant to SM I/C, he shall carry out the instructions given from time to time.

**3. TRAFFIC POINTSMAN:**

- a) He shall work under the orders SM on duty.
- b) He shall couple and uncouple vehicles under the supervision of SM.



**APPENDIX-'D'**

- c) He shall watch and guard the packages and other Railway property lying in the Station premises.
- d) He shall report any irregularities coming to his notice.
- e) He shall do loading and unloading of parcels, smalls and Guard's boxes. He shall do piloting IN and OUT.
- f) He shall deliver any official message to the proper person/office. He shall carry out any other duties entrusted to him by the SM on duty.
- g) He shall follow OM Chapter-2.

**NB:** - All staff should be in uniform while on duty and follow their rosters issued by DPO/WAT from time to time.

**APPENDIX-'E'****APPENDIX 'E' TO STATION WORKING RULES OF LAKSHMIPUR ROAD  
STATION:****ESSENTIAL EQUIPMENT:**

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

<b>Sl. No</b>	<b>Description</b>	<b>Quantity</b>
(i)	Detonators	20
(ii)	LED based Tri Colour flashing torch.	3(1 Spare)
(iii)	Hand Signal Flags	3(1 Spare)
(iv)	Safety chains with Pad locks	8
(v)	Clamps with Padlocks	10
(vi)	Skids	8
(vii)	Wedges	4
(viii)	Fire & Sand buckets	6
(ix)	Fire Extinguishers	2
(x)	Line blocking collars	6
(xi)	Motor trolley on line board	2
(xii)	Block suspension board	2

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**APPENDIX-'F'**

**APPENDIX 'F' TO STATION WORKING RULES OF LAKSHMIPUR ROAD**

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

---NIL----

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**APPENDIX- 'G'**

**LAKSHMIPUR ROAD STATION**

RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS:

DETAILS OF WORKING RULES OF 25KV AC TRACTION.