East Coast Railway

Waltair Division

STATION WORKING RULES

KEUTGUDA (KTGA)

East Coast Railway / Waltair Division

Station Working Rules of

KEUTGUDA (KTGA)

Index of Correction Slips

Sl. No	Correction Slip No	Date of issue	No. of Pages Replaced	Total No of Pages

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EAST-COAST RAILWAY
WALTAIR DIVISION
STATION WORKING RULES OF KEUTGUDA STATION(B.G)
ELECTRONIC INTERLOCKING

Date of Issue:
Date brought into force:

Ref.Lr.No.2000/Safety(A&R)/19/36ofRly. Boarddt.27.10.05.

NOTE: The Station Working Rules must be read in conjunction with General and subsidiary Rules, Operating Manual and Block Working Manual. These rules do not in any way supersede any rules in the above Rule Books.

1. STATION WORKING RULES DIAGRAM:

i) Station Working Rule Diagram: SI/WRD/10367 ALT'N'
ii) CSTE/E..Co.Rly/Drg. No. : SI/10367 ALT'N'
iii) Date up to which corrected (Updated) :

2. DESCRIPTION OF STATION:

2.1 GENERAL (LOCATION):

a	Name of the station	:	KEUTGUDA (Code: KTGA)
b	Class of station	:	'B' class
c	Section	:	Koraput – Rayagada
d	Double line/Single line	:	Single line
e	Electrified/Non Electrified	:	Electrified
f	Gauge BG/MG/NG	:	BG
g	Railway	:	East Coast Railway
h	Route	:	'D' Route
i	Situated at	:	Km 154.015
j	Reckoned from	:	Koraput
k	Operations	:	Centrally operated Panel
l	Standard of Interlocking		STD II R

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

Sl. No	Adjacent Block – section	Distance	Direction
a	SIKARPAI (SKPI)	15.533 km	KRPU end
	BH OF TIE LINE 'A' CABIN	7.367 km	RGDA end
	SPRD	9.708 km	RGDA end
b	Provision of IBS	Nil	
c	Automatic signal	Nil	
d	DK station/Outlaying sidings	Nil	
e	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
DN Direction	From DN advanced starter signal no. 11 of KTGA	UP Advanced starter signal no. 15 of BH OF TIE LINE 'A' CABIN
UP Direction	From UP advanced starter signal no. 12 of KTGA	DN Advanced starter signal no. 12 of SKPI.

2.4 GRADIENTS:

TOWARDS 'Block Hut of Tie Line 'A 'Cabin END.	CHAINAGE IN MTRS FROM CSB		INTER DISTANCE IN METERS	GRADIENT
	FROM	TO		
	00.000	669.00	669	1 in 400 Falling
	669.00	2969.25	2300.25	1 in 125 Falling
	2969.25	Into Section	--	1 in 100 Falling
TOWARDS SKPI END.	CHAINAGE IN MTRS FROM CSB		INTER DISTANCE IN METERS	GRADIENT
	FROM	TO		
	00.000	831.00 (KM 153.184)	831	1 in 400 Raising
	800.00	5331.00 (KM 148.684)	4531	1 in100 Raising
	5331.00	Into Section	--	1 in125 Raising

2.5 LAY OUT :

Sl No	Running/Non Running line	Electrified/Non Electrified	Platforms and Length
1	Route-1 (1st loop)	Electrified	Rail Level Passenger Platform 244MX6.4M
2	Route-2 (Main line)	Electrified	-----
3	Route-3 (2nd loop)	Electrified	-----
4	Route-4 (3rd loop)	Electrified	-----
5	Track Machine Siding	Electrified	-----

2.5.1 RUNNING LINES, DIRECTION OF MOVEMENT AND HOLDING CAPACITY:

Sl No	Name of the line	Holding capacities on CSR	Direction of movement
1	Line no-1 (1stLoop)	714M(STR-STR)	Trains coming from Block Hut of Tie Line 'A' Cabin and proceeding towards SKPI are UP trains. Trains coming from SKPI and proceeding towards Block Hut of Tie Line 'A' Cabin are DN trains.
2	Lineno-2 (Main Line)	720M (STR-STR)	
3	Line no-3 (2nd Loop)	720M (STR-STR)	
4	Line no-4 (3rd Loop)	720M (STR-STR)	

2.5.2 NON- RUNNING LINES AND THEIR CAPACITY:

Sl No	Name of the line	Holding capacities on CSR	Direction of movement
1	Track Machine Siding	200M LONG	The track machine siding is provided on Line no.1 towards RGDA end with CSL of 200M.This siding is isolated by DS Point No.107 controlled by key 'M' at Chainage: 115.12M.Whenever it is required to place or drawn out machines to/from siding, SM/KTGA have to transmit control no.107 on Panel. After transmission of control 107, Key 'M' can be extracted from track machine siding location box. Key 'M' thus extracted is to be inserted in HPL and unlock to operate the point from Normal to Reverse. Then Key 'Y' is to be extracted from HPL and to be inserted in other end of DS point to unlock and operate lever form Normal to Reverse. Both the points of the siding should be clamped for movements from and to siding. After completion of movements, the points should be normalized and key 'M' transmitted to SM/KTGA to release control no.107.When control 107 of track machine siding is to be transmitted, all signals pertaining to line no.1 will not be taken off.

2.5.3 <u>ANY SPECIAL FEATURES IN THE LAYOUT</u>:

a) UP Home signal (S-2) is placed on RH side of the track.
b) UP Adv. Starter (S-12) is placed on RH side of the track
c) Starter signals no's 3, 4, 5, 6, 7, 8, 9, 10 are placed at 1M from the replacement track circuit glued joints in order to increase the CSL as per RB Lr.No.(i) 2012/SIG/SEM-II/Misc dated 10.10.2012 (ii) 2012/Safety/(A&R)/19725 dated 13.06.2013.
d) Due to existence of gradient steeper than I in 400 beyond 50 meters of outer most point of the station yard, SOD revised 2004 chapter-2 item no.2 NOTE –d & NOTE- e to be followed.
e) While shunting on gradient towards DN Adv Starter Signal No.11, an engine to be attached towards the falling side of the gradient. GR-5.20 to be followed.
d) Speed restriction of 10 KMPH is imposed on UP starter signals no.6, 8, 10 and DN starter signals no.7 & 9 due to existence of 1 in 8 (1/2) SS.

2.6 <u>LEVEL CROSSINGS</u>:

------ NIL-----

3. <u>SYSTEM AND MEANS OF WORKING</u>:-

System of Working in force	Absolute Block System of Working.
Double Line/Single Line	Single Line.
Block Instruments	a) KTGA-Block Hut of Tie Line 'A' Cabin Section: Single line Token less Handle type Block Instruments. b) KTGA-SKPI section: Single line Token less Handle type Block Instruments.
Co-operative/Non Co-operative	a) KTGA-Block Hut of Tie Line 'A' Cabin Section: Co-operative.

	b) KTGA-SKPI section: Co-operative.
Block Telephone	Attached with Block Instruments.
Staff responsible for custody of key and operations.	SM on duty

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

1.	*Standard of Interlocking*	Standard-II R.
2.	*Type of signaling*	MACLS
3.	*Mode of operating the signals*	Panel Interlocking
4.	*Provision of Calling-On signals*	Calling-on signals are provided below Home signals (i.e. in both UP & Down directions) as per GR.3.13 (1)(b), (2)(3)(4) & (6) (b).
5.	*Provision of shunt signals*	Shunt back signals SH-15 and SH-16 are provided towards KRPU end of the yard and towards RGDA end of the yard respectively.
6.	*Emergency Cross over*	Nil
7.	*Track circuits*	The provision of track circuits is mentioned in Appendix-B Para No.10 of this SWR.
8.	*Axle counters*	Provided High Availability Single Section Digital axle counter (HASSDAC) for last vehicle verification between KTGA- Block Hut of Tie Line 'A' Cabin Section and KTGA-SKPI for last vehicle verification.
9.	*Crank Handles*	When any point fails to operate normally by the Route Setting operation through Panel, it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for use of crank handle for motor operated points shall be followed as per operating manual chapter-2, para-2.18 & 2.19. CH1: 101, 102, 103. CH2: 104, 105, 106. The Station Master on duty shall perform following exercises to the crank handle through crank handle switch provided on the panel. Crank Handle is revitted to RKT key and housed in the RKT in the locations at either end of the yard. On the panel at the crank handle switch has three indications are provided viz. i) 'WHITE' crank handle 'IN' indication. ii) 'GREEN' crank handle free for extraction indication. iii) 'RED' crank handle out or extracted indication.

		At the station 2 pairs of RKT (CH1 & CH2) are provided on each of the pairs of RKT is for housing the crank handle and other for transmission of crank handle to locations at either end. In normal position the keys are housed in RKT. When it is necessary to extract the crank handle Station Master on duty shall ensure that all the signal switches on the panel are in normal position, and then turn the crank handle switch on the panel to the right. When all conditions for extraction of crank handle are safe a 'GREEN' indications shall appear on the panel suggesting that the crank handle key can be extracted. On observing the Green indication the Station Master on duty shall extract key from RKT housing the crank handle. Immediately Green light extinguishes and 'RED' light glows on the panel suggesting that the crank handle key is out. In this position all the signals controlled by the said crank handle are held locked in their normal position. The key extracted from the RKT shall be transmitted to location through other RKT of the pair to either end locations and instruct the PM to set the route in the desired position. SM on duty shall extract the key from RKT as transmitted from the location and insert it in the next RKT of the pair and turn the switch to the left. The 'RED' light extinguishes and 'WHITE' light appears suggesting that the crank handle is in normal position that is 'KEY IN' position. In addition in each case of operation the common button DUN to be pressed along with turning of concerned switches. SM may take 'OFF' the signals on the route so set by crank handle provided the route setting indication is available on the panel. In addition the points set by crank handle shall be clamped and padlocked (both facing and trailing end of the crossover) When point setting indication could not be obtained on the panel after the points are set with crank handle the trains shall be piloted 'IN' or 'OUT' as the case may be. In such cases, SM on duty shall personally supervise the correct setting, clamping and padlocking of points for all trains before piloting 'IN' and 'OUT' as the case may be.
10.	Showing of veedor counter	The counters as mentioned are provided in this station to record the emergency operations. The increment in the 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. 1. Emergency Route Release. 2. Emergency Crank handle release. 3. UP & DN Calling -On. 4. LVCD axle counters resetting for section Block Hut of Tie Line 'A' Cabin 5. LVCD axle counters resetting for section KTGA-SKPI.
11.	Emergency Route Release	The Electronic interlocking is based on the principle of 'DEAD APPROACH LOCKING'. As such when a route is set and signal is taken 'OFF' on the route, the route gets locked. Normally the route is released by the passage of the train over the route. When it becomes necessary to alter the route after the signal has been taken 'OFF' vide SR 3.36.02(a), the concerned signal must be put back to danger by press signal button and concerned signal cancellation button. Then the emergency route release button (white with red dot) positioned in the top of panel is to be pressed by breaking the seal and subsequently the concerned signal button pertaining to the route is to be pressed. A white light will flash (Up or Down) indicating that the timer is working. After 120 seconds, the white light along with the white strip of light will disappear suggesting the route has been released. In case the route illumination (a white strip of lights) does not disappear, it suggests that the route is not released/cancelled. In such case the emergency cancellation of route has to be resorted to. The concerned S&T staff should be advised immediately to get the emergency route release button resealed after rectification of fault if any. Each operation of emergency cancellation of route is recorded in the emergency route release counter by registering the next higher number. All such operations and the new number should be recorded in the concerned register along with station diary and in the train signal register.
12.	Emergency Crank Handle Release Operation	When a crank handle is locked due to route set earlier is not released or otherwise to Transmit or Release control of the Crank Handle, SS/SM on duty shall cancel the relevant signal first and then turn the concerned CH switch towards right hand direction in 'OUT" position and long press the DUN button on the panel board. After that the 'KEY LOCKED' (Red) indication will start to flash for 120 seconds & 'KEY IN' remains steady. After a lapse of 120 seconds the 'KEY LOCKED' indication will vanish & 'KEY IN' indication will start to FLASH. On observing the Green indication the Station Master on duty shall extract key from RKT housing the crank handle.

		Immediately Green light extinguishes and 'RED' light glows on the panel suggesting that the crank handle key is out. On observing the Green indication the Station Master on duty shall extract key from RKT housing the crank handle. Immediately Green light extinguishes and 'RED' light glows on the panel suggesting that the crank handle key is out. In this position all the signals controlled by the said crank handle are held locked in their normal position. Thus key extracted from the RKT shall be transmitted to location through other RKT of the pair to either end locations and instruct the PM to set the route in the desired position. SM on duty shall extract the key from RKT as transmitted from the location and insert it in the next RKT of the pair and turn the switch to the left. The 'RED' light extinguishes and 'WHITE' light appears suggesting that the crank handle is in normal position that is 'KEY IN' position. In addition in each case of operation the common button DUN to be pressed along with turning of concerned switches. 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 Crank Handle Operation along with the latest counter no. in TSR, SM Diary and the register meant for the purpose.
13.	Taking off Calling-On signal	Miniature colour light Calling-on signal is provided below the Home signals in terms of GR. 3.13(6)(b). A Calling-on signal shows no light in the 'ON' position and White light when taken "OFF". A calling-on signal, will be taken 'OFF' for reception of a train when the Home signal above it cannot be taken 'OFF' due to failure or any other reason or for admission of train on blocked line. To take "OFF" Calling-on signal the train must come to a stop at the foot of the Home signal, occupying the track circuit in rear of the signal. When a train Occupies the track circuit a RED light strip will appear on the PANEL. The particular route on which train is intended to be received shall be set by tracking the pointer in PANEL on to the signal below which the calling on signal is provided. Various options in terms of the total routes over which the signal will lead to will appear on the menu. Then the SM must drag the pointer and click over the particular Calling on route amongst the various options displayed in the menu by the left button of the mouse as a result of which the Calling-on signal will blink for 60 seconds. After a lapse of 60 seconds, the Calling-on signal clears i.e., a White

		light glows at the concerned calling-on signal on the PANEL. Every such operation has to be recorded by the on duty SM along with the reasons to do so. The calling-on signal route can be released after complete arrival of the train or by emergency cancellation. **NOTE:** SM on duty to ensure that no through signals are given while receiving a train on Calling-on. Before taking off calling on signal during failure of track circuit/axle counter, the route and clearance of the track over which train would pass even though in FM zone to be verified physically by the SM on duty.

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/relay hubs/goomties/gate goomties/cabin housing 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 and JPO issued by AM/Traffic & AM/Signal vide No.2021/Sig/21/Safety performance dated 10.06.2023.Relay room/Relay hubs/goomties/Gate goomties/ Cabin housing are provided with two independent locks. The key of one lock shall be in the personnel custody of Station Master on duty and the key of other lock shall be in the custody of S&T Maintainer. In the event of necessity such as for attending failure, or regular maintenance, on being requisitioned by S&T maintainer, SM shall hand over the key to the Maintainer. On completion of the work, maintainer shall lock the relay room/Relay hubs/goomties/Gate goomties/ Cabin housing and shall return the key to SM. The particulars of such transactions shall be entered bythe SM in the relay room/Relay hubs/goomties/Gate goomties/ Cabin housing key register vide OM 2015 Para No.13.16 and in case of Relay hubs/goomties/Gate goomties/ Cabin housing in the register meant for this purpose.

4.2. POWER SUPPLY:

i) Auto Change over CLS power panel with rotary changeover switch is provided in the SM's office with the three power supplies viz AT and local power supply for changing the switch to the required supply position. Luminous indicator's are provided above the circuit breaker for each supply to indicate the availability of the supplies.

ii) Normally the rotary switch will be kept towards AT position. Whenever the power block is to be given, the on duty SM must ascertain the sources i.e local supply must be available.

iii) During the non-availability of AT supply SM on duty shall keep the rotary change over switch towards the local supply to feed available local supply to the Installation.

iv) In case of failure of AT supply without any power block, on duty SM has to check whether the circuit breaker has tripped. Incase of failure of AT supply, the local supply shall be utilized by operating the switch. If the circuit breaker is tripping, even after

resetting, no attempts shall be made to hold it by any other means and a message shall be given to the AEEE/GEN and CTFO/PSI/TRD/GEN for prompt rectification.

v) For IPS system that provides power supply to EI, selection output of Auto Change over CLS power panel is taken.

vi) There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

4.3 **REMOTE MONITORING ASM BOX:**

Remote monitoring ASM box gives alarm to the ASM for the following fault conditions:-

a) 50% DOD (Depth of Discharge) of Battery. In this condition Audio/Visual alarm comes which can be acknowledged with audio cut off.

b) 60% DOD (Depth of Discharge), which warns for emergency. The Alarm forth is condition is same as for condition1.

c) 70% DOD (Depth of Discharge), which signals system, shut down. In this condition Signal feed cut off and all DC-DC converters continue working. Audio alarm will continue till power supply restored.

d) Any of the Module fails, which calls for "Call S&T".

e) Whenever there is a failure of AT supply, the SM shall take prompt action to inform to all concerned for the rectification. The SM himself, during his daily checks, shall test the availability of AT supply and make an entry in station diary duly initiating action for rectification of failure, if any.

5. TELECOMMUNICATIONS:

1. Telephone attached to Block instruments connected to adjacent block stations on either end.
2. Hot line communication is provided to adjacent block stations on either side.
3. The station is connected to KRPU-RGDA control circuit.
4. To Traction power control and traction loco control of section KRPU-RGDA control
5. 25watts VHF set is provided for emergency communication.
6. Magneto phone to UP & DN CH Locations at either end.
7. Magneto phone to Track Machine Siding.
8. The station is provided with CUG telephone.

5.1.1.1 FAILURE OF COMMUNICATIONS :

5.2.1. In the event of partial interruption/failure of communications between the adjacent block station SR6.02.06 shall be observed for single line section for working of trains.

5.2.2. In the event of total failure of all communications between SR 6.02.04 shall be observed.

6.0 **SYSTEM OF TRAIN WORKING**

6.1 **DUTIES OF TRAIN WORKING STAFF:**

Movement of trains is regulated by the Section Controller on duty whose orders must be carried out provided they do not in any way contravene any G&SR, BWM, OM and SWR. In the event of suspension

of control working, the station aster on duty shall work independently in conjunction with the Station Master of the adjacent block stations and shall be responsible for safe reception/dispatch of trains. He shall ensure that preference is given to important trains without causing undue detention which occurs to other trains vide OM 2.14 &2.24(a).

6.1.1 TRAIN WORKING STAFF IN EACH SHIFT:

The duties of train working of operating staff are detailed in the Appendix –D of the SWR.

The following is the complement of Operating staff at the station.

Station Master	1
Traffic Points Man	1

Note: 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 SM's office.

6.1.2 RESPONSIBILITY FOR AS CERTAINING CLEARANCE OF THE LINE AND ZONES OF RESPONSIBILITY:

The above Staff is responsible to ascertain the clearance of the nominated line between Home signal and Advance Starter signal in each direction. Sufficient P.No books and identification number sheets in sealed cover shall always be kept in stock by SM under lock and key by maintaining register for the purpose.

6.1.3 ASSURANCE OF STAFF IN ASSURANCE REGISTER :

All staff connected to train working 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 KTGA-SKPI and between KTGA-Tie line A-Cabin 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 (1st Loop)	Starter Signal No.6	The End of Sand Hump OR Advanced Starter Signal No.12	Starter Signal No.5	The End of Overrun Line OR Advanced Starter Signal No.11
Line No.2 (Main Line)	Starter Signal No.4	Advanced Starter Signal No.12	Main Line Starter Signal No.3	Advanced Starter Signal No.11
Line No.3 (2nd Loop)	Starter Signal No.4	The End of Sand Hump OR Advanced Starter Signal No.12	Starter Signal No.7	The End of Sand Hump OR Advanced Starter Signal No.11
Line No.3 (3rd Loop)	Starter Signal No.4	The End of Sand Hump OR Starter Signal No.12	Starter Signal No.9	The End of Sand Hump OR Advanced Starter Signal No.11

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

----- NIL -----

6.2.1.1 **SETTING OF POINTS AGAINST BLOCK 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 PANEL 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.

5. If the SM fails to set to required points against the occupied line a fault message will be triggered and sent to concern Station Master & all concerned staff to take necessary action.
   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 causalities 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 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:**

----- NIL -----

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

----- NIL -----

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

----- NIL -----

6.2.1.6 **ANY OTHER SPECIAL CONDITIONS SHOULD BE MENTIONED GIVING REFERENCE TO THE G&SR:**

A) SPECIALRESTRICTIONS:

----- NIL -----

B) **SPECIAL INSTRUCTIONS**:

a) UP Home signal (S-2) is placed on RH side of the track.

b) UP Adv. Starter (S-12) is placed on RH side of the track

c) Starter signals no's 3, 4, 5, 6, 7, 8, 9, 10 are placed at 1M from the replacement track circuit glued joints in order to increase the CSL as per RB Lr.No.(i) 2012/SIG/SEM-II/Misc dated 10.10.2012 (ii) 2012/Safety/(A&R)/19725 dated 13.06.2013. Necessary precautions to be taken by SM.

d) Due to existence of gradient steeper than I in 400 beyond 50 meters of outer most point of the station yard, SOD revised 2004 chapter-2 item no.2 NOTE –d & NOTE- e to be followed.

e) While shunting on gradient towards DN Adv Starter Signal No.11, an engine to be attached towards the falling side of the gradient. GR-5.20 to be followed.

f) Speed restriction of 10 KMPH is imposed on UP starter signals no.6, 8, 10 and DN starter signals no.7 & 9 due to existence of 1 in 8 1/2 SS.

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 the signal is put back to 'ON' after passage of train as per GR 3.36(2)(b)

6.4 SIMULTANEOUS RECEPTION/DESPATCH, CROSSING AND PRECEDENCE OF TRAINS:

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

1	Reception of a DN train on line No. 1 (1st loop) setting line to over-run line.	AND	(a) Reception of an UP train on LineNo.3 (2nd loop) Or Line No.4 (3rd loop) setting line to snag dead end. (b) Dispatch of another DN train on Line No.2 or 3 or 4.
2	Reception of a UP train on line No. 3 (2nd loop) or line No.4 (3rd loop)setting line to sand hump.	AND	(a) Reception of a DN train on Line No.1 (1st loop) setting to overrun line. Or (b) Dispatch of another UP train on LineNo.2 or LineNo.1.

6.5 COMPLETE ARRIVAL OF TRAINS :

The entire block section between KTGA-SKPI and KTGA-Block Hut of Tie line 'A' Cabin are provided with High Availability Single Section Digital Axle Counter.

For Section KTGA-SKPI:

A Pair of High Availability Single Section Digital Axle Counter (HASSDAC) is provided between KTGA-SKPI one at just beyond UP advanced starter signal no.12 of KTGA and another on 1T1 track circuit of SKPI for last vehicle verification.

For Section KTGA- Block Hut of Tie line 'A' Cabin:

A Pair of High Availability Single Section Digital axle counter (HASSDAC) is provided between KTGA- Block Hut of Tie line 'A' Cabin one at just beyond DN advanced starter signal no.11 of KTGA and another on 2T track circuit of Block Hut of Tie line 'A' Cabin.

The position of the Block section whether cleared or occupied is reflected in the axle counter reset box and PANEL 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 and IB Home Signals as the case may be, 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 both the systems of Axle counter for HASSDAC. 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.

6.5.1 DISPATCH OF TRAINS:

a) DESPATCH OF TRAINS FROM RUNNING LINES:

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(a), (b), (c) ,3.08 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.

6.6 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)).

6.7 WORKINGINCASEOFFAILURE:

Track Circuits	In case of failure of track circuits, the clearance of the concerned line should be ensured physically including foul track circuits if any by the SM on duty before a train is piloted.
Axle Counters	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.
Block Instruments	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, 6.02.04& 6.02.06) and BWM 5.43.
Reception of a train on obstructed 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 as per GR 5.09(2)(C)(3)(4) (5) and SR 5.09.01.
Reception of a train on non-signaled line	NIL
Defective Signals	Whenever signals become defective, the procedure laid down in GR 3.68 to 3.71 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 3.69, 3.49 (4), 3.68, 3.70, 3.71, 3.74 & 3.76.
Defective Interlocking	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].
Defective/Damaged Points	When any point fails to operate normally by the route setting operation or individually through Panel it is inevitable to operate the points with crank handle. The SM on duty shall personally ensure clamping and padlocking of all facing and trailing points on the Route. Crank handles are interlocked with signals and interlocking system. When points become defective, the signals controlling these points shall be considered defective and vice-versa and the procedure for the use of crank handle (GR 3.77). Note: When any point indication is failed after operation from normal to reverse or reverse to normal, if its indication is flashing in Panel or else, the point has to be considered as failure and movements of trains over this point should be carefully by proper clamping and pad locking for that route. Information is to be given to S&T department to attend the failure by issuing written failure memo. After receiving fit certificate, proper testing is to be done then only movements over this point to be allowed.

6.8 PROVISIONSFORWORKINGOFMOTORTROLLIES/MATERIALLORRIES**:**

a) 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.

b) Motor trolleys shall be worked as per GR 15.25 and SR thereto, BWM 5.39, 5.40, 5.41 and circulars and orders issued from time to time.

c) Material Lorries shall be worked as per GR 15.27 and SRs thereto and in accordance with the provisions of Block Working Manual.

7.0 **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' colloars are to be placed concerned route buttons. 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 BWM 5.37, 5.38 shall be followed.

All shunt movements shall be supervised by TMR/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 the taken off of shunt Signal or on form T/806 whichever is applicable. 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).
iii) While shunting on gradient towards DN Adv Starter Signal No.11, an engine to be attached towards the falling side of the gradient. GR-5.20 to be followed.

8.4 **SHUNTING ON SINGLE LINE:**

i) Within station section: Shunting within station may be carried out 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 and BWM 3.15, 5.36 & 5.37.

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 and BWM 3.15 & 5.38.

iv) During failure of Block Instrument: Block back messages shall be

exchanged between station master at either end of the section with is intended to be obstructed supported by private number. Both the station master shall fix line block collars on respective Block Instruments and shall continue shunting provided the Block section is clear.

8.5 **SHUNTING IN THE SIDING TAKING OFF FROM THE STATION YARD:**
The track machine siding is provided on Line no.1 towards RGDA end with CSL of 200M. This siding is isolated by DS Point No.107 controlled by key 'M' at Chainage: 115.12M.Whenever it is required to place or drawn out machines to/from siding, SM/KTGA have to transmit control no.107 on PANEL. After transmission of control 107, Key 'M' can be extracted from track machine siding location box. Key'M' thus extracted is to be inserted in HPL and unlock to operate the point from Normal to Reverse. Then Key'Y' is to be extracted from HPL and to be inserted in other end of DS point to unlock and operate lever form Normal to Reverse. Both the points of the siding should be clamped for movements from and to siding. After completion of movements, the points should be normalized and key 'M' transmitted to SM/KTGA to release control no.107.When control 107 of track machine siding is to be transmitted, all signals pertaining to line no.1 will not be taken off.

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: Not Applicable.

v) Failure of Axle Counter Block/BPAC: As per Appendix-'B'.

vi) Failure of MTRC: Not applicable.

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. 6.6 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.

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, trains shall run on the authority to proceed without line clear in terms of SR 6.02.04 on Single line Section.

b) During partial interruption of communication, the rules laid in SR 6.02.06 shall be followed.

9.2 **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 6.02.03.

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 UP starter Signal No.6 of Line No.1 and DN Starter Signal No.5 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 proceeding to the 1st stop signal of the station and place one detonator at a distance of 270M from the 1st approaching stop signal towards the approaching train and another detonator at a distance of 10M from the 1st 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 KEUTGUDA STATION

N I L

APPENDIX 'B'
SYSTEM OF SIGNALLING & INTERLOCKING AND COMMUNICATION ARRANGEMENTS AT THE KEUTGUDA 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:

KEUTGUDA is a Standard – II 'R' class single line station equipped with centrally operated panel interlocking with full fledged track circuit. The points and signals are power operated from a composite operating indication panel installed in the Station Master office. The Station is equipped with manually operated Multi Aspect Colour Light Signals.

2. **DESCRIPTION OF PANEL:**

The yard layout is depicted on the panel in a Miniature form. The panel boards fixed parallel to the track so that when the Station Master on duty faces the panel, the yard drawing on the panel corresponds to the actual field layout of the yard on either direction.

3. **SIGNAL/POINTS SWITCHES AND ROUTE BUTTONS:**

Two position knob switches are fitted for points in one row at the bottom of the panel opposite to the respective points. For starter signal separate two position knob switches are provided near each starter signals on the panel. For home and advanced starter signals also separate two position knob switches are provided on either directions. A separate two position knob switch is provided for calling on signal at either end of the yard. Common-route buttons are provided for the both Up and Down home signals and calling on signals on each line. For taking off signals it is necessary to operate the signal switch and the concerned route button concurrently.

DESCRIPTIOIN OF POINTS AND SIGNALS:

a) All the points are operated by electric point machines which have got in built locking arrangement and electrical detection with the signals. The setting of point is indicated by white strip lights in the point configuration.

b) The aspects of the signals in the yard are repeated by the signals at the respective locations on the panel in a miniature form.

1.4 OTHER INDICATIONS:

a) Emergency route release button, signal lamp, muting failure button, crank handle release button with their indication lights/buzzer are provided in one row on top of the panel.

b) The 'Train Arrival' and 'Train Entering Section' indications are provided at either end by illuminated arrow marks for UP and Down trains.

c) The calling on signals counter, lamp failure indication and buzzer and emergency route release counter are provided on top of the panel in one row.

1.5 SM'S PANEL LOCK UP KEY:

The panel is fitted with the SM'S lock up key to prevent unauthorised operation of the panel but with the arrangement to put back the signals to 'ON' position in case of emergency without unlocking the panel but route cannot be altered.

1.6 Station Master is the only authorized person to operate the panel and the key of the panel must be in his personal custody vide GR 5.08..

2. RUNNING LINE POINT SWITCHES:

All running line points are operated by electric point machine which have got in-built locking and detection arrangement.

2.1 CRANK HANDLE:

In case the point cannot be operated from the panel switch crank handles are provided at either end of the yard in location Goomties interlocked with the panel. Every time the crank handle is used for emergency operation, the particulars for such operation should be duly recorded in the 'Emergency Crank Handle Register' maintained at the Station vide SR 3.51.05. There are two crank handles one each for up points and down points.

2.2 ELECTRIC POINT MACHINE AND OPERATING SWITCH:

The operation of electric point machine is controlled by rotary knob switch for each point/crossover. The switch can be moved to two positions i.e. to left 'N' normal position or to right 'R' reverse position.

For admission/despatch of train or for shunting purpose, the point/points is/are to be set by the knob switch to normal or reverse position as the case may be in conjunction with common 'DUN' button.

2.3 INDICATIONS OF MOVEMENT OF POINTS AND SETTING:

While circular illuminated indications are provided above the point rotary switch, viz. Normal 'N' (white) centre RED point locked 'R' reverse 'GREEN'. Normally either the 'Normal 'N' 'WHITE', or 'Reverse GREEN' appears illuminated depending on the housing of the point/cross over with no light on the centre 'RED'.

However during transition of the point from one position to the other a RED FLASHING indication appears at the centre and continues till the point is housed properly in either position corresponding to the knob switch position on the panel.

Normal time taken for the point operation from one position to the other is about ten seconds and if the 'RED FLASHING' continues beyond this time it indicates the point is not set in the desired position. However facilities exist to bring back the point to its original position thus stopping the RED FLASHING indication.

The setting of point is indicated on the panel in the point configuration with white strip lights for normal and reverse positions.

A steady 'RED' indication glows above the concerned point switch when the route is set and the signals are taken 'off' for the said route or when the track circuits of the concerned crossover zone is failed/occupied.

2.4 The cause of non-setting of the point in the desired position has to be checked up by the SM on duty vide SR 3.60.01© and if there is a defect other than an

obstruction the point has to be considered as defective and action taken for setting , clamping and pad locking these points in the desired position with the crank handle under the personal supervision of SM on duty for all trains vide SR 3.69.03(c).

Note: Motor operated crossover when set with crank handle both facing and trailing ends must be crank handle correspondingly in favour of the train movement and the facing and trailing end of the each crossover point must be clamped and pad locked.

3. SIDING POINTS AND SWITCHS:

NIL

4. SIGNAL SWITCHES:

Rotary control knob switches are provided for operation of signals. 2 position knob switches are provided at either end for home and advanced starter signals. The knob has to be turned to 90^0 from centre for receiving or despatching a train as the case may be.

Normally the switch should be in centre poison. 2 position, knob switch is provided for calling on signal at either end of the panel separately for UP and down calling on signals (below the home signal). The normal position of the switch is centre position

4.1 **SIGNAL INDICATIONS:**

The aspects of the signals in the field as obtaining at any time is repeated by the signal indication along side the track on the panel with normal & off aspect.

5. **POWER FAILURE / LAMP FAILURE INDICATIONS AND ACKNOWLEDGING BUTTON POWER SUPPLY INDICATION:**

Whenever there is resumption of power supply after a power failure or a lamp fusing case of any of the signal at the station, a flashing RED LIGHT appears on the panel along with audible alarm.

5.1 Whenever this indication appears, in case of resumption of power supply the SM on duty has to acknowledge this fact by pressing 'Acknowledgement' button for muting flashing as well as audible alarm.

5.2.1 Whenever a lamp fusing case of the signal is involved the SM on duty can mute the bell by pressing the acknowledgement button, but the flashing RED indication continues till the fused lamp is replaced or the aspect of the signal is changed.

6. TRACK CIRCUITS:

Both UP & DN main lines, DN Loop, Common Loop Lines and all the point zones are track circuited as L1T1, L1T2, L2T1, L2T2, L3T1, L3T2, L4T1, L4T2, 1AT, 1T1, 1T2, 106AT, 105/106T, 104AT, 104BT, 2AT, 2T1, 2T2, 102BT, 101/102T, 101BT, 103T.

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.

Indications for the above track circuits are available on Panel. Yellow Strip on Panel 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 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.

6.1 When a signaled movement is made, it is necessary that such a move is made from stop signal to stop signal and that all the track circuits enroute are occupied and cleared in the order of the train movement and unless such movement is completed as indicated in the panel it would not be possible to alter the route or position of the points unless special response is taken for emergency operation of points.

6.2 **VERIFICATION OF LINE CLEARANCE BY SM ON DUTY FOR RECEPTION OF TRAIN INTO STATION YARD:**

In the station yard a route on the running line comprises of entrance, berthing and despatch portion of the yard and this portion of the yard should be clear of all obstructions for the passage of a train or for any other movement.

The clearance of the route including overlap must be ensured by SM on duty personally for all trains through the luminous indications on the panel (or by physical before any movement is permitted on the concerned route subject to the conditions such as locking of points etc).

6.3 **RECEPTION OF TRAIN:**

When a train is to be received, the SM on duty shall nominate a clear line and set the points (facing and trailing) with point switches on the panel in favour of the train movement,, On getting the point settings indication in favour of the train movement he shall press the concerned route button and the home signal switch to ‘R’ position simultaneously. The route from home signal to last stop signal illuminates and this clears the home signal for the concerned route.

6.4 **DESPATCH OF TRAIN:**

When a train is to be despatched from the station yard on signals the SM on duty must ensure that the route between starter signal and block section limits demarcated by the advanced starter signal is clear of any obstruction which also include point zone track circuits on the route, before the SM takes ‘OFF’ departure signals subjected to other conditions such as setting and locking of the route.

6.5 **NON-SIGNALLED SHUNTING MOVEMENTS:**

Whenever a non-signalled move is made the SM on duty must ensure that the concerned points on the route are properly clamped and padlocked (which include facing and trailing end of the crossover) and further he must ensure that the points control switches are in appropriate position and the SM’s panel lock-up key is taken out from the panel and kept in his possession till such movements are completed or other wise cancelled.

Normal working shall be resumed by the SM on duty after properly ensuring

the fact that there is no vehicle standing on any of the point zones constituting an obstruction on this said line.

6.6 **CRANK HANDLE FOR EMERGENCY OPERATION OF POINT(S):**

When a crank handle is locked due to route set earlier is not released or otherwise to Transmit or Release control of the Crank Handle, SS/SM on duty shall cancel the relevant signal first and then turn the concerned CH switch towards right hand direction in 'OUT" position and long press the DUN button on the panel board.

After that the 'KEY LOCKED' (Red) indication will start to flash for 120 seconds & 'KEY IN' remains steady. After a lapse of 120 seconds the 'KEY LOCKED' indication will vanish & 'KEY IN' indication will start to FLASH. On observing the Green indication the Station Master on duty shall extract key from RKT housing the crank handle. Immediately Green light extinguishes and 'RED' light glows on the panel suggesting that the crank handle key is out. On observing the Green indication the Station Master on duty shall extract key from RKT housing the crank handle. On the panel at the crank handle switch has three indications are provided viz.

i) 'WHITE' crank handle 'IN' indication.
ii) 'GREEN' crank handle free for extraction indication.
iii) 'RED' crank handle out or extracted indication

Immediately, Green light extinguishes and 'RED' light glows on the panel suggesting that the crank handle key is out. In this position all the signals controlled by the said crank handle are held locked in their normal position.

Crank Handle is revitted to RKT key and housed in the RKT in the locations at either end of the yard. Thus key extracted from the RKT shall be transmitted to location through other RKT of the pair to either end locations and instruct the PM to set the route in the desired position.

SM on duty shall extract the key from RKT as transmitted from the location and insert it in the next RKT of the pair and turn the switch to the left. The 'RED' light extinguishes and 'WHITE' light appears suggesting that the crank handle is in normal position that is 'KEY IN' position. In addition in each case of operation the common button DUN to be pressed along with turning of concerned switches.

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 Crank Handle Operation along with the latest counter no. in TSR, SM Diary and the register meant for the purpose

.

Every time the crank handle is used for emergency operation/testing /maintenance, the particulars of such operation should be duly recorded in the emergency crank handle register maintained at the station as per proforma OM 2.19.

6.7 **OPERATION OF TRACK CIRCUITS BY LIGHT VEHICLES:**

On account of doubtful operation of any track circuit by a light vehicle/vehicles including self propelled vehicles, such as, motor trolley/light engine/tower wagon in indicating the occupancy of the track it is necessary that SM on duty is satisfied himself that the said vehicle/vehicles has/have cleared the point zone track circuits by observing the track indications of the tracks on either side of crossover by positively checking the entrance and exit track circuits are showing the occupancy and clearance in sympathy with the

train movement.

6.8 **ROUTE SETTING INDICATION:**
Normally there is no indication displayed on the panel for any of the track circuits on any line but when a route is set and the signal is taken 'OFF' a white strip of lights will be displayed on the concerned route including point zones.

As the train travels occupying the track circuits zones white strip light extinguishes and RED strip lights glows. When the train clears the track circuit zones one by one 'RED' strip lights of the concerned track circuit zone extinguishes and white strip lights glows. These white strip lights shall remain till the route is released/cancelled by pressing the concerned route button for two or three second by Station Master.

However, when a train is detained in the station yard for precedence/crossing the overlap will be released 2 minutes after the reception signal switch is made normal.

7. **VEEDER COUNTER:**
Two veeder counters are provided on the panel, one for registering the operation of calling on signals and the other for emergency route release operations.

SM on duty shall make an entry in RED ink in the train signal register and diary and note the number of the veeder counter after every emergency operation with the train number cause etc., Station Master at every shift changing shall also note the last number of the two veeder counters and take the acknowledgement of the SM taking charge.

7.1 **TRAIN ARRIVAL INDICATION:**
Train arrival indications are provided both for UP and Down trains at the respective ends on the panel. As the trains arrives into the yard the indication glows at the concerned end. This illumination shall remain till the route is released by pressing the common route button of the concerned line.

The train arrival indication should not be constructed to indicate the complete arrival of the train.

The procedure detailed in SR 4.17.01(a)(iii) & (iv) shall be followed for confirming the complete arrival of the train.

7.2 **TRAINS ENTERING INTO SECTION INDICATION:**
Trains entering section indications are provided for both UP and DN trains separately at the respective ends on the panel.
The indication will appear when a train enters the block section under a due process of obtaining line clear on block instrument and the last stop signal is taken 'OFF'. This indication will remain illuminated till the concerned block instrument is normalized (on arrival of the train).

8. **EMERGENCY OPERATIONS:**

8.1 **EMERGENCY CANCELLATION OF ROUTE:**
This panel interlocking is based on the principle of 'Dead Approach Locking', such that when a route is set and relevant signals are taken 'OFF' the route gets locked and the said route releases normally with the passage of the train.

But if it becomes necessary to alter the route after the signals have been taken 'OFF' but before the train passed the approach home signal, the concerned signals are to be put to 'ON' by normalising the signal switches. Then the

concerned common route button and the emergency route release button (after breaking the seal) are to be pressed simultaneously for two-or-three seconds and released.

The emergency route release counter registers next higher number for every such operation and after a lapse of 120 seconds 'GREEN LIGHT' route release indication appears at emergency route release button.

On observing the route release indication, SM on duty shall press the common route button of the concerned line once again for two-to-three seconds and release the button. The yellow route indication extinguishes and the route gets released.

If the route does not get released after the normal passage of the train the same procedure as detailed in the foregone paras shall be followed for emergency release of the route.

The concerned Signal Maintainer/Signal inspector must immediately be informed to get the 'Emergency route release button' sealed after rectification of fault, if any.

While performing emergency route release it must be ensured by SM on duty that there will be no danger to the approaching train.

8.2 **FAILURE OF BLOCK INSTRUMENT:**

Whenever there is a failure of the Block Instruments, train shall be worked on PLC ticket and piloting vide GR 14.23 and BWM 3.01 of Chapter-III.

9. **POINTS:**

9.1 All points are operated by electric point machines.

Down End:

i) No. 106 crossover point button between main line and line No. 3 (2nd loop)
ii) No. 104 turnout point with DS on Line No. 1 between main line and Line No. 1 (1st loop)
iii) No. 105 turnout point with DS on Line No. 4 between 2nd loop and 3rd loop..

Up End:

i) No. 102 crossover point button between main line and line No. 1 (1st loop)
ii) No. 101 turnout point with DS on 2nd loop between main line and Line No. 3 (2nd loop)
iii) No. 103 turnout point with DS on 3rd loop and Line No. 3 (2nd loop).

9.2 **SIGNAL SWITCHES:**

West End:

i) Up and Dn distant signals are automatically controlled by the respective home signals.
ii) S 1 down home signal for Line No. 1, 2, 3 & 4.
iii) C 1 down calling on signal for Line No. 1, 2, 3 & 4.
iv) S 12 Up advanced starter signal for section KTGA-SIKARAPAI.
v) S 6, 4, 8 & 10 are the UP starter signals for Line No. 1, 2, 3 & 4 respectively.

East End:

i) S 5, 3, 7 & 9 are the DN starter signals for Line No. 1, 2, 3 & 4 respectively.
ii) S 2 UP home signal for Line No. 1, 2, 3 & 4.
iii) C 2 UP calling on signal for Line No. 1, 2, 3 & 4.
iv) S 11 DN advanced starter signal for section KTGA-'B' Hut of Tie Line 'A' Cabin.

9.3 **DESCRIPTION OF SWITCHES & BUTTONS:**

Sl. No	Switch / Button	Colour of Switch/ Button	Description	Signal Indication on panel
1.	D UN	Grey	Route button for taking OFF DN	--

			advanced starter.	
2.	S C2	Red with White dot	Switch for taking OFF UP calling on signal for Line Nos. 1, 2, 3 & 4	Miniature Yellow
3.	S 2	Red	Switch for taking OFF UP home signal for Line Nos. 1, 2, 3 & 4.	Red or Yellow, or Green or Yellow with route for home signal.
4.	S 11	Red	Down advanced starter.	Red or Green for DN Adv. starter.
5.	C UN	Grey	Common route button for taking OFF, any of the DN starters for Line Nos. 1, 2, 3 & 4.	--
6.	S 5	Red	Switch for taking OFF DN loop starter signal for L. No. 1.	Red or Yellow
7.	S 3	Red	Switch for taking OFF DN starter signal for L. No. 2.	Red or Yellow or Green
8.	S 7	Red	Switch for taking OFF DN starter signal for L. No. 3.	Red or Yellow
9.	S 9	Red	Switch for taking OFF DN starter signal for L. No. 4.	Red or Yellow
10.	L1 UN	Grey	Common route button for taking OFF, UP or DN home signals or calling on signal for Line No. 1.	--
11.	L2 UN	Grey	Common route button for taking OFF, UP or DN home signals or calling on signal for Line No. 2.	--
12.	L3 UN	Grey	Common route button for taking OFF, UP or DN home signals or calling on signal for Line No. 3.	--
13.	L4 UN	Grey	Common route button for taking OFF, UP or DN home signals or calling on signal for Line No. 4.	--
14.	S 6	Red	Switch for taking OFF UP starter on Line No. 1.	Red or Yellow
15.	S 4	Red	Switch for taking OFF UP starter on Line No. 2.	Red or Yellow or Green
16.	S 8	Red	Switch for taking OFF UP starter on Line No. 3.	Red or Yellow
17.	S 10	Red	Switch for taking OFF UP starter on Line No. 4.	Red or Yellow
18.	B UN	Red	Common route button for taking OFF any of the UP starter on line. Nos. 1, 2, 3 & 4.	--
19.	S 1	Red	Switch for taking OFF DN home signal for Line No. 1, 2, 3 & 4.	Red or Yellow, or Green or Yellow with route for DN home signal.
20.	S 12	Red	UP advanced starter	Red or Green for UP Adv. starter
21.	S C1	Red with	Switch for taking OFF DN calling	Miniature

		White dot	on signal for Line No. 1, 2, 3 & 4.	
22.	A UN	Grey	Route button for taking off UP advanced starter.	--
23.	13	Red	Control for crank handle for points 101, 102 & 103.	IN/OUT
24.	14	Red	Control for crank handle for points 104, 105 & 106.	IN/OUT

10. **INTERLOCKING OF SIGNALS:**

10.1 Signal No S 12 is controlled by Train going to position (TGT) of the Token less block instrument's handle for section KTGA-SKPI.

10.2 Signal No S 11 is controlled by Train going to position (TGT) of the block instrument's handle for section KTGA-'B' Hut of Tie Line 'A' Cabin.

10.3 The Block Instruments are controlled by the respective home signals, so that unless the home signal is in its on position the block instrument cannot be made normal.

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

i) Signals are replaced to ON aspect automatically by passage of a train pass the signal. It will not be possible to clear the signal unless the sequence of operation for clearing the signal is repeated again.

ii) However signals can also be replaced to their 'ON' position by turning the concerned signal switch to its normal position.

iii) Advanced starters are interlocked with respective token less block instruments in sending position, so that the advanced starter cannot be taken 'OFF' unless the concerned block instrument is in (TGT) position.

iv) Home signals are interlocked with Single line token less block instrument. The block instruments handle cannot be made normal unless the concerned home signal and home signal switch is in normal position.

11.1 **DESCRIPTION OF POINT SWITCHES (TWO POSITION):**

Sl. No	Point Switch No.	Colour	Description
1.	101	Black	Cross over between Main Line and Second Loop at RGDA end.
2.	102	Black	Cross over between Main Line and 1st Loop at RGDA end.
3.	103	Black	Cross over between 2nd Loop and 3rd Loop at RGDA end.
4.	104	Black	Cross over between Main Line and 1st Loop on KRPU end.
5.	105	Black	Cross over between 2nd Loop and 3rd Loop at KRPU end.
6.	106	Black	Cross over between Main Line and 2ND Loop at KRPU end.

11.2 **DESCRIPTION OF PANEL BUTTONS AND INDICATIONS ETC:**

Apart from the above paras the following buttons/indications are provided on the panel.

Sl.	Button	Colour	Description

No	No.		
1.	WXYN	Grey	Point Failure mutting button. When point indication fails a buzzer sounds and a yellow light appears over the button. To stop the buzzer the WXYN button is to be pressed. Yellow indication which appeared in the panel will remain till point indication is rectified.
2.	GXYN	Grey	Signal lamp Failure mutting button. When any signal lamp indication fails a buzzer sounds and a yellow light appears over the button. To stop the buzzer the GXYN button is to be pressed. Yellow indication which appeared in the panel will remain till concerned lamp is replaced / rectified.
3.	NCR	Grey	Button Failure alarm mutting button. Whenever any button on the panel remain stuck up in pressed condition the buzzer sounds and a yellow light appears over the button. To stop the buzzer the NCR button is to be pressed. Yellow indication which appeared in the panel will remain till the failure is rectified.
4.	COGGN Counter		Every Initiation of calling on signal will be counted by this counter.
5.	DUN	Blue	Common group button for point crank handle and siding points.
6.	EUYN	Grey	Emergency route cancellation button.
7.	EUYN Counter	--	Every Initiation of route cancellation will be registered by this counter.
8.	EUYN Key	--	Key remains with signal Maintainer/SI of the section.
9.	EUUYN	Grey	Future Provision.
10.	EUUYN Counter	--	Future Provision.
11.	'P' Ack	Red	Power acknowledgement button. The failure of power supply is indicated by a buzzer and a Red light over the 'P' Ack button. When the 'P' Ack button is pressed, the Buzzer is stops but Red Light, continues to glow till the power supply is restored.

11.3 **TAKING OFF CALLING ON SIGNALS:**

Miniature colour light calling on signal is provided below the home signal in terms of GR 3.13(6)(b).

A calling on signal shows no light in the 'ON' position. A calling on signal is taken 'OFF" for reception of a train when the home signal above it cannot be taken 'OFF' due to failure or any other reason.

To take off calling on signal the train must come to a stop at the foot of the home signal, occupying the track circuit in rear of the signal. When a train occupies the track circuit a RED strip light will appear on the panel. The particular route on which train is intended to be received shall be set by operating concerned point switches or by crank handling in the event of failure of operation of points through panel switches. After the route is set, the calling on signal switch 'C1' or 'C2' (Red with white dot) as the case may be to be turned to 'OFF' position and simultaneously the concerned route button should also be pressed for two to three seconds and released.

After a lapse of 60 seconds the calling on signal clears i.e., a white light glows at the concerned calling on signal on the panel. The calling ON counter will register a consecutive higher number for every such operation which shall be recorded in diary and train signal register.

11.4 **CALLING ON COUNTER:**

The calling on signal counter provided on the panel registers a consecutive higher number every time a 'CALLING ON SIGNAL' is taken off. The Station Master must record the last number registered on the counter while taking over/handing over duty.

12. MAINTANANCE OF S&T INSTALLATIONS AND ADHERENCE TO MAINTENANCE SCHEDULES:

The regular maintenance of the S&T installations and adherence to the schedules of maintenance as also to the mandatory schedules of testing of points, signals, lever machines, level crossing gates, the associated interlocking apparatus, i.e. cables and finally the interlocking functional tests is a must for safe & satisfactory working of the installations at this station.

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

13. PROCEDURE TO BE FOLLOWED IN CASE OF FAILURE OF SIGNAL INTERLOCKING INSTALLATIONS:

Whenever there is a failure of points, track circuits signals and any other interlocking gear at the station which include level crossing gate/gates if any etc. The failure report should be communicated by the Station Master on duty through a memo to the signal maintainer and the signal inspector of the section along with others as per GR & SR 3.51.04 and 3.68.04 and document all such transactions.

14. INSPECTION OF POINTS BEFORE DECLARING THEM DEFECTIVE:

However, before declaring a signal as defective, the setting of point on the route to which it applies shall be inspected by the SM irrespective of the position of route levers, point levers and lock levers in term of SR 3.68.01(c). The rules laid down in GR 3.68, 3.69, 3.70 with relevant SRs and SR 3.77.01(b), shall be followed.

15. RECTIFICATION AND CHECK BEFORE RESUMING NORMAL WORKING:

It is after receipt of this information the Sectional Maintainer (Electrical or Mechanical) shall attend to the failure after giving disconnection memo. After rectification of the fault, the Sectional Maintainer shall give a reconnection memo detailing the rectification and it is only after the Station Master of duty has personally checked this defective gear and it satisfied that it is in good and proper working order, shall resume the normal working of the said defective gear in terms of SR 3.68.04(c)&(d).

16. PROCEDURE FOR CARRYING OUT PLANNED MAINTENANCE WORK:

Whenever any normal maintenance or special works for heavy renewals etc. are involved, these works should be pre planned by the Signal and Telecom, field staff and the inspector of the section should give to the Station Master in writing 'Advance Intimation' about this planned work in terms of SR 15.08.01.

17. BURNING OF SIGNAL LIGHTS:

At night, If signal lights cannot be kept burning, Station Master on duty shall

before granting the clear initiate action in accordance with the procedure prescribed in GR 3.68 to 3.72 and SR thereto vide GR 3.49(4).

18. CORRECTING TIME IN STATION CLOCK:

The Station Master shall set the time on his clock according to the time signal given by the Section Controller on duty at 16.00 Hours every day according to SR 4.01.01 and 4.01.02.

19. 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/relay hubs/goomties/gate goomties/cabin housing 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 and JPO issued by AM/Traffic & AM/Signal vide No.2021/Sig/21/Safety performance dated 10.06.2023.Relay room/Relay hubs/goomties/Gate goomties/ Cabin housing are provided with two independent locks. The key of one lock shall be in the personnel custody of Station Master on duty and the key of other lock shall be in the custody of S&T Maintainer. In the event of necessity such as for attending failure, or regular maintenance, on being requisitioned by S&T maintainer, SM shall hand over the key to the Maintainer. On completion of the work, maintainer shall lock the relay room/Relay hubs/goomties/Gate goomties/ Cabin housing and shall return the key to SM. The particulars of such transactions shall be entered by the SM in the relay room/Relay hubs/goomties/Gate goomties/ Cabin housing key register vide OM 2015 Para No.13.16 and in case of Relay hubs/goomties/Gate goomties/ Cabin housing in the register meant for this purpose.

20. NORMAL POWER SUPPLY AND STAND BY POWER SUPPLY:

The Station works on 230 Volts single phase power supply. The normal power supply is drawn from the local power supply source at 230 V, 50 Hz.

20.1 NORMAL POWER SUPPLY-MAINTANACNE OF POWER SUPPLY, POWER FAILURE AND REPORTING SUCH FAILURES:

Station works on 230 V single phase power supply the Normal power supply to the Signalling and interlocking installations at this station is drawn from the State electricity sources (OSEB) [at 230V-50Hz].
Standby power supply is from the Diesel Generator set power supply at 230V-50Hz

The Station Master must however, maintain the record of the power failure of the local supply and he must promptly report the failure to the Section controller and the concerned Electrical and S&T maintenance staff.
Whenever local power supply source fails, the SM on duty has to instruct his TPM to start the Diesel Generator and connect the power supply from the healthy source at the installation by operating the change over switch provided in SM's office.

The Station Master on duty shall not operate the change over switch unless the generator attains a steady voltage of 210 v as indicated in the meter and the Diesel Generator set shall not run for more than three hours at a stretch. To keep the set in healthy condition the generator should be allowed to work for the minimum period possible for working the trains.

21. TELECOMMUNICATIONS:

1. Telephone attached to Block instruments connected to adjacent block stations on either end.
2. Hot line communication is provided to adjacent block stations on either side.
3. The station is connected to KRPU-RGDA control circuit.
4. To Traction power control and traction loco control of section KRPU-RGDA control
5. 25watts VHF set is provided for emergency communication.
6. Magneto phone to UP & DN CH Locations at either end.
7. Magneto phone to Track Machine Siding.
8. The station is provided with CUG telephone.

22. FAILURE OF COMMUNICATIONS–FAILURE OF BLOCK INSTRUMETS:

1. In the event of failure/ suspension of Block instrument Line Clear shall be obtained on telephone attached to Block instrument or Magneto phone in the order given under SR 6.02.06(1)(a) by exchanging identification number supported by a Private number.
2. In the event of. Failure/ suspension of Block instrument and telephone attached to Block instrument and magneto telephone, Line Clear shall be obtained on Rly. Auto telephone or BSNL phone in the order given under SR 6.02.06(1)(b) by exchanging identification number supported by private number.
3. In the event of failure/ suspension of Block instrument, telephone attached to Block instrument, magneto telephone, Rly. Auto telephone or BSNL phone, Line Clear shall be obtained on trains control telephone as per SR 6.02.06(1)(c) by exchanging identification number supported by a Private number.
4. In the event of failure/ suspension of Block instrument, telephone attached to Block instrument, magneto telephone, Rly. Auto telephone or BSNL telephone and train control telephone, Line Clear shall be obtained on VHF set as per SR 6.02.06(1)(d) by exchanging identification number supported by a Private number.

23. HIGH AVAILABILITY DIGITAL AXLE COUNTER:

The entire block section between KTGA-SKPI and KTGA- Block Hut of Tie line 'A' Cabin are provided with High Availability Single Section Digital Axle Counter.

For Section KTGA-SKPI:

A Pair of High Availability Single Section Digital Axle Counter (HASSDAC) is provided between KTGA-SKPI one at just beyond UP advanced starter signal no.12 of KTGA and another on 1T1 track circuit of SKPI for last vehicle verification.

For Section KTGA- Block Hut of Tie line 'A' Cabin:

A Pair of High Availability Single Section Digital axle counter (HASSDAC) is provided between KTGA- Block Hut of Tie line 'A' Cabin one at just beyond DN advanced starter signal no.11 of KTGA and another on 2T track circuit of Block Hut of Tie line 'A' Cabin..

S.No	Indication	Automatic action taken by Equipment	Action by SM

1.	Only SSDAC-1 fails after arrival of the train	System resets automatically	NIL
2.	Only SSDAC-2 fails after arrival of the train	System resets automatically	NIL
3.	Both SSDAC-1 & 2 Fails after arrival of the train (or)for any reason	No automatic action	SM to reset the system as procedure laid down in the Para No.6.1 and make an entry in the axle counter register.
4.	Both SSDAC-1 & 2 Fails even after reset by SMs of both the end	No automatic action	Enter in Signal Failure Register issue failure memo to signal technician. Procedure to be adopted is same as laid down.
5.	Either SSDAC-1 or SSDAC-2 fails continuously for long time	--------	Report to signal staff without entering in signal failure

The position of the Block section whether cleared or occupied are reflected in the PANEL 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 both 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 of both the systems i.e HASSDAC, in case of failure of Axle counter system (SSDAC). 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.

23.1 **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 PANEL, 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 KTGA Station, SM of SKPI/ Block Hut of Tie line 'A' Cabin should perform the following step by step procedure from (b) to (i) for resetting the Digital Axle Counter (HASSDAC).

b) SM of KTGA Station and SKPI/ Block Hut of Tie line 'A' CabinStation 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 KTGA and SKPI/ Block Hut of Tie line 'A' Cabinstation.

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.

24 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 3.69.06].

If after the operation from the PANEL, the approach stop signal fails to take 'off' the SM shall personally ensure from the indications displayed in the PANEL that the route is clear, the points indications (including isolation point), crank handle 'IN' indication for the entire route and overlap portion (if any) are lit and remains steady and thereby fulfilling all the requirements of taking off signal. SM's key provided in panel is to be taken out and after that only reception of trains on defective signal may be arranged without clamping and padlocking of

points of concerned route. The loco pilot shall be issued form T/369(3b) or T/369(1) in accordance with GR.3.69. No route cancellation operations of the concerned route are to be initiated till the total completion of the train movement.

Where the point, lock and route indications are fails to appear in the PANEL, the SM on duty shall ensure the clearance of the nominated route, proper setting of all points through crank handle operation and get all the points whether facing or trailing clamped and padlocked with the help of TPM.

The SM on duty shall then hand over the written authority (T/369(3b) to the TPM for piloting the train. While going towards Home signal the TPM shall check the points and satisfy himself that the route is correctly set.

After the train has brought to a dead stop at the Home signal the TPM shall hand over the pilot memo to the Loco pilot, board the engine and display proceed hand signal to pass the Home signal.

NOTE**:**

a) The Station Master on duty shall personally supervise the correct setting, clamping and padlocking of the facing points, if any and ensure clearance on the nominated route vide SR [Ref. SR 3.69.03(c)].

b) The keys of padlock of the clamps put on to the points on the route for piloting In or piloting OUT shall be in the personally custody of the SM on duty or any other authorized operating officials till such time the train / engine / vehicle has utilized the route or alternatively such movement is cancelled.

25 PILOTING OF TRAINS - OUT OF STATION YARD:

When the starter signal has become defective, the Station Master on duty shall follow the procedure laid down in the SR.3.70.03. Then the SM on duty shall hand over the pilot memo T/369(3b) (along with the other authority if necessary) to the on duty TPM. The TPM on duty shall hand over the authority to the Loco pilot of the train and display proceed hand signal at the foot of the starter vide SR. [Refer SR 3.70.01].

In case the advanced starter signal has become defective, such signal shall be passed on the written authority on the form T/369(3b). The TPM shall hand over the pilot memo in form T/369(3b) to the Loco pilot after the train stopped. [Refer SR 3.70.02].

26 SHUNTING:

Shunt back signals SH15 and SH16 are provided towards KRPU end of the yard and towards SPRD end of the yard respectively. For taking OFF Shunt signals please refer Para No. 4.6.2 of APPENDIX-B.

27 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 SM on duty personally through PANEL indications and/or physical verification of track including fouling track (if any) before any movement of trains are permitted on the concerned route subject to the other conditions such as locking of the point's etc.

28 OBSERVATION OF TRACK CIRCUIT AFTER STABLING OF TRAINS ON RUNNING LINES:

When a train is stabled on a running line for a duration exceeding ten hours, the use of the said running line for passing the trains 'IN' 'THROUGH' or 'OUT' at the station shall be done with a lot of care and diligence. Station Master on duty shall meticulously observe the proper functioning of the relevant track circuits (occupancy/clearance) while admitting a train. Such observance should continue for a minimum of four to five trains thereafter. If the Station Master on duty is not satisfied with the proper functioning of the track circuits on which the train was earlier stabled, the signals leading on the line shall be suspended and the S & T maintenance staff be informed to attend.

29 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.

30 SIDINGS:

30.1 TRACK MACHINE SIDING:

The track machine siding 200M long is provided on Line no.1 towards RGDA end. This siding is isolated by DS Point No.107 controlled by key 'M' at Chainage: 115.12M. When Control when 107 is transmitted and Key 'M' is extracted from EKT Signals of controlling routes 1, C1, SH15, 2, C2, SH16 for Line No.1 will not be taken off.

31 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).

32 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.

33 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 and SR.3.77.

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

1. Whenever a Signal or a Point becomes defective any movements over the Points on the running lines should be made after clamping and padlocking both the facing and trailing Points by Station Master on duty personally for all trains at the Station.
2. In case of failure of Signal or a Point and in case the Point cannot be operated from the PANEL, the Crank Handle which is interlocked with the system has to be extracted and the following procedure has to be observed.
3. One common emergency Crank Handle key is provided for certain group of Motor operated Points. This is mechanically riveted to the Key of RKT. This Key along with Crank Handle can be released from the RKT by pressing the RKT Push Button provided near the RKT. In case of failure of Point Motor, the SM on duty will take out the Crank Handle, set the Point manually by inserting Crank Handle in the Motor.
4. When the Crank Handle key is removed from RKT for operation of the defective Motor Operated Points, the responsibility for its safe custody rests with the SS/SM on duty till it is replaced back in RKT.
5. The failure of Motor Operated Points should be promptly reported to the concerned Signal Inspector/ESM for immediate rectification.
6. Whenever a Crank Handle key is required to be used by a Signal Official for maintenance/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.
7. Before parting with the Crank Handle either for attending failure or for Maintenance work by Signal Maintenance Officials, the Station Master on duty will ensure that the reception and departure Signals are put back to on position. The Points of all the lines 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, both in facing and trailing directions over which the train is to pass, as per GR 3.69 and 3.70 with relevant SR's. The Station Master on duty will be personally responsible for setting and locking of Points, for reception and dispatch of all trains.
8. 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:

    a. Date:
    b. Point Number which failed or required to be tested:
    c. Time failure:
    d. Disconnection memo number received from S&T Staff:

e. Signature of SM/Signal Official to whom the Emergency Crank Handle is handed over:
f. Time Emergency Crank Handle is sent out:
g. Individual Point numbers, and Line number nominated for admission of dispatch for which Points are set, Clamped and Padlocked:
h. Train number to be admitted or dispatched:
i. Signature of the Station Master on duty to ensure correct setting, Clamping and Padlocking of the Points:
j. Date and Time fault rectified.
k. Time of Emergency Crank Handle received back by SM on duty:
l. Signature and Designation of the Signal Official who rectified the fault:

35 INTERLOCKING OF SIGNALS WITH BLOCK INSTRUMENTS:

35.1 INTERLCOKING WITH HOME SIGNALS:

The UP HOME Signal is Electrically interlocked with the respective TLBI so that the handle of the TLBI Instrument cannot be turned from TRAIN ON LINE position to LINE CLOSED position unless the respective Home Signals is put back to NORMAL position and the respective Block Section monitored by Axle Counter is clear of trains.

The DN HOME Signal is electrically interlocked with the respective TLBI so that the handle of the TLBI Instrument cannot be turned from TRAIN COMING FROM position to LINE CLOSED position unless the respective Home Signals is put back to NORMAL position and the respective Block Section monitored by Axle Counter is clear of trains.

35.2 INTERLCOKING WITH ADVANCED STARTER SIGNALS**:**

The UP Advanced Starter Signals No.12 is electrically interlocked with respective TLBI of section KTGA-SKPI 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.11 is interlocked with TLBI of section KTGA-BLOCK HUT OF TIE LINE'A' CABIN so that this Signal cannot be taken OFF until the Handle of the concerned Block Instrument is in 'TRAIN GOING TO' position.

35.3 SUSPENSION OF LAST STOP SIGNALS**:**

When the Token Less block instrument for section KTGA-SKPI 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 Piloted Out.

When the Token Less block instrument for section KTGA-BLOCK HUT OF TIE LINE'A' CABIN 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 Piloted Out.

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

1. High availability Digital Axle Counters (HASSDAC) are provided on both Block Sections between KTGA-SKPI and KTGA-BLOCK HUT OF TIE LINE'A' CABINon single line.
2. The occupation and clearance of the axle counter section are indicated on the PANEL 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 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].

37 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.

a) Normal supply from AT connected to OHE traction distribution [230V 50HZ].

b) Stand by supply: Odisha State Electricity Board Supply.

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 ATs. 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). An Auto change over switch is provided in the SM's office with the power supplies viz., AT and local for the changing the switch automatically to the available supply. The availability of the supply is indicated by luminous indicator above the circuit breaker for each supply.

ii). Normally the switch will be kept in Auto Mode. If the Switch kept towards AT position, whenever power block is to be given on the line the on-duty SM on duty must ascertain that power is available on the other AT and change over the switch to the desired position.

NOTE: If power block is to be given on the UP line DN AT must be available and vice versa.

iii). In case of failure of one 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 down and when tripped it goes UP].

In case of failure of both AT supplies without any power block the local supply shall be utilized by operating the changeover 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.

iv). Whenever there is failure of power supply in one AT the SM on duty shall take prompt action to inform to all concerned for rectification.

The on-duty SM himself during each shift shall check & test the availability of power supply on both ATs and make an entry in the station dairy duly initiating for rectification of failure if any.

v). For IPS system which provides supply to EI, a manual changeover switch is provided at SM's Office with the power supply viz., selected supply from CLS panel.

vi). Normally manual changeover switch is kept in selected supply from CLS panel position, if in case any emergency, changeover switch is changed to middle position by on duty SM to cut off the power supply to IPS.

vii). There is a remote monitoring ASM box provided at the station to monitor the health of IPS.

38 <u>WORKING OF INTEGRATED POWER SUPPLY [IPS, INDICATIONS & ACTION TO BE TAKEN BY SM ON DUTY:</u>

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 supplies viz., selected supply from CLS panel AT/Local 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 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 no 230 AC supply is available due to any reason.

In the event of failures of all the sources of 230V 50HZ AC supply, the signaling system shall be fed by backup battery bank connected to IPS for a limited power of 8 to 10 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	Equipment	Red	Alarm	Failure of any

SN	Instruction	Health of Battery Bank/ Equipment.	Visual Indication	Audio Indication	Action to be taken by SM on duty
	staff.	fault.			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 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 APS.

39 WORKING OF AUTOMATIC FIRE ALARM DETECTION 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 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 telephone/mobile number you fed. The prerecorded 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 1st number then panel will dial 2nd number till the time acknowledgement comes it will keep on dialing.

APPENDIX 'C'

ANTI COLLISION DEVICE [RAKSHA KAVACH]:

-NIL-

APPENDIX 'D'

DUTIES OF TRAIN PASSING STAFF AND STAFF IN EACH SHIFT

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

COMPLEMENT OF STAFF	STAFF IN EACH SHIFT
SS/SM	01
TRAFFIC POINT MAN	01

1. STATION SUPERINTENDENT/STATION MASTER (IN CHARGE):

i) He is responsible for trains passing during his shift.

ii) He is responsible for the general and satisfactory working of the station and for the efficient discharge of duties by staff working under him.

iii) He shall keep all Rule books, Registers, Files and documents neat and up to date.

iv) 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.

v) 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.

vi) 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).

vii) He shall promptly attend to accidents and report them.

viii) He shall ensure that firefighting equipment at the station such as fire extinguisher, fire buckets etc. are in good fettle and ready for use.

ix) He must ensure that the essential safety equipment at his station is the same complete and in good condition. If there is any deficiency it should be made good without delay.

x) He shall see that TSR, SM's Diary, Inspection Note Book, Reference Books and other station record is properly maintained and preserved for a minimum period as prescribed in the Operating Manual.

xi) He shall ensure that all correction slips of Manuals and SWR are posted and changes are made in respective pages.

xii) He shall supervise the work of safe working staff and conduct night inspections and report lapses of staff working under him.

2. SS/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.l 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) He shall not consider himself relieved of duty unless he has completed transactions of trains for which he has given/obtained line clear till the complete arrival of such trains.

g) He shall always obey the lawful orders of his superiors so long as they do not contravene any of the extant rules in force.

h) He shall keep the Station Master's control keys of Block Instruments/Control Panel in his personal custody whenever, he is required to leave his office even for a short duration.

i) He shall be responsible for correct issuance of caution order, whenever required.

j) As an assistant to SM, I/C, he shall carry out the instructions given from time to time.

3. TRAFFIC POINTSMAN:

i) He shall work under the orders SM on duty.

ii) He shall be in proper neat and clean uniform while on duty.

iii) He shall always commence his duty equipped with hand signal lamps during night and flags during day.

iv) He shall couple and uncouple vehicles under the supervision of SM.

v) He shall watch and guard the packages and other Railway property lying in the Station premises.

vi) He shall report any irregularities coming to his notice.

vii) He shall do loading and unloading of parcels, smalls and Guard's boxes. He shall do piloting IN and OUT.

viii) 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.

ix) He shall not leave his duty unless properly relieved or authorized by his superiors.

x) He shall follow OM Chapter-2.

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

APPENDIX 'E'

LIST OF ESSENTIAL EQUIPMENT PROVIDED AT THE STATION:

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

Sl. No	Description	Quantity
(i)	Detonators	10
(ii)	LED based Tri Colour flashing torch.	4 (1 Spare)
(iii)	Hand Signal Flags	4 (1 Spare)
(iv)	Safety chains with Pad locks	6
(v)	Clamps with Padlocks	12
(vi)	Skids	6
(vii)	Wedges	4
(viii)	Fire & Sand buckets	6
(ix)	(DCPT) Fire Extinguishers	2
(x)	Reminder collars	6
(xi)	Power block Reminder collars	6
(xii)	Line blocking boards	2
(xiii)	Motor trolley on line board	2
(xiv)	Block suspension board	2
(xv)	Stretcher	1
(xvi)	Power block boards	2
(xvii)	First Aid Box	1

APPENDIX 'F'

RULES FOR WORKING OF DK STATIONS, HALTS, IBH, IBS AND OUTLYING SIDINGS

-NIL-