

APPENDIX -‘E’G H A T R U L E S

SRG1. Ghat Rules - The Subsidiary Rules for working on sections having steep gradients may be referred to as Ghat Rules and the sections to which they apply as Ghat Sections.

SRG2.

- (a) These Rules apply to the following sections of North Central Railway: -
Allahabad Division - Chunar-Chopan

NOTE: -

- (i) Divisional Railway Manager shall issue special instructions for local features prevailing on Ghat Sections over their Divisions.
- (ii) Divisions shall embody special instructions in SWRs /Working instruction for working trains on sections instructions should be consistent with General & Subsidiary Rules.
- (b) All other Subsidiary Rules apply to the working of Ghat Sections, except those modified or superseded by the Ghat Rules.
- (c) Certificate of Competency- The under noted staff, who are directly concerned with train movements, must qualify and shall not assume duties on graded sections until they are granted a certificate of competency by their executive officers: -
- | | |
|-------------------------------------|---|
| 1. Loco Pilots/Asst. Loco Pilots | 5. Guards |
| 2. Shunters | 6. Shunting Jamadars/ Shunting Masters |
| 3. Train controllers | 7. Levermen/ Cabinmen and Cabin Masters |
| 4. Station Masters and Yard Masters | 8. Pointsmen/ Porters/ Shuntmen |
- The certificate of competency shall be valid for a period of three years only.
- (d) A Shunter or a Loco Pilot, before being allowed to learn road on Ghat Section s, should qualify in Ghat Rules.
- (e) A Loco Pilot on having learnt the Ghat Section will not be allowed to work independently, unless a Loco Inspector, after travelling with him, declares the Loco Pilot conversant with the section.
- (f) Certificate of Competency - Asst. Operating Manager are authorised to examine, issue and renew certificates of competency in the following form:-

North Central Railway

I, the undersigned, hereby certify that Sri has passed the examination in Subsidiary Rules for working sections with steep gradient contained in unified Ghat Rules for the North Central Railway.

.....
(Designation of Divl. Officer)

NOTE: - Sr. Divisional Operations Manager may nominate Senior subordinates to examine, issue and renew certificate of competency in respect of class IV staff.

B R A K E S

SRG3. Vacuum/Air Brake - Rules on the Vacuum/Air Brake are to be read in conjunction with other extent Vacuum/Air Brake Rules.

SRG4. Engine Brakes - Every engine working on Ghat Section must be fitted with the automatic vacuum/Air brake in good working order and must be itself braked either by the vacuum brake or air brake. The hand brake of all engines must be in proper working order.

SRG5. Vehicle Brakes - Train running on Ghat Section must be vacuum/air braked throughout.

SRG6. Hand Brakes - All goods vehicles on a train except powder vans must be fitted with a screw brake or hand lever brake capable of being fastened down.

SRG7. Examination of Train before Starting - The train examiner, Loco Pilot and Guard must test the vacuum/Air brake of each train before its departure according to the special instructions laid down in this behalf.

SRG8. Minimum Vacuum/Air Pressure on the Engine and in Rear Brakevans-

(a) Minimum air pressure in engine and rear brakevan of Passenger and Goods trains at the time of starting a train.

Particulars	On Engine		On rear brakevan	
	FP	BP	FP	BP
(i) On Mail, Express and Passenger train	6 Kg/Cm ²	5 Kg/Cm ²	5.8 Kg/Cm ²	4.8 Kg/Cm ²
(ii) On Goods train with load up to 40 air braked 8 wheeler wagons.	-----	5 Kg/Cm ²	-----	4.8
(iii) On goods trains with more than 40 air braked 8 wheeler wagons.	-----	5 Kg/Cm ²	-----	4.7 Kg/Cm ²

(b) Standardization of vacuum level in engine and brakevan of passenger and goods trains: -

(i) Minimum level of vacuum in engine and brakevan: -

Type of Service	Engine	Brakevan	Average
M/E	53	47	50
Passenger	50	44	47
Goods	46	38	42

(ii) Whenever a coaching train runs initially on passenger and subsequently on express services, vacuum levels on such rakes will be maintained as those prescribed on M/E trains.

R E S P O N S I B I L I T Y O F T R A I N S T A F F A S R E G A R D S B R A K E S

SRG9. Loco Pilot to try Vacuum/Air Brakes - Loco Pilot must satisfy himself that the vacuum/Air brake is in proper working order through out the train before leaving the starting station and at each station where any vehicle is attached or detached and also before descending steep gradients. He must also satisfy himself that he has enough brake power before passing the outer signal of any station at which the train has to be stopped.

SRG10. Defective Vehicles - If a Loco Pilot finds the vacuum/Air brake on his train defective, the vehicle with defective vacuum/Air brake if not immediately repairable must be detached from the train, Under no circumstances, whatsoever may/D.V. cylinder be blanked off. He must also refuse to attach any vehicle with a defective brake, but he must give his reasons in writing to the Station Master if asked to do so.

SRG11. Guard to see Vacuum/Air pressure Gauge - The Guard incharge before giving the signal to start must satisfy himself that the required vacuum/Air pressure is registered on the gauge in his brakevan. If the required Vacuum/Air pressure is not registered, he must inform the Loco Pilot. If the Loco Pilot is not able to create the required vacuum/Air pressure as required on the gauge in the rear brakevan, the train must not start until the defect has been remedied by detaching defective vehicles or otherwise. The signal to start given by the Guard Incharge is an indication to the Loco Pilot that the gauge in the rear brakevan shows the required vacuum/Air pressure.

SRG12. Descending Long and Heavy Grades: -

- (a) In controlling trains on descending long and heavy grades, Loco Pilots are cautioned against allowing the vacuum above the pistons to fall too low which usually happens unless periodically restored by blowing up with the large ejector. The destruction of vacuum above the pistons, owing to leakage, is always taking place during the continuous applications of the brake while descending long grades, and it is of the utmost importance that the vacuum above pistons should be restored by the use of large ejector but before using the large ejector the speed must be reduced to allow for increase of speed which will take place when large ejector release to brakes. The large ejector must be used in several short periods instead of one long period for the above purpose. Advantage should be taken of long curves or starts after stops at catch sidings to recreate the vacuum above the pistons. Care must be taken that the speed during the release of the brakes is not allowed to increase beyond a safe limit. If the speed is allowed to get beyond the certain point, the brakes will not pull the train up.
- (b) Loco Pilots must note, that reading of vacuum chamber needle on the engine gives no indication also the vacuum above the pistons throughout the trains.

SRG13. Control of Vacuum/Air Brake on Running Trains: –

- (a) When a second leading engine is employed to pull a train (and not a banking engine pushing it). The Loco Pilot of the first leading engine will be held responsible for the working of the automatic vacuum/Air brake .The Loco Pilot of the second leading engine must, however, in case of emergency, assist in stopping or reducing the speed of the train by applying the air and hand brakes as may be required but he must not maintain or recreate vacuum/air pressure.
- (b) When an additional engine or engines are employed to push a train, the Loco Pilots thereof must not interfere with the working of the vacuum/Air brake, which shall be under the control of the leading engine Loco Pilot. As laid down in para (a), except in case of a run back, when the banking engine Loco Pilot automatically becomes the leading Loco Pilot.
- (c) Whenever a Ghat Section comprises of either descending or ascending gradient only and not both, in the same direction, the second engine should be attached as under:-

- (i) On descending gradient in front of the train.
- (ii) On ascending gradient in the rear of the train.

If, however, it consists of both descending and ascending gradients following each other in quick succession, the banker may be attached in the rear only of the train.

- (d) Loco Pilots of all additional engines will, at all times keep the handle of the vacuum ejector in the running position, and the small ejectors must be closed.
- (e) In the event of the Loco Pilot of the engine in rear requiring in an emergency to attract the attention of the leading engine Loco Pilot, he shall give a whistle signal (one long blast)

Note: - These rules are to avoid the serious danger, which would arise if the Guard or Loco Pilots of additional engines were to attempt to put the brake on, while the leading Loco Pilot was trying to recreate vacuum.

SRG14. Stopping at Stations -

- (a) Loco Pilots must enter stopping stations at such a speed that it would be possible to stop the train at proper place. The vacuum/Air brake must be applied by the Loco Pilot in stopping train or reducing its speed.
- (b) Guards must watch the speed of the train and assist Loco Pilots by the use of their hand brakes, if necessary. They may only apply the vacuum/Air brake when it is necessary to make an emergency stop.

WORKING OF TRAINS

SRG15. Sand Boxes – Dry, sharp sand not mixed with clay, is essential on all Ghat sections and Loco Pilots must see that their sand boxes are full and sanding gear is in working order.

SRG16. Speed Restriction – The speed of trains laid down in the working Time Table must be rigidly adhered to. In no circumstance whatsoever may time be made up on descending grades steeper than 1 in 50.

SRG17. Starting a train – When a train more than one engine is ready to start, the leading engine must whistle first. All being ready, the rear engine will also give whistle as a signal to all other engine starting from the rear.

SRG18. Admission of Train in Station – When two trains are approaching a station from opposite directions and cannot be received without one of them being stopped, the descending train must be stopped at the first stop signal and the ascending train given preference provided that the descending train is not stopped in a tunnel or on a bridge.

SRG19.

- (i) If for any reason, a train is brought to a stand for a period longer than 15 minutes, the hand brakes of the locomotive shall be applied in addition to the application of vacuum/Air Brakes etc. If such stoppage happens to be, of train having vehicles with roller bearings on a section with a grade of 1 in 150 and steeper, and train having vehicles other than roller bearings on a section with a grade 1 in 100 and steeper, the following additional precautions shall be taken.

On trains carrying the passengers, the Guard shall apply hand brakes in the brakevan and wedges or scotch blocks as the case may be to the wheels of two vehicles nearer to the descending steep incline. On goods trains, hand brakes of at least one third of the wagons in the train or 10 wagons behind the engine and 5 wagons inside the brakevan, whichever is more, shall be pinned down, in addition to the application of Guard's hand brake in the brakevan.

- (ii) When the train is expected to start, proper vacuum/air pressure must be recreated/ recharged, as the case may be, and the vacuum brake/air brake must be applied before the wedges or scotch blocks removed and/or hand brakes released. Thereafter the vacuum/air brakes may be released to start the train.
- (iii) The Loco Pilot himself or, on his direction, the Assistant Loco Pilot, shall be responsible for application and release of the hand brakes of wagons behind the engine. The Guard shall be responsible for similar action in regard to the wagons inside the brakevan.
- (iv) Considering the condition of brake power on train, the Loco Pilot may take additional precautions, during the stoppage of his train on section flatter than 1 in 150 or 1 in 100 to avoid run away.

SRG20. Failure of the Vacuum/Air Brakes between Stations - If the vacuum/Air brake becomes defective while the train is running between stations so that it is dangerous to proceed, the Loco Pilot must bring the train to a stand and take it in portions to the next station, each portion being not more than he can safely control. The vehicles left behind will be secured. The Guard will remain with the portion of the train left behind and protect it.

B A L L A S T T R A I N S

SRG21. Brake of Ballast Trains- Each vehicle of a ballast train, in addition to being provided with the vacuum/air brake must be provided with an efficient hand brake capable of being fastened down.

SRG22. Application of Brakes when Stopping Ballast Train on a Grade - On stopping a ballast train on a grade, the Loco Pilot must give long blast of whistle to attract the attention of the Guard, and thereafter give three sharp blasts for the application of all hand brakes. The brakes must not be released until the Loco Pilot has signalled for this by giving two sharp blasts.

SRG23. Position of Ballast train engine when standing on a Grade 1 in 50 or steeper – Before entering a section on which a ballast train is required to stand on a grade of 1 in 50 or steeper, the engine must be attached so that when the train is standing, the engine is at the down hill end of the train.

SRG24. Vehicle not to be detached from a Ballast Train where Grades are 1 in 50 or steeper– Vehicle must not be detached from ballast train on a Grade of 1 in 50 or steeper. The engine itself may be detached with the Guard's permission after he had seen that the hand brakes on each vehicle are properly applied.

SRG25. Ballast Train not to work at Night - Ballast train must not work at night except in an emergency.

SRG26. Restrictions and conditions for Pushing Ballast Trains - Ballast trains are not allowed to be pushed outside station limits over descending gradients. Such trains may push provided that: -

- i. The portion of the line over which the train will run is on a continuous ascending grade.
- ii. The speed of the train must not exceed 15 Kms per hour on the straight line and 8 Kms per hour on the turn out if the leading vehicle is a brakevan and 8 Kms per hour, if the leading vehicle is not a brakevan.
- iii. The Guard must travel in the leading brakevan or the leading vehicle and must exhibit hand signals to the Loco Pilot.
- iv. The train crew must keep a good lookout especially in the direction in which the train is moving and must be prepared to stop short of any obstruction, and

- v. When approaching turn-outs, the Guard must stop the train and satisfy himself that the points are correctly set and that all non- interlocked facing points are locked and manned.

Note: This rule will also apply when the engine is placed somewhere in the middle of the train in an emergency or in exceptional circumstances.

S A F E T Y S I D I N G

SRG27. Definition – There are two kinds of safety siding called “Catch” and “Slip” siding.

- (i) *Catch sidings* are placed above stations approached by a descending grade to protect them from run-away vehicles or trains.
- (ii) *Slip sidings* are placed below station on a grade to prevent vehicles escaping from the station yard.

SRG28. Catch Siding –

- (a) The points of ‘Catch’ siding must always be set and locked for the ‘Catch’ siding except when a train is to be received or despatched.
- (b) ‘Catch’ siding points should not be set for the main line for the reception of an approaching train unless it has first been brought to a dead stop at the first stop signal and the Loco Pilot whistles, except when the following conditions are fulfilled.
 - i. The line on which the train is to be received is clear and the train is to be received on the main line.
 - ii. The points leading to the catch siding as well as the points required for a run through train are set for the main line immediately after granting line clear to the block station in rear.
 - iii. Line clear has been obtained for the block section ahead.
 - iv. The gradients in the block section ahead are such that the train can be brought under control easily.
 - v. Warner signal in the lower quadrant signalling territory is not taken ‘Off’ and distant signal in multiple aspect signalling territory is kept at ‘caution’ position.
- (c) In the case of an outgoing train, the ‘Catch’ siding points must not be set for the main line unless permission to approach has been received from the station in advance.
- (d) (i) The points must be reset and locked for the ‘Catch’ siding as soon as the last vehicle of the train has passed over them.
 - (ii) Hand Signals will be exhibited at all ‘Catch’ siding points. The points shall be fitted with point indicator showing red when the points are set for catch siding and white when they are set for the main line (Except when spring points are provided).

SRG29. Locking and Unlocking the Points of the Slip Sidings - Except for shunting, the points of slip sidings must be normally locked for the siding and must only be unlocked and set for the immediately before taking off the signals for the admission of an ascending train or, in the case of descending train, after permission to approach has been received from the station in advance. If the authority to proceed, for a descending train which is booked to run through the station, has not been received, the descending train must be first brought to a dead stop at the first stop signal before the ‘Home’ and/or ‘Outer’ signals are taken off for its reception. In the case of a descending train. The slip siding points may only be unlocked and set for the main line, when permission to approach has been received from the station in advance. The points must be reset for the slip siding as soon as the last vehicle of a train has passed over them.

NOTE:

- (a) At certain slip sidings, spring points have been provided. These are normally unlocked and are set for the siding. An ascending train trails through them while entering the station. These points need only be locked for despatch of a descending train and this should be done only after permission to approach has been obtained from the block station in advance.
- (b) Point indicators at Slip Sidings- Point indicators showing red, when the points are normally set for the siding and white when set for the main line, shall be provided at all slip siding points. (Except where spring points are provided).
- (c) The duty of locking and unlocking “catch” and “slip” siding points may be performed only by the Pointsman/Porter in whose special charge they have been placed under the orders of the Station Master.

PATROLLING ON GHAT SECTIONSSRG30. Orders for Patrolling –

- (a) The Sr. Divisional Engineer will decide and issue order regarding the Sections to be patrolled and the date on which patrolling is to begin and stop.
- (b) At Chunar-Chopan Ghat section the Sr. Divisional Engineers will decide the question whether regular night patrolling is to be introduced during the monsoon period i.e. 1st June to 31st October. But the exact date of commencement and termination will be decided by Assistant Engineer of the section. Patrolling should not be started until the monsoon actually arrives.
- (c) Vulnerable points - All the vulnerable points will be watched by static patrols, all such points being carefully selected by the Sr. Divisional Engineer. All vulnerable points (including vulnerable bridges and locations, which are subject to slips, rock-falls. Water falls etc.) will be provided with sign boards fixed at a distance of 800 metres on either side of the vulnerable points. The fixing of these boards will be arranged by Divisional Engineers immediately before the monsoon and removal immediately after the monsoon.
- (d) The Railway track and bridges will be patrolled during monsoons, stormy weather, heavy snowing or in the event of any other emergency which may interfere with the safe running of trains. Rains during the winter months also may be a source of danger to the line and therefore, patrolling should also be introduced on such sections where necessary during the winter rains.
- (e) Gang Patrol - In the event of a sudden storm and emergency during day and night, the Mate will on his own initiative, organise patrolling over the length affected, independent of any other patrolling being in operation. This patrol will confine its inspection to known points of danger such as cuttings, culverts and bridges likely to scour and their approaches, embankments likely to be affected and those places which are liable to be in danger on account of likely breach in railway affecting works such as banks and dams. In the absence of the mate, the keyman will organise this patrol. Half the gang will go out during the day and half during the night.

SRG31. Patrol Charts - Patrol charts will be prepared by the Divisional Engineer after the publication of the time table to come into force from 1st April taking into consideration the following: -

- (a) (i) As far as possible, each block section will be treated as a unit of length and will be divided into approximately equal beats;
- (ii) The beat of patrolmen will not exceed 4.5 KMs.
- (iii) The patrolman will go out on his beat in accordance with the Chart. Patrol charts will be scrutinised by JE and SE (P.Way) regularly and by ADENs and DENs frequently when on their inspection rounds. A Patrolman shall not be restored to walk more than 18 KMs.
- (b) In drawing up patrol charts the Divisional Engineers will arrange for maximum ‘Protection’ possible for all trains carrying passengers between the hours of sunset and sunrise. This protection can be given by organising patrolling as specified above and ensuring that: -

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- (i) The patrolmen meet at the end of their beats before a train (or the first train of a group of trains) enters the section, or
 - (ii) The patrolmen have met and are on their way back when other trains or the group of trains enter the section, or
 - (iii) The patrolmen are not back at the end of their beats a long time before the train enters the section.
- (c) The patrol charts will show all trains between 18 hours and 6 hours with their time of entering and clearing the section so that the charts will show at a glance how the trains have been covered.
- (d) After drawing out the patrol charts, each chart will be examined by the Divisional Engineer to see what cover has been given to each train. If, on any block section, which is known to be giving trouble, the interval between the patrol and the train is too long, an intermediate patrol will be introduced to reduce the interval.
- (e) Copies of patrol charts prepared by Divisional Engineers for different sections will be distributed to the Assistant Engineers, SE/JE and copy of the relevant portion of the chart will be issued to each Station Master with instructions: -
- (i) to record time of arrival and departure of patrolmen in the patrol book and initial these entries, and
 - (ii) to record time of arrival and departure of patrolmen and their names in the station diary.
- (f) Copies of patrol charts together with a statement showing places where Loco Pilots, when running to time, may expect to pass patrolmen, will be sent to the shed foreman by the Divisional Engineer. Loco Pilots will proceed cautiously if patrolmen are not found at the expected kilometrages and report the matter to the Station Master at the next station who will take necessary action and advise all concerned.
- (g) A copy of the patrol charts for patrolling block sections, list of stationery watchmen at vulnerable points and mobile patrols between stations will be sent to the office of the General Manager (Engineering) in the month of December every year.
- (h) Officers and Supervisors of the Engineering and Operating Departments, during inspections of stations, should check station diaries to ensure that SMs record correctly the time of arrival and departure of patrolmen.

SRG32. Patrol Books –

- (i) Patrol Book in a tin case, containing a sufficient number of pages, will be supplied to each patrolman.
- (ii) The books will be serially numbered to correspond with the number of the patrol on each section. The first page of the book will contain the name of the patrolman, kilometrage of the patrol section and its number. The remaining pages will contain columns for date, station, times of arrival and departure and signatures of Station Master on duty.
- (iii) Disposal of Patrol Books – JE/SE (P.Way) will take over the patrol books from the patrolmen after sunrise and will tear out the carbon copies and send them by the first available train to the Assistant Divisional Engineer for his information and record.
- (iv) Reporting for Duty - Patrolmen will report at the time shown in the chart for duty to Station Master of the station at which they are headquartered. If any of the patrolmen fails to report for duty, the Station Master must immediately send a message to the nearest JE/SE, so that arrangements may be made at once for another man.

When a patrolman, who is due to arrive at a station does not turn up at the appointed time or does not turn up at all, the Station Master on duty will take following action: -

- (a) Stop run through trains proceeding into the block section.
- (b) Advise the Station Master at the other end of the Section to take similar action and also advise the Controller, and

- (c) Issue Caution Order to all trains proceeding into the block section advising the Loco Pilot to remain cautious and specify a speed restriction of 40 KMPH during the day and 15 KMPH during the night/poor visibility. Caution Order will be discontinued when the patrolman from either end of the patrol section arrives at the station and reports that all is well. In cases where the patrolman does not turn up at all, the Station Master concerned should initiate action to ascertain the reason therefore.

SRG33. Duties of Patrolmen -

- (a) To walk to and from over the beat in accordance with chart pertaining to his 'Patrol Section' looking for subsidence, slips, signs of erosion, trees blown across the track during storms or any other causes likely to endanger the safety of the line. Bridges and their approaches will be specially watched. The following are some instances when damage to the line may be apprehended: -
- (i) When the flood level reaches danger level at any of the bridges, or if any damage has started at the bridge and its approaches, even before the danger level has been reached;
 - (ii) When water on one side of the embankment is at a much higher level than on the other side;
 - (iii) When water seeps through the bank from one side to the other;
 - (iv) When any obstruction, such as fallen trees, blocks the waterway of a bridge;
 - (v) When the track shows signs of settlement.
- (b) To take immediate steps to stop trains when any portion of the line is likely to be rendered unsafe. The patrolman must not allow trains to pass over a bridge or track in case of doubt.
- (c) When no danger is apprehended to stand on the cess on the left hand side facing the train and exhibit his number plate turning the light of his lamp on to it so that the number can be seen from the passing train, and to blow on his whistle.
- (d) To obtain signatures of the Station Master on duty at the Station concerned for his arrival and departure and exchange patrol books with adjacent patrolman.
- (e) To exchange reports as to condition on their beats with adjacent patrolman and stationary watchmen.
- (f) To heed instructions from Loco Pilots who may report a condition of danger at a kilometrage and proceed to the place indicated and take necessary measures.
- (g) To post himself at the danger spot in the event of emergency and not to move under any circumstances till relieved by some other gangman.
- JEs and SEs will record date of examining patrolmen in their duties in a patrol book, muster sheet or any other book issued to every patrolman for recording this. Similarly, ADENs on their rounds will examine patrolmen and watchmen in their duties and record the result of the examination in the registers mentioned.

SRG34. Equipment of Patrolman - Each patrolman and watchman on each SE (P.Way) will be numbered consecutively from one end of the section to the other. Each patrolman and watchman will be provided with the following equipment.

- (i) One staff, spiked and with a hook for hanging the hand signal lamp. The staff should further be graduated in 30 cms. height in white and black for taking approximate measurements.
- (ii) One number plate 15 Cms x 15 Cms. number of patrolmen or watchman painted with luminous paint in 7.5 Cms. size figures (If luminous paint is not readily available, the plate and number will have to be larger).
- (iii) 1 tin case containing 10 detonators.
- (iv) 1 set of hand-signal flags.
- (v) 1 tricolour signal lamp.
- (vi) 1 three-cell electric torch with a red-cap by night.
- (vii) 1 box of matches.

- (viii) Whistle.
- (ix) Patrol book in Tin case.

SRG35. Protecting the line - In the event of any portion of the line being breached or otherwise rendered unsafe for traffic, the following procedure will be observed: -

- (a) In case where two patrolmen are employed -
 - (i) The danger signals will be displayed at once in both directions.
 - (ii) The two patrolmen will then proceed in opposite direction showing danger signals. On reaching a distance of 600 metres from the point of danger, each will clip one fog signal on the rail; they will then proceed to a distance of 1200 metres from the point of danger, where they will clip 3 fog signals at a distance of 10 metres apart;
 - (iii) Should the nature of the obstruction be such as to render impossible for either of the patrolmen to get across the gap, as for instance a wash-away with a deep flood or strong current, one of the men will show a danger signal (red lamp or flag as the case may be) and endeavour to stop trains approaching the gap from his side while the other man will proceed, with all haste, towards the station on his side of the gap, fixing fog signals on the way as laid down in item (ii) above, and also informing the mate of the occurrence, if there is any gang-quarter on the way.
- (b) In case where one patrolman is employed - when damage is detected on the line he will -
 - (i) place a red lamp in prominent position to warn a train which may approach from one direction, and run in the opposite direction and clip 1 detonator at 400 metres and 3 detonators at 800 metres from the damaged point;
 - (ii) return to the damaged point and protect the other side with detonators similarly;
 - (iii) in the event of it being impossible to get to the other side of the damaged point (as in a wash-away), place the red lamp or flag so that it can be seen from as great a distance as possible by a train approaching from that direction.
- (c) The patrolman will arrange to send information to the nearest station, or, in case of an impassable obstruction, to the station in the opposite direction reporting the occurrence to the Station Master. He will also send information to the Mate, JE/SE(P.Way).
- (d) The Station Master will -
 - (i) stop trains entering the block section,
 - (ii) advise the Station Master at the other end of the block section, and
 - (iii) advise the Controller and all concerned.
- (e) The Mate will proceed with his gang to the kilometrage and ensure proper protection and attend to repairs as necessary.
- (f) The first duty of all engineering staff on receipt of the report is to proceed to the site and ensure that the line is protected as described above and then make arrangements for repairing the damage that may have occurred.

In the case of suspected damage to a portion of the line, a bridge or its approaches, a thorough inspection will be carried out testing the track, if necessary, by passing a light engine across, after which trains will be piloted over the threatened zones. These inspections, tests with light engine and piloting of trains will be carried out by engineering official not lower than the rank of an JE. In case of doubt the JE must not allow even a light engine to pass across and must await the arrival of the SE, ADEN, or higher railway officials.

SRG36. Importance of Checks - Proper supervision shall be exercised and frequent checks carried out to ensure that the patrolmen and watchmen are on duty and carry out the tasks assigned to them in an efficient manner. For this purpose the following checks are prescribed: -

- (a) SE and JE will cover their lengths by footplate of engine, trains and by trolley at irregular intervals frequently both by day and night.
- (b) Assistant Engineers will exercise similar checks over their entire section.
- (c) The Divisional Engineers will also exercise check during their inspections and examine as many patrolmen as possible in their duties.

SRG37. SE (P.Way)'s Certificate - SE (P.Way) will submit certificate by 15th May each year to their Assistant Engineer, copy to Divisional Engineer that they have made arrangements for monsoon patrolling, and watching of vulnerable locations and bridges and that patrolmen and watchmen have been made conversant with their duties and rules for the protection of the line and vulnerable locations in their beats. The SE (P.Way) will also submit to their ADENs lists of the patrolmen and stationary watchmen with beats locations and bridges assigned to each. The PWI will issue to each individual by name, a certificate stating that he has been examined and is fully conversant with the rules, regulations and duties and also the location of the beat or static posts of duty assigned to him. A duplicate copy of this certificate should be kept on record with the SE (P.Way) in a Register and this copy of the certificate will bear the signatures or thumb impression of the individual concerned. The ADENs and DENs on their rounds will inspect this register and also examine as many as possible of the patrolmen and watchmen in their duties.

S H U N T I N G

SRG38. Loose Shunting - Loose shunting is forbidden, except where specially authorised in the Station Working Rules.

SRG39. Hand Shunting - Hand shunting is forbidden, except where specially authorised in the Station Working Rules.

SRG40. Shunting at Stations with Slip Sidings - Shunting is forbidden, unless the slip siding points are set and locked for the slip siding, except when it is absolutely necessary to shunt on the main line. In this case, the engine must be in front and the points must be manned the whole time any shunting is being carried out over them and must be reset for the slip siding every time the engine has returned over them.

SRG41. Hand shunting at Stations with Slip Siding - Hand shunting is forbidden, unless the points are set for the slip siding.

T R O L L I E S A N D L O R R I E S

SRG42. Brakes on Trollies - All siding trollies in use on grades steeper than 1 in 50 must have two efficient and independent brakes, which must together brake all four wheels. On other ghat sections the trolley need have only one brake capable of braking all the four wheels efficiently. These brakes must be tested before each journey.

SRG43. Brakes on Lorries - All material lorries working on ghat sections must have an efficient screw brake operating on all four wheels and also a tail rope, which must always be manned when running downhill. The brake must be tested before each journey.

Note: - Dip lorries are not allowed to work on ghat sections.

SRG44. The person in charge of a trolley or lorry is responsible for any accident resulting from a defect in the trolley or lorry, which he might reasonably have been expected to discover.

SRG45. Speed of Lorries - On falling grades the speed of a lorry must not exceed 8 Kms. an hour.

SRG46. Lorry only to run in Blocked Section or on Line Clear - Before lorry is allowed to enter a Block Section, the line must be blocked by the engineering official incharge or line clear must be obtained. Not more than two persons, one brakeman and one helper must travel on the lorry itself; the other person would accompany the lorry on foot.

SRG47. Working of Motor and Push Trollies – The motor trollies on Ghat sections may either be run on line clear or trolley permit in accordance with the instructions made down in S.R.15.18/1(14) push trollies shall however run under precautions mentioned in S.R.15.18/1 (12) which must be rigidly observed.

SRG48. Trolley Break Down –

- (a) In the event of the break down of a trolley, or its brake gear becoming defective between stations, the official In charge shall have it removed from the line at once. If the break down occurs between stations and the trolley is running on an 'Authority to Proceed' or "Trolley Permit" the official Incharge shall at once employ the quickest means at his disposal to advise the nearest Station Master in writing that the trolley has been removed from the line, and will RETURN the "Authority to Proceed" or the "TROLLEY PERMIT" at the same time. The Station Master receiving the advice shall immediately to the Station Master at the other end of the section "trolley which left yours (or mine) at hours has failed in the Block section and has been removed from the track, private number"
- (b) A copy of this message must be recorded in the train registers of line clear enquiry and reply books. Following this, the station towards which the trolley was proceeding or in the case of Neales Token working, the station which receives the Token, shall give the "Train out of Section" signal for the trolley in the usual manner.
- (c) When trolley has been made fit to run, the official incharge shall notify the nearest Station Master in writing that the trolley is fit to run to the station to which he wishes to proceed, and shall give the estimated time that will be taken for the journey, and will ask for the "Authority to Proceed" or "Trolley Permit". The Station Master receiving the message will inform Station Master at the other end of the block section concerned accordingly and will then give or obtain the permission to proceed to the destination and send "Authority to Proceed" or "Trolley Permit" to the official Incharge.

SRG49. Blocked Section - If a section between two stations on which trollies may only run on line clear or trolley permit, is blocked by an accident or by the Way & Works Branch, a trolley may be run through the block provided the person Incharge given a message to the Station Master of the stations on each side of the block section stating that he is proceeding through the block and that the block must not be removed until he arrives at the station ahead. Before entering the blocked section, he must get an acknowledgement of his message from both stations.

SRG50. Inspection between Stations - When it is necessary to stop for work between stations, the trolley must be taken off the line and left with Incharge of the trolleyman but if a trolleyman cannot be spared, the trolley may be left after the wheels have been securely chained and padlocked. On grades 1 in 40 and steeper, not more than two inspecting officials and four trolleyman are allowed to travel on a trolley.

S E C U R I N G O F V E H I C L E S

SRG51. In Sidings or Dead Ends –

- (a) The siding or dead end must be provided with either: -
 - (i) Scotch Block which must be kept locked across the line when vehicles are standing in the siding, or
 - (ii) Trap points which must be kept locked in the open position when vehicles are standing in the siding, and
 - (iii) All vehicles must be placed inside the traps or scotch blocks and coupled together.
- (b) all hand brakes must be put hard on, or if they cannot be put hard on, the vehicles must be spragged.
- (c) The vehicles nearest the traps or scotch block must be chained, if there are more than three vehicles, one must be chained, out of every three.

SRG52. On Running Lines During Shunting - When there is any risk of vehicles escaping into the block section. All hand brakes must be put hard on, or, if any cannot be put-hard on, the must be spragged.

SRG53. In the Block Section –

- (a) Vehicle must not be detached from an engine except in an emergency or as allowed under the rules for ballast trains.
- (b) In every case where it is decided to detach a vehicle from an engine, the Loco Pilot must obtain a memo, from the Guard, in accordance with G.R. 4.48, which must bear certificate to the effect that the train has been properly secured.
- (c) The detached vehicles must be secured by putting all hand brakes hard on. Vehicles, the hand brakes of which cannot be put “hard on” must be spragged.

SRG54. Scotches, Wedges and Chains - Every Guard must carry sufficient number of scotches or wedges to be able to comply with these rules.

