



आलोक जौहरी

महाप्रबंधक

Alok Johri
General Manager



सत्यमेव जयते

उत्तर मध्य रेलवे

सूबेदारगंज

इलाहाबाद-211015

North Central Railway

Subedarganj

Allahabad-211015



प्रस्तावना

रेलवे के संचालन में सुरक्षित यात्रा सर्वप्रथम आवश्यकता है, एवं संरक्षा सर्वोपरि है। संरक्षा हेतु रेलवे में हर स्तर पर निरीक्षण निर्धारित किए गये हैं। इन निरीक्षणों को सारगर्भित बनाने के लिए उत्तर मध्य रेलवे के संरक्षा विभाग द्वारा निरीक्षण नियमावली (तकनीकी) जारी की जा रही हैं।

मुझे विश्वास है कि यह निरीक्षण नियमावली अधिकारियों तथा कर्मचारियों को निरीक्षण के समय संबंधित क्षेत्र के सभी पहलुओं को समझने तथा उनमें पाई गई त्रुटियों के ऊपर समग्र फोकस बनाये रखने में मददगार होगी तथा इससे निरीक्षण की गुणवत्ता में सुधार होगा।

सभी अधिकारी तथा कर्मचारी कृपया इस निरीक्षण नियमावली में दिए गए निरीक्षणों संख्या तथा चेक लिस्ट को ध्यानपूर्वक समझ कर पालन करें। यह नियमावली अपने मूल उद्देश्यों को पूरा करने में सफल हो, यही मेरी कामना है।

आलोक जौहरी

(आलोक जौहरी)

महाप्रबंधक

राम शंकर वर्मा
मुख्य संरक्षा अधिकारी
R.S. Verma
Chief Safety Officer



उत्तर मध्य रेलवे
सूबेदारगंज
इलाहाबाद-211015
North Central Railway
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Allahabad-211015




परिचय

मुझे निरीक्षण नियमावली (तकनीकी) को जारी करते हुए अत्यन्त प्रसन्नता हो रही है। इस नियमावली को दो भागों में बनाया गया है, भाग "क" में रेल के संचालन से जुड़े हुए पाँचों फ्रंट लाइन विभाग तथा संरक्षा विभाग द्वारा किए जाने वाले निरीक्षणों की संख्या तथा भाग "ख" में निरीक्षण किए जाने वाले क्षेत्र के लिए विस्तृत चेक लिस्ट दी गई है।

मैं इस नियमावली को बनाने में सभी संबंधित विभागों द्वारा दी गई जानकारी के लिए उनका आभार व्यक्त करता हूँ। मैं श्री आलोक जौहरी महाप्रबंधक उत्तर मध्य रेलवे का आभारी हूँ जिनके मार्गदर्शन में इस नियमावली का प्रकाशन हुआ।

मुझे आशा है कि यह निरीक्षण नियमावली, निरीक्षण करने वाले अधिकारियों तथा कर्मचारियों के लिए बहुत सहायक सिद्ध होगी। इस नियमावली में यदि किसी प्रकार की चूक या अशुद्धि पायी जाये तो आवश्यकतानुसार शुद्धि पत्र जारी करने के लिए संरक्षा विभाग को सूचित किया जाये। इस संदर्भ में मैं आपके सुझावों को आमंत्रित करता हूँ, जिससे कि नियमावली को और भी सारगर्भित बनाया जा सके।

शुभकामनाओं सहित


(आर.एस.वर्मा)



उत्तर मध्य रेलवे
NORTH CENTRAL RAILWAY
प्रधान कार्यालय
HEAD QUARTER OFFICE
सूबेदारगंज, इलाहाबाद
SUBEDARGANJ, ALLAHABAD

निरीक्षण नियमावली (तकनीकी)
INSPECTIONS MANUAL
(TECHNICAL)

संरक्षा विभाग
SAFETY DEPARTMENT

मार्च 2013
March 2013

Contents

S.No.	Particulars	Page No.
	Part-I : Inspection matrix	
1.	Safety department	01
2.	Operating department	02
3.	Civil Engineering department	03
4.	Signal & Telecommunication department	06
5.	Mechanical department	07
6.	Electrical department	10
	Part-II : Check list for inspection	
1.	Operating department	14
2.	Civil Engineering department	23
3.	Signal & Telecommunication department	30
4.	Mechanical department	38
5.	Electrical department	52
	Annexures	
I	Footplate Inspections	56
II	Crew Booking Office/Lobby	59
III	Inspection of Running Room	61
IV	Night Inspection of Station	63
V	Accident Relief Medical Van Auxiliary VAN (RHV)	64
VI	Checklist of S&T department	65

Safety Department - Monthly Inspection schedule

Head Quarter Offices				Remarks At least one inspection has to be done in Night by HQ officers and 2 inspection in Night by divisional officers
Designation	Footplate Inspection	Other Inspection	Total	
CSO	1	3	4	
Dy. CSO/SSO	1	5	6	
Divisional Officer				
Sr. DSO	2	6	8	
DSO/ADSO	2	6	8	

Operating Department - Monthly Inspection schedule

	Night Insp.	Foot plate Insp.	Station/ Yard/ Lobby Insp.	R/ Room Insp.	Total Insp	Remarks
HQ Officers						
COM			1		1	
CFTM			1		1	
CPTM	1		1		2	
CTPM	1		1		2	
Dy. COM/Goods	1		1		2	
Dy.COM/Coaching	1		1		2	
STM/Goods	1		1		2	
STM/Planning	1		1		2	
STM/Gen.&Rule	1		1		2	
Divisional Officers						
Sr. DOM	1	1	1		3	Detailed Inspection of one major station in six month
Sr. DOM/G, DOM/G	1	1	1	1	4	-do-
Sr. Scale	2	1	1		4	Detailed Inspection of one major station in six month
Jr. Scale	2	1	1		4	

Note : Above is minimum number of inspection more inspection can be done by officer

Engineering Department (Open line)
Monthly Inspection schedule

Officers	No. of Night Inspection	No. of Foot Plate/Rear Window Inspection	Other Inspection	Total
PCE	1	1	2	4
CTE	1	1	2	4
CBE	1	1	2	4
CE/TMC	1	1	2	4
CE/P&D	1	1	2	4
CE/TS	1	1	2	4
CE/G	1	1	2	4

Engineering Department - Monthly Inspection Schedule

Items	Sectional JE/P.Way	SSE/P.Way Incharge	Sectional ADEN/DEN	SR. DEN
Gang Insp.	Once in a month (all gangs)	Once in a month one gang per JE/P.Way	Minimum one gang per SSE/P.Way Incharge every month	Minimum one gang per SSE/P.Way Incharge three month
Push Trolley Inspection	Once in a fortnight	Once in a month	Once in a month	Once in three month
Footplate Inspection	Once in a month	Once in a month	Once in a month	Once in three month
Night Insp.	Once in fortnight	Once in a month	Once in a month	Once in a month
On Foot Inspection	Once in Six months on prorata basis so as to cover entire section	Once a year on prorata basis so as to cover entire section	-	-
Curve	Once in Six month by rotation with SSE/P.Way Incharge	Once in Six month by rotation with sectional JE/P.Way	One curve every quarter under each SSE/P.Way Incharge	Minimum one curve in each ADEN section in every three months.
Points and crossing				
a) Pass. & running lines	Once in three months by rotation with SSE/P.Way Incharge	Once in three months by rotation with sectional JE/P.Way	Once in a year	As often as possible during trolley inspection at least one important Points and crossing on Pass and running lines
b) Other lines & yards	Once in 6 months by rotation with SSE/P.Way Incharge	Once in 6 months by rotation with JE/P.Way	1/10th of total T/outs every year on Programme basis	-

Items	Sectional JE/P.Way	SSE/P.Way Incharge	Sectional ADEN/DEN	SR. DEN
LWR/CWR & SEJ	Once in fortnight during two coldest and two hottest months min and max temperature, otherwise once in two months by rotation with SSE/P.Way Incharge	Once in fortnight during two coldest and two hottest months at min and max temperature, otherwise once in two months by rotation with sectional JE/P.Way	Once in every six months preferably hottest & coldest months	-
Level crossing	Once in a month	Once in a month	Once in Six month	Minimum One LC per SSE/P.Way Incharge in three months

**Signal and Telecommunication Department
Monthly Inspection Schedule**

Head Quarter Officer			
Designation	Night inspection	Footplate/ Other*	Total
PHOD/HOD	1	3	4
JA	1	1	2
Divisional Officer			
JA	2	4	6
Sr.Scale/Jr.Scale	2	10	12

* Other inspection includes station/Relay/equipment room, IBH gate, IBH, Autohut, Joint Footplate inspection, control room, crew lobby (Signal defect register, Window trailing inspection, Safety seminar, training centre, ART/ARME, Depot/Field unit, Exchange telecom unit and other inspection

Sr. DSTE's have to inspect at least 1/3rd of all Signaling installations in the division uniformly distributed in his jurisdiction every year including all major yards and joint footplate as per SEM

Sectional DSTE's/ASTE's have to inspect at least once in a year (within 12 months duration) 100% gears of all stations /Cabin/Interlocked L.C. Gate/IBH/Auto Section under their jurisdiction and Footplate full of their section in both direction and both in day & night as per SEM provisions

The above schedule of inspection is only indicative and actually the officers shall carry out more inspections. Jr. Scale/Sr. Scale officer direct incharge of the section shall spent maximum time in the field

The schedule inspection as defined above shall not include casual inspections, visiting stations/spot while attending failure and breakdowns/accidents and also while accompanying higher officials. Inspection carried out by the officers independently without accompanying higher officials shall only be treated as the finspection and counted in the number of inspection for including the above schedule

Mechanical Department - Month Inspection schedule

SN	OFFICER / TYPE OF INSPECTION		WORKSHOP/GEN			C&W										
			HQ			HQ			Division							
			CWE	JAG (HQ)		SS	CRSE	JAG	JS	JAG	SS	JS				
				WS/PLG	Secy											
1	Workshop		1	1												
2	Coaching Depot		3	1	2	4	2	2	2							
	a	Washing Line											2	3	4	
	b	Platform											2	3	4	
	c	Sick Line											1	2	2	
	d	Br. Power Checks											1	2	4	
	e	Jt. Insp. of Infrastructural facility of Coaching Maintenance Depot, Pit Lines and Sick Lines.											2	2 per year	2 per year	2 per year
	f	Night Inspection											1	2	2	
	g	Rake Inspection											2	4	6	
3	Freight Yard		3	1	2	4	2	2	2							
	a	Sick Line/ ROH Depot											1	2	2	
	b	Yard											2	2	3	
	c	Night Inspection											1	1	1	
	d	Super Check of Goods Rake including Brake Power Check.											1	2	4	
	e	Jt. Inspection of infrastructural facility of wagon maintenance Depot, Examination Yard & Sick Line.											2	2 per year	2 per year	2 per year
	f	Office Inspection											1	1	1	
	g	Qualities of GDR Check											1	1	2	

Mechanical Department - Monthly Inspection schedule

SN	DIESEL & OPERATIONS											
	HQ			Division			DSL Shed					
	CM PE	JAG	JS	JAG	SS	JS	JAG	SS	JS			
4	Diesel Shed											
	a	Super Check of Locomotive	2	2	2				4	4	6	
	b	Foot Plate Inspection							1	1	2	
	c	Shed Night Inspection								6 per year	1	2
	d	RDI								Quar terly	Quar terly	Once in a month by nominated ADME(DSL)
	e	140 T Crane (Maintenance Aspect)								In six month	Quar terly	Once in a month by nominated ADME(DSL)
5	Operation & Fuel											
	a	Foot Plate	2	2	2	3	5	8				
	b	Crew Booking Lobby (Day/ Night)				1/1	2/1	2/1				
	c	Running Room				1	1	1				
	d	Ambush Check				1	1	1				
	e	Safety Seminar				Quar terly	Quar terly	Quar terly				
	f	RDI				1	1	1				
	g	ART/ ARME				Quar terly	Quar terly	Mon thly				
	h	140t Crane				Quar terly	Mon thly	Mon thly				
	i	Surprise night Insp.				1	2	3				
Total		4 *				4 *	4 *	10	14	19	9	7

NOTE:-

1. * - Including Foot Plate/ One Night Inspection.
2. @ - The detail of Inspection has been given by this office L No. Mech./NCR/HAG-SAG/Insp./220-11, Dated 20.09.2012.

Mechanical Department - Month Inspection schedule

SN	OFFICER / TYPE OF INSPECTION		WORKSHOP/GEN			C&W						
			HQ			HQ			Division			
			CWE	JAG (HQ)		SS	CRSE	JAG	JS	JAG	SS	JS
				WS/ PLG	Secy							
4	<i>Diesel Shed</i>											
	a	Super Check of locomotive										
	b	Foot Plate Inspection										
	c	Shed Night Inspection										
	d	RDI										
	e	140 T Crane (Maintenance Aspect)										
5	<i>Operation & Fuel</i>											
	a	Foot Plate										
	b	Crew Booking Lobby (Day/ Night)										
	c	Running Room										
	d	Ambush Check										
	e	Safety Seminar										
	f	RDI										
	g	ART/ ARME										
	h	140t Crane										
	i	Surprise night Insp.										
Total			4*	2	2*	4*	4*	4*	4*	17	26	36

NOTE:-

- * - Including Foot Plate/ One Night Inspection.
- @ - The detail of Inspection has been given by this office L No. Mech./NCR/HAG-SAG/Insp./220-11, Dated 20.09.2012.

Electrical Department - Monthly Inspection schedule
1.0 Head Quarter Officer

	Footplate	Night Inspection	Other	Total
PHOD/HOD	1	1	2	4
JA grade	1	1	2	4
Senior Scale	2	1	2	5
Junior Scale	2	1	3	6

Electrical Department - Monthly Inspection Schedule
2.0 Rolling Stock (RS) (Loco/EMUs)

S.N.	Description	JA	SS	JS	JA	SS	JS
1	Night Foot plate	2	3	6			
2	Foot plate	One in 2 month	1	1			
3	Ambush Checks (OP)		1	1			
4	Out station sheds/night stabling points (OP officers)	1	1	Each per month	One in 2 month	One in 2 month	One in a month
5	Out station sheds/night stabling points (RS officers)	One in 3 month	One in 2 month	One in 2 month			
6	Loco/EMU Sheds (OP)						
7	Running Rooms	1	1	Each month	One in 3 month	One in 3 month	One in 2 month
8	Lobby				One in 2 month	One in 2 month	One in a month
9	Training School		One in 2 month				
10	BPT Test	1 train	1 train	1 goods & 1 Chg.			
11	Night Inspection						
12	Others						

Electrical Department - Monthly Inspection Schedule
3.0 General Services

S.N.	Description	JA	SS	JS	JA	SS	JS
1	Inspection of TL/AC	2	2	2	One in 6 month	One in 6 month	One in 6 month
2	Trains/Rakes Primary/Secondary	2+2	3+3	4+4	One in 6 month	One in 3 month	One in 2 month
3	Sick Line Facilitation/Sub				One in a year	One in 6 month	One in 4 month
4	Inspection of power station/substation/DG sets	1	1	2			One in a year
5	Major AC plants	1	1	2	One in a year		One in a year
6	Major pump Houses	1	1	2			One in a year
7	Station A	1 in 2 month	1	1	One in 2 months		One in a year
8	Major colonies/Hospitals/Health units	1 in 2 month	1	1			
9	Major service buildings	1 in 3 month	1 in 2 month	1			

Electrical Department - Monthly Inspection Schedule

4.0 Traction Distribution

S.N.	Description	JA	SS	JS	JA	SS	JS
1	OHE Depots	1	2	4	One in a year	One in 6 month	One in 3 month
2	Tower Wagon inspections	1	2	3			One in 4 month
3	Push trolley/Motor trolley inspection	1	2	2		One in a year	One in 6 month
4	Inspection by Loco Cab	1	1	2		One in a year	One in 6 month
5	Station inspection/Level crossing gates	1	1	2			
6	Ambush checks of working gangs/TPC	One in 2 month	1	1			
7	Current collection test	One in 6 month	One in 3 month	One in 2 month		One in a year	One in 6 month
8	PSI depots	1	2	4	One in a year	One in a year	One in 6 month
9	Traction substation	1	2	2		One in 6 month	One in 3 month
10	Switching stations	1	2	3		One in a year	One in 6 month
11	Grid substation	2 in a year	1	2		One in a year	One in 6 month
12	Remote control center	one in 6 month	One in 4 month	One in 2 month		One in 3 month	One in 3 month
13	Office inspection	1	1	1			

Operating Department

(Officers visiting for different type of inspections like Detailed, Casual Surprise Night, Footplate, Lobby, Running Room etc. will check as many as items as possible as contained in check list)

1.0 DETAILED STATION INSPECTION

1.1 SM'S OFFICE

- (i) List of safety equipments to be physically verified. Whether the same has been displayed prominently.
- (ii) Performance of control phone and its failure. If provided with TPC telephone, test alertness of TPC.
- (iii) Staff in proper uniform with badges and alert on duty.
- (iv) Whether unauthorized person operates the block instruments?
- (v) Essential equipments as per Appendix "E" of SWR, whether in working order?
- (vi) After receiving train, the points in rear of that line should be set in reverse direction.
- (vii) Clamps/cotter bolts and other essential equipments in ASMs office.
- (viii) The block instruments whether sealed and locked?
- (ix) Whether signal correctly lit/focused and clearly visible?
- (x) First aid box, list of first aides and list of doctors and hospitals.
- (xi) Stock of K.oil & Pad locks etc.

1.2 WORKING OF THE STATION

- (i) Observe reception and despatch of at least 2 trains, whether G&SR and SWR's followed.
- (ii) Whether complete arrival of the trains and clearance of fouling marks observed.
- (iii) Test knowledge of staff about the system of working block section, station section & gate.
- (iv) Test knowledge of staff about abnormal working.
- (v) Test knowledge of staff about VTO.
- (vi) Competency and knowledge of staff regarding panel operations.

- (vii) Whether SWR and diagram is correct and upto date? SWR's due/revision/modification required/ Suggested/ Suggestions for improvement in layout of interlocking.
- (viii) simultaneous reception/despatch facilities. Is there any bottle neck?
- (ix) Ask suggestions/recommendations for improving working, increasing efficiency and reducing cost.
- (x) Scrutinize TSR timings of engine arrival and departure of stabled released/back loaded trains to ensure that Loco Pilot and Guard jointly examine the train before departure from a non-TXR station. Whether a copy of BPC has been prepared and kept at station where incoming trains came without valid OPRS or incoming trains came with valid OPRS but integrity of the rake has been tampered with beyond prescribed limit?
- (xi) Cross check TSR timing of last train with adjacent stations as also handing over time in 'charge diary' to ensure that staff leaves his duty after completing the movement which he has started.
- (xii) Whether S&T gears, cabin basement/relay room kept under locks and its register maintained.
- (xiii) Memos served by ASM to S&T staff for S&T failures.
- (xiv) Cross check signal failure register with T-369 (3b). Also timings of preparation of T-369 (3b) from TSR to ensure sufficient time for the porter for following provision of GR.
- (xv) Cross check shunting order with attaching/detaching register.
- (xvi) Cross check private number with adjacent block station, cabins and gates.
- (xvii) Cross check caution order book and caution register.
- (xviii) Detention to trains outside signal.
- (xix) Cross check crank handle register with signal failure register.
- (xx) Cross check number of emergency counters with the register.
- (xxi) Whether Axle Counter failure register maintained and how clearance of line ascertained in case of Axle Counter failures.
- (xxii) Total failure of communication and No. of trains started without line clear. Cross check with TSR.
- (xxiii) Accident register, follow up action against accident prone staff and suggested remedies/measures.
- (xxiv) SM's night inspections and safety meetings, effective or not.
- (xxv) Scrutinize station inspection book and follow up action thereto.
- (xxvi) Watch cases or loose/rough shunting Explain to staff about dangers involved therein.

- (xxvii) Adequate communications and lighting facilities in yard.
- (xxviii) Possibilities of reducing detention to stock and shunting engine hours.
- (xxix) Cross check during PLC working, S&T supervisor & opts supervisor reached station timely. No crossing or precedence is arranged at the station.
- (xxx) Whether the Block Instruments indicate the condition of Block Section correctly and is corresponding with entries in TSR.
- (xxxii) Acknowledgements of Loco Pilots and Guards should be obtained when caution orders are handed over to them.
- (xxxiii) Whether the First Aid Box is complete with valid medicines.
- (xxxiv) Check Disconnection/Reconnection register for proper records.
- (xxxv) Whether stabling load register maintained as per latest instruction and sufficient chains & wooden wedges are available for securing of load.

1.3 RULE BOOKS REGISTER AND CHARTS

- (i) Whether Rule book/Manuals and SWR's have latest amendment slips?
- (ii) Cross check assurance register for SWR's with attendance register.
- (iii) Are Safety Bulletins and Safety Circulars maintained properly and assurance of staff taken? Cross check with assurance register kept for this purpose.
- (iv) Cross check roster duty chart with actual attendance. Whether mutual arrangements being resorted to?
- (v) Cross check Bio-data register with competency/medical certificate. Whether staff is due for:-
- (vi) a. Competency & Periodical medical examination.
b. Safety Camp/Ghat Rules etc.
c. Line admission book for reception of goods trains.
- (vii) Validity of fog signals and knowledge of staff in their use. Assurance of fog signalmen in the fog signal register.
- (viii) Cross check disconnection/reconnection register with foils of T-351.
- (ix) Whether joint inspection of points and crossing carried out by SE (SIG) & SE (P.Way).
- (x) Monthly summary of signal failures in signal failures register being signed by SE (SIG), SE (P.WAY) & TI/SS.

- (xi) Sanctioned strength, staff on roll register. Indicate surplus staff if any and suggest possible redeployment.
- (xii) Originating trains load register.
- (xiii) Adequate availability of stationary, forms and OPTs and stores.

2.0 CABINS

- (i) Essential equipments of cabins and their condition.
- (ii) Whether points are set against the blocked line?
- (iii) Whether cabinman ensures clearance of line.
- (iv) Ensuring clearance of fouling mark in case of stopping trains.
- (v) Whether lever collars on the relevant levers of blocked/obstructed line are being used?
- (vi) While shunting over emergency cross over, whether the facing point of emergency cross over is cotter bolted/pad locked in addition to locking them from cabin?
- (vii) Test knowledge of cabin/leverman in G&SR/SWR and other instructions pertaining to his duties.
- (viii) Cross check private numbers exchanged, between the cabin/leverman, ASM and other cabins.
- (ix) Whether signals for conflicting movements may be taken off? Cross check slide/slotting arrangements with conflicting movements.
- (x) Cleanliness of cabin, lever handles etc.

3.0 CASUAL INSPECTION OF STATIONS

- (i) Check the alertness and vigilance of the staff
- (ii) Check if staff is habituated to friendly and short cut methods?
- (iii) Whether unauthorized person operates the block instruments?
- (iv) Exchange of all right signals with crew and Guards of passing trains whether ASM himself exchanges all right signal or deposes porter for that?
- (v) Whether keys of block instruments and private number book kept in custody of ASM on duty.
- (vi) Use of lever collars/ferrules.
- (vii) Relay room kept double locked.

4.0 GUARDS EQUIPMENTS AND BRAKEVAN

- (i) Guards essential equipments of two stopping trains viz rule books with latest amendment slip, HS lamp, tail lamp/board, and current

working time table, a red flag a green flag, First aid box, fire extinguishers and PCP set of passenger trains. Test knowledge of Guard about use of PCP.

- (ii) Currency of fog and fusees.
- (iii) Complete bio-data available or not.
- (iv) Additional equipments i.e. one spare red flag, 2 vacuum hose pipe washers, No. of pad locks as prescribed, one vacuum/pressure indicator (gauge).
- (v) Accident relief bands for Mail/Exp Guards only.
- (vi) Availability of sealed TL box in Brake Van of passenger train and check knowledge of passenger Guard for correct use of TL box.
- (vii) Availability of pressure gauge on Brake van

5.0 INSPECTION OF LOCO PILOTS AND GUARDS LOBBIES

- (i) Whether crew are called under rest?
- (ii) Whether breath analyzers are in working order?
- (iii) Speed restriction boards available or not.
- (iv) Caution in force, got noted by the staff.
- (v) Safety literature viz. posters, pamphlets, bulletins/ circulars displayed/kept in the lobbies.
- (vi) Unusual occurrence register maintained or not. Whether the irregularities recorded by Loco Pilots are conveyed to CNL office & feed back obtained.

6.0 RUNNING ROOM INSPECTIONS

- (i) General sanitation of running room, surroundings are clean and healthy, rooms are airy and ventilated.
- (ii) Whether beds, linen, mattresses, pillows, blankets are adequate and clean?
- (iii) If maintenance of kitchen and dining room satisfactory and sufficient crockery and utensils kept in clean and good condition?
- (iv) If there is adequate supply of water in bathroom and lavatories?
- (v) Whether strength of cooks and bearers is adequate?
- (vi) Whether magazines/news papers are supplied regularly?
- (vii) Complaint book being checked or not by running room incharge.
- (viii) Whether safety bulletins/circulars kept?

- (ix) Whether running rooms are used by outsiders/unauthorized persons?
- (x) Stand by lighting arrangements.
- (xi) Availability of Mosquito nets /repellent

7.0 FOOTPLATE INSPECTIONS

- (i) Functioning of head light, marker light and flasher light of engine, speedometer, speedograph, hand and other brakes.
- (ii) Loco Pilots essential equipments.
- (iii) Whether upto date rule books & current working time table available?
- (iv) Whether adequate brake power and vacuum/air pressure available?
- (v) Whether Brake Power certificate and caution order issued correctly?
- (vi) Bio-data of Loco Pilot regarding competency, periodical medical examination and safety camp etc.
- (vii) If Loco Pilot wears spectacles, another pair of spectacles kept or not.
- (viii) Calling and repeating aspects of signal by Asstt. Loco Pilot/ and Loco Pilot.
- (ix) Whether Loco Pilot conducts continuity test (whenever required) brake feel test and brake power test in First block section?
- (x) If Loco Pilot observes the speed restrictions and other speed limits of the section.
- (xi) Exchange of all right signal between station staff and the crew.
- (xii) Visibility of fixed signals whether extinguished or drooping.
- (xiii) Whether Loco Pilot looks back from time to time to ensure train is running in safe and proper manner.
- (xiv) Whether Loco Pilot stops for 1”/2” on red automatic signal during day/night respectively, exchanges all right signal with Guard and proceeds at 15 KMPH speed upto next automatic signals?
- (xv) Test the knowledge of Loco Pilot and Asstt. Loco Pilot about protection of train disabled in block section, specially in case of accident when on double line, adjacent line is blocked & other relevant rules.
- (xvi) Whether Loco Pilot leaves engine unmanned and permits unauthorized person to drive the engine?
- (xvii) Whether Loco Pilot stop for 5” in case of red modified semi automatic signal and proceed at maximum speed of 10 Kmph.

- (xviii) Availability of wooden wedges on loco.
- (xix) Availability of spare air pipe.
- (xx) Working of loco hand brake.
- (xxi) Working of Audio Visual indication in Air brake locos.

8.0 SURPRISE NIGHT INSPECTION OF STATION AND L-XING GATE

8.1 STATIONS

- (i) Check of alertness and vigilance of staff whether sleeping or alert on duty in proper uniform.
- (ii) Exchange of all right signals by Loco Pilot and Guard with station staff.
- (iii) Whether SM himself exchanges signals or deposes pointsman for the same on his behalf.
- (iv) Whether proper staff, as per roster, is on duty or unauthorisedly exchanging duty with their colleagues?
- (v) Show red signal to Guard or through passing train for checking his alertness.

8.2 L-XING GATE

- (i) Incognito check – whether Gateman is alert, vigilant and in proper uniform?
- (ii) Gateman is looking for hot axle, spring breakage, hanging parts and other dangerous conditions on the through passing trains.
- (iii) Loco Pilot and Guard is looking for danger signals from the gateman, check alertness of Guard by showing red signals.
- (iv) Condition of gate leaves, leaf catchers, lifting barriers with bell, speed breaker, road signs, clearance of channels between stock rail and check rail etc.
- (v) Checking of gate parameters with the standard list issued by the division.

9.0 DETAILED L-XING GATE INSPECTION

- (i) Availability of essential equipments. List of safety equipments to be physically verified. Whether the same has been displayed prominently.
- (ii) Check the bio-data of Gateman, duty roster and vacancy position at the gate.

- (iii) Check the knowledge of gate working rules, use of fog signals and fuses.
- (iv) Whether the Gate kept in its prescribed normal position.
- (v) Whether Gateman looks for hot axle, hanging parts, spring breakage and other unsafe conditions on the passing trains?
- (vi) Test knowledge particularly where he should stand when any train passes and action to be taken when anything unsafe noted.
- (vii) Guards response if danger signal is shown to him.
- (viii) Action to be taken in case of defective Gate signals/barriers.
- (ix) Test about practical application of placing detonators and showing danger signal.
- (x) Action to be taken in case a train noticed running in 2 or more parts.
- (xi) If lifting barriers work properly and check ringing of bell.
- (xii) Road surface and depth of channel between stock and check rail.
- (xiii) Channels between stock and check rail are clean.
- (xiv) Condition of road signs/road breakers whether of standard design.
- (xv) Visibility of gate from the road and track.
- (xvi) Hand signal and gate lamps are clean and trimmed and lit at night.
- (xvii) Is interlocking justified?
- (xviii) Complaint particularly detention to road traffic.

10.0 AMBUSH CHECKS AT AUTOMATIC SECTIONS, IBS AND L-XING GATES

10.1 L-XING GATES

- (i) Loco Pilot and Guard look for Gateman danger SE signal.
- (ii) Guards response if danger signal is shown to him.
- (iii) Whether Loco Pilots stops 1" during 2" during night if Gate signal is "ON".
- (iv) Whether Loco Pilot intermentely whistles at 'WL' board up to unmanned L-xing Gate?
- (v) Displaying of hand signal by gateman to an approaching train.
- (vi) Timely closing and opening of gates.
- (vii) Observance of speed limits by the driver if some engg. Restriction is imposed.

10.2 AUTOMATIC SIGNALLING TERRITORY

- (i) Whether Loco Pilot stops for 1"/2" at red automatic signal during day and night respectively.
- (ii) Loco Pilot exchanges all right signals with Guard before starting.

- (iii) Loco Pilot proceeds at 15 KMPH speed up to next automatic signals.
- (iv) Whether Loco Pilot stop for 5" at red modified semi automatic signal and proceed with maximum speed of 10 Kmph.

10.3 AT I.B.S.

- (i) Whether Loco Pilot stops at I.B.S. signal at danger?
- (ii) Whether Loco Pilot blows whistle to apprise Guard?
- (iii) Whether Loco Pilot tries to contact ASM of station in rear on phone?
- (iv) Whether Loco Pilot blows whistle and exchanges all right signal with Guard before proceed at 15 KMPH if visibility is good and 8 KMPH if visibility is impaired upto 1st stop signal if next station?

11.0 CONTROL OFFICE INSPECTION

- (i) Test audibility of CNL phone and frequency of control failures.
- (ii) If proper procedure followed in case of running trains without brake van?
- (iii) Proper guidance to SMs in case single line working on double line and engine failure in block section.
- (iv) Cases of bad controlling and action taken.
- (v) Arrangements of powers and heavy detention to engines.
- (vi) Frequency of change of trains arrangements.
- (vii) Caution order register, power/traffic block register.
- (viii) Ask controllers if any special facility i.e. crossing stations, additional loops on any section improve operations and speed to trains.
- (ix) Dy.CHC/Controllers diary, whether entries are carried forward and follow up action taken therein.
- (x) Whether power controller is maintaining the engine turn round register properly.
- (xi) Register of damaged/sick wagons at road side stations, whether suitable action taken for early clearance.
- (xii) Promptness in arranging ART/Medical Van in case of accidents.

12.0 ART INSPECTION

- (i) Joint check with Mech. & Medical officers once in three months.
- (ii) List of equipment to be physically verified.
- (iii) Personal verification of working of each tool and equipment.
- (iv) Last inspecting officer may be held responsible if any equipment fails at site.

Engineering Department

1.0 FORMATION

- (i) Repairs of Formation in embankment/cuttings
- (ii) Cess repairs
- (iii) Cleaning of rank vegetation/grass in the vicinity of track.

2.0 BALLAST

- (i) Proper Ballast profile
- (ii) Boxing & Dressing of ballast
- (iii) Proper drainage of ballast
- (iv) Weeding out of ballast
- (v) Ballast retainer at tress passing location

3.0 SLEEPERS

- (i) Condition of sleepers
- (ii) Damaged/cracked/worn-out sleepers
- (iii) Out of square sleepers, if any

4.0 RAILS

- (i) Wear of rails
- (ii) Corrosion in rails
- (iii) Corrosion at welds collars.
- (iv) Wheel burns/scabbing of rails

5.0 FASTENING

- (i) Condition of fittings
- (ii) Standard fittings provided or not
- (iii) GRSP worn out/worked out
- (iv) Greasing of ERCs.
- (v) Jamming/seizure of ERC at regular frequency
- (vi) Proper seating of liners
- (vii) Proper joggled fish plate at defective welds with two far end bolts provided or not
- (viii) Joggled fishplate with tight clamps on approach of bridges and on high banks provided or not.

6.0 TRACK CIRCUIT

- (i) Proper seating of GFN liners
- (ii) Proper drainage

7.0 GANG INSPECTION

- (i) Whether tools and plants are sufficient and in good condition.
- (ii) Check strength of the gang vis-a-vis muster sheet and utilization of men.
- (iii) Knowledge of gang about the Safety rules.
- (iv) Checking of quality of previous days work of the gang and its quantity
- (v) Grievance/difficulty of the gang staff, if any

8.0 CURVE

- (i) Cant and Versine within limit or not
- (ii) Side wears on outer rail of curve
- (iii) Curve indicator/boards as per para no. 409 of IRPVM. Painting of Versine station no. and Cant.

9.0 POINTS & CROSSINGS

- (i) Physical condition and wear of Tongue rail, Stock rail and crossing
- (ii) Check rail clearances of wing rail & check rail
- (iii) Throw of switch (95 to 115 mm)
- (iv) Condition of fittings
- (v) Standard fittings provided or not
- (vi) GRSP worn-out/worked out, if any
- (vii) Alignment and Unevenness
- (viii) Whether the length of turnout is standard and location of stock joint is correct
- (ix) Gauge and cross level at specified location
- (x) Gauge, cross level and versine in lead portion

10.0 LWR TRACK

- (i) Proper maintenance oiling and greasing of SEJ
- (ii) Angles at SEJ sleepers provided or not
- (iii) Zero missing fittings and their effectiveness
- (iv) No worn-out/work out GRSP
- (v) SEJ gapes within limit or not

11.0 MANNED LEVEL CROSSING

- (i) Condition of gates, locking arrangements
- (ii) Focusing of conventional tri-colour HS lamp should be checked. Preferably tri-colour LED torches should be provided.
- (iii) Safety equipments & tools are in proper working orders or not
- (iv) Knowledge of gateman in Safety rules
- (v) Duty roster and Gate calendar are provided or not
- (vi) Whether the Gateman on duty as per duty roster
- (vii) Vision test, Competency Certificate, Safety Camp Certificate, Refresher course due or not
- (viii) Availability of Track protection diagram
- (ix) Condition of Gate lodge
- (x) Visibility from the road for the trains
- (xi) Condition of road surface, speed breakers/rumble strips
- (xii) Condition of Road sign boards
- (xiii) Condition of approach track of level crossing
- (xiv) Condition of check rail and clearance of check rail
- (xv) Availability of Inspection record
- (xvi) Data of Periodical censuses with TVU
- (xvii) Proper height gauge provided or not in electrified section
- (xviii) Whistle boards is provided and maintained properly
- (xix) Water supply arrangement
- (xx) Last date of overhauling
- (xxi) Date of last inspection
- (xxii) Whether distinct indication are provided for guiding the Gateman to place the detonators in case of emergency

12.0 UNMANNED LEVEL CROSSING

- (i) Condition of road surface and approach
- (ii) Visibility for the road users should be checked from a distance of 05 meters from the centre line of the nearest track. It should be cleared for a distance of 600 meters on either side along the track
- (iii) Are the road signs and stop boards on the approaches properly maintained
- (iv) Speed breakers are properly maintained on both side of the level crossing

- (v) Whistle boards is provided and maintained properly
- (vi) Condition of check rail and clearance of check rail
- (vii) Date of last inspection and overhauling
- (viii) Proper height gauge provided or not in electrified section
- (ix) Data of Periodical censes with TVU
- (x) Condition of approach track of level crossing

13.0 TRACK MACHINE

13.1 Officials inspection schedule has been given in Para 5.3.2 of IRTMM which is summarized as below:-

S. No	Type of Machine	Inspection Schedule		Dy. CE/TMC/Line
		AXEN/ XEN	SSE (In-charge of group of machines)	
1	CSM	Monthly	Fortnightly	As per Para-1.1 of IRTMM, shall inspect the machine frequently, especially where a group of machines are deployed with the objective of monitoring the health of machines and to ensure that the official concerned are carrying out their duties satisfactorily
2	UNIMAT	Monthly	Fortnightly	
3	BCM	Fortnightly	Weekly	
4	BRM	Bi-monthly	Monthly	
5	SBCM	Monthly	Fortnightly	
6	DTS	Bi-monthly	Monthly	
7	UNO	Monthly	Fortnightly	
8	DUO	Monthly	Fortnightly	
9	T-28	Monthly	Fortnightly	
10	PQRS	Monthly	Fortnightly	
11	TRT	Weekly	Daily	

List of Important items to be specially checked by Inspecting officials of Track machine Organization has been given in Annexure-5.1 of IRTMM (enclosed) and inspection check list has been issued by RDSO in detail separately for each type of track machines.

Annexure 5.1

List of Important Items to be Specially Checked by Inspecting Officials of Track Machine Organization

1.0 Engine

- (i) Oil Pressure : at idle speed
: at full R.P.M.
- (ii) Correctness of the grade of engine oil being used
- (iii) Max. engine temperature during working
- (iv) Cleanliness of diesel tank and diesel oil
- (v) Whether air filters, Mobil oil filters and diesel filters changed/cleaned as per schedule or not
- (vi) Tightness of foundation bolts of engine, radiator fan motors, fuel pump, water pump, compressor, alternator, etc.
- (vii) Level/topping up of engine oil, diesel oil and water in radiator
- (viii) Observance of maintenance schedules and their quality
- (ix) Condition of batteries and charging system

2.0 Hydraulic System

- (i) Hydraulic pressure in various units and leakages
- (ii) Max hydraulic temperature during working
- (iii) Whether hydraulic filters have been changed cleaned as per schedule or not.
- (iv) Whether pumps/ motors/valves are being changed as per schedule or not
- (v) Quality of fitment of hose assembly
- (vi) Tightness of mounting bolts of pumps and motors.
- (vii) Observance of maintenance schedules and their quality
- (viii) Level/topping up of hydraulic oil
- (ix) Cleanliness of hydraulic tank and oil
- (x) Correctness of the grade of hydraulic oil, last date of laboratory testing and report thereof.
- (xi) Accumulator pressure
- (xii) Functioning of various valves

3.0 Pneumatic System

- (i) Air pressure leaks
- (ii) Functioning of various valves
- (iii) Functioning of moisture separator
- (iv) Functioning of brakes

4.0 General

- (i) Functioning of safety devices, control unit and measuring units and general cleanliness of the machine
- (ii) Tightness of the nuts and bolts of all moving and vibrating items
- (iii) Condition of the following items of various machines

- TTM - Tamping tools, rail clamping discs
- BCM - Cutter chain, cutter bar, wear plates, corner rollers, screens, conveyors
- TRT - Conveyer pads, sled, dynamic plow, clamping and guiding rollers
- BRM - Wing plates of side plow and front plow, broom elements, rail top clearing rubber elements
- SBCM/ - Conveyer belts, tooth bucket, ditcher wheel
- KSC 600 - Assembly bearings, screens,
- Portals - Sleeper gripper, rail clamps, sliding frames

- (iv) Quality of pre and post attention in track for machine working. Officers of Machine Organisation will report deficiencies to Sr. DENs/DENs.
- (v) Safety aspects (Rules of protection, safety equipments, Knowledge of safety rules).
- (vi) Availability of the updated tamping charts with the machines as well with the divisional officers.
- (vii) Maintenance of records pertaining to the machine.

5.0 BRIDGES

5.1 Regarding Bridges – following points are to be inspected

- (i) Steps to be provided for inspection.
- (ii) Guard rail clearance : End to be buried in ballast with wooden block.

- (iii) Cleaning of water way.
- (iv) Spacing of sleepers in approaches of important bridges (60 cm. Upto 100m on either Side.
- (v) Inspection of bridge : Bridge register (P – I 103.4) Annexure-I I/8.
- (vi) Painting/oiling & greasing : Date of painting on girder bridges, flood gauge to be painted
- (vii) Trolley refuges.
- (viii) Bridge Tableau.
- (ix) Foundation plaque - Painting on piers and abutment
- (x) Name Board on important bridges
- (xi) H.F.L. and Danger level marking
- (xii) Gauge and Cross level
- (xiii) Provision of dog bolts : arrow marking

5.2 Bridge condition statement should be in following format

Condition of sub structure	Condition of wing wall	Condition of super structure	Condition of Bearing

Signal and Telecom Department

I.0 SAFETY CHECKS

- I.1 **RELAY ROOM/CABIN BASEMENT/BLOCK INSTRUMENT KEY**
- (i) SER/LSC/Relay Room key is not taken more than once in a month for schedule maintenance & supervisor takes it.
 - (ii) Switch on Relay Room Door is as per standard arrangement & spurious logging is not there.
 - (iii) Cross check relay room register with data logger records and mechanical counters / S&T control record - No. of times key taken and duration shall match.
 - (iv) Key for Construction work is taken as per the programme agreed by Sr. DSTE.
 - (v) Construction staff has given memo of the work done for each occasion of key taken and has also recorded in the work register to be kept in relay room by Construction works.
 - (vi) Block Instrument key is taken only after acceptance of either Failure Memo or under accepted disconnection notice. Check from records.
 - (vii) Block Instrument key is not taken or instrument opened when it is on TOL / Line Clear position. Check timing from TSR.
 - (viii) Double locks at in Relay Rooms/SER at stations are effective and it is not possible to open without proper key. Try with all available keys with S&T staff.
 - (ix) Check for duplicate keys in Signal Technicians duties room, tool box / bag.
 - (x) Signal Technicians duty room key is with Signal Technicians and Section JE/SE/SSE only.
 - (xi) Relay Room key of S&T lock remains in custody of Signal Technicians of Station / Section.
 - (xii) Exceptional report from data loggers to be checked if provided for – point failure, signal failure and delay in signal going to ON after occupation of controlling TC.
 - (xiii) All relays are properly sealed with screw fully tightened and an impression on seal is proper.
 - (xiv) Spare relays are kept sealed in Relay Room.
 - (xv) Data Loggers / modem or its reset is shifted outside, wherever feasible.
 - (xvi) Panel, lever frame, SM frame, Block testing / overhauling is done.
 - (xvii) Panel, lever frame, SM frame required lever/slide/button collars are available.

- (xviii) In Relay Room loop or extra wire are not kept.
- (xix) Air Conditioning System where provided is working

I.2 SIGNAL FAILURE REGISTER AND MAINTENANCE

- (i) Signal Failure Memo is issued for each failure recorded in SFR.
- (ii) Each memo issued by SM is acknowledged.
- (iii) Put right time & cause of failure are entered properly by SM & S&T staff respectively.
- (iv) Signal failures, which could have been attended from outside but relay room key taken.
- (v) Trains passed on signal during signal failure.
- (vi) Train passed on signal when relay room key was taken during signal failure.
- (vii) Total trains passed during failures as per TSR & SFR & T 369-3 B actually issued.
- (viii) T 369-3 B cancelled during signal failure & otherwise.

I.3 DISCONNECTION NOTICE

- (i) Total Nos. and adequacy of duration for the type of work done.
- (ii) No. of trains passed on signal during disconnection.
- (iii) Cross check the functioning of the disconnected gear with data loggers report and the work, if any done after reconnection.
- (iv) Reconnection of Construction work on existing gear is after testing by open line.
- (v) All Supervisors & Maintainers are aware of the activities to be done with and without disconnection.

I.4 COUNTERS

- (i) Check all the counters are in working conditions and increment by one only.
- (ii) Counters are getting updated in both LCP
- (iii) RRBU or EUUYN cancellations are done after receipt of memo from SM & all memos kept serially numbered in guard file.
- (iv) EWN operation during TC failure – corresponds with SFR record.
- (v) ERRB cancellations are not too many & analysis of it.
- (vi) Proper procedure of Axle Counter / MUX resetting is followed.

I.5 JOINT INSPECTION OF PANEL & CROSSING AND TC

- (i) Quarterly schedule is followed.
- (ii) Deficiencies are not carried forward.

- (iii) Major deficiencies yet to be attended like worn out tongue rail, stock rail, machine sleepers, out of square, missing stock bolts and loose packing.
- (iv) Availability of pad & liner, condition of sleeper.
- (v) Drainage system.

1.6 MATERIAL AVAILABILITY, SPARES, STANDBY AND REPLACEMENT

- (i) Critical stores for regular maintenance.
- (ii) Torches & Cells.
- (iii) Tools and measuring instruments.
- (iv) Cotton waste, signal bulbs/LED Lamps, lubricating & gear oil.
- (v) Spare material and equipment including axle counters, AFTC are kept tested after putting in working circuit for 24 hrs. and signed by the inspecting official.
- (vi) Spare material and equipment including axle counters, AFTC and bonds etc. of each type are available and kept properly stored.
- (vii) Interlocked relays of spare groups are in normal position.
- (viii) Replacement of identified gears/parts/components/modules is being done as per the periodicity defined in mid life rehabilitation plan.
- (ix) All standby equipments like dual detection, IPS modules, AT supply, DG set, and EI Cards/hot standby are in working condition.

1.7 SSE's DEPOT

- (i) Safety meetings are scheduled every month and all staff attended.
- (ii) Signal lamp lasting arrangements for 3 hours.
- (iii) Material shortage, stock / non-stock items and storage system.
- (iv) Staff grievances.
- (v) Staff Bio data book (Gyan Jyoti) with Competency certificate cum training history book is with each maintainer and supervisor, as issued by Training school/SSDE in-charge.
- (vi) Staff is categorized as A, B, C category and 6 monthly review done.
- (vii) Staff is not due for refresher course.

1.8 STATION STAFF

- (i) Competency of operation is available.
- (ii) Setting of point against stabled/stationery load.

- (iii) Prescribed practice is followed for treating a point/signal defective till a written advice for its rectification from S&T staff is given.
- (iv) Point is inspected by SM after its failure.

1.9 SWR/SWRD AND CIRCUIT DIAGRAM

- (i) SWR matches with SIP.
- (ii) SIP matches with the last work commissioned.
- (iii) Counselling of station staff is done for the last update of SWR.

1.10 DRIVERS LOBBY

- (i) Signal defects are attended and the remarks are put in.
- (ii) Repeated cases of defects reported.

2.0 RELIABILITY CHECK

2.1 MAINTENANCE

- (i) Maintenance by Signal Technician is regular & record kept in SMC and site book.
- (ii) Sectional JE/SE/SSE's inspections are regular & record kept.
- (iii) Quarterly inspections by SSE and monitoring system by him to ensure quarterly inspection.
- (iv) P-5 Schedule by SSE and corresponding disconnection memo of adequate duration.

2.2 POINTS

- (i) Point motors are opened for regular maintenance & not kept sealed throughout the year except monsoon.
- (ii) Epoxy coating of motor & detector assembly in flood prone area is done.
- (iii) Ground connections are fitted as per standard drawing.
- (iv) Wear & Tear on machine slides, looseness on pins in ground connection.
- (v) Motor current under obstruction & normal and variation
- (vi) Friction clutch trips under obstruction.
- (vii) WJR timing for "N" & "R"
- (viii) A ward on point motor corresponds with the KLR.
- (ix) Cleanliness of carbon brush & availability of chamois leather.

2.3 TRACK CIRCUIT

- (i) Track circuit parameters are within limit.

- (ii) Relays are not overdue for overhauling.
- (iii) Track circuit history card are maintained every six months.
- (iv) Track circuit batteries are positively wired in circuit.
- (v) Track circuit in flood prone areas and improvement needed like axle counter in parallel.
- (vi) Testing of GJ/IBJ and replacement of IBJ/William stretcher/Gauge Plate/Tounge attachment is done as per schedule & procedure followed during replacement.
- (vii) OHE bands are available on FP/SEJ & track crossing is insulated.
- (viii) Double track lead wires are provided.
- (ix) Channel pins are replaced every six months and track lead every year.
- (x) AFTC receiver voltage is within prescribed limits
- (xi) AFTC bonds are provided and properly connected with Rails
- (xii) All track connections are properly made.
- (xiii) No spare/released rail is lying parallel to track
- (xiv) OHE masts are connected as per manual provisions
- (xv) AFTC S/Alfa/Tx/Rx Bonds are replaced every 2 to 3 years or on condition basis and as per periodicity defined from time to time.
- (xvi) Separate terminals for measurement of voltages are provided for UM 71 TCs and measurement is not from back of base pins.

2.4 SIGNAL

- (i) LED is provided with current regulators with proper setting for Conventional or LED ECR as per ECR provided
- (ii) HMU functions is checked regularly as per schedule where provided.
- (iii) Cases of repeated LED and CRU fusing/failure of a signal or particular make.
- (iv) Signal is secured properly and earthed.
- (v) Rodents entry and ingress of moisture and rain water is properly plugged.
- (vi) SPDs are provided across each aspect.

2.5 LEVER LOCK & CIRCUIT CONTROLLER

- (i) Proper adjustment of bands & make in proper position.
- (ii) Serrations are holding bands and nut/split pin are intact.
- (iii) Lock is effective and releases at the required position.

2.6

POWER EQUIPMENT, BATTERIES & FUSES

- (i) Battery conditions and year of installation, plan for replacement.
- (ii) Battery maintenance SG & voltage.
- (iii) Load capacity.
- (iv) Redundant fuses are removed.
- (v) Programme switch contacts are made parallel,
- (vi) Parallel fuses in relays & other circuits with indication arrangement and working of standby fuses
- (vii) Charger failure & alarm for TC batteries & other.
- (viii) Fuses of proper capacity of equipment are provided and in signaling circuit capacity is 2 to 3 times of peak current.
- (ix) IPS All equipment are working in n+1/2 configurations
- (x) Cold standby of IPS where provided are properly functional
- (xi) Alarm for IPS functioning is working properly.
- (xii) Protection arrangements of IPS are working properly.
- (xiii) Logs for IPS working to be checked through data logger and potential free contact is connected to datalogger
- (xiv) Earthing and surge protection arrangement is effective and earth resistance is within limits
- (xv) Separate power supply equipment/module are provided for either side signal/TC and line wise also.
- (xvi) Power supply bus bar for various supply on either side is in ring formation
- (vii) Distribution of power supply for various gears in location is not done on single fuse, but separate fuses are provided.

2.7

BPAC & AXLE COUNTERS

- (i) Co-operative reset is effective & for point zone and it is from site.
- (ii) Resetting of axle counter – analysis, repeated resets and cause thereof.
- (iii) Channels voltages are in limit.
- (iv) Resetting of MUX and analysis of it.
- (v) Quad cable is terminated on M6/Link disconnect terminals – plan for removing 8-way.
- (vi) Availability of spares, card, field units & measuring instruments.
- (vii) Checking system of spares, put for one day in service.
- (viii) Storage of spare cards.
- (ix) Axle Counter/MUX are provided with better earth through resistance improvement compound.
- (x) SPDs are provided for each channel

- (xi) Shielded cable is used for channels connection to evaluator
 - (xii) Spurious or induced voltage in channels wrt earth is is not there.
 - (xiii) Telecom cable joints are not buried in ground but protected in location.
 - (xiv) Deflector plates are provided
- 2.8 PANELI/LCP**
- (i) Integrity check of Interlocking is done as per schedule of 3 years.
 - (ii) Record of integrity check of interlocking is kept at site, check the LT/ST on which testing done and signed by testing official. Each time the new print of LT/ST to be used for testing and no hand written LT/ST or earlier used one to be taken
 - (iii) Date of testing is painted on panel.
 - (iv) Cable from relay room to panel is in protected pipe.
 - (v) RRBU lock is not free.
 - (vi) Both LCP are functional
 - (vii) Login in any of the LCP is possible
 - (viii) Analyse system/field level alarms wherever provided.
 - (ix) Communication between LCP and EI is effective. Wherever two OFC/Cable are provided for interconnection, both cables/OFC are working.
 - (x) Installation is dust free
 - (xi) All indications/alarms for various equipments are functional
- 2.9 EI**
- (i) Schedule maintenance is done
 - (ii) Proper voltages for CPU, I/O cards and Misc equipment are available.
 - (iii) Earthing and Surge protection system is effective
 - (iv) Standby systems are working and seamless changeover in case of hot standby is working. In case of warm standby, system changeover is effective and being done regularly.
 - (v) Communication with other EI/Panel/LCP is working. Media for communication wherever provided in redundant mode are in proper working conditions.
 - (vi) There is no loose wires
- 2.10 INTERLOCKED LC GATES**
- (i) Gate opening and closing is smooth and trouble free
 - (ii) Boom locking is effective.

- (iii) All indications and Buzzers on control Panel are working.
- (iv) Audio visual warning for Road users where provided is functional.

2.11 CABLE TESTING

- (i) Cable Testing as per maintenance schedule.
- (ii) System of monitoring cable testing as per schedule.
- (iii) Availability of left over spares in existing cables.
- (iv) Age & insulation value left.
- (v) Need for replacement of defective cable & quantity.
- (vi) Tail cables of all electrical gears are tested as per schedule.
- (vii) Critical points are provided with dedicated spare cable fully terminated at either end for instant switching.
- (viii) Minimum 2 nos. of 12 core cable are available as spares from end to end on either side up to home signals.
- (ix) Line wise cables are laid and cable core conductor allotted with spare cables for each direction.

2.12 SIGNAL FAILURE

- (i) Incidences of a particular gear failing repeatedly
- (ii) Repeated causes.
- (iii) Broad analysis and input needed for improvement.
- (iv) Maintenance and inspection of signaling and telecom equipment is being done as per periodicity defined in maintenance schedule.

2.13 DOCUMENTS

- (i) Prints of approved tracing of completion circuit of the last alterations are available.
- (ii) Modifications, if any done, it as per approved circuit & approved diagrams for that are available.
- (iii) All documents as per list are available.

Mechanical Department

I.0 DIESEL SHED

- i. Quality of failure investigations, trend of failure and preventive actions being taken/to be taken.
- ii. Check of repair books and action taken/being taken on the repairs booked by the drivers.
- iii. Corrective/preventive action taken in case of failures on account of maintenance lapses.
- iv. Inspection of outgoing locomotives in respect of:
 - a. Quality of schedule attention.
 - b. Out of course repairs.
- v. Items of any special drives based on failure analysis.
- vi. Record keeping of various repairs.
- vii. Attention to and monitoring of high LOC locomotive and locomotives with high SFC.
- viii. Availability of spares, time taken for inspection of material.
- ix. Unit exchange items.
- x. Summer drives /Monsoon drives and other special drives, if in progress.
- xi. General housekeeping of shed.
- xii. Progress of schedules and out turn locos overdue schedules.
- xiii. Availability of de-mineralized water or working of DM Plant.
- xiv. Availability of lubricants.
- xv. Tests of water and oil samples in laboratory and availability of chemicals.
- xvi. Record keeping of laboratory tests and action taken on them.
 - a. Spectrograph results and action taken.
 - b. Chloride level maintained.
 - c. Sulphur content of HSD.
- xvii. Working of machinery & Plant, Whiting Jacks etc.
- xviii. Condition of building, pathway and drainage system and other assets.
- xix. Checking of load box records.
 - a. Condition of load box.
 - b. Record keeping.

- xx. Review of overall performance of shed vis-à-vis Action Plan Target.
- xxi. Vacancy and attendance position, administrative action taken for long unauthorized absentees.
- xxii. Block and crankshaft failure reports and analysis.
- xxiii. Shed statistics pertaining to GTKM, SFC, LOC, Engine Kms, Punctuality, equipment failures and Outage. Present holding, holding capacity and future expansion plans.
- xxiv. Progress of Works, RSP and M&P proposals.
- xxv. Training facilities available in the shed. Condition of Training centre and Hostel.
- xxvi. Diesel Shed Store – Receipt and Inspection Ward. Procedure for sampling and inspection, storage of rubber components, oil etc. Rejection Ward – Status of rejection cases.

2.0 SUPERCHECK OF OUTGOING LOCOS FROM DIESEL LOCO SHED

Drivers' repair book should be checked for remarks by drivers and Inspectors' till the last schedule before starting the super checking of the locomotive by both Mech and Electrical side.

2.1 MECHANICAL

2.1.1 ENGINE IN SHUT-DOWN CONDITION

2.1.1.1 RADIATOR ROOM

- (i) Move radiator fan blades with hand clock wise and anti-clock wise to detect any Backlash.
- (ii) Move radiator fan blades up and down with jerk to check the condition of radiator fan bearing.
- (iii) Check RTM blower taper sleeve lock nut tightness.
- (iv) Check the condition of 'V' belts.
- (v) Check the leakage from the expansion tank bottom plate.
- (vi) Check the clamping of water pipe on top of RTM blower.
- (vii) Check the ECC base for any copper dust.
- (viii) Check the condition of water cross over pipe of radiator and its protection.

2.1.1.2 EXPRESSOR ROOM

- (i) Check condition of the bubble collector holding clamp welding.

2.1.1.3 ENGINE ROOM

- (i) Cleanliness.
- (ii) Check oil level in Governor.
- (iii) Check provision of grommet in high pressure tubes.

2.1.1.4 UNDER CARRIAGE

- (i) Check adequate level of suspension bearing oil and its filling cap.
- (ii) Check adequate level of cardium compound in gear case and its cover.
- (iii) Check tightness of gear case bolt.
- (iv) Check if the rollers on the equalizing beam are free.

2.1.2 ENGINE IN RUNNING CONDITION

2.1.2.1 NOSE COMPARTMENT/CAB

- (i) Check for LO leakage from the OPS/Gauge supply in nose compartments.
- (ii) Check control air pressure for 5.00kg/cm² setting after draining reservoir.

2.1.2.2 ENGINE ROOM

- (i) Is the engine running.
- (ii) Stop crank case exhaustor motor on 8th notch and check the following leakages.
- (iii) Leakage from crankcase covers.
- (iv) Leakage from head covers.
- (v) Leakage from governor to block base joint.
- (vi) Leakage from cam gear cover.
- (vii) Leakage from vibration damper block base joint.
- (viii) Leakage from after cooler housing base joint.
- (ix) Leakage from expansion doors and expansion dummies.
- (x) Switch on crank case exhaustor motor and check the engine for any unusual sound also look for the colour of the exhaust from C motor.

2.1.2.3 EXPRESSOR ROOM

- (i) Check the leakages of IC (Inter cooler) from joints.
- (ii) Check leakages of IC (Inter cooler) from pump face joint, water pump lock face joint, main header blocks face joints.

- (iii) Check water leakages from, the Victaulic/dresser gaskets on the water outlet header.
- (iv) Check the sign of leakage of water from way of the vent pipes in expresser room.
- (v) Press expresser tripping valve spindle by hand – it should not depress.
- (vi) Check oil level of expresser.
- (vii) Check vibration of horizontal shaft.

2.1.2.4 RADIATOR COMPARTMENT

- (i) Check condition of radiator compartment floor for leakage of IC or water from Victaulic and dresser joints.

2.1.2.5 UNDER CARRIAGE

- (i) Ensure working of ADC and MR drain cocks.
- (ii) Check for any leakage of air from valves and brake pipes.

2.2 ELECTRICAL

2.2.1 ENGINE IN SHUT-DOWN CONDITION

2.2.1.1 DRIVER'S CAB:

- (i) Check cleanliness and condition of finger tips of CK1 and CK2 Contractors.
- (ii) Visually inspect the condition of Panels.

2.2.1.2 GENERATOR ROOM

- (i) Check Oil level in Hydraulic Governor if provided.

2.2.1.3 ENGINE ROOM

- (i) Check for connection and layout of tacho generator wiring.

2.2.1.4 EXPRESSOR ROOM

- (i) Check fuel pump carbon brush and condition of commutator for D.C. motors.

2.2.1.5 RADIATOR ROOM

- (i) Check for wiring of RCC for proper clamping (Radiator clutch coil).

2.2.1.6 UNDER CARRIAGE

- (i) Check for layout of axle generator wiring and its clamping.
- (ii) Ensure that the cables are not rubbing with body.

- (iii) Ensure that the TM covers are intact and properly secured.

2.2.2 ENGINE IN RUNNING CONDITION

2.2.2.1 ENGINE CAB

- (i) Check for operation of ECC and other circuit breakers like FP Circuit breakers, Cr. Case Exhauster Motor circuit breakers.
- (ii) Check for correct operation of BKT. Reverser, Power contractors.
- (iii) Check for air leakages from pneumatic pipelines to reverser RXT and power contractor magnet valves.
- (iv) Check the operation of the following emergency switches Motor cut out switch, Radiator Fan emergency switch, PCS, TRL, DMR.

2.0 RAILWAY DIESEL INSTALLATION (RCDs)

- (i) Performance of Flow Meter.
- (ii) Electric fuel pump & Dsl pump.
- (iii) Availability of fire extinguishers, sand and water buckets.
- (iv) Changing of filters of filters housing.
- (v) Condition of decanting pipe and fuelling pipe.
- (vi) Disposal of spilled HSD Oil.
- (vii) Accountal of HSD Oil.
- (viii) Effectiveness of Water finding Paste-check on water and later see if the tank bottom has any water.
- (ix) Shortages in fuel and write off action.

3.0 INSPECTION OF ARTS

3.1 CONDITION OF ROLLING STOCK

- (i) Whether due/ overdue POH.
- (ii) Present condition.
- (iii) Brake gear and brake system continuity.
- (iv) General cleanness.

3.2 HYDRAULIC RE-RAILING EQUIPMENT

- (i) Running of power pack under load condition pressure setting.
- (ii) Whether consumables and other spares are available in sufficient numbers and action taken for procurement.
- (iii) Availability & condition of hydraulic oil.
- (iv) Condition of wire ropes.

3.3 GENERATORS – FIXED OR PORTABLE

- (i) Check running, condition of brushes and availability of spares.

3.4 LIGHTING EQUIPMENT

- (i) Check all lighting stands, reflectors, Tower lights condition of cables, switches.

3.5 PETROMAX

- (i) Check proper burning/lighting, spare mantles, pins, pumping equipment.

3.6 S&T EQUIPMENT

- (i) Whether public address system is in working condition.
- (ii) VHF sets for proper working.
- (iii) Walkie- talkie sets for working, condition of dry cells.
- (iv) Field telephones for proper working and condition of cables.

3.7 FIREFIGHTING EQUIPMENT

- (i) Refilling dates, general condition.

3.8 DETONATORS

- (i) Availability dates, general condition.

3.9 COMPRESSOR

- (i) Check for working and availability of spares.

3.10 GAS CUTTING EQUIPMENT

- (i) Condition of torches availability of acetylene and oxygen cylinder. There should be at least 4/8 cylinders and 4 torches.

3.11 AVAILABILITY AND ADEQUACY OF OTHER TOOLS

- (i) Availability and adequacy of other tools like jacks, hard wood Packing, camera, kitchenware, first aid equipment.

3.12 COLD CUTTING EQUIPMENT

- (i) Check working, availability of spares disc spark plug and maintenance tools, ask for demonstration and see if staff conversant with its use.

3.13 140T CRANES

- (i) Check whether the “special safety precautions for operation of 140T cranes” are prominently displayed in the driver’s cab both in English and vernacular.
- (i) Availability of consumables for the crane.
- (iii) Availability of at least two sets of well trained operating staff.

3.14 CAMERA

- (i) Check the camera and its flash for its proper operation.

3.15 KITCHEN WARE, COOKING GAS ETC.

- (i) Check all the kitchen ware of its proper cleanliness.
- (ii) Check whether the raw material for cooking food are available in fresh stock.
- (iii) Check the cooking gas cylinder and its connections are properly fitted.

3.16 TOOLS AND EQUIPMENT

- (i) Check the tools and equipment list and see that the tools, gauges, spanner etc, are available in ART as per revised list.
- (ii) Check all the measuring instruments are also kept as per requirement.

3.17 FIRST AID EQUIPMENT

- (i) Check the stretchers and their condition.
- (ii) Check whether the first aid box material has been inspected and replaced as per schedule.

3.18 MISCELLANEOUS ITEMS

- (i) Check inspection register whether the inspection of ART has been carried out as per directives.
- (ii) Check chains and wire rope testing register, whether the entries of testing wire rope and chains have been made regularly as per schedule.
- (iii) Check G&SR & Accident Manual whether the latest correction slips have been included in them.
- (iv) Check ART Log Book whether the entries of the ART movements at the site of accident whenever order is made till date of inspection.
- (v) Check that the ART is kept in one formation and can be taken out with minimum delay.

4.0 INSPECTION OF ARME AND AUXILIARY VAN

4.1 CONDITION OF ROLLING STOCK

- (i) Due/over due POH
- (ii) Due/over due maintenance schedule.
- (iii) Mechanical condition (Brake gear, wheel etc.)
- (iv) Cleanness.

4.2 COLD CUTTING EQUIPMENT (HRD)

- (i) Whether in working order, physical trial to be done.
- (ii) Availability of spares (disc. Spark plug) and tools.
- (iii) Availability of cutogen and DA and O₂ cylinders.
- (iv) Working to be checked by physical trial.

4.3 GENERATOR

- (i) Whether in working order (actual trial to be done by starting it).
- (ii) Availability of petrol/diesel.
- (iii) Condition of brushes, and
- (iv) Availability of spares.

4.4 LIGHTING EQUIPMENT

- (I) Check availability of lamps, reflectors, towards lights stands, cable, switch board.
- (II) Trial to be done to check working.

4.5 AVAILABILITY OF DRINKING WATER AND EATABLES

- (i) Check availability of water, date on which water was filled or mineral water.
- (ii) Check availability of milk, biscuits, coffee, tea leaf and their expiry dates.
- (iii) Availability of proper plates, cups and saucer.

4.6 CHECK AVAILABILITY AND FUNCTIONING OTHER ITEMS

- (i) Check availability and functioning of jacks, digging equipment, tools, petromax, fire extinguisher, stove, kettle etc. to scale.
- (ii) Check availability of Accident Manual G&SR.
- (iii) Check availability of Red and green banners, detonators, torch, cell, transition coupling, tent etc.

5.0 COACHING DEPOT

5.1 PIT EXAMINATION AND CLEANLINESS

- (i) Adequacy of pit examination time for various rakes
- (ii) Availability of berthing slots
- (iii) Infrastructure availability and adequacies, of the following:
 - a) Approach road
 - b) Cleanliness
 - c) Pathways for material movement.
 - d) Lighting
 - e) Pit Light for night examination
 - f) Welding connections
 - g) Availability of compressor and
 - h) Adequate pipelines for pressure testing's.
 - i) Mechanized cleaning with High pressure jet cleaning machines etc. through professional agencies.
- (iv) System of cleaning of rakes and execution of mechanized coach cleaning contract as per scope of work.
- (v) Quality of repairs.
 - a) Detailed Air Brake Testing procedures.
- (vi) Compliance of instructions for fitment of brake gear & suspension items.
- (vii) Coach holding Vs Actual requirement.
- (viii) Availability of water and watering facilities.
- (ix) Drainage adequacy.
- (x) Quality of Terminal examination/attention in stabling lines/platforms under RPC.
- (xi) Adherence to the activities listed in Trip/A/B Schedules.
- (xii) Redressal of passenger complaints.
- (xiii) Effectiveness of Pest & Rodent control measures.
- (xiv) Performance of linen maintenance contract.

5.2 PERFORMANCE INDICES

- (i) Review indices, identify areas of weakness (strength to be advised to universalize good practices), decide action to be taken
- (ii) Ineffective coaching stock.
- (iii) Average repair time, placement/withdrawal time.

- (iv) Stock detained for long periods.
- (v) Cases of punctuality loss.
- (vi) Coach failures analysis, reporting system and follow up. Detachments primary rakes.
- (vii) Schedules done/arising/overdue (including POH)

5.3 SICK LINE RELATED ITEMS

- (i) Adequacies of infrastructural facilities for IOH.
- (ii) Quality of repairs during IOH.
- (iii) Adequacy of lifting facilities.
- (iv) Attention to welding practices particularly earthing.
- (v) Air pressure, testing of stock after repairs in sick line.
- (vi) Road access and availability of material handling equipment.
- (vii) Review of supply/requirement of wheels & overhauled bogies from shops.

5.4 TRAIN DUTY ON PLATFORMS

- (i) Availability of watering facilities.
- (ii) System of rolling in examination of passing through trains. (Availability of powerful lights for rolling in examination on either side on all platforms)
- (iii) System/adequacy of trouble-shooting of passing through trains and monitoring of the same.
- (iv) Does TXR record correct levels of Air pressure on loco and SLR? Does he conduct checks for passenger Alarm Device ? Do the fitters have proper tools, lights, etc.? Are Ac coaches pre-cooled ?
- (v) Pad locking of terminating trains.
- (vi) Drainage/cleanliness of platform line.
 - a) Clean Train Station activities and the performance levels, execution of CTS contract as per scope of work.
 - b) Adequacy of fire fighting and other safety equipments/ plants.
- (vii) Performance of OBHS.

5.5 MATERIALS

- (i) Housekeeping.
- (ii) Compliance of stores imprests schedule.
- (iii) Important item out of stock / in short supply. Check consumption of all consumables per annum. Is it adequate to cover the cleaning requirements throughout the years.

- (iv) Non moving items/correctness of imprests sanction.
- (v) Scrap return.
- (vi) Proper storing of rubber item.

5.6 FINANCE

- (i) High value item analysis.
- (ii) Review on acceptance of workshop debit.

5.7 ESTABLISHMENT

- (i) Vacancies
- (ii) Staff grievances
- (iii) HOD/Sick cases
- (iv) Causality/absentees. Are attendance registers properly kept and checked in time? Action taken on frequent and OR long absentees.

5.8 TRAINING NEEDS

- (i) Facilities for training and adequacy thereof
- (ii) Overdue refresher courses, orientation courses and special courses and monitoring thereof.
- (ii) Knowledge of staff /supervisors, system of up-grading their knowledge.

6.0 FREIGHT DEPOT

6.1 ROH RELATED ITEMS

- (i) System for identification of repairs and ensuring the completeness thereof.
- (ii) Availability of unit exchange spares mainly trolleys, springs and wheels.
 - (iii) Availability of must –change items: system monitoring audit checks.
 - (iv) Attention to welding practices, particularly of earthing
 - (v) Availability & use of gauges.
 - (vi) Quality of repairs and attention to schedule items

6.2 SICK LINE RELATED ITEMS

- (i) Adequacy of lifting facilities
- (ii) Attention to welding practices particularly earthing
- (iii) Air pressure/vacuum testing of stock after repairs in sick line.
- (iv) NTXR rejection and analysis thereof.
- (v) Road access and availability of material handling equipment.

6.3 MANAGEMENT INFORMATION SYSTEM

- (i) Analysis of failures.
- (ii) Analysis of average examination time
- (iii) Compliance of imprests items and availability of critical materials like brake blocks, brake block keys, brake gear pins, etc. Analysis of non – moving items
- (iv) Trend of expenditure – unit cost and inventory
- (v) Identification of training needs and training
- (vi) 100% implementation of safety related modifications
- (vii) Use of bulb cotters in place of split cotters
- (viii) Ultrasonic testing of axles. Please make surprise check of an axle already cleared.
- (ix) Provision of spare templates for worn out wheel profile for tyre-turning of wheels
- (x) Analysis of freight trains
- (xi) Examined in loaded/empty condition.
- (xii) Running with invalid BPCs
- (xiii) Coming for intensive exam. With open doors.

6.4 INTENSIVE EXAMINATION OF AIR BRAKE TRAINS

Ensuring 100% rolling-in-examination for loose brake gears/skidded wheels/hot box before intensive examination. Is BOX feeling done after train comes to a halt.

6.4.1 BRAKE GEAR AND WHEELS

- (i) Complete inspection of running gear fittings.
- (ii) Correct fitment of Brake Gear pins, split pins & bulb cotters.
- (iii) Tapping and gauging of wheels.
- (iv) Check wheels free from defects as per IRCA rule book.
- (v) Hand brake to check for working.
- (vi) Check empty load box in correct handle position & connection.

6.4.2 SAFETY FITTINGS

- (i) Checking of safety brackets, safety loops and safety fittings
- (ii) Checking correct and sound fitment of AR holding straps.

6.4.3 BOGIE FRAMES AND SPRING GEARS

- (i) Check for cracks on horn gaps, side frame/ spring plank on CASNUB Bogies.

- (ii) Replace cracked/broken springs.
- (iii) Check spring cambers for over loading.

6.4.4 BRAKE POWER

- (i) Check for adequate pressure level
- (ii) Leakage rate should be within prescribed limit.
- (iii) Check for proper mating of brake block on wheel treads
- (iv) Check, correctness of 'A' dimension clearance of SAB regulator and ensure proper working.
- (v) Ensure brake block thickness above 20 mm.
- (vi) Fitment of quick coupling / Adopter 'B' in brake van to be ensured.

6.4.5 MISCELLANEOUS

- (i) Check buffer heights.
- (ii) Check proper security of doors (covered wagons).
- (iii) Check proper packing/lashing and securing of consignment.
- (iv) Inspection of draw and buffing gears.
- (v) Ensure proper locking of CBC/proper tightening of screw couplings.

6.5 INTENSIVE EXAMINATION OF AIR BRAKE TRAINS

Ensuring 100% rolling-in-examination for loose brake gears/skidded wheels/hot box before intensive examination.

6.5.1 BRAKE GEAR AND WHEELS

- (i) Complete inspection of running gear fittings
- (ii) Brake rigging pins & safety brackets in proper working condition
- (iii) Tapping and gauging of wheels to be ensured.
- (iv) Wheels to be checked and should be free from defects as per IRCA rule book.
- (v) Hand brakes of wagons to be fully released.
- (vi) Operating handle of empty load box in correct position.

6.5.2 BRAKE POWER

- (i) Check brake pipe pressure and ensure:

	No. of wagons	Engine	Brake. Van
a)	Upto 56 Wagons	5.0 kg / Cm ²	4.8 Kg/ Cm ²
b)	Above 56 Wagons	5.0 Kg/Cm ²	4.7 Kg/Cm ²

- (ii) Ensure leakage rate within prescribed limit.

- (iii) Proper adjustment of piston stroke. Ensure within specified limit after brake application.
- (iv) Proper mating of brake block on wheel treads.
- (v) Proper working and correct 'A' dimension clearance of SAB Regulators.
- (vi) Ensure minimum percentage of operative cylinders as per specified limits.
- (vii) Ensure continuity of brake pipe connection and Conduct continuity test.
- (viii) Ensure working of guards' emergency brake valve and proper fitment and working of quick coupling.
- (ix) Ensure brake cylinder piston fully inside and brake blocks having clearance from wheels, after release of brakes.

6.5.3 MISCELLANEOUS

- (i) Ensure all angle cocks (except at rear end of train) are kept open
- (ii) Ensure Isolating cock of DVs to be in open position
- (iii) Ensure BP & FP coupling at rear end of train is placed on support
- (iv) Ensure CBCs are properly locked and operating handles properly secured.
- (v) Ensure proper closing of doors.

6.5.4 ADDITIONAL ITEMS FOR BOBR/BOBR'N'/BLC WAGONS

- (i) Load sensing Device (LSD) to be checked for proper working.
- (ii) Ensure clearance between operating valve and spring buffer (LSD) within specified limits.
- (iii) Bolts and nuts of LSD to be properly tack Welded.

6.6 GUARD AND DRIVER CHECK (EXAMINATION)

- (i) Knowledge of Guard and Drivers of items to be checked.
- (ii) Quality of check being done by Guard/Driver.
- (iii) Check for correct method of continuity test being done by Guard & Driver.

Electrical Department

I.0 TRACTION DISTRIBUTION

I.1 STATIONS:

- (i) SWR with latest correction slips.
- (ii) Display of Traction working Diagram and it's correctness at SM's Room and Cabins.
- (iii) Traction Key Board and Key Register for it's proper maintenance and proper entries of Keys taken for isolator operation by Station staff or OHE staff is to be ensured.
- (iv) Knowledge of Traction working of SM/ASM on duty.
- (v) Validity of the Competency Certificate of SM/ASM for isolator operation.
- (vi)
 - i) Operation of CLS panel switches and
 - ii) availability of A.T. stand by supply.
- (vi) Proper earthing of all metallic structures in the vicinity of the OHE at stations, such as ROB/FOB, Water tanks and Platform shelters etc.
- (vii) Proper connection and availability of structure bonds.
- (ix) Presence of caution and warning boards at either end of platform sheds, at Booking window and on the OHE structure of platform and anti-climbing devices where ATs are provided.
- (x) Check Horizontal clearance minimum of 2.36 m for overline structures from Central line of the track to the face of the structure and vertical clearance of OHE from the bottom most point of ROB/FOB or any other over line structure for a minimum of 0.37 m.
- (xi) Check for any flash marks on the under side of bridge structure.
- (xii) Check that the prescribed height of contact wire is available under overline structure.
- (xi) Check that smoke screens are properly secured and have adequate clearances from OHE.
- (xii) No live portion of OHE should be available over platforms. Check the same.

- (xiii) Check implantation of masts/portal uptights provided on the platforms. It should be minimum 4.75 m.
- (xiv) Check protective screens on FOB/ROB.
- (xv) Check respiration charts and first aid box in ASM's Office.
- (xvi) Check E. C. Phone sockets at important locations.
- (xvii) Check availability of staff warning boards in the offices of ASM and TXR office etc.,
- (xviii) Check whether any person is travelling on the roof of coaches/wagons.
- (xix) Precautions to be taken in case of emergency:
 - a) When an OHE snaps cordoning of area around the conductors should be imposed.
 - b) Advise the TPC/OHE depot for clearing the OHE obstruction.
 - c) Necessary precautions to be taken by SM/ASM for trains movement.
- (xx) Working of TPC phone

1.2 ENROUTE:

- (i) Any obstructions including tree branches in the way of free movement of Pantograph and trains.
- (ii) Tilting of masts especially on high bank and masts with sand core foundations.
- (iii) Check excessive sagging or hogging of contact Wire.
- (iv) Any OHE wires or equipments in hanging position.
- (v) ISOLATORS:
 - i) Check locking arrangements.
 - ii) Correct alignment of blade tip in the fixed pole contact jaw. Correct matching and alignment of arcing horns.
 - (vi) Bird's Nests
 - (vii) Flashed/Damaged Insulators

1.3 LEVEL CROSSING :

- (i) Structural soundness of Height Gauges at level crossings.
- (ii) Check height and gradient of contact wire. (By OHE staff only).
- (iii) Check the road level marking on height gauge and actual road level and clearance of height gauge (Maximum: 4.67 m).
- (iv) Check the availability of 25 KV caution board on the height gauge.

- (v) Check the soundness of inter rail bond at LC gate.
- (vi) Check the availability of proper earthing of lifting barriers.

1.4 GENERAL:

- (i) Electrical shock treatment boards exhibited in every OHE depot, equipment room, switching stations, cabin, Inspection Car Shed, Loco Shed, OHE Inspection Car and Wiring train and also in offices of SM, ASM, CYM, AYM and HTXR.
- (ii) First Aid Box should be kept at every switching Stations, maintenance depot, in OHE Inspection Car, Break down vehicle and wiring train as well as in Station also.
- (iii) Ropes, come-along clamps, tirfor etc., should be tested.
- (iv) Ensure earthing before commencement of work for all metallic parts with in the reach.
- (v) Each working party shall be protected by at least two independent earthes, one on each side of working party.
- (vi) Check availability of restricted clearance boards where the clearance between OHEs of two different E/Sections is less than 2 m.

2.0 ELECTRIC LOCOMOTIVE

2.1 STATIONS/ENROUTE :

- (i) Working of Speedometer.
- (ii) Condition of Flasher Lights (both cabs)
- (iii) Marker lights (Red/White)
- (iv) Horns.
- (v) Wipers (both cabs)
- (vi) Head lights (both cabs)
- (vii) Sanders (both cabs)
- (viii) Sun Shades (both cabs)
- (ix) Cab shutters
- (x) Cab heaters
- (xi) Hand brake
- (xii) Fire Extinguishers.
- (xiii) Ladder
- (xiv) VCD Working
- (xv) Speed limit stencil

- (xvi) Relay covers
- (xvii) Alarm chain pulling system (Buzzer)
- (xviii) Working of Rheostatic brakes
- (xix) Shunting Notch operation
- (xx) TM inspection covers and TM gear case covers are available and intact
- (xxi) Defects/Deficiencies noticed in the locomotive
- (xxii) Riding quality of locomotives
- (xxiii) Log Book Remarks
- (xxiv) Working of MVRF during Rheostatic braking
- (xxv) Condition of loco brakes during L.E.
- (xxvi) Visual inspection of auxiliaries, feel by hand the temperature of all axle roller bearings.
- (xxvii) Visual inspection of Mechanical components like springs, equalizer pin, dampers etc.,
- (xxviii) General roof inspection for any Foreign materials such as wire pieces etc.
- (xxix) Battery Voltage
- (xxx) Cattle Guard & Rail Guard

ANNEXURE-I
FOOTPLATE INSPECTION

1. Train No.....
Engine No.....
Base
Load.....
OPRS No./MV5 No.....
From stationto station.....
Departure time.....Arrival time.....
2. Name of Loco Pilot.....
Headquarters.....
Date of last PME.....
Next due on.....
Date of last safety camp attended.....
Next due on.....
Date of last Psycho test.....
Next due on.....
Date of last refresher course attended.....
Next due on.....
Competency certificate for Automatic Signalling working last renewed on.....
Name of nominated LI.....
Last counselled on.....
Whether spare spectacles available with Loco Pilot? Yes/No (If Loco Pilot uses one)
3. Whether Loco Pilot has following personal stores?
 - i. G&SR book with all C/s updated.
 - ii. 2 red and 1 green flag in good condition.
 - iii. Detonators – 10 Nos. Date of manufacture
 - iv. One tri colour hand signal torch..
 - v. Tool box with standard tools.
 - vi. Signal location book
4.
 - i. Name of the Assistant Loco Pilot
HQ.....
 - ii. Date of last refresher course attended.....
Next due on.....
 - iii. Date of last PME.....

- Next due on.....
5. Air pressure.....
 - i. Train engine.....
 - ii. Brake van.....
 - iii. Total no. of cylinders.....
 No. of effective cylinders.....
 Brake power %
 6. Whether engine equipments headlight/electrical speedometer/ mechanical speedometer/flasher lights/marker lights are in working condition?
 7. Whether Loco Pilot check the brake power of his train at the first opportunity?
 8. Whether proper BPC is available with Loco Pilot.
 9. Whether printed caution order form is available with Loco Pilot.
 10. Check
 - (a) Whether Loco Pilot follows correct procedure while passing a defective Signal at ON.
 - (b) Whether Loco Pilot follows correct procedure while passing an automatic Signal at ON/IBS at ON.
 - (c) Whether the Loco Pilot checks personally authority to proceed when delivered to him by Station staff.
 - (d) Whether engine crew exchange all right Signal correctly with the Guard of train, station staff, with train crew of train passing on adjacent lines.
 - (e) Whether Loco Pilot and Assistant Loco Pilot whistle freely while approaching W/WL Boards upto level crossing gates and running through Stations.
 - (f) Whether the engine crew look back frequently particularly on curves to ensure safe and complete running of trains?
 - (g) Whether the Loco Pilot observe following correctly:-
 - i. Permanent speed restriction
 - ii. Engineering temporary speed restriction.
 - iii. Speed limits while entering and leaving form loop line.
 - iv. Maximum permissible speed of Mail/ Express/ Passenger/ Goods train.
 - v. Other speed restrictions.
 - (h) Knowledge of critical locations to engine crew
 - (i) Alertness and sense of responsibility of ALP

- (j) Knowledge of working on Gradient sections
 - (k) Observance of rules for preventing SPAD
 - (l) Knowledge of stabling a train
11. Whether Loco Pilot stop and start the train without jerk?
 12. Whether the Loco Pilot ensures while stopping his train that fouling mark is clear?
 13. Calling out of Signal aspect between Loco Pilot/Assistant Loco Pilot.
 14. Whether engine crew are watching safe passage of trains on adjacent line and checking tail board or Guard's Signal on adjacent line.
 15. Whether ghat competency certificate is available?
 16. Whether any unusual occurrence observed on run?
 17. Whether any unauthorized person is travelling in loop?
 18. Switching OFF of mobiles phones of LP/ALP
 19. Sigma marks on second mast before every signals.
 20. Loco Pilot's knowledge to be tested in following:-
 - i. Protection of adjacent line on top priority during accident.
 - ii. Use of flasher light, when train stopped in section.
 - iii. Train delayed in block section.
 - iv. Train stalled in rising gradient.
 - v. Procedure to be followed to pass IBS at ON.
 - vi. Procedure to be followed when experienced jerked in section.
 - vii. Ghat working rule.
 - viii. Procedure for working load without BPC.
 - ix. Loco Pilot's duty during TSL working and all communication failure.
 - x. Working of trains during train parting.
 - xi. Knowledge of whistle codes.
 - xii. Speed of train when headlight bulb is fused.
 - xiii. Working of train when headlight and marker light both are failed or not working.
 - xiv. Whether Loco Pilot and Assistant Loco Pilot are in habit to write defects in signals and track in books kept in lobbies?
 21. Availability of safety equipments.
 - a. Wooden wedges – 2 Nos.
 - b. Fire extinguishers – 2 Nos. (Last refilling date)
 - c. Audio visual indicators for air flow meter in working condition.

ANNEXURE-II

INSPECTION OF CREW BOOKING OFFICE/LOBBY

1. Staff on duty:
Crew Booking supervisor
Shademan/detail check
2. Manual sign 'ON' and sign 'OFF' register in case of CMS failure.
3. Breathlyser test record to be counter signed by lobby incharge.
4. Bio-data register- how many Loco Pilots/Guards are due for PME/Refresher/Safety camp.
5. Breathlyser instrument in working condition and total breathalyser equipment available.
6. Board displaying staff wearing glasses displayed in lobby?
7. Board displaying correct safety circulars, safety bulletins and headquarter bulletins is displayed in lobby – Yes/No.
8. List of CMS ID of all Running staff and supervisors.
 - Safety circular
 - Order/Instruction book
 - Caution order register
 - Safety bulletins
9. Whether caution order foils are daily received and filed correctly and brought forward in caution order register every Monday.
10. Whether illuminated caution order boards displays Caution order imposed section wise as per caution order.
11. Register indicating Loco Pilots screened in ABC category and their monitoring by the respective LI's is maintained.
12. Unusual incidences register is maintained at the lobby and Loco Pilots/Guards are recording entries in the same. Yes/No
13. Staff detail books are properly maintained. Booking of crew as per crew link.
14. Loco Pilot Observation Register is maintained properly and failures recorded by the Loco Pilots are repeated promptly to test room/PCOR on duty and compliance recorded of the same.

15. Whether First-Aid Box available in lobby is having the medicines as per FA Box list and is being regularly checked. Availability of stretcher.
16. Whether G&SR, Accident Manual with the latest correction slips posted upto date are available with LF/Lobby incharge.
17. Functioning of CMS and CMS log book
18. Whether staff coming on duty are in proper uniform and in possession of safety performance card and having spare spectacles.
19. General Up keep of the lobby.
20. List of operationally weak LP/ALPs
21. Whether list of staff addicted to alcoholic drinks is available with lobby incharge.
22. Whether the list of senior goods Loco Pilots who have been screened and found fit to work on passenger trains is available with lobby incharge.
23. Staff available in lobby should be tested in regard to very important duties of Loco Pilot & Guard during train operation, about latest instructions and various corrections made in G&SR.
24. Safety posters and safety slogans are displayed in the lobby.
25. Complaints redressal system.
26. Simulator training
27. System of CTR collection and dispatch to statistical branch and compilation of GTKMs

ANNEXURE-III

INSPECTION OF RUNNING ROOM

1. Name of Running Room/Station
2. Date of Inspection
3. Staff on duty:-
 - Bearer
 - Janitor
 - Cook
4. General cleanliness – Premises including Bed Rooms/Reading Room/Toilets/Dinning Rooms/Kitchen.
5. Accommodation – Adequate/congested/short. Any proposal formulated for overcoming the shortages. Provision of two beds per room/cubicle
 - i. Sufficient number of beds available-Yes/No.
 - ii. Sufficient number of blankets available – Yes/No
 - iii. Sufficient number of mosquito nets available –Yes/No
 - iv. Sufficient number of table and chairs available – Yes/No
 - v. Adequacy of stock of linen - Adequate/Inadequate
 - vi. Availability of crockery cutlery, cooking gas– Adequate/Inadequate
 - vii. Adequate provision of light, fans, night lamp, water coolers, desert coolers, aqua-guard, insect killers, Geysers, exhaust fans etc. – Adequate/Inadequate
If any of the above items found inadequate, details of additional requirement.
 - viii. Provision of curtains and doormats
6. Condition of furniture – beds. Lockers, chairs, dinning tables etc.
7. Condition of Mattress/Pillows – Good/bad/satisfactory. Provision of rubberized coir mattress and pillows
8. Condition of linen i.e. bed sheets, pillow covers, mosquito nets – Torn/Good. Frequency of changing.
9. Condition/quality of blankets and when these are being washed periodically –Quality of washing.

10. Condition of kitchen – Good/Satisfactory/bad. If not what improvements are necessary. Availability of dust bins
11. Condition of bathrooms – Good/Satisfactory/bad. If not what improvements are required.
12. Are newspapers/magazines being supplied.
13. Is there any nuisance from outsiders.
14. Are the cook and bearer clean and hygienic.
15. Complaint book available or not. Nature of compliance recorded – Action taken.
16. Register of joint checking of Running room by Electrical and Civil supervisors regarding maintenance of running room.
17. Availability of safety posters and fire extinguishers.
18. Repair to roofs, doors, windows , toilets and bathrooms wherever necessary.
19. Provision of adequate water supply and provision of showers in bathrooms.
20. Provision of fencing wherever needed. Maintenance of garden, tree plantation, and beautification with plants in pots (leaf variety)
21. Any suggestions to improve the condition of Running Room such as modernisation of kitchen and lavatory.

ANNEXURE –IV
NIGHT INSPECTION OF A STATION

1. Name/Designation/Particulars/Alertness of staff on duty.
2. Whether slide pin/button collar/route collar/lever collar are placed in case of blocked lines – Yes/No.
3. Correctness of counter numbers.
4. Entries in TSR should be cross checked with record of adjacent station ASM/Cabin/gate.
5. Proper entries are made in private No. sheet – Yes/No.
6. Reception and despatch of trains is being done as mentioned in SWR.
7. In case of stabled load whether points are clamped and stabled load is properly secured.
8. Whether station staff is exchanging all right signal with the train crew.
9. In case of shunting whether Guard is supervising shunting and whether points clamped during unsignaled move.
10. Whether block section cleared by ASM without changing the points in rear on complete arrival of preceding train.
11. Whether the signals are visible and back light of the signal in Mechanical signalling area is visible.
12. Are precautions taken during signal blanking.
13. LV board/tail lamp is being checked by ASM/CAMS/Cabinman.
14. Whether on arrival of train the Guard ensures the changing of points in rear.
15. Whether Cabinman/CASM operating points and signal on verbal instructions only.
16. Whether Cabinman/CASM/ASM on adjacent station are alert and attending promptly on phone.
17. Whether procedure for trains delayed in section and hot axle flat tyre cases is correctly followed as checked from TSR.
18. Whether unauthorized persons attending instruments and operating the same.
19. Whether HS lamps and other safety equipments are available as per SWR.
20. Knowledge of on duty staff.
21. Whether Loco Pilot performing shunting without shunting order.
22. Whether Guard checking continuity/pressure during halt.
23. Guard physically checking last vehicle number before signing in train intact register.
24. Guard ensuring securing of wagons before engine is cut off.

ANNEXURE-V

ACCIDENT RELIEF MEDICAL AND VAN AUXILIARY VAN (RHV)

The name of the Doctor In-charge & the last inspection should be pasted inside the Medical Van. The internal condition of the Medical Van should be absolutely clear of dust etc. The other items to be checked for medical-Vans are detailed as under:-

1. Condition of Operation Table and working of lifting/lowering arrangement.
2. Condition of light for Operation Table.
3. Oxygen Cylinder and the quantity available in the same.
4. Sterilization facility for Operating Tools.
5. Availability of gas cylinders.
6. Condition of Rubber gloves for handling of gas cylinders.
7. Condition and the quantity of availability of medicines and to ensure that the expiry date is not over.
8. Availability of fresh cloth pieces (shrouds) for covering the dead bodies.
9. Availability of
 - (i) Disposable syringes
 - (ii) Refrigerator in working order
- (iii) Drinking water and the date of cleaning and filling the water.
- (iv) Light weight aluminium folding stretchers.
- (v) Milk powder and tea leaves etc.
- (vi) Biscuits and snacks.
10. Availability of required medicine – no expired medicine.

<p style="text-align: center;"><u>NORTH CENTRAL RAILWAY</u> SIGNAL & TELECOMMUNICATION DEPARTMENT LINE MOVEMENT CHART</p> <p>Month of _____ 20 Name _____</p>																								DATE	NO. OF STATIONS/BLOCK SECTIONS INSPECTED	NO. OF HOURS OF INSPECTION	NO. OF FOOTPLATE	
HOURS																												
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	01				
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Signature: _____																												
Remarks and Signature of reviewing official																												

NORTH CENTRAL RAILWAY
SIGNAL & TELECOMMUNICATION DEPARTMENT
STATION INSPECTION CHART MONTH -----20

Name: _____ Designation: _____

Division: _____ Section: _____

Sr. No.	Name of the Stations/Block Sections	Station Inspection											
		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER

Signature: _____

Remarks and Signature of reviewing official

NORTH CENTRAL RAILWAY
SIGNAL & TELECOMMUNICATION DEPARTMENT
FOOTPLATE INSPECTION CHART MONTH20

Name: _____ **Designation:** _____

Division: _____ **Section:** _____

SN	Name of Stations/Sections	Footplate Inspection DAY- BLUE, NIGHT - RED																								
		UP												DN												
		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	

Signature: _____

Remarks and Signature of reviewing official

TENSION –PREVENTION

THE MOMENT YOU ARE IN **TENSION**
YOU WILL LOOSE YOUR **ATTENTION**
THEN YOU ARE IN TOTAL **CONFUSION**
AND YOU WILL FEEL **IRRITATION**
THEN YOU WILL SPOIL PERSONAL **RELATION**
ULTIMATELY YOU WON'T GET **CO-OPERATION**
THEN YOU WILL MAKE THINGS A **COMPLICATION**
THEN YOUR BP MAY RISE-**CAUTION...**
AND YOU MAY HAVE TO TAKE-**MEDICATION...**
INSTEAD UNDERSTAND THE **SITUATION**
AND TRY TO THINK ABOUT THE **SOLUTION**
MANY PROBLEMS WILL BE SOLVED BY **DISCUSSION**
WHICH WILL WORK OUT BETTER IN YOUR **PROFESSION...**
DON'T THINK IT'S A FREE **SUGGESTIONS...**
IT IS ONLY FOR YOUR **PERVASION.**
IF YOU UNDERSTAND THE ABOVE **SUGGESTION**
YOU WILL NEVER BE IN **TENSION**