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JUNE
2024

# SAFETY BULLETIN

Safety Department
Eastern Railways

## संरक्षा पुनराश्वासन

## Sanraksha Punarashwasan


Inaugration of Safety Calendar 2024


DG Safety's inspection of New Coaching Complex ,Sealdah

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मिलिन्द देऊस्कर
महाप्रबंधक

**Milind Deouskar**
GENERAL MANAGER

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Office of General Manager
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Kolkata- 700 001

**Date: 25.07.2024**

## MESSAGE

It gives me immense satisfaction to announce the release of the latest issue of our Safety Bulletin, 'SANRAKSHA PUNARASHWASAN.' This edition features insightful technical articles, critical Joint Procedural Orders, essential monsoon safety tips, invaluable learnings from Safety drives & accidents and exemplary efforts by our employees in preventing accidents.

I am confident that every member of the Railway family will find 'Sanraksha Punarashwasan' to be a valuable resource and embrace the principle of 'Safety first for better safety performance.' Safety is a core value that must be integrated into all aspects of our Railway operations and maintenance. This value should be instilled and cultivated across the organization. The commitment to safety must be a fundamental aspect of the Indian Railways' operations.

I extend my heartfelt wishes to the safety team and believe that this initiative will significantly enhance the safety standards of Eastern Railway.

(Milind Deouskar)
General Manager

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24th July 2024

## MESSAGE

The Indian Railways is a lifeline of the nation, responsible for transporting millions of passengers and vast quantities of essential goods every day. The safety of our passengers is of paramount importance. Preventing accidents is crucial not only to safeguard lives but also to avoid disruptions and financial losses.

The release of this safety bulletin is a significant step in our ongoing efforts to promote safety awareness. This bulletin serves as a comprehensive resource, highlighting the most recent and relevant safety instructions. It aims to remind our staff of the critical importance of adhering to safety protocols and to update them on any new developments in safety procedures.

I urge every member of our railway family to engage with the content of this bulletin. It is through your dedication and vigilance that we can create a culture of safety that permeates every aspect of our operations. By staying informed and committed to best practices, we can prevent accidents and ensure the smooth, safe functioning of our railway network.

Let us all work together to foster an environment where safety is our highest priority. By doing so, we protect the lives of our passengers, secure the safe transport of goods, and uphold the reputation of the Indian Railways as a reliable and efficient service provider. I am confident that this initiative will significantly contribute to enhancing our safety standards and will serve as a valuable tool in our collective mission to ensure a safer railway for all.

( Ram Bahadur Rai )
**Principal Chief Safety Officer**

## OUTSTANDING ACHIEVEMENTS IN FIELD OF SAFETY

| | |
|---|---|
|  <br>Kundan Kumar<br>LPP/SDAH | On 15.02.2024 when LPP was working in Train No. 34062 (BNJ-CG), Train Stopped at BLN PF no.2 at 13:14 hrs for scheduled stoppage, starter signal (S-6 A/B of PF-2 was ON position (RED).Then starter signal OFF with one yellow. Route towards BGB but train was CG local, SM/BLN was given signal in wrong direction.LPP was very alert and he did not start the train, informed to TLC/SDAH at 13:15 hrs. Above Signal put back at 13:16 hrs. and again signal OFF to One Yellow at 13:17 hrs, towards SPR. The Train started at 13:18 hrs. Due to alertness LPP averted an incident. |
|  <br>Santanu Bit<br>TECH-II<br>TRS/NKG/SDAH | He has commissioned air pipeline in washing bay by using in house materials that immensely helps in cleaning of coach fans, interior and exterior of coaches and he has also prepared a mobile lighting arrangement system for localised heavy repair work for effective illumination. |
|  <br>Shyam Bihari Yadav<br>TM-II/SPR | Displayed exceptional vigilance and professionalism while performing his duty as a patrolman on April 13, 2024. His quick detection of a Kinky rail at Km 16/32-34, along with prompt track protection measures and immediate communication too supervisors. |

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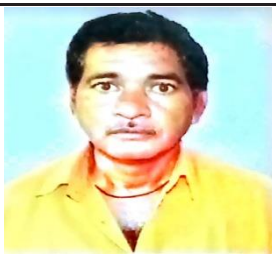
|---|---|
|  <br>Avinash Kumar<br>LPG/SDAH | On 02.04.2024 when LPG was working in Train No. E/BOBRN/E/UDL, Loco No. 90008 WAG9/TKD, while train was approaching towards UP HBC MSAE Home / Signal that time signal aspect change from one Yellow to Green. But when speeding up the train suddenly signal become ON/RED and applied emergency brake and train stop just before the signal at 11:34 hrs. Thus LPG save an incident/SPAD. LPG talked to on duty SM of MSAE over walkie-talkie. SM replied that your train will be received on Loop line. Matter informed to on duty TLC/HWH & TLC/SDAH. |
|  <br>Ram Bhanju Yadav<br>TM-II | During hot weather patrolling work from km.27/0-31/0; he observed misalignment at the weld joint location in track at about 11:50 hrs. dt:02/05/24 and informed to SSE/PW/BNJ/SEC. After receiving information SSE/PW/BNJ/IC attended site and accordingly. He is most diligent and obedient person in service. His prompt action and fast information helps no detention of any trains. |
|  <br>Ashsis Kumar Barai<br>Sr.Tech<br>TRS/RHA/SDAH | An innovation work of low battery voltage detection circuit in EMU/MEMU rakes has been developed by Sri Ashis Kumar Barai, Sr. Tech of RHA carshed.<br>Object of innovation: 1. Low battery voltage may cause detention of Rake on Line.<br>2.Low battery voltage may cause sluggish operation of tap Changer contactors that may in turn results smoke emission/ fire on line.<br>Features: 1. Alert the LPP with the help of RED LED indicator And Buzzer.<br>2. Easy detection by LPP for battery paralleling.<br>Benefits: 1. Improving safety by early identification of fault<br>2. Improving rake punctuality. |

| | |
|---|---|
|  <br>Shri Nitesh Kumar<br>TI(M)SBG | On March 13,2024 while on footplate duty on train no. 13032 DN, A fire was observed adjacent to the track in UP Main Line KM213/8-9 of the NJP-KPTO block section. Adjacent to the track there was an extensive stretch of dry grass and bushes, which would aid the flames thus amplifying the risk. However shri Nitesh Kumar's prompt action and adroit decision help to avert a disaster where he informed on duty PWI/TPH, and instantly alerted 6-8 trackmen about the fire's location. |
|  <br>Binit Anand<br>LP(G)/MLDT | On 24.04.24 while working in train no. E/NTSK Loco No. 41743,approaching Farakka Barrage on UP line He seen the heavy black smoke coming from adjacent down track on Farakka Road Bridge from a lorry due to fire and OHE wire of adjacent line was parted and hanging. He warned danger signal through hand gesture to coming train no. 13182 from opposite direction. |
|  <br>Shri Jyoti Narayan Singh<br>ALP/MLDT | On 24.04.24 while working in train no. E/NTSK Loco No. 41743,approaching Farakka Barrage on UP line He seen the heavy black smoke coming from adjacent down track on Farakka Road Bridge from a lorry due to fire and OHE wire of adjacent line was parted and hanging. He warned danger signal through hand gesture to coming train no. 13182 from opposite direction. |
|  <br>Shri Manoj Kumar Ram<br>Shunting Master -1/SBG | Shri M K Ram while on his way for placement of BCN load to Goods shed-1/SBG, he noticed that the bolt of a point which leads to Goods Shed-1 is in detached condition. Subsequently He brought the BCN load to stop and clamed and padlock the point properly to set for placement. After placement he immediately reported the incident to Station Master. |

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|---|---|
|  <br>Shri Kanhaiya Kumar<br>SM/KTJ | On 20.03.2024 at 18:08 while exchanging alright signal with DN train BSCS/DOLO, Shri K Kumar Noticed smoke and fire from the rear engine emanating from rear engine. He immediately alerted the Loco Pilot through Walkie Talkie and danger signal shoed to the Train Manager and the Train stopped after passing Advance Starter and the fire controlled by using fire extinguished in co-ordination with Loco Pilot. |
|  <br>Shri Gouri Sankar Yadav<br>TM-I<br>Under SSE/PWAY/SBG | On 15.12.2023 at Km No. 245//-9 up line (LR), he detected hair crack at MZC while getting the work done aned immediately he repaired with his ingenuity and informed to concerned PWI. |
|  <br>Sri Gopal Krishna Singh<br>LP / BWN | On 21.03.24 while working with Loco No. 31994/PTRU while admitting at ADL(SER) Railway Line No. 7 wagon No. 3312119228 (ECOR) 37th from Engine got derailed of it's leading pair wheel of trolley. This train was controlled by LP after receiving message over VHF by SMR/ADL.<br>But SMR/ADL got to know over VHF by receiving message of LP Sri G K Singh of Train No. N/ACCG which was waiting for line clear at ADL station on Line No. 2 (HWH end) shouted over VHF to stop the train as the train was derailed of line no. 7. |

| | |
|---|---|
|  <br>Sri Rony Ghosh<br>ALP/BWN | On 21.03.24 while working with Loco No. 31994/PTRU while admitting at ADL(SER) Railway Line No. 7 wagon No. 3312119228 (ECOR) 37th from Engine got derailed of it's leading pair wheel of trolley. This train was controlled by LP after receiving message over VHF by SMR/ADL.<br>But SMR/ADL got to know over VHF by receiving message of ALP Sri R Ghosh of Train No. N/ACCG which was waiting for line clear at ADL station on Line No. 2 (HWH end) shouted over VHF to stop the train as the train was derailed of line no. 7. |
|  <br>Sri Bosen Hansda<br>LPP/BWN | On 29.06.24 on 06:33 while working in Train No. 36811 from HWH to BWN he noticed the Tongue Rail of point no. P335A at Km No. 106/9B in broken condition, he then and there applied Emergency brake and stopped the train. He informed the matter to TLC/HWH, RRI/BWN & ATFR/BWN. AEN/BWN with PI reached the site and fit memo given to LPP at 07:14 hrs. with cautious speed. |
|  <br>Sri Ashis Kumar<br>Sr.TECH(F)<br>MECH/C&W/ASN | During Rolling Out examination Sri Ashis Kumar, detected that primary outer coil spring was broken of Coach No. LWSCZ 188603(D5). The Coach allowed up to destination with Speed Restriction 95 KMPH and escorted by C&W. |
|  <br>Sri Suraj Kumar Yadav<br>Asstt. (C&W) / ASN | During Rolling Out examination Sri Suraj Kumar Yadav, Asstt (C&W) detected that primary outer coil spring was broken of Coach No. LWSCZ 188603(D5). The Coach allowed up to destination with Speed Restriction 95 KMPH and escorted by C&W. |

## SAFETY SUMMARY

**Accident Statistics for the year of 2022-23 & 2023-24**

| Name of the Division | Consequential (RB) | | Indicative | | Others / Unusual (Rly) | | Yard (Rly) | |
|---|---|---|---|---|---|---|---|---|
| Year | 2023 - 24 | 2024-25 up to June | 2023 - 24 | 2024-25 up to June | 2023 - 24 | 2024-25 up to June | 2023 - 24 | 2024-25 up to June |
| HWH | 2 | 00 | 4 | 03 | - | 01 | - | 03 |
| SDAH | 1 | 00 | - | 00 | - | 00 | - | 00 |
| ASN | - | 00 | - | 00 | - | 04 | - | 01 |
| MLDT | 1 | 00 | - | 00 | - | 00 | 1 | 00 |
| Total | **4** | **00** | **4** | **03** | **0** | **05** | **1** | **04** |

## SAFETY SEMINAR HELD IN EASTERN RAILWAY

From April 2024 to June 2024, 162 Safety seminars have been conducted at various locations of Eastern Railway wherein 7560 field staff, Sr. Supervisors and Officers of all disciplines participated.
Details are given below:

| **Month** | **NO. OF SEMINAR CONDUCTED** | **Staff Counselled** |
|---|---|---|
| April/24 | 33 | 1687 |
| May /24 | 72 | 3986 |
| June/24 | 57 | 1887 |
| **TOTAL** | 162 | 7560 |

**SAFETY DRIVE**

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|---|---|
| | **Railway Board** |
| 1 | Week long Railway Board Safety Drive for April 2024 issued on 08.04.2024 and completed. |
| 2. | 10 days Safety Drive for “Foot Over Bridge” has been issued on 10.04.2024 and completed. |
| 3. | Week long Railway Board Safety Drive for May 2024 issued on 06.05.2024 and completed. |
| 4. | 15 days Safety Drive for SPAD of Tower Wagons has been issued on 01.05.2024 and completed. |
| 5. | Month long special Safety Drive, for June 2024 has been issued on 01.06.2024 and completed. |
| 6. | 13 days Safety Drive for Fire Safety has been issued on 08.06.2024 and completed. |
| | **Zonal Railway** |
| 1 | 15 days zonal safety drive for precaution to be taken to stop SPAD has been issued on 06.04.2024 and completed. |
| 2 | 15 days Divisional Safety Drive on Summer Precation has been issued by Sealdah division on 15.04.24 and completed. |
| 3 | 7 days Safety Drive on overdue BPC running and Manual BPC was Issued on 27.05.024 and completed. |
| 4 | 10 days Safety Drive on Weighment of Wagon/rake, Exemption from weighment, Designed Tare Weight of wagons, Procedure to deal with overloaded wagon(s) and levy of Detention Charge etc was issued on 20.05.2024. |

## MONSOON PRECAUTIONS: Engineering Department

**General precautions to be taken before monsoon** –

It is necessary to take certain precautions and carry out certain essential works before the commencement of monsoon, such as

(1) All catch water drains and side drains must be cleared of silt, vegetation and other obstructions to ensure free flow and quick drainage of storm water.

(2) The waterways of bridges must be cleared of vegetation and other obstructions. If silting is noticed in some spans, it should be removed to ensure that the full waterways is available for the discharge of flood water. During de-silting, care should be taken to remove the silt only upto the bed level. Protective and River Training Works must be maintained in good condition and repairs carried out wherever necessary. Scour holes should be filled with boulders.

*[Ref:Chapter VIII of IRBM]*

(3) The High Flood Level (HFL), Full Supply Level (FSL) in the case of canals with year of occurrence and Danger Level (DL) must be painted. The Danger Level Mark shall be painted with bright red band across each pier adjacent to the abutment so as to be clearly visible to the Patrolmen, Special Watchmen and Drivers. Flood Gauges shall be painted on important bridges as specified.

(4) Water shall not be allowed to stagnate on the track. For this purpose, cross drains should be provided at regular intervals. In yards, cross drains and longitudinal drains should be cleared/provided to proper grades.

(5) In hilly areas, where there is incidence of falling boulders, a survey should be carried out to locate loose boulders. Such loose boulders should be dropped in a systematic manner.

(6) Selection of Patrolman and Watchman should be made in accordance with ***Para* 1004(6) of IRPWM** and they must be trained and tested for their knowledge of rules. The duties to be performed by them should be clearly explained to them. The equipment of Patrolmen and other watchman shall be complete in all respects.

(7) Spare trolleys should be kept in readiness at the headquarters of the JE/SSE/P.Way and at other stations in the proximity of vulnerable locations. Motor Trolleys must be overhauled and kept in fit condition.

(8) Rivers in the upstream reaches should be inspected for guarding against possible change in water course.

(9) The prescribed reserve stock of boulders, empty cement bags, wire netting and sand / quarry dust should be kept at specified locations for

rushing to site, in case of emergency and should be made good, in case of deficiency.
(10) Action should be taken as envisaged in ***Para 1127(3)*** of ***IRPWM*** in the case of Railway Affecting Works.
(11) The temporary Engineering Indicators must be painted and kept ready for use.
(12) The rain gauges should be inspected before the monsoon and it should be ensuredthat they are in perfect working condition.
(13) Use of modern technological advancements such as drone videography etc., can be deployed to assess the condition of specific assets/locations and water course etc., which are difficult to access.
*[Ref: RDSO Report No.BS-129 entitled as "Guidelines for Inspection of Railway Bridges using Unmanned Aerial System (Drone)"]*
(14) Trees which are likely to fall on running lines during heavy wind/storms should be identified and cut in advance.
(15) Vulnerable Locations / kilometrages should be reviewed jointly by the Assistant Divisional Engineers and Divisional Engineers and on the basis of past history and pre-monsoon inspections and the register of vulnerable locations should be brought up-to-date.

## Monsoon preparedness of S&T Department:

### 1.TRACK CIRCUITS:

(a) Provision and cleaning of drainage system in yards to avoid water accumulation in points and track circuited area. Temporary drains need to be provided wherever required. Cross and longitudinal drains are made effective and are cleaned regularly during Monsoon and Rainy Season.

(b) Joint inspection of major yards prone to water logging by a team consisting of ADEN, ADSTE, AOM, ADEE and ADMO be carried out and action to be taken to improve the drainage before onset of monsoon. The concerned department shall take necessary action to ensure proper drainage.

(c) Joint inspection by SSE/P Way & SSE/Sig to ensure:

1. Cleaning of ballast and ensuring at least 50 mm clearance of ballast from bottom of rail to avoid leakage of track circuit currents.
2. Provision of 100% insulated GFN liners and rubber pads in track circuited area with PSC sleepers.
3. Replacement of worn out wooden sleepers, if any, and Proper packing of ballast/sleepers below insulated joints.
4. Removal of vegetation, mud and muck from track circuited portion of the track as well as on either side of tracks and in vicinity.
5. All nylon pieces of insulated joints, Insulation of stretcher bars & point rodding are intact and replace those in bad condition.
6. Defective/worn out glued joints are replaced before onset of monsoon.
7. Provision of 'J' clips at all insulated joints on PSC sleepers.

(d) Track lead Junction Boxes in flood prone areas are raised without infringing SOD so that water does not enter in them.

(e) Adjustment of track circuit parameters to keep track relay pick up voltage within safe working limits.

(f) Proper working of track feed charger failure Alarm wherever provided.

(g) Provision of Self restoring type PPTC fuses at all stations.

(h) Proper tuning and adjustment of parameters of AFTCs within. permissible limit, where existing.

(i) Checking of all traction bonds in track Circuited Portion, of track and attending deficiencies through Electrical Traction department.

(j) Checking and ensuring proper Earthing for axle counter field equipment and Evaluator.
(k) Checking & ensuring all connection like rods, transverse bonds, feeds of adjacent track circuits etc. do not touch the bottom of the rail.
(l) timely replacement of rusted old bond wire.

**2. POINTS:**

(a) Joint inspections with P. Way staff of points & crossing and compliance of deficiencies noted during joint inspections.
(b) Adjustment of point rodding, adjustable crank, rod compensators for rod operated points.
(c) Testing of all emergency crossovers for their proper working.
(d) Insulation of point machines be checked. All point motors carbon brush covers shall be sealed with silicon sealant after proper cleaning of commutators. Gear oil shall be filled in gear box and top cover sealed Proper lacing and wiring and greasing of the point machines should be completed. Crank handle contacts should be cleaned. Availability of Gasket and Carbon at point machine to be ensured.
(e) Lifting of point machines wherever required at identified water logged area.
(f) Cable entries be checked to ensure that the cable is in a healthy conditions physically besides meggering and ELD monitoring. All the terminals be cleaned to avoid deposition of moisture on the accumulated dust to avoid low insulation.
(g) Waterproofing of point motors shall be done for the points situated in low lying flood prone areas.
(h) Drills to be conducted for removal, replacing of point motors, detection contact assembly and clamping of points.
(i) Spare point motors and contact assemblies shall be kept at stations.

**3. SIGNALS:**

(a) All signal units shall be examined to check the possibility of water seepage/leakage inside the Signal Units. Signal units have to be sealed with proper gasket to prevent seepage of moisture/water. All signal unit lamp should be completely sealed including any holes to prevent moisture ingress.
(b) Additionally a plastic cover wherever required shall be provided from the back of the Signal units, in case leakage/seepage persists. After the first showers, the signal units have to be re-examined and action to be taken to avoid water seepage/leakage.

(c) Any mechanical discrepancies/damages in the signal units should be attended to ensure that the unit cover fits properly on the body and the locking arrangement is proper and watertight.
(d) Strengthening of foundations of signal posts/location boxes should be done wherever required.
(e) Badly Rusted signal post should be replaced.

**4. RELAY ROOMS, CABINS AND EQUIPMENT ROOMS:**

(a) Based on history of previous years, joint inspection by section ADEN'S and ADSTE's should be carried out to identify cabins/relay and equipment rooms prone to rain water leakage/seepage and corrective steps be taken on a war footing.

(b) Damaged/broken window panes and doors etc. should be repaired to prevent water getting into relay rooms/cabins/equipment rooms, which may cause serious damage to the systems.

(c) Ventilators should be cleaned. Aluminium stainless steel wire mesh be replaced wherever required. Broken glasses and structures should be repaired.

(d) Treatment of service buildings to avoid seepage of water in equipment rooms.

(e) Roof over the relay room/battery room/panel room is cleaned to prevent accumulation of water on the roof. Drain pipes are available and cleaned.

(f) Battery rooms, cabin basement etc. are checked and repairs; if required, carried out. Entry of water at cabin basement should be prevented.

**5. POWER SUPPLY ARRANGEMENT:**

(a) Working of all stand by Power Supply arrangements shall be ensured.

(b) Working of Auto change over for Power supplies at Stations, IBS & Auto sections have to be checked and ensured.

(c) To ensure the availability of power supply to Signalling System, Diesel Generators wherever provided be checked and should be made functional and kept in good fettle. Adequate quantity of Diesel, Mobil Oil, etc. should be stocked at the stations provided with DG sets. Essential spares of DG sets shall be made available. Diesel Generators shall be covered under AMC/Overhauling should be carried out wherever warranted/required.

(d) Secondary cells working beyond codal life have to be identified and replaced on priority. All battery terminals are to be inspected regularly to be free from sulphation.

(e) All IPSs must be checked at SSE/IC level for running the IPS on battery for at least 2 hours, checking the auto change over functions, the functioning of the DC-DC converters, the status of the CVT and inverters, class B protection against power surge etc. earthing and all relevant values, checked, rectified and recorded by SSE/IC concerned. Annual Maintenance Contract for IPS shall be kept in force.

(f) Availability and intactness of Class B & C Surge Protection Devices which are wired in a separate wall mountable box shall be checked for their indications, if available.

(g) All defective modules of IPS should be repaired and kept ready.

(h) Fuses, terminals and all connections, especially those carrying heavy current have to be checked to find if they are generating any heat and, if so, they have to be attended. As far as possible, they should be kept in moisture proof housing and exposed/naked wires, connectors, etc. Should be avoided.

(i) Earth leakage on existing power supplies should be removed by isolating the faults and replacing the conductors. ELD indications shall be linked with data logger and the data obtained should be studied to isolate and remove the faults quickly.

(j) Wherever Signalling installation at station / in mid-section are working only on solar panels, arrangement for back up DG sets be made for charging of Battery.

**6. S&T CABLES:**

(a) Testing of main, tail and power cables should be completed and low insulation conductors to be transferred on healthy conductor in time.

b) Earth Leakage Detectors, where provided, have to be tested for their working for monitoring for any low insulation of conductors. ELD data be linked to Data loggers for effective monitoring.

(c) All defective tail cables have to be replaced before monsoon. All tail cables at entry of Junction Boxes, Location boxes, Signal posts be checked for breakage of insulation. All the earth faults should be removed.

(d) Minimum 5% healthy spare conductors are to be made available in each location / goomty / relay room. These identified spare, conductors have to be kept labelled/marked so that restoration time

for attending signal failure on account of defective cables can be minimized. All spare conductors must be tested. Spare cable details shall also be recorded in cable corage plan and Insulation register.

(e) All Supervisors shall familiarize themselves with the position of spare conductors in their respective sections. JPO should be strictly followed while doing Earth work in the station yards.

(f) Protective works provided for the cables at places like track crossings, culverts, bridges, etc shall be inspected prior to onset of monsoon and special attention has to paid to these protective works soon after the first shower

(g) Drills have to be conducted for all Maintainers and Supervisors in the Section for transferring functions to spare conductors in case working conductors become defective.

(h) Earthing of armour of all cables and continuity of cable armour be ensured.

(i) Spare S&T cables of various core sizes be kept at identified stations. One dedicated 12C/19C/24C signalling cable from relay room to either side shall be. kept tested and tagged for easy identification for use in emergency.

(j) Quad cable meant for Block should be tested for their insulation resistance, cross talk, loop resistance and db losses. Parameters should be brought within acceptable limits. Position of cable joints should be known accurately and joints repaired if required before onset of rains.

(k) Gain of OFC channels used for BPAC/UFSBI should be adjusted within permissible limits:

**7. LOCATION BOXES:**

(a) It should be ensured that doors of all location boxes close properly and there are no extra vents, which may allow entry of water or insects/ rodents inside the location boxes.

(b) Damaged/corroded portions of the location boxes should be repaired / replaced. There should not be any space between the base of the location box and its foundation. Any such space, if existing, should be filled up by mortar.

(c) Location boxes on the banks should be kept vertical by providing strong foundation. Location boxes which are likely to tilt should be attended so as to prevent tilting. Suitable measures shall be taken to prevent ingress of water in location boxes and junction boxes.

(d) Telephones in location boxes, if provided, to be tested for proper functioning.

**8. EARTHING & LIGHTNING PROTECTION DEVICES:**

(a) Proper Earthing and Lightning Protections are provided as per extant instructions on all the equipments like Block Instruments, IPS, Axle Counters (UAC/DAC/MSDAC), EI etc. It should be ensured that all these devices are in proper working order. Defective devices should be identified and replaced.

(b) Earth resistance value of all Earthings should be measured and ensured that it is within permissible limits by adopting necessary measures. Provision of additional Earths or overhauling of Earths may be undertaken wherever warranted.

(c) Earth connection at the Earth bar/location body/equipment side and at the Earthing rod/pipe must be thoroughly cleaned to provide proper connectivity. Rusted bond wires used for Earthing should be replaced.

**9. OPERATING CUM INDICATION PANEL:**

(a) 40/60c indoor cable between panel and relay room shall be checked for proper working. Sufficient spare cores shall be ensured.

(b) SM's room shall be attended to prevent water falling on the Operating. Cum Indication panel.

(c) Working of 'Calling On' signals have to be ensured.

(d) Joint Drill has to be conducted with Operating for Emergency operation of Point through Panel, extraction of Emergency Crank Handles and cranking of point machines.

(e) Testing of farthest points & crossings and emergency crossovers to be done for proper working.

(f) All Panel Indications shall be checked and defective bulbs or LEDs have to be replaced.

(g) Spare items viz., all type of Panel buttons, ECRs, Relays, Timers, Condensers, Resistors, Fuses, track feed chargers have to be made available at each station during monsoon. One pair of spare Transmitter and Receiver of each frequency shall be made available for section where Daido types TLBIs exist.

**10. LEVEL CROSSING GATE:**

(a) Defective wire insulators, rusted wire ropes and rod insulator are to be replaced.

(b) Pipes through which rods or wires run should be cleared regularly.

(c) Gate telephones shall be tested and telephone battery shall be replaced if required.

(d) Area on either side of road & across the gate tracks to be specifically inspected to ensure that no water is getting accumulated.

(e) Sliding booms, wherever provided, shall be kept in working order.

(f) Rusted booms are to be replaced.

**11. ELECTRONIC INTERLOCKING:**

(a) Earthing arrangement as well as Surge and Lightning Protection Measures should be checked to be available as stipulated.

(b) Both Main as well as Standby systems, DC-DC converters, CCIP and VDU or both the VDUs (as the case may be) should be tested to be in working order. Record of testing should be maintained in a register.

(c) Spare cards of El and spare DC-DC converters etc. Should be kept at all critical locations.

(d) In areas highly vulnerable to lightning, safeguards as per local Railway's practice as decided by PCSTE of the Railway be put in place to ensure trouble free working of El during Monsoon.

**12. GENERAL:**

(a) Signalling Equipment like SSDAC, MSDAC, EI, IPS, Data Logger, UFSBI, AFTC etc shall be got checked and audited with OEMs and maintenance check list of the equipment shall be complied with.

(b) Modification/up-gradation of IPS of 2000 specification as per RDSO latest guidelines.

(c) All spare cards of EIs, AFTCs and Digital Axle Counters etc. should be checked by putting them in working circuits and thereafter properly stacked.

(d) Where overhead lines are in use for slot, block circuits and control circuits, strengthening of posts, checking and replacing broken jumpers, insulators, etc. cutting of vegetation, removal of sag in line wires, etc. be got attended.

(e) Sufficient quantity of spares like fuses, AFTC cards/Tuning units, AWS track magnet/opto-coupler card, relays, relay groups, point machines including its parts, various types of signalling cables, should be stocked at vulnerable stations so as to minimise restoration time.

(f) Working of ovens in Repair Centre to be checked and their proper working ensured.

(g) Emergency lights, torches and petromax should be checked and kept in readiness with adequate quantity of torch cells/kerosene oil, etc.

(h) All the measuring instruments. like cable testers, cable route locators, meggers, earth resistance tester, multimeters available with ESM/JE must be checked for their proper functioning.

(i) Transport facilities (with vehicle and driver) should be made available round the clock at critical locations during monsoon to move the staff at the earliest during emergency.

(j) Night failure gangs may be formed by pooling resources and stationed at critical locations for attending defects of signalling system due to heavy rain, etc. in shortest possible time. Their contact nos. shall be displayed in bold in Test rooms.

(k) On Suburban sections where AWS is provided, all AWS track magnets along with opto-coupler covers shall be sealed with silicon sealant and covered with plastic sheet.

(l) All the terminals in the location boxes and junction boxes should be cleaned to avoid low insulation due to moisture deposition on the accumulated dust.

(m) Special Precautions shall be taken for El as per OEM's instructions and RDSO guidelines. Addresses and Mobile/Land Line Telephone numbers of all concerned S&T staff officers shall be kept with in-charge Signal Supervisors and Signal Fault Controller/Test room.

**13.Testing of Communication Equipment:**

The walkie-talkie sets are maintained in a well-charged condition, ensuring their readiness for emergency communications. Emergency telephones are prepared and available for immediate use. Field telephones are thoroughly inspected and are always carried along the line to ensure effective communication.

## Monsoon Precaution Elect / EMU

1) Overhauling of defective air drier should be done.
2) Proper Functioning of Wind Screen Wipers is to be ensured.
3) Overhauling of EP unit should be done as per recommendation by OEM as a preventive measure overhauling may be introduced in advance.
4) Daily draining of all reservoirs including inter & after coolers of main compressors are to be ensured.
5) Proper functioning of Auto Drain Valves are to be ensured.
6) Seepage of water through roof ventilators and roof joints is to be arrested, proper sealing compounds may be used if required.
7) Look out Glasses and head code glasses should be sealed with sealing compounds to arrest ingress of water.
8) 100% fitment of doors, windows in all the coaches is to be ensured. The doors and windows should be checked for free movement and it should be ensured that rain water do not enter through the windows. Special care has to be taken to avoid seepage of water in the vicinity where electrical connections are made. Driving Cab should be specially attended and made water tight.
9) Effective fitment of Rain Water Channels are to be ensured.
10) Proper Cleaning of roof insulators and allied equipments are to be ensured.
11) Availability of rubber sealing washer in the Jumper Couplers with rain protector are to be ensured.
12) Color of Silica Gel is to be checked. Gel should be reactivated / replaced if required.
13) All air pipe line to be checked for any leakage / damage.
14) Special attention is to be taken for vendors coach to avoid ingress of rain water / any liquid in the cable duct (conduit) in the Vendor compartment.
15) Damaged Gaskets of traction motor and main compressor, inspection covers are to be replaced, Axle cap of TM suspension housing are to be ensured for proper sealing to avoid ingress of water.

## Monsoon Precaution – Electric Loco (Conv)

1. Test the water-tightness of loco body including roof by means of a high pressure water jet and seal all leakage points. (It must be ensured that the loco is well away from live OHE to prevent the water jet coming into contact with live wires)
2. Special attention should be given to the following points and gasket for water leakage:
   a. Loco body joints and hood joints.
   b. Joints of the mounting bases of roof equipment.
   c. Head light gaskets.
   d. Joints of look out glasses and corridor side glasses.
   e. Door gaskets. f. Sand box gasket and covers.
   g. Joints of marker light.
   h. Cover of multiple operation / coupler sockets.
   i. VCB cover joints.
   j. Side body filter joints with super structure.
   k. Glass shutters.

l. Roof gasket.

After the first rain the loco should be inspected thoroughly to detect and attend to leakage points. Special attention should be paid to the above water leakage points.

3. Cleanliness of roof gutters and drain pipes and accumulation of water on the roof.
4. Roof bus bars clamps should be greased to prevent accumulation of water.
5. Check the Cab floor above sand boxes for any water leakage into the sand boxes.
6. Roof joints with super-structure-roof gasket should be in good fettle (condition).
7. Proper functioning of all eight sanders by providing sand of size between 2 microns to 20 microns should be ensured.
8. Ensure arrangements for filling good quality of sand on all crew changing points.
9. Ensure availability of register where acknowledgement of drivers is taken after filling up sand.
10. Ensure entry in log book regarding functioning of sanders and availability of sand.
11. Ensure working of sand drying plant and build up adequate stock of dry screened sand at sanding points.
12. One cyclic overhauling of additional C-2 relay valve.
13. Proper working of wipers should be ensured.

14. Provision of head light dome and protection cap over horns and sand boxes.
15. Replacement of Silica gel of transformer and GR breather.
16. Overhauling and Reconditioning of air drier in VCB locomotive on the basis of silica gel color of desiccant.
17. Paraffin/ petroleum jelly should be applied to the terminals of lead acid battery.
18. Check TM inspection covers and terminal blocks cover gasket and replace them, if necessary. Apply varnish to TM terminal.
19. Check the bottom covers of the smoothing reactor for any damage, replace, if any cracking are observed.
20. Ensure proper functioning of water separation and drain cock of the pneumatic pipe system. During monsoon, the pneumatic system should be drained more often to discharge the accumulated water.
21 Provision of RTV compound on MCP terminal box at cable entry point to restrict water entry. Ensure gasket on Terminal box cover or provide RTV.
22 Provision of RTV compound on axle box to restrict water entry in axle box. Ensure gasket on Terminal box cover or provide RTV.
23 Provision of RTV compound on SPM pulse generator (PG) to restrict water entry.
24.High flood marks 9" should be painted on the cattle guard to give the indications to the drivers of water levels over the rails.
25. The transformer oil and tap changer oil should be tested for dielectric strength in a cycle before the outset of monsoon, and filtered if BDV is less than 40 kV.
26. Dissolved Gas Analysis (DGA) of transformer oil.
28. Drain cock and sampling cock covers of transformers are to be sealed properly to avoid moisture entry.
29. Drain the compressed air pipe line manually where the automatic drain valves are removed and cocks are provided.
30. Apply a coat of anti-corrosive paint on the roof bolts while the loco comes to shed.
31. Ensure opening / closing of side window shutters.
32. Insulation resistance of vital equipment like TM, SL lying on shop floor to be improved by baking in oven, varnishing and proper covering.
33. All air dryers to be in proper working order.
34. All EMU type After-Cooler to be regularly drained by drivers as well as at out pits.
35. One cycle calibration of QD relay setting for proper pickup and dropout current.

## Monsoon Precaution – Electric Loco (3 Phase)

1. Check water leakage from machine room filter and TM blower filter joints during water tightness test.
2. Replacement of Silica gel of Converter.
3. The transformer and converter oil should be tested for dielectric strength in a cycle before the onset of monsoon, and filtered if BDV is less than 40 kV.
4. Dissolved gas analysis of transformer and converter oil.
5. Insulation resistance of vital equipment like TM, Auxiliary blowers lying on shop floor to be improved by baking in oven, varnishing and proper covering.
6. Ensure implementation of modification sheet no. RDSO/ELRS/MS/0328 (Rev.0) dtd. 29.10.2003 for provision of water discharge outlet in TM & oil Scavenge blowers.
7. Checking of Megger value of Harmonic filter Resistance and cleaning if found less. 8. Battery box covers to be made water tight.
9. Side body air filters to be cleaned and maintain dust free environment.
10. Provision of drain pipe in SCTM bottom half to drain out accumulated water.

## Monsoon Precaution – Diesel Loco.

1. Special attention should be given to the following points and gaskets for ensuring no water leakage:
   a. Loco roof, loco body and hood joints.
   b. Head light gaskets.
   c. Look out glasses.
   d. Door gaskets.
   e. Sand box gaskets and covers.
   f. Joints of marker light.
   g. Cover of multiple operation/coupler sockets.
   h. Glass shutters.
2. Ensure proper functioning of all sanders on all Diesel locos.
3. Ensure arrangement for filling prescribed quality of sand in all crew changing points and availability of register to obtain acknowledgement from loco pilots after filling of sand.
4. Ensure the proper working of wipers.
5. Ensure proper working of Air-dryer and Auto Drain/Check valve.
6. Proper cleaning of look out door and window glass before the loco leaves the shed.
7. Proper sealing of traction motor to be ensured.
8. Headlights are cleaned and proper focus along with intensity to be ensured. Ensure proper working of Head light, flasher light & marker light and check its proper fitting.
9. Cleaning of TA & by compressed dry air in all schedules. '
10. Cleaning of traction generator, traction alternator, Rectifier and auxiliary machine by compressed dry air irrespective of any schedule.
11. Loco under gear also to be checked for loosening of any fastening, hanging parts and any weld failure.
12.Ensure provision of wooden wedges.

**Do's & Don'ts for CREW**

**Do's**

1. Do brake power test before leaving from originating station.
2. Road learning is to be taken thoroughly
3. Keep valid competency certificate with you while on duty.
4. At your crew lobby see and read speed restriction's board both temporary and permanent.
5. Test the walkie-talkie set at your crew lobby.
6. Ensure correct authority to proceed before start the train.
7. They should take extra precaution while passing through cutting, bridges, newly laid LHSs LC Gates station.
8. Look out for patrolman's signal or detonators signal.
9. They should not work the

**Don'ts**

1. Don't take any alcoholic drink when on duty and within 8hours before coming to duty.
2. They should not work the train if water is more than 4 inches (100 mm) above rail level.
3. Don't sign in assurance register unless you understood properly.
4. Don't perform duty in overdue for PME and Refresher course.
5. Don't start the train with out obtaining caution order (T/409)
6. Don't gossip over walkie talkie which may disturb other working staff.
7. Don't start with out continuity test.

## Monsoon Precaution – Electrical/TRD

During pre monsoon checks, apart from regular items a special attention to be given to following items:

1) **Checks for OHE**:

i) Insulator Cleaning.
ii) Application of Silicon Compound in polluted zone.
iii) Tree Cutting (>5m) with Engg. Department.
iv) Tree trimming maintaining distance of 4mtr from live OHE.
v) Joint Checking of over head power line crossing up to 66 kV (including 11kV and 33kV) with Concerned authorities.
vi) Bird nest removal.
vii) Kite/Thread removal.
viii) Checking/re-tightening of earth pit resistance/connection.
ix) Tower wagon inspection of entire OHE before & after monsoon.
x) Attention to Leaned structures.
xi) Ensure Protection Screens on all FOBS & ROBs together with no water leakage on OHE.
xii) Condition of OHE foundations & proper drainage of water.
xiii) Proper fitting of Guy rods.
xiv) Removal of redundant/released structures.
xv) Availability of bonds and its tightening.
xvi) Special Foot Patrolling before & after the monsoon of entire OHE.
xvii) Free movement of ATD, ensuring proper x, y value.
xviii) Free movement of cantilever.

**2. Checks for PSI:**

i) Checking of IR value and replacement/retreatment of Silica gel of Power Transformer.
ii) Checking of IR value/Silica gel replacement/retreatment of Silica gel of Auxiliary Transformer and keeping silica gel inside BMs, CBs, Marshalling Box and control panel.
iii) Availability of door gaskets of CB, BM, marshalling box of transformer, isolator key boxes, control panel.
iv) Correct oil level of AT, CT, PT & Power Transformer.
v) Condition of AT drop out fuses.
vi) Condition of Lightning Arrestors (as per latest SMI of RDSO) for its earthing and leakage current that they are within limits.

## LATEST JOINT PROCEDURE ORDERS

No. SG.42/0 Kolkata, dt.03.05.2024

### Joint Procedure Order No.97

Sub: Checking procedure of RCC/ST/LT at divisional level.

In order to make commissioning of signaling work, hassle free and smooth transition to new installation without any effect on efficiency of traffic handling the following is suggested:

1 Executing agency will ensure that approvals from PCOM/CRS are obtained by S&T department of division regarding all dispensations under G&SR. The Dispensations under GR 3.47(1) & 5.16 should he obtained based on proposed non-isolated movement/s jointly signed by concerned Dy.CSTE(I secutive). SE.DOM & S.DSTE. The Executing Agency will ensure that all the approved dispensations are duly incorporated in the SIP/Route Control Chart (RCC)/Selection Table (ST) Locking Table (LT).

2. The executing agency shall provide a copy of RCC/ST/LT to the Divisional Operating department along with SIP for scrutiny. The RCC/ST/LT of the concerned stations along with approved dispensations under GR 3.47(1) and 5.16 has to be checked by both S&T and Operating department before their incorporation into the El Logic. Sr.DOM has to ensure that RCC/ST/LT has been checked at divisional level. and any observation on RCC/ST/LT has to be communicated to the executing agency for compliance within 30 day's in case of big Station/Yard and 10 days for smaller yards.

3 On receipt of sanction from CRS, a copy of the same shall be given on priority to Sr.DOM of the division. Sr.DOM will advise executing agency if any condition imposed by CRS is going to affect operational facility with due justification. On receipt of such advice executing agency will approach CRS for relaxation of restrictions imposed by CRS, if tenable. The work will be executed only after receipt of reply from CRS with intimation to Sr.DOM.

4. No change in SIP & RCC will be acceptable once CRS/GM/ PCSTE/PCOM has been obtained without personal approval of the concerned PHOD ie. PCSTE/PCOM.

5. Sr.DOM & Executing Agency will ensure that the operating staff of concerned station is trained on the new installation before final commissioning of work and will make sure that all the staff that will work on the new installation is well conversant with it.

6. During SAT testing, operating staff of division and expert SM of concerned station/TI(M) who is well conversant to the station working will associate with S&T department of executing agency to avoid any post commissioning familiarity issues.

Above procedure should be followed for works targeted henceforth. This will ensure not only safety out also operational requirements of the station.

(Rupesh Kumar)
CTPM/ER

(K.L.Kataria)
CSTE/Planning/ER

## Foreign Rail Accidents which may have been avoided with simple attention

1) **Railway :** South Eastern Railway
**Division:** Kharagpur
**Date & Time :** 09/11/2023 02:40 Hrs.
**Type of Accident:** Yard Accident/Collision
**Details of Accidents:** While performing shunting of Multiple Loco in Nimpura NTY goods yard, during the cab changing and handing over charge from shunter to incoming crew, the multi loco got rolled down and side grazed the BCN wagon and due to that two wagons and loco got derailed. Goods line no 2 and 3 got affected. No other repercussions.
**Responsibility:** Loco Pilot, (crew failure-bad enginemanship.)
**Cause of Incidents:** Non - observance of laid down procedure by LP, ALP and electric shunter during changing of cab of multiple loco.
**Lessons to taken from the incident:**

1. Charge Hand over must be done in side the CAB of Locomotive.
2. During Cab Changing of Multi Loco Wooden Wedges are to be provided on wheels towards gradient.
3. Position of all pneumatic cocks and valves during Multiple unit operation should be done correctly.

**2) Railway :** Western Railway
**Division:** Ahmedabad
**Date & Time :** 27/01/2024 21:58 Hrs
**Type of Accident:** Equipment Failure/Smoke emission.
**Details of Accidents:** Train No 15667 departed ADI at 21.52 from PF no.8, stopped due to ACP at 21.58 while passing advance starter as smoke seen erupting from Feeder Junction Box of first bay of coach no. NF 197369 /C. Passenger evacuated from coach immediately.
**Responsibility:** Carriage Staff (negligence of staff) KYQ depot-LMG Division.
**Cause of Incidents:** Short Circuit leading to smoke.
The smoke incident in first compartment of coach no. 197369-NFR of train no. 15667 GIMB-KYQ EXP on 27.01.2024 took place due to short-circuit between positive and negative wires (110 V DC )of the Emergency Brake pull box (EBPB ) light indication system or ACP unit for bay at the location between connector and PCB of Emergency brake pull box unit. Three wires (+ve / -ve incoming & +ve feedback) were found heavily twisted together in close proximity. The large quantity of garbage including burnt matchsticks, bidhi buds, plastic and paper wrappers, etc were found heavily stuffed inside the Emergency brake pull box unit. The negative and positive wire will pass current to PCB only when micro switch operate due to operation of emergency brake pull box unit. The current to PCB will glow the bay indication light and also supply current to coach end Passenger Alarm Chain Indication Light circuit. Due to twisted condition and close proximity with waste the insulation got weakened and on the day of incidence got short circuited. The waste item near the area helped the spark to spread to nearby upper side of area. Due to initial heavy spark the smoke started to generate which is later controlled. The amount of garbage found inside the ACP unit cover clearly indicates that it has not been opened since very long time.
**Lessons to be taken from the incident:**
1. During Primary maintenance intensive cleaning of all areas which are in close proximity of passengers are to be done.
2. Twisting of cables must be avoided.

**3) Railway :** Central Railway
**Division:** Mumbai
**Date & Time :** 29/04/2024 11:30
**Type of Accident:** Consequential/Derailment
**Details of Accidents:** PL 56 98072 PNVL-CSMT slow local while entering PF No.2, four wheels of leading trolley of 2nd coach 2138B derailed near point no. 101A blocking Up & Dn PF No. 1 and 2 harbour lines.
**Responsibility:** Material Defect.
**Cause of Incidents:** Manufacturing Defect of Tongue Rail- Profile not as per standard drawing. Profile of new RH Tongue rail 101A (1in12) inserted on 28.04.2024 did not match with the prescribed standard of RDSO drawing resulting into derailment.

**Lessons to be taken from the incident:**

1) Sub assembly profiles of turnouts switches & crossings to be verified before inserting at site for the correctness.
2) Lathe machine in the car sheds to be used for the digital wheel gauge, profile and diameter measurements.
3) Nominated pit lines to be made cant free, level track in all Car Sheds.

## ***IMPORTANT AREAS OF INSPECTION for JUL-SEPT***

## Mechanical C&W

**MACRO**

-Rolling In/Out quality and infrastructure.
-Monitoring of and Method of Material Storage especially perishable (Like rubber items) and safety sensitive items (like dampers) in depots and workshops. Availability of safety spares
-ROH depots & Freight yards with focus on maintenance of CBCs and locking of doors.
- Availability of proper infrastructure (including Pit lighting, zero level tracks etc.)
-Electrical cabling including life, material position, cross connection and tightness.

**MICRO**

- HRE Half yearly and Yearly inspection schedules not being done in ARTs.
-EOT Cranes maintenance practices, staff awareness and infrastructure health.
-Spring maintenance, cleaning and flaw detection practices. Air Bellow indication of EMU bogies at Driving Cab to be checked.
- Lubrication / Greasing of Traction Motor bearing, Gear Cases, Side Bearer and Centre Pivot . CAMAX compound leakage cases in EMUs and process of application and heating of the same.
-Training, Record keeping, maintenance and testing of fire extinguishers.

## Electrical (Crew)

**MACRO**

-Fog Safety device :Availability, Operation and Usage
-Footplate and counselling Quality of CLIs (Beat to beat, follow up of deficiency observed etc.)
-Without Rule booking in lobbies. (Overdue rest, due refresher,etc.)
-Double duty in suburban. Long Hours monitoring and relief of Crew. Availability and requirement of road vehicles.
-GDR: Process and infrastructure.

**MICRO**

-Proper Working of Sanders.
-Proper Calling out of signals by LP /ALP. paper work by ALP.
-Reading and maintaining
-Manual Sign ON/OFF should match with link failure register.
-BA Testing :- Testing & Availability of spares

## OPERATING

**MACRO**

-Load stabling and securing practices, Availability of equipment (wedges, chain and padlocks etc. as per standard)
-GDR: Process and infrastructure.
- Use of Emergency Route Cancellation, Cranke Handle. Cross checked with Veeder Counter Register[i.e. dated 06.05.2024 Derailment at Asansol Yard and dated 02.06.2024 Derailment at HWH yard .
- Control of shunting operation by fixed signals or hand signals or by verbal directions as prescribed by GR & SR. Shunting should be supervised by the properly authorized operating staff only[ i.e. Dated 30.11.2022 Consequential Accident at SDAH].
- Updation of SWR as per the physical condition of yard [i.e.Sondalia, Kalipahari]. Correction slip issued after the last updation should be available [i.e.at HWH RRI not available].

**MICRO**

i) Exchange of signals by station staff with train staff when trains run through.
ii) Use of Pressure Gauge and Feed Pipe.
iii) TSR, Caution Order Register, Operating form etc.
iv) Disaster management .
v)Train Operation during Foggy and inclement weather - Precautions

## Engineering

**MACRO**

1. Gauge and cross level to be checked at Points and crossings, its approaches and cross-overs.

2. Versine to be checked in at points and crossings, its approaches specially where forced lay- outs exist.
3. Work-sites to be checked, especially during passing of trains while execution of work is in progress.
4. Visibility of LC Gate both for LP and road users.
5. Effectiveness of locking arrangement for boom of LC Gate in case of non- interlocked LC gates.

**MICRO**

1. Whether inspections are being carried out as per schedule and as per proforma laid down in Manuals.
2. Whether proper protections are being adopted at different work sites.
3. Condition of speed breakers and road surface of LC gate.
4. Availability of P. Way Materials and safety equipment in suffice.
5. Whether there is any overdue of PME, Refresher courses and regular counselling of staff are being done.

## S&T

**MACRO**

-Signal Visibility
- Identification of signalling installation infringing SOD
- Validation of Data Logger and networking of data-logger
- Checking of traction bonds & Proper packing of points
- Manpower : Availability, Deputation & Planning.
- Checking of Earth resistance, Earth connections & Earth pits, Surge arrestors, worn-out Signal units, Signal posts & Location Boxes

**MICRO**

- JPO No. 92 (Procedure for use of spare key of Relay Room and other S&T Rooms by Station Master in case of fire) must be followed with correct method.
-Conduction of Safety Integration test as per IRSEM
-Checking of height of speed breaker & working of Sliding boom & effectiveness of interlocking at LC gates
-Checking of interlocking of emergency key in LC gates
-Checking train operation in track circuit area
- Arranging of Obstruction test of all Points.

## Electric (TRD)

**MACRO**

(i) Upkeep of ladders, tools (Tirfors, Pull lifts, Come along Clamps, Dynamometer, Bond making Zigs and fixtures, Discharge Rods, Meggars, Multimeters, etc. including their periodical testing).
(ii) Working of TPC phones and auto phone.
(iii) Inspect the foot patrolling reports and their compliances.
(iv) Upkeep of OHE Inspection Car. (Maintenance Register, periodical checking by TXR, Diesel Engine and Drive Gear (U/G).
(v) Competency Certificates of all the eligible staff.(TR-1 to TR-11 ) including separate for staff operating the power block.

**MICRO**

i) No vehicle is attached behind the tower wagon since not permitted.
ii) Measure the implantation of OHE mast which should not be less than 2.36 mtrs for existing sections and 2.8 mtrs for new sections on M/L.
iii) Each working party shall be protected by at least 2 independent earth rod. Earth rod does not exit 100 mtrs
iv) Knowledge of staff and supervisors for fire-fighting. Availability of fire buckets and fire extinguishers, First aid box, Shock treatment chart, tools and plants. Last recorded earth resistance readings.
v) Cancellation of power block and charging of OHE with proper exchange of private nos.

## Electric (Loco)

**MACRO**

A) All Inspection schedules must be carried with in due date.
B) Magnetic Particle Testing (MPT) of Traction motor (TM) nose stay in conventional locomotives, TM suspension holder support and motor support in WAG9/WAP7 locomotives and traction motor support arm in WAP5 locomotives must be ensured.
C) Proper Procedure for tightening of axle cap fixation bolts of Traction Motor type TAO-659 as per SMI no.

RDSO/ELRS/SMI/TM/0205-98 (REV. 0) dated 31.8.1998 to be followed. Proper Procedure for proper tightening of suspension tube fixation bolts fitted on the Traction Motor type TAO-659 and HS-15250A as per SMI no. RDSO/ELRS/183 Amendment -1 dated 19.3.1998 to be followed.

D) DGA analysis of transformer oil to be done in every IC/TOH/IOH inspection must be ensured.

E) Ultrasonic test of Axles to be done during axle overhauling & IC inspection. In no case the time interval for ultrasonic testing of locomotives axles should be more than 12 months.

**MICRO**

A) Implementation of Technical circular no. RDSO/2010/EL/TC/104 (Rev. 0) dated 16.7.2010 for storage & handling of lubricant/greases used in Electric locomotives. All barrels must be stored, preferably indoors; away from extreme heat/cold, dust, acidic fumes and moist atmospheric conditions. Lubricating oil barrels should be stored horizontally preferably on wooden rails dunnage to avoid contact with ground. The barrel bungs should be in the clock position at 3 & 9. Grease barrels must be stored vertically preferably covered with tarpaulin, if not stored indoors.

B) Use of induction heaters equipped with essential features like temperature display, temperature hold, auto cut off & de-magnetization. Induction heating should always be 2225245/2023/O/o PED/TRACTION/RDSO 58 Page 5 of 54 done in temperature mode as same/similar components of different manufactures may have different properties. Temperature setting should not be more than 1200C for bearing assembly components.

C) Replacement of sandwich mounting assembly in IOH/TOH must be ensured as per laid down procedures.

D) Wheel gauge to be measured during every IC/TOH/IOH and during axle changing. RDPT of bull gear to be done in TOH/IOH.

E) Testing of loco brake power to be ensured as per parameter given in RDSO SMI 197.

## ***HIGHLIGHTS OF CRB SPECIAL SAFETY DRIVE***
## ***Including lessons learnt & Action required***

**Engineering**

1. Rigorous checking of FOBs is required. Deficiencies range from requirement of timely inspections to dismantling.
2.Better pathway facilities & jungle clearances required at TRS outstation points, GDR points, TXR points etc.
3.Suitable checks for Housing deficiencies need to be made
4. Inspections and Measurements should be taken as per laid down Performa .**NO** area /reading should be left blank unless specified so.
5. Low level of platforms should be identified and rectified.
6. Checking of Dead-end buffers to ensure as per standard.
7. Compliances of Joint points and crossing inspection should be done timely

**S&T**

1. Faster roll out of Smoke Detector and Fire Suppression system in Relay rooms is required.
2. Some cases of SI 24 mismatch with actual signal failure have been observed
3. Root cause analysis and elimination of signal bobbing is required,
4.There is an upward trend of increasing MSDAC failures especially ALTPRO make. This needs to be checked.
5.Redressing of telecom wiring should be identified and addressed.
6.Protection path of control communication to be ensured.

**Mechanical(C&W)**

1.Old rubber kits and other such perishable items should be stored ,purchased ,distributed and used with extreme care.
2.On board emergency equipment like hose, fuse etc. should be properly checked at regular intervals in depots.
3.Competency of welders from Railway inst. needs to be ensured.
4. M/s Rane make Brake Disc were found to have black spotted patches & some were found to have crack initiated on the surface.
5. HRE Half yearly and Yearly inspection not being done in ARTs.
6. Staff to be sensitized for proper Securing of wagon doors
7.Insufficient overhead lighting and pit lighting were observed.
8. Sufficient stock of safety items needs to be ensured.
9. Time bound hydraulic testing of fire extinguisher at depot is required

**Electrical (TRD)**

1.OHE diagram cases of mismatch with AC traction working rule and updation required in some cases.
2. TRD earthing bond with TRD mast at some PFs were not covered.
3. Inclined OHE masts should be identified and eliminated

**Electrical (OP)**

1. Many running rooms especially those of MLDT division need better infrastructure with regards to furniture, with many of them lacking beds, tables, chairs etc.
2. ALP Log (Paper work by ALP) during run has been stopped immediately as per Rly. board guidelines but was found being done by ALPs. Counselling is required
3. Calling out of signals by ALPs needs monitoring.
4. Competency for each CLI needs to be issued.
5. Road learning should not be given without yard sketch drawing.
6.Timely calibration and updation of FSD needs to be ensured.

**Safety**

1. Safety literature like Bulletins and calendars should be distributed in soft copies as well so as to reach every staff.
2. Besides interval, quality of inspections also need to be monitored.

**Operating**

1. At Multiple locations load securing was found below standard. Load securing equipment was also found deficient in some cases. Staff should always work after ensuring securing.
2.Padlocking of hand points has been found negligent in some cases.
3. Requirement of guard repeater was observed especially at multiple suburban stations. The same should be entered by TMs in CMS.
4.Some LC gates need to be re categorized as per current TVU.
5.Requirement & Feasibility study of shunt signals is required in multiple yards.
6.More stringent night checks of LC gateman working and All right exchanges by stations need to be conducted.
7. SS Night inspection is found irregular at some stations.
8.Training of new recruited/promoted TMs needs to be closely monitored and improved.
9. Testing & overhauling process of LC gate boom was found negligent at some places.

Eastern Railway Safety Seminar 2024

Intra Railway Safety Audit at Crew Lobby, Horwah

# SAFETY RULES

- You are responsible for your own safety and safety of others
- Assess the risk before you approach your work. All accidents are preventable.
- Always use equipment/tools/ machinery safely and properly
- Don't take shortcuts. If you are not trained for it, don't do it.
- Keep your work area clean and Clean up spills immediately
- Report any unsafe conditions immediately
- Never wear loose clothes or slippery footwear. Wear proper PPEs
- Report all injuries , however small they may be

**Safety department Eastern Railway**