

CHAPTER – XVII**WORKING OF TRAINS ON ELECTRIFIED SECTIONS OF RAILWAYS**

17.01. Applicability of General Rules - All rules referring to the working of trains shall also apply to electrified sections except as otherwise provided in the rules contained in this chapter.

S.R.17.01/1. (1) All Subsidiary rules, which control the movement and operation of Diesel trains shall also apply to movement and operation of electric trains, except as otherwise provided in these rules.

(2) (a) All officials connected with movement of rolling stock shall have a thorough knowledge of these rules. They shall also be responsible for ensuring that staff, working under them, are thoroughly conversant with the instructions relating to their work and correct procedure to be followed under normal condition as well as in an emergency.

(b) Every Railway employee, supplied with these rules shall make himself thoroughly acquainted with the rules and shall be held responsible for knowledge of and compliance with them. Ignorance of the rules will not be accepted as an excuse for non-compliance.

(3) (a) The A.C. Traction Manual containing the rules for the operation of A.C. Traction equipment shall be applied to only 25 KV AC Traction System.

(b) All staff working in an area where electric traction is in use must make themselves thoroughly conversant with the appropriate rules pertaining to their duties on 25 KV A.C. traction.

17.02. Special definitions applicable to this Chapter - In these rules unless the context otherwise requires -

- (1) **“electrical way and works” means the traction installations including overhead equipment and other connected works provided on the electrified sections of the railway;**
- (2) **“feeding post” means a supply control post, where the incoming feeder lines from grid sub-station are terminated.**
- (3) **“neutral section” means a short section of insulated and dead overhead equipment which separates the areas fed by adjacent sub-stations or feeding posts;**
- (4) **“Power Block” means blocking of a section of line to electric traffic only;**
- (5) **“supply control post” means an assembly of interruptors, isolator switches, remote control equipment and other apparatus provided for controlling power supply to overhead equipment. It includes feeding posts, sectioning and paralleling posts, sub-sectioning and paralleling posts and sub-sectioning posts;**
- (6) **“tower wagon” means a self-propelled vehicle which is used for the maintenance and repairs of overhead equipment;**
- (7) **“Traction Power Controller” means a competent railway servant who may for the time being be responsible for the control of power supply on the traction distribution system.**

S.R.17.02/1. (i) **“Phase Conductor” means a conductor, which carries current to the traction overhead equipment.**

(ii) **“Return Conductor” means a conductor which carries return current from the tracks to the sub-station. Return Conductor also includes conductor carrying return current from booster transformer to the track.**

S.R.17.02/2. **“Traction Power distribution system” means a distribution system provided for traction purposes. This is also referred to as “Power distribution system”.**

S.R.17.02/3. (i) “Earthed” or “Connected to Earth” means electrically connected with the general mass of earth in such manner as to ensure at all times an immediate discharge of energy without danger.

(ii) “Earth” for the purpose of the overhead equipment only includes the track return circuit and the structures supporting the overhead equipments, provided such structures are connected to earth or track return.

S.R.17.02/4. “Feeder” means a conductor connecting a switching station to a grid sub-station, and a switching station or switch gantry to a feeding point and includes a conductor connecting O.H.E. to switching station.

S.R.17.02/5. “Voltage” means the difference of electric potential measured in volts between any two conductors or between any part of either conductor and the earth as measured by a suitable voltmeter.

S.R.17.02/6. (i) All overhead electrical equipments, distribution lines, transmission lines and feeders may be collectively referred to as “overhead lines”.

(ii) “Pantograph” means collapsible devices mounted on and insulated from the roof of an electric engine or motor coach and provided with a means for collecting current from the overhead equipment.

S.R.17.02/7. (i) “Rail Bond” means an electrical connection across a joint in or between adjacent length of rail.

(ii) “Bond Continuity” means a rail bond used for maintaining continuity of the rail return circuit at points and crossings.

(iii) “Bond cross” means a rail bond used for connecting together two rails of a track or rails of adjacent tracks.

(iv) “Bond Impedance” means a bond installed on a double rail track circuit by the S&T department, which provides a low impedance path for the traction return current and relatively high impedance path for track circuit current.

(v) “Bond, joint” means an electrical connection across a joint between two adjacent lengths of rail as part of the track return.

(vi) “Bond Structure” means an electrical connection between the steel work of a track structure, bridge or station building to which the traction overhead equipment is attached, and the track return.

S.R.17.02/8. (i) “Single Unit Train” means the combination of a motor coach and trailer or motor coach and trailers adopted as an operating unit.

(ii) “Multiple Unit Train” means a train consisting of two or more single unit trains coupled together and operated as one train.

S.R.17.02/9. (i) “Switch (Electrical)” means a device for opening or closing an electric circuit.

(ii) “Switch, Alternate Feed” means a switch used for connecting the overhead equipment of a loop or siding or crossover to alternative sections of the overhead equipment.

(iii) “Switch, Gang operated, Earth type” means a special switch used for isolating and earthing the O.H.E. over electric loco inspection pits and in electric loco sheds (and carriage, coaching section) and for providing a dead section in front of it. Simultaneously and for energising both sections in one operation.

(iv) “Switch, Inter-connecting, section or isolator” means a switch used for connecting or disconnecting adjacent elementary sections of overhead equipment or of distribution mains.

(v) “Switchgear” means isolator switches, Circuit Breakers, Interruptors, Cut-Outs and other apparatus used for the operation, regulation and control of electrical circuits.

S.R.17.02/10. Additional definitions in use on North Central Railway -

- (1) “Apparatus” means electrical apparatus and includes all machines fittings, accessories and appliances in which conductors are used.
- (2) “Assistant Electrical Engineer (Traction Distribution) / (AEE /TRD)” means an Assistant Executive Officer-in-charge of maintenance and repairs of the Power distribution system in a division or in an area and responsible to the Divisional Electrical Engineer (Traction Distribution).
- (3) “Assistant Electrical Engineer (Rolling Stock)/(AEE/RS)” means an Assistant Executive Officer in-charge of maintenance and repairs of electrical rolling stock in a division or in an area and responsible to the Divisional Electrical Engineer (Rolling Stock).
- (4) “Assistant Traction Foreman (A.T.F.O.)” -
 - (a) means a subordinate of the area concerned responsible to the Traction Foreman for inspection and maintenance of traction overhead lines, rail bonds and for the staff employed thereon.
 - (b) ”Rolling Stock (RS)” means a subordinate of the area concerned responsible to Traction Foreman (Rolling Stock) for the maintenance of electric rolling stock and for the staff employed thereon.
- (5) “Bare” means not covered with insulating material.
- (6) “Cable” means length of Insulated single conductor (solid or stranded) or of two or more such conductors, each provided with its own insulation, which are laid up together.
Such insulated conductor or conductors may or may not be provided with an overall mechanical protective covering.
- (7) “Caution Notice” means notice attached to or placed near live equipment calling attention to the danger of touching or interfering with such equipment, and bearing the words “Caution - Live Equipment”.
- (8) “Chargeman” means an authorised person in charge of a gang of workmen and/or Linemen, authorised to work on specific types of traction equipment such as overhead equipment, switching station feeder lines, remote control equipment, electric rolling stock etc.
- (9) “Circuit” means an arrangement of conductor or conductors for the purpose of conveying electrical energy and forming a system or a branch of a system.
When they form a closed path through which a current can circulate, the circuit is referred to as ‘closed’. When the path is not closed, the circuit is referred to as “Open”.
- (10) “Circuit Breaker” means a device for closing and opening an electrical circuit under all conditions unless otherwise specified and so designed as to open the circuit automatically under abnormal conditions.
- (11) “Competency Certificate” means a certificate issued to a person by the Railway Administration authorising him to carry out specified duties pertaining to his employment.
- (12) “Contact Wire” means an overhead conductor from which electric power is supplied to electric rolling stock.
- (13) “Cut-out”(fuse) means any appliance for automatically interrupting the transmission of energy through any conductor when the current rises above predetermined value.
- (14) “Danger” means danger to health or to life or any part of body from stock, burn or other injury to persons, or property, or from fire or explosion, attendant upon transmission, transformation, conversion, distribution or use of electrical energy.
- (15) “Danger Notice” means a notice attached to dead equipment to convey a warning against such equipment being made alive, and bearing the words “Danger-Men Working”

- (16) “Danger Zone” means the zone lying within two metres of any live equipment in the 25KV AC traction system in which no work is permitted when the equipment is alive. Notwithstanding the above the Loco Pilot of an electric loco is permitted to change the headlight bulb of the loco while standing on the buffer beam projection at the floor level of the cab.
- (17) “Divisional Electrical Engineer (Traction Distribution) (D.E.E./TR.D)” means an Executive Officer responsible for the traction power distribution system including power supply arrangements and remote control equipment in a division or in an area.
- (18) “Divisional Electrical Engineer (Rolling Stock)/(D.E.E./R.S.)” means an Executive Officer responsible for the electric rolling stock in a division or in an area.
- (19) “Dropper” means a fitting used in overhead equipment construction for supporting the contact wire from the catenary.
- (20) “Electrified Track” means track provided with overhead equipment.
- (21) “Emergency telephone” means a telephone circuit provided for contacting the Traction Power Controller.
- (22) “Grid sub-station” means a sub-station equipped with transformer and switchgear belonging to the power supply authority from which power at 25 KV is supplied for electric traction.
- (23) “Guarded” means covered, shielded, fenced or otherwise protected by means of suitable casing, barrier, rails or metal screens to remove the possibility of dangerous contact or approach by persons or objects to a point of danger.
- (24) “Insulated (Air-gap) Overlap-Span” means an arrangement of overhead equipment over a track where two sets of traction conductors overlap each other for a short distance providing for a smooth passage for the pantograph of electric rolling stock, the two sets of wires being insulated from each other by an adequate air-gap.
- (25) (i) “Interruptor” means a single phase oil circuit breaker without an automatic tripping device.
- (a) “Bridging Interruptor” means an “Interruptor” which is provided at a neutral section to enable one sub-station to feed a sector of the overhead equipment normally fed by another sub-station during emergencies or when the latter is out of use. This interruptor normally remains in the open position.
 - (b) “Sectioning Interruptor” means an Interruptor, which connects adjacent sub-sectors together to maintain continuity of supply. This interruptor normally remains in the closed position.
 - (c) “Paralleling Interruptor” means an interruptor, which connects overhead equipment of two different tracks. This interruptor normally remains in the closed position to reduce voltage drop.
- (ii) “Isolator” means a switch suitable for disconnecting circuit on no load condition.
- (26) “Lineman” means a person authorised to inspect and work on the overhead lines and switches in relation therewith.
- (27) “Operator” means a person on duty who is in charge of a switching station.
- (28)(a) “Remote Control Centre” means the centre from which the equipment’s at various switching stations are remote controlled by the Traction Power Controller.
- (b) “Remote Control Cubicle” means a room in a switching station in which remote control equipment and batteries are erected for remote operation of switchgear located at the post.
- (29) “Section Insulator” means a device installed in the contact wire for insulating two elementary electrical sections from each other while providing a continuous path for the pantograph.
- (30) “Sector” means a section of overhead equipment of a track from a feeding post to a sectioning post.
- (a) “Sub-sector” means the shortest section of overhead equipment, which can be isolated by opening of Interruptors.

- (b) "Elementary Section: means the shortest section of overhead equipment which can be isolated from the rest of the system by switching operations.
- (31) "Sectioning and Paralleling post (SP)" means a switching station situated mid way between two feeding posts at a neutral section and provided with bridging and paralleling Interruptors.
- (32) "Sub-sectioning and Paralleling Post (SSP)" means switching station where sectioning and paralleling Interruptors are provided.
- (33) "Yard Supply Post (YS)" means a Switching station where sectioning interruptors are provided for feeding yards.
- (34) "Traction Sub-station" means an electrical installation comprising of converting or rectifying and transforming machinery, batteries and controlling apparatus for supply of energy to the power distribution system.
- (35) "Track Return" means the track rails when used as the return conductor for the traction return current to the sub-station.
- (36) "Traction" means electric traction.
- (37) "Traction Engine Examiner" means an official responsible for inspection and maintenance of electric rolling stock.
- (38) (a) "Traction Foreman (T.F.O) Overhead equipment (OHE)" means a subordinate of the area concerned responsible for the operation and maintenance of overhead equipment and for the staff employed thereon.
- (b) "Traction Foreman (T.F.O) Rolling Stock (RS)" means a sub-ordinate responsible to Assistant Electrical Engineer (Rolling Stock) for the maintenance and/or inspection of electric rolling stock and for the staff employed thereon.
- (39) "Traction Loco Controller (T.L.C.)" means an official under the control of Assistant Electrical Engineer (Rolling Stock) who will be responsible for booking of electric locomotives and running staff to meet the requirements of the traffic.

17.03. Inspection of electrical way and works - The electrical way and works shall be inspected regularly in accordance with special instructions by officials nominated for the purpose and in accordance with the duties assigned to them.

S.R.17.03/1. (a) The duties of Section Engineer in General Rules 15.01 to 15.10 (inclusive), wherever applicable to electrical way and works shall devolve on the Traction Foreman, (Overhead Equipment) and Assistant Traction Foreman, (Overhead Equipment) in so far as these duties relate to the respective items of electrical way & works in their charges.

(b) The duties of the Gangmate, wherever applicable to overhead equipment, shall devolve on the overhead equipment Lineman.

If due to any defect or damage to the overhead equipment it is necessary to lower pantographs over any particular section of the running lines, the traction official concerned shall communicate with the Traction Power Controller, who, in turn, shall advise the Section Controller for arranging the issue of necessary Caution Orders by the Station Masters to the Loco Pilots. The Caution Order shall specify the exact kilometres and structure numbers between which the Loco Pilot shall lower the pantographs and trail through. In addition, the traction official, asking for the Caution Order to be issued, shall arrange with the Assistant Traction Foreman (Overhead Equipment) for the exhibition of suitable indication boards marking the beginning and end of the affected section in which Loco Pilots shall trail through with lowered pantographs.

S.R.17.03/2. No conductor shall be erected over or along side an electrified track unless it is adequately guarded in accordance with the rules laid down by the Railway Administration. This guard shall be effectively connected to earth.

S.R.17.03/3.

- (1) The inspection of overhead equipment and electrical equipment at supply control posts shall be carried out periodically in accordance with instructions issued by the Divisional Electrical Engineer (Traction Distribution).

- (2) Electrical equipment in rolling stock shall be inspected periodically in accordance with instructions issued by the Divisional Electrical Engineer (Rolling Stock).
- (3) (a) Loco Pilots of electric rolling-stock shall, as far as possible and without interfering with their primary duties, watch the overhead equipment.
- (b) When a defect on the overhead equipment, which is likely to interfere with the smooth movement of the pantograph or cause damage to it, is noticed ahead, the Loco Pilot shall trip the circuit breaker and immediately lower the pantograph by placing the pantograph handle in the 'lower' position.
- (c) An emergency stop should be made, if necessary.
- (d) If damage to overhead equipment is slight (such as a slight break away of the contact wire from the droppers or catenary), it may be practicable to coast under the defective section, but the defect shall be reported to the Traction Power Controller through the nearest emergency telephone circuit or in case this circuit is not available, through any other telephone.
- (e) In the case of a breakdown of overhead equipment requiring trains to be stopped, the Loco Pilot noticing such a breakdown shall immediately bring his train to a stop and arrange protection of the line or lines affected in accordance with G.R. 6.03.

In the case of a breakdown in an automatic signalling section, the track must be protected in accordance with G.R.9.10. Thereafter he will take immediate action to advise the Traction Power Controller on the nearest emergency telephone circuit giving details of the break down,

In case this circuit is not available, communicate the information to the nearest Station Master/Cabin A.S.M./Cabinmaster on any other telephone circuit.

The Traction Power Controller, on receipt of such message, will pass on suitable instructions to the Section Controller, and, if necessary, advise him to stop running of trains in the affected section.

- (4) (a) All breakdowns or defects, noted in the overhead equipment or any other traction equipment, including continuity bonds, joint bonds, cross bonds, structural bonds and impedance bonds by any railway employee, shall be reported immediately to the Traction Power Controller.

In case he cannot be contacted, the nearest Station Master, Cabin Assistant Station Master, Cabinmaster, Traction Foreman, (Overhead equipment) or the Assistant Electrical Engineer (Traction Distribution) shall be advised. In case of the impedance bonds, the Signal Inspector shall be advised. The Station Master, Cabin Assistant Station Master or Cabinmaster to whom such breakdowns or defects are reported shall convey the information immediately to the Traction Power Controller through the Section Controller.

In case of failure of communication, he shall use his discretion regarding movement of traffic and advise the nearest Traction official.

- (b) In case of breakage of an overhead line the railway employee detecting it shall ensure that no person comes in contact with the line until an authorised person arrives on the spot. The authorised person will take immediate action to make the affected line dead and earthed.
- (5) (a) All overhead line staff, when on patrol, shall watch the pantographs of passing electric rolling stock and, if any defects are noticed, they should immediately try to attract the attention of the Loco Pilot /Guard to stop by displaying hand danger signals or by gesticulation. If, however, they are unable to attract the attention of Loco Pilot /Guard, they must immediately report to the Traction Power Controller through the emergency telephone circuit or any other telephone, if the emergency telephone circuit is not available, giving full particulars including number of the rolling stock, nature of defect and the time when the defect was noticed.
- (b) The Traction Power Controller shall communicate reports of a defective pantograph to the Traction Loco Controller who shall arrange to have the electric rolling stock stopped as soon as possible for examination of the defective pantograph.
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- (6) Traction Foreman (Overhead equipment) shall be responsible for the proper and efficient maintenance of all breakdown equipment, wiring trains, tower wagons, break down lorries etc., so that they are always in a state of good repair. He shall ensure that they are equipped with full quantities of stores and spare parts as per approved inventory. All tools and tackles, straining screws, clamps, ropes and ladders shall be maintained in good condition and ready for use at all times.
- (7) The staff concerned shall ensure that equipment, not in immediate use, is always ready for service, except such equipment as may be under repair or overhaul..

S.R.17.03/4.

- (i) (a) The keys for all out door switches shall be kept in locked glass fronted boxes in the custody of Station Masters, Cabin Assistant Station Master/ Cabin Master or other persons stationed conveniently nearby the switches. The keys shall be issued on demand only to authorised persons, whose signatures for receipt shall be obtained in a book maintained for this purpose.
- (b) All chambers or enclosures containing live equipment shall be kept closed and locked, with the keys in the custody of the authorised person. A duplicate key shall be kept in a box with a fixed glass fronted cover in place to be notified by the Divisional Electrical Engineer (Traction Distribution). The key may be removed by breaking open the glass over of the box, in case of emergency, by an authorised person. A record shall be maintained of every such use of the key.
- In the event of breaking of the glass of the keyboard, the key or the keys will be kept in safe custody of the A.S.M., Cabin A.S.M. or Cabin Master, until the glass is replaced. The Traction Power Controller will keep a record where such keys are kept so that, in an emergency, he will be able to direct the parties.
- When the glass cover is broken to obtain the duplicate key, the concerned Traction Foreman (OHE) shall be immediately advised to replace the glass. The person replacing the glass shall obtain the signature of the authorised person who shall put down the date of replacement.
- (c) Any person, while working in a chamber or enclosure containing electrical equipment, which under normal conditions is alive, shall retain the keys of the chamber or enclosure. These keys shall be returned to the person in whose custody they are normally kept, immediately after the chamber or enclosure has been locked.
- (d) Permit-to-work cards shall not be cancelled until the keys have been returned to the box or to the person in whose custody they are normally kept.
- (ii) (a) In emergency, Station Master or a Cabin Assistant Station Master/ Cabinmaster shall operate such switches as per specific direction of the Traction Power Controller.
- (b) In the event of a fault in the overhead equipment necessitating isolation of a section in addition to the faulty one, the Assistant Traction Foreman (Overhead Equipment) or an authorised person shall arrange with the Traction Power Controller to isolate the healthy section also. However, if necessary, he shall himself open those switches, which can be operated conveniently.
- (c) Should the Traction Power Controller wish to have any isolator switch opened or closed he shall ask the Assistant Traction Foreman (Overhead Equipment) or Station Master/Cabin Assistant Station Master/Cabinmaster or any authorised person to carry out the required switching operations. The person concerned shall, after carrying out the orders, lock the switch either in 'Open' or 'Closed' position, as the case may be and inform the Traction Power Controller of the action taken. He shall not part with the key until receipt of further orders from the Traction Power Controller. A record of every such operation shall be maintained by the person concerned.

Each instruction regarding the parting with the keys shall be confirmed by exchange of Private Numbers.

- (d) Every Station Master, Cabin Assistant Station Master or Cabinmaster shall be fully aware of the location of isolator switches provided for the control of power supply overhead equipment at his station or near his cabin and shall be conversant with the correct method of opening and closing the same in an emergency.
- (iii) No person other than authorised maintenance staff, their assistants when accompanying them, and persons provided with special permits issued by Divisional Electrical Engineer (Traction Distribution) shall be admitted to supply control posts except the following -
 - (a) A person escorted by the Divisional Electrical Engineer (Traction Distribution) or by the Assistant Electrical Engineer (Traction Distribution).
 - (b) A doctor summoned to attend an accident case.
 - (c) Electrical Inspector to Government for the Railway area concerned.
 - (d) A person required by an officer to speak from a telephone installed in the premises.
- (iv) No person below the rank of an Operator or Lineman shall be allowed to enter an unattended supply control post alone.

S.R.17.03/5.

- (1) Presence of a responsible person - When repair or adjustment to overhead equipment makes it necessary for a train to proceed cautiously, an authorised person shall be present at the site of work and shall be responsible for showing the signals prescribed in G.R. 15.09.
- (2) Issue of Caution Orders - Before commencing work on overhead equipment or in cases of breakdown of overhead equipment, when it is necessary for a train to proceed cautiously, the Traction Foreman or Assistant Traction Foreman (Overhead Equipment), responsible for such notification, shall arrange for issue of Caution Orders in accordance with S.R. 4.09/1.
- (3) No alteration or addition shall be made to any equipment so as to infringe standard dimensions, whether permanent or temporary. If an infringement is unavoidable, sanction shall first be obtained from the Divisional Electrical Engineer (Traction Distribution).
- (4) Care shall be taken to ensure that covers of tank wagons, funnels of steam cranes or such other items are not left in such a position as to foul the traction overhead equipment.
- (5) (a) No steam or hand-crane shall be worked adjacent to traction overhead equipment unless such overhead equipment is dead and earthed. All movements of the crane Jib shall be carefully controlled so as not to foul the traction overhead equipment. Wherever possible the direct blast from the crane funnel to the overhead equipment and particularly to section insulators shall be avoided.
- (b) Except in an emergency, 24 hours advance notice of intention to work a crane adjacent to overhead equipment shall be given to the Divisional Electrical Engineer (Traction Distribution) in order to make arrangements for overhead equipment staff to standby. When possible the working of cranes shall be included in the weekly programme detailed in S.R. 17.04/1. In an emergency, the Traction Power Controller shall be advised and he shall make arrangements for overhead equipment staff to standby.
- (c) Crane shall not be worked adjacent to traction overhead equipment unless the overhead equipment staff is present.

S.R.17.03/6.

- (1) No work on live or unearthed indoor or outdoor equipments above 400 volts is permitted. The only occasion when maintenance staff may work on unearthed equipment, after it has been isolated, is for the purpose of taking 'insulation tests'. On completion of tests the equipment shall be earthed before any work started.

- (2) Earthing of feeder lines - After the feeder is made dead, it shall first be discharged by throwing an earthed chain over the conductor. The feeder line is then connected to earth by means of a stranded copper cable of adequate size securely connected to earth and the conductor.
- (3) Interruptors or Isolator - switches, which have been opened for the purpose of isolating electrical equipment for maintenance, shall have a danger notice displayed in a prominent position on the Interruptor Operating Handle of the switch or on the enclosure containing Isolator-switch and control apparatus as well as on the corresponding switches in remote control centre.
- (4) Work in the danger zone of overhead equipment - Before any work is undertaken on a section of overhead equipment, which is normally alive, or on any part of the structure adjacent thereto or supporting such equipment situated at a distance less than 2 metres for 25 KV AC system from the live parts, the overhead equipment shall be made dead and earthed. A minimum of two earths shall be provided one on either side of the working party. In case the work is spread over several sub-sectors, additional earths shall be provided close to the feeding points of supply control posts involved.
- (5) Work at insulated overlap spans (air-gap sections) - No work shall be attempted on insulated overlap spans or on section insulators unless the adjoining sections of overhead equipment on either side are made dead and earthed. In the case of a sectioning point, the isolator switch, the bridging or sectioning interruptor bridging the overlap span shall be closed.

S.R.17.03/7. Precautions to be taken by staff - Where overhead equipment for two or more tracks is supported on one structure and work has to be done on the overhead equipment of one track while the overhead equipment of adjacent tracks are alive, access to the overhead equipment to be worked on shall be direct by ladders, trestles or similar means but not by supporting structures. Staff shall not, in any circumstances, walk or climb across live overhead equipment by means of the supporting bridge to gain access to the overhead equipment to be worked on.

S.R.17.03/8. Working on service buildings and structures in the vicinity on live equipment -

- (1) (a) Railway staff, when required to carry out work on service buildings and structures in proximity to overhead equipment, shall exercise special care to ensure that tools, measuring tapes, materials etc. are not placed in a position where they are likely to fall or make contact with electrical equipment.
 - (b) Wherever such work has to be carried out under conditions which involve risk to the workmen or other persons, arrangements shall be made for authorised overhead equipment staff to be present who shall take such precautions as may be necessary for the safety of the persons concerned.
- (2) Protection of the maintenance parties -
- (a) A working party shall not commence or carry out any work on or adjacent to overhead equipment involving danger to trains or traffic without the consent of the Divisional Electrical Engineer (Traction Distribution) or The Assistant Electrical Engineer (Traction Distribution).
 - (b) No person shall disturb the overhead equipment or carry out bonding or other work in such a way as to obstruct the line and necessitate the showing of danger signals,
 - (i) Until such signals have been shown, and
 - (ii) If within the station limits, until he has also obtained the written permission of the Station Master and all the necessary signals have been placed in the 'On' position. When such work is to be undertaken the traction official responsible for the work shall advise the Station Master(s) concerned and arrange for showing the necessary danger signals.

- (c) When defects are noticed on overhead equipment which are likely to cause damage to pantographs or emergency repairs are being effected to overhead equipment and it is not possible to convey the information to the Station Master (s) concern to enable him/them to issue Caution Orders, the line or lines shall be protected in accordance with G.R. 15.09 and S.R. thereto.
- (3) Protection of staff - Every member of the staff shall provide for his own protection independent of every other member except when one is assisting another in which case, the person in-charge of the work is responsible for the proper protection of himself and his assistants.
- (4) Working on structures supporting live over-head equipment -
- (a) No person other than overhead equipment staff shall climb or work on any structure, which supports the overhead equipment without having received a permit-to-work card. No work shall be carried out on any structure nor anything affixed to a structure without the written permission of the Divisional Electrical Engineer (Traction Distribution).
 - (b) Before work is commenced on a structure supporting overhead equipment, the limits of the danger zone(s) shall be defined by day by means of a red disc and by night by means of a red lamp, which shall be placed in suitable position.
 - (c) When work is to be carried out in the danger zone of a structure after the overhead equipment is made dead, no staff other than the person authorised to test and earth the overhead equipment shall attempt to climb a structure, until he personally has received definite instructions to climb the structure from the person in-charge of the working party and no message or signal other than these instructions is permissible.
 - (d) The instructions may be conveyed from the person in-charge of the party to workmen by another person. Such a person shall be individually deputed as a messenger by the person in-charge of the party and shall be not below the rank of a Linesman.
 - (e) All persons, deputed in clause(d) to convey instructions to workmen, shall be made known to the workmen previously and the workmen shall be advised that orders regarding the climbing of structures shall on no account be accepted from any person other than those deputed.
 - (f) The person, in-charge or the person deputed under clause (d), shall, before instructing his men to climb a structure, explain which section overhead equipment is dead and which section is alive and which parts of the structure are safe to work upon. The person in charge or the person deputed under clause (d) shall satisfy himself that his explanation is clearly understood by all the workmen whom he has instructed to climb the structure.
 - (g) It shall be the responsibility of every person conveying instructions to climb structures to see that the danger discs or lamps are correctly fixed before work is commenced.
 - (h) On structures spanning multiple tracks where work is being carried out adjacent to one or more sections of overhead equipment, the person in charge shall ensure, before any of the line or lines are made alive on completion of work that all men and materials adjacent to the line or lines have been withdrawn from the danger zone and if work is to continue on other parts of the structures, that the danger discs or lamps have been moved to indicate the changed danger zone.
 - (i) The special attention of person, in-charge of painting of structures, is directed to this rule.

- (5) Painting of structures - Only after permit-to-work has been received and overhead equipment has been correctly earthed, portions of track structures at a distance less than 2 metres in case of 25 K.V. A.C. system from any live equipment may be scraped, cleaned or painted. Other portions of structures of overhead equipment may be cleaned and painted while the overhead lines are alive unless special conditions at site render it unsafe or inadvisable, in which case the work shall only be done after making the equipment dead and earthed.

S.R.17.03/9. (i) Markers are placed wherever possible, along the cable alignment and plans are available indicating generally the position of buried cables. Excavation must not be undertaken in the vicinity of cable routes until the exact position of the cables has been ascertained and a representative of the department concerned is present. This is applicable to cables of Posts and Telegraphs Department also.

(ii) If circumstances make it imperative that work be undertaken without sufficient notice, the Assistant Electrical Engineer (Traction Distribution) and Assistant Signal and Telecommunication Engineer concerned must be informed by a message for arranging staff to be present.

17.04. Permit-to-work on electrical equipment - If work is to be carried out adjacent to the electrical equipment or any other part thereof by other than the competent railway servant, such work shall be done only when and for such time as the person-in-charge of the work has obtained a written permit-to-work, duly signed and given by the railway servant authorised for the purpose by special instructions. He, in turn, shall issue the same only with the knowledge of the Traction Power Controller.

S.R.17.04/1. Work in the danger zone of traction electrical or overhead equipment -

- (1) Before commencing work, and for the whole time that work is being performed on any part of the electrical equipment or adjacent thereto, that part of the electrical equipment shall be made dead and earthed save and except as provided in these rules. A permit-to-work shall be obtained from the Traction Power Controller or an authorised person in accordance with sub-rules (4), (5), (9) & (10) below.
- (2) Procedure for obtaining traffic or power block and permits-to-work on traction electrical or overhead equipment -
- (a) All departments in the electrified area who require traffic blocks, power blocks or permits-to-work in the danger zone of traction equipment, or who require overhead line and/or bonding staff to be present at site for scheduled maintenance works, shall deliver at the office of the divisional Electrical Engineer (Traction Distribution) not later than 10 Hours on every Monday morning, statements in the prescribed form showing:
- the nature of the work and the date on which it is to be performed,
 - by whom the work is to be carried out,
 - location of the work and the section of the lines to be blocked,
 - the trains between which the block is required and
 - whether the track will be available for diesel traffic.
- (b) The requirements of all departments will be co-ordinated in the office of the Divisional Electrical Engineer (Traction Distribution) and a consolidated statement forwarded to the Divisional Operating Manager concerned, by 12 hours on every Wednesday for inclusion in the weekly programme of traffic and power blocks.
- (c) Works of an urgent character shall be attended to by obtaining emergency blocks and permits-to-work from the Traction Power Controller.
- (d) A weekly programme of work involving traffic blocks, power blocks and permits-to-work shall be prepared in the office of Divisional Operations Manager, and despatched to all concerned by Friday evening, for the week commencing on the following Monday.

Note: The procedure detailed in paras (3), (4) & (5) must be followed for obtaining the power blocks and permits-to-work shall be obtained in each case as prescribed even though the work is included in the weekly programme.

(3) Procedure for arranging Power blocks in electrified sections -

- (a) When a power block has been sanctioned, Traction Power Controller shall issue to the Section Controller a power block message (in the prescribed form) in duplicate either through messenger or by telephone with exchange of private numbers. The section Controller shall get confirmation from the Station Master (s) or Cabin Assistant Station Master(s) or Cabinmaster that the section will be blocked for electric traffic as detailed in sub-rule (11) (b) below.

He shall then either return one copy of the written message duly acknowledged indicating thereon the time from which the block will be given or send a phone message to the Traction Power Controller giving the same information supported by a private number. The Traction Power controller will thereafter arrange to isolate and make dead the portions of electrical equipment concerned at the time indicated by the Section Controller and issue a permit-to-work thereon, as detailed in sub paras (4) and (5) below.

- (b) However in the case of an emergency the Traction power Controller shall switch 'Off' the power first and then advise the Section Controller of the power block imposed and reasons for doing so.
- (c) When permit-to-work on the portion of the electrical equipment has been cancelled and the Traction Power Controller has restored normal conditions, he shall cancel the power block message issued to the Section Controller, either by message sent in duplicate or by telephone with exchange of private numbers.

(4) Method of obtaining permit-to-work in the danger zone of traction electrical or overhead equipment for work by authorised persons -

- (a) Excepting as detailed in Sub-rule (9) permits-to-work shall be obtained by authorised persons from the Traction Power Controller who shall carry out through remote control or order the switching operations necessary to isolate the portion of the equipment concerned.

When the Traction Power Controller receives confirmation that the switching operations have been correctly carried-out, he shall inform by a telephone message with exchange of Private Numbers the authorised person stating clearly that the electrical equipment has been made dead.

This information shall constitute a permit-to-work. Permits-to-work will be issued in this manner only to authorised persons not lower in grade than a Linesman. A duplicate copy of every permit-to-work issued should be retained in the personal possession of the authorised person issuing it for the period prescribed by the Railway Administration.

- (b) On receipt of a permit-to-work, and before work is commenced, the electrical equipment specified shall be earthed as per rules in force. Each working party shall be protected by independent earths.
- (c) On completion of the work the person who received the permits-to-work shall ensure that all men and materials have been withdrawn from the electrical equipment and its vicinity. He shall then remove the earths, and inform the Traction Power Controller either by written memo or by a phone message supported by a Private Number that the work for which the permit to work was issued has been completed, men and materials have been withdrawn from the specified electrical equipment and the same may be made alive. Such procedure shall constitute cancellation of the permits to work.

(5) For work by other than authorised persons -

- (a) If work is to be carried out on or adjacent to any part of the electrical equipment by other than authorised persons such work shall not commence until the person in-charge of the work is in possession of a permit-to-work card issued to him by an authorised person.

- (b) The permit-to-work shall be taken from the Traction Power Controller by an authorised person who shall earth the electrical equipment specified and hand over a permit-to-work card to the person in-charge of the work holding an acknowledgement on the other copy. A duplicate of every permit-to-work card shall be retained in the personal possession of the authorised person who issued it.
- (c) On completion of the work and when all men and materials have been withdrawn from the electrical equipment and its vicinity, the person-in-charge of the working party shall cancel his permits-to-work card and return it to the authorised person who issued it. The authorised person shall in turn cancel the permit-to-work as detailed in 4(c) above.
- (6) Local cancellation of permit-to-work when telephones are interrupted - If telephone communication with the Traction Power Controller is interrupted when a permit-to-work is to be cancelled, the authorised person to whom the permit-to-work was issued shall arrange locally for restoring to normal (Live) conditions the portion of traction electrical or overhead equipment, specified in the permit-to-work and for cancelling the power -block, if possible.
- (7) Working of more than one party independently on the same portion of traction electrical or overhead equipment - Whenever work has to be carried out by more than one working party the permit-to-work shall be issued by the Traction Power Controller only to one authorised person who alone shall be responsible under this rule, for all work on the portion of electrical equipment, specified in the permit-to-work.
- Any additional party or parties may work on the same portion of electrical equipment only with the permission of this authorised person who shall inform all parties of the total number of parties working on the same portion of electrical equipment.
- The authorised person shall cancel the permit-to-work only when he is satisfied that all working parties have withdrawn all men and materials and removed the earths from the electrical equipment. In the event of telephone communication being interrupted, the responsible person shall proceed as provided in (6) above.
- (8) Entries in the log book - The number of each permit-to-work issued must be entered in the log book of the Traction Power Controller, together with the particulars and time when the equipment is made dead for the work and re-energised after completion of the work as per information received on the telephone from the authorised person concerned.
- (9) Work inside electric loco shed - In case of work to be done inside electric loco sheds, the application for permit-to-work must be made to the Traction Foreman, Assistant Traction Foreman or Chargeman (Rolling Stock), who shall arrange for the issue of the permit-to-work after getting the switch of the inspection bay or the feeders opened.
- No intimation to the Traction Power Controller is necessary and the permit-to-work must be returned for cancellation by the person in-charge of the work to the Traction Foreman, Assistant Traction Foreman or Chargeman (Rolling-Stock) before the switches are closed.
- (10) Local Blocks -
- (a) Local arrangements may be made with the Station Master, Cabin Assistant Station Master, Cabinmaster, Yard Master and others responsible for the movement of traffic, for power blocks in such sidings as do not affect the movement of trains on main running lines, loop lines and reception or departure lines in yards.
- The Traction Power Controller shall, however, be kept informed as to when the Power block is taken and cancelled. The Station Master, Cabin Assistant Station Master, Cabin Master, Yard Master and other persons shall also advise the Section Controller of such power blocks.
- (b) Local blocks shall be arranged on the forms prescribed for the purpose.
- (11) Procedure for preventing admission of electric rolling stock into or over sections of track with dead or earthed overhead lines -
- (a) In order to prevent electric rolling stock from being admitted on a cross over or track over which overhead equipment is made dead or for which a permit-to-work has been issued, the levers of signals and points in the signal cabins, governing such movements of electric rolling-stock, shall be protected by means of lever collars. If the points and signals are locally operated, the same should be locked and the keys kept with the Station Master.

- (b) The Section Controller, on receipt of a power block message from the Traction Power Controller, shall repeat to all Station Masters/Cabin Assistant Station Masters/Cabin Master concerned the said message indicating the time from which the block is to commence.

Each Station Master/Cabin Assistant Station Master/Cabinmaster shall record and acknowledge the message with a Private Number and the time of receipt and then block to electric traffic the line or lines described from the time indicated and place lever collars on the appropriate levers.

When lever frames or other signal cabins are controlled electrically from a Station Master's office or signal cabin, the Station Master/Cabin Assistant Station Master/Cabinmaster shall place the slide collars on the slides of electric slide instruments, or on the keys of electric transmitters or interlocked key boxes. The Station Master/Cabin Assistant Station Master/Cabinmaster shall ensure that lever collars are placed on the relevant levers.

Note: The information in regard to AC Traction working is given in Appendix to the Traction Working Rules of each station.

- (c) The lever/slide collars shall not be removed until the Station Master/Cabin Assistant Station Master/Cabinmaster receives from the Section Controller and acknowledges a message supported by Private Number cancelling the power block. The Section Controller shall not issue such a message unless he has received a written message or phone messages supported by a Private Number from the Traction Power Controller cancelling the power block.

Note: In all cases mentioned under paras (2), (3), (10) and (11) of this Subsidiary Rule the Station Master/Cabin Asstt. Station Masters/Cabinmaster must record the information in the Power Block Register/Train Signal Register.

- (12)(a) All messages relating to operation of switches and issue of permits-to-work shall be confirmed by Private Numbers.
- (b) All messages together with the Private Numbers shall be issued from and received into books specially maintained for the purpose.

17.05. Warning to staff and Public -

- (1) **All electrical equipment shall be regarded as being live at all times and consequently dangerous to human life, save and except in cases, where the electrical equipment has been specially made dead in accordance with special instructions. Caution notices shall be prominently fixed near all vulnerable places to warn staff and public to exercise due caution.**
- (2) **No person shall climb on the top of engines or tenders or on the roofs of carriages or wagons when those vehicles are located beneath overhead equipment except when the overhead equipment is dead and earthed in accordance with special instructions.**

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- (1) Work on pantographs and roofs of rolling stock shall normally be carried on special sidings where switches are provided for making such sidings dead and earthed.
- (2) Traction Engine Examiner or other authorised person in charge shall be responsible for making dead the overhead equipment over the tracks of inspection lines in loco sheds and stabling siding before permitting work to be done on the roof of electric rolling stock. The overhead equipment over these tracks shall not be energised except by the authorised person in-charge, who shall be responsible for every precaution being taken to ensure that everything is in order and that all staff are clear before energising the equipment.
- (3) (a) In stations and yards an authorised person shall arrange to make dead and earth the overhead equipment and a permit-to-work card shall be obtained by the staff concerned before work on the roof of rolling stock or engines is commenced. On completion of work, the card shall be returned to authorised person for cancellation. The authorised person shall then satisfy himself that every thing is in order and that all staff are clear before energising the overhead equipment.

- (b) Prescribed working rules for isolating and making dead section of overhead equipment for watering of carriages shall be followed at watering stations.
- (4) Supplement to the Station Working Rules for A.C. Traction issued to each station, loco shed etc. specify that switches, the operation of which, will make a section dead or alive.

17.06. Alterations to track - Before any alteration to alignment or level of electrified tracks is commenced, due notice shall be given to those responsible for the overhead equipment so that the overhead equipment may be adjusted to conform to the new conditions.

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- (1) Before any slewing, alteration to super-elevation or level of tracks is done, notice shall be given to the Divisional Electrical Engineer (Traction Distribution) to enable him to arrange for adjustment overhead equipment to conform to the new conditions, if necessary. Such work shall be included in the weekly programme detailed in S.R. 17.04/1 (2-d).
- (2) (a) All minor alterations to overhead equipment whether permanent or otherwise shall be reported to the Traction Power Controller immediately by telephone and to the Divisional Electrical Engineer (Traction Distribution)or the Assistant Electrical Engineer (Traction Distribution) in writing.
(b) Major alterations affecting the existing disposition of any section of overhead equipment shall not be made unless sanctioned by the Divisional Electrical Engineer (Traction Distribution).
- (3) (a) When working on overhead equipment, all staff shall ensure that the wires are not deflected so as to cause pantographs of electric rolling stock passing on other lines to be fouled by steady arm tubes or any other parts of the overhead equipment.
(b) When the overhead equipment is slewed either temporarily or permanently, the person in charge shall ensure that section insulators, jumpers, distance and other fittings will not foul the pantographs of electric rolling stock passing on other lines.
- (4) (a) Whenever any work on track, which is likely to affect rail bonds ,is undertaken by permanent way staff, adequate notice shall be given to the Traction Foreman (Overhead Equipment), to enable him to arrange for bonding staff for removal and replacement of bonds.
(b) Bonding staff when working with a Section Engineer (P.Way) shall work under the latter's instructions who shall then be responsible for the safety of the track and of the staff.

17.07. Tripping of circuit breakers of locomotives and electrical multiple units at neutral sections- Unless otherwise allowed by special instructions, the Loco Pilot of the locomotive or electrical multiple unit shall coast through the neutral section, duly switching off power. Necessary indication boards to this effect shall be provided to guide the Loco Pilot to switch off and switch on power.

17.08. Tower Wagon - The rules for the movement and working of tower wagons shall be laid down by special instructions.

S.R.17.08/1. (a) Whenever it is necessary to work a Tower Wagon either for the maintenance of OHE or attending to the site of Break Down or for any other reason, the person incharge of the Tower Wagon shall advise the Station Master/Cabin Assistant Station Master/Cabinmaster about the movement of Tower Wagon.

(b) A Tower Wagon is to be treated like a train and shall be worked without a guard. The duties and responsibilities for protecting the train/track and other duties of the guard shall devolve on the OHE Supervisor accompanying the Tower Wagon.

(c) In case of an arranged OHE block, one or more Tower Wagons can be worked and follow one another. The Station Master, while authorising the following Tower Wagon/Wagons into occupied affected OHE Section, shall issue an "Authority to proceed Without Line Clear" and a Caution Order mentioning the site of work indicating the speed which under no circumstances, shall exceed 10 KMPH. The first Tower Wagon to enter the section shall also not exceed the prescribed speed.

(d) A Tower Wagon shall, however, not be permitted to enter the section following a train in Absolute Block Signalling Territory.

(e) After completion of the work, the official incharge of the Tower Wagon which entered last in the section shall certify at the station in advance about clearance of the section and initial against the relevant entry in the Train Signal Register in token of the section having been cleared of the last Tower Wagon.

(f) Tower Wagons have a key role in the maintenance of OHE and for attending to breakdowns. As such as soon as the programmed and sanctioned work is completed they shall be returned to their base depot with the utmost expedition in as much the same way as an Accident Relief Train.

(g) No tower wagon shall be driven except by an authorised person and no person shall be so authorised, unless he has knowledge of the section on which tower wagon is operating in addition to being conversant with the operation of tower wagon.

17.09. Additional rules for electrified sections - Special instructions for working of trains on electrified sections shall be notified by the authorised officer.

S.R.17.09/1. Accident and Unusual in Electrified Territory -

- (1) Duties and responsibilities of Traction Power Controller, Section Controller and Station Master in case of No Tension-Fault Tripping in Over-head equipment -

Fault Isolation:

- (i) In an electrified section in the event of Over-head equipment failure, Traction Power Controller shall immediately identify and localise the faulty section and isolate the same. In case of double and multiple line sections, he shall also isolate healthy section on adjacent track on the same route length as faulty section. The Traction Power Controller shall then advise the Section Controller in writing or on phone under exchange of private number, of the section found faulty and healthy section temporarily isolated.
- (ii) On receipt of the advise from Traction Power Controller, the Section Controller shall take as under: -
- (a) Section Controller shall, under exchange of private number, advise Station Masters of stations on either side of isolated sections to treat the faulty section as if the same is under emergency power block and take action accordingly.
- (b) The Section Controller shall check whether any train has entered in the faulty section. If not, he shall advise the concerned SM to issue caution order to the Loco Pilot of the first train on unaffected section to 'keep a sharp look out on the adjacent line-lines to see if there are any OHE abnormalities'.

On reaching the next station, Loco Pilot should report whether or not the section over which they have passed is safe for train movement. Then Section Controller will advise the Traction Power Controller in writing to re-energize the healthy section that was temporarily isolated.

- (c) If however a train has entered in faulty section, the Section Controller shall immediately inform SMs of all stations who are concerned with working of train in the faulty section and also in the section in which healthy Over-head equipment is temporarily isolated, under exchange of Private number, that they shall not allow any train to enter the effected block sections unless both Loco Pilot and Guard of the first train in unaffected section have been issued caution order to this effect.

- (i) "Proceed with speed not exceeding 60 KMPH during day when visibility ahead is clear and not exceeding 30 KMPH during night subject to observance of other speed restrictions".
- (ii) "Keep a sharp look-out and be prepared to stop short of any obstruction, which may be due to any infringement from the adjacent line-lines and also keep a sharp look-out on the adjacent line-lines to see if there are any over-head equipment abnormalities. On reaching the next station, Loco Pilots to report whether or not the section over which they have passed is safe for train movement".
- (iii) Only after taking this action the Section Controller shall advise the Traction Power Controller in writing that necessary precaution have been taken to ensure safety of the train. The Traction Power Controller shall then restore the feed to the healthy section, which was temporarily isolated.
- (iv) Action to remove speed restrictions shall be taken by the Section Controller in consultation with Station Master on receipt of report from the Loco Pilot and the Guard that the section is free of obstruction. Section Controller shall also advise the Traction Power Controller of the report of Loco Pilot-Guard of the train indicating whether or not there are any infringements or abnormalities in Over-head equipment.

Till such time, it is decided to remove speed restriction, subsequent train shall be allowed to enter into the section only with permission from the Section Controller and shall continue to be issued caution order prescribing clearly the speed restriction and other precautions, as pointed out in c (i) above.

(2) Duties and responsibilities of Traction Power Controller in the event of any abnormality in train on Electric Traction necessitating 'Switching off of overhead equipment supply': -

- (i) As soon as Traction Power Controller comes to know about unsafe condition of a train working on Electrified Traction, he shall immediately switch 'Off the over-head equipment supply of both the lines of relevant Sub-sector. Traction Power Controller shall then advise in writing, the Section Controller of sections in which over-head equipment has been switched 'Off'.
- (ii) On receipt of advice from Traction Power Controller, the Section Controller shall, under exchange of private number, advise Station Masters of all stations, who are concerned with working of trains in the affected section to treat the Dead section as if the same is under emergency power block and to ensure that no train is allowed to enter into the section.

Healthy section temporarily isolated

- (i) Station Masters will not allow any train to enter even healthy line of the affected section unless both Loco Pilot and Guard of the first train of unaffected section have been issued caution order to proceed with the restricted speed not exceeding 60 KMPH during day when view ahead is clear and 30 KMPH during night subject to observance of other speed restrictions and keep a sharp look-out and be prepared to stop short of any obstruction, which may be due to any infringement or over-head equipment abnormalities from the adjacent line-lines. Also advise Loco Pilot to report immediately on reaching the next station whether or not the Section over which they have passed is safe for the train movement.
- (ii) If Loco Pilot of unaffected section contacts him on phone, the over-head equipment of unaffected portion should be resumed and he will be asked to proceed with the restricted speed not exceeding 60KMPH during day when view ahead is clear and 30 KMPH during night subject to observance of other speed restrictions and shall keep a sharp look out and be prepared to stop short of any obstruction, which may be due to any infringement from the adjacent line-lines. On reaching the next station Loco Pilot will report whether or not the section over which they have passed, is safe for train movement.

- (iii) After ascertaining that there is no infringement to adjacent track, the Caution Order as indicated shall be withdrawn immediately.

Section- having affected train

- (i) After getting information from the Crew of the affected train about the nature of abnormality, decision regarding recharging of the over- head equipment shall be taken by the Section Controller in consultation with Chief Controller/ Dy. Chief Controller (Shift duty) and controller of concerned department.
- (ii) If the Loco Pilot of the affected train contacts Traction Power Controller/Control and no defect is detected in the train, on resumption of over-head equipment he will be asked by control to clear the block section with the restricted speed not exceeding 60 KMPH during day when view ahead is clear and 30 KMPH during night subject to observance of other speed restrictions and shall keep a sharp look out for any abnormality in the train. On arrival at the station the staff of concerned department should check the train. If no abnormality detected the train should resume at normal speed.
- (3) Duties and responsibilities of the Loco Pilot and the Guard in case of over-head equipment tripping/no tension in over-head equipment: -
- (i) In cases of transient Tripping of Over-head equipment the Loco Pilot shall resume normal traction and keep a sharp look out including on the adjacent line-lines to see if there are any abnormalities-obstructions and will inform to the Guard through walkie- talkie or whistle code about tripping in over-head equipment. The Guard of the train will look out for any abnormality on his train. The Assistant Loco Pilot should look back and observe his train for any abnormality.
- (ii) If no tension is over-head equipment continuous, the Loco Pilot shall immediately switch 'ON' the Loco flasher and control the speed (not exceeding 60 KMPH at night) so as to be able to stop short of any obstruction and stop his train close to first emergency socket and will communicate with the Traction Power Controller/Control to know the reason for no tension in over head equipment. The Crew should act according to advice of control.
- (iii) If it is not possible to communicate with the Traction Power Controller/ Control immediately, the Loco Pilot shall depute the Assistant Loco Pilot to get down and check the train with the Guard in order to look for any abnormality for any defect in his train including locomotive. After the train has been checked, the Loco Pilot-Guard shall inform Section controller of the abnormality, and assistance required, if any, or otherwise, through emergency phone of other line walkie-talkie, Level Crossings gate or through train of other direction or by any other means of communication and act in accordance with advice of control. In case no abnormality is noticed in his train, Loco Pilot should switch "OFF" the loco flasher.
- (iv) If in the meantime, Power supply to over-head equipment gets restored, the Loco Pilot shall resume normal traction no sooner he come to know of such resumption of supply.

