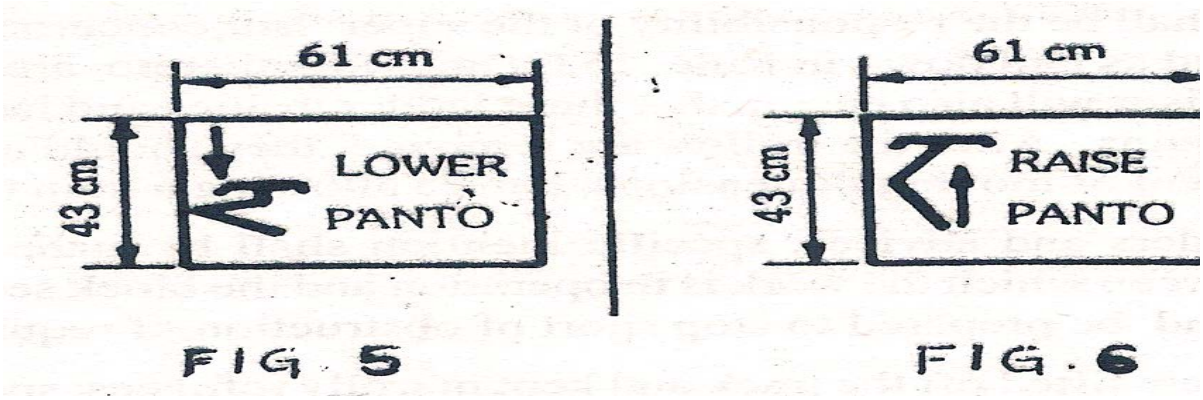

FIG. 5 FIG. 6

SR.17.07.3. Programmed speed restrictions at Neutral Sections:

Whenever speed restrictions of less than 30 KMPH on either side of the neutral section (for programmed works) is necessary, such speed restrictions shall not be imposed until the Sr.DEN/DEN concerned has made arrangements with the Sr.DEE/DEE(Tr.D) for temporary energisation of the neutral section. After the neutral section is provided with necessary warning boards, the Tr.D staff shall authorise the Station Master/SCOR to permit movement of electric train/EMU into the section, duly exchanging PNs and also after informing TPC that the neutral section has been jumpered and temporary section provided, duly specifying the location. No electric train/EMU shall be permitted to enter the section with speed restriction of less than 30 KMPH. Unless the Station Master/SCOR has received this authorisation from Tr.D staff, under such conditions, the Loco Pilots of all electric trains/EMUs shall be issued with Caution Orders at stations/notice stations concerned, permitting them to pass the neutral section with power on and also indicating to them the location of temporary neutral section, where the pantographs have to be lowered and raised.

SR.17.07.4. Emergency speed restriction at neutral sections.

Whenever emergency speed restrictions of less than 30 KMPH are required to be enforced within one KM on either side of the neutral section, the permanent way staff shall immediately arrange to protect the affected section on either side and take all steps to bring to halt any train in rear of neutral section. The PWI shall also inform the nearest Station Master regarding imposition of speed restriction. The Station Master shall inform the Station Master at the other end of the neutral section, the SCOR and TPC. The SCOR and Station Masters at either end of the neutral section shall not permit the entry of any electric train/EMU into the section until an advice has been received from the TPC. The TPC shall make immediate arrangements for energising the neutral section and provision of a temporary neutral section. After this has been completed, movement of electric trains/EMUs shall be permitted in accordance with S. R. 17.07.3. The Tr.D. official, who has jumpered the neutral section, shall issue a Caution Order to the Loco Pilot of the train, if any which might have been stopped in rear of the neutral section, advising him that he can pass the neutral section, with power on and also informing him, if necessary, the locations at which he has, to lower and raise pantograph at the temporary neutral section.

17.08. Tower Wagon.—

The rules for the movement and working of Tower Wagons shall be laid down by special instructions.

S.R.17.08.1.1. In case of breakdown of overhead equipment, the SCOR, on request from the TPC, shall arrange for quick passage of the Tower Wagons /OHE wiring trains to the site of breakdown. The movement of Tower Wagons shall be governed by all the rules governing movement of trains.

S.R.17.08.1.2. Tower Wagons shall not be worked on running lines unless a Driver or an official holding a competency certificate for this purpose is on the Tower Wagon and is in-charge of its movements. The certificate of competency shall be issued by DEE/Tr.D after a written, oral and practical test in the relevant rules.

S.R.17.08.1.3.1. Ladder Trollies shall be considered as Lorries and when placed on the line shall always be accompanied by at least 4 selected men who can easily lift them off the track.

S.R.17.08.1.3.2. These Trollies shall not be used for the carriage of electrical or other heavy materials. The running of ladder trollies shall be governed by Rules 15.18 to 15.27 and SRs there under.

S.R.17.08.1.3.3 These ladder trollies along with ladders will move on the track under protection as laid down in Rule 15.09 and SRs there under both outside and within station limits.

S.R.17.08.1.3.4. The working of Ladder Trollies will be supervised by a supervisor not below the rank of Electrical Chargeman specially authorised for the purpose. It shall be the responsibility of the supervisor concerned to ensure that Caution Orders and various other advices required as laid down in Rule 15.09 and SRs thereto, are issued to all the station staff concerned well in time. The supervisor will also ensure that these Ladder Trollies and Ladders are removed from the track in time to avoid detention to trains. After the Trollies are removed, they should also ensure that they are properly secured without any infringement of moving dimensions, before allowing a train to pass.

S.R.17.08.1.3.5. While issuing Caution Orders and advices, specific mention shall be made regarding the type of precautions, the exact kilometreage between which the work is in operation and the block section concerned, so that the Loco Pilots may keep a sharp lookout and be prepared to stop short of obstruction, if required.

S.R.17.08.1.3.6. At places where the Trollies are lifted off the track and kept in trolley refuges, special care shall be taken to ensure that these trollies do not endanger safety of moving trains.

S.R.17.08.1.4. In the event of a minor defect occurring on the overhead wires which does not necessitate the immediate isolation of the section, Station Masters should stop all trains outside the affected section and issue a Caution Order to the Loco Pilot to proceed cautiously until he is clear of the section, or until it is safe for him to proceed at normal speed. Such occurrences should be immediately reported to the TPC who will arrange to inform the maintenance party and to proceed with the repairs as soon as possible.

S.R.17.08.1.5.1. Supervisory officials in-charge of maintenance of overhead equipment shall carefully plan their work in such a way that under normal circumstances, train service is not affected in any way, where the nature of the maintenance work is such that train movement is likely to be affected, the TFO/OHE shall give prior intimation to the DEE/Tr.D who will arrange for traffic working rules to be issued to facilitate the execution of the work.

S.R.17.08.1.5.2. Whenever any section of the overhead equipment is to be made dead for the purpose of maintenance work, the Chargeman in-charge of the section will give intimation to the TPC at the earliest possible time, specifying the section where shut-down is required. The TPC shall then intimate the Chargeman the time and permissible duration of the shut-down. The Chargeman is responsible for regulation of work so that permissible duration is not exceeded. If for any reason the period of shut-down is required to be extended, the TPC should be advised in good time.

S.R.17.08.1.5.3. Where written messages are not exchanged, shut-down will be effected by exchanging messages over the telephone, using the PN. The official in actual charge of the maintenance work shall in person exchange messages with TPC. No one below the rank of Linesman is authorised to exchange such messages.

S.R.17.08.1.5.4. Shut-down on any section of overhead equipment (except at location where Electric locos are stabled for examination), shall be effected only after the SCOR has been informed by the TPC and has agreed to shutdown except in case of emergency. When train movement has to be blocked over any crossover road or section of line for the purpose of effecting shut-down, the TPC shall advise the CHC, as to what train movements are to be blocked during the period of shut-down. The CHC shall advise the Station Masters of train movements as required. The Station Master shall block train movements as required and advise CHC by message. The CHC shall advise the TPC by message that the movements have been blocked.

S.R.17.08.1.5.5. After the train movements are blocked as required and after switching of power from the section, the TPC shall inform the Chargeman and other official in charge of the work by message that power has been switched off and work may be commenced. On completion of the work, the official in-charge of the work shall advice the TPC by message that the work has been completed. The TPC shall then restore power on the section and inform the CHC by message that normal traffic may be resumed.

S.R.17.08.1.5.6. Operation of the overhead switch isolators at stations for the purpose of effecting shut-down shall be done on instructions from TPC by authorised person available for the purpose.

S.R.17.08.1.5.7. Before commencing work on the overhead equipment, the Chargeman shall test lines for supply with the method prescribed by competent authority and fix two earthing connections on the line, one on either side of the section of line where work is to be carried out; the earthing connections shall be of approved type and of adequate cross-sectional area. The earthing shall not be removed until all work has been completed and all men are clear of the line.

S.R.17.08.1.5.8. In case of breakdown of overhead equipment, the official in-charge of the repair work shall inform TPC as to what sections of line are to be made dead to facilitate the work. Care shall be taken when effecting shutdown to ensure that power is not cut off over those sections in which train services may be maintained without hindrance to the repair work. The procedure for cutting off power and for blocking train movements and for restoration of power shall be the same as in the case of shut-down for maintenance work.

S.R.17.08.1.5.9. On completion of the repair work, the official in-charge of the repairs shall advise whether normal traffic may be resumed or whether any speed restrictions are to be imposed. If a speed restriction is to be imposed, the official concerned shall advise in writing to the Station Master and shall also inform the TPC. The TPC shall clearly state so in his advice to the CHC, who will ensure that these instructions are conveyed to the Station Master concerned. When the speed restriction is to be removed or relaxed, supervisory official shall advise in writing to the Station Master and also inform the TPC who shall then convey the message to CHC.

S.R.17.08.1.5.10.1. When loads which exceed the prescribed standard moving dimensions are to pass through the electrified sections, the CHC shall give at least 48 hours prior notice to the TFO/OHE & the TPC.

S.R.17.08.1.5.10.2. When shut-down is to be effected on any section or sections of the line for the passage of oversized consignments, the same procedure as laid down in para 1.5.4 shall be followed. The authorised person receiving the shut-down message from the TPC shall issue Permit-to-work to the Guard of the train with the oversized consignment, for each section of the line on which power has been shut-down. The Guard shall not allow the train to enter this section until the Permit-to-work is received by him. Before issuing the Permit-to-work, the authorised person will test the line but it is not necessary to earth the line. When the train has to pass through two or more feeding sections, each section shall be tested before the train enters the section.

S.R.17.08.1.5.10.3. An additional authorised person should be deputed to travel on the engine, to test the line for power supply at each feeding section. The Station Master at the starting point shall advise the Loco Pilot in writing to follow the instructions of the authorised person, to stop the train as and when required for the purpose of testing the line for power supply.

S.R.17.08.1.5.10.4. The Permit-to-work shall be returned by the Guard of the train duly signed, to the authorised person, when the train has passed out of the section concerned. The authorised person shall then issue a message to the TPC that the line is clear.

S.R.17.08.1.5.10.5. No work may be carried out in the vicinity that is within 2 metres of live overhead equipment, till a Permit-to-work has been obtained as laid down in SR.17.04. At least 48 hours prior notice shall be given to the TFO/OHE, who shall depute an authorised person to arrange for the shut-down. The authorised person shall effect the shut-down by following the procedure laid down in Para 1.5 and shall issue a Permit to work to the supervisory official in-charge of the work. Before issuing the Permit-to-work the authorised person shall test the line for supply and earth the lines. The Permit-to-work shall be retained by the supervisory official in-charge of the work and on completion of the work, he shall return the 'permit-to-work' duly certified that the work has been completed and all men are clear of the live equipment. The authorised person shall then remove the earthings and issue a message to the TPC that power may be restored on the line.

S.R.17.08.1.5.10.6.1. Crow nests or other stray wires, in the vicinity of live overhead equipments, may be removed only after power has been switched off from the line. Such work may only be done, with the aid of insulated hooks of approved type, taking care not to make contact with the over-head wires or insulators. Under these circumstances, it is not necessary to test and earth the lines, after it is certified by the TPC.

S.R.17.08.1.5.10.6.2. When a nest or stray wire is to be removed, a person not below the rank of a Lineman, shall inform the TPC over the telephone that power is required to be switched off, clearly stating the location where the work has to be done. The TPC shall then switch off power from the section, after instructing the SCOR to stop train movements which are likely to result in making the line live and ensuring that these instructions have been conveyed to the Station Masters concerned and have been acknowledged by them under exchange of PNs. The TPC shall then inform the Lineman that the power has been switched off from the line. The Lineman shall arrange to remove the crow nest or stray wire as expeditiously as possible and when this has been done, inform the TPC without delay that the work has been completed and power may be restored on the line.

S.R.17.08.1.5.10.6.3. The TPC shall make detailed entries in the log sheet of all particulars relating to the shutdown.

S.R.17.08.1.5.10.7.1. Due to a break of overhead equipment or for any other reason, when it becomes necessary to stop train movements urgently over a section of line or over a cross-over road, the TPC shall inform the SCOR.

S.R.17.08.2. Tower Wagon Drivers:

A Tower Wagon Driver should undergo course of training and tests indicated below, before the certificate of competency is issued to him:-

1. Training in G&SR in the ZRTI/MLY or other approved establishment followed by a written and practical test conducted by the ZRTI/MLY.
2. Practical test by CTFO/OHE to see if the employee is fully conversant with the engine and running gear of the Tower Wagon, as well as the details of maintenance he is expected to carry out.
3. Training for a period of one month to learn the road in the section in which he is expected to work the Tower Wagon, at the end of which, the employee should sign a declaration that he is fully conversant with the road.

4. A period of practical training for 2 months in the actual driving of the Tower Wagon under the supervision of a qualified Tower Wagon Driver at the end of which a driving test will be taken by DEE/Tr.D.
5. Prescribed Medical Examination.

S.R.17.08.3. Competency Certificate: Tower Wagon Driver shall be given with a Competency Certificate by DEE/Tr.D, after a written test, on form TR-4.

Form No.TR-4

CERTIFICATE OF COMPETENCY

South Central Railway

Electrical Department.

Number …….. (for Tower Wagon Drivers)

Shri …… is authorised to drive Tower Wagons in the section between …… and …… duly observing all the safety rules and standing instructions. His written declaration *dated …….. that he is fully familiar with the signals in the above section has been noted while issuing this certificate.

Date: DEE/Tr.D

This declaration must be countersigned by driving Inspector and personally scrutinised by the officer, before issue of the certificate. The driving Inspector before countersigning the declaration shall orally examine the employee for his knowledge of the road.

S.R.17.08.4. Maintenance.

Tower Wagons perform a key role in the maintenance of OHE and for attending the breakdowns. The satisfactory upkeep of Tower Wagons is, therefore, of utmost importance. It will be the direct responsibility of ATFO/OHE to ensure that the Tower Wagon under his control is maintained satisfactorily and is always available for attending to OHE and for use in the event of breakdowns.

Each Tower Wagon should carry necessary tools for maintenance of OHE and attending to breakdowns such as tackles, straining screws, clamps, ropes, a minimum of two ladders as well as adequate stock of insulators, contact and catenary wires and other OHE fittings. An approved list of tools and equipment to be carried in each Tower Wagon should be issued by DEE/Tr.D. It will be the responsibility of ATFO/OHE to ensure that tools and equipment as per the approved list are always available on the Tower Wagon.

A monthly Mechanical Inspection of the bogie and running gear of each Tower Wagon shall be done by a nominated TXR of the Mechanical department, headquartered close to the OHE depot, where the Tower Wagon is normally stabled. For each Tower Wagon on a zonal railway, the TXR responsible for monthly Mechanical Inspection will be nominated and a Joint Circular to this effect must be issued by CME and CEE.

The ATFO/OHE in-charge of the Tower Wagon will advise the TXR concerned the date on which the Tower Wagon is required to be attended for monthly inspection and running repairs. Such advice shall be given 48 hours in advance. It will be the responsibility of the ATFO/OHE to ensure that this monthly advice is issued regularly and the Tower Wagon is offered for inspection and attended to every month. The TXR will arrange for examination of bogie, running gear, under frame, under gear fittings and axle boxes only, in accordance with IRCA rules Part III. He will also arrange for stenciling the date of monthly examination on the sole bar of the Tower Wagon.

Depending on the intensity of usage of the Tower Wagon in each railway, the CEE and CME should jointly decide the interval at which the Tower Wagons are required to be given POH. Such POH will be done in the nominated C&W workshop of the zonal railway.

The day to day maintenance of the diesel engines and driving gear of the Tower Wagons will be the responsibility of the ATFO/OHE concerned. The Tower Wagon drivers should carryout the daily maintenance. Specialized staff conversant with the maintenance and overhaul of diesel engines and driving gear should be available on each division for attending to the monthly and six monthly maintenance schedule of the diesel engines and driving gear. Depending on the work load, two or three divisions may be grouped together for the purpose of posting such specialized staff if it is convenient.

Taking into account the total number of Tower Wagons and the need to relieve Tower Wagons for the purpose of POH etc., in each zonal railway, one or more spare Tower Wagons may be provided as necessary.

S.R.17.08.5. Rules for operating Tower Wagon:

1. No Tower Wagon may be operated by anyone unless he is authorised to do so after he has been examined for his knowledge of the rules prescribed.

2. Scope:-

   The following rules shall govern the working of a Tower Wagon fitted with a pantograph for the purpose of inspection of traction OHE either during commissioning of completed sections of traction OHE or during periodical inspections carried out by the traction maintenance staff. All staff in-charge of operation of Tower Wagons shall make themselves fully conversant with and act according to the special instructions given below.

3. Movement: The movement of Tower Wagons on tracks will be governed by all rules governing movement of trains.

4.1. No Tower Wagon shall be driven except by an authorised person and no person shall be so authorised unless he has proper road and working knowledge of the section on which the Tower Wagon is operating. In addition to being conversant with the operation of the Tower Wagon, he should also be in possession of valid competency certificate for the task.

4.2. The Tower Wagon shall be driven during contact wire level and stagger recording operations at a speed not exceeding 10 KMPH. This shall be done by running on the first gear. Riding on the clutch for this purpose is prohibited.

4.3. If the Tower Wagon is driven for other than recording operations, the speed should not exceed the maximum permissible speed to which the vehicle is cleared to run (stenciled), subject to the restrictions, temporary or permanent, imposed on account of engineering, signalling or other considerations:

4.4. In each TRD maintenance depot, one or more OHE staff duly trained with valid competency certificate shall be kept as trainee reserve for driving a Tower Wagon in exigencies.

   Note: High speed Tower Wagons are special type of Tower Wagons with eight wheeled bogie under frame intended to run at higher speed duly observing all sectional speeds and other speed restrictions and the maximum permissible speed that it can run will be stenciled on them.

5. Pantograph operation:-

5.1. The pantograph mounted on the roof of the Tower Wagon is electrically bonded to the under fame by means of cable connections. The cable connections should be checked before start of each operation for checking and adjustment of OHE.

5.2. The pantograph shall normally be kept in the fully lowered position and clamped securely by means of the special clamp provided for the purpose. No string, chord, etc shall be used for the purpose.

5.3. Before any person goes up to the roof for the purpose of commencing inspection and adjustment, the section of the traction OHE concerned shall be made dead and earthed at both ends. Additional earths shall be provided where necessary. After earthing OHE as above an additional earth shall be provided near the Tower Wagon on the OHE of the track on which the Tower Wagon is standing. An authorised person, not lower in rank than a Lineman, shall then go up on the top of the Tower Wagon and remove the clamps so as to release the pantograph.

5.4. Under no circumstances should the Tower Wagon work with the pantograph raised without an earth on either side of it on the section of the OHE on which it is working.

5.5. In order to ensure that the pantograph does not enter a section with live OHE, the Tower Wagon shall be protected on both the sides with banner flags and other signal flags. The Driver shall further stop the Tower Wagon ahead of all turnouts, crossovers, insulated overlaps and section insulators and cross them only after ensuring that the section ahead is dead and earthed. Banner flags shall only then be removed for the purpose of admitting the Tower Wagon into the section ahead.

5.6. At the end of the inspection and checking, the pantograph shall be lowered and clamped by an authorised person not lower in rank than a Linesman working on the roof after earthing the OHE of the track on which the Tower Wagon is working. The earths on OHE near the Tower Wagon shall then be removed after all persons working on the roof have come down from the roof.

6. Tower Wagon provided with revolving tower:

6.1. Revolving tower shall ordinarily be in the normal position. i.e., along the length of the Tower Wagon.

6.2. The revolving tower shall be moved out of the normal position, only when the Tower Wagon is stationary.

6.3. The Tower Wagon shall be moved only after the revolving tower has been put back to the normal position.

S.R.17.08.6. Annual maintenance and check by Tower Wagons:

This schedule must be carried by Tower Wagon. During this schedule, fittings are not generally dismantled but all fittings which are found defective must be replaced. In addition, clearances, heights, stagger etc., should be checked and corrected.

The details of work to be carried out during this schedule are as under:–

S.R.17.08.6.1. Masts, portals and cantilever supports:

1. Check rail level and setting distance against markings on the masts and entries in the registers, variation above 20 mm in setting distance and 20 mm in rail level should be notified to the PWI for correction. Variations, even within the above limits, should not be permitted, if the schedules of dimensions are infringed.

2. Check all steel parts and remove rust of painted steel works wherever found. Rusty portions after cleaning must be given two coats of zinc chromate and painted wherever required. Grease all turn-buckles and pulleys.

3. Check all anchors for tightness of bolts and provision of check nuts and pins wherever required. Grease all turn-buckles and pulleys.

4. Examine the foot of each structure to ensure that muffs permit drainage of water outwards. Clean the muffs of any muck or dirt that might have accumulated. Cracked or damaged muffs must be recast.
5. Check all bonds thoroughly. Defective bonds must be rectified and missing bonds replaced.
6. Inspect all galvanized pipes and fittings. Where galvanization is found to be chipped off, fitting or pipe may be replaced.
7. Inspect and tighten all G.I. bolts.
8. Examine register arm and steady arm hooks for possible cracks. Check for possible crack on steady arm tube itself.
9. Clean all insulators, carefully check for cracks and replace insulators which are cracked or chipped.
10. Lubricate stay arm fittings i.e., compression tube bolts or turn buckle threads and ensure free movement.
11. Check and adjust heights and staggers on the basis of setting distance and rail level marked. Close co-ordination with PWIs is required for keeping the permanent way at correct location.
12. Check presence of prescribed sign boards such as caution notice boards, number plates, coasting boards etc. Paint the boards as required. Ensure that they are well secured.
13. Ensure that the drain holes in the tubes are free and not clogged.

S.R.17.08.6.2. Contact and catenary wires:

1. Thoroughly examine conditions of contact and catenary wires, particularly for kinks and twists in contact wire and broken strands of catenary wire.

   Note:–Any stranded conductor (catenary wire etc) should be suspended if more than 20 percent of the strands are found broken.
2. Check tightness of PG clamps and jumpers. If necessary, open them for thorough examination.

S.R.17.08.6.3. Droppers: Check droppers and tighten bolts wherever required.

S.R.17.08.6.4. Turns Outs:

1. With Tower Wagon running on main line, check up if the loop OHE passes smoothly on the pantograph.
2. With Tower Wagon running on loop line check up if the main line OHE passes smoothly under the pantograph.
3. Check up stagger at turnout of both the OHEs with respect to both loop and main lines. (It shall not normally exceed 300 mm)
4. Check up that the main line OHE of overlap type turnout is about 50mm below that of the turnout OHE.
5. Check up cross contact bar, if any for displacement and distortion.
6. Check for hit marks if any.
7. Check for hard spots near rigid droppers, if any,

S.R.17.08.6.5. Section insulators:

1. Clean insulators and replace badly chipped or even slightly cracked insulators.
2. Check up runners for flash marks.

3. Observe for hit marks on runners.
4. Check for excessive wear in contact wire near anchor clamps.
5. Check the level of the assembly and adjust if necessary.
6. Tighten PG clamps of droppers and stiffeners.

S.R.17.08.6.6. Isolators:

1. Check number plates. They should be clean and well secured;
2. Check correctness of operation: correct alignment of contacts and arcing horns;
3. Check earth continuity wherever applicable;
4. Lubricate moving parts and locks;
5. Check interlocks where provided;
6. Check that the distance between male and female contacts in open positions is 380 mm to 500 mm depending upon the type of isolators.

S.R.17.08.6.7. Overlaps:

1. Check up height and stagger of OHE in the overlap section.
2. Check up whether the normal minimum clearance of 500 mm is available between the two OHEs in an insulated overlap and 200 mm in the case of un-insulated overlap.
3. Check up whether the lifting of out-of-run OHE is correct.
4. Check for parallel running of contact wires in the overlap for about 4 M in the panto sweep region.

S.R.17.08.6.8: Contact wire thickness:

Measure and record thickness of contact wire.

S.R.17.08.6.9. Neutral Section:

Carryout all checks as far as overlap in the case of overlap type neutral sections and as far as section insulators in the case of section insulator type neutral sections.

S.R.17.08.6.10. Over line structures:

1. Check and record horizontal and vertical clearances and adjust OHE as required.
2. Check for any flash marks underneath the bridge structures.
3. Check if minimum height of contact wire is available.
4. Check that the gradient of contact wire on either side does not exceed 3 mm.
5. Check up that smoke screens are well secured and have adequate clearance from OHE. If not, get these attended to by engineering department.

S.R.17.08.6.11. Level crossings:

1. Check up height of contact wire.
2. Check for any flash marks underneath the bridge structures.
3. Check if minimum height of contact wire is available.
4. Check that the gradient of contact wire on either side does not exceed 3 mm.
5. Check up that smoke screens are well secured and have adequate clearance from OHE. If not, get these attended to by engineering department.
6. Check and adjust height and slope of contact wire.

7. Examine for water tightness and get necessary repairs done by engineering departments.
8. Check rail level marks on side of tunnels.

S.R.17.08.6.12. Regulating equipment:

1. Check ‘X’ and ‘Y’ in the case of pulley block type equipment and ‘Z’ and ‘Y’ in the case of winch type equipment against prescribed values of the temperature at the time of checking, making use of turn buckles, adjust as required.
2. Check that the compensating plate is vertical, if not adjust as required.
3. Lubricate pulleys and other moving parts.
4. Check if 20 mm vide bands in black colour are painted on the mast to indicate upper and lower movement of counter weight.

S.R.17.08.6.13. Bands and earth connections:

1. Check all bands and replace defective or missing bands, and paint all bands.
2. Inspect earth and record each resistance. Earth having resistance of over 10 ohms, should be attended to.

S.R.17.08.6.14. Masts:

The verticality of all masts should be checked up with plump bob and remedial action taken as required.

S.R.17.08.6.15. Sites affected by accidents, should be specially checked and adjusted.

S.R.17.08.6.16. Feeder lines:

1. Inspect guard wires at road crossings;
2. Inspect earthing of towers;
3. Measure and record the earthing of towers;
4. Clean insulators.

S.R.17.08.7. Equipment:

The following equipment should be carried by the Driver of the Tower Wagon.

1. One copy of hand book for Loco Pilots & Guards.
2. One copy of Working Time Table.
3. One portable field telephone.
4. One watch.
5. Three sets of HS flags.
6. Two tricolor HS lamps.
7. One tail lamp.
8. Ten detonators.
9. One Powerful electric torch.
10. One chain with pad lock & Key.
11. One pair of spare spectacles.
12. Such other equipment and stores as may be prescribed by the electrical department.
13. General and subsidiary rules for 25KV A.C. traction.

Speed of Tower Wagons:

The Tower Wagon shall run at a speed stenciled subject to Caution Orders in force. If the Tower Wagon is driven for inspecting contact wire level and stagger recording operations, the speed should not exceed 10 KMPH and this shall be done by running on the 1st gear. Riding on the clutches for this purpose is prohibited.

S.R.17.08.8**.** Working of Tower Wagons:

1. A Tower Wagon must always run under block protection and shall be treated and signalled as a train.

2. If there is total interruption of communications, the Station Master on duty, must advise the Tower Wagon Driver of the same and the Tower Wagon shall be worked on the section under the rules for working of trains during total interruption of communications.

3. When a Tower Wagon has to stop in the block section for inspection work, Line Block has to be taken in advance.

3.1. The running and stabling of Tower Wagon shall be arranged by Station Master in consultation with the SCOR. In case the control is not working, the Station Master shall consult the Station Masters of the adjoining stations.

3.2. When the Tower Wagon is stabled on running line due to unavoidable circumstances, the mechanical hand brake shall be applied and the Tower Wagon shall be securely chained to the rails in accordance with Rule 5.23 and SRs there under.

3.3. The Tower Wagon shall not be moved into or outside the traffic yard without the permission of Station Master on duty. No shunting on goods or passenger stock must be permitted on the line, where the Tower Wagon is stabled. Shunting should not be performed with the Tower Wagon attached.

3.4. When the Tower Wagon is moved, attached to a train, it should be inside the rear brake-van and the speed of the train to which the Tower Wagon is attached should be restricted to the speed of the Tower Wagon (which is stenciled on the Tower Wagon) observing all other speed restrictions. Necessary Caution Order shall be issued to the Loco Pilot of the train duly advising the Guard of the train and control.

4. No unauthorised person shall be allowed to operate the Tower Wagon.

5. Failure of the Tower Wagon and accidents thereto shall be treated in the same manner as train accidents and action taken as per rules in force.

Special responsibilities:

The Driver shall be responsible to see at the commencement of the journey that the Tower Wagon is fit in all respects to perform the intended journey that is, brake and horn are in efficient working order and the equipment like flags, detonators etc., mentioned in para 7 above are complete.

6. When the Tower Wagon is required to move from one block station to another block station, the operator should run the machine only with the proper ‘authority to proceed’ under the system of working, to enter the block section.

7. However, the following procedure shall be observed for working of Tower Wagon in a block section between two block stations under traffic block, power block etc:

7.1. If one Tower Wagon is programmed to go into the block section and return to the station from where it started, T/1708 with the private number received from the station in advance, shall be issued.

7.1.1. If more than one Tower Wagon are programmed to go into the block section and return to the station from where they started, the first one will be given T/1708 and the succeeding ones will be given Caution Order with the private number received from the station in advance for each Tower Wagon. When T/1708 is received back by the Station Master, it is deemed that the block section is clear.

7.2. When one Tower Wagon is programmed to go into the block section and then proceed further to the next block station, T/A 1708 with the private number received from station in advance, shall be issued.

7.2.1. If more than one Tower Wagon is programmed to go into the block section and then proceed further to the next block station, the first and the following Tower Wagons will be given Caution Order and the last one will be given T/A 1708 with the private number received from the Station in advance for each Tower Wagon. When T/A 1708 is received by the Station Master of the next station, it is deemed that the block section is clear.

7.3. The speed of the first Tower Wagon will be booked speed and the following ones will observe a speed restriction of 25kmph during day and when view is clear and 10kmph during night and also during day when view is not clear.

7.4. Station Master whoever receives T/1708 and T/A 1708 shall intimate to the other Station Master of the station at the other end under exchange of PN in token of block section being clear of Tower Wagons.

Note: 1. When more than one Tower Wagon is sent into the block section, the number of Tower Wagons permitted into the block section shall be decided before dispatch of the first Tower Wagon and accordingly an endorsement to this effect shall be made in the Authority/Caution Order about the total number and sequence of dispatch of each Tower Wagon.

2. All the entries pertaining to each Tower Wagon shall be made in TSR in red ink.

7.5. On completion of the work and after ensuing that the block section is clear of Tower Wagons, the official in-charge will hand over to the Station Master a *safety certificate* for resumption of normal working and specify therein whether any speed restriction is to be observed. On receipt of this certificate, the Station Master will advise the SCOR and all concerned and cancel the traffic block, power block etc., and resume normal working.

SOUTH CENTRAL RAILWAY

UP/DOWN Form No. T/1708
S.No._____

AUTHORITY TO PROCEED FOR TOWER WAGON AND TO RETURN TO THE STARTING STATION (DRIVER / IN-CHARGE / RECORD)

Station: _____
Date: _____

To: Driver of Tower Wagon

LINE CLEAR TICKET

1. You are hereby authorised to enter block section on Up / Down line between – _____ and _____ stations and permitted to proceed upto KM_____ only.
2. You are permitted to work from _____ to _____ hrs.
3. On completion of work, you are permitted to return to this station.
4. Private Number received _____
5. Number of Tower Wagons which will follow:_____

AUTHORITY TO PASS SIGNALS AT 'ON' POSITION

You are authorised to pass _____ signal/signals in 'On' position, speed not exceeding 15 KMPH, observing hand signals at the foot of signal post, if it protects points.

CAUTION ORDER

You are permitted to run your Tower Wagon at speed as instructed by the in charge of Tower Wagon duly observing the following restrictions in force.

S. No.	Stations between		Kilometre		Speed	Cause/Remarks
			From	To		
1.						
2.						
3.						
4.						

Understood the contents.

Signature of Driver Signature of In-charge Signature of Station Master
Station Stamp
Time:

SOUTH CENTRAL RAILWAY

UP/DOWN Form No.T/A.1708
S.No._____

AUTHORITY TO PROCEED FOR TOWER WAGON TO CLEAR INTO THE STATION IN ADVANCE (DRIVER/IN-CHARGE/RECORD)

Station:_____ Date:_____

To: Driver of Tower Wagon

LINE CLEAR TICKET

1. You are hereby authorized to enter block section on Up / Down line between _____ and _____ stations.
2. You are permitted to work from _____ to _____ hrs.
3. On completion of work, you are permitted to proceed to _____ station.
4. Private number received _____
5. Number of Tower Wagons which shall follow _____

AUTHORITY TO PASS SIGNALS AT 'ON' POSITION

You are authorized to pass _____ signal/signals in 'on' position, speed not exceeding 15 KMPH, observing hand signals at the foot of signal post, if it protects points.

CAUTION ORDER

You are permitted to run your Tower Wagon at speed as instructed by the in-charge of Tower Wagon duly observing the following restrictions in force.

S. No.	Stations between		Kilometre		Speed	Cause/Remarks
			From	To		
1.						
2.						
3.						
4.						

Understood the contents.

Signature of Driver Signature of In-charge Signature of Station Master
Station Stamp
Time:

S.R. 17.08.9. Periodical examination-

Tower Wagon is to be inspected monthly by a nominated TXR as per 0519 (2) para of "Manual of AC Traction and Operation". The C&W/RE is nominated for this purpose.

S.R. 17.08.9.1. Stationing-

Tower Wagons are stationed at the stations nominated by the division.

S.R. 17.08.9.2. Time limit for turning out Tower Wagons-

Tower Wagons, going to the spot for restoration of OHE, have to be moved on top priority just as ART. The target time for turning out the Tower Wagon, to go to the spot for restoration, is as under:-

1. During day light hours i.e., from 6 hrs to 18 hrs – 30 minutes.
2. During night hours i.e., from 18 hrs. to 6 hrs - 45 minutes.

The TPC and the SCOR shall both make detailed entries in the log sheets showing the time when the instructions are issued and particulars of train movements stopped. Traffic over the section in which the train movements have been stopped as above, may be resumed only with the approval of the TPC, who shall convey the instructions for the resumption of traffic to the CHC in the form of a message supported by a PN stating clearly whether any speed restrictions are to be imposed.

17.09. Additional rules for electrified sections.––

Special instructions for working of trains on electrified sections shall be notified by the authorized officer.

SR.17.09.1. Transmission and distribution by section and siding switches.

1. Section and siding switches installed in the overhead equipment shall be operated only by the authorized persons.
2. In the event of a fault necessitating the isolation of a section in addition to the faulty one, the Electrical Foreman or Chargeman shall open the concerned switch and inform the TPC immediately.
3. Every Station Master shall be trained in the operation of section and siding switches in an emergency (See S.R. 17.03.5.3.4). They shall open or close such switches when called upon to do so by the TPC and shall be treated as authorized persons for this purpose. They shall lock the switches in the position advised by the TPC and shall not part with the key until it is cleared by the staff of the traction department.
4. No switch affecting the feed to main running line or loco line/lines shall be closed or opened without the prior written permission of the TPC. As an exception to this rule, these switches may be opened in times of emergency by the authorized persons. All operation of sectioning or isolating switches shall be reported to the TPC in every case.
5. Section switches are located as indicated in the diagram annexed to SWR and general sectioning diagram. These diagrams show the distinguishing numbers of section switches, the stations they control and the location of each switch.
6. The CHC is in direct communication with the TPC who is connected by telephone to all sub stations, track sectioning cabins and the receiving station of power supply. All messages to the TPC regarding the operation of train services shall be routed through the CHC. In case the CHC cannot be contacted, the information shall be given to the TPC, who in turn, shall inform the CHC.